100 Series

UNIVERSAL TEST MACHINE

Low Forces up to 10 kN (2250 lbf)



TESTRESOURCES

100 SERIES

TestResources' 100 Series modular universal testing machines incorporate key elements for maximum configurability including modular frames and actuators, customizable controllers and a wide range of accessories.

The 100 Series serve lower force mechanical test applications. This series is ideal for test applications requiring loads as low as 0.0001 N (sub-gram) up to 10 kN (2250 lbf) and material and product physical test applications that require accurate measurement and control of forces. Our 100 Series is designed as a tabletop test machine and is compact and lightweight. We also offer portable packages.

What's Different?

What sets the TestResources' 100 Series apart from traditional universal test machines?

- Five preconfigured frame styles
- Configurable to meet custom widths and heights to match any test requirement
- Flexible and scalable software packages
- Includes high performance and easy to use controller with logical workflow design
- Interchangeable actuators with force capacities up to 9 kN (2000 lbf)
- Can be configured for low force testing

What's New?

Newton Universal Controller

Affordable - Pay only for what you need now

Smart - Receive performance and capability for what you might need in the future



Announcing the Newton Universal test controller with both tablet and computer based configurations.

What does this mean for you?

- User interface optimized for intuitive workflow and ease of use
- Configured and customized to meet YOUR immediate testing needs and available budget
- Upgrade and Expand as needed to meet ALL future unforeseen testing challenges
- Research quality accuracy, resolution and speed range
- Expands to 20 sensors (transducer control channels)

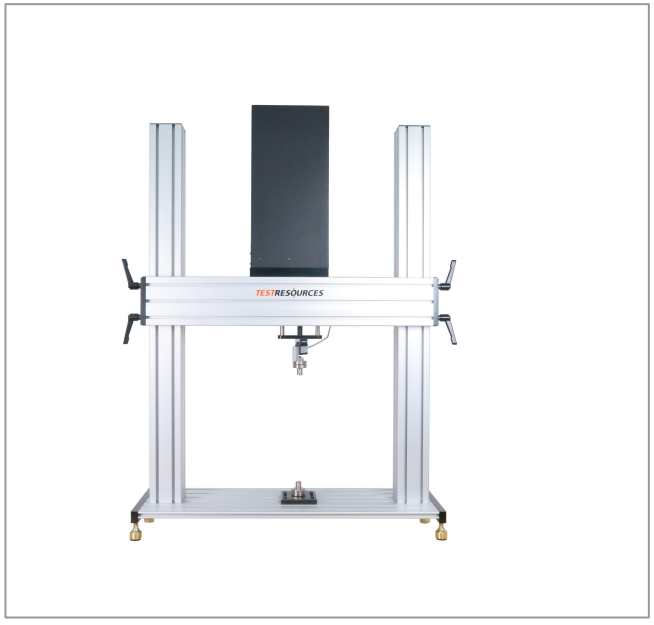
100 Series Modular Universal Test Machines

TESTRESOURCES

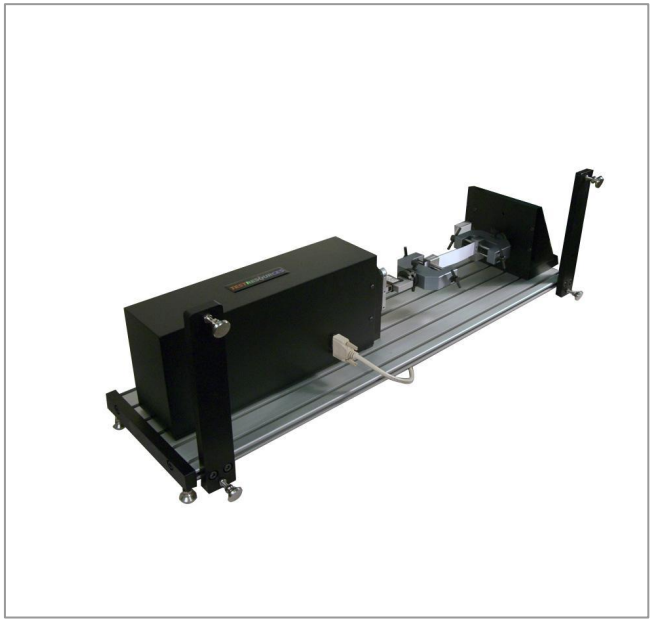
1 axis testing
3 control modes
5 frames styles
7 actuators sizes
16 simultaneous test samples
20 sensor inputs
32 input and output channels
2,000+ fixtures and accessories
5,000 samples per second
Infinite number of test profiles











What you can do with the 100 Series...

