

Standard

ISO 7500-1, ASTM E4, ASTM D-76, DIN5122, JIS B7721/B7733, EN 1002-2, BS1610, GB T228

Industry

Rubber, Plastic, Paper, Textile, Metal, Wood, Tape, Electronics, Package, Medical, Construction and others



Machine Description

The desktop double-column tensile (compression) machine has relatively bigger test space and stroke, making it suitable for large specimens tests and extended environmental tests. The machine is equipped with servo motor and ball screw with maximum capacity 20kN. Test stroke can be adjusted for different dimensions of sample; different sorts of grips are available for diverse tests.

The M1F special test software is compatible with the Windows system, and can perform various functions such as tensile (compression) force test, bending test, peeling test, and hold tension (compression). The software operation is simple and easy to learn, with multiple languages, various metric and English unit choices, real-time graph display, and provides complete test analysis data, report planning, complete analysis or archiving after the test is completed. This tester can also be equipped with a display for stand-alone operation to capture effective test data quickly.

Machine Specification

Control Performance

Force Resolution	32	bits
Force Preciso	0.5% / 1% (Note 1)	
Stroke Resolution	0.001	mm
Data Sampling Rate	2-400	Hz
AD Input Signal	1	set
Encoder Input Signal	1	set

Transmission System

Motor	400W AC servo motor drives	
Speed Range	0.2-1000.0	mm/min
Speed Precision	0.2-1.0±2.5%	mm/min
	1.0-1000.0 ±0.3%	mm/min

Data Processing System

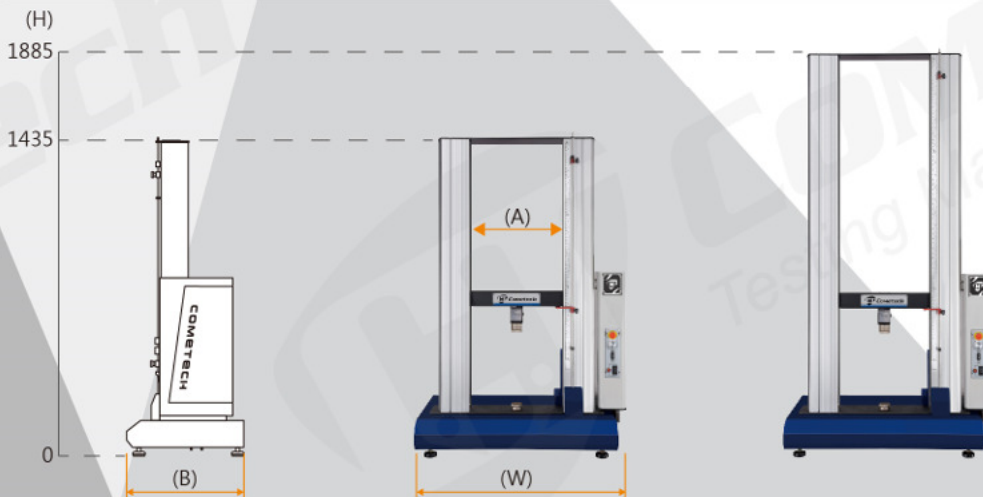
Network Protocols	TCP/IP
Language in Display	Chinese, English, Japanese, Polish, Italian
Analysis Modules in Optional Software	Over 210
Language in Optional Software	Chinese, English, Japanese, Korean, Portuguese, Spanish, Polish, Russian

Safety Mechanism

Hardware Protection	Upper/Lower limit, emergency stop button
Protection in Optional Software	Loadcell Anti-Collision Function (Note 2)
CE Marking	Machinery Directive 2006/42/EC

Electrical Specification

Power Supply	Single phase 200-240V, 5A
Max. Power	1200 W



Model	QC-526-M	QC-526-L	
Capacity	20	20	kN
Test Stroke	800	1200	mm
Test Space(A)	425	425	mm
Stiffness	15.85	15.85	kN/mm
Width (W)	940	940	mm
Depth (B)	530	530	mm
Height (H)	1435	1885	mm
Weight	130	185	kg

Note 1: depends on the precision of chosen loadcells

Note 2: collision detection for loadcells within speed movement 1000mm/min.

The function offers 90% protection for loadcells above 500N on QC-548 series, 90% protection for loadcells above 1000N on QC-526 series.

Servo-Powered Type

The use of servo motor drives not only increases the speed range and speed accuracy, but also allows more changes in machine control like multi-step test.

The machine can be operated either by the display panel for simple testing, or by the software on a PC for complete data analysis. The two ways of operations above are selected according to the use occasion.

