

FORCE MEASUREMENT IMADA Product Catalog

Force Gauges & Associated Equipment
DIGITAL FORCE GAUGE
MECHANICAL FORCE GAUGE
MOTORIZED TEST STAND **2023-1**



Next Series

A group of upgraded measurement devices with new PCBs. Those devices under Next Series enable a variety of benefits online through the user support site.



Force Gauges

IMADA force gauges can be used for tensile tests, compression tests, peel tests, and unlimited force testing applications. We offer a wide range of gauges such as mechanical models (easy to handle), digital models (various functions equipped), and a variety of sensors.



Software

Software records force transitions graphically, calculates the statistics automatically, and equips various functions to enable you to analyze the data in detail.



Test Stands

A test stand achieves greater accuracy since it provides constant test angle/speed. Combined with a digital force gauge, a motorized test stand can activate useful functions to protect sensors from breakdown, streamline measurement, and more.



Attachments

We provide a wide range of grips and fixture to meet your force measurement needs. One force gauge can be combined with various attachments to handle a wide range of force testing applications.



Force Testing System

We provide various force testing system below to improve your productivity and meet a variety of force testing needs.

- Force-displacement analysis system
- Specialized testers for peeling etc.
- And more



IMADA's force testers are used worldwide in R&D and quality control of every industry to assess and ensure the quality.

IMADA offers a wide range of force testing products and know-how accumulated for many decades, enabling you to measure a huge variety of "force" such as mechanical strength (breaking/deformation force), tactile sensation (softness/hardness), functionality of operational physical force, and more.

FORCE MEASUREMENT IMADA

IMADA CO.,LTD
99 Jinnoshinden-cho 2za Kanowari Toyohashi Aichi 441-8077 Japan
Telephone: +81-(0)532-33-3288 Telefax: +81-(0)532-33-3866 E-mail: info@forcegauge.net

The further product information is on our Product and Service Site.

<https://www.forcegauge.net/en/>

Please visit our Corporate Site which introduce a wide range of information of force measurement.

<https://force-channel.com/en/>

- The contents will be changed without any notices.
- We can custom design and manufacture to meet your particular requirements.
- Please feel free to contact us or our distributor for further information of our products.
- The colors and shapes might be slightly different from the actual products.
- We show specifications partially, so please see full specifications on our website or contact us before purchase.

Agency

The best force measurement solution by IMADA

We are an expert of force measurement.

IMADA force gauges have been used worldwide for more than 75 years to assess and ensure quality by professionals in every industry. IMADA gauges can be used for a wide range of force testing applications such as tensile, compression, peel, and more. They can even measure ambiguous things such as "cheese stickiness" and "switch pressing force." We provide the best force measurement solutions with our know-how and a wide range of products.

The industries using
our force gauges



IMADA offers the best force measurement solution.

Force changes shape and speed of objects. Force is defined as Mass×Acceleration=Force. There are many types of forces such as Tension/Compression/Shearing/Bending, and more. Below you can see force measuring instruments called "force gauges," which quantify the force in units of "Newton," "Kilogram," and "Pound." We provide a wide range of force gauges and related equipment to fit your measuring needs.

75 Years History of IMADA Force Gauge

In 1947
Developed the first
force gauge in Japan.



The Latest Force Gauges

Capable, Functional and User-friendly
force gauge, ZT series are released.

Before-sales services

Test Method Consulting

We provide the best measurement solution based on our 75 years knowledge and experiences. Please feel free to contact us for any measurement concerns, for example, measurement in accordance with standards, effective measurement ways, improvement of measurement repeatability and so on.



Custom-made Orders

We also provide custom-made orders which are based on your measurement conditions and samples. Please let us know your requests such as installing a force gauge in equipment, looking for a fixture which can grip a unique shape sample, and the like.



After-sales services

Repair

We and some of our sales partners provide repair services. We are dedicated to short-term delivery.



Calibration

We and some of our sales partners also provide calibration service to keep the accuracy. Some of our products can be provided calibration services in accordance with ISO/IEC 17025:2017.



Publishing Various Certifications

Many types of certifications can be published in short terms such as Calibration Certificate, Traceability Chart and so on.



● Pull force



● Insertion force



● Pushing force



● Extraction force



● Peeling/adhesive force



● Shearing force/Tension force



● Rotating/Twisting force



● Crashing force



● Opening force



● Bending force



● Closing force



● Frictional force

From simple testing to professional one, you can easily conduct force measurement anytime, anywhere.

Force measurement is conducted to assess safety, durability, functionality, operability, and more. We offer a wide range of force gauges and related equipment to fit your measurement needs.

For use by hand

Compression and tension force can be easily measured.



For use as a simple testing machine

A force gauge can be combined with a test stand to achieve high repeatability.



A Force gauges (Push Pull Scales)

They measure compression, tension, peeling force, and more. They can be readily used by hand to conduct a test, or can be combined with a test stand to create your own testing machine.



To page 07

B Attachments

Attachments are integral components to be combined with a force gauge or a test stand, enabling compression, tension, peeling and other force measurement.



To page 38

C Software

Software draw graphs of the relationships between Force and Time or Force and Displacement. Utilize it for detailed analysis.



To page 22

D Test Stands

Test stands move a force gauge vertically or horizontally. It helps high-repeatability measurements by keeping the speeds and the angles.



To page 30

E Connecting Cables

A cable connects a force gauge and a test stand, activating the force controlling function and the preventing overload function. Besides, cables are also used to connect external equipment like PC.



To page 25

Other Product Line-up

FSA Force-Displacement Analysis Unit

Easy graph drawing of force and displacement relationships

To page 50



Automatic crimp tester ACT-1000N

A specialized tester for tensile strength test of crimped terminal

To page 53



180 Degree Peel Tester IPTS-5N/20N/50N

A specialized tester for peeling test of such as cover film of electric components and tapes

To page 54



Texture Analyzer FRTS

Digitizing food texture such as stickiness, hardness and more

See another catalog, "Catalog for Torque testers and Food testers."



Torque Gauges

For rotating and twisting force measurement

See another catalog, "Catalog for Torque testers and Food testers."



Measurement Examples

Compression Test

IMADA compression testers handle a wide range of testing applications such as, durability, bending, sticking, and more.



Tension Test

IMADA tension testers handle a wide range of testing applications such as tearing, extracting, pull-off, and more.



Peel Test

IMADA peel testers handle a wide range of testing applications of such as adhesive tape, film, and more.



Coefficient of Friction Test

IMADA COF testers calculate coefficient of static Friction and average of coefficient of kinetic Friction automatically.

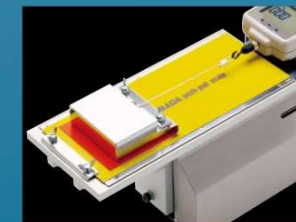


Table of contents

Category	Page	Details
Force Gauges and Related Items		
Force Gauge Comparison&Applications	07~08	A comparison table to help selecting a force gauge, and information of how to use it
Digital Force Gauges		
ZTS	11~12	Standard type force gauges with high repeatability
ZTA	13~14	Advanced force gauges with high functionality
Advanced Measurement Examples		
DST	16	Simple force gauges
DSV	17	Handheld force gauges with high repeatability
Amplifiers & Load cells		
eZ-Connect	18~21	Set of a sensor interchangeable amplifier & a load cell
eZT	18	Sensor interchangeable amplifier
Desktop Amplifier	18	An amplifier for a load cell to read force value
Load cells	19~21	Sensors to detect force (Various models are available to fit your test needs.)
Software		
Force Recorder Light	23	Affordable force-time graphing software for ZTS/ZTA, eZT, FA Plus2, HTGS/HTGA and DTXS/DTXA
Force Recorder Standard	23	Force-Time graphing software for ZTS/ZTA, eZT, FA Plus2, HTGS/HTGA and DTXS/DTXA
Force Recorder Professional	23	Force-Displacement graphing software for ZTA, eZT, HTGA and DTXA
Force Recorder Plus	24	Multiple gauges Force-Time graphing software for ZTS/ZTA, eZT, FA Plus2, HTGS/HTGA and DTXS/DTXA
Force Logger Plus	24	Multiple gauges managing software
ZLINK4	24	Force-Time graphing software for DSV/DST
Cables		
Cables	25	Cables to output for external devices like PC and activate optional functions
Wireless Unit	26	Wireless unit to transmit data wirelessly
Cable Application Examples	26	Examples of functionality expanded by cables
Built-in Linear Scale Unit	26	Linear scale unit for ZTA and eZT series
Mechanical Force Gauges		
FB	27	Simple force gauges
PS	27	Highly accurate force gauges
PSM	28	The most accurate force gauges with high resolution
PSH	28	High-capacity force gauges in capacity up to 3000N
UKT/UKK	28	Small force gauges ideal for mounting on equipment
Muscle Force Measurement Device	28	Kit for measurement of muscle strength and job task analysis (workload test)
Force Gauge Complementary Information	29	Information to select a suitable capacity, key points of managing force gauges, and more
Test Stands		
Test Stand Comparisons&Applications	30~31	Comparison table to help selecting test stand
Motorized Test Stands		
MX2	32	Digital vertical stand to improve repeatability and operating performance
MH2	32	Digital horizontal stand to improve repeatability and operating performance
EMX	33	High-performance / functional model with wide speed range and digital stroke limit function
MX	33	Simple vertical test stands
MH	33	Simple horizontal test stands
Manual Test Stands		
SVL/SVH	34	Simple vertical test stands (Lever type or handle type)
HV	34	Long stroke model ideal for testing large or flexible samples
FCA	35	Lever-type test stand able to fix a stroke
KV	35	Small model for low capacity (less than 50N) measurement
MS	35	Compact model helping various measurement by different ways of installation
SH	35	Horizontal test stand with a handle
Accessories for Test Stand	35	Accessories which improve safety during measurement and enable you to perform displacement measurement by mounting yourself.
Options for Test Stands	36	Available options such as extending stroke, speed range change, and more
Customized Test Stands	37	Examples of customized test stands
Attachments and Fixtures		
Attachment types and how to use	38	Basic information of attachments
Accessory Attachments	38	Standard attachments coming with force gauges
Compression Attachments	39~40	Attachments for compression tests like a bending test, a pressing test, and more
Tension Attachments	40~42	Attachments for tensile tests like a tearing test, an extraction test, and more
Compression and Tension Attachments	43	Attachments for both compression and tension
Pinching Force Test Attachment	43	Jig for pinching or opening tests of forceps, vernier-calipers, and clips.
Friction Attachments	43	The fixtures comes with the auto calculating software of Coefficient of Static Friction and Average of Coefficient of Kinetic Friction.
Wire Crimp Pull Test Attachments	44	Wire and terminal clamps for wire harness testing
Chip Components Tension/Shear Test Attachments	44	Fixtures for soldering strength testing of QFP and TQP
Peel Test Fixtures	45	Attachments for peel tests of such as tape, film coating surfaces, pull-tab and so on
Medical Attachments	46	Attachments for medical equipment such as syringe
Vise Grips and Tables	47	Varieties of tables and adapters like vice grips, XY table.
Optional Handles	48	An accessory fixed to mechanical or digital force gauges to improve measurement repeatability.
Conversion Adapters	48	Attachment fixed between force gauge and attachment for higher repeatability.
Eye Bolts and Eye Nuts for Load Cells	48	Hoisting attachments to load cells for tensile tests.
Custom Order Examples	49	Examples of custom-made attachments
Force Measurement Units/Simple Testers		
Force Displacement Analysis Unit FSA	50~52	Measurement unit for drawing force-displacement curves easily
Automatic Crimp Tester ACT-1000N	53	An automatic crimp tester with easy operation
Crimp Tester LH-500N	53	Crimp pull tester for the tensile strength test of crimped terminal
180 Degree Peel Tester IPTS Series	54	Peel tester exclusive for cover film of electric components and tapes

Index

Utilize this index to find the number of the page of your desired product.

A		G		R	
A-1/2/3/4/5/6/7/8	38	GC-1100/1200/5000/GCF-1200	40	PPC-5000N	42
A-40/60	39	GC-5/15	43	PR-500N/2500N	40
ACT-1000N	53	GC-60/100	41	PSH series	27
ACT-T-01/ACT-T-02	53	GF-1/2	34	PSM series	28
APR-97 series	45	GP-15/30	42	PTD-100N	42
		GR-30/2000	42	PTF-100N	42
B		GT-10/20	44	PTW-10IN	45
B-1/2/3/4/5/6/7/8	38	GT-30/2000N	47	PW-4	44
BC-15	41	GTW-2500N	47		
BT-500N/5000N/5000N-CB	40	GTW-50R/50L	47		
C		H		S	
CA series	48	HDC-1	48	RE-20kN	48
CB series	25	HFC-50N	42	RZTA-1000N/RDSV-1000N/RFB-750N	28
CCJ series	43	HGB-1	48		
CFX series	20	HV series	34	S-1/2/3/4/5/6/7/8	38
CH-500N	44			S-40/60	39
CH-5000N	44	I		SC-3/8	41
CHX series	20	IPTS series	54	SCX series	19
CLFX series	20			SH series	35
COF-2N-V/10N-V	43	J		SHF series	42
COF2-2N/10N	43	JF6-50N	48	SJ series	44
CP-150N	43			SJS series	44
CW-500N	41,44	K		SK series	21
CW-5000N	44	KV-50N	35	SKM-1000N	21
		KC-100/1001/5000	41	SP-5010/5020/5030	39
D				SQ-5030/5075/5150	39
DD2 series	20	L		SR-1	38
DF-60	42	LC series	20	ST-SS	35
DM-2000N	21	LH-500N	53	SVH-1000N	34
DMK series	26	LM series	20	SVL-1000N	34
DST series	16	LMT-1000N	20	SW1 series	19
DSV series	17	LMU series	19	SW3 series	19
DPU series	19	LOP-1000N	42	T	
		LU series	19	TH-1000N/5000N	45
E		M		TKS-20N/250N	39
EB series	48	MED series	46	TS-5000N	47
eFA Plus2	18	MH-1000N	33	U	
eHT series	21	MH2 series	32	UJ6-1000N/UJ10-5000N	48
EJ6-1000N	48	MS series	35	UR-8S/BM	39
EJ10-5000N	48	MX series	33	UKK series	28
EMX series	33	MX2 series	32	UKT series	28
EN-500N	48				
eTFX series	21	O		V	
eZ Connent series	18	OP-EMX-FA	35	VWF-10N	43
eZT	18	OP-MX2EMX-IC/OP-MX250-IC	35		
		OT-BIN	40	W	
F		P		X	
FA Plus2	18	PAD series	40	WG series	41
FB/FS series	27	P45-50N	45	WL01-ADP/WL01-USB	26
FC series	41	P90-200N/200N-EZ/200N-BB	45		
FCA-50N	35	P180-200N/200N-BB	45	Z	
FOH-1	48	PCA-150N	43	ZD series	20
Force Logger Plus	24	PG-2/3/4/5	39	ZLINK4	24
Force Recorder Light	23	PGC-0505/0510/2530	41	ZTA series	13~14
Force Recorder Plus	24			ZTS series	11~12
Force Recorder Professional	23	PK1-500N	21	ZU series	21
Force Recorder Standard	23	PK2-1500N	21	ZW1-10kN	21
FP-50/51	41	PN-50N	19		
FSA series	50~52				
FSC-1525	45				
FW-12	44				

Force Gauges (Push Pull Scales)

Measuring instruments for compression/tension/peel force

A force gauge can be used by hand, or combined a test stand to create your force testing machine. They are also called for "push pull scales" or "push pull gauges."



Digital Force Gauges

Strong Points

- Force values can be easily read.
- It can be connected with a PC to analyze data particularly and manage it easily.
- Digital functions are available such as OK/NG judgment, and more.
- It is suitable for impact tests and breaking tests.

Weak Points

- Batteries need to be charged.
- It is difficult to read force transition without graphing software.

DST To page 16

- Capacity: 2N~1000N
- Sampling speed: 1000Hz
- Accuracy: $\pm 0.2\%F.S. \pm 1$ digit



- It is ideal for simple measurements by hand.
- Easily detect a peak value with its peak hold function.

DSV To page 17

- Capacity: 2N~1000N
- Sampling speed: 1000Hz
- Accuracy: $\pm 0.2\%F.S. \pm 1$ digit



- Tilt-sensing-function improves the repeatability even in handheld measurement.

ZTS To page 11~12

- Capacity: 2N~5000N
- Sampling speed: 2000Hz
- Accuracy: $\pm 0.2\%F.S. \pm 1$ digit



- Captures a peak value accurately due to its high sampling rate.
- Displays clearly.
- Manages data easily with included software.

ZTA To page 13~14

- Capacity: 2N~5000N
- Sampling speed: 2000Hz
- Accuracy: $\pm 0.2\%F.S. \pm 1$ digit



- Advanced Functionality Model
- Outputs and inputs displacement using a linear scale together.
- Saves data in a USB flash drive.

Simple

Functional Accurate

Mechanical Force Gauges

Strong Points

- They work without battery.
- They have durable bodies.
- Read force transition easily.

Weak Points

- It is not suitable for impact tests and breaking tests.
- It may cause human reading error.

FB To page 27

- Capacity: 10N~500N
- Accuracy: $\pm 0.3\%F.S.$ or less



This is the most economical model

PS To page 27

- Capacity: 5N~500N
- Accuracy: $\pm 0.1\%F.S.$ or less



This is high accuracy model.
When measuring high capacity more than 500N: PSH-To Page 28

PSM To page 28

- Capacity: 20N~500N
- Accuracy: $\pm 0.1\%F.S.$ or less



This is the most accurate model with high resolution dial.

Digital force gauges

A digital force gauge has an internal sensor. It has 2 remarkable features; 1. Its digital indication prevents human reading error. 2. Easily manage or analyze test data with connecting it to a PC.



How to Use Digital Force Gauges (Using Example Model: ZT series)

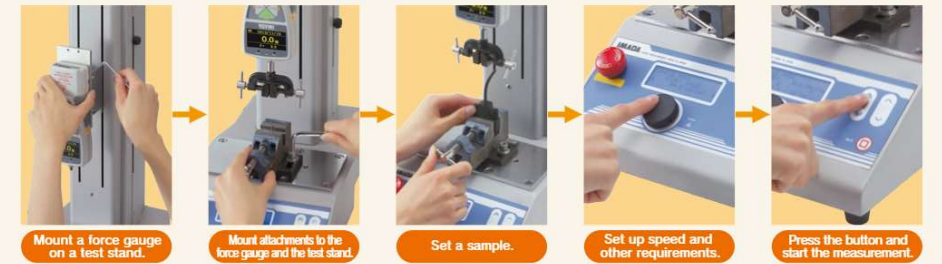
Simple Method

Easily measure force by hand.



Highly Repeatable Method

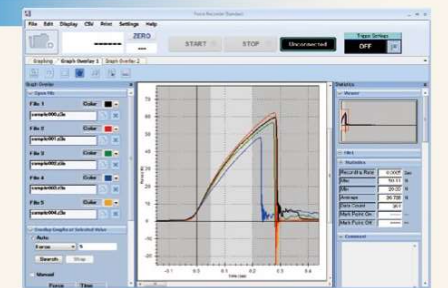
Combining a digital force gauge with a test stand (page 30), enables you to conduct a highly repeatable test since the test stand provides constant test speed and angle.



Graphing

With software (page 22), the force transition can be confirmed graphically on a PC.

Connecting a digital force gauge with a PC enables you to see force transition graphically and analyze data in detail.





Next Series

~Continue to Evolve

Typified by ZT digital force gauge series, Next Series is a generic term to describe the next generation models of IMADA measurement devices.

Unlike previous models, these devices under Next Series are equipped with new PCBs allowing them to avail various benefits on our user support website.

Especially additional functions downloadable on the site expand the usage scenes of the devices by improving efficiency or safety in measurement or enhancing the compatibility of test data.

Consequently, Next Series devices have high customizability to meet complex needs of each user.

IMADA, a solution provider in Force Measurement, increases both hard and software product line-ups to enable various measurements for more comprehensive requirements.



Scan the QR code for the latest line-ups of the Next Series and additional functions



Refer to  for the Nest Series products in this catalogue (as of Jan 2023)

User Support Site

IMADA-Connected





With your account and product registrations, You can download additional functions, software, operating manuals, etc. from this website.



<https://www.imada-connected.com/>

Standard Type with High Repeatability

ZTS series (Basic Model)

This is user-friendly and functional. This series of gauges can be used for a wide range of measuring purposes from peak measurement to highly repeatable measurement. The gauges come with data-capturing software.

Accurately / Precisely

- High Speed Sampling:2000Hz
It follows rapid force change, capturing peak values more accurately.
- High Accuracy:±0.2%F.S±1digit

User-friendly

- High Luminance Organic EL Display
Clear organic display has excellent readability.
- 8 languages available
Setting menu in 8 languages helps easy operation.

Making efficient

- OK-NG Judgment Function
Picks out defective products easily. (NG or NG light goes on when the force is over or under the borderline that you have decided.)
- 3 Line Indicator
A force value is indicated in the middle tier, and can select information as required in the upper and lower tiers.
- Connect and Link to Various External Equipment.

Compression and Tension Compatible

Size: Approx. W75×D34×H191mm
Weight: Approx. 490g

- Check Force Transition on Graphs
Software Force Recorder — To Page 23~24
- Connect with External Devices
Cable Using Applications — To Page 26
- Improve Measuring Repeatability
Test Stands — To Page 30

Easy Data Management on PC

- Data Capturing Software Force Logger is included.
-It sends 10 data/sec to PC.
-It automatically detects maximum and minimum values.
-It saves data in CSV format.
- Graphing by Optional Force Graphing Software
The software shows force vs time graphically on PC in real time (at Max.2000Hz) The detail is in Page 22.