The 100 series is a single channel uniaxial test machine with mechanical test measurement and control, data acquisition, results analysis and customized test report generation. Standard and custom models are available.

Save time and money using modular components that allow you to build it or expand it yourself. You can easily remove the actuator from the frame and mount it on a different frame for a completely different test. The actuator assembly is completely self-contained including the displacement and load instruments needed for precision operation. It's so versatile you can even make your own frame.

Designed to meet a wide range of mechanical tests

These test systems are reliable, low maintenance and easy-to-use, even for inexperienced users, yet versatile enough to perform a wide variety of research quality tests.

Test Types

- Tensile
- Compression
- Flexural
- Simple load-deflection cyclic tests
- Strain controlled (with optional extensometer)
- Viscoelastic (Stress Relaxation / Creep)
- And more!

Test Profiles

- Monotonic
- Dual segment
- Multiple segment (Custom)
- Cyclic



Standards

Meets specific industry test methods from ASTM, ISO, EN, DIN, JIS, TAPPI, JEDEC and other international standards organizations.

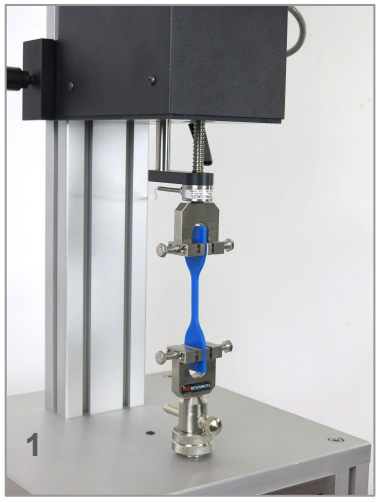
Markets

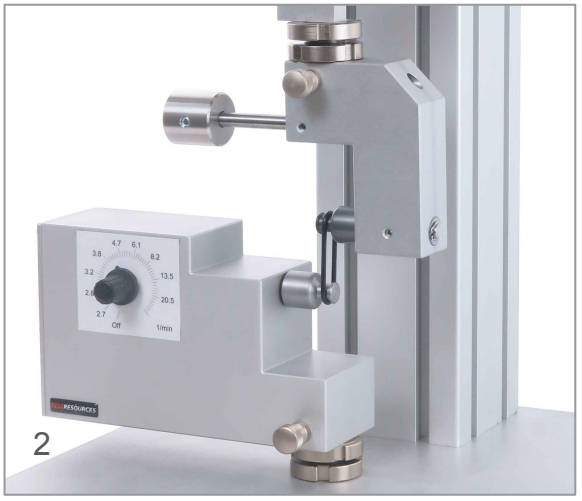
Product and materials testing in quality assurance, production, research, product development and educational test environments.

Industries

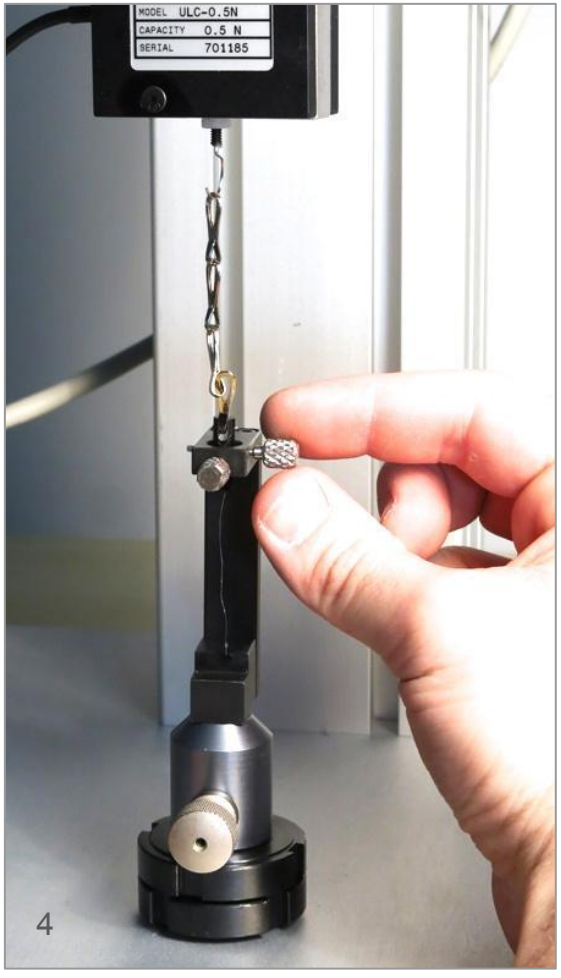
Medical devices, biomaterials, textiles, soft metals, rubber and elastomers, food, small components, wire, paper, plastic, film and many more.

