AIKOH
ENGINEERING

GENERAL CATALOG
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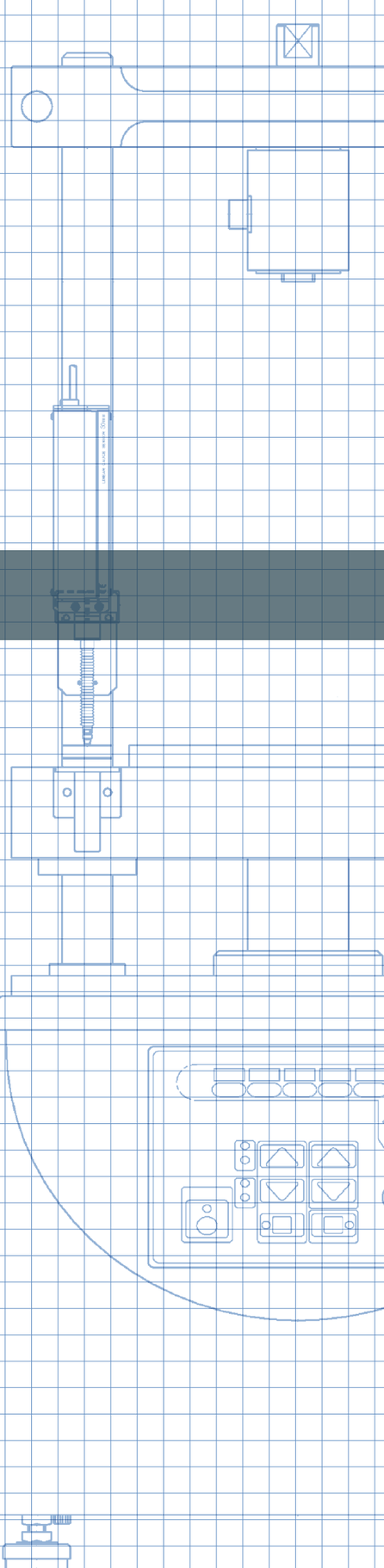

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Pursuing Higher Reliability and Uniformity from Customers' Standpoint

No matter how the times change, wish for safety and security remains unchanged and concerns about quality keep growing.

In the industrial world where Internet has been spreading, production bases located in various places in the world and manufacturing activities diversified and fragmented, Aikoh Engineering, since its foundation, has committed itself to "quality" through measurement of load for more than 30 years. We have offered various services including physical property-to-environment composite tests and physical property-to-electrical characteristics composite tests as well as individual tests of tension, compression and rotation.

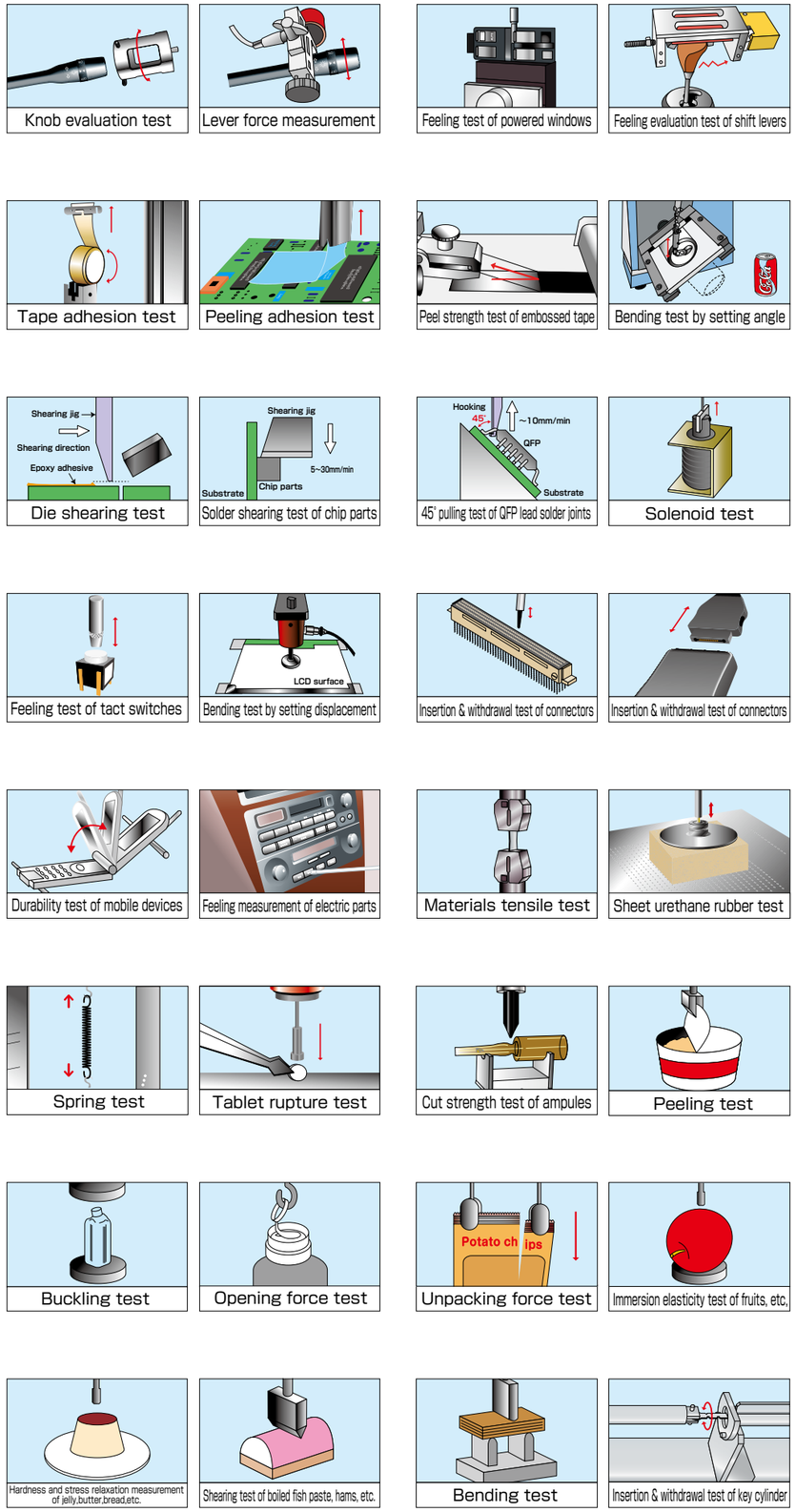
All of the members at Aikoh are determined to be of assistance to enhancement of the reliability of products of our dear customers through our experience and know-how accumulated over a long period of time.

We would like to ask for your continued business and support in the future.

Executive President
Kazuya Yoshioka

Product Lineup

- Screen display type force measuring instruments
- Torque - angle measuring instruments
- Automatic force - displacement measuring instruments
- Various testers for durability evaluation
- Handy force measuring instruments
- Various load cells
- Various assembling jigs
- Design of measurement software
- Spring testers



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RX Series Digital Push Pull Gauges

The RX Series are up-to-date models that remarkably change the functions of digital push pull gauges currently in use and the concept of maintenance.
They are especially superior in response, accuracy, operation efficiency and durability.
They also feature small size, clear display on large-size screens, screen reversing and other various functions shown below, fit-to-hand shape and operation buttons.

RX Series Model List

Model	RX-1	RX-2	RX-5	RX-10	RX-20	RX-50	RX-100
Measurement range	10N (1Kgf)	20N (2Kgf)	50N (5Kgf)	100N (10Kgf)	200N (20Kgf)	500N (50Kgf)	1000N (100Kgf)
Min. display unit	0.001N (0.1gf)	0.01N (1gf)			0.1N (10gf)		
Top shaft	M6						

Caution) The min. display unit is not accuracy.

Optional Cables for RX Series

Analog output cable	RX-OP-1
RS232C interface cable	RX-OP-2
MITUTOYO printer cable	RX-OP-3
MITUTOYO DIGIMATIC input cable	RX-OP-4
External control cable	RX-OP-5
Stand control & RS232C interface cable	RX-OP-6
Stand control cable	RX-OP-7

Standard Accessories for RX Series

RX Series Standard Specifications

Measurement unit	Kgf, N, Lbf selectable
Measurement item	Peak value & Track value
Accuracy	±0.2% F.S.
Sampling frequency	50ms, 16ms, 5ms & 1.25ms selectable
Display update interval	1, 2, 5, 10 & 20 times/sec selectable
Display	6-digits LCD, 44 x 44mm
A/D converter	16-bit, 100kHz
CPU in use	16-bit, single-chip CPU
Analog output	±2V/F.S. ※
Communication output	RS232C, 38400bps ※
Printer output	SANEI thermal printer, MITUTOYO DIGIMATIC output ※
GO-NG judgment	Lamp indication & output
Stand connection output	Overload, zero reset & external input display hold contact ※
Continuous run time	Approx. 12hours
Applicable temperature range	0 to 40℃
Weight	Approx. 450g
Power supply	Nicd & AC adaptor MODEL-761 (100VAC) or MODEL-762 (200-240VAC)

The product marked with ※ requires an optional cable.

Common Features of RX Series

- Easy-to-observe large display and display reversing function
- Memory function: Up to 1000 data at any point of time
- Insertion and pull-out tests in one-time measurement
- NO, GO, NO judgment displayed on lamps
- Remaining battery capacity display
- Real-time high-speed communication (at 38400bps)
- Automatic power off function
- Stores the basic set data even when the battery is replaced.
- Original load calibration guarantees high precision

SX Series Digital Force Gauges

- With easy reading large display and reversible display
- With automatic power off and automatic zero resetting function
- Printer output and overload output provided as standard features
- Three size AAA nickel-hydrogen cells, with an exclusive adaptor (100 to 240V/European specification plug)
- Recharging time: Approx. 4.5hours (measureble during charging)
- Usable time: Approx. 35hours after full recharging

This is a force gauge with the functions required for a handy-type test equipmet.
Operation is easy for simultaneous display of the compression and tensile force values.
External inputs allow easy printout. (A printer is optional.)
The AC adaptor exclusive for the SX is applicable to 100-240V with simple plug replacement allows uses in a wide area.

SX Series Model List

Model	SX-2	SX-5	SX-20	SX-50
Measurement range	20N (2Kgf)	50N (5Kgf)	200N (20Kgf)	500N (50Kgf)
Min.display unit	0.01N/0.001Kgf/1gf		0.1N/0.01Kgf	
Top shaft	M6			

Caution) The min. display unit is not accuracy.

Optional Cables for SX Series

Overload cable	SX-OP-1
Printer & External input cable	SX-OP-2

Standard Accessories for SX Series

SX Series Standard Specifications

Measurement unit	N, Kgf (gf), Lbf selectable
Measurement item	Track/Peak/+Peak/-Peak
Accuracy	±0.2% F.S.
Sampling frequency	20, 62, 200 & 800 times/sec. selectable
Display update interval	1,2,5,10 & 20 times/sec. selectable
Display	LCD, Signed 5-digits, 40 x 40mm
Functions	External printer input, external contact hold input, external zero-reset input, overload output, thermal printer BL2-58 printer output, reset after printing (ON/OFF), automatic power off (ON/OFF), automatic zero reset (ON/OFF), both compression peak and tensile peak display
Standard accessories	6 attachments, exclusive AC adaptor (100 to 240VAC) and exclusive carrying case
Options	Thermal printer BL2-58 & cables
Applicable temperature range	0 to 50℃
Weight	Approx. 360g
Power supply	Three exclusive AAA nickel hydrogen cells, AC adaptor MODEL-770 (5VDC, 1200mA)

SX Series and RX Series Comparison Table

	SX Series	RX Series
Measurement unit	Kgf (gf)/N/Lbf selectable	Kgf/N/Lbf selectable
Measurement item	Track/Peak/+Peak/-Peak	Track/Peak
Accuracy	±0.2% F.S.	
Sampling frequency	20,62,200 & 800 times/sec.selectable	
Display update interval	1,2,5,10 & 20times/sec. selectable	
Analog output	×	○
RS232C output	×	○
Printer output	○	○
Overload output	○	○
Comparator setting	×	○
External contact hold input	○	○
External print input	○	×
Main body case	Aluminum die casting	ABS resin

Usage example

MODEL-2256 (Horizontal type)

MODEL-2257 (Vertical type)

RX-T Series Portable Torque Gauges

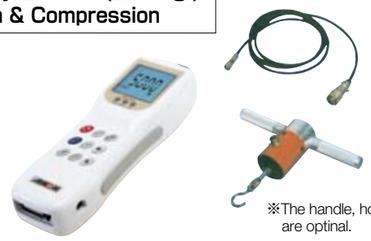
The portable torque gauges RX-T Series are especially designed for static measurements such as screw retightening and returning torque, breakage torque due to twisting, etc. With a large and easy-to-see display, simultaneous reading of clockwise and counterclockwise torque, NO-GO-NO judgment function and residual battery capacity display function, the RX-T Series are state-of-the-art multi-function torque gauges. The bit or jig at the top is changed according to the measurement requirements. Measured data may be stored in the memory or output to a connected printer. The basic specifications are the same as the RX Series shown on the previous page. Two measurement units are available: mN · m and Kgf · cm.