Standard Type Model List

Model	Capacity	Display	Thread
ZTS-2N	2N	2.000N/2000mN(200.0gf)	
ZTS-5N	5N	5.000N/5000mN(500.0gf)	
ZTS-20N	20N	20.00N(2.000kgf)	
ZTS-50N	50N	50.00N(5.000kgf)	M6
ZTS-100N	100N	100.00N(10.00kgf)	
ZTS-200N	200N	200.00N(20.00kgf)	
ZTS-500N	500N	500.00N(50.00kgf)	
ZTS-1000N	1000N	1000N/1.000kN(100.0kgf)	

ZTS series specifications

Accuracy	±0.2%F.S.±1digit(Excluded sensor separated model)
Unit of measurement(※1)	N, kgf, lbf (※1)
Display	4-digit Organic EL
Sampling rate	2000Hz (2000 data / sec) at maximum
Function	Customized display (header and footer), Peak hold (tension and compression), Internal 1000 points data memory, Comparator (judgement of OK or NG), Reversible display, Sign inversion, Zero clear timer, +NG alarm, Off timer (auto power off), Dumping, Time display
Operating environment	Temperature: 0 to +40 degrees Celsius, Humidity: 20 to 80%RH
Output	USB, RS232C, ±2 VDC analog output (D/A), Comparator 3 steps (+NG/OK+NG), Overload alarm
Battery	6.5 hours (2 hours full re-charging)
Accessory	Attachments(※2), AC adapter, Inspection certificate, CD-driver(including simple software for data logging), USB cable, Carrying case.

※1 The model less than 5N can be displayed mN, the model more than 1000N can be displayed kN. Japanese domestic model does not indicate kgf and lbf units.
※2 Please refer to Page 38 for the detail of accessory attachments.
©The weights are slightly different by the ranges.

ZTS series (High Capacity Model)

- The load capacity ranges from 2500N to 5000N.
- This model has the same functions and performance as ZTS series basic model.



Compression and Tension Compatible
Size: Approx. W83×D44.5×H221mm
Weight: Approx. 1100g

High Capacity Model List

Model	Capacity	Display	Thread
ZTS-2500N	2500N	2500N (2.500kN)	M10
ZTS-5000N	5000N	5000N (5.000kN)	

- Check Force Transition on Graphs
Software Force Recorder — To Page 23~24
- Improve Measuring Repeatability
Test Stands — To Page 30
- Connect with External Devices
Cable Using Applications — To Page 26
- Transmit Data Wirelessly
Wireless Unit WL01-ADP/WL01-USB — To Page 26

ZTS series (Separated Sensor Model)

- It features an external sensor, which is ideal for installing into facilities or measuring under special circumstance.
- We offer a wide range of sensors such as waterproof, wide temperature range, pen shape, and more to meet your force measurement requirement.
※ Please select one load cell from page 19 to 21.
※ Sensor interchangeable model eZ-Connect(page18) is recommended for those who change load cells.



Size (the indicator only): Approx. W75×D34×H188mm
Weight (the indicator only): Approx. 490g

- Check Force Transition on Graphs
Software Force Recorder — To Page 23~24
- Connect with External Devices
Cable Using Applications — To Page 26
- Transmit Data Wirelessly
Wireless Unit WL01-ADP/WL01-USB — To Page 26

Sensor separate type Model List (When selecting load cell DPU series)

Model	Capacity	Display	Thread
ZTS-DPU-2N	2N	2.000N (2000mN)	
ZTS-DPU-5N	5N	5.000N (5000mN)	
ZTS-DPU-10N	10N	10.00N	
ZTS-DPU-20N	20N	20.00N	M6
ZTS-DPU-50N	50N	50.00N	
ZTS-DPU-100N	100N	100.00N	
ZTS-DPU-200N	200N	200.00N	
ZTS-DPU-500N	500N	500.00N	

(When selecting load cell DPU series [High capacity model])

Model	Capacity	Display	Thread
ZTS-DPU-1000N	1000N	1000N (1.000kN)	
ZTS-DPU-2000N	2000N	2000N (2.000kN)	M10
ZTS-DPU-5000N	5000N	5000N (5.000kN)	
ZTS-DPU-10kN	10kN	10.00kN	M18/5 Dip22 (torque screw)
ZTS-DPU-20kN	20kN	20.00kN	

©Please refer to Page 19 for the detail of load cell DPU series

An example of separated sensor model combined with a load cell **ZTS-LM-500N** Load cell model Choose ZTS or ZTA
※In the case where you combine ZTS with a load cell, LM-500N

On our website, you can see a wide range of force testing applications, and download a specification sheet of each product. Please feel free to contact us.
●MADA service group telephone number: +81(0)532-33-3288

IMADA Search <https://www.forcegauge.net/en/>

Table of contents
Force Gauges and Related Items

Test Stands

Attachments and Fixtures

Force Measurement Units/Simple Testers

High-functional Type with Various Functions

ZTA series (Basic Model) Next Series

This series have the highest functionality. They have 2 remarkable points; 1. They input or output displacement. 2. They can connect to USB flash drive to save the original graph data.



ZTA has all the functions of ZTS(Page 11) with a few more additional features, including I/O for displacement, saving data to USB flash drive, and more.

ZTA series features

Input and Output Displacement

- Force vs displacement data management on PC
FSA series (Force-Displacement Analysis Unit) [Page 50~52] can be used to manage force-displacement data on PC.
- Showing displacement on a force gauge with a test stand
FA version test stand [Page 32~33] can be used together to show displacement on a force gauge. Need an optional cable [Page 25] for that.
- Measuring force-displacement with external facilities
Built-in linear scale [Page 26] can be used together with ZTA.



Force displacement measurement unit FSA series



CE

ZTA set

Compression and Tension Compatible Size: Approx. W75×D34×H191mm Weight: Approx. 490g

Data Saving to a USB Flash Drive

- Data Saving into a USB Flash Drive at 100Hz.
Series of data can be saved without PC.



- Check Force Transition on Graphs
Software Force Recorder — To Page 23~24
- Connect with External Devices
Cable Using Applications — To Page 26
- Improve Measuring Repeatability
Test Stands — To Page 30

- Apply Stable Force by Hand
Handle FOH-1 — To Page 48
Hand Grip Belt HGB-1 — To Page 48
- Analyze Force-Displacement Relation
Force-Displacement Analysis Unit — To Page 50
- Transmit Data Wirelessly
Wireless Unit WL01-ADP/WL01-USB — To Page 26

ZTA series model list

Model	Capacity	Display	Thread
ZTA-2N	2N	2.000N/2000mN(200.0gf)	
ZTA-5N	5N	5.000N/5000mN(500.0gf)	
ZTA-20N	20N	20.00N(2.000kgf)	
ZTA-50N	50N	50.00N(5.000kgf)	M5
ZTA-100N	100N	100.0N(10.00kgf)	
ZTA-200N	200N	200.0N(20.00kgf)	
ZTA-500N	500N	500.0N(50.00kgf)	
ZTA-1000N	1000N	1000N/1.000kN(100.0kgf)	

※1 The model less than 5N can be displayed mN, the model more than 1000N can be displayed kN. Japanese domestic model does not indicate kgf and lb units.
 ※2 Maximum 100 data/sec capturing series of data with a USB flash drive.
 ※3 A USB flash drive and a linear scale consume more battery.
 Thus, when you combine ZTA with the USB flash drive or the linear scale, the battery runs out faster.
 ※4 A USB flash drive is not included.
 ※5 Please refer to Page 38 for the detail of accessory attachments.
 ©The weights are slightly different by the ranges.

ZTA series specifications

Accuracy	+/-0.2%F.S. +/-1 digit
Unit of measurement(※1)	N, kgf, lbf(※1)
Display	4-digit Organic EL
Sampling rate	2000Hz (2000 data / sec) at maximum
Function	Customized display (header and footer), Peak hold (tension and compression), Internal 1000 points data memory, Comparator (judgement of OK or NG), Reversible display, Sign inversion, Zero clear timer, +NG alarm, Off timer (auto power off), Dumping, Time display, 1st/2nd peak, Displacement detection at force peak value, Displacement zero reset at selected force
Output	USB, RS232C, +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(※2), Displacement(※3)
Operating environment	Temperature: 0 to +40 degree Celsius, Humidity: 20 to 80%RH
Battery	6.5 hours (2 hours full re-charging)
Accessory(※4)	Attachments (※5), AC adapter, Inspection certificate, CD driver (including simple software for data logging), USB cable, Carrying case, Adaptor for USB flash drive.

ZTA series (High Capacity Model) Next Series

- The load capacity ranges from 2500N to 5000N.
- This model has the same functions and performance as ZTA series basic model.



CE

ZTA (High capacity model) set

Compression and Tension Compatible Size: Approx. W83×D44.5×H221mm Weight: Approx. 1100g

High Capacity Model List

Model	Capacity	Display	Thread
ZTA-2500N	2500N (250kgf)	2500N/2.500kN (250.0kgf)	M10
ZTA-5000N	5000N (500kgf)	5000N/5.000kN (500.0kgf)	M10

- Check Force Transition on Graphs
Software Force Recorder — To Page 23~24
- Improve Measuring Repeatability
Test Stands — To Page 30
- Connect with External Devices
Cable Using Applications — To Page 26
- Analyze Force-Displacement Relation
Force-Displacement Analysis Unit — To Page 50
- Transmit Data Wirelessly
Wireless Unit WL01-ADP/WL01-USB — To Page 26

ZTA series (Separated Sensor Model) Next Series



CE

ZTA (Separated sensor model) set

Size (the indicator only): Approx. W75×D34×H188mm Weight (the indicator only): Approx. 490g

- It features an external sensor, which is ideal for installing into facilities or measuring under special circumstance.
- We offer a wide range of sensors such as waterproof, wide temperature range, pen shape, and more to meet your force measurement requirement.
 ※ Please select one load cell from page 19 to 21.
 ※ Sensor interchangeable model eZ-Connect(page 18) is recommended for those who change load cells.
- This model has the same functions and performance as ZTA series basic model. (Accuracy and testing direction is determined by the sensor combined with the indicator.)



- Check Force Transition on Graphs
Software Force Recorder — To Page 23~24
- Connect with External Devices
Cable Using Applications — To Page 26

Sensor separate type Model List (When selecting load cell DPU series)

Model	Capacity	Display	Thread
ZTA-DPU-2N	2N	2.000N (2000mN)	
ZTA-DPU-5N	5N	5.000N (5000mN)	
ZTA-DPU-10N	10N	10.00N	
ZTA-DPU-20N	20N	20.00N	
ZTA-DPU-50N	50N	50.00N	M5
ZTA-DPU-100N	100N	100.0N	
ZTA-DPU-200N	200N	200.0N	
ZTA-DPU-500N	500N	500.0N	

(When selecting load cell DPU series [High capacity model])

Model	Capacity	Display	Thread
ZTA-DPU-1000N	1000N	1000N (1.000kN)	
ZTA-DPU-2000N	2000N	2000N (2.000kN)	M10
ZTA-DPU-5000N	5000N	5000N (5.000kN)	
ZTA-DPU-10kN	10kN	10.00kN	M18/1.5 Digit:5 Range:5000
ZTA-DPU-20kN	20kN	20.00kN	

©Please refer to Page 19 for the detail of load cell DPU series.
 An example of separated sensor model combined with a load cell **ZTA-LM-500N** Load cell model
 ※In the case where you combine ZTA with a load cell, LM-500N Choose ZTS or ZTA

Advanced Measurement Examples using ZT series

Force Gauge

ZTS ZTA Separated Sensor

Motorized Test Stand

MX2 EMX MH2

+


Connecting them via Force Control Cable CB series, enables you to maximize the functions such as the following.

※Please contact us for the combinations. (Our service group: +81-(0)532-33-3288)

following functions

Preventing Overload

◎For reducing overload risks, a test stand stops when a force gauge senses too much force over its capacity.



STOP!

If the motorized stand goes beyond the overload value during its operation, it will not continue to operate.


※Not able to prevent overload in some cases.

Making Efficient

◎It automatically starts graphing and recording data.

※Graphing software is sold separately.

Automatically it starts graphing.



START!

Force Control Functions

◎Improve operating efficiency

- The force gauge automatically returns to starting point after reaching a pre-set force limit.
- It can change the test speed when a force gauge senses a set point. Using this function, you can move the force gauge quickly until it touches a test sample, which reduces the time taken for measurement.



For example, slow down when a force gauge detects 0.1N.

For example, pause for 60 seconds, applying 500N pressure constantly.

◎Suitable for pressure/endurance tests

- It can automatically regulate the load so as to be in a pre-set range for a pre-set time period, which is fit for pressure/endurance tests.



Affordable & Simple Type

DST Series

Covering measurement of low, medium force area, from 2N-1000N. It features simple functions and easy handling with light weight and compactness.

Ideal for hand use

- ◎Hand fitting design
It has an easy gripping shape.
- ◎Light weight
Approx. 460g, light enough to measure with one hand
- ◎Long lasting battery
Use up to 30 hours continuously (when backlight off).
- ◎USB power supply available
Charge it from a PC or mobile battery.

Easy data management on PC

- ◎Easy connection via USB
- ◎Data capture software (Force Logger) included
 - Transfer 10 data / second to PC
 - Automatic detection of max. and min. values
 - Can be saved in CSV format



▲ Supplied force acquiring software Force Logger



DST set

Easy quality control

- ◎Pass (OK) judgment function
Easy checking for defects (It indicates OK when a force is within acceptable range.)
- ◎Notice of calibration schedule
Set the calibration date and notify 30 days before the scheduled date
- ◎Overload alarm
Notify with a warning when the measured value approaches capacity

Compression / Tension compatible

□Size: Approx. W72 × D32 × H181mm
□Weight: Approx. 460g

Check force transition on graphs

Software ZLINK4 To Page 24

Apply Stable Force by Hand

Handle FOH-1 To Page 48
Hand Grip Belt HGB-1 To Page 48

■ Model table of DST series

Model	Capacity (N)	Display	Thread
DST-2N	2N	2.000N (2000mN)	M6
DST-5N	5N	5.000N (5000mN)	
DST-20N	20N	20.00N	
DST-50N	50N	50.00N	
DST-200N	200N	200.0N	
DST-500N	500N	500.0N	
DST-1000N	1000N	1000N (1.000kN)	

■ Specifications of DST series

Accuracy	+/-0.2%F.S.+/- 1 digit
Unit of measurement	N(mN/kN), kgf(g)/lbf (※1)
Display	4-digit
Sampling rate	1000Hz (1000 data / sec) at maximum
Battery	Approx. 30 hours (backlight off); Approx. 14 hours (backlight on) (4.5 hours full charge)
Power	Built-in Ni-MH battery, USB power supply (PC, mobile battery, AC adaptor)
Operating environment	Temperature: 0 - 40° C Humidity: 20 - 80% RH
Function	Peak hold (tension and compression)/Comparator (judgment of acceptance or rejection)/Setting sensitivity (3 levels)/Reversible display/Reversible symbols/Setting lock/Date time setting/Off timer/Calibration time notice
Output	USB/RS232C
Overload alarm	Advance notice alarm: Range 90% or above Overload warning (Alarm/Display): Range 110%
Accessory	Force Logger (Data capturing software)/USB cable/AC adaptor/Attachment (※2)/Carrying/Operation manual/Inspection certificate

※1 kN is available at 1000N, mN and gf are available at 2N and 5N ranges.
The available units are different from Japanese domestic model and international one.
※2 Please refer to Page 38 for the detail of accessory attachments.
◎Weight are slightly different by the ranges.
◎Specifications for international models only.
Specifications for Japanese domestic models vary on functions and performance.

Table of contents

Force Gauges and Related Items

Test stands

Attachments and Fixtures

Force Measurement Units/Simple Testers

High Repeatable Type for Handheld Use

DSV Series

Covering measurement of low, medium force area, from 2N-1000N.
Increase the reproducibility of measurements of hand-held, with warning function of posture change.



High-end model with a few additional functions while keeping the performance of DST series (Page 16)

Features of DSV Series

Increase repeatability

- Detection of posture change, notification by alarm (tilt alarm)
- Data record of posture change abnormalities

Higher operability

- Internal memory
Record 1000 data with date & time, and judgment results
- Continuous peak mode
Increase productivity of measurement by continuously acquiring peak value without button operation

Compression / Tension compatible

- Size: Approx. W72×D32×H181mm
- Weight: Approx. 460g

- Check force transition on graphs
Software ZLINK4 ————— To Page 24

- Improve Measuring Repeatability
Test Stand ————— To Page 30



DSV set

- Apply Stable Force by Hand
Handle FOH-1 ————— To Page 48
Hand Grip Belt HGB-1 ————— To Page 48

Model table of DSV series

Model	Capacity (N)	Display	Thread
DSV-2N	2N	2.000N(2000mN)	
DSV-5N	5N	5.000N(5000mN)	
DSV-20N	20N	20.00N	
DSV-50N	50N	50.00N	M5
DSV-200N	200N	200.0N	
DSV-500N	500N	500.0N	
DSV-1000N	1000N	1000N(1.000kN)	

Specifications of DSV series

Accuracy	+/-0.2%F.S.+/- 1 digit
Unit of measurement	N(mN/kN), kgf(g), lbf (※1)
Display	4-digit
Sampling rate	1000Hz (1000 data / sec) at maximum
Battery	Approx. 30 hours (backlight off); Approx. 14 hours (backlight on) (4.5 hours full charge)
Power	Built-in Ni-MH battery, USB power supply (PC, mobile battery, AC adaptor)
Operating environment	Temperature: 0 - 40° C Humidity: 20 - 80% RH
Function	Peak hold (tension and compression) / Comparator (judgment of acceptance or rejection) / Setting sensitivity (3 levels) / Reversible display / Reversible symbols / Setting lock / Date time setting / Off timer / Calibration time notice / B alarm / Continuous peak mode / Internal memory (1000 data)
Output	USB / RS232C
Overload alarm	Advance notice alarm: Range 90% or above Overload warning (Alarm/Display): Range 110%
Accessory	Force Logger (Data capturing software) / USB cable / AC adaptor / Attachment (※2) / Carrying / Operation manual / Inspection certificate

※1 kN is available at 1000N, mN and gf are available at 2N and 5N ranges.
The available units are different from Japanese domestic model and international one.
※2 Please refer to Page 38 for the detail of accessory attachments.
○Weight are slightly different by the ranges.
○Specifications for international models only.
○Specifications for Japanese domestic models vary on functions and performance.

Load Cells and Amplifiers

Load cells convert sensing force to electric signal. You need an amplifier to indicate the force value measured by load cells. They are ideal for built-in or use under unique environment such as dangerous / narrow / dusty, and the like.



eZ-Connect series



eZ-Connect series are...

- eZ-Connect is composed of an amplifier and load cells. Load cells can be replaced without additional adjustment.
 - Choose a load cell from page 19 to 21 to connect with the amplifier. Available load cells have a mark
 - Its overall accuracy is calculated as the total of the accuracy of the amplifier (+/- 0.2%F.S.) and a load cell connected with it.
 - We do not offer inspection certificate when we ship it out. Therefore, please calibrate it by yourself, or request calibration for each combination if needed (available at a charge).

[This is recommended in these cases below.]

Measure things from low load to high load.

Carry out different types of tests such as tension and torque.

Keep a spare load sensor to reduce risks in operation.

Models of load cells for eZ-Connect series

- Add "e" to model name of a load cell for eZ-Connect series as stated below.

Example Normal load cell: DPU-50N

Load cell for eZ-Connect series: eDPU-50N

Sensor Interchangeable Amplifier eZT

Precise

- Capture test data precisely due to its high sampling rate (Max.2000Hz).

Easy

- No additional adjustment is needed to replace load cells.

Multifunctional

- It has many useful functions such as OK/NG judgement, saving data in USB flash drive, and more.



- Size (Amplifier only) : Approx. W75×D34×H188mm
- Weight (Amplifier only) : Approx. 490g

- Check Force Transition on Graphs
Software Force Recorder ————— To Page 23-24
- Connect with External Devices
Cable Using Applications ————— To Page 26

- Connect with a Linear Scale
Built-in Linear Scale Unit ————— To Page 26
- Transmit Data Wirelessly
Wireless Unit WLO1-ADP/WLO1-USB ————— To Page 26

Desktop Amplifier FA Plus2 series



Accuracy

- High speed sampling :2000Hz
It shows force value precisely and even follows rapid force change due to its high sampling rate.

Connect with external equipment

- It can be used as a part of factory automation equipment using input and output signals.

- Its box-shaped design is ideal for integration into facilities.
- Its rich output functions allow easy connection to external devices such as PLC.



- Size: W151×D150×H90mm
- Weight: Approx. 1.1kg

This amplifier is available with all load cells from page 19 to 21 except SKM-1000N and eZ-Connect load cells.
Load cells can be replaced in the most cases although they need adjustments. However, some load cells are incompatible, and they cannot be combined with an amplifier. Please contact us for the details.

