

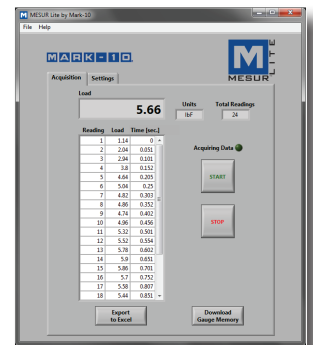


Series TT01 Cap Torque Testers are designed to measure application and removal torque of bottle caps up to 100 lbFin [11.5 Nm]. Adjustable posts effectively grip a broad range of container shapes and sizes, while optional flat and adjustable jaws are available for unique profiles. A rugged aluminum design, and simple, intuitive operation allow for use in laboratory and production environments.

Class-leading accuracy of  $\pm 0.3\%$  and blazingly fast sampling rate of 7,000 Hz ensure reliable and consistent test results, even in quick-action applications.

The TT01 includes a range of sophisticated productivity-enhancing features, including USB, RS-232, Mitutoyo, and analog outputs, automatic data output and zeroing upon cap removal, memory storage for 1,000 readings, pass/fail indicators and outputs, and more. Password protection is provided to prevent unauthorized changes to settings and calibration.

Series TT01 testers include MESUR® Lite data acquisition software. MESUR® Lite tabulates continuous or single point data. Data stored in the TT01's memory can also be downloaded in bulk. One-click export to Excel allows for further data manipulation.



MESUR Lite data acquisition software is included with Series TT01 testers

## Features

- High-speed 7,000 Hz sampling rate accurately captures peak torque values
- First / second peak detection for slip and breakaway torques in tamper evident closures
- Moveable posts and other available gripping options accommodate a wide range of sample shapes and sizes
- USB, RS-232, Mitutoyo, and analog outputs
- Automatic output, data storage, and zeroing upon bottle cap removal helps automate testing processes
- 1,000-point data memory with statistics and outputs
- Programmable set point indicators and outputs for pass/fail determination
- Password protection prevents unauthorized changes
- MESUR® Lite data collection software included

## Controls & Indicators

- Set points
- Current or peak reading
- Set point (pass/fail) indicators
- Battery indicator
- Memory storage for 1000 readings (auto-save also possible)
- Access the tester's settings menu via an easy-to-use interface
- One-push data output to a PC, printer, or other device (auto-output also possible)
- Clockwise/counter-clockwise indicator
- Peak readings (CW/CCW or 1st/2nd peaks)
- Measurement mode
- Unit of measurement
- Analog load bar w/set point markers
- Zero the reading to begin a new test (auto-zero also possible)
- Toggle between real time, peak, and 1st peak/2nd peak display modes

## Optional Items



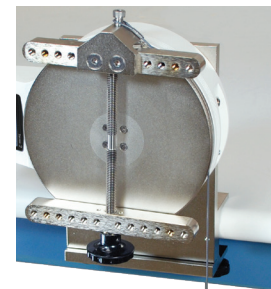
**CT001**  
**Flat jaws**  
Set of rubber jaws for gripping square or odd shaped containers.



**CT002**  
**Carrying case**  
Provides storage space for the TT01 tester, gripping jaws, AC adapter, and accessories.



**CT003**  
**Adjustable jaws**  
Rubber-edged arms may be independently repositioned to accommodate unique samples.



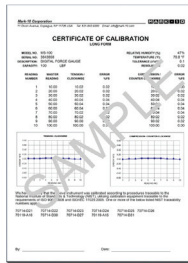
**AC1036**  
**Calibration kit**  
Complete set of brackets, cable, and hardware for calibration of any Series TT01 torque tester. Weights not available from Mark-10.



**CT005 / CT006 / CT007**  
**Extended length post sets**  
CT005: Four 2.5" (63 mm) posts  
CT006: Four 4" (101 mm) posts  
CT007: Kit of four of each length: 1.25" (31 mm), 2.5" (63 mm), and 4" (101 mm)



**AC1077**  
**Connector cover kit**  
Helps protect the rear connectors against liquid entry.



**CERT**  
**Calibration certificate w/data**  
Includes 10 data points in each measurement direction (short form certificate without data is included)



