

Digital Torque Gauges

For torque of screws or torsion strength.



The example of the feeling measurement of a click of a rotary switch by HTG2.

* TA-01~03 are available as option. Please add [-1], [-2], or [-3] to the end of model.
* HTG2-10N, HTG2-1000Nc includes handles.
* USB model is also available as customized.

For the torque measurement of the screw-caps of cosmetic, food and beverage containers.



Torque measurement of bottle screw cap.

* Design, appearance and specifications may be changed for modifications or improvements without any prior notice.

HTG2 Hand Held Torque Gauge

- Accuracy: $\pm 0.5\%$ F.S. ± 1 digit • Display: 4-digit LCD • Measuring units: N-m, kgf-m or gf-m, or lbf-in selectable • Sampling rate: 1000 times/sec or more
- Power supply: Internal NiMH rechargeable battery or AC adapter
- Overload capacity: Approx.150% F.S. • Overload warning: Approx.110% F.S. (LED flash, alarm) • Tips: $\phi 0.5\sim 6.5$ mm Pin Chuck (Standard Model) • Weight: Display unit= Approx. 410g, Sensor= Approx. 530g • Dimension: Display unit= W78xD32xH220mm, Sensor= L194x ϕ 39mm, Cable= Approx. 350mm
- Included: AC adapter, Carrying case, Instruction manual, Inspection certificate
- Other specifications are the same as ZP/Z2 series.

Model	Capacity	Display	Resolution
HTG2-2N	2N-m(200gf-m)	2.000N-m(200.0gf-m)	0.001N-m(0.1gf-m)
HTG2-5N	5N-m(500gf-m)	5.000N-m(500.0gf-m)	0.001N-m(0.1gf-m)
HTG2-10N	10N-m(1.000kgf-m)	10.00N-m(1.000kgf-m)	0.01N-m(0.001kgf-m)
HTG2-200Nc	200N-cm(20.00kgf-cm)	200.0N-cm(20.00kgf-cm)	0.1N-cm(0.01kgf-cm)
HTG2-500Nc	500N-cm(50.00kgf-cm)	500.0N-cm(50.00kgf-cm)	0.1N-cm(0.01kgf-cm)
HTG2-1000Nc	1000N-cm(100.0kgf-cm)	1000N-cm(100.0kgf-cm)	1N-cm(0.1kgf-cm)



HTG2-10N, 1000Nc included handles



(TA-00)
Standard Pin Chuck
 $\phi 0.5\sim 6.5$ mm



(TA-01)
9.5" Torque Wrench



(TA-02)
Torque Driver



(TA-03)
Large Pin Chuck
 $\phi 1.2\sim 13$ mm

DTX2 Screw-cap Tester

- Accuracy: $\pm 0.5\%$ F.S. ± 1 digit • Display: 4-digit LCD • Measuring units: N-m, kgf-m or gf-m, or lbf-in selectable • Sampling rate: 1000 times/sec or more
- Display update: 10 times/sec • Sample diameter: $\phi 20\sim \phi 180$ mm
- Functions: Memory, Comparator, Peak hold • Output: Same as Z2 series
- Overload capacity: Approx.150% F.S. • Overload warning: Approx.110% F.S. (LED flash, alarm) • Operating temperature: $0\sim +40^{\circ}\text{C}$ • Power supply: DTX2-A= AC100~240V, DTX2-B= NiMH rechargeable batteries, AC adapter
- Weight: Approx. 4.5kg • Dimension: W210xD324xH164mm • Included: AC adapter (only DTX2-B), Carrying case, Instruction manual, Inspection certificate

Model	Capacity	Display	Resolution
DTX2-2N-A(B)	2N-m(200gf-m)	2.000N-m(200.0gf-m)	0.001N-m(0.1gf-m)
DTX2-5N-A(B)	5N-m(500gf-m)	5.000N-m(500.0gf-m)	0.001N-m(0.1gf-m)
DTX2-10N-A(B)	10N-m(1.000kgf-m)	10.00N-m(1.000kgf-m)	0.01N-m(0.001kgf-m)
DTX2-200Nc-A(B)	200N-cm(20.00kgf-cm)	200.0N-cm(20.00kgf-cm)	0.1N-cm(0.01kgf-cm)
DTX2-500Nc-A(B)	500N-cm(50.00kgf-cm)	500.0N-cm(50.00kgf-cm)	0.1N-cm(0.01kgf-cm)
DTX2-1000Nc-A(B)	1000N-cm(100.0kgf-cm)	1000N-cm(100.0kgf-cm)	1N-cm(0.1kgf-cm)

* The model of AC power supply becomes what attached "A" to the end of model. (for example DTX2-2N-A)

* The model of battery use becomes what attached "B" to the end of model. (for example DTX2-2N-B)

FORCE MEASUREMENT
IMADA

Imada offers the best solution in force and torque measurement in the field of quality control and R & D.

Tactile feel test



For analysis and evaluation of switch's tactile feel.

Wire harness pull test



Pull test of a wire harness terminal by LH-500N.

90° peel test



90° peel adhesion test using attachment P90-200N.

Opening torque of screw caps



Torque measurement of a bottle screw cap by DTX2.

TECNIMETAL

2008.10

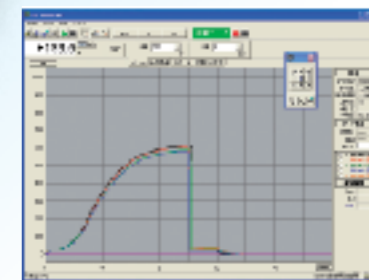
Products Catalog

Digital Force Gauge / Accessories / Load Cell / Mechanical Force Gauge
Motorized Test Stand / Manual Test Stand / Standard Attachment / Optional Attachment
Digital Torque Gauge

Digital Force Gauge

For measurement of tensile and compressive forces, it features ease of use combined with powerful functionality.

ZP Series



Easy data management by USB

Making a chart by 1000 data/sec

Motorized Test Stand

For precise repeatable and reproducible measurements, motorized stand is necessary to keep test speed and sample orientation consistent.

MX Series



Force control function

Optional speed / length meter



www.forcegauge.net

TECNIMETAL

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28017 MADRID

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IMADA offers the best solution in force and torque measurement

IMADA challenges difficult complicated measurement and extends the possibility of force measurement by original technology and know-how.



Applications Industries

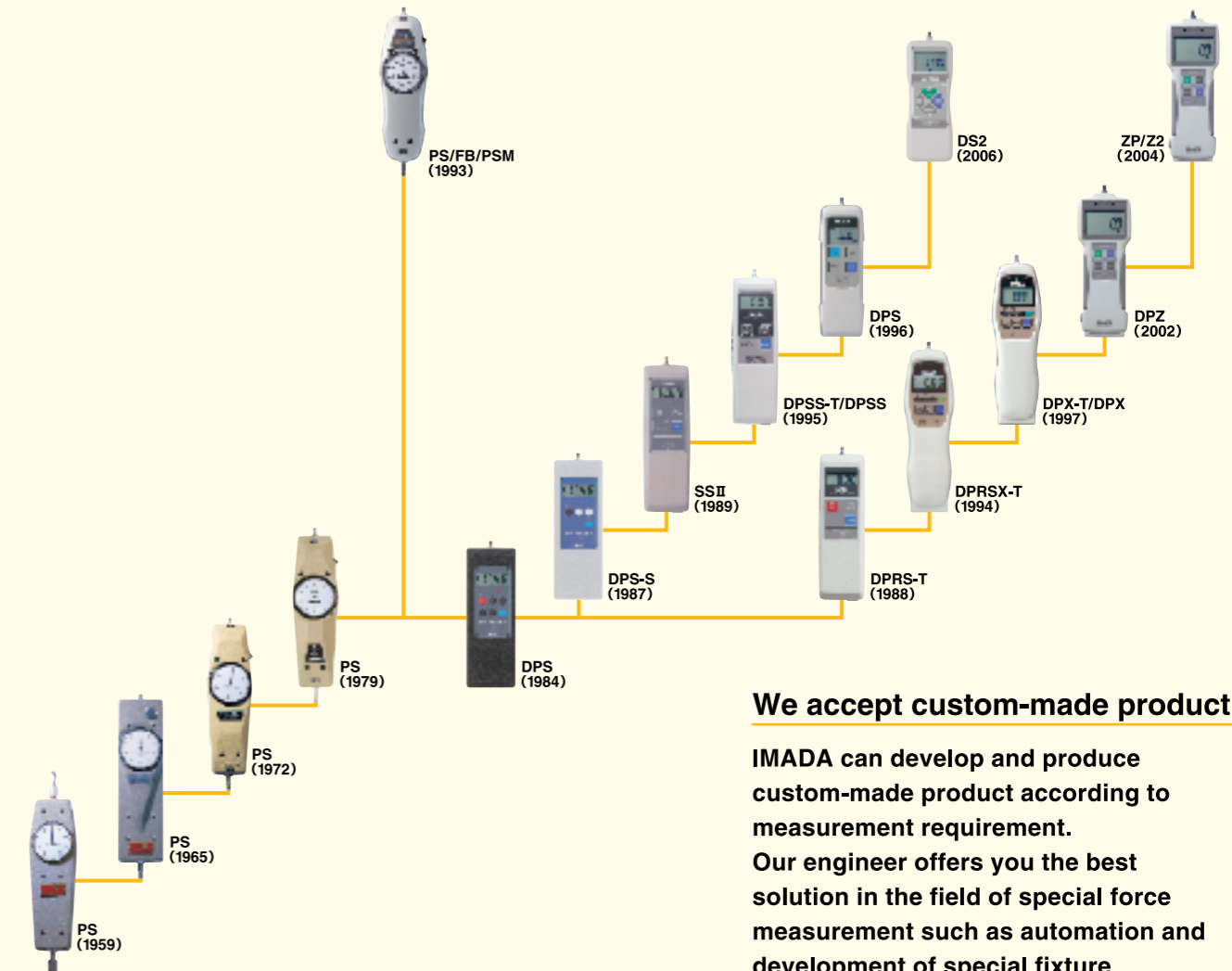
- Aircraft
- Vehicles
- Electronics
- Precision
- Plastics
- Textile
- Office equipment
- Medical instrument
- Sport goods
- Foods
- Cosmetics
- Packages

Applications

- Switch, keyboard contact press
- Connector insertion / withdrawal force
- Adhesive bond, spot welds strength
- Glass, ceramics, pills crush strength
- Brake, clutch pedal operating pressure
- Seal, laminate peel strength
- Motor, bearings driving force
- Needle penetration force
- Spring, silicon rubber bending strength
- Plastic, cardboard box breaking strength
- Fastener, pull top can pull testing
- Paste materials, fruit firmness

History of IMADA Force Gauge

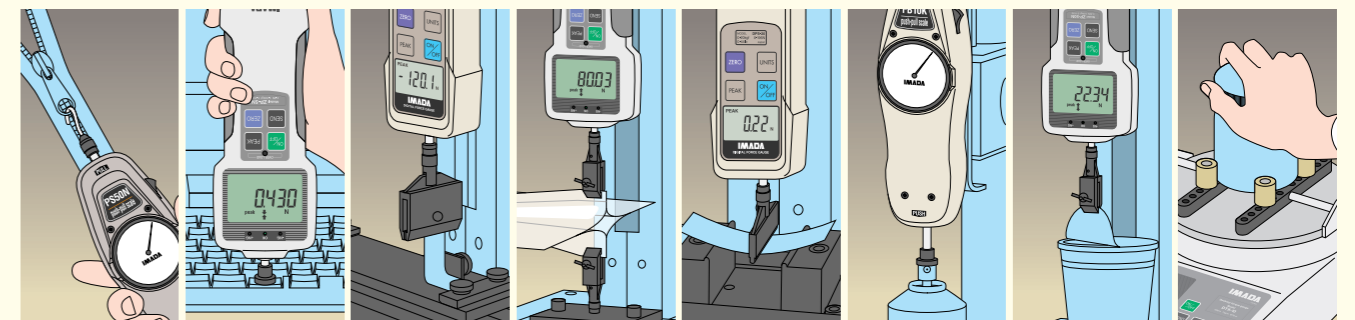
IMADA Force Gauges are designed to precisely measure tension and compression forces associated with various industrial products. Today, our force Gauges are widely used as critical strength testers in the field of Quality Control and R & D. Our history goes back to 1947 when the first mechanical Push-Pull Scale was developed for the aircraft industry. Over the years, IMADA has established its name and reputation as a world leading manufacturer of Force Gauges of the highest quality and reliability.