Model	FA Plus2	eFA Plus2
Features	Adjustment is required when change the load cell	Load cell interchangeable eZ-Connect series (no need for adjustment)
Unit of measurement	Depends on load cell and settings	Depends on load cell and settings
Display	(N, kN, kgf, lbf, N-m, N-cm, kgf-m, kgf-cm, lbf-in, ozf-in) (※1)	(N, kN, kgf, lbf, N-m, N-cm, kgf-m, kgf-cm, lbf-in, ozf-in) (※1)
Sampling rate	4-digit	4-digit
Sampling rate	2000 data / sec at maximum	2000 data / sec at maximum
Functions	Customized display (header and footer), Peak hold (tension and compression), Comparator (judgment of OK or NG), Display of AD value, Reversible display, Zero clear timer, +NG alarm, Off timer (auto power off), Dumping, Time display, 1st/2nd peak, Displacement detection at force peak value, Displacement zero reset at selected force, setting lock	Customized display (header and footer), Peak hold (tension and compression), Comparator (judgment of OK or NG), Display of AD value, Reversible display, Zero clear timer, +NG alarm, Off timer (auto power off), Dumping, Time display, 1st/2nd peak, Displacement detection at force peak value, Displacement zero reset at selected force, setting lock
Output	RS232C (baud rate available from 57600bps to 9600bps), USB, ±2 VDC analog output (I/V), Comparator 3 steps (-NG/OK/+NG), Overload alarm, Sub comparator 2 steps (output of large or small judgment), USB flash drive, Displacement	RS232C (baud rate available from 57600bps to 9600bps), USB, ±2 VDC analog output (I/V), Comparator 3 steps (-NG/OK/+NG), Overload alarm, Sub comparator 2 steps (output of large or small judgment), USB flash drive, Displacement
Accessories	AC adaptor (only for standard model), Force Logger (software for data logging), USB cable, Adaptor for USB flash drive (※2), Instruction manual	AC adaptor (only for standard model), Force Logger (software for data logging), USB cable, Adaptor for USB flash drive (※2), Instruction manual

※1 The available units are different from Japanese domestic model and international one.
※2 USB flash drive is not included.

Load Cells

<p>for Compression and Tension</p> <p>Standard Type DPU</p> <p>Easy built-in shape to external equipment.</p>  <p>It measures force by mounting an attachment on the thread (the male screw part).</p> <table border="1"> <tr><td>Capacity</td><td>2N~500N</td></tr> <tr><td>Accuracy</td><td>+0.2%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. W65xO21xH17~W72xO21xH13mm</td></tr> <tr><td>Cable Length</td><td>Approx. 2m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>DPU-2N</td><td>2N</td><td rowspan="6">Male Screw M6P1.0</td></tr> <tr><td>DPU-5N</td><td>5N</td></tr> <tr><td>DPU-10N</td><td>10N</td></tr> <tr><td>DPU-20N</td><td>20N</td></tr> <tr><td>DPU-50N</td><td>50N</td></tr> <tr><td>DPU-100N</td><td>100N</td></tr> <tr><td>DPU-200N</td><td>200N</td></tr> <tr><td>DPU-500N</td><td>500N</td></tr> </table>	Capacity	2N~500N	Accuracy	+0.2%F.S. or less	Size	Approx. W65xO21xH17~W72xO21xH13mm	Cable Length	Approx. 2m	Model	Capacity	Thread	DPU-2N	2N	Male Screw M6P1.0	DPU-5N	5N	DPU-10N	10N	DPU-20N	20N	DPU-50N	50N	DPU-100N	100N	DPU-200N	200N	DPU-500N	500N	<p>for Compression and Tension</p> <p>High Capacity Type DPU</p> <p>Easy built-in shape to external equipment.</p>  <p>It measures force by mounting an attachment on the thread (the male screw part).</p> <table border="1"> <tr><td>Capacity</td><td>1000N~20kN</td></tr> <tr><td>Accuracy</td><td>+0.2%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. W65xO26xH13~W85xO42xH15mm</td></tr> <tr><td>Cable Length</td><td>Approx. 3m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>DPU-1000N</td><td>1000N</td><td rowspan="8">Male Screw M10P1.5</td></tr> <tr><td>DPU-2000N</td><td>2000N</td></tr> <tr><td>DPU-5000N</td><td>5000N</td></tr> <tr><td>DPU-10kN</td><td>10kN</td></tr> <tr><td>DPU-20kN</td><td>20kN</td></tr> <tr><td colspan="3">※1 A female screw M12 P1.75 is available by removing the measuring shaft.</td></tr> <tr><td colspan="3">※2 DPU-10kN/20kN equips a female screw M18 P1.5. The measuring shaft is separately sold.</td></tr> </table>	Capacity	1000N~20kN	Accuracy	+0.2%F.S. or less	Size	Approx. W65xO26xH13~W85xO42xH15mm	Cable Length	Approx. 3m	Model	Capacity	Thread	DPU-1000N	1000N	Male Screw M10P1.5	DPU-2000N	2000N	DPU-5000N	5000N	DPU-10kN	10kN	DPU-20kN	20kN	※1 A female screw M12 P1.75 is available by removing the measuring shaft.			※2 DPU-10kN/20kN equips a female screw M18 P1.5. The measuring shaft is separately sold.			<p>for Compression and Tension</p> <p>Waterproof and Dust-proof Type SW1</p> <p>Able to connect samples to the two sides of the sensor.</p>  <p>Fix it with female screws or connect it to female screws to connect it to measure force.</p> <table border="1"> <tr><td>Capacity</td><td>100~5000N</td></tr> <tr><td>Accuracy</td><td>+0.5%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. W40xO20xH40mm</td></tr> <tr><td>Cable Length</td><td>Approx. 0.5~2m (Curl cable)</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>SW1-100N</td><td>100N</td><td rowspan="8">Female Screw M6P1.0</td></tr> <tr><td>SW1-200N</td><td>200N</td></tr> <tr><td>SW1-500N</td><td>500N</td></tr> <tr><td>SW1-1000N</td><td>1000N</td></tr> <tr><td>SW1-2000N</td><td>2000N</td></tr> <tr><td>SW1-5000N</td><td>5000N</td></tr> <tr><td colspan="3">※Please contact us if the users need the male thread.</td></tr> </table>	Capacity	100~5000N	Accuracy	+0.5%F.S. or less	Size	Approx. W40xO20xH40mm	Cable Length	Approx. 0.5~2m (Curl cable)	Model	Capacity	Thread	SW1-100N	100N	Female Screw M6P1.0	SW1-200N	200N	SW1-500N	500N	SW1-1000N	1000N	SW1-2000N	2000N	SW1-5000N	5000N	※Please contact us if the users need the male thread.			<p>for Compression and Tension</p> <p>Waterproof and Dust-proof Type SW3</p> <p>Able to connect samples to the two sides of the sensor.</p>  <p>Fix it with female screws or connect it to eye bolts to measure force.</p> <table border="1"> <tr><td>Capacity</td><td>10kN~20kN</td></tr> <tr><td>Accuracy</td><td>+0.5%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. W80xO25xH80mm</td></tr> <tr><td>Cable Length</td><td>Approx. 5m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>SW3-10kN</td><td>10kN</td><td rowspan="2">Female Screw M16P2.0</td></tr> <tr><td>SW3-20kN</td><td>20kN</td></tr> <tr><td colspan="3">※Please contact us if the users need the male thread.</td></tr> </table>	Capacity	10kN~20kN	Accuracy	+0.5%F.S. or less	Size	Approx. W80xO25xH80mm	Cable Length	Approx. 5m	Model	Capacity	Thread	SW3-10kN	10kN	Female Screw M16P2.0	SW3-20kN	20kN	※Please contact us if the users need the male thread.		
Capacity	2N~500N																																																																																																								
Accuracy	+0.2%F.S. or less																																																																																																								
Size	Approx. W65xO21xH17~W72xO21xH13mm																																																																																																								
Cable Length	Approx. 2m																																																																																																								
Model	Capacity	Thread																																																																																																							
DPU-2N	2N	Male Screw M6P1.0																																																																																																							
DPU-5N	5N																																																																																																								
DPU-10N	10N																																																																																																								
DPU-20N	20N																																																																																																								
DPU-50N	50N																																																																																																								
DPU-100N	100N																																																																																																								
DPU-200N	200N																																																																																																								
DPU-500N	500N																																																																																																								
Capacity	1000N~20kN																																																																																																								
Accuracy	+0.2%F.S. or less																																																																																																								
Size	Approx. W65xO26xH13~W85xO42xH15mm																																																																																																								
Cable Length	Approx. 3m																																																																																																								
Model	Capacity	Thread																																																																																																							
DPU-1000N	1000N	Male Screw M10P1.5																																																																																																							
DPU-2000N	2000N																																																																																																								
DPU-5000N	5000N																																																																																																								
DPU-10kN	10kN																																																																																																								
DPU-20kN	20kN																																																																																																								
※1 A female screw M12 P1.75 is available by removing the measuring shaft.																																																																																																									
※2 DPU-10kN/20kN equips a female screw M18 P1.5. The measuring shaft is separately sold.																																																																																																									
Capacity	100~5000N																																																																																																								
Accuracy	+0.5%F.S. or less																																																																																																								
Size	Approx. W40xO20xH40mm																																																																																																								
Cable Length	Approx. 0.5~2m (Curl cable)																																																																																																								
Model	Capacity	Thread																																																																																																							
SW1-100N	100N	Female Screw M6P1.0																																																																																																							
SW1-200N	200N																																																																																																								
SW1-500N	500N																																																																																																								
SW1-1000N	1000N																																																																																																								
SW1-2000N	2000N																																																																																																								
SW1-5000N	5000N																																																																																																								
※Please contact us if the users need the male thread.																																																																																																									
Capacity	10kN~20kN																																																																																																								
Accuracy	+0.5%F.S. or less																																																																																																								
Size	Approx. W80xO25xH80mm																																																																																																								
Cable Length	Approx. 5m																																																																																																								
Model	Capacity	Thread																																																																																																							
SW3-10kN	10kN	Female Screw M16P2.0																																																																																																							
SW3-20kN	20kN																																																																																																								
※Please contact us if the users need the male thread.																																																																																																									
<p>for Compression and Tension</p> <p>Extra Small Type SCX</p> <p>Suitable for measurement where access is limited due to the extra compact body.</p>  <p>It measures force by mounted to equipment with female threads.</p> <table border="1"> <tr><td>Capacity</td><td>100N~2000N</td></tr> <tr><td>Accuracy</td><td>+1.0%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. W16xO12xH19.1mm</td></tr> <tr><td>Cable Length</td><td>Approx. 3m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>SCX-100N</td><td>100N</td><td rowspan="4">Female Screw M6</td></tr> <tr><td>SCX-200N</td><td>200N</td></tr> <tr><td>SCX-500N</td><td>500N</td></tr> <tr><td>SCX-2000N</td><td>2000N</td></tr> </table>	Capacity	100N~2000N	Accuracy	+1.0%F.S. or less	Size	Approx. W16xO12xH19.1mm	Cable Length	Approx. 3m	Model	Capacity	Thread	SCX-100N	100N	Female Screw M6	SCX-200N	200N	SCX-500N	500N	SCX-2000N	2000N	<p>for Compression and Tension</p> <p>Extra Small Type LMU</p> <p>Sensor part diameter is Approx. φ18mm.</p>  <p>It measures force by mounting an attachment on the thread (the male screw part).</p> <table border="1"> <tr><td>Capacity</td><td>50~500N</td></tr> <tr><td>Accuracy</td><td>+1.0%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. φ18xH25mm</td></tr> <tr><td>Cable Length</td><td>Approx. 2m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>LMU-50N</td><td>50N</td><td rowspan="5">Male Screw M6P0.8</td></tr> <tr><td>LMU-100N</td><td>100N</td></tr> <tr><td>LMU-200N</td><td>200N</td></tr> <tr><td>LMU-500N</td><td>500N</td></tr> <tr><td colspan="3">※1 Conversion adaptor CA-F5T6 (Page 48) is required when M6 screw attachments mounting on the load cell.</td></tr> </table>	Capacity	50~500N	Accuracy	+1.0%F.S. or less	Size	Approx. φ18xH25mm	Cable Length	Approx. 2m	Model	Capacity	Thread	LMU-50N	50N	Male Screw M6P0.8	LMU-100N	100N	LMU-200N	200N	LMU-500N	500N	※1 Conversion adaptor CA-F5T6 (Page 48) is required when M6 screw attachments mounting on the load cell.			<p>for Compression and Tension</p> <p>Small Type LU</p> <p>Able to connect samples to the two sides of the sensor.</p>  <p>Fix it with female screws or connect it to eye bolts to measure force.</p> <table border="1"> <tr><td>Capacity</td><td>50~2000N</td></tr> <tr><td>Accuracy</td><td>+1.0%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. φ28xH35mm</td></tr> <tr><td>Cable Length</td><td>Approx. 3m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>LU-50N</td><td>50N</td><td rowspan="6">Female Screw M6P1.25</td></tr> <tr><td>LU-100N</td><td>100N</td></tr> <tr><td>LU-200N</td><td>200N</td></tr> <tr><td>LU-500N</td><td>500N</td></tr> <tr><td>LU-1000N</td><td>1000N</td></tr> <tr><td>LU-2000N</td><td>2000N</td></tr> <tr><td colspan="3">Conversion adaptor CA-B16 (for M6 screw)/CA-B110 (for M10 screw) (Page 48) is required when M6/M10 screw attachments mounting on the load cell.</td></tr> </table>	Capacity	50~2000N	Accuracy	+1.0%F.S. or less	Size	Approx. φ28xH35mm	Cable Length	Approx. 3m	Model	Capacity	Thread	LU-50N	50N	Female Screw M6P1.25	LU-100N	100N	LU-200N	200N	LU-500N	500N	LU-1000N	1000N	LU-2000N	2000N	Conversion adaptor CA-B16 (for M6 screw)/CA-B110 (for M10 screw) (Page 48) is required when M6/M10 screw attachments mounting on the load cell.			<p>for Compression and Tension</p> <p>Pen Type PN-50N</p> <p>Ideal for touching force measurements such as small manipulation force.</p>  <p>It measures force by mounting an attachment on the thread (the male screw part).</p> <table border="1"> <tr><td>Capacity</td><td>50N</td></tr> <tr><td>Accuracy</td><td>+2.0%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. φ20xH90mm</td></tr> <tr><td>Cable Length</td><td>Approx. 2m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>PN-50N</td><td>50N</td><td>M6P1.0</td></tr> </table>	Capacity	50N	Accuracy	+2.0%F.S. or less	Size	Approx. φ20xH90mm	Cable Length	Approx. 2m	Model	Capacity	Thread	PN-50N	50N	M6P1.0																		
Capacity	100N~2000N																																																																																																								
Accuracy	+1.0%F.S. or less																																																																																																								
Size	Approx. W16xO12xH19.1mm																																																																																																								
Cable Length	Approx. 3m																																																																																																								
Model	Capacity	Thread																																																																																																							
SCX-100N	100N	Female Screw M6																																																																																																							
SCX-200N	200N																																																																																																								
SCX-500N	500N																																																																																																								
SCX-2000N	2000N																																																																																																								
Capacity	50~500N																																																																																																								
Accuracy	+1.0%F.S. or less																																																																																																								
Size	Approx. φ18xH25mm																																																																																																								
Cable Length	Approx. 2m																																																																																																								
Model	Capacity	Thread																																																																																																							
LMU-50N	50N	Male Screw M6P0.8																																																																																																							
LMU-100N	100N																																																																																																								
LMU-200N	200N																																																																																																								
LMU-500N	500N																																																																																																								
※1 Conversion adaptor CA-F5T6 (Page 48) is required when M6 screw attachments mounting on the load cell.																																																																																																									
Capacity	50~2000N																																																																																																								
Accuracy	+1.0%F.S. or less																																																																																																								
Size	Approx. φ28xH35mm																																																																																																								
Cable Length	Approx. 3m																																																																																																								
Model	Capacity	Thread																																																																																																							
LU-50N	50N	Female Screw M6P1.25																																																																																																							
LU-100N	100N																																																																																																								
LU-200N	200N																																																																																																								
LU-500N	500N																																																																																																								
LU-1000N	1000N																																																																																																								
LU-2000N	2000N																																																																																																								
Conversion adaptor CA-B16 (for M6 screw)/CA-B110 (for M10 screw) (Page 48) is required when M6/M10 screw attachments mounting on the load cell.																																																																																																									
Capacity	50N																																																																																																								
Accuracy	+2.0%F.S. or less																																																																																																								
Size	Approx. φ20xH90mm																																																																																																								
Cable Length	Approx. 2m																																																																																																								
Model	Capacity	Thread																																																																																																							
PN-50N	50N	M6P1.0																																																																																																							

