Screw Cap Torque Tester DTXS/DTXA series

- **Ideal for opening and closing torque measurement of bottles and similar**
- **Follows sudden force change due to high speed sampling (2000Hz)**
- **A wide range of attachments available to test various samples**
- **Simple operations with various useful functions**

DTXA-0.5N-Z

DTXA-10N

Test Image		
Torque measurement of bottle lids	Torque measurement of PET bottle caps	As a tester for screen protective film
		*with Rotation Support Jig for DTXS/A SDT series and Small Table HT-ST

Feature 1: Internal memory function

Test data can be saved in the internal memory. (Max.1000 data)
The saved data can be printed out by using RS232C printer.

Feature 2: High repeatability by high-speed sampling

The high-speed data sampling rate (2000 data / sec) captures momentary force change and digitizes it.
It contributes to capturing accurate maximum value and enhance repeatability of tests.

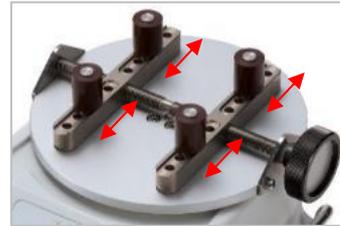## Feature 3: Various attachments for a wide range of samples

A variety of attachments (different table sizes, pin lengths and shapes) are available to suit various samples.

| Remove the table | Insert other attachment or table | Change the position and type of pin |

* Tables and attachments are insert-in type. Some torque will be generated at a time of contact due to the clearance between the table/attachment and the tester.

Feature 4: Useful functions improving work efficiency

Organic Electroluminescence Display

The display can be clearly seen diagonally or even in the dark.
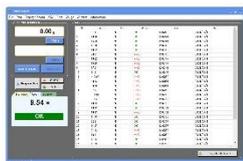
Various Display

Time display
It helps easy and accurate data management.
Bar graph
It contributes to preventing breaking the sensor (overload). (*1)

Acquiring Data to PC by Included Software

It shows Force value, Date and time, and OK / NG judgment on PC by connecting to PC via USB.

Stable Body Fixation

The body can be fixed on a desk using the carry handle holes. It supports stable testing.

*1 This function does NOT prevent overloading. It may be overloaded if a great force is applied rapidly to the sensor part.

[DTXA Limited Functions]

Data saving to USB flash drive

USB flash drive can be connected to DTXA series via included cable and save continuous data (100 data / min).

*USB flash drive is not included.

Analyzing force and angle

DTXA series can detect torque and angle values by connecting to test stand MTS series or SDT series with angle meter (sold separately).

It is ideal for evaluation of functionality at a certain angle.

Force Recorder Professional (separately sold) graphically shows the torque-angle relationship.
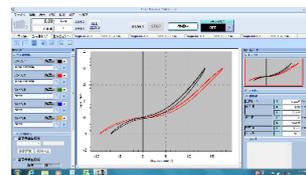
Displaying multiple peaks

On the DTXA monitor, 2 peak values can be displayed at the same time.

e.g. measuring PET bottle cap torque

P1: Opening start force
P2: Opening finish force

[DTXS/DTXA series Specification]

Model	DTXS	DTXA
Outline	Standard model with various functions	Advanced model with additional functions of DTXS series such as input/output angles and saving to USB flash drive etc.
Accuracy	+/-0.5%F.S.+/-1digit	
Unit of measurement	N-m, N-cm, kgf-m, kgf-cm, lbf-in, ozf-in (switchable) (*1)	
Display	4-digit	
Display update	16 times /sec	
Sampling rate	Maximum 2000 data/ sec (*2)	
Battery	8 hours (2 hours full charge) (*3)	
Safe overload rating	Approx. 200%	
Operating Environment	Temperature: 0 to 40 degrees Celsius Humidity: 20 to 80%RH	
Functions	Customized display (header and footer) / Peak hold (Clockwise and Counterclockwise) Internal memory (1000 data)) / Comparator (OK or NG judgment) Reversible display / Sign inversion/ Zero clear timer/ +NG alarm Off timer (Auto power off) / Dumping / Time display / Setting lock	
	-	1st 2nd peak Angle detection at torque peak value (*4) Angle zero reset at selected torque (*4)
Output	USB, RS232C, Mitutoyo digimatic (*5), 2 VDC analog output (D/A), Comparator 3 steps (-NG/OK/+NG), Overload alarm	
	-	Sub comparator 2 steps (output of large or small judgment), USB flash drive, angle (displacement)
Overload warning	Approx.110% F.S. (Warning message and alarm)	
External connecting switch	SEND (a point of contact holding), Zero reset, Peak ON/OFF setting	
Weight	Approx. 3.0kg (table not included), Approx. 4.5kg (standard table and pins included)	
Dimensions	See [Dimensions]	
Accessory	AC adapter, Inspection certificate, CD driver (including data logging software), USB cable, Carrying case, L wrench	
	-	USB flash drive adapter (*6)
Approved standard	JIS S 0022 (2001) Guidelines for all people including elderly and people with disabilities -- Packaging and receptacles -- Test methods for opening "6.3 Screw top receptacle"	

