

# Force and Torque Measurement Products



Brochure

**MARK-10**

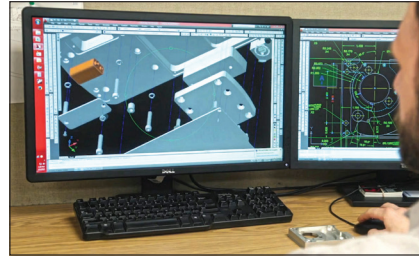
Force and Torque Measurement Engineered Better

# Force and Torque Measurement Engineered Better



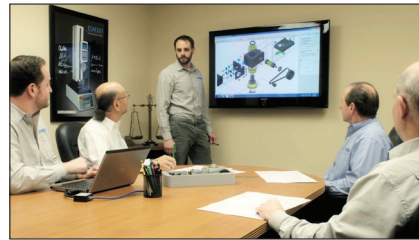
Mark-10 Corporation is a designer and manufacturer of force and torque measurement products. Since our founding in 1979, our products have proven themselves in numerous applications in virtually every industry around the globe.

## Focus On Engineering



With our roots as an engineering consultancy, Mark-10 has focused on better engineering from our very beginning. Having developed years of expertise in force measurement, we introduced our first product, a game-changing force gauge, in 1990. Over the years, we've engineered an industry-leading range of force and torque measurement products.

## A Culture of Innovation



As an independent, family-run business, we answer only to our customers. Through frequent collaboration between Engineering, Manufacturing, Marketing, and Sales, we keep a pulse on the market, and address those needs with products which are elegant, easy to use, and cost effective.

## Integrated Manufacturing



Utilizing the latest in CAD technology, CNC machining, and the talents of an experienced team of technicians and assemblers, products are engineered and manufactured in house. Customer service and technical support are provided under one roof, providing quick response to inquiries and feedback.

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# Industries & Applications

## Medical Device / Pharma



- Syringe plunger force
- Needle penetration force
- Tablet crush force
- Suture strength
- Packaging peel force
- Dental implant torque

## Packaging



- 90° / 180° peel testing
- T-peel tests of flexible packaging materials
- Bottle cap torque testing
- COF measurement
- Top-load testing

## Automotive



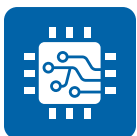
- Turn signal stalk activation
- Rotary dial torque
- Seat belt retraction force
- Fastener torque testing
- Ignition switch torque
- Wire crimp pull testing

## Aerospace



- Bearing torque testing
- Tensile strength of materials
- Passenger control button activation force

## Electronics



- Switch force activation
- PCB bend testing
- Wire crimp pull testing
- Component pull testing
- Connector insertion/ withdrawal force

## Springs



- Extension spring testing
- Compression spring testing
- Torsion spring testing

## Consumer Products



- Ski flex testing
- Goggle strap pull testing
- Tennis ball compression
- Lace break strength
- Elongation testing of materials
- Peel testing of packaging materials

## Ergonomics



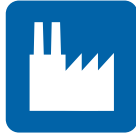
- Pushing a cart
- Loading and unloading boxes
- Luggage / cargo handling
- Operating machinery
- Muscle strength testing
- Fitness assessment

## Food and Beverage



- Bottle cap torque testing
- Bottle cap pull-off force testing
- Food texture analysis
- Ripeness testing
- Crush force testing

## Other Applications



- Torque tool testing
- Push-out force testing
- Tensile testing
- Weld force testing
- Elongation testing
- Bearing torque testing





## Digital Force & Torque Gauges

Mark-10 force and torque gauges measure real time and peak load values, with data output capabilities for further analysis. Gauges can be handheld, bench-mounted, or integrated with a Mark-10 test stand. Available in a broad range of load capacities, with intuitive interfaces and an impressive set of functions, Mark-10 gauges are at the heart of measuring systems in virtually every industry.



