

Torque-Angle measurement Unit TAA Series

- Measurement unit to analyze Torque (Rotating/Twisting force) -Angle relationships
- Simple and accurate Torque-Angle measurement with high repeatability
- Drawing and analyzing graphs with PC, simple real time operations
- Desktop and handheld types available to meet your measurement needs

Space-saving Desktop type
TAA-ACMTS-TB series



Handheld type
TAA-HTG series



TAA series is a measurement unit which can be used to measure and analyze Torque-Angle relationships. The high-speed sampling rate of 2000 Hz provides highly repeatable measurement results and draws smooth graph of torque-angle curves in real time. It is ideal for product quality control, operability, usability, physical characteristics, and functional evaluation.

Feature	
Measurement unit to analyze torque-angle relationships precisely by simple operation and easy setup	2000Hz High-speed data sampling to follow rapid torque change, capturing measurement values accurately
Software for graphing torque-angle relationships with several functions. Graph overlay (up to 5 graphs), Comment function, CSV file converting function, etc.	Versatile Torque-Angle testing combining with optional attachments (separately sold)

[TAA-ACMTS-TB Series Unit configuration]

TAA-ACMTS-TB series	Product Configuration
	<p>1. Screw Cap Torque Tester: DTXA series Measurement for rotating and twisting forces. Easily detachable for repair or calibration requirements.</p> <p>2. Advanced Type Motorized Torque Stand: ACMTS-10N The upper attachment rotates at the set speed. Possible settings of the operations by the torque value and angle.</p> <p>3. Option Cable: CB-728 Connecting DTXA and ACMTS-10N for control.</p> <p>4. Software: Force Recorder Professional Real time Torque and Angle graphing</p> <p>5. Standard Attachments: Upper chuck MT-TB + Lower table DT-TB Attachments are interchangeable according to the measurement sample.</p>
	<p>Complete unit for Torque-Angle measurements</p>
<p>4</p>	<p>This unit includes 1-5 items which are necessary for torque-angle measurements. Torque-angle measurement of various samples can be performed by combining the optional chuck or table attachments which are separately sold.</p> <p>* TAA-ACMTS-Z series, the model without table and upper chuck available. Refer to page 3 for detail.</p>

* Refer to the specification sheet of each product for details.

[TAA-ACMTS-TB Testing Image]

Opening and Closing Torque measurement	sliding resistance test for camera lens	Other Case Studies
		<p>-Repeated durability tests for the rotary switch -Twisting characteristics tests for underwear and some medical supplies -Lipstick feed torque measurement</p> <p><u>Ideal Solutions for a wide array of characteristic evaluations</u></p>

* If the sample itself is easily deformed, measurement may not be possible.

* Custom-made attachments are recommended for measurements with specific shapes and forms. Please contact us for details.

* Accurate measurement may not be possible with samples that shrink significantly due to torsion. If shrinkage is a concern, please consider using our "sample measurement service" in which we perform a trial measurement for your sample.

[TAA-ACMTS-TB series model list]

Model*1	Type	Stroke *2	Capacity*3
TAA-ACMTS-()N-TB	Standard	58 to 120mm	Please select one 2N-m (200N-cm) 5N-m (500N-cm) 10N-m (1000N-cm)
TAA-ACMTS-()N-2L-TB	Long Stroke (-2L)	158 to 320 mm *4	
TAA-ACMTS-()N-Z *5	Without chuck and table	-	

* The accommodate sample diameter depends on the selected attachment. Please refer to the specification sheet "Attachments for DTXS/DTXA series" and "Attachments for ACMTS/MTS series" in our website for details.

*1 (): Required capacity to be selected.

*2 Customized torque stand according to the sample height is available.

*3 Note that the sensor failure occurs with overcapacity force applied.

Please contact us about purchasing in combination with DTXA of the 0.5N-m (50N-cm) range.

*4 The stroke can be adjusted with a customized extension shaft for a low-height sample. Please contact us for details.

*5 Long stroke options -2L can be also added for models with Z specifications.

[TAA-ACMTS-TB series specification]