*1 These are the specifications for international model. Note that this unit is different from Japanese domestic model.
*2 Up to 100 data/sec. is saved in USB memory (selectable among 1, 50, and 100 /sec)
*3 The battery is more consumed when connected to USB flash drive or a angle scale.
*4 Angle (displacement) scale is necessary to valid this function.
*5 Compatibility is not always guaranteed for Mitutoyo digimatic products.
*6 USB flash drive is not included.

[DTX series Models]

Model		Range	Display	Resolution
DTXS-0.5N-Z	DTXA-0.5N-Z	0.5 N-m (50N-cm)	50.00N-cm	0.01N-cm
DTXS-2N	DTXA-2N	2 N-m (200N-cm)	2.000N-m (200.0N-cm)	0.001N-m (0.1N-cm)
DTXS-5N	DTXA-5N	5 N-m (500N-cm)	5.000N-m (500.0N-cm)	0.001N-m (0.1N-cm)
DTXS-10N	DTXA-10N	10N-m (1000N-cm)	10.00N-m (1000N-cm)	0.01N-m (1N-cm)

* Standard table and Standard pins are not included in DTXA/DTXS-0.5N-Z.

* Standard table and Standard pins are included in DTXA/DTXS-2/5/10N.

Model with no table is also available:

Model with no table	
DTXS series: DTXS-0.5/2/5/10-N-Z	DTXA series: DTXA-0.5/2/5/10-N-Z

* "-Z" is added at the end of model.

[Included Accessories]

Data logging software: Force Logger

	Features - Data transfer to PC at 10Hz with ease. - Displaying various measuring data such as Maximum, Minimum, and Average values - Data recording in CSV format.
	Operating environment - OS: 7/8/8.1/10 (32/64bit version) - Hardware: CPU Pentium4 (1GHz or more), Memory 2GB, Hard disk: 10GB or more recommend - Platform: .NET Framework4.6 or later - Execute environment: Internet Explorer 6.0, Windows Installer 3.1 or later - Connection port: USB1.1, USB2.0 connector

Standard table and pins included in 2/5/10N-m range		
 Standard table	 Standard pin	Suitable for fixing PET bottles, cans,and similar Capacity: 10N-m Sample diameter: 20 to 60mm Standard table weight: Approx.1.3kg Standard table material: Steel and aluminum Standard pin weight: Approx. 28g/pc Standard pin material: Stainless-steel and urethane *The table and pins are included in DTXS-2/5/10N and DTXA-2/5/10N.

The following types of pins are available to suit your samples.

 Notch pin	Ideal for fixing slippery samples such as aluminum cans and plastic containers Pin weight: Approx. 69g/pcs Pin material: Stainless-steel *In case of changing to notch pin, add "-TB-01" to the end of the model. (e.g. DTXS-10N-TB-01)	 Long clamp pin	Ideal for fixing tall samples such as circuit boards, camera lenses and liquor bottles Pin weight: Approx. 67g/pcs Pin material: Stainless-steel and urethan *In case of changing to long clamp pin, add "-TB-02" to the end of the model. (e.g. DTXS-10N-TB-02)

* The table and pins above cannot be used with 0.5N-m range.

[Example of Table and Pin Combination]

DTX series can be purchased together with tables and pins of your choice.

Example 1: Measurement of small samples	Example 2: Measurement of small torque

For measurement of small motor or eye drop lids etc.
 	
- Select small table (standard pin).
 	
    Product model: DTXS/A- (　) N-ST
 	
* For small tables, the end of model is "-ST"
	For measurement of small torque such as small screws etc.
	
	- Select DTX series of 0.5N-m range and light weight small table (standard pin).
	