Standard Specifications

Model	RX-T-20	RX-T-100
Measurement range	2000mN · m (20Kgf · cm)	10N · m (100Kgf · cm)
Measurement unit	mN · m, Kgf · cm	N · m, Kgf · cm
Min. display unit	1mN · m (0.01Kgf · cm)	0.001N · m (0.01Kgf · cm)
Accuracy	±1% F.S.	
Analog output	±2V/F.S.	
Communication output	RS232C, 38400bps	
Printer output	SANEI thermal printer, MITUTOYO DIGIMATIC output	
Continuous run time	Approx. 12hours	
Power supply	Nicd & AC adaptor MODEL-761 (100VAC) or MODEL-762 (200-240VAC)	

RX-S-200

Capacity:2000 N (200 kgf)
Tension & Compression



※The handle, hook and jig are optinal.

MODEL-RX-FL-1•RX-FL-2

※The manual stand MODEL-1338 is optional.

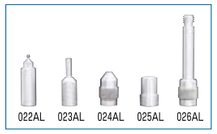
The RX-FL Series measures the peak values, bottom values, click ratios, click values, etc. of silicone rubber and dome switches in a single sequence of operation.It has a large screen and stores measured data in memory, which may be printed out or output to a PC after measurement.

Standard Specifications

Model	RX-FL-1	RX-FL-2
Measurement range	10N (1Kgf)	20N (2Kgf)
Min. display unit	0.001N (0.1gf)	0.01N(1gf)
Measurement unit	N, Kgf, Lbf selectable	
Measurement item	Peak value, Bottom value, Click value & Click ratio	
Accuracy	±0.2%F.S.	
Sampling frequency	5ms (100Hz)	
Display	6-digits LCD, 44 x 44mm	
A/D converter	16-bit, 100kHz	
CPU in use	16-bit, single-chip CPU	
Analog output	±2V/F.S.	
Communication output	RS232C, 38400bps	
Printer output	SANEI thermal printer, MITUTOYO DIGIMATIC output	
GO-NG judgment	Lamp indication & output	
Stand connection output	Overload, zero reset & external input display hold contact	
Continuous run time	Approx. 12hours	
Applicable temperature range	0 to 40℃	
Weight	Approx. 450g	
Power supply	Nicd & AC adaptor MODEL-761 (100VAC) or MODEL-762 (200-240VAC)	

Optional Cables for RX-FL Series

Analog output cable	RX-OP-1
RS232C interface cable	RX-OP-2
MITUTOYO printer cable	RX-OP-3
External control cable	RX-OP-5

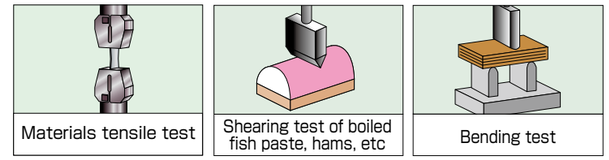


Bench Type Simple Tester

MODEL-1309

Capacity: 1000N (100 kgf)
Force - Displacement

※RX Series is optional.



A small stand for force-displacement measurement dedicated to RX Series. With a displacement resolution of 0.1mm, this stand is suitable for long-stroke tensile/compression tests. A force-displacement FS curve can be drawn on a PC screen by the dedicated software for effective data management.

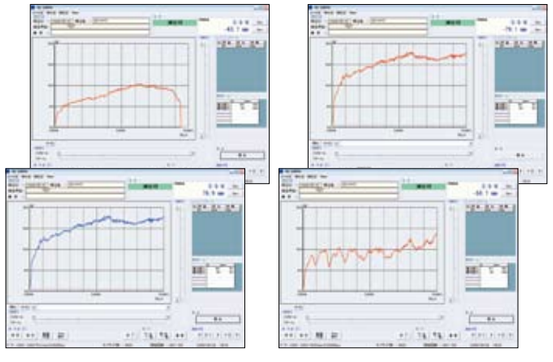
Standard Specifications

Max. force	1000N (100Kgf)
Force display	Depending on RX Series
Test speed	10 to 300 mm/min.
Speed changing	LO: 10mm/min. MD: 100mm/min. HI: 200mm/min. Intended setting is available. VR: 10 to 300mm/min.
Stroke	400mm
Displacement display (Resolution)	0.1mm
Displacement display (Max. display)	±400mm
Table size	295 x 175mm
Weight	Approx. 35Kg
Size	W300 x H850 x D340mm
Power supply	100 to 120VAC/200 to 240VAC

Standard Configuration

Tester body
Application software for MODEL-1309: RX-2009H
Cable for connecting RX Series: RX-OP-8
RS232C cable

Dedicated application software RX-2009H



※This software is compatible with Windows 7 & Japanese OS.

Major functions

Item	Description	
Data acquisition	Real time force/displacement acquisition, graph drawing	
	Data save/batch save	Dedicated format/CSV format
Data file processing	Data load/batch load	Dedicated format
Graph overlap display	Number of registration	100
Printing	Graph cut sheet print	Cut sheet horizontal: 1graph
	Graph continuous print	Cut sheet horizontal: 1graph
		Cut sheet vertical: 2graphs
		Cut sheet horizontal: 4graphs
		Cut sheet vertical: 8graphs
	Pick up registered data	
Pick up registered data	Number of registration	100/measurement
Measurement list display	Representative value detection	Force max./min./average
	All measurements processing	Force max./min./average
Graph data list display	Time/displacement/force data values	
Stand control	Stand start/stop during test	
USB serial conversion	I-O DATA: RSAQ5 (Recommended/option)	

Desk-top type Testers

MODEL-1308

※Digital gauge is optional.

Option
Grip mounting plate
MODEL-OJ-P-90
(Needed when using the tensile test jig.)

A long-stroke automatic test stand dedicated to RX Series & SX Series. This is a reasonable test stand that is suitable for tests of specimens of large size and long test stroke. When used together with RX Series or SX Series, such operations are possible as overload monitoring and automatic stop and reversing when the load set in RX Series or SX Series is reached. For combining this stand with RX Series or SX Series, please use an optionally available RX-OP-6/RX-OP-7 for RX Series or SX-OP-1 for SX Series.

Standard Specifications

Max. force	1000N (100 kgf)
Test speed	5 to 100 mm/min., variable
Speed changing	Continuous
Stroke	400 mm
Displacement display	None
Distance between test center & column	60 mm
Table size	W250 x D140 mm
Sample table size	W120 x D90 mm, center: M6
Drive motor	DC brushless motor
Driving mechanism	Trapezoidal screw
Driving mechanism guide system	Linear ball bush
Weight	Approx.20 kg
Size	W255 x H810 x D300 mm
Power supply	100 to 240 VAC, single-phase, 0.5 A

MODEL-1349

※Digital gauge is optional.

The MODEL-1349 is a lever type Stand exclusively designed for compression tests. The gauge mounting unit is moved down with the lever.

Standard Specifications

Max. force	500 N (50 kgf)
Stroke	43mm/140 degrees
Table size	180 x 100 mm
Max. span	210 mm
Weight	Approx.9kg
Size	W200 x H435 x D235 mm

MODEL-1345

※Digital gauge is optional.

The MODEL-1345 is a manual test stand. The gauge mounting head is moved up and down by rotating the handle.

Standard Specifications

Max. force	500 N (50 kgf)
Stroke	43mm (1.75 mm/rotation)
Table size	180 x 100 mm
Max. span	210 mm
Weight	Approx.9kg
Size	W200 x H435 x D235 mm

MODEL-2252R

※Digital gauge is optional.

The MODEL-2252R employs a motor-driven gauge mount, which moves to the right and left. Zstage may be adjusted vertically. The work mount table has slotted holes for adjusting the jig position back and forth.

Standard Specifications

Max. force	500 N (50 kgf)
Test speed	10 to 80 mm/min.
Speed changing	In five steps or continuous
Stroke	150 mm
Displacement display	None
Z stage stroke	Adjustable with 40 mm
Distance between test center & Z-axis plane	39 to 79 mm
Table size	W100 x D100 mm
Driving mechanism	Trapezoidal screw
Drive motor	DC brushless motor
Weight	Approx.23 kg
Size	W518 x H228 x D345 mm
Power supply	100 to 240 VAC, single-phase, 0.5 A

Wire Harness Withdrawal Force Tester

MODEL-2254

※The push pull gauge is not included.(optional)

The MODEL-2254 is a manual test stand for measuring the caulking strength of wire harnesses and so forth. The work mounting head is moved with a lever. Using the AIKOH RX Series digital gauges provides various functions, including data printing and storage in personal computers. The RX Series digital gauges are optional. The MODEL-2254 is supplied with a set of gauge jigs.

Standard Specifications

Max. force	500 N (50 kgf)
Stroke	70mm
Chuck width	0 to 10 mm
Weight	Approx.15kg
Size	W525 x H150 x D200 mm

Vertical & Horizontal Manual Stand

MODEL-2256

Option
Grip mounting plate
MODEL-OJ-P-90
(Needed when using the tensile test jig.)

※The push pull gauge is not included.(optional)

A vertical and horizontal manual handle type small stand dedicated to RX Series and SX Series. Capable of measurement up to 500N. The gauge mounting part can be moved by turning the handle.

Standard Specifications

Max. force	500 N (50 kgf)
Moving distance	3 mm/handle rotation
Stroke	240 mm
Weight (Vertical)	Approx.16kg
(Horizontal)	Approx.12kg
Size	W200 x H500 x D150 mm (including handle)

Vertical & Horizontal Motorized Stand

MODEL-2257

Option
Grip mounting plate
MODEL-OJ-P-90
(Needed when using the tensile test jig.)

※The push pull gauge is not included.(optional)

A vertical and horizontal small automatic stand dedicated to RX Series and SX Series. This is a reasonable test stand that is suitable for tests of specimens of small size and short test stroke. When used together with RX Series or SX Series, such operations are possible as overload monitoring and automatic stop and reversing when the load set in RX Series or SX Series is reached. For combining this stand with RX Series or SX Series, please use an optionally available RX-OP-6/RX-OP-7 for RX Series or SX-OP-1 for SX Series.

Standard Specifications（vertical type）

Max. force	500 N (50 kgf)
Test speed	10 to 200 mm/min.
Speed changing	Continuous
Stroke	150 mm
Displacement display	None
Distance between test center & column	49 mm
Table size	W200 x D120 mm
Drive motor	DC brushless motor
Driving mechanism	Trapezoidal screw
Driving mechanism guide system	Sliding contact
Weight	Approx.20 kg
Size	W215 x H380 x D235 mm
Power source	100 to 240 VAC, single-phase, 0.5 A

Waveform Display V Series Force Measuring Amplifier

MODEL-1016B

NEW

The MODEL-1016B is a digital force measuring amplifier with an LCD touch panel. Various measuring conditions are set by touching the LCD panel. The MODEL-1016B has four-quadrant operations necessary for reciprocal measurement without the need of any CF cards, in principle. It features remarkably improved graph processing speed and as high communication rate as 230.4 kbps. This amplifier stores all measured data digitally and allows the user to reproduce data displayed on the screen as many times as needed during measurement and after measurement. It requires, however, an exclusive CF card for switch feeling tests, separation tests and creep tests.