1. Side Action Tensile Grips
2. Fixture for tensile testing of O-rings
3. Environmental Chamber
4. Special Ultra Small Test Fixture
5. 3 Point Bend Fixture
6. 90° Peel Test Table
7. Compression Platens
8. Pneumatic Tensile Grips with Wide Jaws
9. Biomedical Bath
10. IFD Compression Fixtures
11. Meat Shear Test Fixture

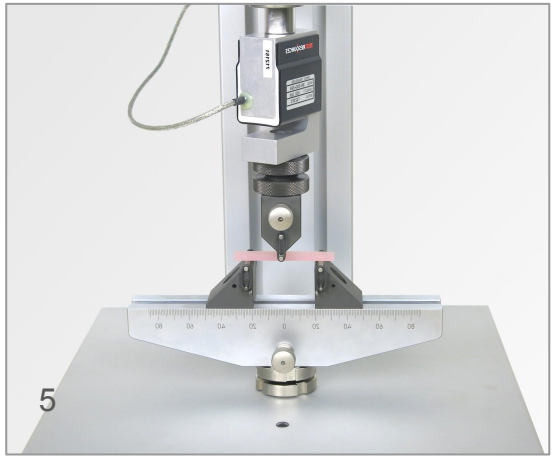

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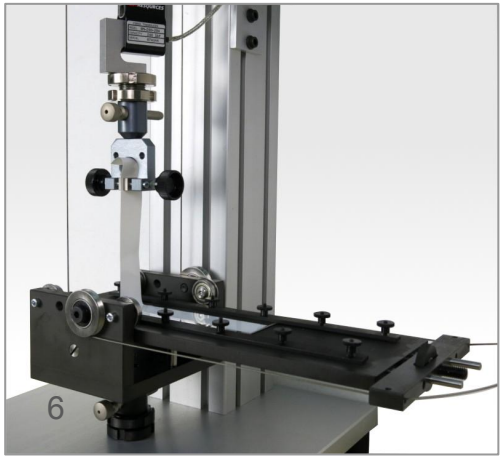

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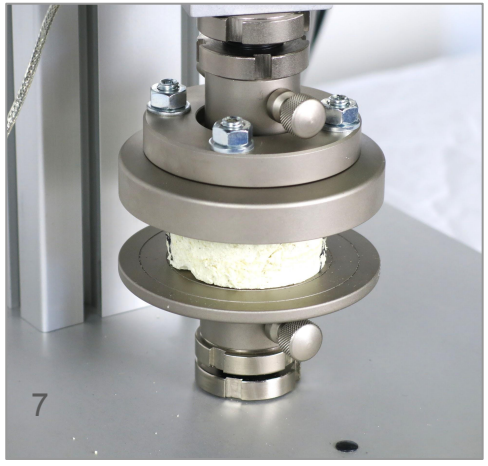

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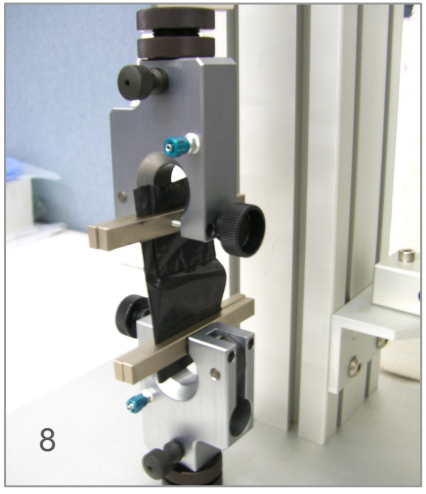