We accept custom-made product

IMADA can develop and produce custom-made product according to measurement requirement.

Our engineer offers you the best solution in the field of special force measurement such as automation and development of special fixture.



Digital Force Gauges

Digital Force Gauges

It is the force measuring instrument of the electronic formula which can measure both tension and compression power by single axis. It excels in a response and measured value is displayed in an instant. Big LCD and easy to read measured value. The display can be reversed for opposite direction use. It is easy to manage and analyze measured data by connecting to a computer. Using with optional accessories, digital force gauge can meet various application and needs. ZP/Z2 series have memory function up to 1000 data and comparator function which offer you better process of quality control. ZP series have USB connection to a computer which offer you high usability and data processing. Using with IMADA test stand, it corresponds to a large area from the field of a quality control to R & D.

Features of Digital Force Gauge

Few reading errors by clear digital indication

Connectable to computer by RS-232C output

Various function are available

Suitable for impact test



Measuring shaft
Measure tensile and compressive forces with the following attachments: Small Hook, Large Hook, Y Hook, Flat Tip, Conical Tip, Chisel Tip, Notched Tip and supplied attachments.

Comparator discrimination LED
The LED is switched on according to high and low set point value.

Display part
Measured value, a unit, the mode, and warning of battery is displayed. Measured value and unit indication can be reversed.

Overload warning LED
It will blink, if the maximum force is exceeded about 110% of F.S.

PEAK key
Toggle between "Peak mode" and "Track mode".

ON/OFF key
Turn ON/OFF the power.

ZERO key
Display value is reset to zero.

SEND key
While pressing, a display value is frozen, and it is output to a printer and PC.

Input-and-output connector RS-232C (Common) USB (ZP series)
By connecting various option cables, data can be transmitted to PC, or a measurement result can be recorded on a Mitutoyo Digimatic mini-processor or a pen recorder.

ZP/Z2 Standard Model

Display can be reversed for using with test stand. It excels in a response and measured value is displayed in a instant. Covers the measurements of low to medium force between 2N~1000N. ZP series has USB output function.

Features of ZP/Z2 series

- 1. Ergonomic new design
- 2. Programmable high / low set points with color coded indicators
- 3. Memory up to 1000 measurement data
- 4. Display reverse function
- 5. Peak hold function
- 6. High measuring speed and suitable for impact and break point test
- 7. Rugged die cast aluminum housing
- 8. Included attachments and carrying case
- 9. 1 year guarantee

Applications

- Measuring of the strength of electronic parts bonding or soldering
- Measuring of contact press for touch panel or keyboard
- Measuring of push/pull force for connector pin or slide cap
- Pull testing of pull top can or noodle container lid

Specifications

- Weight: Approx. 520g
- Dimensions: W78xD32xH220mm
- Included: 8 attachments (Small Hook, Flat Tip, Conical Tip, Chisel Tip, Notched Tip, Extension Shaft, Large Hook, Y Hook), AC adapter, Carrying case, Instruction manual, Inspection certificate, Driver CD-ROM (for USB model), USB cable (for USB model)



Common Specifications of ZP/Z2 series

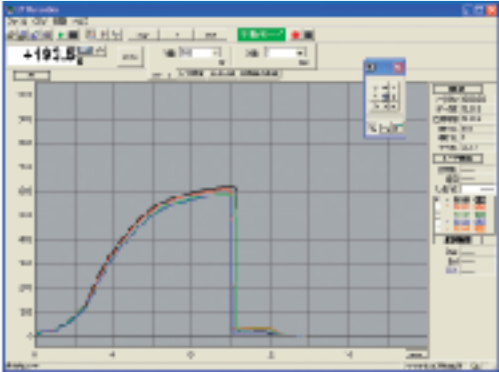
Model	ZP/ZPS/ZPH (USB model)	Z2/Z2S/Z2H (NON-USB model)
Accuracy	±0.2% F.S. ±1digit	
Display	4-digit LCD	
Display update	10 times/sec	
Sampling rate	1000 times/sec or more	
Battery usage	8 hours (Approx. 10 hours for charging)	
Overload capacity	Approx. 200% F.S.	
Measuring units	kgf/(k)N/lbf or gf/N/ozf selectable	
Power supply	Internal NiMH rechargeable battery, AC adapter	
Temperature and humidity range	Temperature: 0~+40°, Humidity range: 20~80%RH	
Functions	Peak hold, Memory (1000 data), Comparator, Display reverse, Auto zero clear, Alarm, Auto power off, Damping	
Output	RS232C, Analog voltage ±2V F.S. Comparator ± NG or OK, Overload	
Overload warning	Approx. 110% F.S. (LED flash, alarm)	
External connecting switch	HOLD, ZERO, PEAK	

Model	Capacity	Display	Resolution	Measuring shaft
ZP(Z2)-2N	2N(200gf)	2.000N(200.0gf)	0.001N(0.1gf)	M6
ZP(Z2)-5N	5N(500gf)	5.000N(500.0gf)	0.001N(0.1gf)	M6
ZP(Z2)-20N	20N(2kgf)	20.00N(2.000kgf)	0.01N(0.001kgf)	M6
ZP(Z2)-50N	50N(5kgf)	50.00N(5.000kgf)	0.01N(0.001kgf)	M6
ZP(Z2)-100N	100N(10kgf)	100.0N(10.00kgf)	0.1N(0.01kgf)	M6
ZP(Z2)-200N	200N(20kgf)	200.0N(20.00kgf)	0.1N(0.01kgf)	M6
ZP(Z2)-500N	500N(50kgf)	500.0N(50.00kgf)	0.1N(0.01kgf)	M6
ZP(Z2)-1000N	1000N(100kgf)	1000N(100.0kgf)	1N(0.1kgf)	M6

Advantage of USB connection

- 1. High usability due to the most popular interface
- 2. High speed data processing for accurate graphing

ZP-Recorder is the new optional software for the USB equipped ZP force gauge. The maximum data transfer rate to the host computer is 1000 per second, and this high speed data communication makes for smooth and accurate graphing and event capture not possible with the old RS-232C standard.



Optional software for ZP (USB) model: ZP-Recorder

Digital Force Gauges

ZPS/Z2S Separate Sensor Model

This is a force gauge display unit connected to an external load cell.
For the use of limitation and dangerous area, this model is suitable.
This gauge is available with various shape and wide range of load cells.
ZPS series has USB output function.

- Specifications
- Weight of display: Approx. 440g
 - Dimension of load cell (~500N): W78xD32xH220mm
 - Included: 8 attachments (Small Hook, Flat Tip, Conical Tip, Chisel Tip, Notched Tip, Extension Shaft, Large Hook, Y Hook)*1, AC adapter, Carrying case, Instruction manual, Inspection certificate, Driver CD-ROM (for USB model), USB cable (for USB model)
 - Other specifications are common to ZP/Z2 series.
Please refer to "Common Specifications of ZP/Z2 series" on page 4.

Model	Capacity	Display	Resolution	Measuring shaft
ZPS(Z2S)-DPU-2N	2N(200gf)	2.000N(200.0gf)	0.001N(0.1gf)	M6
ZPS(Z2S)-DPU-5N	5N(500gf)	5.000N(500.0gf)	0.001N(0.1gf)	M6
ZPS(Z2S)-DPU-20N	20N(2kgf)	20.00N(2.000kgf)	0.01N(0.001kgf)	M6
ZPS(Z2S)-DPU-50N	50N(5kgf)	50.00N(5.000kgf)	0.01N(0.001kgf)	M6
ZPS(Z2S)-DPU-100N	100N(10kgf)	100.0N(10.00kgf)	0.1N(0.01kgf)	M6
ZPS(Z2S)-DPU-200N	200N(20kgf)	200.0N(20.00kgf)	0.1N(0.01kgf)	M6
ZPS(Z2S)-DPU-500N	500N(50kgf)	500.0N(50.00kgf)	0.1N(0.01kgf)	M6
ZPS(Z2S)-DPU-1000N	1000N(100kgf)	1000N(100.0kgf)	1N(0.1kgf)	M10
ZPS(Z2S)-DPU-2000N	2000N(200kgf)	2000N(200.0kgf)	1N(0.1kgf)	M10
ZPS(Z2S)-DPU-5000N	5000N(500kgf)	5000N(500.0kgf)	1N(0.1kgf)	M10
ZPS(Z2S)-DPU-10kN	10kN(1000kgf)	10.00kN(1000kgf)	0.01kN(1kgf)	female screw
ZPS(Z2S)-DPU-20kN	20kN(2000kgf)	20.00kN(2000kgf)	0.01kN(1kgf)	female screw

*1 Included 6 high capacity attachments for 1000N, 2000N and 5000N.
* No attachment is included with ZPS/Z2S-DPU-10kN or higher. Those models do not have measuring shaft but there is a female screw in place of a measuring shaft.
* Other type of load cells are available as option. (On page 7) * When you connect a load cell to an amplifier, the amplifier must be adjusted according to the load cell.

ZPH/Z2H High Capacity Standard Model

Covers the measurements of high force between 1000N~5000N.
Display can be reversed for using with test stand.
ZPH series has USB output function.

- Applications
- Strength test for various materials (tension test, compression test, shearing test, etc.)
 - Measuring of attraction / repulsion force of solenoid or magnet.
 - Adhesion test of laminated tubes.

- Specifications
- Weight: Approx. 1150g
 - Dimension: W92xD44.5xH232.5mm
 - Included: 6 attachments (Small Hook, Flat Tip, Conical Tip, Chisel Tip, Notched Tip, Extension Shaft), 2 exclusive handles, 4 installation bolts, AC adapter, Carrying case, Instruction manual, Inspection certificate, Driver CD-ROM (for USB model), USB cable (for USB model)
 - Other specifications are common to ZP/Z2 series.
Please refer to "Common Specifications of ZP/Z2 series" on page 4.

Model	Capacity	Display	Resolution	Measuring shaft
ZPH(Z2H)-1000N	1000N(100kgf)	1000N(100.0kgf)	1N(0.1kgf)	M10
ZPH(Z2H)-2000N	2000N(200kgf)	2000N(200.0kgf)	1N(0.1kgf)	M10
ZPH(Z2H)-5000N	5000N(500kgf)	5000N(500.0kgf)	1N(0.1kgf)	M10



ZPS/Z2S set



ZPH/Z2H set

DS2 Popular Model

It covers the measurement of low to medium force between 2N~1000N.
It has high performance and quality
but simple functions and economic price.



DS2 set

- Features of DS2 series

1. An ergonomic design fit to your hand
2. Easy operation with simple functions
3. Display reverse function
4. Peak hold function
5. High measuring speed and suitable for impact and break point test
6. Rugged die cast aluminum housing
7. Included attachments and carrying case
8. 1 year guarantee

- Applications
- Measurement of tensile and compressive force.
 - Measurement of strength of electronic parts, etc.
 - Measurement of strength of packaging seals, etc.
 - Measurement of insertion/removal force of connectors and slide caps.