Features

- LCD touch panel
- Capable of force - displacement measurement and torque - angle measurement.
- Offers four-quadrant operations necessary for reciprocal measurement.
- Features as high communication rate as 230.4 kbps.
- Able to calibrate the loads of a maximum of ten load cells.
- Able to read the force and displacement at any points with the cursor.
- Able to change the scales of the force and displacement graphs during measurement.
- Compact size for space saving
- Save the data to the CF card. (.CSV)

CF Card Types

- **V-103A**
  For switch feeling tests
  Capable of setting the point - displacement test conditions, masking function and end stroke.
- **V-108A**
  For separation tests
- **V-115A**
  Force holding creep tests
  Force - displacement, and force - time

Connection with PC & Recorders

Hard copy
- DOS Printer

CF card
- Hard copies of the screen
- Outputs text data of the waveform graph

Analog output

RS232C

PC

Load Cells & Load Display

Capacity	Display	Min. unit
5N (500g)	±5000mN	1mN
20N (2kg)	±20.00N	0.01N
50N (5kg)	±50.00N	0.01N
200N (20kg)	±200.0N	0.1N
500N (50kg)	±500.0N	0.1N
2KN (200kg)	±2.000KN	1N
5KN (500kg)	±5.000KN	1N
10KN (1ton)	±10.00KN	0.01 KN
20KN (2ton)	±20.00KN	0.01KN
50KN (5ton)	±50.00KN	0.01 KN
100KN (10ton)	± 100.0KN	0.1KN

Torque Meters & Torque Display

Capacity	Display	Min.unit
0.2N·m (2kgf • cm)	200.0mN • m	0.1mN • m
0.5N·m (5kgf • cm)	500.0mN • m	0.1mN • m
2N·m (20kgf • cm)	2.000N • m	0.001N • m
5N·m (50kgf • cm)	5.000N • m	0.001N • m
20N·m (200kgf • cm)	20.00N • m	0.01N • m
50N·m (500kgf • cm)	50.00N • m	0.01N • m
200N·m (20kgf • m)	200.0N • m	0.1N • m
500N·m (50kgf • m)	500.0N • m	0.1N • m

Specifications of MODEL-1016B

Names	Performances & Specs.
Load cell input	Input channel: 1 Calibration points: 10
Load cell amplifier	Load cell application voltage: 12/6/3 Vdc (110 mA max., 350Ωx 3) Voltage variation: 100 ppm/℃ max. Input voltage range: BV = 12V, 0.1 mV/V to 2 mV/V BV = 6V, 0.2 mV/V to 4 mV/V BV = 3V, 0.4 mV/V to 8 mV/V Accuracy non-linearity: 0.01 % max. Zero point movement: 1 μV/℃ RTI max. Gain variation: 100 ppm/℃ max. Low-pass filter frequency: 1, 3, 10, 30, 100, 300, 1k & 3k (Hz)
A/D converter	Resolution: 16 bits, sequential proportional type Sampling frequency: 1000 times/sec. (1 ms)
Length measurement counter for rotary & linear encoders	Phase A/B up/down counter x 2 channels Resolution: 24 bits
Proportional voltage output (Vp)	±10V, load resistance: 10kΩ or more Output for monitoring load cell conditions
Voltage output for recorder(X.Y)	±10V, load resistance: 10kΩ or more x 2 channels (X- & Y-axes) D/A converter Resolution: 12 bits Updating frequency: 1000 times/sec. (1ms)
Control voltage output (Vref)	±10V, load resistance: 10kΩ or more D/A converter Resolution: 12 bits
Control contact I/O	Inputs: 8 Outputs: 8 (relay contacts)
Stand control output	STOP, UP, DOWN & QUICK
Digital I/O	Centronics-compatible parallel port for connecting a printer Start-stop synchronous serial port for connecting a PC Baud rate: 4.8 k, 9.6 k, 19.2 k, 38.4 k, 115.2 k, & 230.4 k (bps)
Display	STN type black-and-white LCD panel, 320 dots x 240 dots Effective display area: 96 x 72 mm
Operation panel	10 X 6 touch panel
Source voltage	100 VAC ±10 % AC outlet (unswitched)
Power consumption	30 VA
Outside dimensions	W260 x H132.5 x D280 mm
Weight	Approx.5.2kg

CF card for Storing Important Data

V-103A
For switch feeling tests

V-10BA
For separation tests

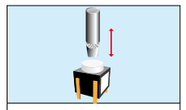
V-115A
For force holding creep tests

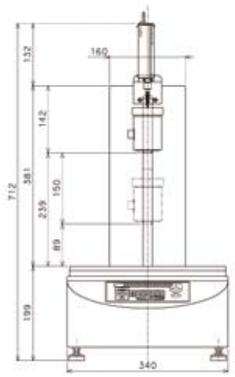
Small Size Desk Top Force Tester

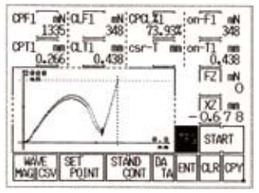
MODEL-1305VR

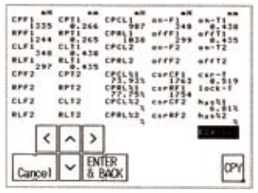
Capacity: 200 N (20 kgf)
Force - Displacement


Touch panel load measurement


Tact switch feeling test







This is a small force tester designed for compression and tensile force tests up to 200N.It consists of a main unit and MODEL-1016B amplifier and is capable of testing feeling of such switches as tact switches and rubber switches by using an optionally available CF card V-103A.

Standard Specifications

Max. force	200N(20kgf)
Test speed	2 to 60mm/min.
Speed changing	In five steps or continuous
Stroke	150mm
Displacement display	Provided
Detector	Linear gauge
Display resolution	0.001mm
Display accuracy	0.05mm
Max. display value	30.000mm
Distance between test center & column	77mm
Table size	W330×D150mm
Drive motor	DC brushless motor
Driving mechanism	Trapezoidal screw
Driving mechanism guide system	Linear ball bush
Weight	Approx.32kg
Size	W340×H580×D430mm
Power supply	100 to 240 VAC,single-phase,0.5A

Measurement point

	Setting
Peak Advance value	(CPF)ForceN • (CPT)Displacement mm
Bottom Advance value	(CLF)ForceN • (CLT)Displacement mm
Peak Return value	(RPF)ForceN • (RPT)Displacement mm
Bottom Return value	(PLF)ForceN • (RLT)Displacement mm
Force difference	CPF-CLF or CPF-RLF
Click rate	(CPF-CLF)/CPFx100 or (CPF-RLF)/CPFx100
Contact ON	ForceN • Displacement mm
Contact OFF	ForceN • Displacement mm
Cursor position	ForceN • Displacement mm

When using ROM card (V-103) or CF card (V-103A)

On/Off Point Detector

For detecting On/Off points of silicon rubber switches

MODEL-0219

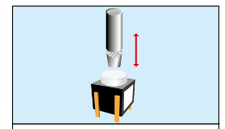
Standard Specifications

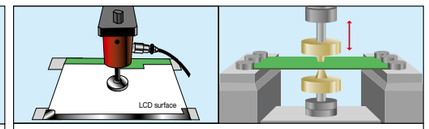
Input range	1, 10 & 100 kΩ (Selectable ranges)	
Setting device	10-rotation helical potentiomeler with 500 even division scale	
Setting accuracy	±0.5% in each resistance range (including non-linearity & hysteresis)	
Output	(1) Analog voltage	0 to 10V in each resistance range,load resistance:10kΩ
	(2) Monitor lamp	Red LED (Lit below set value.)
	(3) Open collector	Withstand voltage:35V max,suction current:50mA max.
		ON voltage:1.5V max.
Response delay time	ON: 0.5 mS or less - Until open collector output goes on after lowering below set value	
	OFF: 2mS or less - Until turning off open collector output after exceeding set value	
Temp.setting	0 to 40 , no dew condensation	
Power supply	12 VDC (including 9 to 16.5 V ripples), 300 mA	
Size	140W×45.5H×140Dmm(including projections),approx.450g(not including AC adapter)	

Precision force tester

MODEL-1605ⅡV / MODEL-1605ⅡVL

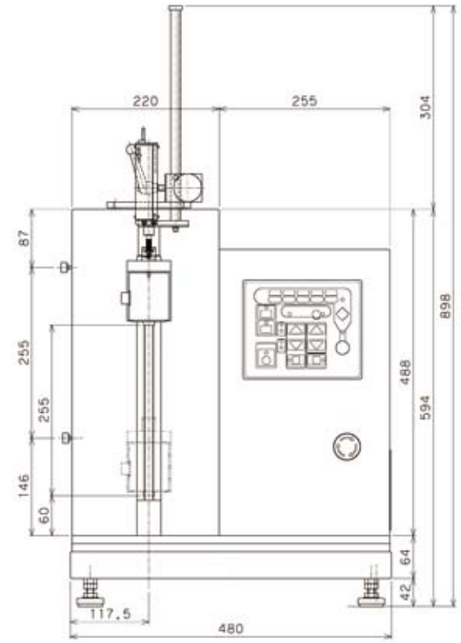
Capacity: 500N (50Kgf)
Precison force-Displacement


Tact switch feeling test



Bending test at preset displacement

* Jigs are not included. (Optional)



MODEL-1605 Series are highly versatile force testers capable of high precision tests.These testers can perform force-displacement tests under various conditions.They are equipped with such functions as detailed motion setting required for various force tests and pickup data management.They are suitable for testing connector mating/unmating, metal characteristics and penetration.

Standard Specifications

Model	1605Ⅱ V	1605Ⅱ VL
Max. force	500N (50Kgf)	
Test speed	0.5 to 600mm/min.	
Speed changing	In fifteen steps or continuous	
Stroke	250mm	
Displacement display	Provided	
Detector	Rotary encoder	Linear gauge
Display resolution	0.01mm	0.001mm
Display accuracy	0.05mm	
Max. display value	±250.00mm	±30.000mm (When using linear gauge)
Distance between test center & column	100mm	
Table size	W475 x D150mm M10x1.5	
Driving mechanism	Ball screw	
Drive motor	Servo motor	
Weight	Approx. 50Kg	
Size	W480 x H578 x D375mm	W480 x H882 x D375mm
Power supply	100 to 240VAC, single-phase, 5A	

Standard Configuration

MODEL-1605Ⅱ V
Tester body
Measuring amplifier: MODEL-1016B
Load cell: 1pce (Up to 500N)

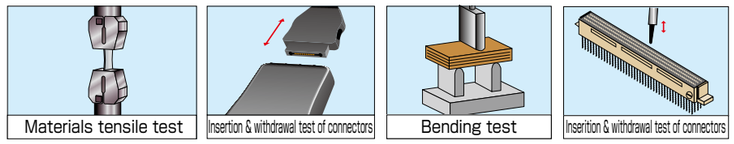
MODEL-1605Ⅱ VL
Tester body
Measuring amplifier: MODEL-1016B
Load cell: 1pce (Up to 500N)

Desk-top type Force Tester

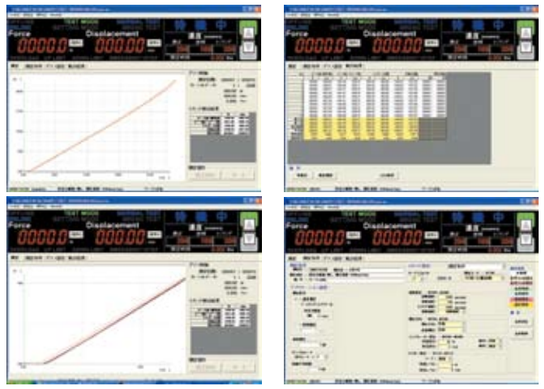
FTN 1-13A

Capacity: 500N/2kN (50Kgf/200Kgf)
Force-Displacement

※Jigs are not included. (Optional)



This is an integrated force tester with a built-in amplifier for the compression and tensile force tests up to 2kN (200Kgf).
Two measurement speeds are available according to the load cell capacity (300mm/min. for 500N, and 125mm/min. for 2kN).
A rotary encoder is provided for displacement detection.
7-segment LEDs are in use for data display.
A software program is provided as the standard for easy tester operarion and result output.
Test conditions can easily be set by anybody.



