

# 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**



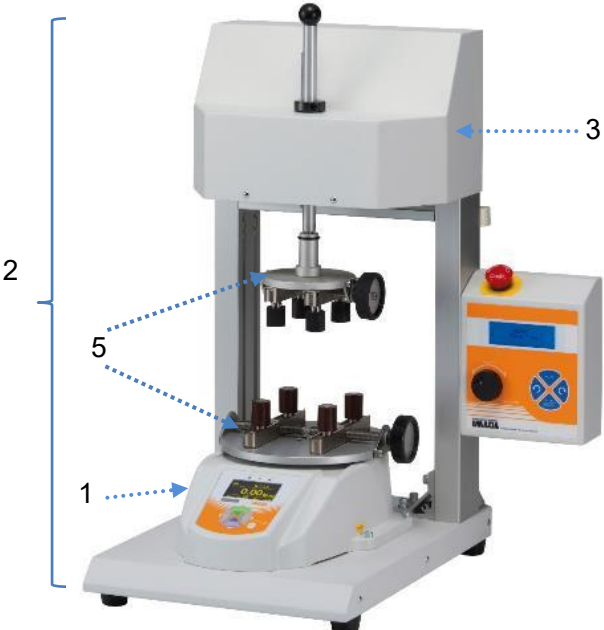
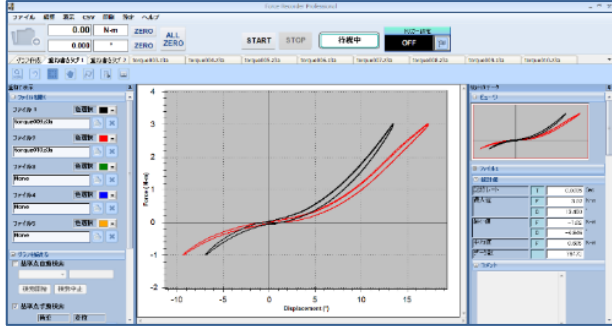
Handheld type  
**TAA-HTG series**



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
	1. Torque gauge: DTXA series (with a table) Measurement for rotating and twisting forces. Easily detachable for repair or calibration requirements.
	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.
	3. Option Cable: CB-728 Connecting the torque gauge and the torque stand for control.
	4. Software: Force Recorder Professional Real time Torque and Angle graphing
	5. Standard Attachments: Upper chuck MT-TB + Lower table DT-TB Attachments are interchangeable according to the measurement sample.
	Complete system for Torque-Angle measurements
	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.  * TAA-MTS-Z series, the model without table and upper chuck available. Refer to page 3 for detail.

\* 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"> <li>-Usability feel tests for the rotary switch</li> <li>-Twisting characteristics tests for undearwears and some medical supplies</li> <li>-Sliding resistance test for Camera lens</li> </ul> <p><b><u>Ideal Solutions for a wide array of characteristic evaluations</u></b></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 (8 hour using/ 2-hour full charge)
	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]**

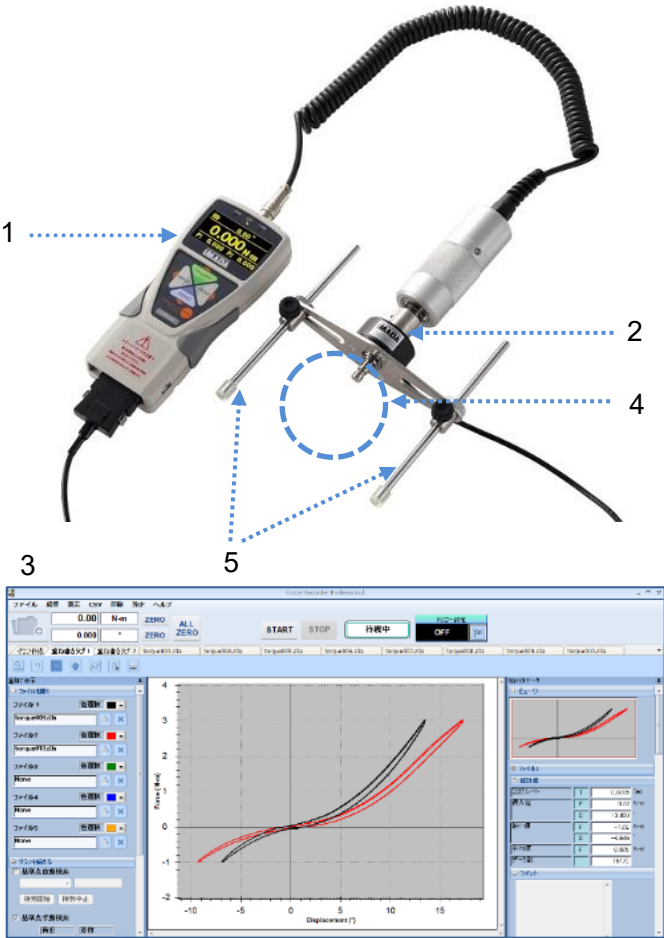
For upper part		
<p>Small chuck <b>MT-ST</b></p> <p>Designed for small samples Sample diameter: <math>\phi 7-50\text{mm}</math> Capacity: 5N-m Selectable pin from standard, notch and long</p> 	<p>Pin chuck <b>MT-DC</b></p> <p>Ideal for gripping columnar samples Large: <math>\phi 1.2-13\text{mm}</math>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