Measuring shaft: M6 Measuring shaft: M10 Measuring shaft: Female screw

- Specifications of DS2 series

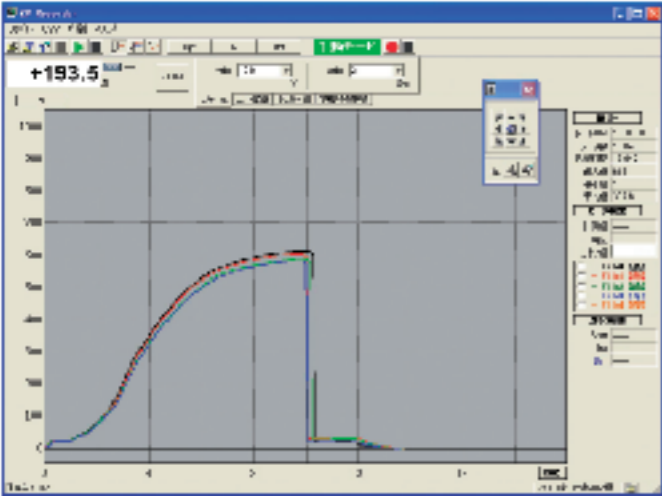
Accuracy	±0.2% F.S. ±1digit
Display	4-digit LCD
Display update	10 times/sec
Sampling rate	1000 times/sec or more
Battery usage	10 hours (Approx. 10 hours for charging)
Overload capacity	Approx. 200% F.S.
Measuring units	kgf/N/lbf or gf/N/ozf selectable
Power supply	Internal NiMH rechargeable batteries or AC adapter
Temperature range	0~+40°C
Humidity range	20~80%RH
Functions	Peak holding Comparator Display reversing Damping (2-step)
Output	Digital (RS232C) Analog voltage Approx. ±1V F.S. Mitutoyo Digimatic
Overload warning	Approx. 110% F.S. (LCD blinks)
Weight	Approx. 420g
Dimensions	W66xD33xH189mm
Included	6 attachments (Small Hook, Flat Tip, Conical Tip, Chisel Tip, Notched Tip, Extension Shaft) AC adapter Carrying case Instruction manual Inspection certificate

Model	Capacity	Indication	Resolution	Measuring shaft
DS2-2N	2N(200gf)	2.000N(200.0gf)	0.001N(0.1gf)	M6
DS2-5N	5N(500gf)	5.000N(500.0gf)	0.001N(0.1gf)	M6
DS2-20N	20N(2kgf)	20.00N(2.000kgf)	0.01N(0.001kgf)	M6
DS2-50N	50N(5kgf)	50.00N(5.000kgf)	0.01N(0.001kgf)	M6
DS2-200N	200N(20kgf)	200.0N(20.00kgf)	0.1N(0.01kgf)	M6
DS2-500N	500N(50kgf)	500.0N(50.00kgf)	0.1N(0.01kgf)	M6
DS2-1000N	1000N(100kgf)	1000N(100.0kgf)	1N(0.1kgf)	M6

Accessories

Accessories

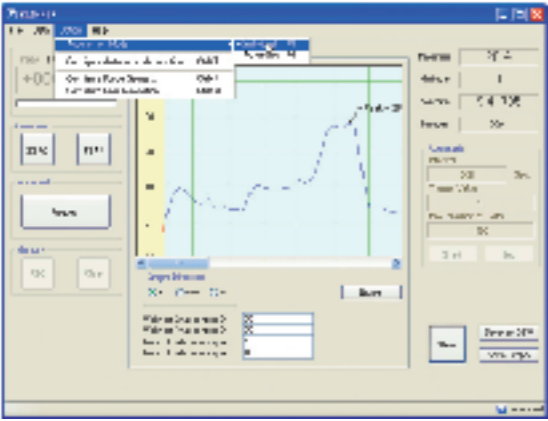
IMADA digital gauge can be connected to a computer or printer.



ZP-Recorder (Japanese)
ZP-Recorder-E (English)
Software for USB model

ZP-Recorder is a software for managing and analyzing measuring data.
High-speed sampling is possible by USB connection.
The comparison analysis of a maximum of four graph is possible.

- Sampling: Maximum 1000 times/sec
 - Functions: Graphic chart, Averaged value
 - Save as: .fce, .csv format
 - Available gauges: ZP series (USB output)
- [Operating Environment]
- Microsoft Windows 98SE/2000/XP
 - Microsoft .Net Framework 1.1 or later (Included)



ZLINK3 (Japanese)
ZLINK3-E (English)
Software for RS232C connection

ZLINK is a software for managing and analyzing measuring data.
ZLINK 3 has function of making graph and managing peak value.
This software provides high usability and efficient work of data processing.

- Sampling: maximum 10 times/sec
 - Functions: Graphic chart, Averaged value
 - Save as: .bmp, .csv format
 - Available gauges: DS2/Z2/HTG2/DTX2 series
- [Operating Environment]
- Microsoft Windows 98SE/2000/NT/XP
 - Microsoft .Net Framework 1.0 or later (Included)

RS232C Cable

Connect to PC to record the measured value and to set the parameters and operate the measurements from the PC.

- Approx. 3m



CB-204
(for Z/HTG2/DTX2)



CB-203(9P)
(for DS2)
CB-201 (25P male)
CB-202 (25P female)



CB-304
(for Z2/HTG2/DTX2)



CB-301
(for DS2)



CB-104
(for Z/HTG2/DTX2)



CB-101
(for DS2)

Digimatic Cable

Connect to Mitutoyo Digimatic Mini-Processor to record the measured value.

- Approx. 3m

Analog Cable

Connect to analog equipment, such as a pen recorder, to record the changes in measured value.

- Approx. 3m



SS-100F-MM
Mini Recorder

Loading-changes are recordable in real time.

- Input range: DC100mV, 200mV, 500mV, 1V, 2V, 5V (6 ranges selectable)
- Chart speed: 2.5, 5, 10mm/second and mm/min
- Accuracy: $\pm 0.5\%$ F.S.
- Power supply: Selectable AC100V, 120V, 220V Approx. 9VA

DP-1VR
Mitutoyo Digimatic
Mini Processor®

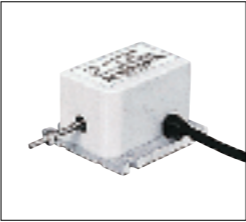
Connect to Z2/DS2/HTG2/DTX2 series to print out the measured values and numeric value in the memory.

Load Cells

Measuring shaft: M6 Measuring shaft: M10 Others

The most suitable load cell can be selected for ZPS/Z2S model according to measurement purpose.

Load Cells for Tension



LTS
For Mini Tension

- Capacity: 0.5N(50gf)
- Accuracy: $\pm 1\%$ F.S.
- Dimension: W34xD23xH55mm
- Cable: Approx. 1m

Model	Capacity	Measuring shaft
LTS-0.5N	0.5N(50gf)	M2



LT
For Tension

- Capacity: 500N(50kgf)~20kN(2000kgf)
- Accuracy: $\pm 0.5\%$ F.S.
- Dimension: $\phi 68 \times H111 \sim \phi 68 \times H168$ mm
- Cable: Approx. 5m

Model	Capacity	Measuring shaft
LT-500N	500N(50kgf)	M12
LT-1000N	1000N(100kgf)	M12
LT-2000N	2000N(200kgf)	M12
LT-5000N	5000N(500kgf)	M14
LT-10kN	10kN(1000kgf)	M18
LT-20kN	20kN(2000kgf)	M24

Load Cells for Tension / Compression



DPU
For Tension and Compression

- Capacity: 2N(200gf)~500N(50kgf)
- Accuracy: $\pm 0.2\%$ F.S.
- Dimension: W58xD21xH71~W72xD21xH73mm
- Cable: Approx. 2m

Model	Capacity	Measuring shaft
DPU-2N	2N(200gf)	M6
DPU-5N	5N(500gf)	M6
DPU-10N	10N(1kgf)	M6
DPU-20N	20N(2kgf)	M6
DPU-50N	50N(5kgf)	M6
DPU-100N	100N(10kgf)	M6
DPU-200N	200N(20kgf)	M6
DPU-500N	500N(50kgf)	M6



DPU
For Heavy Tension and Compression

- Capacity: 1000N(100kgf)~20kN(2000kgf)
- Accuracy: $\pm 0.2\%$ F.S.
- Dimension: W58xD24xH130~W88xD40xH110mm
- Cable: Approx. 3m

Model	Capacity	Measuring shaft
DPU-1000N	1000N(100kgf)	M10
DPU-2000N	2000N(200kgf)	M10
DPU-5000N	5000N(500kgf)	M10
DPU-10kN	10kN(1000kgf)	none
DPU-20kN	20kN(2000kgf)	none



LU
For Tension and Compression

- Capacity: 50N(5kgf)~2000N(200kgf)
- Accuracy: $\pm 1\%$ F.S.
- Dimension: $\phi 28 \times H35$ mm
- Cable: Approx. 3m

Model	Capacity	Measuring shaft
LU-50N	50N(5kgf)	none
LU-100N	100N(10kgf)	none
LU-200N	200N(20kgf)	none
LU-500N	500N(50kgf)	none
LU-1000N	1000N(100kgf)	none
LU-2000N	2000N(200kgf)	none

Load Cells for Compression



LC
For Compression

- Capacity: 500N(50kgf)~20kN(2000kgf)
- Accuracy: $\pm 0.5\%$ F.S.
- Dimension: $\phi 50 \times H25$ mm
- Cable: Approx. 3m

Model	Capacity	Measuring shaft
LC-500N	500N(50kgf)	none
LC-1000N	1000N(100kgf)	none
LC-2000N	2000N(200kgf)	none
LC-5000N	5000N(500kgf)	none
LC-10kN	10kN(1000kgf)	none
LC-20kN	20kN(2000kgf)	none



LM
For Compression

- Capacity: 5N(500gf)~20kN(2000kgf)
- Accuracy: 5~2000N= $\pm 1\%$ F.S., 5000N/10kN= $\pm 1.5\%$ F.S., 20kN= $\pm 2.5\%$ F.S.
- Dimension: $\phi 12 \times H4 \sim \phi 21 \times H10$ mm
- Cable: Approx. 2m

Model	Capacity	Measuring shaft
LM-5N	5N(500gf)	none
LM-10N	10N(1kgf)	none
LM-20N	20N(2kgf)	none
LM-50N	50N(5kgf)	none
LM-100N	100N(10kgf)	none
LM-200N	200N(20kgf)	none
LM-500N	500N(50kgf)	none
LM-1000N	1000N(100kgf)	none
LM-2000N	2000N(200kgf)	none
LM-5000N	5000N(500kgf)	none
LM-10kN	10kN(1000kgf)	none
LM-20kN	20kN(2000kgf)	none



LCK
For Compression

- Capacity: 5000N(500kgf)~20kN(2000kgf)
- Accuracy: $\pm 0.5\%$ F.S.
- Dimension: $\phi 78 \times H25$ mm
- Cable: Approx. 5m

Model	Capacity	Measuring shaft
LCK-5000N	5000N(500kgf)	none
LCK-10kN	10kN(1000kgf)	none
LCK-20kN	20kN(2000kgf)	none

Load Cells for Others



TFC
For Torque

- Capacity: 200N-cm(20kgf-cm)~1000N-cm(100kgf-cm)
- Accuracy: $\pm 0.5\%$ F.S.
- Dimension: $\phi 60 \times H53$ mm
- Cable: Approx. 2m

Model	Capacity
TFC-200Nc	200N-cm(20kgf-cm)
TFC-500Nc	500N-cm(50kgf-cm)
TFC-1000Nc	1000N-cm(100kgf-cm)



TMS
For Torque

- Capacity: 500N(50kgf)~2000N(200kgf)
- Accuracy: $\pm 0.5\%$ F.S.
- Dimension: TMS-50= W100xD31xH170mm, TMS-100/200= W120xD45xH250mm
- Cable: Approx. 2m

Model	Capacity
TMS-500N	500N(50kgf)
TMS-1000N	1000N(100kgf)
TMS-2000N	2000N(200kgf)

When you connect a load cell to ZPS/Z2S display, the display must be adjusted according to the load cell.
The accuracy of above load cells are numerical values at the case of using together with IMADA amplifier or display.
* We can produce special load cell as customized version.