## Specifications

<b>Accuracy:</b>	±0.3% of full scale
<b>Sampling Rate:</b>	7,000 Hz
<b>Bottle diameter range:</b>	Ø0.5 – 7.5 in [12.7 – 189.4 mm] With CT001 optional jaws: Ø0 – 5.9 in [0 – 149.9 mm] With CT003 optional jaws: Ø0 – 4.6 in [116.8 mm]
<b>Power:</b>	AC adapter: 100-240VAC, 50-60 Hz, 0.3 A Battery: Rechargeable 8.4V NiMH Low battery indicator appears when battery level is low, and gauge powers off automatically when power reaches critical stage.
<b>Battery life:</b>	<b>Backlight on:</b> up to 7 hours of continuous use <b>Backlight off:</b> up to 24 hours of continuous use
<b>Units:</b>	ozFin, lbFin, kgFcm, Nm, Ncm
<b>Outputs:</b>	<b>USB / RS-232:</b> Configurable up to 115,200 baud. <b>Mitutoyo:</b> Serial BCD suitable for all Mitutoyo SPC-compatible devices. <b>Analog:</b> ±1 VDC, ±0.25% of full scale at capacity. <b>General purpose:</b> Three open drain outputs, one input. <b>Set points:</b> Three open drain lines.
<b>Safe overload:</b>	150% of full scale (display shows "OVER" at 110% and above)
<b>Weight:</b>	8.4 lb [3.8 kg]
<b>Environmental requirements:</b>	40 - 100°F, max. 96% humidity, non-condensating
<b>Warranty:</b>	3 years (see individual statement for further details)

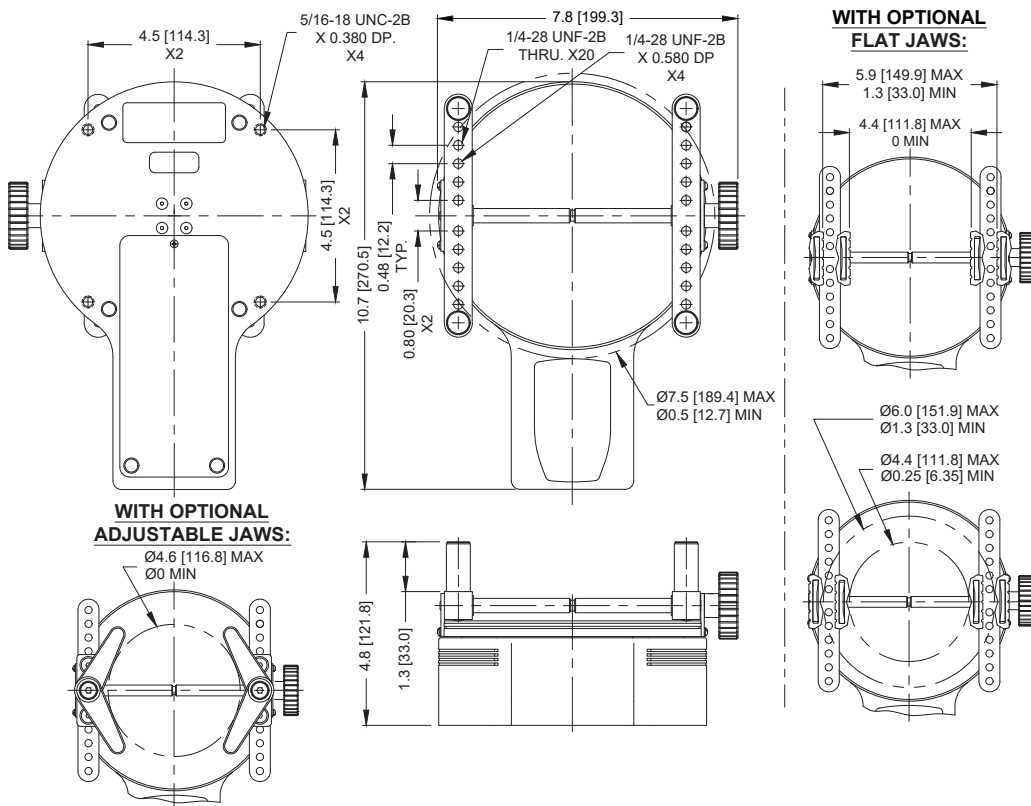
## In The Box

Series TT01 torque testers are shipped as shown at right, and include the following accessories:

- (4) Sample gripping posts
- (1) USB cable
- (1) AC adapter
- (1) Battery
- (1) Certificate of calibration without data (data is optional)



## Dimensions in [mm]



## Capacity x Resolution

Model No.	lbFin	ozFin	kgFcm	Ncm	Nm
MTT01-12	12 x 0.005	192 x 0.1	14 x 0.01	135 x 0.1	1.35 x 0.001
MTT01-25	25 x 0.01	400 x 0.2	28 x 0.02	290 x 0.2	2.9 x 0.002
MTT01-50	50 x 0.02	800 x 0.5	58 x 0.05	570 x 0.5	5.7 x 0.005
MTT01-100	100 x 0.05	1600 x 1	116 x 0.1	1150 x 0.5	11.5 x 0.005

All models include 110V AC adapters. Add suffix 'E' for euro plug (220V), 'U' for UK plug (220V), or 'A' for Australian plug (220V).