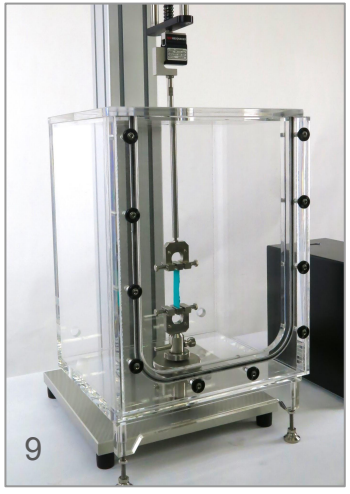
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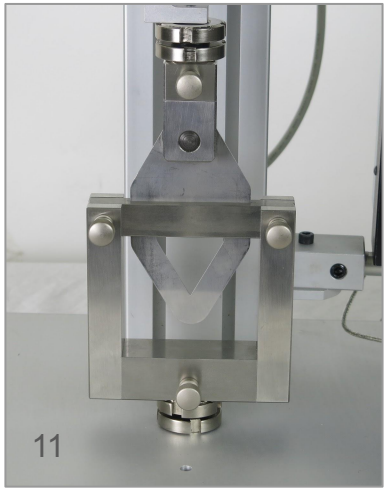

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EXCEPTIONAL PERFORMANCE

At TestResources, exceptional performance is our top priority because we know that your test relies on it. This is especially evident with our 100 Series universal testing machines which produce precise, repeatable and reliable test results.



Load & Strain Measurement Accuracy

The 100 Series features accurate load measurements over a wide dynamic range, while meeting or exceeding industry standards such as ASTM E4, BS 1610, DIN 51221, ISO 7500-1, EN 10002-2 and AFNOR A03-501. Load accuracy is better than ± 0.5% over the range of 100% of load cell capacity to 1% of capacity.

- Accurately measure forces as low as 0.0001 N (0.00002 lbf) with a low force rated load cell.
- Fifteen load cells available to cover a wide range of full scale capacities including 0.1 lbf, 0.2 lbf, 1.1 lbf, 2.2 lbf, 5.6 lbf, 10 lbf, 25 lbf, 50 lbf, 100 lbf, 150 lbf, 250 lbf, 500 lbf, 1125 lbf and 2250 lbf. Metric models are also available.
- Controller automatically identifies each load cell with Plug ‘n’ Play simplicity, which improves operator efficiency and reduces likelihood of errors. Newton controllers meet TEDS IEEE 1451.4 standard.
- Strain measurement accuracy meets or surpasses ASTM E83, ISO 9513 and EN 10002-4

Position Resolution

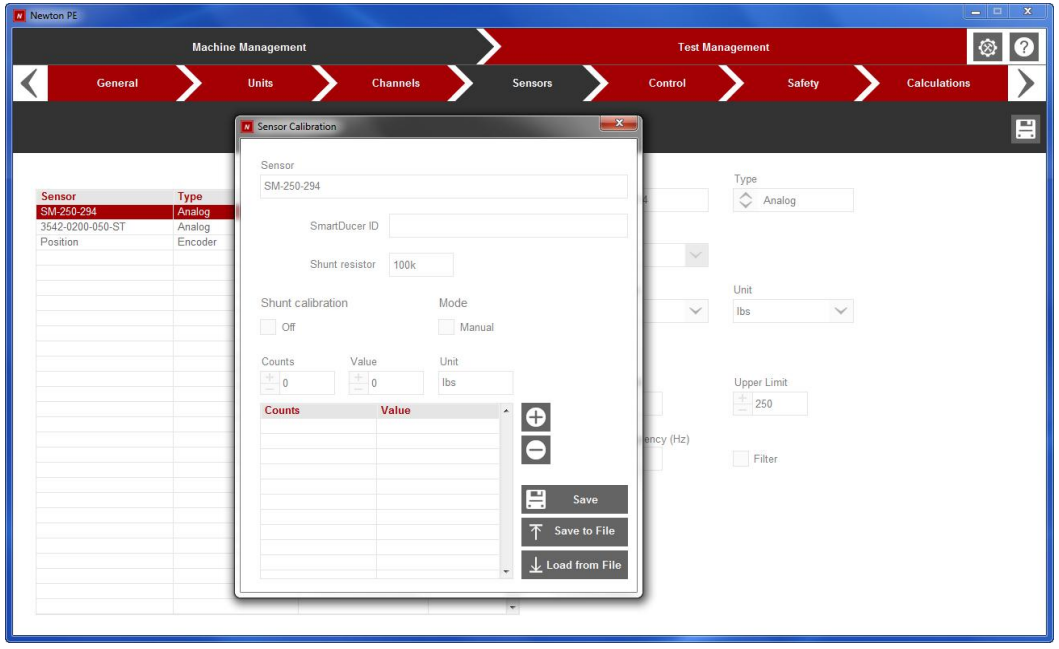
High resolution position encoders improve position data quality and improve machine control.