Precision Jog Controller

The precision jog controller module allows the users to make slight adjustments to the position of the fixture, and can also be applied to the fine adjustment of machine calibration. It provides a safe and convenient control mode for the operator.

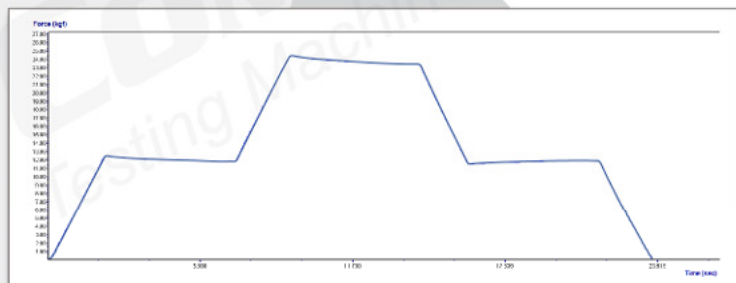
The minimum degree of jog controller can be set in the range of 0.1-20 μ m.

Multi-Step Testing

In the dedicated software, up to 10 steps of test condition are executable. In each step, different speeds, directions and stop conditions can be set in a diversified and customized way.

In addition, constant tensile/ compression test settings in a short time are possible.

The software provides built-in templates of multiple standard test conditions, allowing users to learn and shorten the setup time.



Miscellaneous Test Analysis

Complete and miscellaneous test analysis is the biggest feature of M1F software. More than 200 kinds of analysis can be selected, and the overlapping comparison of test curves can be performed.

Efficient Transmission System

The timing belt and the ball screw coordinate with the system to improve movement efficiency and reduce the risk and noise in operation.

Standardized Parts Design

This series of machine has been optimized many times, and a number of standardized specifications of spare parts have been established.

The design makes it easier to control the production cost and time of the machine. Reducing the number of parts makes the machine easier for maintenance. The shared accessories facilitate the upgrade and modification of the machine.

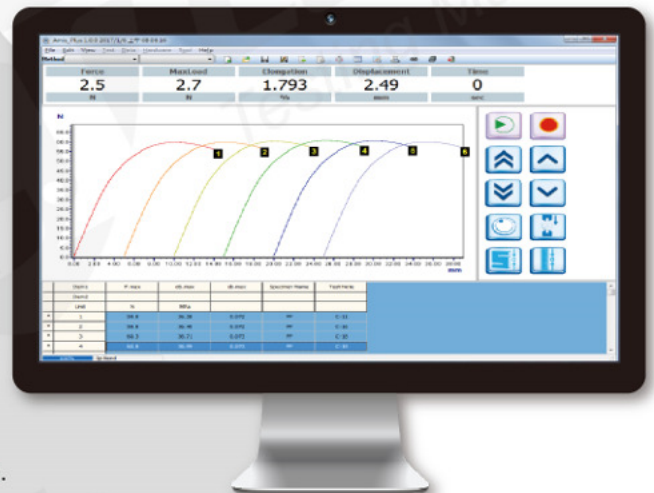
Optional Accessories - Display panel

- 7" color touch TFT display panel is used.
- Chinese, English, Japanese are supported.
- Displays force, pressure, displacement and time.
- Can perform test condition settings: test speed, direction, auto-return, stop at the break point.
- Can analyze max. force, interval force, force at break point, and so on.
- Provides multiple stopping point settings: force, displacement, time and elongation.
- Supports over travel, overload, overtime stop protection settings.
- Can save up to 50 test results; it also supports saving to USB.
- Restore the machine to factory setting is available.
- Can calibrate under stand-alone mode.
- Supports switching between Metric and Imperial units .