- Force capacities from 50 gF to 1000 lbf (0.5 N to 5 kN)
- Torque capacities from 10 ozFin to 100 lbFin (7 Ncm to 11.5 Nm)
- Handheld or test stand mounting
- Selectable units of measurement
- Data outputs available (USB, RS-232, Mitutoyo, analog)
- Pass / fail limit indicators and outputs
- Data storage and statistical calculations available
- Averaging mode available, for average load over time
- External trigger feature available for switch contact testing
- Full serial command set for PC / PLC external control



[www.mark-10.com/force-gauges](http://www.mark-10.com/force-gauges)



[www.mark-10.com/torque-gauges](http://www.mark-10.com/torque-gauges)



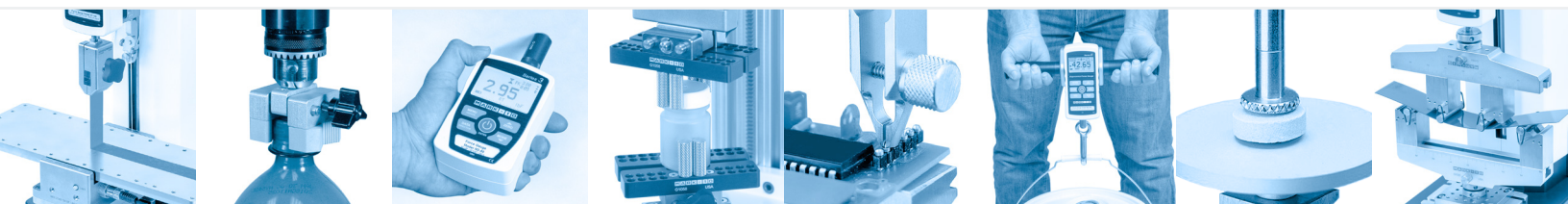
## Remote Force & Torque Sensors

Mark-10's Plug & Test® family of interchangeable force and torque sensors represent the ultimate in measurement flexibility. Select from a range of form factors and load capacities, and mix and match with a choice of three indicators. All configuration and calibration data is saved within the sensors' smart connectors, allowing for true interchangeability. For unique applications, our model PTA configurable adapter can interface many third party strain gage-based load cells and transducers.

- Force capacities from 0.25 lbf to 10000 lbf (1 N to 50 kN)
- Torque capacities from 10 ozFin to 5000 lbFin (7 Ncm to 550 Nm)
- Interchangeable remote force and torque sensors
- Plug & Test® interchangeability - all parameters saved with the sensor



[www.mark-10.com/indicators-sensors](http://www.mark-10.com/indicators-sensors)



## Force & Torque Test Stands

Motorized and manual test stands offer a significant advantage over hand testing by ensuring proper alignment and consistent test speed. Some motorized models can be programmed for advanced test sequences to accommodate demanding applications. A test stand is an integral part of a force or torque measurement system, typically also comprising a force gauge or torque gauge, grips, data collection software, and accessories.

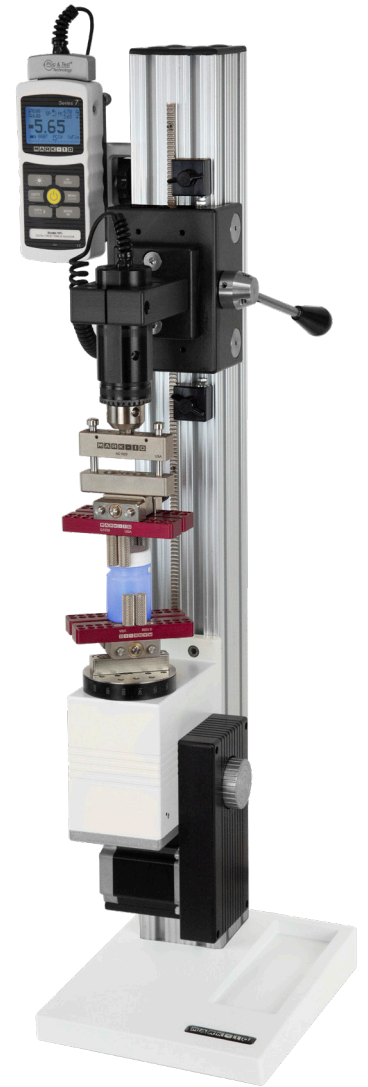
- Force capacities to 1,500 lbf (6.7 kN)
- Torque capacities to 200 lbf·in (22 Nm)
- Ensure consistent sample alignment and test speed
- Reduces operator variability and fatigue
- Motorized and manual models
- Travel measurement available, for tensile, spring, elongation, and other applicable requirements
- Configure number of cycles, preload, load holding, and many other available functions
- PC control available, for custom programming