Features

- The max. allowable test force is 2kN regardless of its compact size.
- Two measuring speeds 5 to 300 mm/min. (500N) and 5 to 125 mm/min. (2kN) are provided.
- Compression, tension and breakdown tests are possible.
- The resolution is high at 0.1N for the force test and 0.01mm for the displacement.
- The power supply is 100VAC to 240VAC for worldwide uses.
- Simply operable personal computer software is provided as the standard.
- The load cell allows 3-ch calibration. (Optional feature)

Standard Specifications

Item		FTN1-13A/500	FTN1-13A/2000
Max. force		500N (50Kgf)	2kN (200Kgf)
Max. speed range		5 to 300mm/min.	5 to 125 mm/min.
Moving speed range (inching & return)		5 to 300mm/min.	
Speed resolution		0.1mm/min.	
Resolution	Force 5000display	4-digit display	
	2000display	4-digit or 5-digit display	
	1000display	4-digit or 5-digit display	
	Displacement	0.01mm	
Accuracy	Force	3000 Series: ±0.2% F.S./UP Series: ±0.3% F.S.	
	Displacement	±0.2mm	
Driving block	Motor type	Stepping motor	
	Motor control system	Pulse	
Applicable load cell		UP Series & 3000 Series (Up to 2kN)	
Detector		Rotary encoder	
Input/output	Digital input/output	USB (For connecting to external PC)	
	Analog input/output	Force (±10V/10bits)	
Table size		Approx. 174 x 200mm	
Emergency stop		Installation on main body, driving block power off	
Outside dimensions		W300 x H820 x D400mm	
Weight		Approx. 40Kg	
Power supply		100 to 240VAC, single-phase, 3A	

Performances

Item	FTN1-13A/500, 2000
Measurement start trigger	Force/Displacement (LV setting available)
Comparator	Force (Return/Stop, with a setting)
	Displacement (Return/Stop, with a setting)
Automatic zero	Upon receiving measurement start trigger
Manual zero return	Zero resetting by key operation
Breakdown	Breaking position detection (Detection sensitivity settable)
Automatic return	Comparator/hardware limit (with speed setting)
Data detection	Measurement positive peak detection (Force/displacement)
	Measurement negative peak detection (Force/displacement)
	Turn-back point (Force/displacement)
	Measurement start point (trigger position) (Force/displacement)
Automatic repetition of measurement	1 to 999999 times
Real-time data output	Digital data output

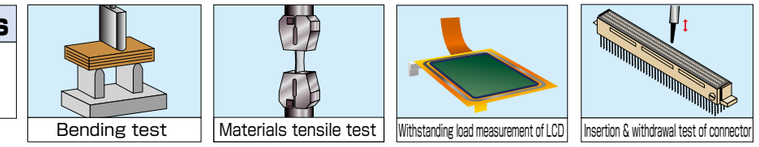
Softwares

MODEL	FTN-3000 (Packed version)	FTN-3001 (Full spec version)
Computer	DOS/V compliant IBM/PC compatible	
Operation system (OS)	WindowsXP Professional Service Pack2, Pack3 or later	

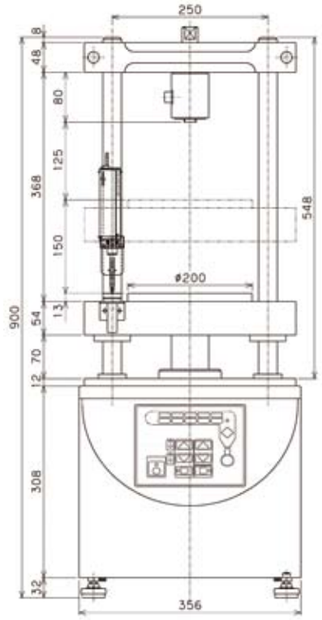
Precison force tester

MODEL-1310VR Series

Capacity: 2kN (200Kgf)
Force-Displacement



※Jigs are not included. (Optional)



Standard Configuration

MODEL-1310VR/VRW (Wide range)
Tester body
Measuring amplifier: MODEL-1016B
Load cell: 1pce (Up to 2kN)

MODEL-1311VR/VRW (Wide range)
Tester body
Measuring amplifier: MODEL-1016B
Load cell: 1pce (Up to 2kN)

These are all-round desktop type precision force testers for force and displacement measurements up to 2kN (200Kgf).
When combined with MODEL-1016B amplifier, they can measure two-point data of force-displacement and breaking force-displacement.
A force-displacement graph is shown on an LCD panel in real time.
The two-column type is highly rigid, which makes these testers suitable for highly precise testing.

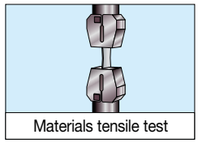
Standard Specifications

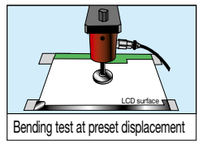
Model	1310VR	1310VRW (Wide range)	1311VR	1311VRW (Wide range)
Max. force	2kN (200Kgf)			
Test speed	5 to 125mm/min.	0.2 to 250mm/min.	5 to 125mm/min.	0.2 to 250mm/min.
Speed changing	In five steps or continuous			
Stroke	150mm			
Displacement display	Provided			
Detector	Rotary encoder		Linear gauge	
Display resolution	0.01mm		0.001mm	
Display accuracy	0.1mm		0.05mm	
Max. display value	±150.00mm		±30.000mm (Using linear gauge)	
Column length	548mm			
Column interval	250mm			
Table size	ϕ200mm CenterM10 x 1.5			
Driving mechanism	Ball screw			
Drive motor	DC brushless motor	Servo motor	DC brushless motor	Servo motor
Weight	Approx. 41Kg			
Size	W356 x H900 x D314mm			
Power supply	100 to 240VAC, single-phase, 1A			

Large Size Precision Force Testers

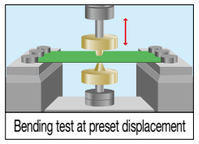
MODEL-1840VT

Capacity: 2 to 50 kN (200 to 5000 kgf)
Force - Displacement


Materials tensile test



Bending test at preset displacement


Bending test at preset displacement

*Jigs are not included. (Optional)

The MODEL-1840VT is a large-size precision force tester designed for compression and tensile force tests up to 200 to 5000Kgf (2 to 50kN).
The test speed and control system conditions may be set on a touch panel.
In combination with the MODEL-1016B amplifier, the basic testparameters including the travel distance, repetition frequency and so forth may be set on the amplifier screen and measurement results are displayed on a LCD.
The stroke may be extended and the pitch of columns may be changed according to test sample sizes of customers.

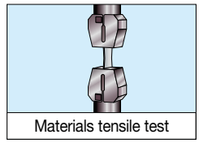
Standard Specifications

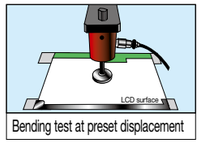
Model	1840VT/200	1840VT/500	1840VT/1000	1840VT/2000	1840VT/5000
Max. force	2kN (200Kgf)	5kN (500Kgf)	10kN (1000Kgf)	20kN (2000Kgf)	50kN (5000Kgf)
Test speed	0.1 to 600mm/min.		0.1 to 300mm/min.		0.1 to 250mm/min.
Speed changing	Free setting				
Stroke	700 mm		1000 mm	950 mm	
Displacement display	Provided				
Detector	Rotary encoder				
Display resolution	0.01 mm				
Display accuracy	0.1 mm				
Max. display	±700.00 mm		±1000.00 mm	±950.00 mm	
Column interval	350 mm				400 mm
Table size	300 mm dia., center M20 x 1.5				□290 mm M20 x 1.5
Drive motor	Servo motor				
Driving mechanism	Ball screw				
Driving mechanism guide	Linear ball bush				
Size	W600xH1340xD580 mm		W600xH1714xD580 mm	W630xH1685xD610 mm	W720xH1714xD540 mm
Weight	Approx.175kg	Approx.185kg	Approx.210kg	Approx.290kg	Approx.390kg
Power supply	100VAC, single-phase, 5A	100VAC, single-phase, 10A		200VAC, single-phase, 10A	200VAC, three-phase, 10A

Large Size Precision Force Testers

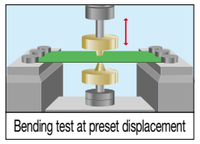
MODEL-1840V

Capacity: 2 to 50 kN (200 to 5000 kgf)
Force - Displacement


Materials tensile test



Bending test at preset displacement


Bending test at preset displacement

*Jigs are not included. (Optional)

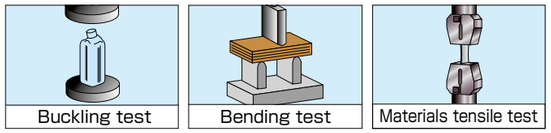
The MODEL-1840V is a large-size precision force tester designed for compression and tensile force tests up to 200 to 5000Kgf (2 to 50kN).
In combination with the MODEL-1016B amplifier, it displays measurement results on a LCD.
It employs a ball screw feeding mechanism and a servo motor for stable and wide-range test speed.
The stroke may be extended and the pitch of columns may be changed according to test sample sizes of customers.

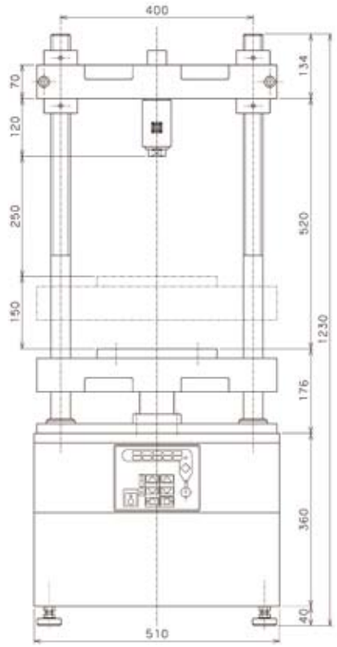
Standard Specifications

Model	1840V/200	1840V/500	1840V/1000	1840V/2000	1840V/5000
Max. force	2kN (200Kgf)	5kN (500Kgf)	10kN (1000Kgf)	20kN (2000Kgf)	50kN (5000Kgf)
Test speed	1 to 600 mm/min.		1 to 300 mm/min.		1 to 250 mm/min.
Speed changing	In five steps or continuous				
Stroke	700 mm		1000 mm	950 mm	
Displacement display	Provided				
Detector	Rotary encoder				
Display resolution	0.01 mm				
Display accuracy	0.1 mm				
Max. display	±700.00 mm		±1000.00 mm	±950.00 mm	
Column interval	350 mm				400 mm
Table size	300 mm dia., center M20 x 1.5				□290 mm M20 x 1.5
Drive motor	Servo motor				
Driving mechanism	Ball screw				
Driving mechanism guide	Linear ball bush				
Size	W600 x H1340 x D400 mm		W600 x H1714 x D400 mm	W630 x H1655 x D410 mm	W720 x H1714 x D540 mm
Weight	Approx.160 kg	Approx.170 kg	Approx.190 kg	Approx.270 kg	Approx.350 kg
Power supply	100VAC, single-phase, 5A	100VAC, single-phase, 10A		200VAC, single-phase, 10A	200VAC, three-phase, 10A

Large Size Desk Top Type Force Testers

MODEL-1320VR/1321VR
Capacity: 10kN (1000 kgf)
MODEL-1322VR/1323VR
Capacity: 5kN (500 kgf)
MODEL-1324VR/1325VR
Capacity: 20kN (2000 kgf)





*Jigs are not included. (Optional)

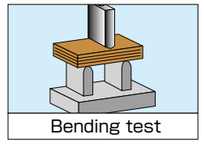
These models are large size testers designed for compression and tensile force tests up to 500 to 2000Kgf (5 to 20kN).
They use the MODEL-1016B amplifier and display the measurement results on LCD panels.
They are available in force measurement only types and force-displacement measurement types, six types in all,whose measurement force are 500Kgf, 1000Kgf and 2000Kgf.
With large test stands, 800mm long columns, and 360mm column interval, these are suitable to measurement of large parts.
The components and specifications may be changed according to test sample sizes of customers.

Standard Specifications

Model	1320VR	1321VR	1322VR	1323VR	1324VR	1325VR
Max.force	10 KN (1000 kgf)		5 kN (500 kgf)		20 KN (2000 kgf)	
Test speed	2 to 60 mm/min.				2 to 40 mm/min.	
Speed changing	In five steps or continuous					
Stroke	150mm					
Displacement display	None	Provided	None	Provided	None	Provided
Detector		Rotary encoder		Rotary encoder	–	Rotary encoder
Display resolution		0.01mm		0.01mm		0.01mm
Display accuracy		0.1mm		0.1mm		0.1mm
Column length	800mm					
Column interval	360mm					
Table size	250 mm dia., center M20 x 1.5					
Drive motor	DC brushless motor					
Driving mechanism	Ball screw					
Driving mechanism guide	Sliding contact					
Weight	Approx. 120 kg					
Size	510 W x 1220 H x 400 D mm					
Power supply	100 to 240 VAC, single-phase, 5 A					

Large Size Force Tester

MODEL-1431V/5000 - 20000
Capacity: 50 to 200 kN
(5 to 20 tonf)
Force - Displacement



The MODEL-1431V Series are multi-purpose large-size force testers designed for compression, tensile, bending and other tests of various large works at 1, 2, 5, 10 and 20tonf.
They employ precision ball screws and servo motors in the driving mechanisms and rotary encoders for displacement detection.
They offer repetitive tests based on the max. value, breaking values, displacement and force, constant force tests, step-force tests and so forth. They use the MODEL-1016B amplifiers.
The test data and waveforms are displayed on LCD panels.
Various protection devices such as safety covers and area sensors are available according to customer's safety requirements.