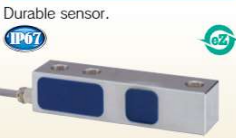
<p>for Compression</p> <p>Standard Type LM</p> <p>It can be inserted in narrow spaces due to the coin shape.</p>  <p>It measures force by applying compression on the top of projection.</p> <table border="1"> <tr><td>Capacity</td><td>10N~20kN</td></tr> <tr><td>Accuracy</td><td>10N~10kN: ±2.0%F.S. or less 20kN: ±3.5%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. φ120I4~φ210xH10mm</td></tr> <tr><td>Cable Length</td><td>10N~2000N: Approx. 2m 5000N~20kN: Approx. 3m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th></tr> <tr><td>LM-10N</td><td>10N</td></tr> <tr><td>LM-20N</td><td>20N</td></tr> <tr><td>LM-50N</td><td>50N</td></tr> <tr><td>LM-100N</td><td>100N</td></tr> <tr><td>LM-200N</td><td>200N</td></tr> <tr><td>LM-500N</td><td>500N</td></tr> <tr><td>LM-1000N</td><td>1000N</td></tr> <tr><td>LM-2000N</td><td>2000N</td></tr> <tr><td>LM-5000N</td><td>5000N</td></tr> <tr><td>LM-10kN</td><td>10kN</td></tr> <tr><td>LM-20kN</td><td>20kN</td></tr> </table>	Capacity	10N~20kN	Accuracy	10N~10kN: ±2.0%F.S. or less 20kN: ±3.5%F.S. or less	Size	Approx. φ120I4~φ210xH10mm	Cable Length	10N~2000N: Approx. 2m 5000N~20kN: Approx. 3m	Model	Capacity	LM-10N	10N	LM-20N	20N	LM-50N	50N	LM-100N	100N	LM-200N	200N	LM-500N	500N	LM-1000N	1000N	LM-2000N	2000N	LM-5000N	5000N	LM-10kN	10kN	LM-20kN	20kN	<p>for Compression</p> <p>High Accuracy Type LC</p> <p>High accuracy model.</p>  <p>It measures force by applying compression on the top of projection.</p> <table border="1"> <tr><td>Capacity</td><td>500N~20kN</td></tr> <tr><td>Accuracy</td><td>+0.5%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. φ50xH25mm</td></tr> <tr><td>Cable Length</td><td>Approx. 5m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th></tr> <tr><td>LC-500N</td><td>500N</td></tr> <tr><td>LC-1000N</td><td>1000N</td></tr> <tr><td>LC-2000N</td><td>2000N</td></tr> <tr><td>LC-5000N</td><td>5000N</td></tr> <tr><td>LC-10kN</td><td>10kN</td></tr> <tr><td>LC-20kN</td><td>20kN</td></tr> </table>	Capacity	500N~20kN	Accuracy	+0.5%F.S. or less	Size	Approx. φ50xH25mm	Cable Length	Approx. 5m	Model	Capacity	LC-500N	500N	LC-1000N	1000N	LC-2000N	2000N	LC-5000N	5000N	LC-10kN	10kN	LC-20kN	20kN	<p>for Compression</p> <p>Extra Small and Flat Type CFX</p> <p>Extra small load cell with the large load-bearing area.</p>  <p>It measures force by applying compression on the flat sensor area.</p> <table border="1"> <tr><td>Capacity</td><td>20N~200N</td></tr> <tr><td>Accuracy</td><td>+1.0%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. φ15xH9mm</td></tr> <tr><td>Cable Length</td><td>Approx. 3m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>CFX-20N</td><td>20N</td><td rowspan="3">Female Screw M2</td></tr> <tr><td>CFX-50N</td><td>50N</td></tr> <tr><td>CFX-200N</td><td>200N</td></tr> </table>	Capacity	20N~200N	Accuracy	+1.0%F.S. or less	Size	Approx. φ15xH9mm	Cable Length	Approx. 3m	Model	Capacity	Thread	CFX-20N	20N	Female Screw M2	CFX-50N	50N	CFX-200N	200N	<p>for Compression</p> <p>Thin and Flat Type CLFX</p> <p>Able to insert in narrow space due to the extra thin body.</p>  <p>It measures force by applying compression on the flat sensor area.</p> <table border="1"> <tr><td>Capacity</td><td>50N~5000N</td></tr> <tr><td>Accuracy</td><td>+2.0%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. φ20xH6mm</td></tr> <tr><td>Cable Length</td><td>Approx. 3m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>CLFX-50N</td><td>20N</td><td rowspan="2">Female Screw M2</td></tr> <tr><td>CLFX-500N</td><td>500N</td></tr> </table>	Capacity	50N~5000N	Accuracy	+2.0%F.S. or less	Size	Approx. φ20xH6mm	Cable Length	Approx. 3m	Model	Capacity	Thread	CLFX-50N	20N	Female Screw M2	CLFX-500N	500N
Capacity	10N~20kN																																																																																										
Accuracy	10N~10kN: ±2.0%F.S. or less 20kN: ±3.5%F.S. or less																																																																																										
Size	Approx. φ120I4~φ210xH10mm																																																																																										
Cable Length	10N~2000N: Approx. 2m 5000N~20kN: Approx. 3m																																																																																										
Model	Capacity																																																																																										
LM-10N	10N																																																																																										
LM-20N	20N																																																																																										
LM-50N	50N																																																																																										
LM-100N	100N																																																																																										
LM-200N	200N																																																																																										
LM-500N	500N																																																																																										
LM-1000N	1000N																																																																																										
LM-2000N	2000N																																																																																										
LM-5000N	5000N																																																																																										
LM-10kN	10kN																																																																																										
LM-20kN	20kN																																																																																										
Capacity	500N~20kN																																																																																										
Accuracy	+0.5%F.S. or less																																																																																										
Size	Approx. φ50xH25mm																																																																																										
Cable Length	Approx. 5m																																																																																										
Model	Capacity																																																																																										
LC-500N	500N																																																																																										
LC-1000N	1000N																																																																																										
LC-2000N	2000N																																																																																										
LC-5000N	5000N																																																																																										
LC-10kN	10kN																																																																																										
LC-20kN	20kN																																																																																										
Capacity	20N~200N																																																																																										
Accuracy	+1.0%F.S. or less																																																																																										
Size	Approx. φ15xH9mm																																																																																										
Cable Length	Approx. 3m																																																																																										
Model	Capacity	Thread																																																																																									
CFX-20N	20N	Female Screw M2																																																																																									
CFX-50N	50N																																																																																										
CFX-200N	200N																																																																																										
Capacity	50N~5000N																																																																																										
Accuracy	+2.0%F.S. or less																																																																																										
Size	Approx. φ20xH6mm																																																																																										
Cable Length	Approx. 3m																																																																																										
Model	Capacity	Thread																																																																																									
CLFX-50N	20N	Female Screw M2																																																																																									
CLFX-500N	500N																																																																																										
<p>for Compression</p> <p>Washer Type CHX</p> <p>Ideal for press-fit force measurement due to the washer (through hole) design.</p>  <p>It measures press-fit force by pushing in a rod-shaped sample through a part.</p> <table border="1"> <tr><td>Capacity</td><td>100N~2000N</td></tr> <tr><td>Accuracy</td><td>100~500N: ±2.0%F.S. or less 2000N: ±1.0%F.S. or less</td></tr> <tr><td>Size</td><td>100~500N: Approx. φ25xH17.1mm 2000N: Approx. φ30xH14mm</td></tr> <tr><td>Cable Length</td><td>Approx. 3m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th></tr> <tr><td>CHX-100N</td><td>100N</td></tr> <tr><td>CHX-500N</td><td>500N</td></tr> <tr><td>CHX-2000N</td><td>2000N</td></tr> </table>	Capacity	100N~2000N	Accuracy	100~500N: ±2.0%F.S. or less 2000N: ±1.0%F.S. or less	Size	100~500N: Approx. φ25xH17.1mm 2000N: Approx. φ30xH14mm	Cable Length	Approx. 3m	Model	Capacity	CHX-100N	100N	CHX-500N	500N	CHX-2000N	2000N	<p>for Compression</p> <p>High Capacity Type DD2</p> <p>High accuracy model. Available for high capacity measurement.</p>  <p>It measures force by applying compression on the top of projection.</p> <table border="1"> <tr><td>Capacity</td><td>5000N~20kN</td></tr> <tr><td>Accuracy</td><td>+0.5%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. φ94xH48mm</td></tr> <tr><td>Cable Length</td><td>Approx. 5m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th></tr> <tr><td>DD2-5000N</td><td>5000N</td></tr> <tr><td>DD2-10kN</td><td>10kN</td></tr> <tr><td>DD2-20kN</td><td>20kN</td></tr> </table>	Capacity	5000N~20kN	Accuracy	+0.5%F.S. or less	Size	Approx. φ94xH48mm	Cable Length	Approx. 5m	Model	Capacity	DD2-5000N	5000N	DD2-10kN	10kN	DD2-20kN	20kN	<p>for Compression</p> <p>Wide Temperature Range Type LMT-1000N</p> <p>It can be used in temperatures between -40 degrees Celsius and +130 degrees Celsius.</p>  <p>It measures force by applying compression on the top of projection.</p> <table border="1"> <tr><td>Capacity</td><td>1000N</td></tr> <tr><td>Accuracy</td><td>+1.0%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. φ14xH4.3mm</td></tr> <tr><td>Cable Length</td><td>Approx. 2m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th></tr> <tr><td>LMT-1000N</td><td>1000N</td></tr> </table>	Capacity	1000N	Accuracy	+1.0%F.S. or less	Size	Approx. φ14xH4.3mm	Cable Length	Approx. 2m	Model	Capacity	LMT-1000N	1000N	<p>for Compression or Tension</p> <p>High Capacity ZD</p> <p>Small-size sensor in capacity from 1000N up to 20kN.</p>  <p>It measures force by mounting an attachment on the thread (the male screw part).</p> <table border="1"> <tr><td>Capacity</td><td>1000N~20kN</td></tr> <tr><td>Accuracy</td><td>+0.5%F.S. or less</td></tr> <tr><td>Size</td><td>Approx. W90xO30xH44~W110xO60x46mm</td></tr> <tr><td>Cable Length</td><td>Approx. 3m</td></tr> </table> <table border="1"> <tr><th>Model</th><th>Capacity</th><th>Thread</th></tr> <tr><td>ZD1-1000N</td><td>1000N</td><td rowspan="7">Male Screw M12P1.75</td></tr> <tr><td>ZD1-2000N</td><td>2000N</td></tr> <tr><td>ZD1-5000N</td><td>5000N</td></tr> <tr><td>ZD1-10kN</td><td>10kN</td></tr> <tr><td>ZD2-20kN</td><td>20kN</td></tr> <tr><td colspan="3">※Please choose tension or compression</td></tr> </table>	Capacity	1000N~20kN	Accuracy	+0.5%F.S. or less	Size	Approx. W90xO30xH44~W110xO60x46mm	Cable Length	Approx. 3m	Model	Capacity	Thread	ZD1-1000N	1000N	Male Screw M12P1.75	ZD1-2000N	2000N	ZD1-5000N	5000N	ZD1-10kN	10kN	ZD2-20kN	20kN	※Please choose tension or compression																					
Capacity	100N~2000N																																																																																										
Accuracy	100~500N: ±2.0%F.S. or less 2000N: ±1.0%F.S. or less																																																																																										
Size	100~500N: Approx. φ25xH17.1mm 2000N: Approx. φ30xH14mm																																																																																										
Cable Length	Approx. 3m																																																																																										
Model	Capacity																																																																																										
CHX-100N	100N																																																																																										
CHX-500N	500N																																																																																										
CHX-2000N	2000N																																																																																										
Capacity	5000N~20kN																																																																																										
Accuracy	+0.5%F.S. or less																																																																																										
Size	Approx. φ94xH48mm																																																																																										
Cable Length	Approx. 5m																																																																																										
Model	Capacity																																																																																										
DD2-5000N	5000N																																																																																										
DD2-10kN	10kN																																																																																										
DD2-20kN	20kN																																																																																										
Capacity	1000N																																																																																										
Accuracy	+1.0%F.S. or less																																																																																										
Size	Approx. φ14xH4.3mm																																																																																										
Cable Length	Approx. 2m																																																																																										
Model	Capacity																																																																																										
LMT-1000N	1000N																																																																																										
Capacity	1000N~20kN																																																																																										
Accuracy	+0.5%F.S. or less																																																																																										
Size	Approx. W90xO30xH44~W110xO60x46mm																																																																																										
Cable Length	Approx. 3m																																																																																										
Model	Capacity	Thread																																																																																									
ZD1-1000N	1000N	Male Screw M12P1.75																																																																																									
ZD1-2000N	2000N																																																																																										
ZD1-5000N	5000N																																																																																										
ZD1-10kN	10kN																																																																																										
ZD2-20kN	20kN																																																																																										
※Please choose tension or compression																																																																																											

※Load cells with the mark (eZ) can be combined with eZ-Connect series. eZ-Connect series are comprised of a sensor interchangeable amplifier and a load cell. Put "e" at the head of a load cell model for eZ-Connect to tell it apart from normal model. Please see the page 18 for the details.

Load Cells

for Compression or Tension

High Accuracy Type SK



Durable sensor.
Mount metal fittings in 3 holes as required.

Capacity	2000N~20kN
Accuracy	±0.25%F.S. or less
Size	Approx. W130XD30XH130mm
Cable Length	Approx. 5m
Model	Capacity
SK-2000N	2000N
SK-5000N	5000N
SK-10kN	10kN
SK-20kN	20kN

for Tension

High Capacity Type ZU



Two rod ends are included. Small-size sensor in capacity from 10kN up to 20kN.

Capacity	10kN~20kN
Accuracy	±1.0%F.S. or less
Size	Approx. φ30xL120~φ39xL234mm
Cable Length	Approx. 5m
Model	Capacity
ZU-10kN	10kN
ZU-20kN	20kN

for Tension

Crane Scale Type ZW1-10kN



A hook is included. Light weight and user-friendly.

Capacity	10kN
Accuracy	±1.0%F.S. or less
Size	Approx. W79×L250
Cable Length	Approx. 0.5~2m (Curl cable)
Model	Capacity
ZW1-10kN	10kN

Special Use Load Cell

Door Tester DM-2000N



Exclusively for measuring closing force of automatic doors and revolving doors.

Capacity	2000N
Accuracy	±2.0%F.S. or less
Size	Approx. W94XD66XH138mm
Cable Length	Approx. 2m
Model	Capacity
DM-2000N	2000N

Complies with the corresponding part of BS EN 12453 (2017) "Industrial, commercial and garage doors and gates - safety use of power operated doors - requirements and test methods", JIS A 4722 (2017) "Power operated pedestrian doorsets - Safety"

Special Use Load Cell

Closing Force of Car Windows SKM-1000N



Exclusively for automatic closing force of car windows.

Capacity	1000N
Accuracy	±1.0%F.S. or less
Size	Approx. W70XD50XH132mm
Cable Length	Approx. 200mm (Flexible arm)
Model	Capacity
SKM-1000N	1000N

This product is united to the indicator. The united model: ZTS-SKM-1000N/ZTA-SKM-1000N

Special Use Load Cell

Handbrakes Force of Two-Wheelers PK1-500N



Exclusively for gripping hand breaks force of two-wheelers.

Capacity	500N
Accuracy	±1.0%F.S. or less
Size	Approx. W100XD25XH124mm
Cable Length	Approx. 1.5m
Model	Capacity
PK1-500N	500N

Special Use Load Cell

Foot Brakes Force of Cars PK2-1500N



Exclusively for stepping foot brakes of cars.

Capacity	1500N
Accuracy	±1.0%F.S. or less
Size	Approx. W50XD70XH128mm
Cable Length	Approx. 1.5m
Model	Capacity
PK2-1500N	1500N

For Torque (only for eZ-connect)

Torque Load Cell eHT series



It measures torque using optional attachments such as pin chuck, socket holder, torque driver etc. Please see another torque catalog for the details of the attachments.

Capacity	0.5N-m~10N-m
Accuracy	±0.5%F.S. or less
Size	Approx. φ38×L39mm
Cable Length	Approx. 0.5~1m (curl cable)
Model	Capacity
eHT-0.5N	0.5N-cm (≈1)
eHT-2N	2N-m (200N-cm)
eHT-5N	5N-m (500N-cm)
eHT-10N	10N-m (1000N-cm)

※1 Displayed unit is "N-cm" only.
※You can switch N(m) to kgf-m(kgf-cm) or lbf-in(oz-in).

For Torque (only for eZ-connect)

Flange type Torque Load Cell eTFX



It measures turning/twisting force.

Capacity	5N-m~10N-m
Accuracy	±1.0%F.S. or less
Size	Approx. φ35×28mm
Cable Length	Approx. 2m
Model	Capacity
eTFX-5N	5N-m (500N-cm)
eTFX-10N	10N-m (1000N-cm)

What is IP?

IP (International Protection) is a standard which is based on IEC Standard 529 for solid foreign materials, electric devices for water and cabinet.

- (Explanation of the IP code)
- IP 6 7** Protected from immersion in water under the specified time and water pressure (depth).
 - IP 6 5** Protected against water jets from any direction.
 - IP 6 4** Protected against water splashed from any direction.
- : Protection rating against solid foreign objects
○ : Protection rating against water
- (Some IMADA load cells are rated with IP67 /65/ 64.)
- Only the load cell part is rated with IP. Its amplifier (indicator), connecting parts, and connector parts do not comply with IP.

Custom Order Examples

[Example: Extend the length of a cable]
We can extend the length of a cable for gauge-PC connection or loadcell-amplifier connection.

[Example: Enhance flexibility of a cable]
We can offer high-flex cable to reduce risks of disconnection. ※We cannot offer it in some cases. Contact us for further information.

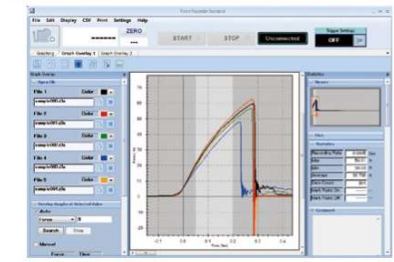
※Load cells with the mark (eZ) can be combined with eZ-Connect series. eZ-Connect series are comprised of a sensor interchangeable amplifier and a load cell. Put "e" at the head of a load cell model for eZ-Connect to tell it apart from normal model. Please see the page 18 for the details.

Data Collection and Analysis Software

Force transition can be graphically confirmed in real time by connecting force gauge and PC via USB cable. Software allows easy data management and analysis.

Advantage of Using The Software

Transfer data from a force gauge to a PC in real time via a cable. It shows test data graphically on a PC, and force transition can be confirmed visually. Moreover, it automatically calculates the statistics and stores recorded data, enabling you to manage data with ease.



※All software is available in English and Japanese by language setting.

Software Lists

CD	Name of software	Purpose	Compatible model	Connecting port	Main data capturing rate
	Force Recorder Light	for drawing Force-Time Graph This software is moderate-priced edition.	ZTS To Page 11, ZTA To Page 13, ZTA To Page 18, FA Plus2 To Page 18, HTCS/HTCA/TFX See a torque catalog, DTXS/DTXA See a torque catalog	USB	Max. 2000Hz
	Force Recorder Standard	for drawing Force-Time Graph	ZTS To Page 11, ZTA To Page 13, ZTA To Page 18, FA Plus2 To Page 18, HTCS/HTCA/TFX See a torque catalog, DTXS/DTXA See a torque catalog	USB	Max. 2000Hz
	Force Recorder Professional	for drawing Force-Displacement Graph	ZTA To Page 13, ZTA To Page 18, FA Plus2 To Page 18, HTCA/TFX See a torque catalog, DTXS/DTXA See a torque catalog	USB	Max. 2000Hz
	Force Recorder Plus	for drawing Force-Time Graph up to 4 force gauges.	ZTS To Page 11, ZTA To Page 13, ZTA To Page 18, FA Plus2 To Page 18, HTCS/HTCA/TFX See a torque catalog, DTXS/DTXA See a torque catalog	USB	Max. 1000Hz
	Force Logger Plus	for acquiring data from up to 4 force gauges ※Not available for drawing a graph	ZTS To Page 11, ZTA To Page 13, ZTA To Page 18, FA Plus2 To Page 18, DSW To Page 16 To Page 17, See a torque catalog, DTXS/DTXA See a torque catalog	USB	Max. 10Hz
	ZLINK4	for drawing Force-Time Graph	ZTS To Page 11, ZTA To Page 13, ZTA To Page 18, FA Plus2 To Page 18, DSW To Page 16 To Page 17	USB	Max. 50Hz

Operating Environment for Force Recorder series, Force Logger Plus, ZLINK4, Force Recorder Plus (Operating Environment)

Model	Force Recorder Light/Standard/Professional,ZLINK4	Force Recorder Plus	Force Logger Plus
OS	Windows 8.1 / 10 / 11	Windows 8.1 / 10 / 11	Windows 8.1 / 10 / 11
Hardware	CPU: 1GHz or higher/Memory: 2GB or more Hard disk: 10GB(Data storage area) more.	CPU: 1GHz or higher/Memory: 4GB or more Hard disk: 10GB(Data storage area) more	CPU: 1GHz or higher/Memory: 2GB or more Hard disk: 10GB(Data storage area) more
Platform	.NET Framework 4.8 later	.NET Framework 4.8 later	.NET Framework 4.8 later
Image size	Resolution: 1024×768 pixel more	Resolution: 1920×1080 pixel more	Resolution: 1280×768 pixel more

Comparison Table

Function Comparison	Force Recorder Light	Force Recorder Standard	Force Recorder Professional	Force Recorder Plus	Force Logger Plus	ZLINK4
Software	Graphing only	With editing functions	Force-displacement graphing	Graphing to multiple force gauges at the same time	Connected up to max. 4 force gauges	Simple Graphing
Graph	Force-time	Force-time	Force-time, Force-displacement	Force-time	N/A	Force-time
Data transferring speed (Max)	2000 data/sec	2000 data/sec	2000 data/sec	1000 data/sec	10 data/sec	50 data/sec
Recording data point (Max)	7.2 million	7.2 million	7.2 million	3 million	65 thousand	7.2 million
Displacement output	N/A	N/A	N/A	N/A	N/A	N/A
Graph overlaying function	N/A	✓(Max. 5 graphs)	✓(Max. 5 graphs)	✓(Max. 10 graphs)	N/A	N/A
Trigger function	N/A	✓	✓	✓	N/A	✓
Point marking	N/A	✓	✓	✓	N/A	N/A
Border line function	N/A	✓	✓	✓	N/A	N/A
Capitulate function	N/A	✓	✓	✓	N/A	N/A
Graph scaling	✓(Auto)	✓(Auto)	✓(Auto)	✓(Auto/Manual)	N/A	✓
Statistics output	✓	✓	✓	✓	N/A	✓
Comment	✓	✓	✓	✓	N/A	✓
Print	✓	✓	✓	✓	N/A	✓
CSV file converting	✓	✓	✓	✓	N/A	✓
Preview saving (PDF/Word/Excel)	✓	✓	✓	✓	N/A	✓
Force gauge setting	✓	✓	✓	✓	N/A	✓
Managing force gauge	N/A	N/A	N/A	✓	✓	N/A

※Old models of force gauges may not be compatible partially or wholly. Contact us for the detail about old models.



Force Recorder Light

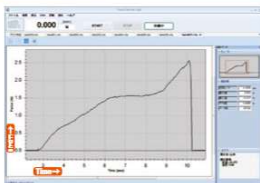
Force-Time Graphing Software

Moderated Price Model

Compatible models
 Z1S To Page 11 Z1A To Page 13 eZ1 To Page 18 FA Plus2 To Page 18 HTGS/HTGA(-TFX) See a torque catalog DTXS/DTXA See a torque catalog

Affordable model focusing on graph acquisition

- **Acquire measuring data accurately and precisely**
 - It graphs measurement accurately and precisely at high sampling rate, up to max. 2000Hz.
 - **Create report instantly**
 - Easily saves data in Word, Excel and PDF format, reducing time to create reports.
 - It automatically inputs graphs, dates & time, and statistics. Comments also can be input manually.
- Refer to the [Operating Environment] on the previous page for the details of operating environment.




Force Recorder Standard

Force-Time Graphing Software

Compatible models
 Z1S To Page 11 Z1A To Page 13 eZ1 To Page 18 FA Plus2 To Page 18 HTGS/HTGA(-TFX) See a torque catalog DTXS/DTXA See a torque catalog

Analyze data easily and accurately, and create report with ease

- **Make efficient by simple manipulations and useful functions**
 - Easy steps for recording: Connect a force gauge and PC with a USB cable, and click START.
 - Data can be easily compared due to plural tabs.
 - It automatically calculates Max/Min/Ave values.
 - Comments can be inserted.
 - Maximum 5 graphs can be overlaid in a table, allowing easy comparison and accurate analysis.
 - **Capture measuring data accurately**
 - It graphs the measurement accurately due to high sampling rate, at Max.2000Hz
 - A peak value can be captured more precisely due to the higher sampling rate.

◀ Comparison of 2000Hz and 100Hz
 2000Hz is more to capture peak value than 100 Hz.
 - **Create reports quickly**
 - Data can be easily saved in Word, Excel, and PDF format, reducing the time to create reports.
 - It automatically inputs graphs, date & time, and statistics. Comments also can be input manually if necessary.
- Refer to the [Operating Environment] on the previous page for the details of operating environment.




Force Recorder Professional

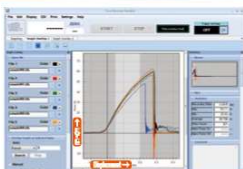
Force-Displacement Graphing Software

Compatible models
 Z1A To Page 13 eZ1 To Page 18 FA Plus2 To Page 18 HTGA(-TFX) See a torque catalog DTXA See a torque catalog

Draw and analyze force vs displacement graphs (FS curve)

In force-displacement measurement, a dedicated device measures force and travel amount (compression, tension) of the force gauge on the motorized stand as displacement at the same time.

- **Force vs displacement graphs can be drawn.**
 - Force-displacement graph can be created by connecting the linear scale (Page 26) or test stand with inbuilt linear scale (FA model) (Page 36) together with force gauge.
 - FSA series (Page 50~52) include this software.
 - **Professional is basically the same as Standard in performance&function**
- Refer to the [Operating Environment] on the previous page for the details of operating environment.



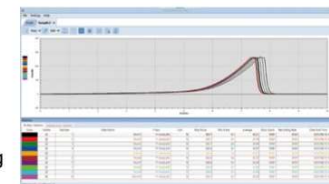

Force Recorder Plus

Multiple gauges Force-Time Graphing Software

Compatible models
 Z1S To Page 11 Z1A To Page 13 eZ1 To Page 18 FA Plus2 To Page 18 HTGS/HTGA(-TFX) See a torque catalog DTXS/DTXA See a torque catalog

Graph the data up to 4 force gauges, and display different measurement unit such as force and torque in 1 screen

- **Acquire data up to 4 force gauges**
 - Easy USB connection ※A self-power USB hub is required separately.
 - Acquire synchronized data (up to 1000 times/sec)
 - The force applied to different parts of the sample can be measured up to 4 points at the same time
 - **Display different unit such as force and torque in 1 screen**
 - Record the transition of the multiple movements such as pressing and turning
 - **Maximum 10 graphs can be overlaid in a table and compared**
 - It enables you to analyze test results more easily since 10 graphs can be compared at the same time, which is more than other software
- Refer to the [Operating Environment] on the previous page for the details of operating environment.