Please note that Force Gauges and Load Cells are delicate articles need special attention with handling. They will be broken if they are exposed further theirs rated capacity.

Load Cells

Mechanical Force Gauges (Push-Pull Scale)

Mechanical Force Gauges

It is the force measuring instrument of the mechanical type of the power supply needlessness which can measure tension and compression power correctly and easily. Based on our long history of technical achievement as a force gauge pioneer with the variety of know-how, IMADA mechanical force gauge is produced under advanced technology and severe quality control, and maintain early high precision for a long period of time.

Features of Mechanical Force Gauge

Power supply needlessness

Durable and high reliability

Reading of force transition is possible

1. Ergonomic new design for hand held use
2. Rugged die cast aluminum housing
3. Durable high accuracy with exclusive indicator and special spring materials
4. Peak force hold on all models
5. Zero adjustment for tare weight
6. Easy to read dial
7. Included attachments and carrying case
8. 1 year guarantee



Tension sensing rod (PSS/PS/PSM/FS/FB: M6P1) (PSH: M10P1.5)
Measure tensile forces with the following attachments: Small Hook, Large Hook, Y Hook and supplied attachments.

Peak switch
This switch activates or clears peak hold reading.

Tare ring
Rotate tare ring to delete the attachment's weight.

Compression sensing rod (PSS/PS/PSM/FS/FB: M6P1) (PSH: M10P1.5)
Measure compressive forces with the following attachments: Flat Tip, Conical Tip, Chisel Tip, Notched Tip and supplied attachments.

Measuring shaft: M6

PS/PSS Standard Model

It is the standard type in high precision and durability. Covers the measurements of low to medium force between 5N~500N.

■ Applications

- Measuring of the contact pressure for touch panel or keyboard.
- Measuring of the bonding strength of adhesive tapes and the peel strength of adhesive sheets.

* For the measuring test with shock to the Force Gauge, we recommend Digital Force Gauges.

■ Specifications

- Accuracy: $\pm 0.1\%$ F.S.
- Stroke: 10mm
- Graduation: 100 lines (120 lines for 30N, 300N, 3K, 30K, 30lb)
- Measurement mode: Track and peak mode (selectable)
- Peak hold function
- Measuring shaft: M6
- Use temperature: 0~+40°C
- Weight: Approx. 600g
- Dimension: W67xD48xH232.5mm
- Included: 8 attachments (Small Hook, Flat Tip, Conical Tip, Chisel Tip, Notched Tip, Extension Shaft, Large Hook, Y Hook), Carrying case, Instruction manual, Inspection certificate



PS/PSS set

Model	Capacity	Resolution
PS-5N	5N	0.05N
PS-10N	10N	0.1N
PS-20N	20N	0.2N
PS-30N	30N	0.25N
PS-50N	50N	0.5N
PS-100N	100N	1N
PS-200N	200N	2N
PS-300N	300N	2.5N
PS-500N	500N	5N

Model	Capacity	Resolution
PSS-0.5K	500gf	5gf
PSS-1K	1kgf	10gf
PSS-2K	2kgf	20gf
PSS-3K	3kgf	25gf
PS-5K	5kgf	50gf
PS-10K	10kgf	100gf
PS-20K	20kgf	200gf
PS-30K	30kgf	250gf
PS-50K	50kgf	500gf

Model	Capacity	Resolution
PS-5lb	5lbf	0.05lbf
PS-10lb	10lbf	0.1lbf
PS-20lb	20lbf	0.2lbf
PS-30lb	30lbf	0.25lbf
PS-50lb	50lbf	0.5lbf
PS-100lb	100lbf	1lbf

FB/FS Popular Model

FS/FB model performs steady precision at most affordable price. Covers the measurements of low to medium force between 10N~500N.

■ Applications

- Measuring of the contact pressure for touch panel or keyboard.
- Measuring of the bonding strength of adhesive tapes and the peel strength of adhesive sheets.

* For the measuring test with shock to the Force Gauge, we recommend Digital Force Gauges.

■ Specifications

- Accuracy: $\pm 0.3\%$ F.S.
- Stroke: 10mm
- Graduation: 100 lines (120 lines for 30N, 300N, 3K, 30K, 30lb)
- Measurement mode: Track and peak mode (selectable)
- Peak hold function
- Measuring shaft: M6
- Use temperature: 0~+40°C
- Weight: Approx. 600g
- Dimension: W67xD48xH232.5mm
- Included: 6 attachments (Small Hook, Flat Tip, Conical Tip, Chisel Tip, Notched Tip, Extension Shaft), Carrying case, Instruction manual, Inspection certificate



FB/FS set

Model	Capacity	Resolution
FB-10N	10N	0.1N
FB-20N	20N	0.2N
FB-30N	30N	0.25N
FB-50N	50N	0.5N
FB-100N	100N	1N
FB-200N	200N	2N
FB-300N	300N	2.5N
FB-500N	500N	5N

Model	Capacity	Resolution
FS-1K	1kgf	10gf
FS-2K	2kgf	20gf
FS-3K	3kgf	25gf
FB-5K	5kgf	50gf
FB-10K	10kgf	100gf
FB-20K	20kgf	200gf
FB-30K	30kgf	250gf
FB-50K	50kgf	500gf

Model	Capacity	Resolution
FB-5lb	5lbf	0.05lbf
FB-10lb	10lbf	0.1lbf
FB-20lb	20lbf	0.2lbf
FB-30lb	30lbf	0.25lbf
FB-50lb	50lbf	0.5lbf
FB-100lb	100lbf	1lbf

Mechanical Force Gauges (Push-Pull Scale)

Mechanical Force Gauges

PSM Precision Model

Its high-resolution scale has more calibration points than PS model.
This guides you much fine-tune measurement easily.
Covers the measurements of low to medium force between 20N~500N.

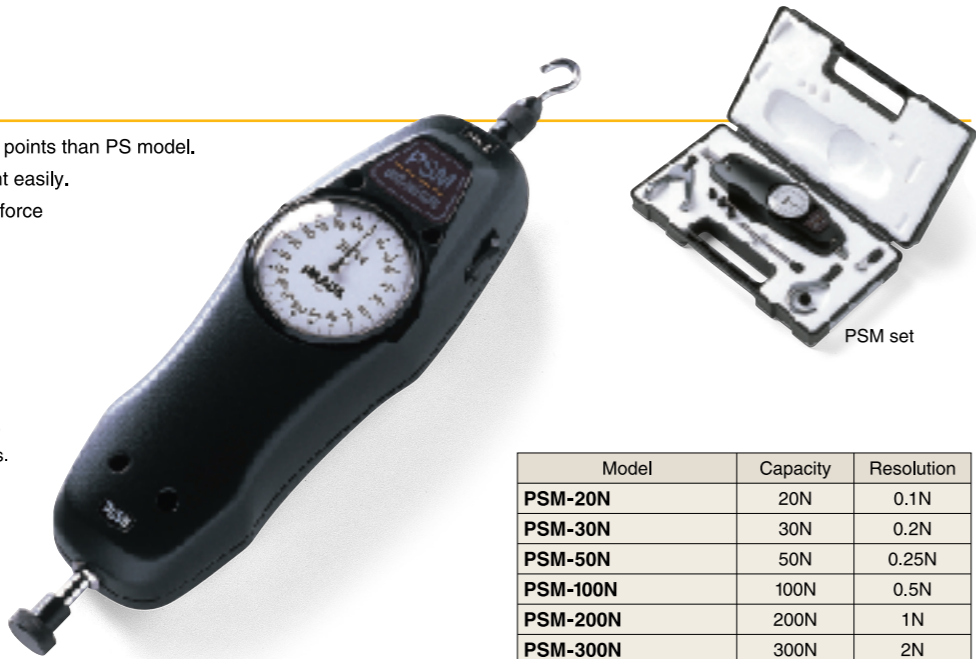
Applications

- Measuring of the contact pressure for touch panel or keyboard.
- Measuring of the bonding strength of adhesive tapes and the peel strength of adhesive sheets.

* For the measuring test with shock to the Force Gauge, we recommend Digital Force Gauges.

Specifications

- Accuracy: $\pm 0.1\%$ F.S.
- Stroke: 10mm
- Graduation: 200 lines (150 lines for 30N, 300N, 3K, 30K)
- Measurement mode: Track and peak mode (selectable)
- Peak hold function
- Measuring shaft: M6
- Use temperature: 0~+40°C
- Weight: Approx. 600g
- Dimension: W67xD48xH232.5mm
- Included: 8 attachments (Small Hook, Flat Tip, Conical Tip, Chisel Tip, Notched Tip, Extension Shaft, Large Hook, Y Hook), Carrying case, Instruction manual, Inspection certificate



PSM set

Model	Capacity	Resolution
PSM-20N	20N	0.1N
PSM-30N	30N	0.2N
PSM-50N	50N	0.25N
PSM-100N	100N	0.5N
PSM-200N	200N	1N
PSM-300N	300N	2N
PSM-500N	500N	2.5N

Model	Capacity	Resolution
PSM-2K	2kgf	10gf
PSM-3K	3kgf	20gf
PSM-5K	5kgf	25gf
PSM-10K	10kgf	50gf
PSM-20K	20kgf	100gf
PSM-30K	30kgf	200gf
PSM-50K	50kgf	250gf

PSH High Capacity Standard Model

Extra strong body supports high load range with best reliability.
Covers the measurements of high force between 500N~3000N.

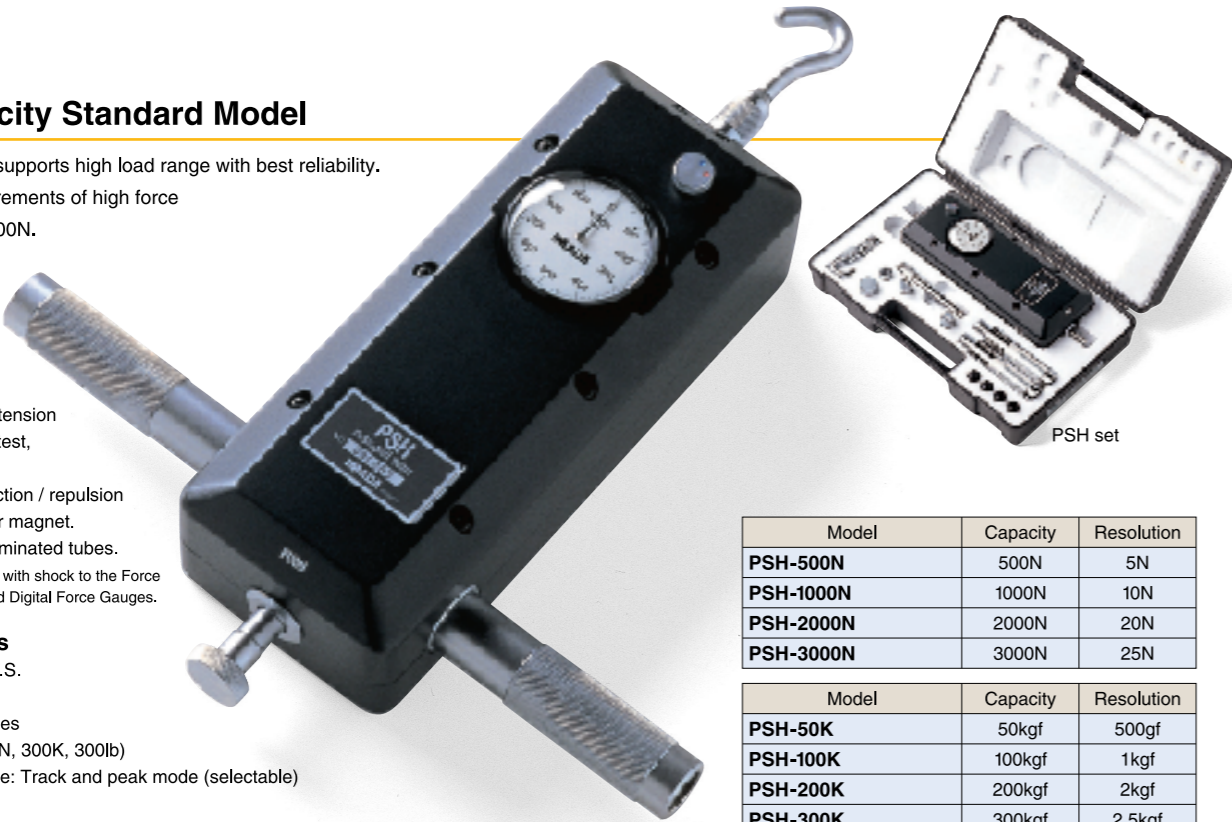
Applications

- Strength test for various materials (tension test, compression test, shearing test, etc.)
- Measuring of attraction / repulsion force of solenoid or magnet.
- Adhesion test of laminated tubes.