Standard Specifications

Model	1431V/5000	1431V/10000	1431V/20000
Max.force	5 tonf (50 kN)	10 tonf (100 kN)	20 tonf (200 kN)
Test speed	0.5 to 300 mm/minute		
Speed changing	In fifteen steps or continuous		
Stroke	1000 mm	800/1200 mm (not including grip)	
Displacement display	Provided		
Detector	Rotary encoder		
Display resolution	0.01 mm		
Display accuracy	0.1 mm		
Max. display	±1000.00 mm		
Column interval	400 mm	520 mm	650 mm
Table size	□ 290 mm, M20 x 1.5	□ 400 mm	
Drive motor	Servo motor		
Driving mechanism	Ball screw		
Driving mechanism guide	Linear ball bush		
Weight	Approx. 450 kg	Approx. 1000 kg	Approx. 1400 kg
Size	W900 x H2345 x D600 mm	W1200 x H2535 x D800 mm	W1350 x H2720 x D900 mm
Power supply	200 VAC, three-phase, 15 A		200 VAC, three-phase, 20A

*MODEL-1431V/10000 and MODEL-1431V/20000 are manufactured on a per-order basis to customer specifications.

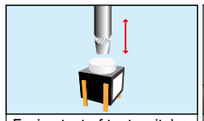
Switch Feeling Testers

GT-FL500

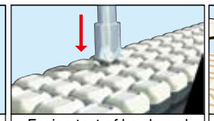
Capacity: 50N (5Kgf)
Force-Displacement

[Standard Configuration]

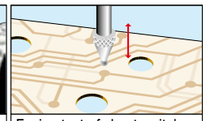
- XYZ automatic stand
- Measurement unit
- Load cell
- Measurement software
- Personal computer (Windows7)



Feeing test of tact switches



Feeing test of key board



Feeing test of sheet switches

Z-axis (Test) Standard Specifications

Max. force	50N (5Kgf)
Drive motor	AC servo motor
Control motion	UP/DOWN
Drive range	0 to 200 mm
Force measuring range	0 to 50N (0 to 5Kgf)
Force resolution	0.001N (1mN)
Force accuracy	0.1N (100mN)
Displacement measuring range	0 to 200 mm
Displacement resolution	0.001 mm
Displacement accuracy	±0.03 mm
Test speed range	0.1 to 50 mm/min.
Moving speed range	1 to 15 mm/sec.
Analog output	±10V (Force, displacement)
Tester size	W750 x H900 x D560 mm
Weight	Approx. 50Kg
Power supply	100VAC

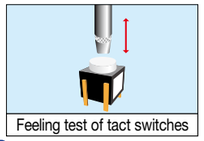
X-Y axes (Move) Standard Specifications

Drive motor	Stepping motor
Control motion	X: Right/left, Y: Front/back
Drive range	X: 0 to 460 mm, Y: 0 to 200 mm
Displacement resolution	0.01 mm
Displacement accuracy	±0.1 mm
Moving speed range	1 to 30 mm/sec.
Specimen table size	W550xD280 mm
Specimen carrying weight	Approx. 20Kg

This tester is dedicated to feeling tests of force-displacement of various switches, keyboard switches, dome switches, rubber switches, etc.
Three axes of X, Y and Z can be controlled automatically.
The tester is capable of testing 16 ON/OFF contacts maximum.
The tester is equipped with a jog dial to facilitate teaching.
Waveforms are displayed in real time on the amplifier and PC screen.

MODEL-1616W

Capacity: 50N (5Kgf)
Force-Displacement



Feeling test of tact switches

Standard Specifications

Max. force	50N (5Kgf)
Test speed	1 to 300 mm/min.
Stroke	150 mm, ball screw
Test stroke	0.00 to 30.00 mm
Displacement display	30.00 mm, minimum 1μ possible(When using linear gauge)
Detector	Linear gauge (or Rotary encoder)
Right-left movement	Manual: 200 mm
Drive motor	Servo motor
Table size	W480xD200 mm
Weight	Approx. 22Kg
Size	W630xH910xD400 mm
Power supply	100VAC

This tester is dedicated to feeling tests of force-displacement of various switches, dome switches, rubber switches, etc.
The Z axis is capable of measurement in the minimum unit of 1μ for precision measurement.
The X axis can be moved to a desired position manually.
By using the CF card V-103A, feeling test points can be measured.

Horizontal Force Tester

MODEL-2152VRE

Capacity: 500N (50 kgf)
Force -Displacement

Standard Specifications

Max. force	500N (50 kgf)
Test speed	10 to 80 mm/min.
Speed changing	In five steps or continuous
Stroke	150 mm
Displacement display	Provided
Detector	Rotary encoder
Display resolution	0.01 mm
Display accuracy	0.1 mm
Z-axis stroke	40 mm
Distance between test center & Z-axis plane	77.5 to 117.5 mm
Table size	W100 × D100 mm
Drive motor	DC brushless motor
Driving mechanism	Trapezoidal screw
Driving mechanism guide	Linear ball bush
Weight	Approx.23kg
Size	W518 × H314 × D345 mm
Power supply	100 to 240 VAC,0.5A

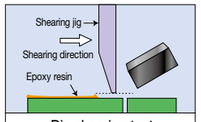
The MODEL-2152VRE is a horizontal force tester designed for compression and tensile force tests up to 50 kgf (500 N) as well as breaking tests and force -displacement correlation measurement of various electronic parts. It uses the Model-1016 amplifier and displays the measurement results on a LCD panel.

Standard Configuration

- Tester body:One
- Measuring amplifier MODEL-1016B:One
- Load cell:One

Small Size Electronic Parts Strength Evaluation Tester (IC Strength Tester)

MODEL-2252RDH



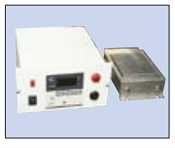
Die shearing test

Standard Specifications

Max. force	200N(20kgf)
Test speed	10 to 80 mm/min.
Speed changing	In five steps or continuous
Stroke	150 mm
Displacement display	None
Z-axis stroke	40 mm
Distance between test center & Z-axis plane	39 to 79 mm
Table size	W90 × D90 mm
Drive motor	DC brushless motor
Driving mechanism	Trapezoidal screw
Driving mechanism guide	Linear ball bush
Weight	Approx.23kg
Size	W518 × H228 × D345 mm
Power supply	100 to 240 VAC,single-phase,0.5A

The MODEL-2252RDH is designed to measure the adhesion strength of electronic parts mounted on horizontal boards. The sample fixing position may be adjusted in the Z direction. The digital gauge Model RX-20 is mounted on the load
measuring side and the shearing jig is mounted at the top. It is also possible to mount the hot plate (HTP-OP-1)on the sample fixing side. The load measuring unit of this tester moves to the right and left.It stores measured data,which may be printed or read in a PC.

Hot Plate for Thermel Load Tests (Common) (HTP-OP-1)



Specifications

- Plate area: 60mm×60mm
- Heating accuracy: Normal temperature to 300℃
- Temperature range: Set temperature±10℃

Standard Configuration

- Tester body:One
- RX-20:One
- Shearing jig:One (2mm,4mm or 8mm)

Options

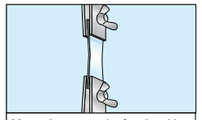
- Hot Plate
- Printer

Small Size Separation Evaluation Tester

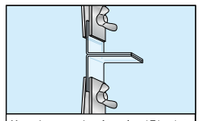
MODEL-1308H

Capacity: 200N (20 kgf)

※The push-pull gauge is not included (optional)



Measuring strength of resin rubber

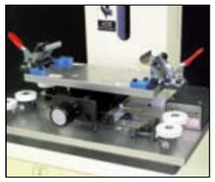


Measuring separation of tape-fused T brackets

The MODEL-1308H employs a motor-driven gauge mounting head, which moves up and down. The gauge mounting head may be returned automatically by the action of a limit switch after completion of a test. The MODEL-1308H offers other various functions, including data output function. Refer to the catalogs of the RX series digital push pull gauges. Use our various jigs and accessories to extend the confines of tests. Refer to the pages of jigs and grips.

Standard Specifications

Max. force	200 N (20 kgf)
Test speed	10 to 300 mm/min.
Stroke	400 mm
Table size	150 x 140 mm
Weight	Approx. 20 kg
Size	W255 x H810 x D300 mm
Power supply	100 to 240 VAC,single-phase0.5A



90° separation test jig
(Option installed)

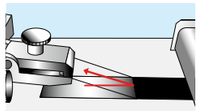
Applicable Tests

Separation tests at 90° and 180° (JIS-C 6481)
Various breakdown tests
Various non-destructive evaluation tests of parts
Penetration elasticity tests of fruits, etc.
Stress relief measurements of foods
Shearing tests
Bending tests

Embossed Carrier Tape Separation Tester

MODEL-2165P

Separation force: 5N (500 gf)



Peel strength test of embossed tape

The MODEL-2165P measures adhesion of various types of tapes. It conforms to the JIS and EIAJ Standards. The results can be saved in a PC using the dedicated software. (This software is compatible with WindowsXP & JapaneseOS.)

Standard Specifications

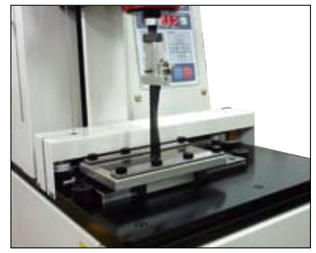
Separation force	5 N (500 gf)
Resolution	0.001 N (0.1 gf)
Separation angle	165 to 180 degrees(with five scales)
Separation speed	50, 100, 200, 300 & 400 mm/min.
Effective length	400 mm
Applicable length	88 mm
Weight	Approx. 16.5 kg
Size	W630 x H300 x D260 mm
Power supply	100 VAC / 220 VAC, 1A

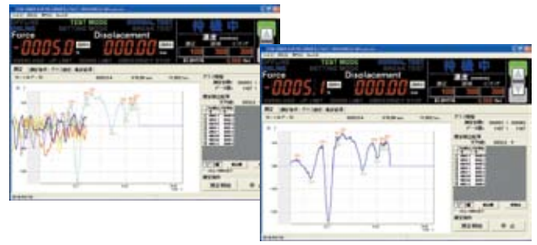
Adhesion Tester

FTN4-15A

Capacity: 50 N (5 kgf)
Force - Displacement

This is a low priced adhesion tester based on FTN1 - 13A with only the mechanism changed. The maximum test speed has been increased to 1000 mm/min to meet needs of high-speed tests. In addition, a jig for 90-degree peeling that meets testing in accordance with JIS Z 0237 and software FTN-2008P dedicated to adhesion test are also available.





