

Torque-Angle measurement System

TAA Series

- Measurement system to analyze Torque (Rotating/Twisting force) -Angle
- 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-MTS-TB series



Handheld type
TAA-HTG series



IMADA Torque-Angle Measurement System TAA series is a complete test system which can be configured for a wide array of applications for both Torque and Angle. The high-speed sampling rate of 2000 Hz captures accurate values and draws a smooth and precise real-time graph of torque and angle by a simple operation. This TAA series is ideal for product quality control, operability, usability, physical characteristics, and functional evaluation at a specific rotation angle.

Feature	
Measurement system to analyze torque-angle measurement precisely by simple operation and easy setup	2000Hz High-speed data sampling to follow rapid force change, capturing measurement values accurately
Simple connection to PC with the USB cable. Up to 5 graphs overlay, comment function, transferring graph data to WORD, EXCEL, PDF, etc.	Versatile Torque-angle testing combining with optional attachment

[TAA-MTS-TB Series System configuration]

TAA-MTS-TB series	Product Configuration
	<p>1. Torque gauge: Next Series DTXA series (with a table) Measurement for rotating and twisting forces. Easily detachable for repair or calibration requirements.</p> <p>2. Torque stand: MTS-10N-RA The upper attachment rotates at the set speed. Possible settings of the rotation start/return speed and stop operations at specific torque.</p> <p>3. Option Cable: CB-728 Connecting the torque gauge and the torque stand 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 style="text-align: center;">Complete system for Torque-Angle measurements</p> <p>This system includes 1-5 items which are necessary for measurements. Versatile Torque-Angle measurements are possible by a combination of optional chuck or table attachments.</p> <p>* TAA-MTS-Z series, the model without table and upper chuck available. Refer to page 3 for detail.</p>

* Refer to the specification of each product details for more information.

[TAA-MTS-TB Testing Image]

Opening and Closing Torque	Twisting strength of circuit boards	Other Case Studies
		<ul style="list-style-type: none"> -Usability feel tests for the rotary switch -Twisting characteristics tests for undearwears and some medical supplies -Sliding resistance test for Camera lens <p><u>Ideal Solutions for a wide array of characteristic evaluations</u></p>

* If the strength of the sample container itself is weak, the measurement may be difficult.

* Custom-made attachments are recommended for measurements with specific shapes and forms.

[TAA-MTS-TB series model list]

Model*1	Type	Maximum sample height	Capacity*2
TAA-MTS-()N-TB	Standard	140mm	Please select one 2N-m (200N-cm) 5N-m (500N-cm) 10N-m (1000N-cm)
TAA-MTS-()N-L-TB	Long Stroke (-L) *4	240mm	
TAA-MTS-()N-2L-TB	Long Stroke (-2L) *4	340mm *3	
TAA-MTS-()N-Z *5	Without chuck and table	-	

* The sample diameter depends on the selected Attachment. Refer to Specification sheet in our website "Torque Gauge/Motorized Torque Stand Table Attachments".

*1 (): Required capacity to be selected.

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

*3 Custom-made devices are required for measuring sample heights over 340mm.

*4 For long stroke types (-L) and (-2L), extension shafts may be required. Refer to P4 for details.

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

[TAA-MTS-TB series specification]

		TAA-MTS-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-MTS-5N: 0.001N-m[0.1N-cm])
	Angle	0.01° (on Torque gauge display) 0.001° (on Force Recorder Professional)
Angle measurement range		0.01 to 9999.99° (Torque gauge) 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), Analog (Approx. +/-2V), Comparator, Overload, Sub comparators, USB flash drive *2
Function	Torque gauge	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
	Link function*3	Angle detection at torque peak, Angle zero reset at the selected torque, Automatic mode (CONTINUOUS, ONE WAY), Torque control, Overload prevention
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*4		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 *5

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

*2 USB flash drive is not included.


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

*4 Optional attachment and PC are not included.

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








[Software operating environment]

Operating environment	OS: Windows 7/8/8.1/10
Hardware	CPU: Pentium4(1GHz or more) or later recommended
	Memory: 2GB or more
	Hard disk: 10GB (Data storage area) or more
Platform	.NET Framework4.6 or more
Execute environment	Microsoft Internet Explorer 6.0 or more
	Windows installer 3.1 or later
Image size	Resolution 1024×768 pixel or more
Connecting port	USB1.1 USB2.0port *USB3.0 operation is not guaranteed.

Measurement for small sample using Long stroke model	
Extension shaft	
MT-EXT (length 100mm)	MT-EXT2 (length 200mm)
TAA-MTS-()N-L-TB: Sample height 130mm or less TAA-MTS-()N-2L-TB: Sample height 130mm-230m	TAA-MTS-()N-2L-TB: Sample height 130mm or less
	

* Sample height is with the standard attachment.