Data Acquisition Rates

Up to 5 kHz data acquisition rate option simultaneous on load, extension and strain channels.

Flexible Control

Control variety of testing modes including constant crosshead speed (CRE), loading rate (CLM) and strain rate (CSR).



NEWTON UNIVERSAL CONTROLLER



Newton Universal, universal test machine controller, is an interactive and intuitive workflow guided controller that is configurable to your test requirements, preferences and budget.

User interfaces:

- Touchscreen tablet interface
- Desktop PC with keyboard and mouse interface

Software packages:

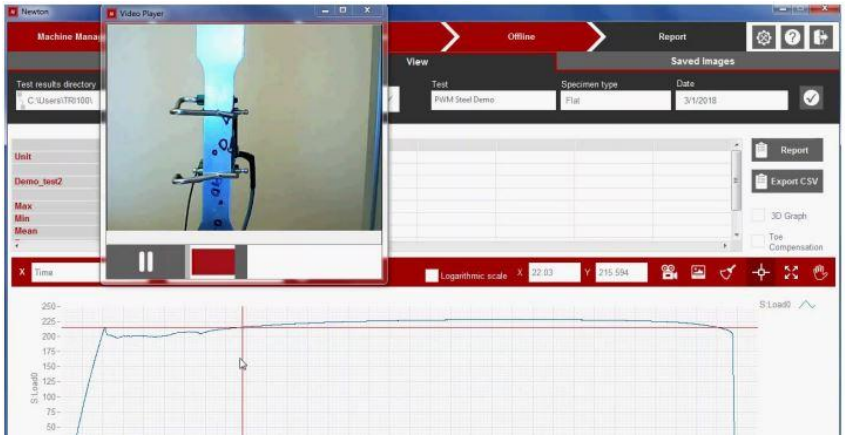
- Force Testing Package
- Materials Testing Package
- Premium Package

Optional features to enhance your testing capabilities:

- **TestCam** Module for video capture and playback of all tests
- **TestProfiler** Module creates custom multiple segment profiles for product and component testing
- **TestCalc** Module enables you to create custom analyses and calculations
- **TestComply** Module to meet CFR 21 Part 11 FDA needs for biomedical applications
- **TestLingo** Module translates your controller interfaces to your language.

Additional options:

- Strain channel modules for standard and biaxial applications
- Inputs from up to 20 different sensors
- Up to 32 different digital input and output channels



BUY ONLY WHAT YOU NEED, WHEN YOU NEED IT

Newton is the latest technology on the market that gives you the ability to purchase only the capabilities and features you currently need while allowing you to easily and affordably expand the system's capabilities to meet all potential needs.

This industry leading approach gives you the freedom of choice, the power to control your budget and the security for future growth.

Your controller and software can be easily enhanced at any time by adding standard or customized features. Have a unique calculation or report that you need? No problem. We can create any custom feature that your test application requires.

LOAD FRAMES

TestResources' 100 Series universal test machines are modular, compact, lightweight and versatile. There are five different load frame families, including single column, C Type, Dual Column (light duty) Dual Column (heavy duty) and Horizontal.