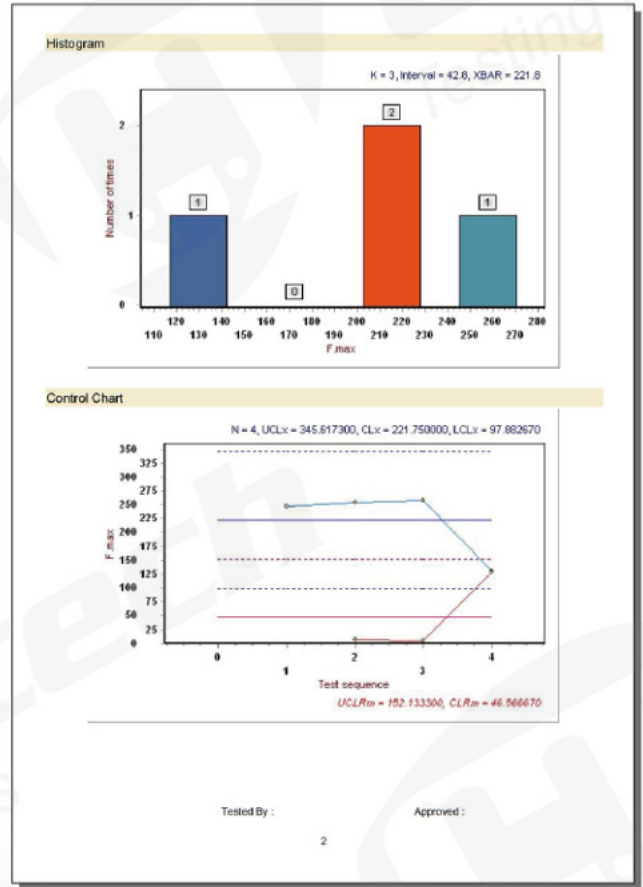
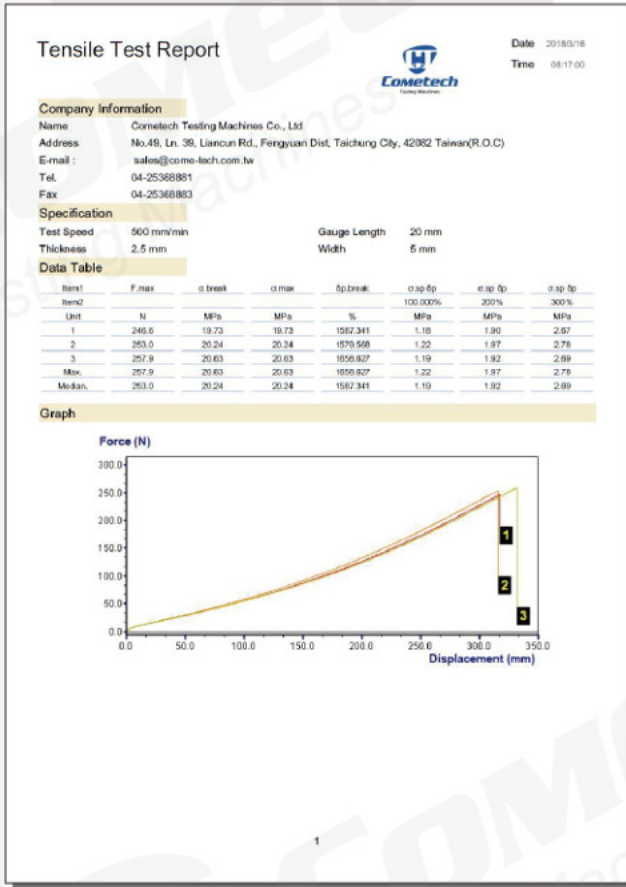