TAA-ACMTS-TB series		
Unit	Torque	N-m/N-cm, kgf-m/kgf-cm, lbf-in/ozf-in (Switchable) *1
	Angle	°(degree)
Drive System		Automatic Rotary
Resolution	Torque	4digit (e.g. The resolution of TAA-ACMTS-5N: 0.001N-m[0.1N-cm])
	Angle	0.01° (on Screw Cap Torque Tester display) 0.001° (on Force Recorder Professional)
Angle measurement range		0.01 to 9999.99° (Screw Cap Torque Tester) 0.01 to 9999.999° (Force Recorder Professional)
Accuracy	Torque	+/-0.5%F.S. +/-1 digit
	Angle	+/-0.1° +/-1 digit
Sampling Rate		2000 data/sec
Torque display upgrade		16 data/sec
Output		USB, Serial (RS232C), +/-2VDC analog output (D/A), Comparator, Overload, Sub comparators, USB flash drive *2
Function	Screw Cap Torque Tester	Customized display (Header and footer), Peak hold mode (CW/CCW), Internal memory(1000data), Comparator (OK/NG Judgement), Reversible display, Sign inversion, Zero clear timer, +NG alarm, Off timer (Auto power off), Damping, Time and calendar display, 1st 2nd peak detection, Setting lock
	Test stand	Manual mode, Jog mode, Speed adjustment, Automatic mode (Angle control)
	Link function*3	Angle detection at torque peak, Angle zero reset at the selected torque, Automatic mode (Torque control), Overload stop*4
Power Supply	Torque gauge	Rechargeable battery (approx. 6.5 hours for using, approx. 2 hours for re-charging)
	Test stand	AC100V-240V Free input
Operating environment		Temperature: 0 – 40 degree Celsius, Humidity: RH20 -80%
Accessory*5		Graphing software Force Recorder Professional, Driver CD-ROM (with data logger simple software), Power cable, AC adapter, USB cable, instruction manual, Inspection certificate, tool, packing cardboard box, USB flash drive adapter, Torque gauge connecting cable CB-728, Spare Fuse
Included attachments		Upper side: MT-TB, Lower side DT-TB *6

*1 kgf-m/kgf-cm, lbf-in/ozf-in are only available for international model.

*2 USB flash drive is not included in TAA-ACMTS-TB series.

*3 For activating this function, connect the Screw Cap Torque Tester and the Test Stand with the cable included.

*4 It does not guarantee the entire prevention of the overload failures of the measuring devices.


*5 Optional attachment and PC are not included in TAA-ACMTS-TB series.

*6 MT-TB and DT-TB are not included in Z model.

[Software operating environment]

Operating environment	OS: Windows 8.1/10/11
Hardware	CPU: 1GHz or more
	Memory: 2GB or more
	Hard disk: 10GB (Data storage area) or more
Platform	.NET Framework4.8 or more
Image size	Resolution 1024×768 pixel or more

[Downloadable Graphing Software Option]

Downloadable Torque-Angle (Force-Displacement) Graphing Software	
-NEXT	<p>With this option, Downloadable Graphing Software Force Recorder Next Professional is included instead of CD version Graphing Software Force Recorder Professional. *1 * Please add the code to the end of model. Example: TAA-ACMTS-10N-TB-<u>NEXT</u></p>
	<p>A software for graphing torque-time / torque-angle</p> <ul style="list-style-type: none"> - High sampling rate of max. 2000Hz enables accurate graphing. - Test condition presets: for effective recording / analysis of measurement results. - Data editing: overlaying up to 10 graphs, etc., for results editing / analysis. - Add Images / Comments function: useful for recording measurement data details. - The Print Command allows images and statistics output in a file form: PDF/Word/Excel.

*1 When -NEXT option is applied, the dedicated download card providing the redemption code is included. To use the software, downloading the software from IMADA Connected is required.

- * To download Force Recorder Next Professional, user & product registration on IMADA Connected is required.
- * An Internet connection is required in process of user & product registration and downloading the software.
- * Some specification such as operating environment is different from the CD version. Please refer to the specification sheet of the Force Recorder Next series for details.









[RS232C Split Cable and RS232C Printer Options]

RS232C Split Cable	
-RS	<ul style="list-style-type: none"> - The RS232C Split Cable CB-728-RS is included instead of the standard cable. - By using CB-728-RS, DTXA series can be connected simultaneously to the ACMTS-10N and the external devices (RS232C communication). * Please add the code to the end of model. Example: TAA-ACMTS-10N-TB-<u>RS</u>
RS232C Printer Package with a Dedicated Cable *1	
-PRT	<ul style="list-style-type: none"> - The RS232C Split Cable CB-728-RS is included instead of the standard cable. - RS232C Printer BL2-58 series (Sanei Electric Inc.) is additionally included. - By using CB-728-RS, DTXA series can be connected simultaneously to the ACMTS-10N and BL2-58 series. * Please add the code to the end of model. Example: TAA-ACMTS-5N-TB-<u>PRT</u>

* For details on the RS232C printer and connection cable, please refer to the individual specification sheets.

*1 This product can be sold to customers in Japan and EU markets only. Please contact us if you would like to purchase the product in other regions. Data output from DTXA series to RS232C printer is supported only for products with firmware Ver. 3.10 or later; For Next Series products, "RS232C Print Function" must be installed via network.