	    Product model: DTXS/A-0.5N-Z and DT-STL
	
	* No arranged model exists for this combination.
	  Select from the no table model and table respectively.

* Refer to Attachments for DTX series specifications for more details.

[Related Products]

Small table **DT-ST**	Light weight small table **DT-STL**	Light weight wide table **DT-STLW**
For gripping various small samples by switching the pins	Light weight table, which reduces weight influence, suitable for small force torque measurement	Wide type of HT-STL for gripping samples from φ10 to 100mm
*Only for 2/5N-m range	*Only for 0.5/2N-m range	*Only for 0.5/2N-m range

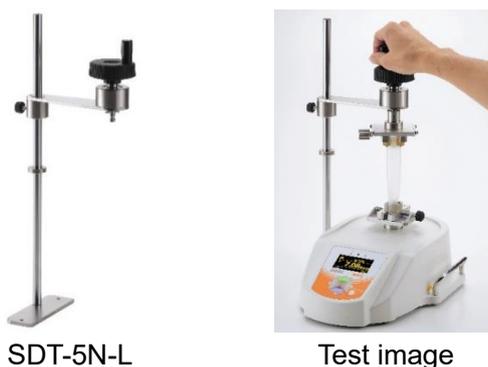| Sample stage for standard table **TB-SP**		Replacement battery **BP-308**
Stage for setting samples stably		Battery for replacement
	Setting image	

Motorized Torque Stand: MTS Series

- This is motorized torque stand for DTX series.
- Regulated rotation speed allows torque measurement with better accuracy.

Analyzing Torque and Angle Relationships

 MTS series can be equipped with a rotary encoder to analyze torque and angle relationships.
 Angle meter and DTXA series (sold separately) are required.

* Refer to MTS series specifications for more details.
* Torque-Angle Measurement Unit TAA series is also available. TAA series include all items required to analyze torque and angle relationships.
* Refer to TAA series specifications for details.

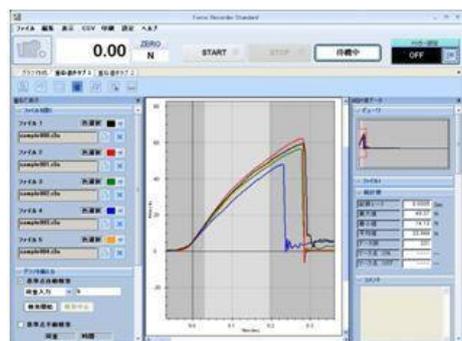MTS series   Test image

Rotation Support Jig for DTXS/A: SDT Series

- SDT series is a rotation support jig for DTXS/A series.
- The sample can be continuously rotated by keeping turning the knob.
- Various torque measurements are possible with attachments suitable for the sample.
- It assists analysis of torque-angle relationships for tactile test of rotating a dial. (DTXA series is required)

* Refer to SDT series specifications for more details.

SDT-5N-L   Test image

Graphing Software: Force Recorder

*The image is of Force Recorders Standard.

- Plots graphs of force-displacement at real time via USB connection at 2000Hz
- Comment function for keeping a note of testing conditions such as testing speed
- Overlays up to 5 graphs (Standard, Professional edition)
- Analyzes torque-angle relationships (Professional edition)

* Refer to each specification for further information.