Standard Specifications

Max. force		50 N (5 kgf)
Test speed range		5 to 1000 mm/min.
Moving speed range		5 to 1000 mm/min. (inching & return)
Speed resolution		0.1 mm/min.
Resolution	Force	0.01 N (50.00)
	Displacement	0.01 mm
Accuracy	Force	3000 Series: ±0.2% F.S. UP Series: ±0.3% F.S.
	Displacement	±0.5 mm
Effective stroke		100 mm/min. (with 90-degree peeling jig installed)
Drive unit		Stepping motor
Applicable load cell		UP, M-3000 Series
Detector		Rotary encoder (2000 P/R)
Input/output	Digital input/output	USB (for connection to external PC)
	Analog input/output	Force (±10V)
Weight		Apporx. 35 kg
Size		W300 x D400 x H820 mm
Power supply		100 to 240 VAC, Single-phase, 3A

Optional jig

Applicable standard	JIS Z 0237
Peeling method	90-degree peeling
Movable range (stroke)	100 mm (Standard: 85 mm)
Peeling point synchronizing method	Moving amount synchronization with wire & pulley
Test plate	50 x 125 x T2 or larger, SUS 304 (Surface roughness specified)
Specimen size	25 x 250
Safety measure	Safety cover on with & pulley and other areas

Software

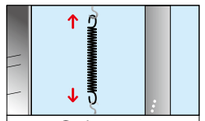
Name	FTN-2008P
Function	Display of results, calculation (required numeric values, max., average, etc.), save, F-S graph display (real time, results, save data)

- **Peak/bottom automatic acquisition: 50 maximum**
- **Peak/bottom display method: In the order of time or peak values**
- **Processing of multiple samples: (Simplified statistics)**
- **Set point measuring function: (JIS compatible)**
- **This software is compatible with WindowsXP & JapaneseOS.**

Touch Panel Type Spring Testers

MODEL-SHRⅢSeries

SHRⅢ-1	Capacity:10 N(1 kgf)
SHRⅢ-5	Capacity:50 N(5 kgf)
SHRⅢ-10	Capacity:100 N(10 kgf)
SHRⅢ-50	Capacity:500 N(50 kgf)



Spring test

The MODEL-SHR Ⅲ Series testers are the newest type high-performance spring testers. Their advanced functions facilitate various measurement item setting and input point setting, which have been very troublesome. The user only has to follow instructions displayed on the screen to input various items and may register a maximum of 100 work numbers. The screen provides real-time display of measured data and dispersion distribution bar graphs. It is possible to set a maximum of ten each measurement stages for both the normal spring tests and length measurement according to preset loads.

Outline of SHRⅢ Type Spring Tester

Test options	Tensile test & compression test
Screen display	Test data, totalization function, work No. registration (100 Nos.), & dispersion distribution bar graph
Unit options	Kgf (N, lb)
Operation options	Load measurement acc. to set length,measurement acc. to set load Max. number of measurement stages: Ten Max. stop time in each stage: 999.9 sec.
Input type for each stage setting	Teaching input, ten-key pad input, & step input
Printing function	Automatic, manual, Note input printing, & hard copy
Tolerance setting	Two types selectable: ± and %
Touch panel	5.7 TFT color LCD

Performances

Length resolution	0.01mm
Variable speed	1 to 600 mm/min.
Automatic distortion correction	Corrects rigid distortion automatically
Automatic origin setting function	Displays the data where the origin was set last
Force resolution	1/100000 max.
External connection	USB port
Protective functions	Overload stop function, & emergency stop button

Standard Specifications

Item	SHR Ⅲ-1	SHR Ⅲ-5	SHR Ⅲ-10	SHR Ⅲ-50
N force capability	10 N (1kgf)	50 N (5kgf)	100 N (10kgf)	500 N (50kgf)
N minimum reading	0.0001 N (0.01gf)	0.001 N (0.1gf)	0.001 N (0.1gf)	0.01 N (1gf)
Unit of measurement	kgf (N, lb, inch for length measurement)			
Test speed	1 to 600 mm/min.			
Max. measurable length	225 mm			
Min. length reading	0.01 mm			
Compression plate diameter	60 mm dia.			
Hook for tensile test	1 stage	2 stages		
Weight	Approx. 45kg			
Size	W450 x H565 x D345 mm			
Power supply	100 to 240 VAC			

Touch Panel Type Spring Testers

SHRⅢ-100	Capacity:1 kN(100 kgf)
SHRⅢ-200	Capacity:2 kN(200 kgf)
SHRⅢ-500	Capacity:5 kN(500 kgf)
SHRⅢ-1000	Capacity:10 kN(1 tonf)
SHRⅢ-2000	Capacity:20 kN(2 tonf)

SHRⅢ-5000	Capacity:50 kN(5 tonf)

Standard Specifications

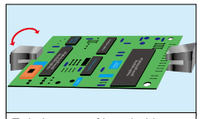
Item	SHRⅢ-100	SHRⅢ-200	SHRⅢ-500	SHRⅢ-1000	SHRⅢ-2000	SHRⅢ-5000
N force capability	1000 N（100kgf）	2000 N（200kgf）	5 KN（500kgf ）	10 KN（1000kgf ）	20 KN（2000kgf ）	50 KN（5000kgf ）
N minimum reading	0.01 N（1gf）	0.1 N（10gf）	0.1 N（10gf）	0.1 N（10gf）	1 N（100gf）	1 N（100gf）
Unit of measurement	kgf (N, lb, inch for length measurement)					
Test speed	1 to 600 mm/min.					
Max. measurable length	600 mm					
Min. length reading	0.01 mm					
Compression plate diameter	150 mm dia			200 mm dia		
Hook for tensile test	1 stage		Optional			
Weight	Approx. 170kg	Approx. 190kg	Approx. 200kg	Approx. 210kg	Approx. 290kg	Approx. 450kg
Size	W500 x H1310 x D450 mm	W600 x H1200 x D420 mm				W900 x H2215 x D600 mm
Power supply	100 VAC			200 VAC		200 VAC, three-phase

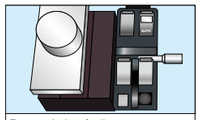
※The tensile spring jigs for the SHR-500 and larger load models are optional.

Torque Angle Testers

MODEL-5125VR/VRW (Wide range)

Capacity: 5N • m (0.5Kgf • m)
Torque-Angle


Twisting test of board with parts


Power window feeling measurement

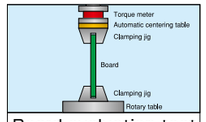
These are designed for complicated evaluation tests of various electronic, mechanical and other parts, including the torque angle tests, sliding torque tests, repetitive reducing torque measurement and so forth. The table in lower position rotates. The span from the work is adjusted with the torque meter mount in upper position, which is moved up and down manually. Select the proper torque meter and jig of the torque suitable to measurement. Test data and test waveform are displayed on the screen. In repetitive tests, waveforms are overwritten and displayed on the screen. Data are stored in the amplifier and printed.

Standard Specifications

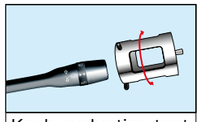
Model	5125VR	5125VRW (Wide range)
Max. output torque	5N • m (0.5Kgf • m)	
Test speed	0.2 to 6RPM	0.1 to 20RPM
Speed changing	In five steps or continuous	
Angle setting	0 to 340° or continuous	
Displacement display	Provided	
Detector	Rotary encoder	
Display resolution	0.1 degree	
Display accuracy	1 degree	
Z-axis stroke	210 mm	
Distance between rotational center & column	110 mm	
Table size	150 mm dia.	
Driving mechanism	Ball speed reducer	
Drive motor	DC brushless	Servo motor
Weight	Approx. 55Kg	
Size	W350 x H767 x D475 mm	
Power supply	100 to 240VAC, single-phase, 0.5A	100 to 240VAC, single-phase, 5A

MODEL-5125VT

Capacity: 5N • m (0.5Kgf • cm)
Torque-Angle



Board evaluation test


Knob evaluation test

The MODEL-5125VT designed for complicated evaluation tests of various electronic, mechanical and other parts, including the torque angle tests,sliding torque tests, repetitive reducing torque measurement and so forth. Various test conditions may be set on a touch panel. The table in lower position rotates. The span from the work is adjusted with the torque meter mount in upper position, which is moved up and down manually. Select the proper torque meter and jig of the torque suitable to measurement. Test data and test waveform are displayed on the screen. In repetitive tests, waveforms are overwritten and displayed on the screen. Data are stored in the amplifier and printed.

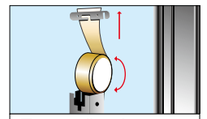
Standard Specifications

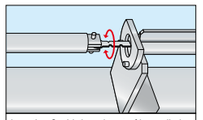
Max. output torque	5N • m (0.5Kgf • cm)	Z-axis stroke	210 mm
Test speed	0.1 to 20RPM	Distance between rotational center & column	110 mm
Speed changing	Free setting	Table size	150 mm dia.
Angle setting	0 to 340° or continuous	Driving mechanism	Ball speed reducer
Displacement display	Provided	Drive motor	Servo motor
Detector	Rotary encoder	Weight	Approx. 55Kg
Display resolution	0.1 degree	Size	W350 x H767 x D475mm
Display accuracy	1 degree	Power supply	100VAC, single-phase, 3A

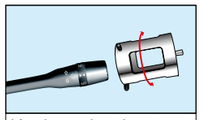
Torque Angle Testers

MODEL-5401VR-50/200

Capacity: 5N • m/20N • m
(0.5Kgf • m/2Kgf • m)
Torque-Angle


Tape adhesion test


Insertion & withdrawal test of key cylinder


Knob evaluation test

The MODEL-5401VR-50 and MODEL-5401VR-200 are capable of torque angle measurement up to 340degrees. Samples are fixed in the lower positions, and the torque meter in the upper positions rotate. The optional X-Y tables or jigs are installed on the sample measuring side. Attaching the automatic centering table to the torque meter enables smooth adjustment of the torque meter center to the work center. This function is convenient for samples that may not be rotated.

Standard Specifications

Model	5401VR-50	5401VR-200
Max. output torque	5N • m (0.5Kgf • m)	20N • m (2Kgf • m)
Test speed	0.2 to 1RPM	
Angle setting	0 to 340 degree	
Displacement display	Provided	
Detector	Rotary encoder	
Display resolution	0.1 degree	
Display accuracy	1 degree	
Z-axis stroke	140 mm	
Distance between rotational center & column	120 mm	
Table size	W350 x D320 mm	
Driving mechanism	Pully transmission mechanism	
Drive motor	DC brushless motor	
Weight	Approx. 60Kg	
Size	W490 x H742 x D480 mm	
Power supply	100VAC, single-phase, 0.5A	100VAC, single-phase, 1A

Large Size Torque Tester

MODEL-5127V/500-5000

Capacity: 50N • m to 500N • m
(500kgf • cm to 5000Kgf • cm)
Torque-Angle

The MODEL-5127V Series are designed to measure correlation of the torque angles of large automobile parts,electronic parts and so forth. Jigs or chucks are set on rotary tables in lower positions. Spans from works are adjusted with the cross head in upper positions, which are moved up and down by motors. Torque meters is fixed to the cross head. The MODEL-5127V Series employ the MODEL-1016B amplifier for versatile evaluation tests of parts, including general torque breaking tests, repetitive durability evaluation tests and so forth.

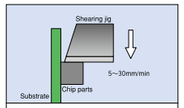
Standard Specifications

Model	5127V/500	5127V/2000	5127V/5000
Max. output torque	500Kgf • cm	2000Kgf • cm	5000Kgf • cm
Torque display	±500.0Kgf • cm	±2000Kgf • cm	±5000Kgf • cm
Load table rotation speed	0.05 to 2RPM		
Rotation accuracy	±0.5%		
Rotational angle display & setting	±0 to 10000.0 degree		
Table size	200 mm dia.		250 mm dia.
Detector	Rotary encoder		
Motor	Servo motor		
Weight	Approx.350Kg	Approx.400Kg	Approx.700Kg
Size	W900 x H2300 x D600 mm		
Power supply	200VAC, three-phase		

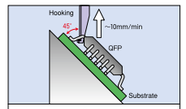
JIS-Rated Lead Free Solder Tester

MODEL-1605 ⅡV/NF

Capacity: 50 N (5 kgf)
Force - Displacement



Shearing test of solder joint of chip part



45° pull test of QFP lead solder joint

The MODEL-1605 IIV/NF is a precision tester designed for lead-free solder tests of boards with parts in conformance to JIS Z 3196-6 and JIS Z 3198-7. Jigs are replaced according to the test conditions. The pull point and shearing point are adjusted with the X-Y table. Measured data are stored in the Model-1016B amplifier and may be printed out or loaded into a PC after completion of measurement.