Optional Accessories - Software

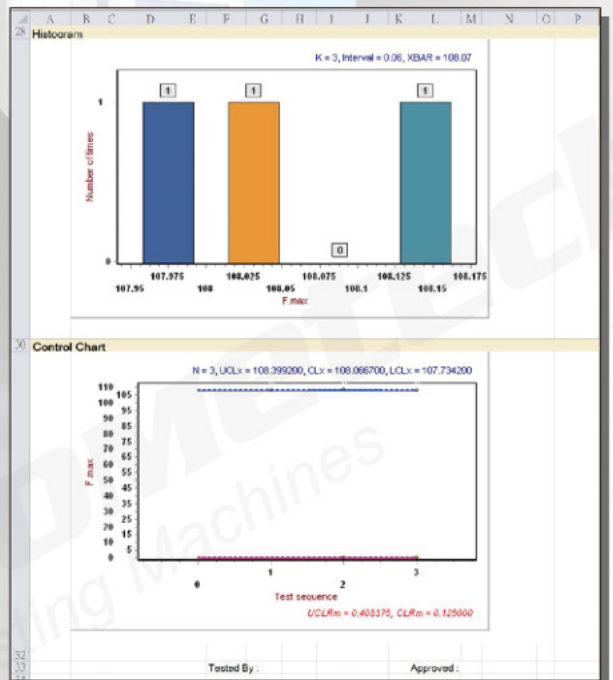
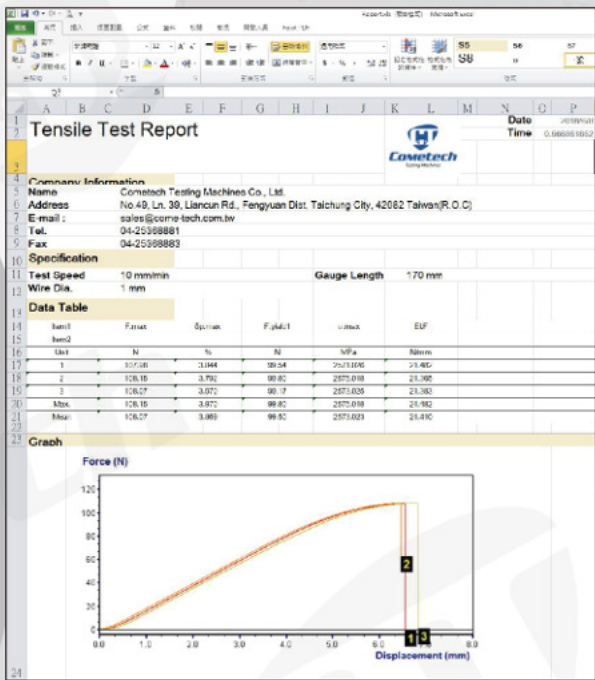
- The data sampling rate is up to 400 Hz.
- Controlled by mouse, keyboard and the up/down button on the machine to quick-adjust the position of grip.
- Windows system required.
- Chinese, English, Japanese, Korean, Portuguese, Polish, Spanish and Russian are available.
- Operation Mode: TCP/IP two-way transmission to connect with PC.
- Can import multiple test data and display at the same time.
- Supports switching between Metric and Imperial units .
- Provides a flexible table for data analysis.
- Can name the data results and create a user-defined formula.
- Data can be shown through the table, graph, or both.
- Data processing: save, import, list, statistical comparison, and so on.
- The X-Y axis of the graph is adjustable including marks on the curve, interval marks, slope, and so on.
- Tensile, compression, bending, spring, and other tests are available.
- Supports over travel, overload, over time stop conditions as machine protection
- Supports various test patterns such as constant tensile (compression) and 10-stage setting.
- Specimen modular design is for easy and quick specimen information setting.
- Test condition modular design can reduce human setting error.
- Supports upper and lower limits for data selection to get the key information.
- Supports multiple I/O ports for the additional test functions.



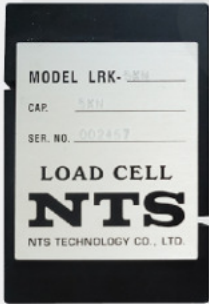
Software Standard Report



Excel Report



Optional Accessories-Loadcell



Features

- The loadcell is designed with built-in chips that record its specification and calibration parameters. There is no need to reset the loadcell when it is replaced. The relevant parameters can be read directly and there is no limit on the loadcell replacement numbers.
- The accuracy of Comotech grade A/B loadcells can meet international standards.
- Loadcell of various types and capacity is provided according to your requirements.
- The loadcell is conveniently removable with regular tools.

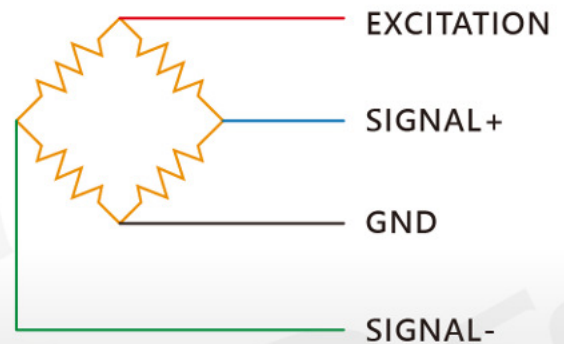


Specification

Controller System	Grade A Loadcell	Grade B Loadcell
M1F	0.5-100% $\pm 0.5\%$	1-100% $\pm 1\%$
Safe Overload	140%	120%

How to Choose a Suitable Loadcell?

- Loadcell capacity is not the larger the better. The recommended range of loadcell application is between 1-99%. Testing force evaluation is suggested before selection of a loadcell; it is recommended to choose one with its capacity twice larger than the maximum testing force.



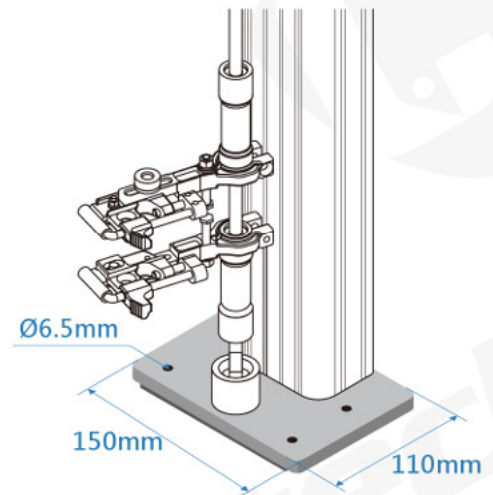
Optional Accessories-Extensometer

QC-551 Long Extensometer

The Long Extensometer is an essential accessory for measuring extensible material such as rubber, plastic, PE, fabric, webbing, and materials with the elongation higher than 20%. The testing specimen is usually made into a dumb-bell shape, and the gauge length is adjustable according to the length of specimen. The extensometer will automatically detect the elongation during test process.