TAA-HTG Series	Product Configuration
	1. Torque gauge: 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
	<b>Complete system for Torque-Angle measurements</b> <p>This handheld system includes 1-3 items which are necessary for Torque-Angle measurements.</p> <p><b>[Important Notice]</b>  <b>Attachments “4. Chuck” and “5. Stay” are not included.</b>  <b>“4. Chuck” and “5. Stay” are required for Torque-angle measurement.</b>  <b>Please refer to :</b>  <b>Page 8 for chuck sold separately.</b>  <b>Page 9 for examples of “Stay,”</b>  <b>Attachment made-to-order according to measurement conditions.</b></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"> <li>- Opening and Closing force of key Locks</li> <li>- Operability of automobile accelerator</li> <li>- Opening and closing force with twisting/turning motions of various buttons and switches</li> </ul> <p><b><u>Suitable for torque-angle measurements of finished products</u></b></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 (8 hour using/2-hour full charge)
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]

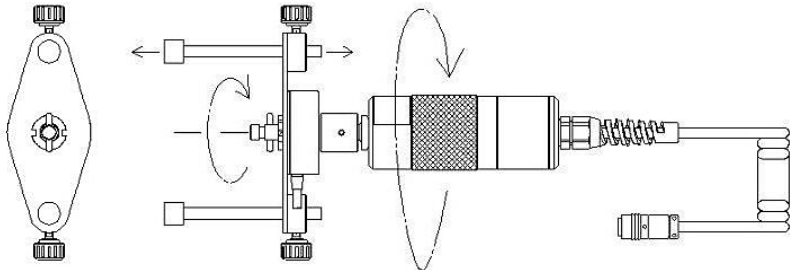
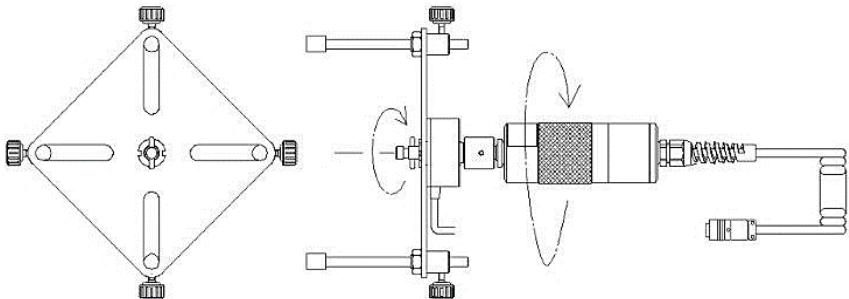
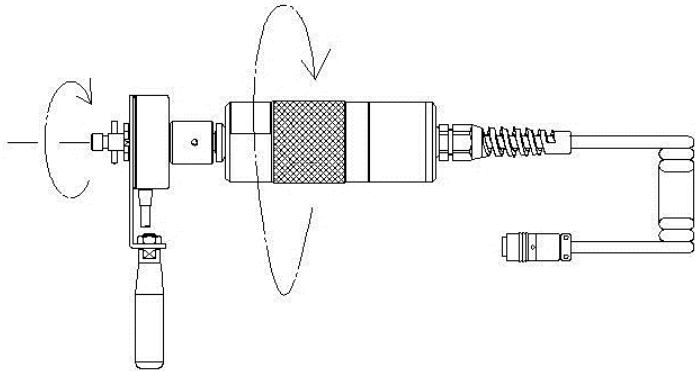
Operating environment	OS: Windows 7/8/8.1/10
Hardware	CPU: Pentium4 (1GHz or more) or later recommended
	Memory: 2GB or more
	Hard disk: 10GB (Data storage area) or more
Plat form	.NET Framework4.6 or more
Execute environment	Microsoft Internet Explorer 6.0 or more
	Windows installer 3.1 or later
Image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

\*USB3.0 operation is not guaranteed.

Related Chuck and Attachment ( <b>TAA-HTG series</b> )		
<p>Small table and pins <b>HT-ST</b></p> <p>Designed for small samples Sample diameter: <math>\phi 7-50\text{mm}</math> Capacity: 5N-m Selectable pin from standard, notch and long</p>	<p>Small Table <b>HT-STW</b></p> <p>Wide table for a sample up to 100mm Sample diameter: <math>\phi 10-100\text{mm}</math> Capacity: 5N-m Selectable pin from standard, notch and long</p>	<p>Light weight small table for HTG <b>HT-STL</b></p> <p>Lightweight table for a small sample Sample diameters: <math>\phi 7-50\text{mm}</math> Capacity: 2N-m Selectable pin from standard, notch and long</p>
		
<p>Light weight wide table for HTG <b>HT-STLW</b></p> <p>Light weight and wide table for a sample up to 100mm Sample diameter: <math>\phi 10-100\text{mm}</math> Capacity: 2N-m Selectable pin from standard, notch and long</p>	<p>Torque driver <b>HT-DBH</b></p> <p>Ideal for measuring tightening/loosing torque of screws Bit: 1 pc (+1, +2, +3, -6<math>\times</math>45)</p>	<p>Pin chuck <b>HT-DC</b></p> <p>Ideal For gripping columnar samples Large: <math>\phi 1.2-13\text{mm}</math> *1 Standard: <math>\phi 0.5-6.5\text{mm}</math> Small: <math>\phi 0.5-4\text{mm}</math> *2</p>
		
<p>Socket holder <b>HT-9.5HQ</b></p> <p>Ideal for torque wrench or screwdriver bit Socket: 9.5mm square</p>	<p>M10 adaptor <b>HT-AD-M10</b></p> <p>For mounting M10 Attachment</p>	<p>Sensor holder <b>SHT-5N</b></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 <b>RSH series</b></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.



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

\* 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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Visit our website for more information on a wide range of product specifications, measurement applications and videos.

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