Standard Specifications

Max. force	50 N (5 kgf)
Test speed	0.5 to 600 mm/min.
Stroke	250 mm
Displacement display	Provided
Detector	Rotary encoder
Display resolution	0.01 mm
Display accuracy	0.1 mm
Displacement reading	10 µm (Standard) 1 µm (Option)
Table size	W475 x D150 mm, M10 x 1.5
Driving mechanism	Ball screw
Drive motor	Servo motor
Weigh	Approx. 50 kg
Size	W480 x H578 X D375 mm
Power supply	100 to 240 VAC, single-phase, 5A

Standard Configuration

■Stand: M-1605 Ⅱ
■Amplifier: MODEL-1016B
■Load cell: MODEL-3005 (5 kgf)
■Jig (Full set): M-500 FS

Applicable Tests

45° pull test of QFP lead solder joint
JIS Z 3198-6
Shearing test of solder joint of chip part
JIS Z 3198-7

MODEL-1308/NF

Capacity: 50 N (5 kgf)

The MODEL-1308/NF is a low-price and compact JIS-rated lead-free solder tester. It is designed for 45° pull tests of QFP lead solder and shearing tests of chip parts, which are enabled by replacing the jigs and RX series digital gauges. Measured data are stored in the RX series digital gauge and may be printed out or loaded into a PC after completion of measurement. The jigs are commonly used for the MODEL-1605 ⅡV/NF.

Applicable Tests

45° pull test of QFP lead solder joint: JIS Z 3198-6
Shearing test of solder joint of chip part: JIS Z 3198-7

Standard Specifications

Max. force	50 N (5 kgf)
Test speed	5 to 100 mm/min., variable
Stroke	400 mm
Table size	W250 x D140 mm
Weight	Approx. 20 kg
Size	W255 x H810 X D300 mm
Power supply	100 to 240 VAC, 0.5 A

Standard Configuration

■Stand: MODEL-1308
■Push-pull gage: select proper RX Series (up to 5 kgf)
■Jig (full set): M-500 FS


M-500P (Z3198-6)


M-500H


M-500HS-H


M-500HS


M-330


M-230-45

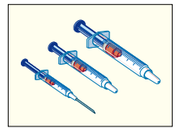
CUSTOM ORDER PRODUCTS

Comprehensive Syringe Needle Force Measuring Tester

MODEL-1310VR/SL

Capacity: 2kN (200Kgf)

The MODEL-1310 is designed for comprehensive force tests of various syringes shown below, for which various jigs are available. In particular, a one-touch needle chuck is supplied for sharpness tests of syringe needles. Measured waveform and maximum value are displayed on the screen. Select the test items from those shown below. Different jigs are used according to the test types. The MODEL-1310 has a vertically movable table.



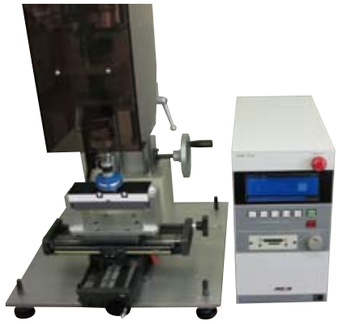
Standard Specifications

Max. force	2kN (200Kgf)
Stroke	150mm
Column length	750mm
Column interval	250mm
Test speed	5 to 125mm/min.
Table size	200mm dia.
Weight	Approx. 41Kg
Size	W356xH1102xD314mm
Power supply	100 to 240VAC, single-phase 1A

Options

Select the following according to the test requirements.
A. Sharpness measurement
B. Sharpness measurement in the condition where needle bases are fixed to needles
C. Tensile strength measurement of needle-needle base adhesive
D. Slide strength measurement between barrels and pistons
E. Air tightness measurement between barrels and pistons
F. Dislocation (withdrawal strength) measurement of needles from barrels
G. Dislocation load measurement between needles and caps
H. Three-point bending measurement of needles only

Torque feeling tester



This tester is designed to test a correlation between torque value and the rotation angle. The acquired torque value and angle data are drawn on a torque-angle graph. It is also possible to automatically acquire the click torque value and angle during turning and show typical measurement values (click values).

Switch & Silicone Rubber Durability Tester (3-CH)

MODEL-SR-3

The MODEL-SR-3 is designed for durability tests of various electronic parts. It automatically stops a test at the preset cycle or when a test work is broken.

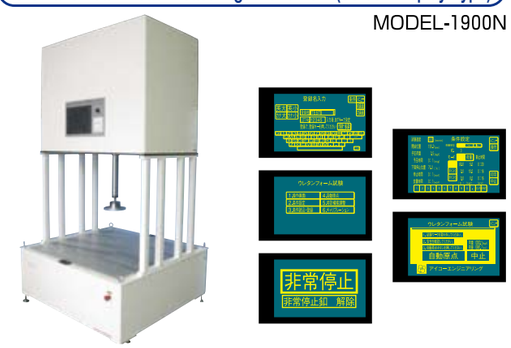
Power Cable Bending Durability Tester (5CH)

MODEL-CBL/5S

This is designed for durability tests of cables in conformity to the UL and JIS standards. It stops operation automatically at the set values (±90° & ±45°) and when the cable is broken. (Interlock type and manual type are available.)

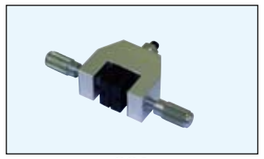
Urethane Foam Load Measurings Instrument (Screen Display Type)

MODEL-1900N

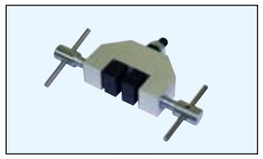


The MODEL-1900N allows all test patterns to be set on the touch panel. It stores a maximum of ten JIS, JAS and any optional patterns in the memory unit, which may be read out in tests. The test data are displayed on the screen and may be printed out.

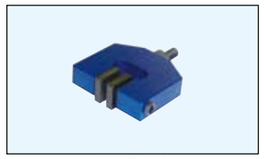
Grips & Jigs



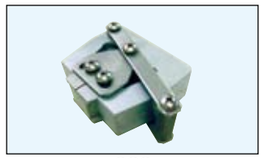
201
Small-size flat chuck



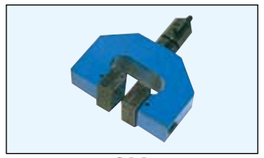
203
Flat chuck



207-2K
Flat chuck

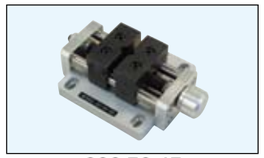


209
Rubber, plastic, cloth & metal
Wedge-type chuck

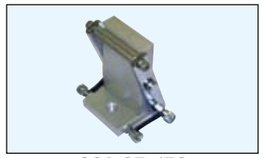


211
Cloth, metal & plastic
Large-size flat chuck

212
Wedge-type chuck

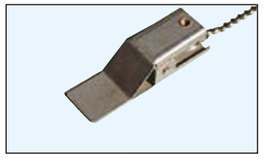


220-50-45
Small double side opening vise



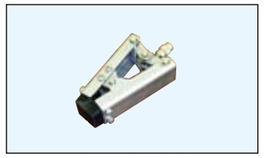
221-25／50
Single roller chuck

224-P-4／5
Pin vise

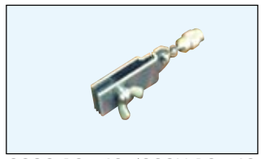


225
Small loads of wires, etc.

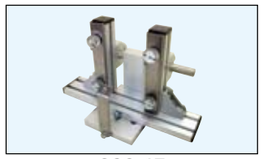
226-1／5／10／15
Pantograph chuck



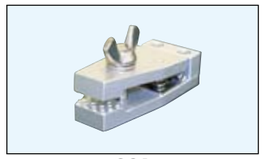
227-20／30
All-purpose type



228G-10~40／228H-10~40
Film chuck
G: Rubber H: Sand paper



230-45
Board mounting jig

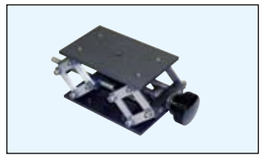


231
All-purpose type

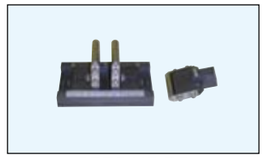
232
All-purpose type

340-05／5(For torque)
Alignment table

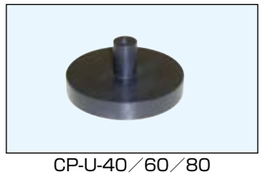
340-L-5(For Tens. & Comp.)
Alignment table



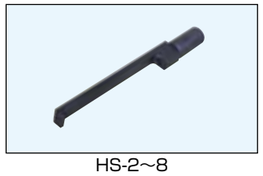
440
Z table



CB50-U3-D3
Bending jig



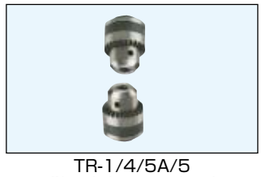
CP-U-40／60／80
Round flat type compression table



HS-2~8
Shear jig

OJ-U-M6-M6 etc
Joint

OJ-M10-F6,OJ-M10-M6 etc
Joint



TR-1/4/5A/5
Chuck for round rod

Double Slide Vise

▶ MODEL-220

Specifications

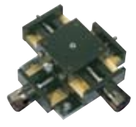
Max. open wicth	0 to 80 mm
Gripping force	1 kN
Blade size	W90 x D30 mm
Thread hole dia	M6
Weight	2.1 kg

※Blades are optional

This vise has blades that open toward both sides from the center. Fix it to the table of the instrument, and hold a test piece directly on the vise or fix the grip blades using the threaded holes in the upper pan.

X-Y Table

▶ Model-330



Specifications

Travel	1 mm/rotation
X-axis travel	±25 mm
Y-axis travel	±25 mm
Max. force	2 kN
Withstand tensile load	0.1 kN
Table size	55 x 60 mm
Weight	1 kg

Use this X-Y table together with AIKOH's test stands for centering or fine feeding of test pieces.

Grips and Jigs

Standard Specifications

MODEL	Capacity	Jaw Size (WxDmm)	Jaw Max. Opng (mm)	Mounting screw	Weight (g)	Application	Type
201	50N	20 x 15	8	※ M6 female	Approx.125	All-purpose type	Parallel flat plate individual screwing
203	2kN	25 x 20	14	※ M10 female	Approx.442		
207-2K	2kN	25 x 25	12	※ M10 female	Approx.356		
209	5kN	32 x 30	10	M20-P1.5 female	Approx. 1800		Wedge type
211	5kN	30 x 60	20	M20-P1.5 female	Approx. 2800		Parallel flat plate individual screwing
212	2kN	25 x 19	3.5	M10-P1.5 female	Approx. 545		Wedge type
220-50-45	500N	50 x 45	0 - 45		Approx.958	Vice	Right-hand/left-hand thread
221-25	200N	W25	—	※ M6 female	Approx.115	Film/cloth	Spring opening/closing
221-50	2kN	W50	—	M10-P1.5	Approx. 376		
224-P-4/5	10N	—	0- Φ 3.2	※ M6 female	Approx.12	Round bar	For round bar/collet change type
225	0.5N	25 x 25	3	M6 female	Approx.56	Gold wire	Clip type
226-1	5N	Tip jaw width 0.5-1	2	M6 female	Approx.97	Small parts	Pantograph type
226-5	100N	Tip jaw width 5	2	M6 female	Approx.100		
226-10	100N	Tip jaw width 10	2	M6 female	Approx.100		
226-15	100N	Tip jaw width 15	2	M6 female	Approx.107		
227-20	1kN	20 x 10	4	※ M6 female	Approx.214	All-purpose type	
227-30	1kN	30 x 10	4	※ M6 female	Approx.233		
228-10	20N	W10	1	M6 female	Approx.37	Thin plate	Screwing
228-20	20N	W20	1	M6 female	Approx.49		
228-30	20N	W30	1	M6 female	Approx.64		
228-40	20N	W40	1	M6 female	Approx.77		
230-45	—	—	4	—	Approx.850	Substrate holding	
231	200N	15 x 10	3	※ M6 female	Approx.78	All-purpose type	Opening by spring pressure, closing by screw
232	100N	Tip width 3xD8	1	M6 female	Approx.30		
340-05	0.5N · m	—	—	—	Approx. 315	Alignment table for torque	
340-5	20N · m	—	—	—	Approx. 1300		
340-L-5	500N	—	—	—	Approx. 1500	Alignment table for Tens. & Comp.	
440	200N	—	—	—	Approx. 3100	Z table	
CP-U-40	100N	Φ 40	—	M6 female	Approx.100	Upper compression plate	
CP-U-60	100N	Φ 60	—	M6 female	Approx.210		
CP-U-80	100N	Φ 80	—	M6 female	Approx.350		
HS-2	30N	W2	—	M6 female	Approx.44	Shear jig	
HS-4	50N	W4	—	M6 female	Approx.46		
HS-6	50N	W6	—	M6 female	Approx.48		
HS-8	50N	W8	—	M6 female	Approx.49		
OJ-P-90	—	—	—	M6 female	Approx.748	Lower tension jig mounting plate	
TR-1	3kN	—	Φ 0.5-3	M6-P1 depth: 12	Approx. 70	Round bar	Scroll type
TR-4	10kN	—	Φ 2-9	1/2-20UNF depth: 20	Approx. 500		
TR-5A	50kN	—	Φ 3-13	1-12UNF depth40	Approx. 2500		
TR-5	50kN	—	Φ 10-20		Approx. 2500		

The screws with asterisks, ※ , need the OJ-U joints.
CP-U Series are not processed quenching

Indicators

MODEL-0218B

This is a low priced simple digital display meter.
This compact and light-weight equipment has the following features:

Features

1. Data hold function (Sample hold)
2. Peak hold function
3. External reset function
4. One-touch auto zero function
5. High and low values settable as desired
6. Analog output

Standard specifications

Display range	99999-19999
Response	10, 100, 1kHz
Sampling rate	15times/sec.
Decimal point	Free setting
Temperature drift	0.02% F.S.%/
Applied voltage	DC5V
Power supply	100V, 110V, 200V or 220V

MODEL-0215T

This is a digital display meter compliant with the TEDS Standard (IEEE 1451.4Class 2 mixed mode interface).
When combined with various TEDS-compatible strain gauge type sensors, sensitivity can be calibrated easily and accurately.
Zero calibration, span calibration, upper/lower limit comparison, digital/analog filtering, motion detection and zero tracking can be set manually on the display.