Wireless Data Transmit System: WL01 series

WL01-USB and WL01-ADP

Setting Image

WL01-BOX

- Transmits acquired measurement data wirelessly to the device such as PCs
- Ideal for receiving data from remote location
- Ensures accurate data transmission with data reception detection and interference prevention
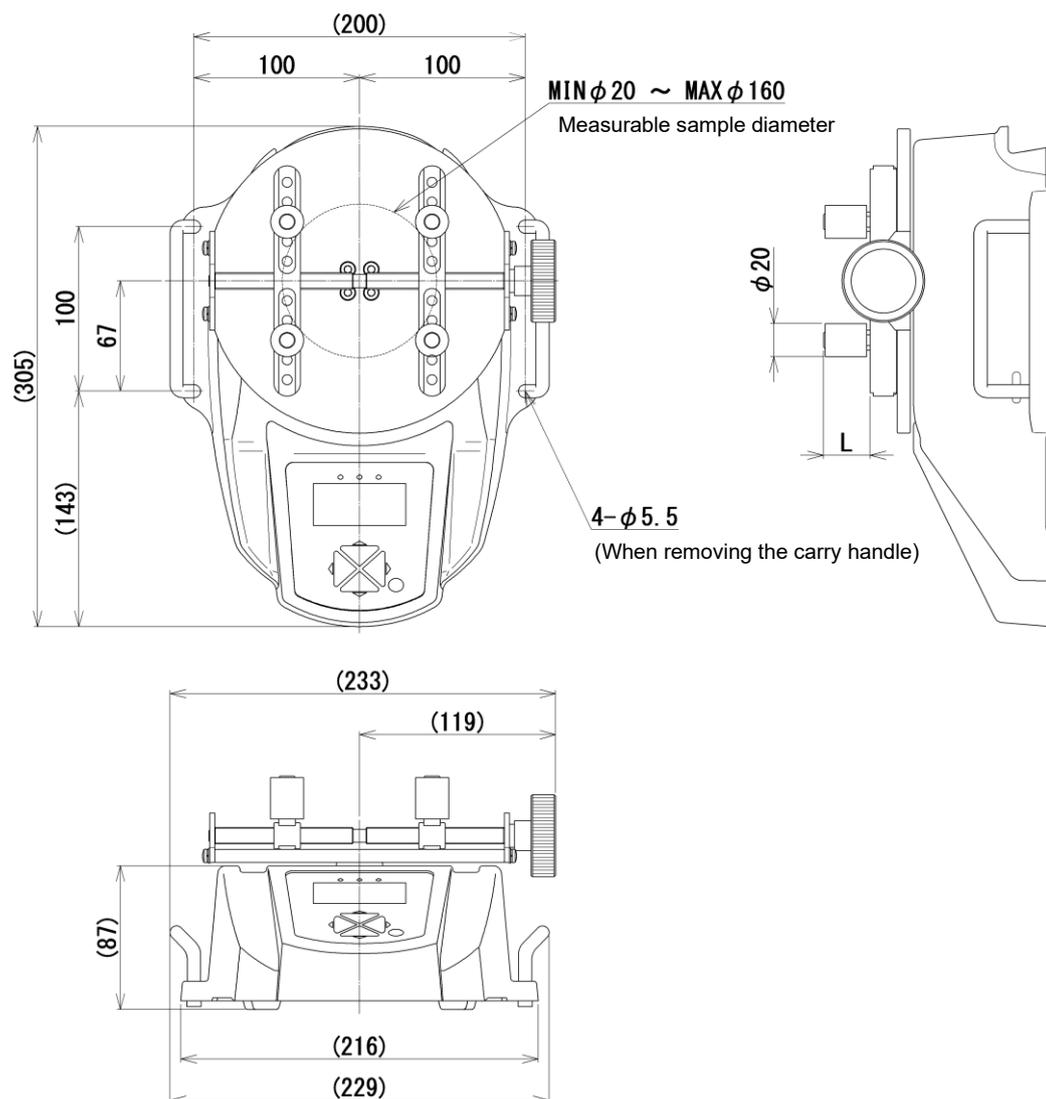- Allows combining with your own equipment using provided communication formats

* Available from firmware Ver.3.10 and later
* Available countries and regions are limited
* Refer to the specification for details

RS232C printer *Prepare the printer by yourself if required	Printer DP-1VA	Optional cables
		Analog(3m): CB-108
		RS232C Cable (3m): CB-208
		Digimatic cable(3m): CB-308
		Contact point cable (3m): CB-808
		Open end cable (3m): CB-908
RS232C Printer can be connected to print out the results and conditions. *Compatible device: BL2-58 (Sanei Electric INC.) *Required cable: CB-208	It prints out the displayed force values. *Required cable: CB-308	Various cables are available.

[Dimensions]

MIN φ20 ~ MAX φ160
Measurable sample diameter

4−φ5.5
(When removing the carry handle)

Unit: mm

[Calibration Certificate]

- We offer calibration certificate with extra charge.
- * Please contact us or our distributor in your country for further information.

[Cautions]

- Information in this document is subject to change without prior notice.
- This document is product descriptions and handling precautions, and do not guarantee various characteristics or safety.
- This product is designed for force measurement purpose only.
- Do not copy and use this content without authorization.
- Do not apply force more than its capacity or from incorrect direction to the measuring shaft.
- Some samples may not be suitable to measure with this product.

Visit our website for more information on wide product specifications, measurement applications and videos.