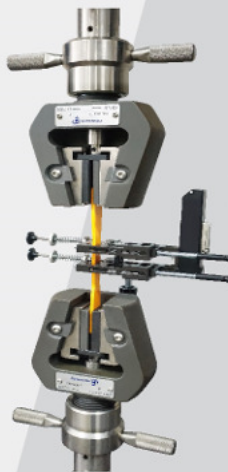
Specification

Specification	S: Standard	L: Extended
Test Stroke	700mm	1100mm
Gauge Length	15-100mm (adjustable)	
Extensometer Class	C2	
Resolution	0.0125mm	
Operating Force	0.25N	
Specimen Thickness	0-10mm (depending on the jaw face selected)	
Reach of Arms	110mm	



QC-557 Short Extensometer

The Short Extensometer is used for testing rigid plastic, metal, and materials with the elongation lower than 50%. The device has a precise displacement sensor and a compact structure, with resolution up to 0.5µm. Customized specification can be provided when the gauge length or the elongation is higher. In a test with max. load below 20kN, the extensometer can be attached to specimen until it is fractured.



Specification

Specification	QC-557 Short Extensometer
Resolution	0.0005mm
Gauge Length	25mm / 50mm
Max. Stroke	25mm
Distance Clamp-Rod's Head	78mm
Flat Specimen Thickness	0-22mm
Round Specimen Diameter	Ø4.5-Ø21mm
Weight	400g
Extensometer Class	C1
Features	With special jigs to reinforce clamping

QC-558 LVDT Displacement Fixture

The fixture is designed to measure specimen's slight deformation in short distance. It has to be mounted on the side of customized compression platens, bending fixtures or other fixtures to accurately measure the displacement between two platens/fixtures. With the fixture, the machine displacement and stiffness affect to the least degree in the measurement.

Resolution	0.5µm
Max. Measuring Distance	15mm



Grip Application

The grip is an important accessory that affects accuracy, convenience and safety in a test conducted on a material testing machine.

With experience in this field for over 30 years, Cometech provides to-the-point and a complete range of grip/fixture testing solutions according to common test standards.

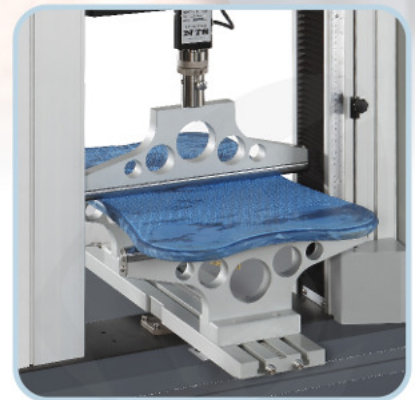
For more information please refer to <https://www.come-tech.com.tw/en>



Wedge Grip



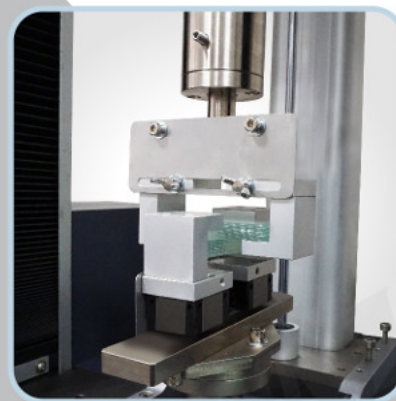
Bending Test



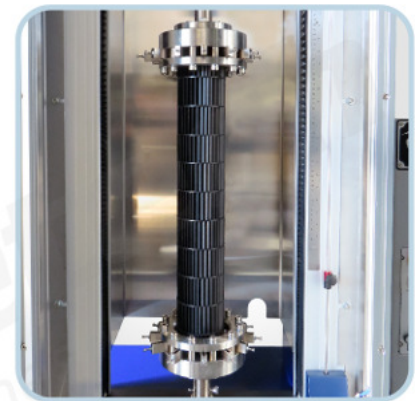
Customized Compression Grip



Compression Platen with Displacement Sensor



Cross Peel Shear Grip



Customized Air-conditioning Shaft Centering Grip

*Cometech reserves the right to modify product specification.

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