Single Column Load Frame - 100 Family	
Model	**100-36**
Max Force	4.4 kN (1000 lbf)
Column Spacing	89 mm (3.5 in)
Manually Adjustable Vertical Test Space	0 to 775 mm (0 to 31 in)
Compatible Actuators	DG250; DG500; DG1000



C Type Load Frames - 110 Family		
Model	**110-10**	**110-20**
Max Force	1.1 kN (250 lbf)	1.1 kN (250 lbf)
Column Spacing	250 mm (10 in)	500 mm (20 in)
Compatible Actuators	DG250	DG250

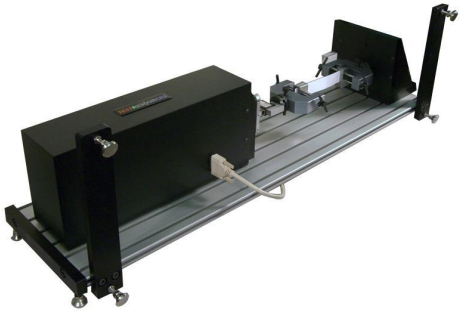
LOAD FRAMES



Light Duty Dual Column - 120 Family			
Model	**120-16**	**120-W-H**	**121-16**
Max Force	2.2 kN (500 lbf)	2.2 kN (500 lbf)	4.4 kN (1000 lbf)
Column Spacing	405 mm (16 in)	Per Requirements	400 mm (16 in)
Manually Adjustable Vertical Test Space	0 to 775 mm (0 to 31 in)	Per Requirements	0 to 775 mm (0 to 31 in)
Compatible Actuators	DG250; DG500	DG250; DG500	DG1000



Heavy Duty Dual Column - 140 Family		
Model	**140-16-36**	**140-W-H**
Max Force	10 kN (2250 lbf)	10 kN (2250 lbf)
Column Spacing	405 mm (16 in)	Per Requirements
Manually Adjustable Vertical Test Space	0 to 775 mm (0 to 31 in)	Per Requirements
Compatible Actuators	DG500-140; DG1000-140; DG1500-140; DG2000-140; DH1125-140; DH2000-140	



Horizontal Test Tables - 150 Family		
Model	**150-30**	**150-30-8**
Max Force	4.4 kN (1000 lbf)	4.4 kN (1000 lbf)
Column Spacing	75 mm (3 in)	200 mm (8 in)
Manually Adjustable Test Space	0 to 600 mm (0 to 24 in)	0 to 600 mm (0 to 24 in)
Compatible Actuators	DG250; DG500; DG1000	DG250; DG500; DG1000

ACTUATORS

TestResources' interchangeable actuators allows exceptional flexibility and growth. Our test systems can be configured with one of our seven actuators that offer force capacities up to 10 kN (2250 lbf). These actuators can be interchanged as test requirements change, making them unique in the industry. This capability eliminates the need to invest in a completely new machine.

DG Family Actuators								
Model	**DG250**	**DG500**	**DG1000**	**DG500-140**	**DG1125-140**	**DG2250-140**	**DH1125-140**	**DH2000-140**
Max Load Capacity	1.1 kN (250 lbf)	2.2 kN (500 lbf)	4.4 kN (1000 lbf)	2.2 kN (500 lbf)	5 kN (1125 lbf)	10 kN (2250 lbf)	5 kN (1125 lbf)	8.9 kN (2000 lbf)
Max Speed	760 mm/min (30 in/min)	300 mm/min (12 in/min)	150 mm/min (6 in/min)	380 mm/min (15 in/min)	225 mm/min (9 in/min)	125 mm/min (5 in/min)	2000 mm/min (80 in/min)	760 mm/min (30 in/min)
Position Resolution	0.06 micron (2.5 micro-in)	0.02 micron (1.1 micro-in)	0.018 micron (0.7 micro-in)	0.03 micron (1.25 micro-in)	0.02 micron (0.8 micro-in)	0.01 micron (0.34 micro-in)	0.01 micron (0.4 micro-in)	0.01 micron (0.4 micro-in)
Actuator Stroke	150 or 300 mm (6 or 12 in)	150 or 300 mm (6 or 12 in)	150 or 300 mm (6 or 12 in)	150 mm (6 in)			300 or 450 mm (12 or 18 in)	300 or 450 mm (12 or 18 in)
Actuator Elements	Motor, position encoder, ball screw, linear bearings, two limit switches mounted at the end of the stroke							
Load Frame Mount	Vertical test space is manually adjustable via lever arm clamp							