[www.mark-10.com/seriesf](http://www.mark-10.com/seriesf)



[www.mark-10.com/torque-testers](http://www.mark-10.com/torque-testers)



## Wire Crimp Pull Testers

Measure crimp quality by pulling to break, pulling to a load, or holding at a load - satisfying destructive and non-destructive applications. Select from manual and motorized benchtop testers, a handheld tester for field auditing, or test stand-based systems.



[www.mark-10.com/wire-pull-testers](http://www.mark-10.com/wire-pull-testers)



## Ergonomics Testing Kits

Make job task analysis and ergonomic testing analysis simple and accurate with Mark-10 ergonomics kits. Ideal for workplace design, strength assessment, and ergonomic studies.



[www.mark-10.com/ergonomics](http://www.mark-10.com/ergonomics)

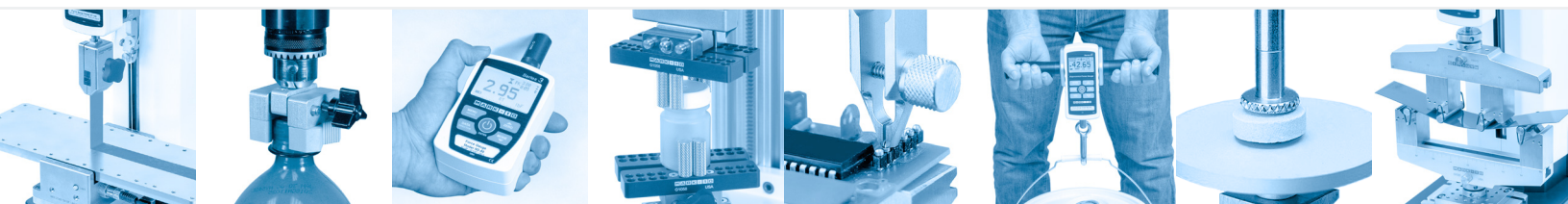
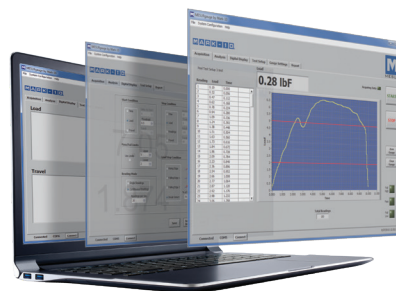


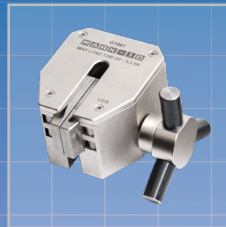
## Data Collection & Analysis Software

Analyze data from Mark-10 instruments and test stands with our MESUR<sup>®</sup> family of PC applications. MESUR<sup>®</sup> Lite is a free, basic data acquisition program, while MESUR<sup>®</sup> gauge plots, calculates statistics, generates reports, and provides other analysis tools.



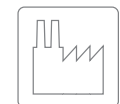
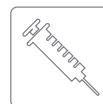
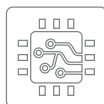
[www.mark-10.com/software](http://www.mark-10.com/software)





## Applications are virtually limitless...

Mark-10 force and torque measurement products help quality control, engineering, and manufacturing professionals assess and ensure quality in virtually every industry worldwide.



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Mark-10 Corporation  
11 Dixon Avenue ■ Copiague, NY 11726 USA  
888-MARK-TEN ■ Tel: +1 631 842 9200 ■ Fax: +1 631 842 9201  
www.mark-10.com ■ info@mark-10.com



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