[Related Products TAA-ACMTS-TB series]

For upper part		
<p>Small chuck MT-ST</p>	<p>Pin chuck MT-DC</p>	<p>Long Shaft Pin MT-TB-03P</p>
<p>Designed for small samples Sample diameter: $\phi 7-50\text{mm}$ Capacity: 5N-m Selectable pin from standard, notch and long</p>	<p>Ideal for gripping columnar samples Large: $\phi 1.2-13\text{mm}$ Standard: $\phi 0.5-6.5\text{mm}$ Small: $\phi 0.5-4\text{mm} *1$</p>	<p>The Fixing Pin for Standard Chuck MT-TB. Suitable for holding nozzle caps, etc. since its long shaft allows the pin knob to avoid obstacles and to clamp the sample properly.</p>
		
For lower part		
<p>Small table DT-ST</p>	<p>Light weight small table DT-STL</p>	<p>Light weight wide table DT-STLW</p>
<p>Designed for small samples Sample diameter: $\phi 7-50\text{mm}$ Capacity: 5N-m Selectable pin from standard, notch and long</p>	<p>Lightweight table for a small sample Sample diameters: $\phi 7-50\text{mm}$ Capacity: 2N-m Selectable pin from standard, notch and long</p>	<p>Light weight and wide table for a sample up to 100mm Sample diameter: $\phi 10-100\text{mm}$ Capacity: 2N-m Selectable pin from standard, notch and long</p>
		
<p>Pin chuck DT-DC</p>	<p>Sample stage for standard table TB-SP</p>	
<p>Suitable for clamping samples such as wire and round-bar due to its three claws Large: $\phi 1.2-13\text{mm}$ Standard: $\phi 0.5-6.5\text{mm}$ Small: $\phi 0.5-4\text{mm} *1$</p>	<p>Stage for Standard Table DT-TB to set samples stably.</p>	
		

* Please refer to the specification of each attachments for details.

*1 Maximum capacity of **small pin chuck MT-DC and DT-DC** is 5N-m.

[TAA-HTG series Unit configuration]

TAA-HTG Series	Product Configuration
	<ol style="list-style-type: none"> 1. Handheld Digital Torque Gauges : HTGA series Measuring rotating torque and twisting torque 2. Angle Meter Kit: AMK-360 Measure and output the angle 3. Software: Force Recorder Professional Drawing torque-angle graph at real time <p style="text-align: center;">Related Products (separately sold)</p> <ol style="list-style-type: none"> 4. Attachment Required to fix the samples. 5. Stay (Custom-made) Required to measure with angle meter kit. Fixing the stay allows to start from 0 point and measure accurate angle measurement. <p style="text-align: center;">Unit for Torque-Angle measurements</p>
	<p>This unit includes items No.1~3 only.</p> <p>[Important Notice] “4. Attachment” and “5. Stay” are also required for Torque-angle measurement.</p> <p>Please refer to : Page 8 for attachments separately sold and Page 9 for examples of custom-made “Stay” according to measurement conditions.</p>

* Refer to the specification sheet of each product for details.

[TAA-HTG series Testing image]

Twisting torque tests of doorknobs	Operability tests of rotary switches such as air-conditioner and audio	Others
		<ul style="list-style-type: none"> - Opening and closing torque tests of key Locks - Operability tests of automobile accelerator - Opening and closing torque tests with twisting/turning motions of various buttons and switches <p style="text-align: center;"><u>Suitable for torque-angle measurements of finished products</u></p>

[TAA-HTG series specification]

TAA-HTG-()N		
Unit	Torque	N-m/N-cm, kgf-m/kgf-cm, lbf-in/ozf-in (Switchable)*1
	Angle	°(degree)
Drive System		Manual Twisting (Handheld)
Range *2		2N-m (200N-cm), 5N-m (500N-cm), 10N-m (1000N-cm) Please select the suitable capacity
Resolution	Torque	4 digit (e.g. The resolution of TAA-HTG-5N: 0.001N-m[0.1N-cm])
	Angle	0.1° (on Force Recorder Professional) / 0.1° (on Torque gauge display)
Angle measurement range		0.1 to 9999.9°
Accuracy	Torque	+/-0.5%F.S. +/-1digi
	Angle	+/-0.2°
Sampling Rate		2000 data/sec
Torque display upgrade		16 data/sec
Output		USB, Serial (RS232C), +/-2VDC analog output (D/A), Comparator, Overload, Sub comparators, USB flash drive *3
Function		Customized display (Header and footer), Peak Hold mode (CW/CCW), Internal memory (1000data), Comparator (OK/NG Judgement), Reversible display, Sign inversion, Zero clear timer, +NG alarm, Off timer (Auto power off), Damping, Time and calendar display, 1st 2nd peak, Setting lock
Power Supply		Rechargeable battery (approx. 6.5 hours for using, approx. 2 hours for re-charging)
Operating environment		Temperature: 0-40 degree Celsius, Humidity: RH 20-80%
Accessory*4		Graphing software Force Recorder Professional, Driver CD-ROM (with data logger simple software), AC adapter, USB cable, instruction manual, Inspection certificate, tool, packing cardboard box, Adapter for USB flash drive Supported handle (Only for 10N-m range)

*1 kgf-m/kgf-cm, lbf-in/ozf-in are only available for international model.