FLEXIBILITY TO EXPAND

1000's of Grips and Test Fixtures

- Wedge action grips
- Pneumatic action grips
- Mechanical side action grips
- Compression platens
- 3 and 4 point bending jigs and fixtures.
- Self tightening grips
- Capstan bollard grips
- Meet specific ASTM and ISO standard test requirements
- Custom test fixture design service

Special Load Frame Accessories

- Safety enclosures
- Carrying cases for portable applications
- T slot and engineered baseplates
- Test frame column spacing
- Control multiple actuators per test frame
- Multi-sample test setups

Extensometers and Deflectometers

- General purpose clip on extensometers
- High resolution video and laser extensometers
- Precise deflectometers

Environmental Chambers with Test Fixtures and Extensometers

- Low temperature environmental ovens
- High temperature environmental ovens
- Humidity control options
- Biomedical bathes for testing in saline at 37 C (98.6 F)

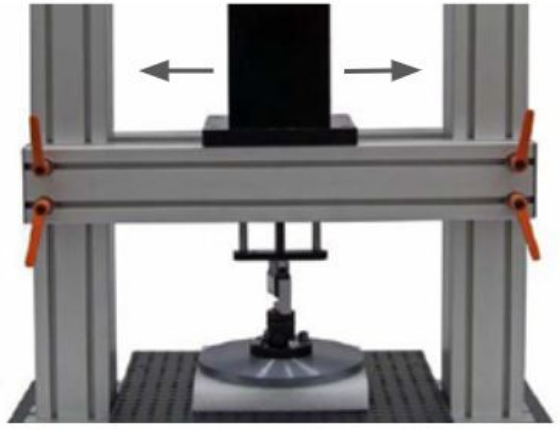
High temperature furnaces for tests at temperatures up to 1600 C (2912 F)

Add a Torsion Channel

Simple twist-thrust biaxial tests help evaluate the mechanical performance of medical devices such as tubing, bone screws, luer lock connectors, wires and child-proof medicine bottles. TestResources solves these applications in multiple ways that depend on the timing of your torsion add on. Our systems are inherently modular and flexible.

Custom Solutions

Our modular approach makes quick and easy application engineered solutions practical. Changes can be made on modules, rather than at integrated system levels which are more complicated.





SIMILAR PRODUCTS

When you need more travel and higher test/return speeds.
200 Series Single Column Universal Test Machine



Consider a traditional 200 Series universal test machine if you have high extension or long travel testing applications. When compared to the 100 Series machines, the 200 Series offers several benefits:

- Force capacities up to 5 kN (1125 lbf) and test speeds up to 100 ipm (2500 mm/min)
- Travel lengths up to 1400 mm (55 in)
- Test high elongation test samples such as thin film and rubber with extended crosshead movement
- More flexible adjustment of crosshead travel limits. The 100 series limits are fixed at the end of the actuator travel range

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When you need higher force.
300 Series Dual Column Universal Test Machine



If your tests requires more than 8.9 kN (2000 lbf), then consider the 300 Series of universal test machines.

- Tabletop models with force capacities from 5 kN to 50 kN (1125 to 11250 lbf)
- Floorstanding models with force capacities from 5 kN to 500 kN (1125 lbf to 112 kip)

SUPPORT

With over 20 years of providing support around the world we have it figured out. TestResources is recognized globally for delivering reliable, low maintenance and budget friendly solutions. It all starts with well-designed products, the right people and a machine with easy to replace components.

TestConnect. Better Support--Faster

TestConnect, included as part of our Newton Universal support toolset, delivers powerful communication capabilities that bring our most experienced support engineers even closer to your organization and operators. Secure online screen share connection technology enables us to provide you with fast and straightforward technical support when you need it.

TestConnect reduces wait times, shortens support times and saves you money.

Additional Services

We offer on-site calibration, new operator training, refresher training, emergency repair and replacement parts which ensures that you can start testing faster and stay testing longer.

Facts about TestConnect

94% of our customers have no service calls within the first 5 years of operation
83% of our support calls are resolved within 4 hours



TestResources

Our team of experienced engineers help our customers find exact solutions based on their test requirements. Find out how we can help you ensure accurate and consistent test results!

CONTACT US

701 Canterbury Road S,
Shakopee, MN 55379

+1-952-944-6534

www.testresources.net

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