* For the measuring test with shock to the Force Gauge, we recommend Digital Force Gauges.

Specifications

- Accuracy: $\pm 0.1\%$ F.S.
- Stroke: 10mm
- Graduation: 100 lines (120 lines for 3000N, 300K, 300lb)
- Measurement mode: Track and peak mode (selectable)
- Peak hold function
- Measuring shaft: M10
- Use temperature: 0~+40°C
- Weight: Approx. 3kg
- Dimension: W95xD63.5xH290mm
- Included: 6 attachments (Small Hook, Flat Tip, Conical Tip, Chisel Tip, Notched Tip, Extension Shaft), 2 exclusive handles, 4 installation bolts, Carrying case, Instruction manual, Inspection certificate



PSH set

Model	Capacity	Resolution
PSH-500N	500N	5N
PSH-1000N	1000N	10N
PSH-2000N	2000N	20N
PSH-3000N	3000N	25N

Model	Capacity	Resolution
PSH-50K	50kgf	500gf
PSH-100K	100kgf	1kgf
PSH-200K	200kgf	2kgf
PSH-300K	300kgf	2.5kgf

Model	Capacity	Resolution
PSH-200lb	200lb	2lb
PSH-300lb	300lb	2.5lb
PSH-500lb	500lb	5lb

UKT/UKK Compact Model (for tension / for compression)

The smallest in dimension in all mechanical gauge.
Ideal for build in narrow space.
Two models are in line; exclusive for tension, or compression.
UKT for tension and UKK for compression.

Applications

- Measuring of the contact pressure for touch panel or keyboard.
- Measuring of the bonding strength of adhesive tapes and the peel strength of adhesive sheets.

* For the measuring test with shock to the Force Gauge, we recommend Digital Force Gauges.

Specifications

- Accuracy: $\pm 0.3\%$ F.S.
- Stroke: 10mm
- Graduation: 100 lines (120 lines for 30N, 300N, 3K, 30K, 30lb)
- Measurement mode: Track and peak mode (selectable)
- Peak hold function
- Measuring shaft: M6
- Use temperature: 0~+40°C
- Weight: Approx. 300g
- Dimension: W60xD40xH156mm
- Included: UKT= 4 tension attachments (Small Hook, Extension Shaft, Large Hook, Y Hook), UKK= 5 compression attachments (Flat Tip, Conical Tip, Chisel Tip, Notched Tip, Extension Shaft), Carrying case, Instruction manual, Inspection certificate



Measuring shaft: M6 Measuring shaft: M10

Model		Capacity	Resolution
Tension	Compression		
UKT-20N	UKK-20N	20N	0.2N
UKT-30N	UKK-30N	30N	0.25N
UKT-50N	UKK-50N	50N	0.5N
UKT-100N	UKK-100N	100N	1.0N
UKT-200N	UKK-200N	200N	2.0N
UKT-300N	UKK-300N	300N	2.5N

Model		Capacity	Resolution
Tension	Compression		
UKT-2K	UKK-2K	2kgf	20gf
UKT-3K	UKK-3K	3kgf	25gf
UKT-5K	UKK-5K	5kgf	50gf
UKT-10K	UKK-10K	10kgf	100gf
UKT-20K	UKK-20K	20kgf	200gf
UKT-30K	UKK-30K	30kgf	250gf

Model		Capacity	Resolution
Tension	Compression		
UKT-5lb	UKK-5lb	5lb	0.05lb
UKT-10lb	UKK-10lb	10lb	0.1lb
UKT-20lb	UKK-20lb	20lb	0.2lb
UKT-30lb	UKK-30lb	30lb	0.25lb
UKT-50lb	UKK-50lb	50lb	0.5lb

Selection of suitable force gauge

We usually classify types of force gauge as mechanical or digital. Each model has specific feature and function. Suitable force gauge must be chosen according to measuring purpose.

Comparison of mechanical and digital force gauges

	Digital Force Gauge	Mechanical Force Gauge
Advantage	<ul style="list-style-type: none">Less reading errorConnectable to PC, printer and recorderVarious functions as digital instrumentSuitable for impact and break point test	<ul style="list-style-type: none">No electricity is requiredDurablePossible to read force transition
Weakness	<ul style="list-style-type: none">Difficult to read force transition without softwareNecessary to charge a battery	<ul style="list-style-type: none">Unsuitable for impact and break point testReading error might occur by individual difference

Selection of suitable range

Please choose suitable range of force gauge as the following method.

Measuring method	Selection of the range
When you do high speed test as impact and break point	Please select the capacity is 200% of measuring value. For example; Measuring value: 10N Digital force gauge: ZP/Z2 series Then, ZP-20N which is double capacity of measuring value is suitable.
When you do show speed test as elongation test	Please select the capacity is 150% of measuring value. For example; Measuring value: 30N Digital force gauge: ZP series Then, suitable capacity will be 45N and choose ZP-50N.

The sensor of digital force gauge will break if higher power from overload capacity is applied.

We recommend the weight of attachment should be under 10% of gauge capacity.
Please be careful to select an attachment when you use small range gauge.

Motorized Test Stands

For precise and repeatable measurements, test stand is necessary in order to keep same test condition. It does not need heavy manual labor when applying large forces, and makes the task of obtaining measurements more efficient.

* All the force gauges shown with the test stands in this page are sold separately.

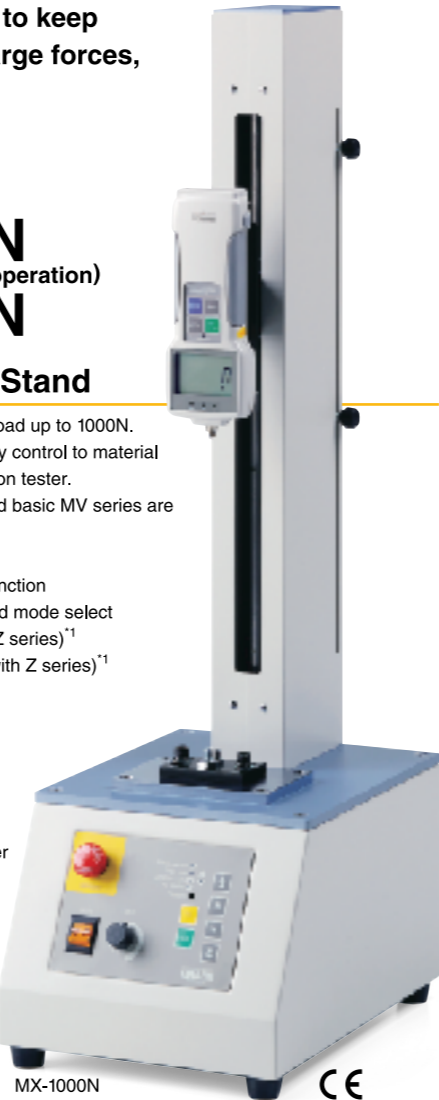
MX-500N (Automatic / manual operation) MV-500NII (Manual operation) Motorized Test Stand

Standard model covers low-load up to 500N.
This stand covers from quality control to material testing as tension-compression tester.
High functional MX series and basic MV series are available.
= MX-500N function =
• Single / continuous cycle function
• Fix speed / adjustable speed mode select
• Overload brake (work with Z series)^{*1}
• Force control mode (work with Z series)^{*1}
= Common specification =
• Capacity: 500N(50kgf)
• Stroke: 288mm
• Speed: 10~300mm/min non-step adjustable
• Power supply: AC100~240V
• Safety feature: Upper / lower limit, Emergency button
• Weight: Approx. 18kg
• Dimension: W214xD428xH574mm
[Optional function]^{*2}
• Speed / length meter (-E)
• Timer unit (-TM)^{*3}
• Digimatic length meter (-S)
• Extended stroke (-L550)^{*4}
• Another speed range^{*5}



MX-1000N (Automatic / manual operation) MV-1000N (Manual operation) Motorized Test Stand

Standard model covers low-load up to 1000N.
This stand covers from quality control to material testing as tension-compression tester.
High functional MX series and basic MV series are available.
= MX-1000N function =
• Single / continuous cycle function
• Fix speed / adjustable speed mode select
• Overload brake (work with Z series)^{*1}
• Force control mode (work with Z series)^{*1}
= Common specification =
• Capacity: 1000N(100kgf)
• Stroke: 400mm
• Speed: 8~240mm/min non-step adjustable
• Power: AC100~240V
• Safety feature: Upper / lower limit, Emergency button
• Weight: Approx. 24kg
• Dimension: W263xD368xH903mm
[Optional function]^{*2}
• Speed / length meter (-E)
• Timer unit (-TM)^{*3}
• Digimatic length meter (-S)
• Extended stroke (-L650)^{*4}
• Another speed range^{*5}



MH-1000N (Automatic / manual operation) ML-1000N (Manual operation) Motorized Test Stand

Horizontal model covers low-load up to 1000N.
High functional MH series and basic ML series are available.
= MH-1000N function =
• Single / continuous cycle function
• Fix speed / adjustable speed mode select
• Overload brake (work with Z series)^{*1}
• Force control mode (work with Z series)^{*1}
= Common specification =
• Capacity: 1000N(100kgf)
• Stroke: 300mm
• Speed: 6~180mm/min non-step adjustable speed
• Power supply: AC100~240V
• Safety feature: Left / right limit, Emergency button
• Weight: Approx. 14kg
• Dimension: W700xD195xH210mm
[Optional function]^{*2}
• Speed / length meter (-E)
• Digimatic length meter (-S)
• Extended stroke (-L□□□)^{*4}
• Another speed range^{*5}



MH-300 Motorized Test Stand

Horizontal model covers to 3000N.
Include auto-cycle function.
• Manual / single cycle / continuous cycle function
• Capacity: 3000N(300kgf)
• Stroke: 250mm
• Speed: 8~240mm/min non-step adjustable
• Power supply: AC100~240V
• Weight: Approx. 29kg
• Dimension: W700xD252xH230mm
[Optional function]^{*2}
• Speed / length meter (-E) • Digimatic length meter (-S)
• 5 speed changeover switch (-5C) • Extended stroke (-L□□□)^{*4} • Another speed range^{*5}