Force Logger Plus

Multiple Gauges Managing Software

Compatible models
 Z1S To Page 11 Z1A To Page 13 eZ1 To Page 18 FA Plus2 To Page 18 DST To Page 16 DSV To Page 17 HTGS/HTGA(-TFX) See a torque catalog DTXS/DTXA See a torque catalog

Manage data up to 4 force gauges

- **Acquire data up to 4 force gauges**
 - Easy USB connection ※A self-power USB hub is required separately.
 - Acquire single data or synchronized data (up to 10 times/sec)
- **Simple data management**
 - Record data by each serial number of the force gauge, together with the date & time of recording and person in charge.
 - Register the force gauge by each serial number and manage the force gauge with an operator's name and a department.
- **Force gauge setting**
 - Easily set functions of the force gauge by the software.



※The wire less Unit(P124) is available only for Ver.1.10 and later.
 Force Logger is available with Ver.2.10 and later.

· Refer to the [Operating Environment] on the previous page for the details of operating environment.



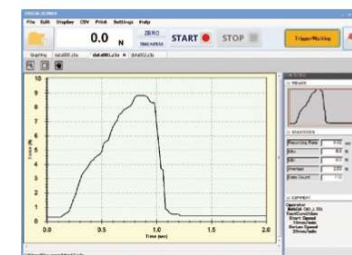
ZLINK4

Force-Time Graphing Software for DST/DSV

Compatible models
 DST To Page 16 DSV To Page 17

Draw force-time graph easily

- **Graphing at Max. 50Hz**
 - Open multiple graphs with tabs
 - Zoom specific parts in detail easily with zoom function
 - **High operability by trigger function**
 - Automatic recording by setting the force value of when to start and end. The recording time also can be set.
- Refer to the [Operating Environment] on the previous page for the details of operating environment.



Cables

Cables expand the functionality of digital force gauges and test stands.



To Page 13

To Page 11

To Page 18

To Page 17

To Page 16

To Page 18

The Cables to Connect a Force Gauge to an External Devices

	ZTA	ZTS	eZT	DSV	DST	FA Plus2
RS232C cable Connects a PC to a force gauge, enabling to record the measurement and transmit command signals from the PC to the gauge.	CB-208 (9-pin) Length: Approx. 3m	CB-208 (9-pin) Length: Approx. 3m	CB-208 (9-pin) Length: Approx. 3m	CB-203 (9-pin) Length: Approx. 3m	CB-203 (9-pin) Length: Approx. 3m	CB-208 (9-pin) Length: Approx. 3m
Analog cable Connects analog devices such as a pen recorder to a force gauge, enabling to record force transition. ※CB-118 works for "-AN" option. ※1	CB-108 Length: Approx. 3m	CB-108 Length: Approx. 3m	CB-108 Length: Approx. 3m			CB-108 Length: Approx. 3m
Open End cable Connects a force gauge to a special device.	CB-908 Length: Approx. 3m	CB-908 Length: Approx. 3m	CB-908 Length: Approx. 3m			CB-908 Length: Approx. 3m
Cable with Terminal Block Connects an external equipment such as PLC	CTB-A Length: Approx. 1m	CTB-A Length: Approx. 1m	CTB-A Length: Approx. 1m			CTB-A Length: Approx. 1m
External Contact Point cable Enables you to measure external contact points.	CB-808 Length: Approx. 3m	CB-808 Length: Approx. 3m	CB-808 Length: Approx. 3m			CB-808 Length: Approx. 3m

The Cables to Connect a Force Gauge/an Amplifier to a Test Stand

Force Control cable ※2 Connects a test stand (MX/MH) to a force gauge/an amplifier, activating motion control by set force values and an overload-preventing function.	CB-508 Length: Approx. 1.5m	CB-508 Length: Approx. 1.5m				
Force Control cable ※2 Connects a test stand (MX2/MH2/EMX) to a force gauge/an amplifier, activating motion control by set force values and an overload-preventing function.	CB-528 Length: Approx. 1.5m	CB-528 Length: Approx. 1.5m	CB-528 Length: Approx. 1.5m			CB-528 Length: Approx. 1.5m
Displacement cable (EMX-FA/MX2-FA/MH2-FA connecting) ※2※3※4 Allows displacement output by connecting a force gauge/an amplifier to a test stand equipping a linear scale (EMX-FA/MX2-FA/MH2-FA).	CB-718 Length: Approx. 1.5m		CB-718 Length: Approx. 1.5m			CB-718 Length: Approx. 1.5m
Displacement cable (EMX-FA connecting) ※2※3※4 Allows displacement output by connecting a test stand equipping a linear scale (EMX-FA) to a force gauge/an amplifier.	CB-728 Length: Approx. 1.5m		CB-728 Length: Approx. 1.5m			CB-728 Length: Approx. 1.5m

The Cable to Connect a Test Stand to an External Device

External Signals I/O Cable Connects a test stand (MX2-CN/MH2-CN/EMX), activating the external control.	CB=706 Length: Approx. 1.5m
--	---------------------------------------

※1 ZTS/A series force gauges output raw sensor data as fast analog voltage without conversion with -AN option.
 ※2 Please refer to "ZT series Advanced Measurement Examples" on Page 15.
 (A test stand stops when a force gauge senses force beyond its capacity (overload-preventing function) however, it cannot prevent overload completely. We do not guarantee the complete overload prevention.)
 ※3 It also activates motion control by set force values and an overload-preventing function.
 ※4 EMX series with firmware ver. 2.0 or later requires CB-718.
 ※ We offer custom-made options for the cables such as extending the length, changing the connector (from analog output to BNC connector), enhancing the flexibility and more.
 ※ CB-308 are required to connect Mitulovo Digimatic Mini Processor to ZTS/A series (earlier than Ver.5.00).

Wireless Data Transmit System WL01-ADP/ WL01-USB

It transmits measurement data wirelessly from a force gauge to a PC or other device.

- **Reliable data transmission/reception:** It equips reception-detecting function such as "group-name" setting and send-error detection.
- **High security data protection:** It prevents data leak with AES data encryption
- **Various methods of data management:** Using published communication-command, you can import data to your Excel format or other software, and it can receive data from 26pcs of force gauge at a maximum. ※1



WL01-USB

WL01-ADP

Wireless Data Transmission System Unit

When connected to PC

Wireless Transmit Adapter	
Adapter which connected to force gauge to send data	
Model	WL01-ADP
Compatible Models ※2	ZTA/ZTS (Separated Sensor Models Included) eZT, FA Plus2, eFA Plus2, DTXA/DTXS, HTGA/HTGS, HTGA/HTGS-TFX
Communication Distance ※4	Approx. 20m
Wireless Communication Standard / Frequency	Complies with IEEE802.15.4 World Common Frequency: 2.4GHz Complies with CE: Radio Equipment Directive (2014/53/EU) Complies with Japanese Technical Standard: ARIB STD-T66 ※Please contact us for use in other available areas

USB Wireless Receiver	
Receiver which connected to PC to receive data	
Model	WL01-USB
Compatible Software ※3	Force Logger (Attachment, available from the Ver. 2.10 later) Force Logger Plus (Sold Separately, available from Ver. 1.10 later)
Communication Distance ※4	Approx. 20m
Wireless Communication Standard / Frequency	Complies with IEEE802.15.4 World Common Frequency: 2.4GHz Complies with CE: Radio Equipment Directive (2014/53/EU) Complies with Japanese Technical Standard: ARIB STD-T66 ※Please contact us for use in other available areas

※ In the case of using the output signal by connecting force gauge to a test stand or external device while using wireless communication, you can use Wireless Transmit BOX (WL01-BOX).
 ※1 Depending on the software used, the number of connectable devices is limited.
 ※2 All compatible models are available from firmware Ver. 3.10 and later.
 ※3 The maximum number of gauges connected to it in IMADA software is Force Logger: 1 unit / Force Logger Plus: 4 unit
 In the case of using Wireless Data Transmission System Unit with IMADA software, you cannot use some functions. Please contact us for the details. E.g. Acquire continuous data
 ※4 The communication distance may vary depending on the obstacles and environmental conditions. Please contact us for the details.

Built-in Linear Scale Unit

Connect this linear scale to ZTA(P13) series/eZT(P18) series to measure force and displacement. It can be mounted on your equipment easily.

Model	DMK-100	DMK-300	DMK-500	DMK-800
Stroke(mm)	Max.100	Max.300	Max.500	Max.800
Size(mm)	254X25	454X25	654X25	954X25
Fixing screw	M4	M4	M4	M4

※Select from 3 / pin connector or cable without connector.



The Cables for Past Models

If you need a cable for past-model force gauges/torque gauges, please refer to the right list. If your model is not mentioned in the list, please contact us.

[The Model List]

Model	ZP.Z2 series	HTG2.DTX2 series	DS2 series
Analog cable	CB-104	CB-104	CB-101
RS-232C cable	CB-204	CB-204	CB-203
Digimatic cable	CB-304	CB-304	CB-301
Force Control cable	CB-501 (Connect with MX series)		

※Please select CB-504 if CB-204 and CB-501 are required to use at the same time.

Examples of Cable Applications

● with Digital Force Gauge ZT series

- It enables you to
 - detect abnormalities using a buzzer / light / your equipment together. (Using the functions of comparator and overload output)
 - record the force value of contact point in a switch tactile test or broken point in a cable strength test. (Using the function of the external contact point output)
 - show the point at the moment contact point of switch tactile test or a broken point of cable strength test on a graph using software (Force Recorder Standard/Professional). (Using the mark point function)
 - control an external device when the force gauge senses a set point. (Using sub-comparator function; Available only in ZTA/eZT series)

● with Motorized Test Stand EMX, MX2(MH2) series (Option-CN version)

- It enables you to
 - Operate externally from a foot switch and the like.
 - Improve equipment safety with an interlock mechanism.
 - Link wire conduction and test stand activities.



What is Unit "N"?

The "N" is a force unit called "Newton." <1kgf=9.80665N>
 In Japan, Measurement Act established in 1993 requires you to use only Newton for force measurement.
 Thus, in Japan our gauges indicate N.
 For outside of Japan, we offer international models providing N/kgf/lbf. To be specific, as for digital force gauges you can switch units (N/kgf/lbf), and as for mechanical force gauges you have to select one from the 3 units before purchase.

For your information, in Japan the unit only in the table below can be used according to Measurement Act.
 Excerpt of "Measurement Units pertaining to the International System of Units" (Ministry of Economy, Trade and Industry)

Quantity of the state of physical phenomena	Measurement unit
Force	Newton
Moment of force	Newton-meter
Pressure	Pascal or Newton per square meter bar
Stress	Pascal or Newton per square meter
Viscosity	Pascal second or Newton second per square meter

Reduced value for conventional force unit 1kgf=9.80665N

What is the best way to choose the most suitable range of a force gauge / a load cell?

⚠ Capacity in specifications means the maximum force that can be applied to a force gauge / a load cell. Force gauges or load cells would be broken if you applied force over their capacity. Therefore, we recommend that you choose the force gauge whose capacity is a little larger than expected force in your testing. Please utilize the information below to prolong gauges' lives.

Shock or Breaking Test : When Measuring Rapid Force Change

→Please choose the force gauge whose capacity is 200% of expected force in your testing.
Ex) Expected force: 10N, Measuring instrument: Digital force gauge ZTS →ZTS-20N is recommended.
 (①Double the expected force(10N) → 20N, ②Choose the ZTS whose capacity is 20N → ZTS-20N)

Elongation Test : When Measuring Slow Force Change

→Please choose the force gauge whose capacity is 150% of expected force in your testing.
Ex) Expected force: 30N, Measuring instrument: Digital force gauge ZTS series →ZTS-50N is recommended.
 (①Increase expected force(30N) by half → 45N, ②Choose the ZTS whose capacity is 45N
 → We do not offer ZTS-45N, then ZTS-50N is the nearest one.)

What Is "F.S." for Accuracy, for example +/-0.2%F.S.?

"F.S." is abbreviation of "Full Scale," and it means the capacity.
Ex) ZTS-50N offers +/-0.2%F.S. accuracy, and has 50N capacity.
 →The error is... 50N X +/-0.2% = +/-0.1N.
 →When the measured value is 30N using ZTS-50N, guaranteed result is... 30N +/-0.1N = 29.9 to 30.1N.

Key Point of Maintenance of Measuring Instrument

Measuring instruments should be calibrated periodically. Calibrating means checking if they maintain initial accuracy or not. All of the measuring instruments including force gauges reduce their accuracy slightly day by day, therefore, they should be calibrated, and adjusted as required to conduct precise measurement continuously.

IMADA offers calibration services, so you can keep using our force gauges for long after purchase at ease. Besides, our calibration center is certified with ISO/IEC 17025:2017, therefore, we offer high quality of calibration service if required.
 ※Some products cannot be calibrated for some reasons.

Test Stands

Test Stands Improve Repeatability.

They provide constant test speed and apply load straight, reducing the variation from a person to a person.

A force gauge can be used by hand, and also it can be used with a test stand for greater accuracy. Combine a test stand with a force gauge and attachments to create a force testing machine, which offers a significant advantage over handheld use in precision.



Motorized Test Stands

They provide constant test speed and apply force straight, offering high repeatability.

Simple MX(Vertical)/MH(Horizontal)



To Page 33

Capacity:
 (MX) 500N~1000N
 (MH) 1000N

The Simplest Type

- For simple compression/tension tests

Measuring speed can be changed with its dial, however, the setting speed is not able to be seen in digital. MX2/MH2 or EMX can display the speed on its monitor.

Standard MX2(Vertical)/MH2(Horizontal)



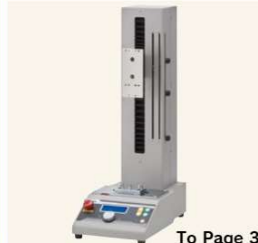
To Page 32

Capacity:
 (MX2) 500N~5000N
 (MH2) 500N~2500N

User Friendly and High Functionality

- Digitally set testing speed and see it on its monitor.
- The equipped monitor indicates measuring conditions which can be easily set.
- MX2/MH2 include Timer and Counter function which enable you to conduct durability tests and repeat tests.

High Performance EMX



To Page 33

Capacity: 500~1000N

Advanced type of MX2 with several features below

- It provides a wide range of testing speed (0.5-600mm/min) and travel distance setting, covering a wide variety of testing conditions.
- It has highest rigidity, offering great precision.
- 5 types of measuring pattern (speed/repeat frequency etc.) can be stored.

Manual Test Stands

With a manual test stand, force can be applied straight, offering higher repeatability than measurement by hand.

Simple



To Page 34

Capacity: 1000N

- The simplest test stand
- The lever improves measuring efficiency.



To Page 34

Capacity: 1000N

- The simplest test stand
- The handle realizes stable measurement.

Low Capacity



To Page 35

Capacity: 50N

- Simple Lever Test Stand can set travel distance.



To Page 35

Capacity: 50N

- Ideal for small force measurement.



To Page 35

Capacity: 50N

- Varieties of measurements can be realized by the different installing ways.

Long Stroke



To Page 34

Capacity: 500N~3000N

- Ideal for stretching or large sample measurement.

Horizontal



To Page 35

Capacity: 1000N~3000N

- A sample can be set very easily.

※Actual measuring capacities are depending on the force gauge capacities.
 However, measurements are depending on test stand capacities when the test stand capacity is less than the force gauge capacity.

On our website, you can see a wide range of force testing applications, and download a specification sheet of each product. Please feel free to contact us.
 ※IMADA service group telephone number: +81(0)532-33-3288 <https://www.forcegauge.net/en/>

Motorized Test Stands

They provide constant test speed and apply force straight. They realize the high-repeatable measurement.

Combining a test stand with a force gauge and attachments enables you to create a testing machine to meet your testing needs.



Compression Test



Tension Test



Peeling Test

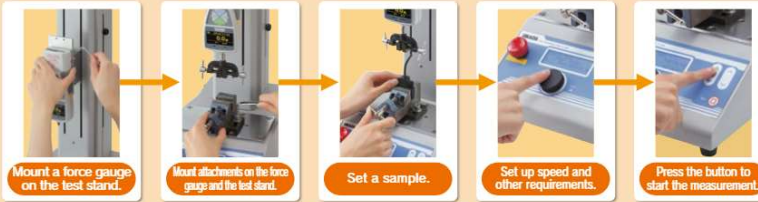


Friction Test



How to Use Motorized Test Stand

(Using Example: MX2 series)



As options, we can extend stroke, change speed range, and more to meet your measurement needs. Some models can equip a linear scale (FA version) to measure / analyze the relationships of force and displacement. The details are on Page 36.

Common overview of Motorized Test Stand (Compatible Test Stand : MX2 series, MH2 series, EMX series)

Adjusting Speed ※1

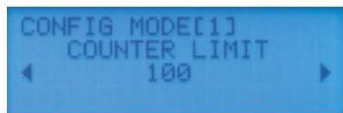


Testing speed is easily adjustable with the dial. Setting Resolution:

Speed Range	UNIT
1.0-2.0mm/min	0.5mm/min
2.0-10.0mm/min	5mm/min
10.0-30.0mm/min	10mm/min

※Adjustable speed types: Start/Measuring/Return

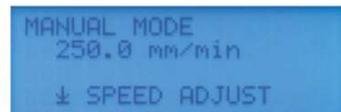
Other Functions



In CYCLEMODE, you can set the reciprocating frequency and pausing time. **Counter (the reciprocating frequency):**Max. 65535 times **Timer (pausing time):**Max. 99 min 59 sec 9 (by 0.1 sec)

※1 The speed ranges vary per product.

Three Measuring Modes



Three Testing Modes are available:

- MANUAL MODE:**It moves a force gauge at the set speed while Up/Down or Left/Right button pressed.
- JOG MOVE:**It moves a force gauge at light feeds (approx. 0.05mm/1 turn)by turning the dial.
- CYCLE MODE:**It reciprocate a force gauge between stroke-limit knobs.

Versatile Functions with Force Gauge



Versatile functions are available with the Force Gauge (ZT Series) and the CB series cables.

- Overload Prevention:**A test stand stops when a force gauge senses too much force over its capacity.
- Force Control:**A test stand stops when a force gauge senses a pre-set force limit. Or it can automatically regulate the load so as to be in a pre-set range for a pre-set time period.
- Measurement Speed Control:**Auto-switch function between the Moving direction and the Measurement Speed.
- Auto-Functions:**Auto-Zero Reset of the Force Gauge and Auto-recording of the measured values reflected in the Software during the measurement.

Refer to the P.15 for details

Motorized Test Stand

Standard Type

- Measuring speed can be set digitally.
- This type of stands have a monitor to show measuring conditions which enables you to set them easily.
- Durability test using its timer function and repeat test using its counter functions can be conducted.



MX2 series

Option

- Length Scale
 - FA version
 - Long Stroke
 - Extended Column (MX2-5000N only)
 - Speed Range Change
 - Output and Input External Signal
- Please refer to Page36



Measure under the safe environment

Accessory To Page 35



Connect with External Devices

Application examples of how cables are used To Page 15 and Page 25



Analyze Force-Displacement Relation

Force-Displacement Analysis Unit To Page 50



Specification

Model	MX2-500N	MX2-1000N	MX2-2500N	MX2-5000N
Capacity	500N	1000N	2500N	5000N
Speed	1.0-30.0mm/min	1.0-30.0mm/min	1.0-30.0mm/min	0.5-30.0mm/min
Maximum Sample Height (mm)	Approx. 235mm	Approx. 300mm	Approx. 320mm	Approx. 380mm
Weight	Approx. 1.8kg	Approx. 1.9kg	Approx. 2.6kg	Approx. 5.1kg
Size	Approx.W230xD130xH162mm	Approx.W250xD130xH163mm	Approx.W250xD130xH164mm	Approx.W250xD130xH163mm

MH2 series

Horizontal Type



Option

- Length Scale
 - FA version
 - Speed Change
 - Output and Input External Signal
- Please refer to Page36



Specification

Model	MH2-500N	MH2-2500N
Capacity	500N	2500N
Speed	1.0-30.0mm/min	1.0-30.0mm/min
Maximum Sample Length (mm)	Approx. 245mm	Approx. 340mm
Weight	Approx. 1.4kg	Approx. 2.7kg
Size	Approx.W155xD220xH1219mm	Approx.W166xD340xH1261mm



Connect with External Devices

Application examples for using cables To Page 15 and Page 25

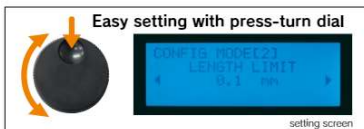


Analyze Force-Displacement Relation

Force-Displacement Analysis Unit To Page 50

Advanced Type EMX series

- Meets your various measuring requirements by wide speed range (0.5-600mm/min)
- Enables you to measure precisely with the highest rigidity
- Sets the travel distance digitally and unify measuring condition
- Improves measuring efficiency by storing up to 5 measuring patterns
- Allows communication with various external devices by equipped I/O connector
- Improves measuring accuracy and efficiency by CONTACT/BREAK DETECTION
- Makes it simple to set measuring conditions by Easy set-up mode



Measure under the safe environment
Accessory
To Page 35

Connect with External Devices
Application Example for using cables
To Page 15 and Page 25

Analyze Force-Displacement Relation
Force-Displacement Analysis Unit
To Page 50

Option
●FA version
●Long Stroke
Please refer to Page36



EMX-500N

■Specification

Model	EMX-500N	EMX-1000N
Capacity	500N	1000N
Speed	0.5-600mm/min	0.5-600mm/min
Maximum Sample Height(※1)	Approx.295mm	Approx.320mm
Weight	Approx.19kg	Approx.23.5kg
Size	Approx.W220xD380xH1637mm	Approx.W280xD410xH1643mm

Simple Type

- This type is the simplest.