[Related Products TAA-MTS-TB series]

For upper part		
Small chuck MT-ST	Pin chuck MT-DC	M10 adapter MT-AD-M10
Designed for small samples Sample diameter: ϕ 7-50mm Capacity: 5N-m Selectable pin from standard, notch and long	Ideal for gripping columnar samples Large: ϕ 1.2-13mm Standard: ϕ 0.5-6.5mm Small: ϕ 0.5-4mm *1	For mounting M10 attachment
		
For lower part		
Small table DT-ST	Wide Table DT-STW	Light weight small table for HTG DT-STL
Designed for small samples Sample diameter: ϕ 7-50mm Capacity: 5N-m Selectable pin from standard, notch and long	Wide table for a sample up to 100mm Sample diameter: ϕ 10-100mm Capacity: 5N-m Selectable pin from standard, notch and long	Lightweight table for a small sample Sample diameters: ϕ 7-50mm Capacity: 2N-m Selectable pin from standard, notch and long
		
Light weight wide table for HTG DT-STLW	Pin chuck DT-DC	
Light weight and wide table for a sample up to 100mm Sample diameter: ϕ 10-100mm Capacity: 2N-m Selectable pin from standard, notch and long	Suitable for clamping samples such as wire and round-bar due to its three claws Large: ϕ 1.2-13mm Standard: ϕ 0.5-6.5mm Small: ϕ 0.5-4mm *1	
		

* 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 System configuration]

TAA-HTG Series	Product Configuration
	<ol style="list-style-type: none"> 1. Torque gauge: Next Series HTGA series Measuring rotating force and twisting force 2. Angle meter unit: AMK-360 Measure and output the angle 3. Software: Force Recorder Professional Creating torque and angle graph at real time 4. Chuck (sold separately) Attachment to fix the sample 5. Stay (Custom-made) Attachment to twist manually <p>Complete system for Torque-Angle measurements</p>
	<p>This handheld system includes 1-3 items which are necessary for Torque-Angle measurements.</p> <p>[Important Notice] Attachments “4. Chuck” and “5. Stay” are not included. “4. Chuck” and “5. Stay” are required for Torque-angle measurement. Please refer to : Page 8 for chuck sold separately. Page 9 for examples of “Stay,” Attachment made-to-order according to measurement conditions.</p>

* Refer to the specifications of each product for details.

[TAA-HTG series Testing image]

Twisting force of doorknob	Operability of rotary switch such as air-conditioner and audio	Others
		<ul style="list-style-type: none"> - Opening and Closing force of key Locks - Operability of automobile accelerator - Opening and closing force with twisting/turning motions of various buttons and switches <p><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), Analog (Approx. +/-2V), 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.

*4 Stay (Custom-made), chuck, optional attachment and PC are not included.

[Software operating environment]

Operating environment	OS: Windows 7/8/8.1/10
Hardware	CPU: Pentium4 (1GHz or more) or later recommended
	Memory: 2GB or more
	Hard disk: 10GB (Data storage area) or more
Plat form	.NET Framework4.6 or more
Execute environment	Microsoft Internet Explorer 6.0 or more
	Windows installer 3.1 or later
Image size	Resolution 1024×768 pixel or more
Connecting port	USB1.1 USB2.0port

*USB3.0 operation is not guaranteed.

Related Chuck and Attachment (TAA-HTG series)		
<p>Small table and pins HT-ST</p>	<p>Small Table HT-STW</p>	<p>Light weight small table for HTG HT-STL</p>
<p>Designed for small samples Sample diameter: ϕ7-50mm Capacity: 5N-m Selectable pin from standard, notch and long</p>	<p>Wide table for a sample up to 100mm Sample diameter: ϕ10-100mm Capacity: 5N-m Selectable pin from standard, notch and long</p>	<p>Lightweight table for a small sample Sample diameters: ϕ7-50mm Capacity: 2N-m Selectable pin from standard, notch and long</p>
		
<p>Light weight wide table for HTG HT-STLW</p>	<p>Torque driver HT-DBH</p>	<p>Pin chuck HT-DC</p>
<p>Light weight and wide table for a sample up to 100mm Sample diameter: ϕ10-100mm Capacity: 2N-m Selectable pin from standard, notch and long</p>	<p>Ideal for measuring tightening/loosing torque of screws Bit: 1 pc (+1, +2, +3, -6\times45)</p>	<p>Ideal For gripping columnar samples Large: ϕ1.2-13mm *1 Standard: ϕ0.5-6.5mm Small: ϕ0.5-4mm *2</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>Manual rotation support jig for torque gauge HTGS/A series to measure torque in the horizontal direction</p>		
		

* Refer to the specifications of each Attachments for details.

*1 Large Pin chuck HT-DC is not for use with for 2N-m.

*2 Maximum capacity of small pin chuck HT-DC is 5N-m.

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.

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

[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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