MX-2000N Motorized Test Stand

Standard model covers to 2000N.
Various functions are available to improve your measurement.
• Manual / single cycle / continuous cycle function
• Fix speed / adjustable speed mode select
• Force control mode (work with Z series)^{*1}
• Capacity: 2000N(200kgf)
• Stroke: 350mm
• Speed: 6~180mm/min non-step adjustable
• Power supply: AC100~240V
• Safety feature: Upper / lower limit, Emergency button, Overload brake (work with Z series)^{*1}
• Weight: Approx. 23kg
• Dimension: W250xD483xH782mm
[Optional function]^{*2}
• Speed / length meter (-E)
• Timer unit (-TM)^{*3}
• Extended stroke (-L600)^{*4}
• Another speed range^{*5}



IPT200-5N 180° Peeling Tester



180° peel strength test of emboss tape



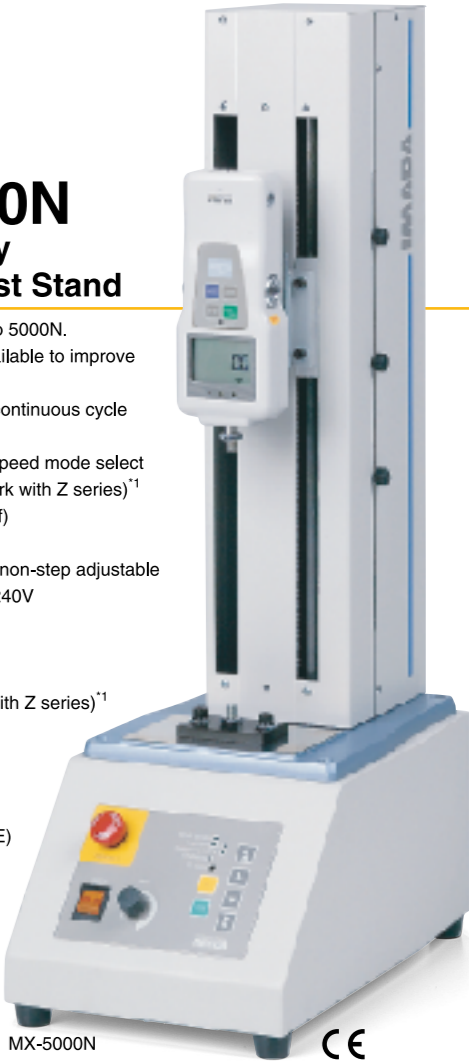
ZP-Recorder-IPT

IPT200-5N is specialized for application of peeling strength of emboss tapes and films. It is possible to make smooth and precise graph with inclusive software by USB connection.
• Capacity: 5N(500gf)
• Width of sample: 8~88mm
• Stroke (load cell movement): 400mm
• Peeling stroke: 200mm
• Peeling speed: 120, 300, 500, 1000, 1500mm/min (5-step selectable)
• Power supply: AC100~240V
• Weight: Approx. 11kg
• Dimension: W710xD300xH126mm
• Accessories: Software, Cable, Grips



MX-5000N High Capacity Motorized Test Stand

Standard model covers to 5000N.
Various functions are available to improve your measurement.
• Manual / single cycle / continuous cycle function
• Fix speed / adjustable speed mode select
• Force control mode (work with Z series)^{*1}
• Capacity: 5000N(500kgf)
• Stroke: 350mm
• Speed: 10~300mm/min non-step adjustable
• Power supply: AC100~240V
• Safety feature: Upper / lower limit, Emergency button, Overload break (work with Z series)^{*1}
• Weight: Approx. 30kg
• Dimension: W250xD420xH816mm
[Optional function]^{*2}
• Speed / length meter (-E)
• Timer unit (-TM)^{*3}
• Another speed range^{*5}



EN-00(E) Speed / Length Meter (Option for motorized test stand)

This is a option for motorized test stand and indicates speed and length.
It is important to recognize measuring speed for precise measurement due to keeping the same condition of measurement. This speed length meter must be installed by the factory.
Please use suffix "E" to after model name of each stand.
ex. MX-500N-E



TM-00(TM) Timer Unit (Option for motorized test stand)^{*3}

It automatically resets after a preset force is applied for a preset time.
It is suitable for pressure tests and press-fitting force controls. Please use suffix "TM" to after model name of each stand.
ex. MX-2000N-TM

^{*1} Overload break and force control function is available with Z series force gauge. Optional cable CB-501 is required to valid this function.
^{*2} The form of optional model becomes what attached 「□」 in () to the end of model.
^{*3} Timer unit is available with the combination of Z series force gauge and MX series test stand.
^{*4} Extend stroke is optional. The available extended stroke is different according to stand capacity.
^{*5} Speed range change differs according to stand capacity. Please contact us for the detail.



CB-501

Manual Test Stands

For precise and repeatable measurements, test stand is necessary in order to keep same test condition. It does not need heavy manual labor when applying large forces, and makes the task of obtaining measurements more efficient. In the measurement which small movement is required, exact measurement is attained by handle or lever operation.

* All the force gauges shown with the test stands in this page are sold separately.

KV-50N Manual Test Stand for Low-loaded

Quick and precise measurements for low-loaded. Minimum size gives convenience in transporting.

- Capacity: 50N(5kgf)
- Stroke: 70mm
- 1mm/knob turning
- Weight: Approx. 2kg
- Dimension: W140xD180xH220mm
- [Optional function]^{*1}
- Digimatic length meter (-S)



KV-50N

SV-1 Manual Lever Operation Test Stand for Compression

SV-1 is exclusive for compression measurement. Simple one-lever control makes the measurement efficient.

- Capacity: 500N(50kgf)
- Stroke: 60mm (angle 110 degree)
- Mechanical stopper
- Weight: Approx. 9kg
- Dimension: W200xD249xH410mm
- [Optional function]^{*1}
- Extended shaft (-L600)
(stroke unchanged)



SV-1

SV-2 Manual Test Stand

SV-2 is compact manual test stand of handle operation. It is simple and easy operation.

- Capacity: 500N(50kgf)
- Stroke: 60mm
- 3mm/one complete turn of hand wheel
- Mechanical stopper
- Weight: Approx. 9kg
- Dimension: W200xD249xH410mm
- [Optional function]^{*1}
- Digimatic length meter (-S)
- Extended shaft (-L600)
(stroke unchanged)



SV-2-S

HV-500NII Manual Hand Wheel Operation Test Stand

For tension / compression test up to 500N. Includes mechanical stopper.

- Capacity: 500N(50kgf)
- Stroke: 288mm
- 2mm/one complete turn of hand wheel
- With screw stopper
- Weight: Approx. 10kg
- Dimension: W327xD309xH598mm
- [Optional function]^{*1}
- Digimatic length meter (-S)
- Extended stroke (-L550)



HV-500NII

HV-1000N HV-3000N Manual Hand Wheel Operation Test Stand

Vertical stand in manual operation; with a minute revolution of 1.2mm/one complete turn of hand-wheel ensures delicate measurement.

- Capacity: 1000N(100kgf) for HV-1000N, 3000N(300kgf) for HV-3000N
- Stroke: 430mm
- 1.2mm/one complete turn of hand wheel HV-1000N, 0.6mm/one complete turn of hand wheel HV-3000N
- Weight: HV-1000N= Approx. 18kg, HV-3000N= Approx. 24kg
- Dimension: HV-1000N=W305xD275xH730mm, HV-3000N=W355xD310xH744mm
- [Optional function]^{*1}
- Digimatic length meter (-S)

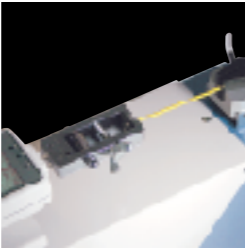


HV-1000N

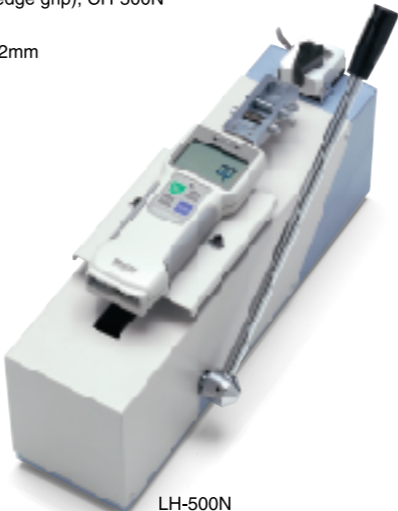
LH-500N Wire Harness Pull Tester

Pull tester for checking of pull-off force values of electrical leads, crimped terminals, connectors and soldered parts. Packed with attachments for fixing each terminal and wire. Please note force gauge is not inclusive.

- Capacity: 500N(50kgf)
- Stroke: 85mm (angle 120 degree)
- Included Attachment: CW-500N (wedge grip), CH-500N
- Stand weight: Approx. 10.5kg
- Stand dimension: W155xD450xH182mm
- Attachment weight: CW-500N=Approx. 220g, CH-500N=Approx. 210g
- 2 gripping fixtures each for terminal and wire come with the LH-500N



Pull test of a wire harness terminal by LH-500N

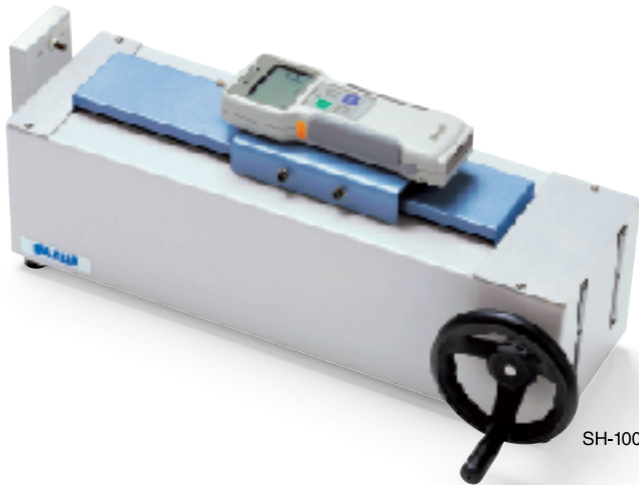


LH-500N

SH-1000N SH-3000N Manual Hand Wheel Operation Test Stand

Horizontal stand that helps handling samples easily in manual operation. Suitable measuring by feed screw features with small step of the travel length. Easier handling for material due to its horizontal design.

- Capacity: 1000N(100kgf) for SH-1000N, 3000N(300kgf) for SH-3000N
- Stroke: SH-1000N= 300mm, SH-3000N= 370mm
- One complete turn of hand wheel: SH-1000N= 1.2mm, SH-3000N= 0.6mm
- Weight: SH-1000N= Approx. 15kg, SH-3000N= Approx. 22kg
- Dimension: SH-1000N= W560.5xD265xH219.5mm, SH-3000N= W696.5xD285xH225mm
- [Optional function]^{*1}
- Digimatic length meter (-S)
- Extended stroke (-L□□□)^{*2}

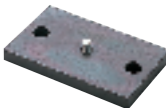


SH-1000N

GF-1 Grip Mounting Adapter (for manual test stand SV-1/2)

Mount attachments to test stand base. It is possible to fix vertical stand SV, HV, MV and MX series.

- Capacity: 1000N(100kgf)
- Mounting screw: M6
- Weight: Approx. 240g
- Screw: M6



*1 The form of optional model becomes what attached □ in () to the end of model.

*2 The length witch can extend long stroke specification according from differs. Please ask us horizontal models for detail.

Standard Attachments / Optional Attachments

Standard Attachments Accessories of force gauges.