MX series

Option
●Speed/ Length Meter
●Length Scale
●Long Stroke
●Speed Change
Please refer to Page36

Measure under the safe environment
Accessory
To Page 35



MX-500N

■Specification

Model	MX-500N	MX-1000N
Capacity	500N	1000N
Speed	10-300mm/min	8-240mm/min
Maximum Sample Height(※1)	Approx.235mm	Approx.420mm
Weight	Approx.13kg	Approx.24kg
Size	Approx.W214xD428xH1573mm	Approx.W263xD368xH1903mm

Note: ①A force gauge is separately sold.②Actual measuring capacity depends on the force gauge's capacity. However, when the test stand's capacity is less than the force gauge's capacity, you can measure force up to the test stand's capacity.(※1)The maximum height or length means the distance between the test stand table and the thread of the force gauge.ZT series general type(1000N or less)at the highest position of the test stand. The distance does not include attachments. The distance of MX2-2500, MX2-5000N or MH2-2500N is in the case of mounting ZT series high capacity type.

MH-1000N

●Horizontal Type



Option
●Speed/ Length Meter
●Length Scale
●Speed Change
Please refer to Page36

MH-1000N

■Specification

Model	MH-1000N
Capacity	1000N
Speed	6-180mm/min
Maximum Sample Length(※1)	Approx.280mm
Weight	Approx.14kg
Size	Approx.W700xD195xH1210mm

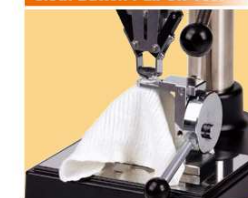
Manual Test Stands

They provide constant test angles, offering higher repeatability than measurement by hand.



Combining a test stand with a force gauge and attachments, you can create a testing machine to meet your testing needs.

Cloth Button Pull Off Test

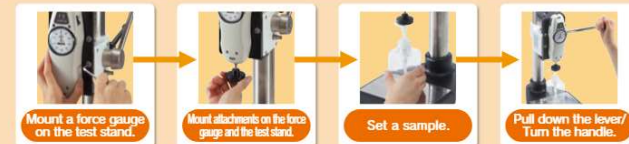


Ball Hardness Test



How to Use Manual Test Stand

(Using Example: SVL-1000N)



As options, we can extend its stroke or mount a length scale. The detail is on Page 36.

Simple Type SVL-1000N/SVH-1000N

- The lever type improves the measuring efficiency. The handle type realizes stable measurement.

■Specification

Model	SVL-1000N(Lever type)	SVH-1000N(Handle type)
Capacity	1000N	1000N
Maximum Sample Height(※1)	Approx.225mm	Approx.225mm
Maximum Stroke※A	60mm	60mm
Feed Amount	60 mm / 170 degree turn of the lever	3mm/1turn
Weight	Approx.7.3kg	Approx.7.7kg
Size	Approx.W200xD280xH410mm	Approx.W200xD280xH410mm

※A Maximum stroke means maximum traveling distance of a force gauge.
※B GF-1/2: These are necessary adapters for mounting a chuck fixture on the tables of the stand. (Separately sold)



Option
●Length Scale
●Extended Column
Please refer to Page 36

Long Stroke Type HV series

- HV series have a long stroke, ideal for testing extensible or large specimens.
- They are operated by a handle.

■Specification

Model	HV-500NII	HV-1000N	HV-3000N
Capacity	500N	1000N	3000N
Maximum Sample Height(※1)	Approx.240mm	Approx.375mm	Approx.415mm
Feed Amount	2mm/1turn	1.2mm/1turn	0.6mm/1turn
Weight	Approx.10kg	Approx.18kg	Approx.24kg
Size	Approx.W327xD300xH1567.5mm	Approx.W325xD275xH1730mm	Approx.W355xD310xH1744mm

Option
●Length Scale
●Long Stroke (except HV-3000N)
Please refer to Page 36



Low Capacity or Small Type

- This type is ideal for measurement in capacity up to 50N.
- A force gauge can be moved at light feed.

FCA-50N

- Sets a travel distance to move a force gauge, and measures the force value to the distance.



FCA-50N

Specifications

Model	FCA-50N
Capacity	50N
Distance	0~45mm (Adjustable with the limit knob)
Measuring Space	50~80mm (※1)
Weight	Approx. 3kg
Size	Approx. W175xH129xD178mm
Compatible force gauge	ZTS ZTA DST DSV (※2)

※1 The measuring space means the distance between the test stand table and the thread of a force gauge. The distance depends on where you put the force gauge.
 ※2 You cannot combine high capacity model force gauges with this stand.
 ※We also offer an food testing unit including this FCA-50N. For further information, please see "Catalog for Torque Testers and Food Testers."

KV-50N

- It is a desktop type.
- It can move a force gauge at light feed (1.0mm/1 turn).



KV-50N

Option

- Length Scale
Please refer to Page 36

Specifications

Model	KV-50N
Capacity	50N
Maximum Sample Height(※1)	Approx. 63mm
Feed Amount	1.0mm/1 turn
Weight	Approx. 2kg
Size	Approx. W140xH180xL1220mm

MS series

- Various measurements are possible by the different installing ways.

Analyze Force-Displacement Relation
Force-Displacement Analysis Unit
To Page 50

You can combine this stand with an optional handle or your tripod to expand the range of measuring opportunity.
 ※You need an optional adaptor (sold separately) to combine it with a tripod.
 ※We do not sell any tripods.

Specifications

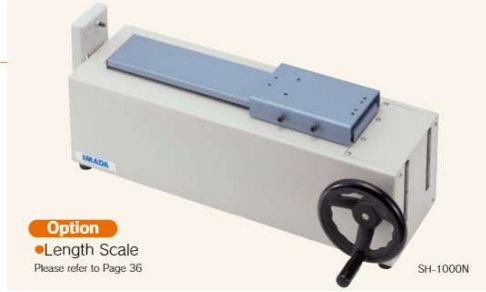
Model	MSF-50N	MSL-50N
Type	Standard	FA version(Page.33)
Capacity	50N	
Maximum Sample Height(※1)	Approx. 44mm	
Feed Amount	1.8mm/1 turn	
Weight	Approx. 1.2kg	
Size	Approx. W110xH181xL1204mm	

Horizontal Type SH series

- Horizontal type: Sets a sample easily.

Specification

Model	SH-1000N	SH-3000N
Capacity	1000N	3000N
Maximum Sample Length(※1)	Approx. 250mm	Approx. 355mm
Feed Amount	1.2mm/1 turn	0.6mm/1 turn
Weight	Approx. 15kg	Approx. 22kg
Size	Approx. W560.5xH265xL119.5mm	Approx. W696.5xH285xL1225mm



Option

- Length Scale
Please refer to Page 36

Accessories for Test Stand

Interlocking Shield OP-MX2EMX-IC OP-MX250-IC

- Interlocking shield for MX2 and EMX series automatically stops operation when the door is open.



OP-MX2EMX-IC

Model	OP-MX2EMX-IC	OP-MX250-IC
Cover Material	PET	Polycarbonate
Weight	Approx. 9.1kg	Approx. 5.5kg
Size	Approx. W410xH312xH950mm	Approx. W375xH250xH803mm
Compatible Test Stand (※1)	MX2-500N/1000N/2500N EMX series	MX2-5000N

※1 -CN option and safety setting of MX2 series are required to activate interlock function. (-CN option is installed standardly for EMX series)

Safety Shield ST-SS

- It is a safety shield put in front of a test stand, protecting an operator from sample debris.



ST-SS

Model	ST-SS
Cover Material	Acrylic
Weight	Approx. 500g
Size	Approx. W406xH305xH1628mm

User Mounted Kit FA version OP-EMX-FA

- Displacement unit can be mounted by yourself to EMX series firmware ver 2.0 or later.



Model	OP-EMX-FA	OP-EMX-L-FA
Size	Approx. W81xH82xL455mm	Approx. W61xH82xL1755mm
Fixing Screw	Use included M3 hex head screws(Short 2pcs, Long 4pcs).	

※Use CB-718 Sold separately to measure displacement.

Options for Test Stands

The options below can be added to expand functionality of test stands or improve measuring efficiency.

Options for The Manual and Motorized Test Stands

Length Scale (-S)	Long Stroke (-L, -2L)
It digitally indicates travel distance of a force gauge. (We recommend another option [FA version] below if you need to analyze the relations of force and displacement.)	We extend the stand's stroke. Extended Column (-EXT) We extend the stand's column. The stand's stroke does Not change.

Limited Options for The Motorized Test Stands

Speed / Length Meter (-E)	FA version (-FA)
It displays the measuring speed and travel distance of force gauges.	We build a linear scale into a test stand to output travel distance of a force gauge, and you can utilize it for analysis of force-displacement relations. For further information of force-displacement analysis unit, please see page 45.
Speed Range Change (-V○○)	Output and Input External Signals (-CN)
We can change the range of measuring speed. (The customizable range differs among models. Besides, some models could decrease their force capacity. Please contact us for further information.)	We can equip a connector for external input and output. For example, you can connect a footswitch with the stand via the connector to operate it by the footswitch (like step on it to start measurement). Please contact us for further information.

Options Available for Motorized Test Stands

	Model	MX-500N	MX-1000N	MX2-500N	MX2-1000N	MX2-2500N	MX2-5000N	EMX-500N	EMX-1000N	MH-1000N	MH2-500N	MH2-2500N
Speed/ Length Meter	-E	○	○	○	○	○	○	○	○	○	○	○
Length Scale	-S	○	○	○	○	○	○ ^{※1}	○	○	○	○	○ ^{※1}
FA Specification	-FA	○	○	○	○	○	○ ^{※1}	○ ^{※1}	○ ^{※1}	○	○	○ ^{※1}
Long Stroke (mm)	-L	○	○	○	○	○	○	○	○	○	○	○
	-2L	+200 ^{※2}	+250 ^{※2}	+200	+300	+300	○	+300	+300	○	○	○
Extended Column (mm) ^{※4}	-EXT	○	○	○	○	○	○	○	○	○	○	○
O/I External Signals	-CN	○	○	○	○	○	○	○ ^{※5}	○ ^{※5}	○	○	○
Speed Range Change (mm/min) ^{※6}	-V●●	40~1200 20~600 2~60	40~1200 20~600 2~60	30~800 20~600 15~40 1.5~45	30~1000 20~600 15~150 1.5~75	2.5~75 5~150	○	○	○	30~900 20~600 10~300 3~30	30~900 20~600 10~300 3~30	2.5~75 5~150

※1 User mounted unit is available. ※2 It may decrease its capacity. ※3 The -2L option is incompatible with length scale (-S option). Additional charge for wooden packaging is required for shipping.
 ※4 The column is extended but the stroke remains the same. ※5 It is already installed as the standard function. ※6 Some models could decrease their force capacity. Please contact us for further information.

Examples of Model with Options

- When you want to extend the stroke of MX2-500N → Choose the option "Long Stroke (-L)" = **MX2-500N-L**
- When you want to change the speed range of MX2-500N → Choose the option "Speed Range Change (-V●●)" = **MX2-500N-V600**
 ※ In ●●, we put figure of speed. → Example) When the speed range changes into the fastest speed 20~**600** mm/min The number is here

Options Available for Manual Test Stands

	Model	SVL-1000N	SVH-1000N	HV-500NII	HV-1000N	HV-3000N	KV-50N	MSF-50N	MSL-50N	SH-1000N	SH-3000N
Length Scale	-S	○	○	○	○	○	○	○	○	○	○
Long Stroke (mm)	-L	○	○	○	○	○	○	○	○	○	○
Extended Column (mm)	-EXT	○	○	○	○	○	○	○	○	○	○

※1 It may decrease its capacity. ※2 We can extend the column length, but travel distance of force gauge does Not change.

Examples of Model with Options.

- When you want to see the travel distance of a force gauge using SVH-1000N → Choose the option "Length Scale (-S)" = **SVH-1000N-S**

The Helpful Functions of Motorized Test Stand

The optional functions can be activated by connecting a force gauge ZTS/ZTA series to a motorized test stand via the suitable cable.

- ① The Overload Preventing Function
- ② Force Control Functions

For further information, see page 15

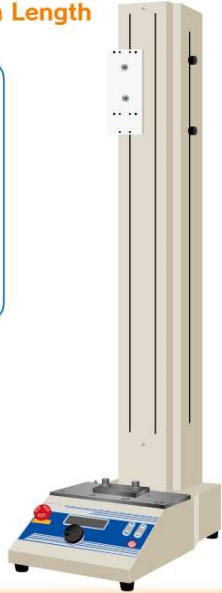
Examples of Customized Test Stands

We provide made-to-order test stands to fit your needs.

Changing Test Speed Range / Extending Column Length

[This is recommended when you...]

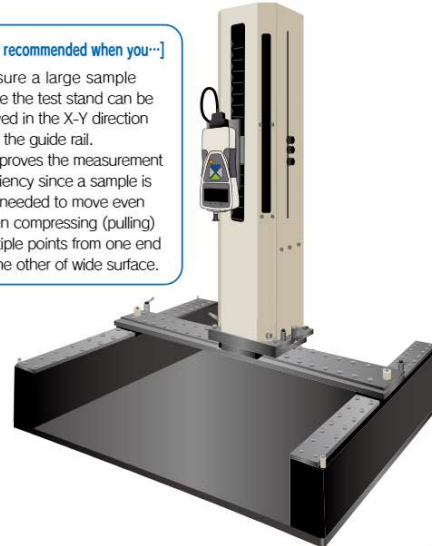
- Test stretch samples.
- Compress (Tensile) long.
- ↑ We can extend column length of both horizontal and vertical test stands.
- Test speedily.
- Test slowly.
- ↑ We can change the range of measuring speed.



Testing Large Samples

[This is recommended when you...]

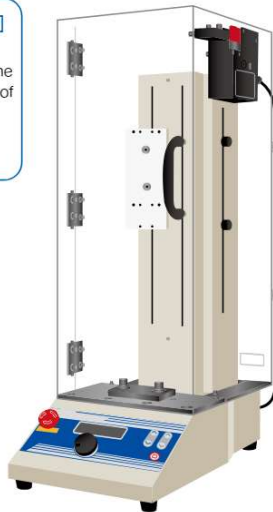
- Measure a large sample since the test stand can be moved in the X-Y direction with the guide rail.
- It improves the measurement efficiency since a sample is not needed to move even when compressing (pulling) multiple points from one end to the other of wide surface.



The electromagnetic lock cover provides safety

[This is recommended when you...]

- Would like to stop the test stand completely before the door is unlocked, instead of unlocking the door at the same time as the stand stops.



Separating a Display Part from a Drive Part for Built-in

[This is recommended when you...]

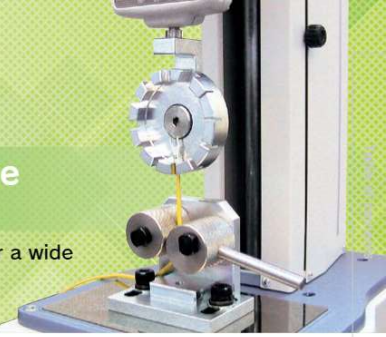
- Incorporate IMADA force testing system into your equipment
- Fix a display part (a drive part) on a specific place
- Manipulate it apart, preventing dangers in testing.



Attachments

The fixtures mounting on a force gauge thread or a test stand table

Attachments are integral components of testing systems, designed for a wide variety of force testing applications for tension, compression, peeling, COF, and more.



The Attachment Types and How to Use

IMADA attachments are separated to 2 types generally.

Attachments to be mounted on a force gauge.



A force gauge's thread is M6 or M10 screw, and type 1 attachments are designed to fit into either screw. You can choose desired one from a wide range of attachments, and mount it on a force gauge's thread to complete a force tester.

Attachments to be mounted on a test stand table.



Type 1 can be mounted on a test stand with a grip mounting adapter.*



*It is attached with test stands (except some models).

- ⚠ Weight of an attachment is applied as force to a force gauge, therefore, please choose an attachment whose weight is 10% or less of the force gauge's capacity.
- ⚠ Please contact us before purchase to choose the most appropriate attachment for your testing. Some samples cannot be tested appropriately due to their shapes or materials. We are pleased to help you choose the best attachment to meet your testing needs.
- ⚠ Some attachments are in accordance with Japanese Industrial Standard (JIS). A force gauge and a test stand are required for measurements complying with JIS. Please feel free to contact us for the details. When you need other standard such as ISO or ASTM, please contact us as well.

Accessory Attachments

The IMADA force gauges come with attachments below for basic compression/tension tests.

Standard Type

M6

(Accessory attachments for the force gauges whose capacities are 1000N or less)

Force gauges whose capacities are 100N or less come with aluminum made attachments (A-type). Steel made attachments (S-type) are included in force gauges whose capacities are from 200N to 1000N.



The number of attachments varies by models.
ZTS/ZTA Basic model: ①~⑧, ZTS/ZTA-DPU-2~500N: ①~⑧,
DST/DSV: ①~⑥, PS/PSM: ①~⑧, FB: ①~⑥
For 1000N capacity, SR-1 is included instead of S-1.

High Capacity Type

M10

(Accessory attachments for the force gauges whose capacities are higher than or equal to 1000N)



The number of attachments varies by models.
ZTS/ZTA-2500N/5000N: ①~⑧,
ZTS/ZTA-DPU-1000~5000N: ①~⑥, PSH: ①~⑧

Please feel free to contact us about made-to-order issues. We will provide the best solution for you.

On our website, you can see a wide range of force testing applications, and download a specification sheet of each product. Please feel free to contact us.

●IMADA service group telephone number: +81(0)532-33-3288

IMADA Search <https://www.forcegauge.net/en>

Compression Attachments

We offer fixtures for a variety of compression testing such as a durability test, a bending test, a sticking test, and more.

Puncture Test Fixture **TKS-20N/250N**

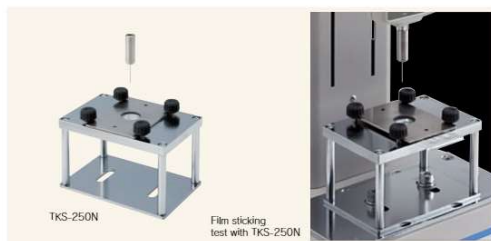
Designed for puncture strength test of thin samples such as film.

Representative applications

Film Metal foil PET bottle Cloth Fiber material

Model	TKS-20N	TKS-250N
Capacity(N)	20	250
Pin diameter(mm)	Approx. φ1	Approx. φ1
Pin weight(g)	Approx.22.2(Pin+Pin vice)	Approx.16
Mounting screw	MS	

In accordance with a part of JIS Z 1707(2019)



Compression Test Fixture for Small Spots **PG-2/3/4/5**

Ideal for compression and penetration tests of small samples.



Representative applications

Switch LCD panel Food

Model	PG-2	PG-3	PG-4	PG-5
Capacity(N)	100	100	200	200
External diameter(mm)	Approx. φ2	Approx. φ3	Approx. φ4	Approx. φ5
Weight(g)	Approx.2	Approx.3	Approx.4	Approx.5
Mounting screw	MS			

Compression Test Fixture **UR-8S/8M**

Hemisphere shaped fixture made of urethane. It produces finger-touch.



Representative applications

Switch Electric component Touch panel

Model	UR-8S	UR-8M
Capacity(N)	50	50
Weight(g)	Approx.5.4	Approx.5.2
Hardness	ShoreA50	ShoreA70
Mounting screw	Hardness like eraser / Hardness like rubber ball for base ball	
	MS	

※ Please note the fixture does not react to capacitance touch panels.

For High Capacity[Rectangle type] **SQ series**

Ideal for high capacity compression/ breaking testing up to 5000N. They can contact a test sample closely due to a free joint design. (Only SQ-5075/5150)



Representative applications

Tablet Plastic PVC

Model	SQ-5030	SQ-5075	SQ-5150
Capacity(N)	5000	5000	5000
Size(mm)	30X20	75X50	150X100
Weight(g)	Approx.65	Approx.500	Approx.1560
Mounting screw	MS		

Compression Test Fixture **A-40/60, S-40/60**

Ideal for crushing tests. Type A is made of aluminum and Type S is made of steel. Type A is for low capacity force gauges.



Representative applications

Carbon fiber Cushion Tablet Ball Spring

Model	A-40	A-60	S-40	S-60
Capacity(N)	200	200	1000	1000
External diameter(mm)	φ40	φ60	φ40	φ60
Weight(g)	Approx.38	Approx.84	Approx.110	Approx.238
Mounting screw	MS			

For High Capacity [Disc type] **PC series**

Ideal for high capacity compression/ breaking testing up to 5000N. They can contact a test sample closely due to a free joint design.



Representative applications

PET bottle Ball Tablet Plastic

Model	PC-5040	PC-5060	PC-5100
Capacity(N)	5000	5000	5000
External diameter(mm)	φ40	φ60	φ100
Weight(g)	Approx.160	Approx.330	Approx.820
Mounting screw	MS		

For High Capacity[Spherical type] **SP series**

Ideal for high capacity compression/ breaking testing up to 5000N.