*2 Do not apply force more than its capacity or from the incorrect direction to the sensor.

*3 USB flash drive is not included in TAA-HTG series.

*4 Stay (Custom-made), optional attachment, and PC are not included in TAA-HTG series..

[Software operating environment]

Operating environment	OS: Windows 8.1/10/11
Hardware	CPU: 1GHz or more
	Memory: 2GB or more
	Hard disk: 10GB (Data storage area) or more
Plat form	.NET Framework4.8 or more
Image size	Resolution 1024×768 pixel or more

[Downloadable Graphing Software Option]

Downloadable Torque-Angle (Force-Displacement) Graphing Software	
-NEXT	With this option, Downloadable Graphing Software Force Recorder Next Professional is included instead of CD version Graphing Software Force Recorder Professional. *1 * Please add the code to the end of model. Example: TAA-HTG-5N-NEXT

*1 When -NEXT option is applied, the dedicated download card providing the redemption code is included. To use the software, downloading the software from IMADA Connected is required.

* To download Force Recorder Next Professional, user & product registration on IMADA Connected is required.

* An Internet connection is required in process of user & product registration and downloading the software.

* Some specification such as operating environment is different from the CD version. Please refer to the specification sheet of the Force Recorder Next series for details.

Related Attachments (TAA-HTG series)		
<p>Small table and pins HT-ST</p>	<p>Wide table HT-STW</p>	<p>Light weight small table for HTG HT-STL</p>
<p>For gripping small samples such as small bottle and key. 3 pin options available (standard, notch, and long type).</p>	<p>Wide type of HT-ST for gripping samples from $\phi 10$ to 100mm. 3 pin options available (standard, notch, and long type).</p>	<p>For small torque measurement with light weight small table. 3 pin options available (standard, notch, and long type).</p>
<p>Light weight wide table for HTG HT-STLW</p>	<p>Torque driver HT-DBH</p>	<p>Pin chuck HT-DC</p>
<p>Wide type of HT-STL for gripping samples from $\phi 10$ to 100mm. 3 pin options available (standard, notch, and long type).</p>	<p>For measuring tightening and loosening torque of screws. Bit: 1 pc (+1, +2, +3, -6\times45)</p>	<p>Ideal for gripping columnar samples.</p>
<p>Socket holder HT-9.5SQ</p>	<p>M10 adaptor HT-AD-M10</p>	<p>Sensor holder SHT-5N</p>
<p>Ideal for torque wrench or screwdriver bit. Socket: 9.5mm square</p>	<p>For mounting M10 Attachment.</p>	<p>Simple torque stand to hold the sensor vertically or horizontally for stable measurement. Capacity: 5N-m</p>
<p>Rotation support jig for HTGS/A RSH series</p>	<p>RS232C Printer Package with a Dedicated Cable PRN-SEZD *1</p>	
<p>Manual rotation support jig for torque gauge HTGS/A series to measure torque in the horizontal direction.</p>	<p>The package of RS232C Printer BL2-58 series and RS232C cable CB-208. Measurement result can be printed without PC.</p>	

* Refer to the specification sheet of each Attachments for details.

*1 This product can be sold to Japan and EU markets only. Please contact us if you would like to purchase the product in other regions. Data output from HTGA series to RS232C printer is supported only for products with firmware Ver. 3.10 or later; For Next Series products, "RS232C Print Function" must be installed via network.

Custom-made example of stay	
2 legs type	
	<ul style="list-style-type: none"> - Suitable for use in limited space
4 legs type	
	<ul style="list-style-type: none"> - For stable torque measurement - When space is enough for fixing the 4 legs
Handle type	
	<ul style="list-style-type: none"> - When there is no space for fixing the leg - Lower accuracy of measurement due to handheld testing

* The stay is required to measure with angle meter unit. Fixing the stay allows to start from 0 point and measure accurate angle measurement.

* Please contact authorized local distributor or us for custom-made order.

[Calibration certificate & ISO 17025 calibration services]

- We are the accredited ISO / IEC 17025: 2017 Calibration Organization with the in-house Calibration Service facility.
- The Calibration Service and Issuing of the Calibration Certificates and Traceability Charts available at cost.
- For further information, please kindly contact the local authorized distributor or us.

[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 torque more than its capacity or from incorrect direction to the sensor.
- Do not use this product in the environments including fierce temperature changes, high temperature, high humidity, near water, dusty place.

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