Ex: MTT01-12E, MTT01-25U, MTT01-50A

32-1059 REV 0



Series CT cap torque testers present a powerful, yet value priced solution for closure manufacturers, bottlers, food and beverage companies, and others. The tester features a solid aluminum housing and rugged construction for many years of service in laboratory or production environments. Adjustable posts effectively grip a broad range of container shapes and sizes, while a set of optional jaws is available as an alternative gripping method. The CT captures peak torque in both clockwise and counterclockwise directions for application and removal measurements.

## Features

Wide sample size range	Portable and flexible for a wide range of applications
Peak memory	For application and removal torque
Selectable units of measurement	Measure in lbFin, kgFmm, or Ncm
Moveable posts	Accommodate a wide range of samples
Push-button	Simple and quick calibration procedure calibration

## Optional Equipment

Sample gripping jaws CT001	Set of rubber jaws for gripping square or odd shape containers
Data outputs package CTRS	RS-232 and Mitutoyo (Digimatic) outputs
Output cables	Choice of RS-232 and Mitutoyo data output cables are available



» Moveable posts



» Simple hand operation



» Optional sample gripping jaws

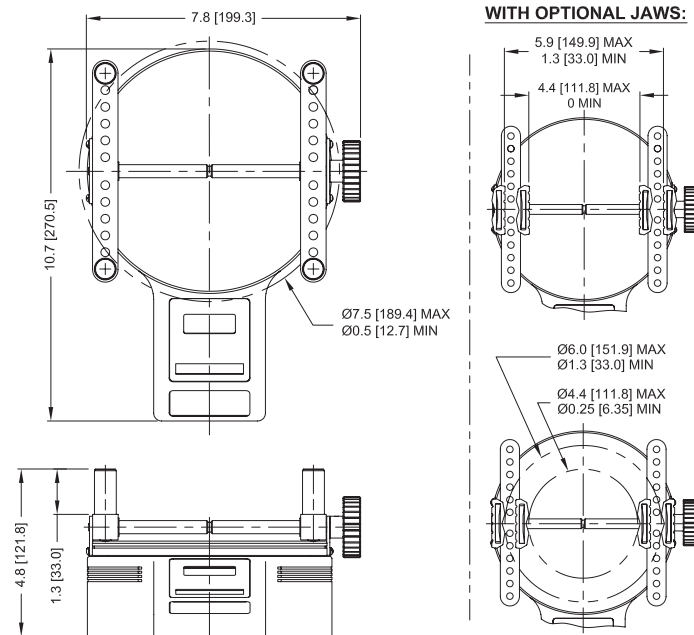


» Optional data outputs package

## Specifications

Accuracy:	±0.5% of full scale ±1 digit
Sampling Rate:	30 readings/s
Display Rate:	2.5 updates/s in normal mode / 30 updates/s in peak mode
Power:	AC or non-rechargeable 9V battery, with Intelligent Power Management System (IPM). IPM warns the user via a "LO BAT" indicator and then will power off the gauge.
Battery Life:	30 hours of continuous use
Selectable units of measurement:	lbFin, kgFmm, Ncm
Safe overload:	150% of full scale (display shows "----" at 110% and above)
Weight:	10 lb [4.5 kg]
Environmental Requirements:	40° F - 100°F [5°C - 45°C], <96% humidity (non-condensating)
Thermal effects:	Zero: 0.03% of full scale/°C, Span: 0.01% of full scale/°C
Housing construction:	6061 aluminum
Warranty	3 years (see individual statement for further details)

## Dimensions



## Ordering Information

Model No.	Capacity x Resolution
CT12	12 x 0.01 lbFin, 140 x 0.1 kgFmm, 135 x 0.1 Ncm, 110V
CT50	50 x 0.05 lbFin, 580 x 0.5 kgFmm, 570 x 0.5 Ncm, 110V
CT100	100 x 0.1 lbFin, 1150 x 1 kgFmm, 1150 x 1 Ncm, 110V
CT001	Sample gripping jaws, pair
CTRS	Outputs package for CT (RS-232 and Mitutoyo outputs)

For 220V operation, add suffix E to model number. Example: CT50E