Representative applications

Carbon fiber Cushion

Model	SP-5010	SP-5020	SP-5030
Capacity(N)	5000	5000	5000
External diameter(mm)	φ10	φ20	φ30
Weight(g)	Approx.26	Approx.55	Approx.135
Mounting screw	MS		

Compression Attachments

We offer fixtures for a variety of compression testing such as a durability test, a bending test, a sticking test, and more.

Press Test Fixture **PR-500N/2500N**

Designed for durability tests for retort pouch, heat sealed packages, box and so on.

Representative applications

Retort pouch Packing box Food pack Tube container

Model	PR-500N	PR-2500N
Capacity(N)	500	2500
Measurable size(mm)	W194XD120XH156	W200XD140XH105
Weight(g)	Force gauge side: Approx.900	Force gauge side: Approx.3100
Mounting screw	MS	

PR-2500N: In accordance with a part of JIS Z 0238(1998)



Bending Test Fixture **BT-500N/5000N/5000N-CB**

Designed for 3 points bending tests for metals, glasses, and more.



Representative applications

Metal board Plastic board Carbon Wire net Plywood Ceramic

Model	BT-500N	BT-5000N	BT-5000N-CB
Capacity(N)	500	5000	5000
Upper anvil diameter(mm)	R2.5	R3	R5
Block diameter(mm)	R2.5	R3	R2
Upper anvil Weight(g)	Approx.100g	Approx.130g	Approx.150g
Mounting screw	MS		

BT-500N Complies with the corresponding part of JIS C214(1992)/R161(2009)/R162(1995)/R163(2006)/R164(2016)
BT-5000N CB: Complies with the corresponding part of JIS K7074(1988)/701(1999)/C2141(1992)/H1406(1993)/R163(2006)/21(991).ISO 1518-1:2015

Soft Pad Attachments **PAD series**

Ideal for when not damage the surface of sample and apply force slowly not to generate the impact force.

Representative applications

Furniture Plastic cup Humbody

Model	PAD-100-25	PAD-R80	PAD-25-25	PAD-D80
Capacity(N)	1000	1000	1000	1000
Size(mm)	100×25×25	100×31.4×25	25×25×25	φ80×25
Hardness	Asker C35			
Weight(g)	Approx.95	Approx.75	Approx.30	Approx.140
Mounting screw	MS			



Tension Attachments

We offer a wide range of fixtures and grips for tensile testing such as a tearing test, a breaking tension test, and more.

Flat Chuck **GC series**

These grips can be used for a wide range of testing applications. Its jaw is manually tightened, and individually adjusted for samples up to 10-30mm thick. (The maximum thick differs among models.) GCF-1200 is multi-purpose model, replaceable the claws.

Representative applications

Concave Cable Fastener Booklet Plastic Piece of metal

Model	GC-1100	GC-1200	GC-5000	GCF-1200
Capacity(N)	1000	1000	5000	1000
Aperture opening width(mm)	Max. 10	Max. 20	Max. 30	Max. 20
Weight(g)	Approx.160	Approx.170	Approx.1400	Approx.170
Mounting screw	MS			
Replaceable claws exchange	○			

GCF-1200 with wave-shaped claws complies with the corresponding part of ISO 1924-2(1994)/JIS P 8113(2006).
※ Fixed model (F) are available, recommended when you attach it on a test stand since their attaching parts are fixed. (Fixed mounting screw is standard equipped to GCF-1200.)



Compression and Tension Attachments

These attachments can be used for both compression and tension testing.

Pin Grip CP-150N

For gripping thin wire-shaped samples. You can utilize it in measurement at narrow spaces.



○ Representative applications

Model	CP-150N
Capacity(N)	150
Aperture opening width(mm)	Approx. ϕ 0~3.2
Weight(g)	Approx. 22
Mounting screw	M5

Cap Clamping Jig CCJ Series

Firmly Clamps small cylindrical specimen such as bottle caps with 4 adjustable pins. (Not suitable for soft or easy-to-deform samples.)



○ Representative applications

Model	CCJ-100N	CCJ-100N-01	CCJ-100N-02	CCJW-100N	CCJW-100N-01	CCJW-100N-02
Capacity (N)	100	100		100		
Allowable sample diameter(mm)	7~5.0		10~100			
Clamping Pin	Standard Pin (Left)	Notch Pin	Long clamp pin	Standard Pin (Left)	Notch Pin	Long clamp pin
Weight (g)	Approx. 250	Approx. 300	Approx. 260	Approx. 330	Approx. 380	Approx. 340

Jacobs Chuck GC-5/15

Ideal for gripping round cylindrical shaped samples. Designed to prevent the samples from slipping.



○ Representative applications

Model	GC-5	GC-15
Capacity(N)	500	1000
Aperture opening width(mm)	Approx. ϕ 0.5~6.5	Approx. ϕ 2.0~13
Weight(g)	Approx. 235	Approx. 500
Mounting screw	M5	M8

Pinching Force Test Attachment

Pinching Force Measurement Jig PCA-150N

Designed for pinching/spreading force measurement of double-handle tools, like calipers and forceps. Easy adjusting of the measuring widths along with the scale.



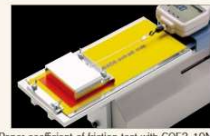
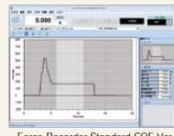
○ Representative applications

Model	PCA-150N
Capacity (N)	150
Pinching widths (mm)	5~15
Spreading section widths of the jig(mm)	1~1.5
Weight (g)	Force gauge mounting side : Approx. 50

Friction Attachments

The included software automatically calculates Coefficient of Kinetic friction and coefficient of Static friction and draws graphs.

Coefficients of Friction Fixture COF Series



○ Representative applications

Model	COF2-2N	COF2-10N	COF-2N-V	COF-10N-V
Compatible test stand	MH2-500N		Vertical type ※1	
Weight of the weight set(g)	200	1000	200	1000
Measurable size(mm)	Thickness: Max. 1.5 Length: Max. 150			

※ You need A-1 or S-1 (Page 38) to attach the weight to a force gauge.
 ※ 1 Some vertical test stand can not be combined with the fixture. Please contact us if you need the details.

Variable Weight Reciprocating Friction Test Jig VWF-10N

This jig enables you to measure the friction occurring when vertical force is applied by a weight, reciprocating friction, repeated friction and more. Various holders which are sold separately allow you to diversify test applications. The included software (Force Recorder Standard COF Ver.) automatically calculates Coefficient of friction.



○ Representative applications

Model	VWF-10N	①VWF-STH	②VWF-STH-VA	③VWF-ATH-VA	④VWF-BAH6	⑤VWF-BLH
Capacity ※	1000g					
Sample diameter	8mm					
Compatible force gauge	ZTS/ZTA Series					
Compatible test stand	MH2-500N					
Feature	Stick Holder	Variable Angle Stick Holder	Variable Angle Attachment Holder	ϕ 6 Ball Holder	Blade Holder	

※ Weight is required separately.

Wire Crimp Pull Test Attachments

Combining these attachments with a force gauge and a test stand, enables you to create a wire harness testing machine. These attachments are designed to grip different sizes of harnesses.

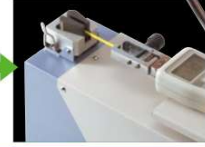
~500N Accessory Attachments for A Manual Wire Clamp pull Tester [LH-500N(P53)]

Terminal clamp jig It is designed to secure a crimp terminal easily and quickly. For engaging it, you only have to hook it between its jaws.

Model	CH-500N
Capacity(N)	500
Aperture opening width(mm)	Max. 6
Weight(g)	Approx. 210
Mounting screw	M5

Wire clamp jig It is designed to secure the ends of wire/cable tightly and easily. For engaging sample, you only have to pull its lever and put your sample on.

Model	CW-500N
Capacity(N)	500
Aperture opening width(mm)	Max. 5
Weight(g)	Approx. 220
Mounting screw	M5



~1000N Attachments for Vertical Test Stands

Rotary wire terminal jig The grip secures wire terminals and other samples. It has grooves of different sizes to accommodate wire diameters up to 8mm. Rotate the wheel to the desired size.

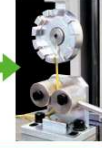
Model	FW-12
Capacity(N)	1000
Measurable diameter(mm)	ϕ 1~8
Weight(g)	Approx. 380
Mounting screw	M5

Rotary wire terminal jig The grip secures wire terminals and other samples. It has pins of different sizes to accommodate the round terminal diameters up to 8mm. Rotate the wheel to the desired size.

Model	PW-4
Capacity(N)	1000
Dimensions of pins (mm)	ϕ 3 (1) ϕ 2 (4) ϕ 3 (4) Female Screw
Weight(g)	Approx. 310
Mounting screw	M5

Wire clamp jig It is for securing the end of wire/cable. Knurled cam mechanism reduces the possibilities of breaking samples.

Model	GP-30
Capacity(N)	1000
Aperture opening width(mm)	Max. 10
Weight(g)	Approx. 880



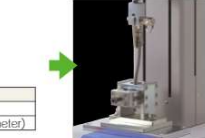
~5000N Attachments for High Capacity

Wire terminal jig It engages terminals from ϕ 4 to ϕ 12mm diameter.

Model	CH-5000N
Capacity(N)	5000
Measurable diameter(mm)	ϕ 4~12 (Internal diameter of the terminal hole)
Weight(g)	Approx. 315
Mounting screw	M8

Wire clamp jig It is designed for preventing wire coating from breaking.

Model	CW-5000N
Capacity(N)	5000
Measurable diameter(mm)	Max. ϕ 30 (Cable diameter)



Chip Components Tension/Shear Test Attachments

QFP Lead Hook/Chip Shear Jig SJ Series

5 types of attachment for QFP lead hook/chip shear jig meet your testing requirements.



○ Representative applications

Model	SJ-QFP-01	SJ-TIP-01	SJ-TIP-02	SJ-TIP-03	SJ-TIP-04
Capacity(N)	100				
Dimension(mm)	Approx. 118	Approx. 79	Approx. 78	Approx. 93	Approx. 75
Mounting screw	M3				
Weight (g) ※ 1	Approx. 60	Approx. 50	Approx. 50	Approx. 15	Approx. 25



Endurance test for surface mount solder joint with SJ-QFP-01.

Chip Peel Fixture GT-10/20

Ideal for peel (shear) testing for soldered or adhered electric components.



○ Representative applications

Model	GT-10	GT-20
Applying force	for Tension	for Compression
Capacity(N)	500	
Weight(g)	Approx. 34	
Mounting screw	M5	



Alignment stage for solder joint strength test SJS-100N-L/S

Designed for solder joint strength test. The table enables you to finely adjust the stage position. The direction of stage is switchable and enables you to perform solder joint strength test of 45 and 90 degrees.

○ Representative applications

Model	SJS-100N-L	SJS-100N-S
Capacity(N)	100	
Dimension(mm)	Approx. W236 x D155 ~ x H247	Approx. W236 x D155 x H190
Weight (kg) ※ 1	Approx. 3.2	Approx. 2.8
Mainly distance (W stage)	+ 30mm	

※ 1 Weight of the attachment is also applied as a load on the force gauge. Consider it when selecting the capacity of a force gauge.



Peel Test Fixtures

We offer fixtures for peel testing (adhesive testing) of sticky tapes, coating surfaces, and more.

90 Degree Peel Test Fixture **P90-200N/200N-EZ/200N-BB**

Ideal for 90 degree peel testing for adhesive tape and the like. P90-200N keeps the peeling degree at 90 degree.
The moderated price model is P90-200N-EZ.

Representative applications
Adhesive, Copper foil, Magnet card, Bouffice

Model	P90-200N	P90-200N-EZ	P90-200N-BB
Measurable force(N)	~200	0.4~200	~200
Measurable size(mm)	Length:Max.150	Width:Max.80	Contact us

P90-200N Complies with the corresponding part of JIS C5016(1994)/20237(2022),IEC249-1(1982)/326-2(1990),ASTM D6862-11(2016)/D3330(2010),ISO29862(2007)
P90-200N-BB Complies with the corresponding part of IEC249-1(1982)/326-2(1990),ISO4525(2003),JIS H 8630(2006).
※We provide a film cutter (P45). With the cutter, you can cut film in constant-width.
※We also provide a rubber roller according to JIS (See P45 for further information).



P90-200N

Adhesive tape peeling strength test at 90 degree with P90-200N.

180 Degree Peel Test Fixture **P180-200N/200N-BB**

Ideal for 180 degree peel testing for adhesive tape and so on.
It is in accordance with a part of JIS Z 0237(2009).

Representative applications
Adhesive

Model	P180-200N	P180-200N-BB
Measurable force(N)	0.5~200	0.5~200
Measurable size(mm)	Length:Max.150	Width:Max.40
		Contact us

P180-200N Complies with the corresponding part of IEC249-1(1982)/326-2(1990),ISO29862(2007),ASTM D3330(2010),JIS C5016(1994)/JIS Z 0237(2009).
P180-200N-BB Complies with the corresponding part of IEC249-1(1982)/326-2(1990),JIS C5016(1994).
※We provide a film cutter (P45). With the cutter, you can cut film in constant-width.
※We also provide a rubber roller according to JIS (See P45 for further information).



Adhesive tape peeling strength test with P180-200N.

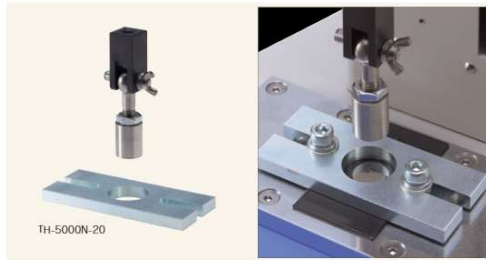
Surface Coating Pull-Off Test Fixture **TH-1000N/5000N**

Ideal for pull-off testing of surface coating. It comes with 5 peeling heads(10 peeling heads for TH-1000N-7).

Representative applications
Paint surface

Model	TH-1000N-7	TH-1000N-20	TH-5000N-20
Capacity(N)	1000	1000	5000
Upper fixture	Adhesive area shape	Diameter:7mm	Diameter:20mm
Force gauge	Weight(g)	Approx.40	Approx.90
Lower fixture	Mounting screw	φ10	φ10
	Mounting screw	φ10	φ10
Lower fixture	Mounting screw diameter(mm)	Diameter:30	Diameter:30

TH-1000N-7 is in accordance with a part of JIS K 5600-5-7 (2014). TH-1000N-20 and TH-5000N-20 are in accordance with a part of JIS K 5600-5-7 (1999).



TH-5000N-20

Rubber Roller for Peel Test **APR-97 series**

With this roller, you can apply stable pressure to stick samples, improving repeatability.



APR-97-2K

Model	APR-97-1K	APR-97-2K
The roller weight(g)	Approx.1000	Approx.2000
The sample contacting part material	Rubber(hardness A80)	Rubber(hardness A80)

APR-97-1K is in accordance with a part of JIS Z 0237(2022),ISO 29862(2018), and ISO 29863(2018).
APR-97-2K is in accordance with a part of JIS Z 0237(2022),ISO 29862(2018), and ISO 29863(2018).

Film Cutter **FSC-1525**

This cutter enables you to cut film in constant-width, improving measurement efficiency. It comes with 2 sets of spare edges.



Model	FSC-1525
Width to cut	15~70mm
Width adjustment block	15mm / 1 inch

FSC-1525 is in accordance with ASTM F88, JIS Z 0238 (1998), and JIS Z 1707 (2019).

Optional tray **PTW-101N**

For receiving outflowing contents. It is attached on an IMADA test stand.



Setting Image

Model	PTW-101N
Size (mm)	264×178
Attachments using with this tray	P45-50N,PTD-100N,PTF-100N,MED-SCT-500N

※Even though you combine the tray with a test stand, remember that the stand is still weak in water.

Medical Attachments

Attachment for Probe Tack Test **MED-IS-20N**

Ideal for measuring adhesiveness of sticking plaster etc. by tack test.

Representative applications
Sticking plaster

Model	MED-IS-20N
Capacity (N)	20
Surface diameter of contact (mm)	5
Weight (g)	Force gauge mounting side: Approx. 70g
Mounting screw	φ5

In compliance to 6.12.3.4 of the Probe Tack Method by the Japanese Pharmacopoeia



Sticking plaster adhesion test with MED-IS-20N

Attachment for Needle Pull Out Test **MED-NPT-200N**

Ideal for testing pull out strength of a needle from a needle base.

Representative applications
Needle

Model	MED-NPT-200N
Capacity	200
Measurable needle diameter (mm)	0.3-20
Measurable length diameter (mm)	above 10
Weight (g)	Force gauge mounting side: Approx. 210g
Mounting screw	φ5

Complies with a part of JIS T3209(2011)/T3220(2011)/T3221(2011)/T3222(2011)/T3223(2016)/T3228(2018)/T3229(2011)
Complies with a part of ISO 7864(2016)/10555-5(2013)/11608-2(2012)



Needle pull out strength test with MED-NPT-200N

Attachment for Compression Test of Syringe **MED-SCT-500N**

Ideal for compression test of syringe.

Representative applications
Syringe

Model	MED-SCT-500N
Capacity (N)	500N
Measurable capacity(ml)	0.5~50
Diameter of attached outer cylinder (mm)	10/15/24/33
Installation	Mounting on the stand

Complies with a part of ISO 7886-1 (2017)
※We provide an optional tray to receive outflowing contents. (See P45 for further information.)
※You need S-2 (Page38) to push syringe.



Syringe compression test with MED-SCT-500N

Luer fitting adapters **MED-LFA-20N series**

Designed to connect sample needles to force gauges without removing their needle hubs.

Representative applications
Needle, Vial stopper

Model	MED-LFA-20N-MS	MED-LFA-20N-FS	MED-LFA-20N-ML
Capacity(N)	20	20	20
Weight(g)	Approx. 15	Approx. 15	Approx. 15
Mounting Screw	φ5	φ5	φ5
Product Type	Male Luer Slip Adapter	Female Luer Slip Adapter	Male Luer Lock Adapter

Complies with a part of ISO 8871-5(2016)/ISO 7864(2016)



Vial stopper Penetrability test with MED-LFA-20N

Attachment for Acupuncture Needle: Strength and Sharpness **MED-ACU-2N**

Designed to measure strength and sharpness of acupuncture needle.

Representative applications
Acupuncture needle

Model	MED-ACU-2N
Capacity(N)	2
Applicable Diameter (mm)	φ0.1~1.0
Weight (g)	The side with force gauge:22g
Mounting screw	φ5

Complies with the corresponding part of JIS T 9301(2016)



Acupuncture needle strength and sharpness test with MED-ACU-2N

Vial holder **MED-VH-5N**

Ideal for penetrability test of vial stoppers

Representative applications
Vial stopper

Model	MED-VH-5N
Capacity(N)	5(※)
Weight(g)	Approx.220

Complies with a part of ISO 8871-5(2016)
※Force value applied to the clamp when extracting the needle cannot exceed 5N.



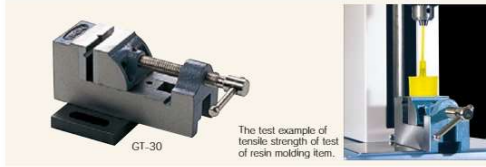
Vise Grips and Tables

Vise Grip **GT-30/2000N**

Wide opening range accommodates different sizes or shaped samples. Use with vertical test stands. (Contact us for models available with this grip.)

Model	GT-30	GT-30-E	GT-30-U	GT-2000N
Features	Compatible with 1000N	Notch Jaw ※1	One side notched jaw	Compatible with 2000N
Capacity (N)	1000	1000	250	2000
Aperture opening width (mm)	38	35	35	66
Mounting	To test stand table			

※1 We provide spare notch jaw.



Self-centering Vise Grip **GTW-50R/50L**

Self-centering vise. 2 models are available: 1. Knob model (high operability type) 2. Lever model (Strong clamp type) Use with vertical test stands. (Contact us for models available with this grip)

Model	GTW-50R	GTW-50L
type	Knob type	Lever type
Capacity (N)	500	1000
Aperture opening width (mm)	Max. 68	
Mounting	To test stand table	



High Capacity Self-centering Vise Grip **GTW-2500N**

A wide opening jaw enables gripping a larger samples. The stainless material unaffected magnetic specimen. It is designed to replace jaws easily and even mount your own jaw. ※It comes with standard jaw GTW-2500-MP(2pieces).

Model	GTW-2500N
Capacity (N)	2500
Aperture opening width (mm)	Max. 160
Mounting	To test stand table

※We provide the Jaw (GTW2500-MP10) which can be fixed up to 6 pieces and Sample stage (GTW-SP) which helps to put a sample stably.



XY Table **XY-500N series**

A sample can be put at the center using this XY table since the stage can be moved manually in X and Y directions at light feed. Use with vertical test stands. (Contact us for models available with this table)

Model	XY-500N-BB	XY-500N-M8	XY-500N-EZ
Features	Breadboard type	M8 screw type	M8 screw and free movable table type
Capacity (N)	Tension:500 Compression:1000	Tension:500 Compression:1000	Tension:500 Compression:1000
X-Y movement amount (mm)	+/- 30		
Mounting	To test stand table		

※The table position of -BB/-M8 can be adjusted with knobs, and feed amount of per turning the knob is 0.8mm.



X-axis Slide Table **XST-500N**

This table enables you to align a test sample easily.

Model	XST-500N
Capacity (N)	500
Movement amount (mm)	70
Weight (kg)	1.9
Mounting	To test stand table



T-Slot Table **TS-5000N**

It is for holding attachments, being utilized to mount/remove attachments quickly. A sample also can be centered readily since the table moves in X/Y directions.