Standard Capacity Model

Steel S-series are included in models up to 1000N/100kgf. Aluminum A-series are included in models under 100N/10kgf. DS2 and FB don't include large hook and Y hook. The model with capacity 1000N/100kgf includes small hook SR-1 instead of S-1. • Screw: M6

High Capacity Model

Included ZPH(Z2H), ZPS(Z2S)-DPU and PSH series (For capacity 1000N/100kgf to 5000N/500kgf). Not included with handles and installation bolts for ZPS(Z2S) series. • Screw: M10

A-1/S-1/SR-1 Small Hook

- A-1 Weight: Approx. 3.1g
- S-1 Weight: Approx. 13g
- SR-1 Weight: Approx. 19g

A-2/S-2 Flat Tip

- A-2 Weight: Approx. 2.7g
- S-2 Weight: Approx. 13g

A-3/S-3 Conical Tip

- A-3 Weight: Approx. 1.7g
- S-3 Weight: Approx. 10g

A-4/S-4 Chisel Tip

- A-4 Weight: Approx. 1.8g
- S-4 Weight: Approx. 11g

B-1 Small Hook

- Weight: Approx. 59g

B-2 Flat Tip

- Weight: Approx. 29g

B-3 Conical Tip

- Weight: Approx. 33g

B-4 Chisel Tip

- Weight: Approx. 38g

A-5/S-5 Notched Tip

- A-5 Weight: Approx. 2.0g
- S-5 Weight: Approx. 11g

A-6/S-6 Extension Shaft

- A-6 Weight: Approx. 6.7g
- S-6 Weight: Approx. 27g

A-7/S-7 Large Hook

- A-7 Weight: Approx. 6.8g
- S-7 Weight: Approx. 44g

A-8/S-8 Y Hook

- A-8 Weight: Approx. 8.8g
- S-8 Weight: Approx. 58g

B-5 Notched Tip

- Weight: Approx. 37g

B-6 Extension Shaft

- Weight: Approx. 102g

B-7 Handles

- Weight: Approx. 250g (1 piece)

B-8 Installation Bolts

- Weight: Approx. 16g

Optional Handle DOH-1, MOH-1

For hand held use.

Model	DOH-1	MOH-1
Usable gauge	Digital force gauge ZP/Z2, DS2	Mechanical force gauge PS/PSS, PSM, FB/FS
Weight	Approx. 740g	Approx. 805g



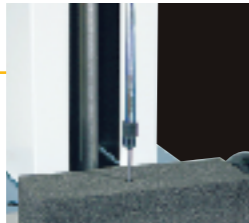
Optional Attachments

We can provide wide variety of attachment to cover many applications. We can produce special attachment as customized version.

Attachments for Compression

PG-2/3/4/5 Penetrating Pin Gauges

Check the hardness of clay-like materials, the burst strength of plastic covering, etc. The penetrating pin gauges are light and suitable for measuring minute force.

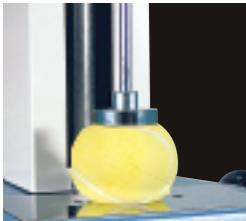


Hardness test of sponge

Model	PG-2	PG-3	PG-4	PG-5
Capacity	100N(10kgf)	100N(10kgf)	200N(20kgf)	200N(20kgf)
Outer diameter	ø2mm	ø3mm	ø4mm	ø5mm
Length	20mm	20mm	20mm	20mm
Weight	Approx. 2g	Approx. 3g	Approx. 4g	Approx. 5g
Screw	M6	M6	M6	M6

A-40/60, S-40/60 Large Flat Heads

The head is suitable for the crush test of tablet or plastic bottles. The materials of A type is aluminum and it is light weight.



Compression test of tennis ball



A-40

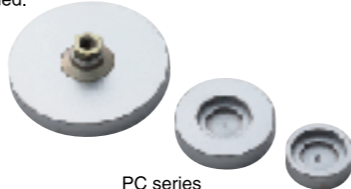
Model	A-40	A-60	S-40	S-60
Capacity	200N(20kgf)	200N(20kgf)	500N(50kgf)	500N(50kgf)
Outer diameter	ø40mm	ø60mm	ø40mm	ø60mm
Weight	Approx.38g	Approx. 84g	Approx. 110g	Approx. 238g
Screw	M6	M6	M6	M6

PC-5040/5060/5100 Disc Compression Jig

For the measurements of many kinds of compression force and breaking strength, the variety of shapes and sizes are designed for the jigs. The larger size jigs have free joint, which will prevent the breakdown of force gauge when extra force is applied.



Compression test of plastic bottle

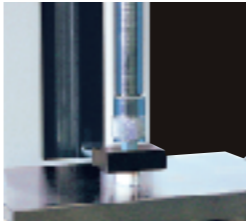


PC series

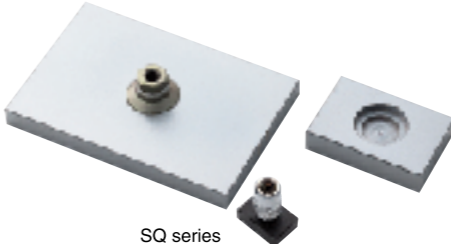
Model	PC-5040	PC-5060	PC-5100
Capacity	5000N(500kgf)	5000N(500kgf)	5000N(500kgf)
Outer diameter	ø40mm	ø60mm	ø100mm
Weight	Approx. 160g	Approx. 330g	Approx. 820g
Screw	M10	M10	M10

SQ-5030/5075/5150 Rectangle Compression Jig

It is suitable for burst test of plastic bags.



Hardness test of tablet

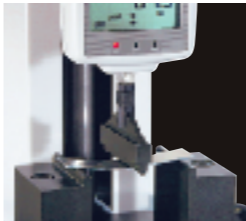


SQ series

Model	SQ-5030	SQ-5075	SQ-5150
Capacity	5000N(500kgf)	5000N(500kgf)	5000N(500kgf)
Place size	30x20mm	75x50mm	150x100mm
Weight	Approx. 70g	Approx. 500g	Approx. 1560g
Screw	M10	M10	M10

GA-10N/5000N Bend Test Stand

For the bend testing of the test object.



Bend test of metal material



GA-10N

Model	GA-10N	GA-5000N
Capacity	500N(50kgf)	5000N(500kgf)
Depth	60mm	60mm
Opening width stage	5~60mm	5~70mm
Arc	Upper: R2.5mm, Stage: R2.5mm	Upper: R5.0mm, Stage: R2.5mm
Weight	Upper: Approx. 100g, Stage: Approx. 4100g	Upper: Approx. 120g, Stage: Approx. 4200g
Screw	M6	M10

Attachments for Tension

FP-50/51, SC-3/8 Fine Point Chuck, Small Grips

For the measurements in the confined space or of the narrow objects. It is suitable for low force and narrow space test due to lightweight model.



Thin wire test



Fine Point Chuck FP-50



Small Grips SC-3

Model	FP-50	FP-51	SC-3	SC-8
Capacity	100N(10kgf)	50N(5kgf)	100N(10kgf)	150N(15kgf)
Opening width	Maximum 0.5mm	Maximum 0.5mm	Maximum 1mm	Maximum 1mm
Jaw face width	1mm	1mm	3mm	8mm
Weight	Approx. 19g	Approx. 8g	Approx. 20g	Approx. 21g
Screw	M6	M6	M6	M6

SP-5010/5020/5030 Sphere Compression Jig

For compression test of various materials.

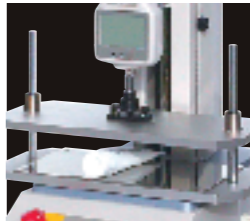


SP series

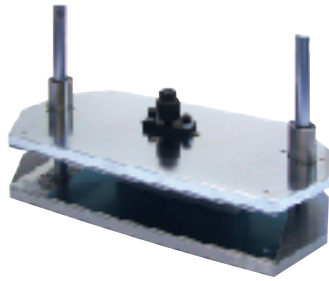
Model	SP-5010	SP-5020	SP-5030
Capacity	5000N(500kgf)	5000N(500kgf)	5000N(500kgf)
Diameter	ø10mm	ø20mm	ø30mm
Weight	Approx. 26g	Approx. 55g	Approx. 135g
Screw	M10	M10	M10

PR-2000 Attachment for Burst Strength Test

For the application of burst strength test of tube, and so on.



Burst strength test of tube



Model	PR-2000
Capacity	2000N(200kgf)
Opening space	W260xD170xH100(75)mm
Recommendation combination	Motorized test stand: MX-2000N-TM
	Digital force gauge: ZPH/Z2H-2000N, and PR-2000
Weight	Total: Approx. 9.5kg, Upper: Approx. 4.5kg, Bottom: Approx. 5kg, Tube Compressor: Approx. 230g
Screw	M10

GC-60/100 Tape Grips

The grips is best suited for tension test of rubber, films, or test materials which become deformed or thinned on the testing process. Self tightening "buckle-type" mechanism ensures slip-free operation.



Elongation test of rubber material



GC-60

Model	GC-60	GC-100
Capacity	500N(50kgf)	500N(50kgf)
Specimen width	Maximum 30mm	Maximum 50mm
Specimen thickness	Maximum 2mm	Maximum 2mm
Weight	Approx. 158g	Approx. 300g
Screw	M6	M6

* We recommended the weight of attachment should be under 10% of gauge capacity. Please be careful to select an attachment when you use small range gauge.

* Specific material and appearance can not be used with these attachment even if it is within specification. Please contact us for detail.

Attachments for Tension

GR-30/2000
Cam Grips

By pulling, the chuck will be fastened. Suitable for the measurement of the objects, which can change the shapes to flatter. It is not suitable for the material of tempered.



Tensile strength test of tape

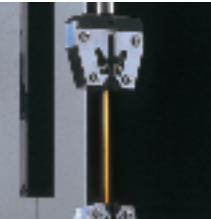


GR-30

Model	GR-30	GR-2000
Capacity	500N(50kgf)	2000N(200kgf)
Specimen width	Maximum 30mm	Maximum 50mm
Specimen thickness	Maximum 2mm	Maximum 4mm
Weight	Approx. 180g	Approx. 870g
Screw	M6	M10

KC-100/1001/5000, PGC-0510
Wedge Grips, Pantograph Grips

Suitable for the measurement of fiber optics and electric wires which change the shapes easily. It is not suitable for the material of tempered. PGC-0510 is easy to remove from a gauge by hook formula.



Electric wire strength test



KC-100



KC-1001



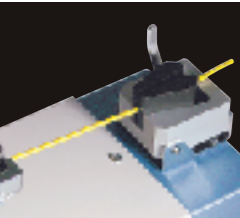
PGC-AD6

Model	KC-100	KC-1001	KC-5000	PGC-0510
Capacity	500N(50kgf)	1000N(100kgf)	5000N(500kgf)	500N(50kgf)
Opening width	Maximum 10mm	Maximum 2mm	Maximum 5mm	Maximum 15mm
Weight	Approx. 330g	Approx. 95g	Approx. 565g	Approx. 110g
Screw	M6	M6	M10	Hook formula*1

*1 Use small hook to attach to a force gauge. PGC-AD6 is necessary to attach to a test stand.

CW-500N
Wedge Grips

It is easy to clamp cable and wire by one-touch operation.



Wire harness pull off test



Model	CW-500N
Capacity	500N(50kgf)
Opening width	Maximum 5mm
Weight	Approx. 220g
Screw	M6

GC-1100/1200/5000
Flat Chuck

For the measurements of general tension force.



Extraction test of connector



GC-1100

Model	GC-1100	GC-1200	GC-5000
Capacity	1000N(100kgf)	1000N(100kgf)	5000N(500kgf)
Jaw face width	20mm	20mm	29mm
Opening width	Maximum 10mm	Maximum 20mm	Maximum 30mm
Weight	Approx. 160g	Approx. 170g	Approx. 1400g
Screw	M6	M6	M10

FC-21/20/40/21U/41U/21UQ
Film Grips

FC-21U, 41U, and 21UQ reduce a risk of cutting a sample by grip itself because of one side urethane grip. FC-21UQ is lever operation model.