Model	TS-5000N
Capacity (N)	5000(2500N for Tor: 5000N for 2pcs)
Diameter of T-rail hole	M8
The space between T-rails	Max. 125
Movement amount (mm)	X: +64 Y: +15
Mounting	To test stand table



Optional Handles

Optional Handle for Force Gauges **FOH-1**

Combining a force gauge with this handle by screws, you can apply force stably.



Model	FOH-1
Compatible model	1000N or less range of ZTA/ZTS/DSV/DST/PSS/PS/PSM/FS/FB series
Weight (g)	Approx. 500

Hand Grip Belt **HGB-1**

Designed to prevent a force gauge slipping from hand. It enables you to apply force easily.



Model	HGB-1
Compatible model	200N or less range of ZTA/ZTS/DSV/DST/PSS/PS/PSM/FS/FB series
Weight (g)	Approx. 45

Conversion Adapters

Attachment Adapter **JF/EJ series**

The mounting adapter for grip-type attachment for tension test. They help smooth sample fixation and precise adjustments of gripping positions and angle.



Model	JF-50N	EJ-1000N	EJ10-5000N
Capacity (N)	50	1000	5000
Mounting screw for a force gauge	—	M6	M10
Mounting screw for a truck fixture	M6	M6	M10
Weight (g)	Approx. 8	Approx. 29	Approx. 140

※Please contact us for the detail that which attachment is available.
※A 1/8"-1/32" (Page 38) is required to mount JF-50N on a force gauge.

Universal Joint **UJ6-1000N/UJ10-5000N**

It features free-joint design to reduce biased load to a force gauge. Combine this joint and an attachment, and mount them to a force gauge's thread, then the attachment uniformly contacts a test specimen, which improves repeatability.



Model	UJ6-1000N	UJ10-5000N
Capacity (N)	1000	5000
Mounting screw for a force gauge	M6	M10
Mounting screw for an attachment	M6	M10
Weight (g)	Approx. 25	Approx. 140

Eye Bolt and Eye Nut for Load Cells

Hoisting attachment for tension test by load cells (Page 19).

Eye Bolt **EB series**

It hangs a test sample or a load cell by hooking chain, rope, hook etc.

Model	EB-500N-M6	EB-500N-M8	EB-5000N	EB-20kN
Compatible load cell	DPU-5N~500N SW1-100N/200N	LU series SW1-500N	DPU-1000N~5000N	DPU-10kN/20kN
Capacity (N)	500	500	5000	20k
Weight (g)	Approx. 18	Approx. 39	Approx. 137	Approx. 1100
Mounting screw	M6 Male Screw	M8 Male Screw	M12 Male Screw	M18 Male Screw



Rod End (for shafts) **RE-20kN**

A shaft can be put through it.

Model	RE-20kN
Compatible load cell	DPU-10kN, DPU-20kN
Capacity (kN)	20
Weight (g)	Approx. 300
Mounting screw	M18 Male Screw



Optional Handle for Fire Door Closing Measurement **HDC-1**

Specialized for fire door closing force measurement according to the Building Standard Law of Japan.



Model	HDC-1
Compatible model	1000N or less range of ZTA/ZTS/DSV/DST/PSS/PS/PSM/FS/FB series
Weight (g)	Approx. 330

Conversion Adapter **CA series**

Gauges' threads (a part to mount an attachment) differ in size among models, thus you can use these adapters to combine a force gauge and a desired attachment even if their sizes are different.



Model	Screw diameter	Capacity	Purpose
CA-F6T4	M6 (male screw) -M4	100N	When mounting a M4 screw attachment to a M6 screw thread of a force gauge.
CA-F6T10	M6 (male screw) -M10	1000N	When mounting a M10 screw attachment to a M6 screw thread of a force gauge.
CA-F10T6	M10 (male screw) -M6	1000N	When mounting a M6 screw attachment to a M10 screw thread of a force gauge.
CA-F4T6	M4 (male screw) -M6	100N	When mounting a M6 screw attachment to a M4 screw thread of a force gauge.
CA-F5T4	M5 (male screw) -M4	100N	When mounting a M4 screw attachment to a M5 screw thread of a load cell (LU) series.
CA-F5T6	M5 (male screw) -M6	500N	When mounting a M6 screw attachment of FHS series to a M5 screw thread of a load cell (LU) series.
CA-8T4	M8 -M4	100N	When mounting a M4 screw attachment of FHS series to a M8 screw thread of a load cell (LU) series.
CA-8T6	M8 -M6	500N	When mounting a M6 screw attachment of FHS series to a M8 screw thread of a load cell (LU) series.
CA-8T10	M8 -M10	2000N	When mounting a 1-rail / M8 screw thread of load cell (LU) series to M10 attachment.

Eye Nut **EN-500N**

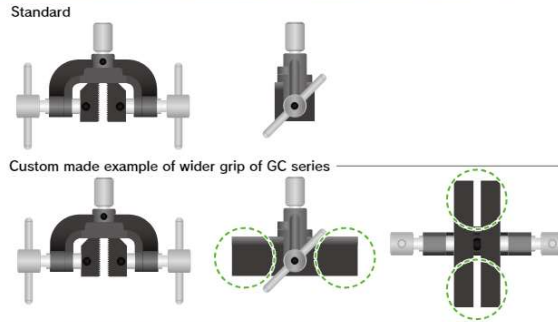
It hangs a test sample or a load cell by hooking chain, rope, hook etc.

Model	EN-500N
Compatible load cell	LMU series
Capacity (N)	500
Weight (g)	Approx. 11
Mounting screw	M5 Female Screw



1. Resizing Ready-Made Attachment

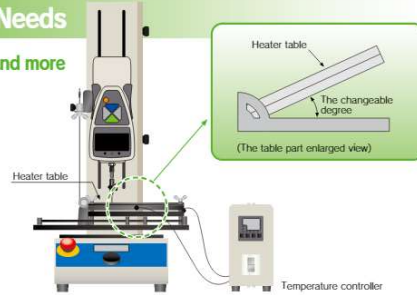
[Example: GC-1200 series
Length change of grip part]
We can resize the width and the length of the grip part.



We flexibly change sizes (width, depth) of fixtures and grips to fit your testing needs. Please contact us for the details.

2. Changing Specifications to Fit Your Testing Needs

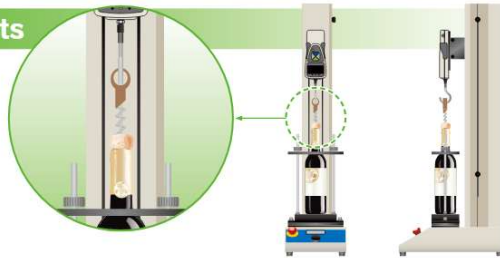
● Changing conditions such as measuring angles, temperatures, and more
[Example: Specification change of peeling test fixture]
We can offer a degree changeable table for peel testing. Besides, we can combine a heater with a table of a test stand.



● Measurement in accordance with standards such as Japanese Industrial Standard, ISO or ASTM
We offer force measuring instrument complying with standards' requirement (measuring speed, fixture design, etc).

3. Completely Original Products

[Example: Cork excerpption measuring unit]
We offer the special use fixture for your sample to improve measuring repeatability and efficiency.



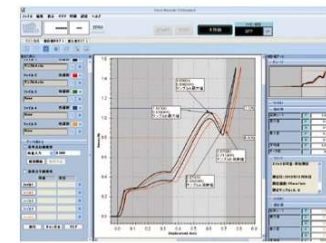
FSA series Force-Displacement Analysis Unit

High-performance measurement unit that can easily analyze the relationship between force and displacement

With this unit, deformation amount (displacement) to compression (tension) force can be measured. It is ideal for tactile test and material characteristic evaluation.



It draws Force vs Displacement graphs in real time at Max.2000Hz



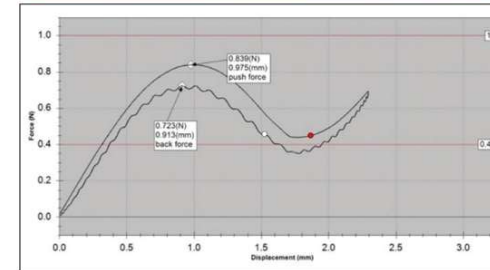
- Basic Functions of Force-Displacement Measurements**
- Easy connection to PC by USB
 - Smooth graphing performance at 2000Hz
 - Graph zooming function
 - Comment insertion on graphs
 - Quick data export to WORD, EXCEL, PDF

- Useful Functions for Measurements and Analysis**
- Graph comparing function Max 5 graphs.
 - Reference line function
 - Statistical calculation (maximum/ minimum/ average values).
 - Automatic displacement reset at the measurement start (when the force reaches the set force value)
 - Test trigger function (when the force reaches the set displacement value)

The Advantage of Measuring Displacement and Force Together.

Since force transition with reference to displacement can be confirmed, this unit is perfect for tactile testing, material characteristic evaluation, and more.

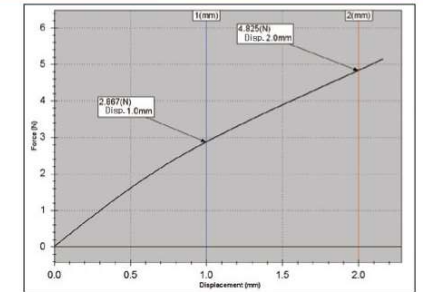
Example of A Switch Characteristic Evaluation



Curves in force-time graphs constantly goes from left to right, and never come back to left. On the other hand, curves in force-displacement graphs come back to left since it is drawn based on displacement. Therefore, force-displacement analysis method is better choice to identify the hysteresis(zero reversion). Moreover, the point of switch ON/OFF can be automatically defined and displayed by using Mark On function.

※Custom-made cable is required for Mark On function.

Example of Plastic Bending Test



Measuring displacement means identification of deformation amount. It is easy to check "How much force does it need to transform a testing sample(dent a sample at ○○mm)?"

Other Test Examples

- Simple evaluation of spring characteristic
- Simple evaluation of rubber product characteristic
- Cushioning material repulsion test
- Car cushion hardness test
- Fitting quality test of cosmetic containers
- Extract test of connectors
- Peel test with distance of tape and films
- Compression and Breaking test for electric components
- Pulling test for slide structures.
- Repulsion test for sport equipment (Tennis ball)
- Food texture test
- LCD panel strength test

On our website, you can see a wide range of force testing applications, and download a specification sheet of each product. Please feel free to contact us.

IMADA

●IMADA service group telephone number: +81(0)532-33-3288 <https://www.forcegauge.net/en/>

Configuration

A Force Gauge

It measures force, and indicates force and displacement values. Different attachments can be combined to handle a wide range of force testing applications. Easily put it on (off from) a test stand by screws.

A Test Stand

It is a machinery to move a force gauge up and down (left and right). Move it with up/down (left/right) buttons. Easily set up test requirement such as test speeds, pause and more with its dial.

A Cable

It connects the force gauge and the test stand for control. (FSA-MSL does not include this cable since it operates manually.)

Standard Attachments

Attachments are integral components of this testing system. Although this testing system comes with some basic attachments, optional attachments can be combined as required. We offer a wide range of optional attachments to fit various measurement needs.



Software

This software can draw force-displacement graph. It captures force and displacement values at Max. 2000/sec, and draw them into graphs smoothly. It automatically starts graphing using Trigger function. ※MSL-FSA does not have this Trigger function.



Measurement unit	Force	N, kgf, lbf ※
	Displacement	mm, inch ※
Range		2N(200gf), 5N(500gf), 20N(2kgf), 50N(5kgf), 100N(10kgf), 200N(20kgf), 500N(50kgf), 1000N(100kgf), 2500N(250kgf), 5000N(500kgf)
Resolution	Force	4 digit (e.g. Resolution of 5N force gauge is 0.001N)
	Displacement	0.001mm (on software; Force Recorder Professional) 0.01mm (on force gauge display)
Accuracy	Force	+/-0.2% F.S. +/-1 digit
	Displacement	+/-0.1mm +/-1 digit (with no load)
Sampling rate		2000 data/sec
Output		USB, Serial(RS232C), Analog(Approx. +/-2V), Comparator, Overload, Sub comparator, USB flash drive * USB flash drive is not included.
Accessories		Instruction manual, Inspection certificates, Power cable, 2 pcs of spare fuses, Driver CD-ROM(including software for data log "ZT-Logger"), Graphing software "Force-Recorder Professional".

Note: ①A force gauge is separately sold. ②Actual measuring capacity depends on the force gauge's capacity. However, when the test stand's capacity is less than the force gauge's capacity, you can measure force up to the test stand's capacity. (※1)The maximum height or length means the distance between the test stand table and the thread of the force gauge ZT series general type(1000N or less)at the highest position of the test stand. The distance does not include attachments. The distance of FSA-2.5K2, FSA-5K2, FSA-2.5HK2 is in case of mounting ZT series high capacity type. ※The unit is different from Japanese domestic models.

We provide a wide range of testing system to fit your needs

Easily

- Digitally set up test requirements such as speed, pause, a number of times, and more with simple operation (Except FSA-MSL).
- Start graphing by one click or record data automatically.

Precisely

- Capture data accurately due to its high sampling rate(Max. 2000Hz).
- Overlay graphs for detailed analysis.

Vertical

The MX2 series test stand is set. Testing speed can be adjusted digitally. It is compact enough to be put on a desk.

FSA-0.5K2, 1K2, 2.5K2
□Speed: 10-300mm/min (standard)

FSA-5K2
□Speed: 0.5-300mm/min (standard)



Models: FSA-0.5K2-2~500N

- Capacity: 2~500N
- The max. sample height: 235mm

Models: FSA-2.5K2-2~2500N

- Capacity: 2~2500N
- The max. sample height: 320mm

Models: FSA-1K2-2~1000N

- Capacity: 2~1000N
- The max. sample height: 300mm

Models: FSA-5K2-2N~5000N

- Capacity: 2~5000N
- The max. sample height: 380mm

Horizontal

The MH2 series test stand is set. Testing speed can be adjusted digitally.

□Speed: 10-300mm/min (standard)



Models: FSA-0.5HK2-2~500N

- Capacity: 2~500N
- The max. sample height: 245mm

Models: FSA-2.5HK2-2~2500N

- Capacity: 2~2500N
- The max. sample height: 340mm

Multifunctional and Accurate

□Speed: 0.5~600mm/min (Standard)

The travel distance to move a force gauge can be set digitally. Test requirements also can be stored in it.

Since this test stand has high intensity, enables you to measure force and displacement more accurately.



Models: FSA-0.5KE-2~500N

- Capacity: 2~500N
- The max. sample height: 295mm

Models: FSA-1KE-2~1000N

- Capacity: 2~1000N
- The max. sample height: 320mm

Portable (Knob operation, Up to 50N)

□Capacity: 2~50N (※1)
□The sample maximum height: 44mm (※2)



Mounting on tripod enables you to measure wider range of testing applications. An optional adaptor is required to mount it on a tripod.

①Easy knob operation



Since it is lightweight, it can be carried to various places. It also can be fixed on a wall by screws.

Models: FSA-MSL-2~50N

※1 Force gauge's capacity decides the capacity of testing system.

※2 The sample maximum height means the distance between the test stand table and the thread of the force gauge ZT series general model (1000N or less) at the highest position of the test stand. The figure for FSA-2.5K2, FSA-2.5HK2, FSA-5K2 is in the case of ZT series high capacity model combined.

Automatic crimp tester

ACT-1000N



[You can carry out the test in accordance with a part standards UL 486A-486B and JISC2805.]

- The start button provides smooth flow from testing to saving data including OK/NG judgment.
- Test conditions can be saved up to 26 patterns in it, which is useful for multiple tests. Recall a suitable setting easily and instantly.
- 2 test modes are available; "BREAK mode" and "KEEP mode".
With BREAK mode, Detect the force when a crimp terminal is broken. With KEEP mode, Test the tensile durability at a set point.

ACT-1000N provides speedy test due to its ease of use.



Hook for a terminals, and grip a wire.

Press the START button.

It carries out a test and save the test data automatically. Done.

Optional attachment



ACT-T-01
Jig for round terminals:
Easily fix round terminals.



ACT-T-02
Jig for rod terminals:
Grips a small terminal such as a rod terminal.

Model	ACT-1000N	ACT-1000N-V300
Capacity	1000N	
Accuracy	+/-0.5% F.S. +/-1 digit	
Unit	N, kgf, lbf(※1)	
Sampling rate	2000Hz	
Measuring speed	10/25/50/100 mm/min (Choose from 4 steps)	25/50/100/300 mm/min (Choose from 4 steps)
Stroke	Approx. 50mm	
Allowable sample diameter	Terminal side: 1~8mm Harness side: 1~8mm	
Allowable sample length	100mm or more	
Mode	BREAK mode / KEEP mode	
Output	USB/RS232C/pass or fail decision signal(OK/NG)	
Security lock	Emergency stop button and Overload prevention(at the power on)	
Power supply	AC100~240V	
Operating environment	Temperature: 0~40 degree Celsius Humidity: 20~80%RH	
Accessory	Software, USB cable, Power cord, Inspection Certificate	

※1 This is the specifications for International model.
Please note Japanese domestic model shows force in N only.



It comes with fixtures for wire and terminal.

□Size: W400×D240×H150mm
□Weight: Approx. 1.1kg

Test Lever Stand LH-500N

- It is ideal for tensile strength test of crimped terminal.

Designed exclusively for wire harness testing = Easy manipulation → Improve measurement efficiency



Put a terminal on a hook.

Grip a wire part

Pull up the lever, and the test is done.

Accessory Attachment



CW-500N
Wire Clamp fixture:
Wedge type. You can grip wire/cable easily by pulling the lever.



CH-500N
Terminal Clamp fixture:
It is wide size fixture as gripping a crimp contact.

□Size:
Approx. W155×D450×H182mm
□Weight:
Approx. 1.1kg



Model	LH-500N
Capacity	500N
Accessory	Terminal Clamp Fixture: CH-500N Wire Clamp Fixture: CW-500N *Force gauge is not included.

Peel Tester

IPTS-5N



- It enables peel test of embossed carrier tape complying with IEC.
- It graphs the measurement accurately due to its high sampling rate, at Max. 2000Hz.
- It handles a wide range of test speed up to 1500mm/min.
- One-click Operation: The start button provides smooth flow from testing to data saving.



□Size: Approx. W702×D300×H140mm
□Weight: Approx. 1.1kg

Related Standards

- A part of JIS C0806-3(2014) [Packaging of components for automatic handling-Part 3: Packaging of surface mount components on continuous tapes]
- A part of IEC 60286-3(2019) [Packaging of components for automatic handling - Part 3: Packaging of surface mount components on continuous tapes] (Peel test part)



Peel test of embossed carrier tape

High Speed Peel Tester

IPTS-20N/50N



- It graphs the measurement accurately due to its high sampling rate, at Max. 2000Hz.
- It handles a wide range of test speed up to 1500mm/min.
- One-click Operation: The start button provides smooth flow from testing to data saving.
- It enables to test samples at a thickness of up to 0.5mm.



□Size: Approx. W702×D300×H140mm
□Weight: Approx. 1.1kg

Related Standards

- A peel test part of ISO 29862:2018 [Self adhesive tapes - Determination of peel adhesion properties] (A peel test part of JIS Z 0237:2022)
- A peel test part of ISO 8510-2:2006 [Adhesives - Peel test for a flexible-bonded-to-rigid test specimen assembly - Part 2: 180° peel] (A peel test part of JIS K6854-2:1999)
- A peel test part of Japanese Pharmacopoeia

Test Samples

Label, adhesive tape, stickers, screen protector sheet, laminated package, adhesive tape for first-aid, postcard, magnetic tape, foil laminated film, electrode's line of solar cell, copper foil of circuit board.



Peel test of copper foil

IPTS series is specialized for 180-degree peel test. = It ensures the high performance of your works and accurate test.



Fix a sample.

Select test speed.

Click start button.

Automatically it records and graphs the measurement.

Model	IPTS-5N	IPTS-20N	IPTS-50N
Capacity	5N	20N	50N
Resolution	0.001N		0.01N
Unit※	N, gf, ozf		N, kgf, lbf
Accuracy	±0.2%F.S. ±1 digit		
Overload	Approx. 150%F.S. (It warns with light flashing and buzzer when the force is over 110% of capacity.)		
Sampling rate	Max. 2000 data / sec. (2000Hz)		
Test speed	120, 200, 300, 500, 1000, 1500mm/min (Switchable)		
Stroke (length)	Travel of load cell: Approx. 400mm (Peel length: Approx. 200mm)		
Peel angle	165°-180° (Height and angle are adjustable.)		
Max. sample width	Adhesion: 88mm (Film clip: 40mm, Sample clip: 95mm)	Adhesion: 88mm (Grip: 20mm, Clamp: 50mm)	
Max. sample thickness	Cover film: 0.5mm	Grip: 3mm Clamp: 13mm	
Safety device	Emergency stop button, Overload prevention (Valid only when the power is ON) (※1)		
Power	AC100~240V free input (※2)		
Weight	Approx. 1.1kg		
Operating environment	Temperature: 0~40°C Humidity: 20~80%RH		
Accessories	Force Recorder Standard (graphing software), USB cable, Power cable, Film grip, Inspection certificate, Instruction manual		

※1 You cannot prevent overload in some cases.
※2 Please specify the voltage when you order. (Accessory varies depending on voltage.)
※3 The film grip attachments for IPTS-5N and IPTS-20N/50N are different.
※ Japanese domestic models do not indicate gf/kgf and oz/lbf.