180° peel strength test



FC-20

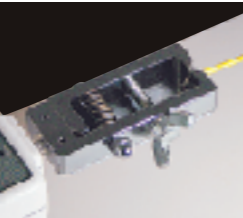


FC-21UQ

Model	FC-21	FC-20	FC-40	FC-21U	FC-41U	FC-21UQ
Capacity	250N(25kgf)	500N(50kgf)	500N(50kgf)	250N(25kgf)	250N(25kgf)	250N(25kgf)
Jaw face width	20mm	20mm	40mm	20mm	40mm	20mm
Opening width	Maximum 2mm	Maximum 2mm	Maximum 2mm	Maximum 2mm	Maximum 2mm	Maximum 1mm
Weight	Approx. 25g	Approx. 73g	Approx. 125g	Approx. 40g	Approx. 70g	Approx. 50g
Screw	M6	M6	M6	M6	M6	M6

CH-500N
Wire Terminal Grips

It is suitable for wire terminal clamp.



Wire harness pull off test



Model	CH-500N
Capacity	500N(50kgf)
Opening width	Maximum 6mm
Weight	Approx. 210g
Screw	M6

GC-30, WC-2000
Wire Wrapping Grips

For measuring the strength of wires, filaments, fibers, etc.



Tensile strength of textile

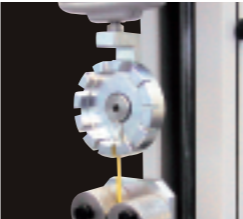


WC-2000

Model	GC-30	WC-2000
Capacity	500N(50kgf)	2000N(200kgf)
Wrapping screw	M10	M16
Sample diameter	Maximum ø1mm	Maximum ø2mm
Weight	Approx. 136g	Approx. 900g
Screw	M6	M10

FW-12
Rotary Wire Terminal Fixture

These are 12 different slit for wide range of terminal cramp. Since it is rotary type, it is easy to set up a sample.



Wire harness strength test



Model	FW-12
Capacity	1000N(100kgf)
Number of slit	12
Weight	Approx. 380g
Screw	M6

CH-50U
Slant Film Grips

Suitable for an opening strength test of zipper bags. It reduce damage of a sample by grip itself because of one side urethane grip.



Opening strength test of zipper bag



Model	CH-50U
Capacity	100N(10kgf)
Jaw face width	50mm
Opening width	Approx. 1mm
Weight	Approx. 100g
Screw	M6

GP-15
Knurling Cam Grips

It is suitable for elasticity samples such as silicon rubber, urethane, and resin.



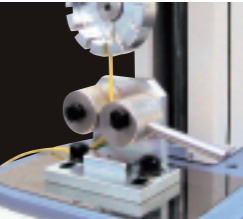
Elongation test of rubber tube



Model	GP-15
Capacity	250N(25kgf)
Jaw face width	Maximum 15mm
Opening width	Maximum 4.5mm
Weight	Approx. 70g
Screw	M6

GP-30
Knurled Cam Grips

It is the best for the clamp of a wire by the cam mechanism.



Wire harness strength test



Model	GP-30
Capacity	1000N(100kgf)
Jaw face width	Maximum 30mm
Opening width	Maximum 10mm
Weight	Approx. 880g
Fixing to test stand	M8 bolts (x2)

DF-60
Hook for Corrugated Cardboard

It is suitable for opening strength test of glued corrugated cardboard.



Opening strength of glued corrugated cardboard



Model	DF-60
Capacity	250N(25kgf)
Width	60mm
Weight	Approx. 145g
Screw	M6

Attachments for Others

CP-150N
Pin Grips

It is ideal grips for small pin, wire, etc. CP-150N can be used for both tension and compression. It is suitable for low force and narrow space test due to lightweight model.



Strength test of thin wire

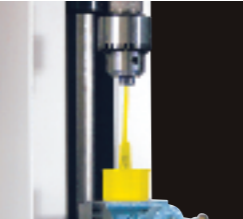


Collet

Model	CP-150N
Capacity	150N(15kgf)
Sample diameter	ø0~ø3.2mm
Weight	Approx. 22g
Screw	M6

GC-5/15/15-10
Jacob's Chuck

For use with shafts and rods. The Jacob's chuck has characteristic of better initial gripping and less slipping or test material on testing process.



Insert test of plastic pipe

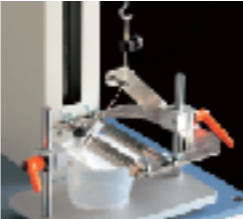


GC-5

Model	GC-5	GC-15	GC-15-10
Capacity	500N(50kgf)	1000N(100kgf)	1000N(100kgf)
Sample diameter	ø0.5~ø6.5mm	ø2.0~ø13mm	ø2.0~ø13mm
Weight	Approx. 235g	Approx. 500g	Approx. 500g
Screw	M6	M6	M10

P45-50N
45° Peel Test Fixture

Suitable for peeling strength of cup container cover. Angle is 45° is nearly practical condition of opening cover.



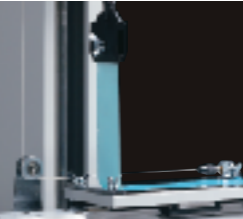
Peeling test of food contain cup



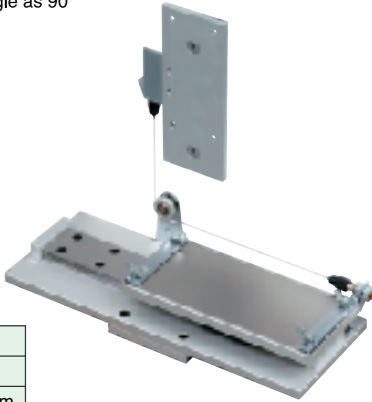
Model	P45-50N
Capacity	50N(5kgf)
Maximum sample	Height: 12~90mm, Diameter: 30~120mm
Thickness of cover	Maximum 2mm
Weight	Grips: Approx. 30g, Cup fixture: Approx. 1200g

P90-200N
Slide Table for 90° Adhesion Test

This table keep the measurement angle as 90° by self adjusting sliding system.



90° peel strength test



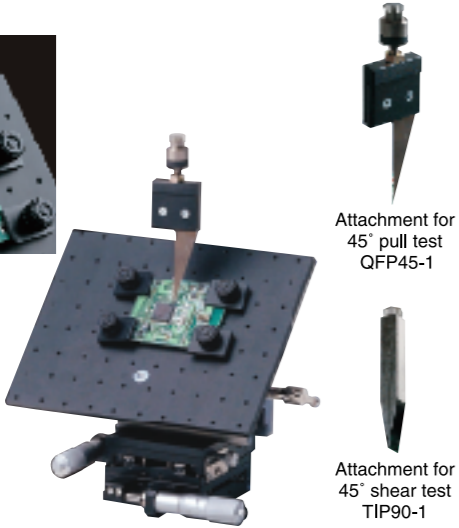
Model	P90-200N
Capacity	200N(20kgf)
Sample length	Maximum 155mm
Sample width	Maximum 80mm
Weight	Approx. 3kg

LF
Attachment for Measurement of Soldering Strength (QFP 45° pull test + TIP 90° shear test)

It is possible to use QFP lead 45° pull shear test.



Soldering strength test of IC parts



Attachment for 45° pull test QFP45-1

Attachment for 45° shear test TIP90-1

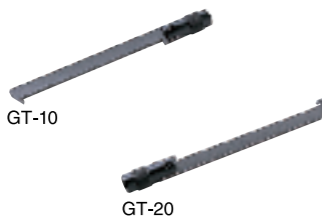
Model	LF
Contents	QFP45-1: Hook attachment QFP45-2: Table for 45° TIP90-1: Shear attachment TIP90-2: Table for 90° QFP-1: X-Y stage
Capacity	100N(10kgf)
XY stage	Stroke: ±12.5mm Resolution: 0.01mm
Table dimension	200x150mm
Table fixing holes pitch	M3P0.5x80 Minimum pitch: 20x20mm Maximum pitch: 180x140mm
Weight of attachment	QFP45-1: Approx. 60g, TIP90-1: Approx. 50g
Weight of table	QFP45-2: Approx. 650g, TIP90-2: Approx. 650g
Weight of XY stage	QFP-1: Approx. 2.6kg

GT-10/20
Peeling Attachment (for peel / for push)

The peeling attachment is installed on the Imada's force gauge for peeling or shearing test of electronic components.



IC tip peel strength test



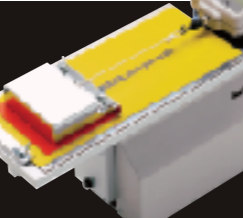
GT-10

GT-20

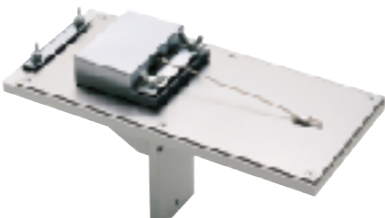
Model	GT-10	GT-20
Use	Peel	Push
Capacity	500N(50kgf)	500N(50kgf)
Weight	Approx. 34g	Approx. 34g
Screw	M6	M6

COF-10N
Coefficient of Friction Jig

COF-10N is a jig for coefficient of friction. Both dynamic and static friction data can be acquired by included software.



Coefficient of friction test of paper



ZP-Recorder-COF

Model	COF-10N
A Weight	10N(1kgf)
Thickness sample	Maximum 1.5mm
Stroke	Maximum 150mm
Weight	Approx. 2.7kg
Accessories	Measurement software: ZP-Recorder-COF

GT-30
Vise Grips

Screw tightened vise is ideal for slip-free attachment to base of test stand. The vise grip can be installed on the vertical stand SV, HV, MV and MX series.



Insert test of plastic pipe



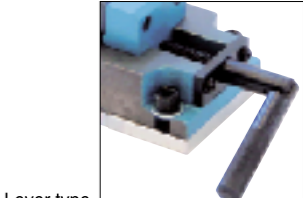
Model	GT-30
Capacity	1000N(100kgf)
Jaw face width	38mm
Opening width	Maximum 39mm
Weight	Approx. 1100g

GTW-50R/50L
Double Vise Grips

This grips open from the center toward both sides and can grip a specimen, large or small, at the center. The gripping faces have vertical and horizontal V-grooves to firmly grip a specimen even if round. An easy-to-use knob type and a strong-gripping lever type are available.



Knob type



Lever type

Model	GTW-50R	GTW-50L
Type	Knob type	Lever type
Capacity	500N(50kgf)	1000N(100kgf)
Jaw face width	50mm	50mm
Weight	Approx. 3kg	Approx. 3kg

XY-500N
X-Y Table

It is low height model of X-Y table.

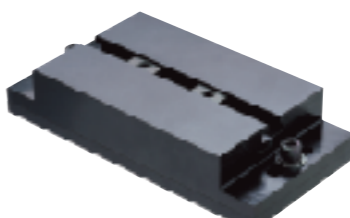


Model	XY-500N
Capacity	Tension: 500N(50kgf) Compression: 1000N(100kgf)
Stroke	X, Y each ±30mm
Weight	Approx. 1.4kg

* Not possible to use with horizontal test stand and KV-50N.

TS-5000N
T-Slot Table

It is easy to exchange grips. It is also easy to position center by sliding nut.



Model	TS-5000N
Capacity	5000N(500kgf)
T nut	M8
T nut space	Max.125mm
Weight	Approx. 5.3kg

CA-10/20
Conversion Adapter

CA-10 is conversion adapter from M6 to M10 screw. CA-20 is conversion adapter from M10 to M6 screw.



CA-10



CA-20

Model	CA-10	CA-20
Weight	Approx. 36g	Approx. 34g
Screw	M6→M10	M10→M6