What is "TEDS"?

"TEDS" stands for "Transducer Electronic Data Sheet".When a memory containing TEDS data of a sensor is installed, the information of the sensor can easily be transferred to a display meter having a function of reading the memory.

Usable load cells (made by AIKOH)
MODEL-CM, UP, QF, DCD, CH, US, DUD, CB Series

Features

- The use of the TEDS function ensures easy and accurate sensitivity calibration.
- The display meter needs not be used with a sensor as a pair, but their combination may be changed as desired.
- A sensor in which no TEDS data has been written can also be used.
- Static strain can be measured.
- The conversion cable for connection of MODEL-0215T is a standard accesorry.
- CE mark-compliant.
- The power supply is 100 to 240VAC.
- Optionally, BCD parallel data output, RS232C interface and D/A converter (Voltage/current output) are available.

Specifications

Applied voltage		10VDC, 2.5V±10%, current 120mA
Signal input range		0 to ±3.0mV/V
Equivalent input/TEDS	**Calibrating range**	0.3 to 3.0mV/V
	Calibrating accuracy	0.2% F.S. or better, provided that the sensor sensitivity it set to 0.5mV/V min.
Zero adjustment range		0 to ±2.0mV/V
Minimum input sensitivity		1μV/count (1/10000 guaranteed at input above 1mV/V)
Non-linearity		Within 0.02% F.S. (When input is 3mV/V or over.)
A/D conversion speed		100times/sec.
Analog filter		4, 10, 100Hz (Default), 3kHz (Set on the panel)
Analog output		Voltage: 2V±5% max. per 1mV/V, force registance: 2kΩ or more
		Response frequency: Approx. 5kHz/-3dB (Not passing through analog filter)
TEDS function		IEEE1451.4 Class2, mixed mode interface
Peak-hold function (analog and digital hold system)	**Response speed**	Approx. 1kHz (Waveform width 2ms: 3mV/V input, analog filter 3kHz)
	Accuracy	0.2% F.S. or better
	When reset	50μs max.
Display	**Display range**	±19999
Power supply		100 to 240VAC, Approx. 7W
Operating temperature range		-10 to +40 (Storage temperature range: -40 to +80)
Operating humidity range		85% RH max. (No condensation)
External dimensions		Approx. W96 x H96 x D146mm (Projections are not included)
Weight		Approx. 1kg
Accessory		AC power cable, 1piece, TEDS conversion cable 1piece, instruction manual (CD-ROM) 1copy
Option		BCD parallel data output, RS232C interface
		D/A converter (Voltage/current output)

Load cells

				
MODEL-CK	**MODEL-VCV**	**MODEL-US**	**MODEL-QF**	**MODEL-CH**
Small size load cell for compression test	High performance load cell for compression test	Load cell for tension/compression	Non-Rotary Type Torque Meter	Load cell for compression test
Capacity: 100N to 20kN	**Capacity: 500N to 100kN**	**Capacity: 10kN to 500kN**	**Capacity: 0.2 N・m to 1kN・m**	**Capacity: 5kN to 500kN**
●Standard Specifications Rated output: 1mV/V (10 & 20kN: 1.5mV/V) Non-linearity: 1%R.O. (10 & 20kN: 2%R.O.) Hysteresis: 1%R.O. (10 & 20kN: 2%R.O.) Repeatability: 1%R.O. Recommend applied voltage: 5V Allowable applied voltage: 7V Temp. Compensation range: -5 to +65 ℃ (2 to 20kN: -5 to +50 ℃) Allowable compensation range: -10 to +70 ℃ (2 to 20kN: -10 to +60 ℃) Allowable overload: 120%R.C.	●Standard Specifications Rated output: 2mV/V±0.25% (50 & 100kN: 2mV/V±0.5%) Non-linearity: 0.15%R.O. (50 & 100kN: 0.1%R.O.) Hysteresis: 1%R.O. Repeatability: 0.05%R.O. Recommend applied voltage: 8V Allowable applied voltage: 12V Temp. Compensation range: -10 to +70 ℃ Allowable compensation range: -15 to +80 ℃ (50 to 100kN: -15 to +75 ℃) Allowable overload: 150%R.C.	●Standard Specifications Rated output: 2mV/V±0.25% (10kN: 1.5mV/V) Non-linearity: 0.1%R.O. Hysteresis: 0.1%R.O. Repeatability: 0.05%R.O. Recommend applied voltage: 10V Allowable applied voltage: 15V Temp. Compensation range: -10 to +70 ℃ Allowable compensation range: -20 to +80 ℃ Allowable overload: 150%R.C.	●Standard Specifications Rated output: 1mV/V±1% Non-linearity: 0.3%R.O. Hysteresis: 0.3%R.O. Repeatability: 0.2%R.O. Recommend applied voltage: 10V (6V at 1N・m or less) Allowable applied voltage: 15V (10V at 1N・m or less) Temp. Compensation range: -10 to +70 ℃ Allowable compensation range: -20 to +80 ℃ Allowable overload: 150%R.C.	●Standard Specifications Rated output: 1mV/V±1% Non-linearity: 0.5%R.O. Hysteresis: 0.5%R.O. Repeatability: 0.1%R.O. Recommend applied voltage: 10V Allowable applied voltage: 15V Temp. Compensation range: -10 to +70 ℃ Allowable compensation range: -20 to +80 ℃ Allowable overload: 150%R.C.

				
MODEL-CM	**MODEL-DCD**	**MODEL-DUD**	**MODEL-QR**	**MODEL-CB**
Very small size load cell for compression test	High performance load cell for compression test	Small high performance load cell for tension/compression test	Rotary type torque meter	Load beam
Capacity: 10N to 2kN	**Capacity: 500N to 200kN**	**Capacity: 500N to 20kN**	**Capacity: 10N・m to 2kN・m**	**Capacity: 50N to 10kN**
●Standard Specifications Rated output: 1mV/V Non-linearity: 1%R.O. Hysteresis: 1%R.O. Repeatability: 0.3%R.O. Recommend applied voltage: 6V Allowable applied voltage: 10V Temp. Compensation range: -10 to +70 ℃ Allowable compensation range: -20 to +80 ℃ Allowable overload: 150%R.C.	●Standard Specifications Rated output: 2mV/V±0.5% Non-linearity: 0.15%R.O. Hysteresis: 0.1%R.O. Repeatability: 0.1%R.O. Recommend applied voltage: 10V Allowable applied voltage: 15V Temp. Compensation range: -10 to +70 ℃ Allowable compensation range: -20 to +80 ℃ Allowable overload: 150%R.C.	●Standard Specifications Rated output: 2mV/V±1% Non-linearity: 0.15%R.O. Hysteresis: 0.1%R.O. Repeatability: 0.1%R.O. Recommend applied voltage: 10V Allowable applied voltage: 15V Temp. Compensation range: -10 to +70 ℃ Allowable compensation range: -20 to +80 ℃ Allowable overload: 150%R.C.	●Standard Specifications Rated output: 1.5mV/V±1% (10 to 50N・m: 1mV/V) Non-linearity: 0.3%R.O. Hysteresis: 0.2%R.O. Repeatability: 0.3%R.O. Recommend applied voltage: 10V Allowable applied voltage: 15V Temp. Compensation range: -10 to +70 ℃ Allowable compensation range: -20 to +75 ℃ Allowable overload: 150%R.C.	●Standard Specifications Rated output: 2mV/V±1% Non-linearity: 0.05%R.O. Hysteresis: 0.05%R.O. Repeatability: 0.05%R.O. Recommend applied voltage: 10V Allowable applied voltage: 15V Temp. Compensation range: -10 to +70 ℃ Allowable compensation range: -20 to +80 ℃ Allowable overload: 150%R.C.

MODEL-3000 Series

Standard Specifications

Rated capacity	20 N to 20 kN
Rated output	2mV/V±1%(20N:1mV/V,10kN & 20kN:1.8mV/V)
Non-linearity	0.1% R.O.
Hysteresis	0.1% R.O.
Repeatability	0.1% R.O.
Recommended applied voltage	10 V
Allowable applied voltage	15 V
I/O resistance	350 Ω ±2%
Temp.compensation range	-10 to +70℃
Allowable compensation range	-20 to +80℃
Temp.influence upon zero point	±0.005% R.O. / ℃
Temp.influence upon output	±0.005% / ℃
Allowable overload.	150% R.C.

Tensile & Compression Type Load Cells

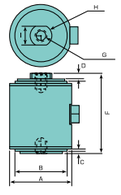
While these load cells with female threads on both sides are designed for both tensile and compression tests, they feature high precision, high output, and less output errors in pushing and pulling, resulting in high reliability. They are widely used for performance tests and industrial measurement of materials and car parts in as wide ranges as 50 N to 20 kN.

Dimensions

Model	Rated capacity	ΦA	ΦB	C	D	F	G	H	I
3005	50 N	60	50	2	5	80	M10 P1.5	20	17
3020	200 N	60	50	2	5	80	M10 P1.5	20	17
3050	500 N	60	50	2	5	80	M10 P1.5	20	17
3200	2KN	60	50	2	5	80	M10 P1.5	20	17
3500	5KN	68	58	2	10	90	M20 P1.5	36	30
3800	10KN	60	50	3	15	120	M20 P1.5	36	30
3900	20KN	60	50	3	15	120	M20 P1.5	36	30

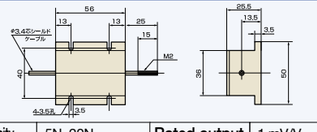
※3002 (20 N) type is also available. The rated output is 1 mV/V.

3000 Series



UP-05K 5N
UP-2K 20N

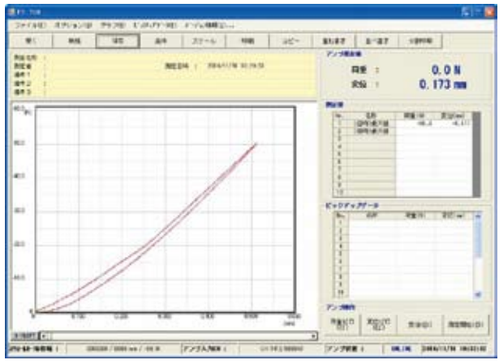
UP Series

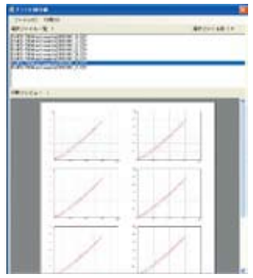


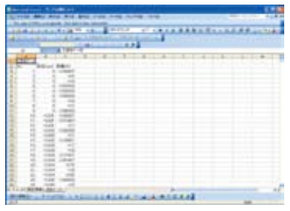
Rated capacity	5N, 20N	**Rated output**	1 mV/V
Allowable overload	150%R.C.	**Non-linearity**	0.2%R.O.
Hysteresis	0.2%R.O.	Repetition Performance	0.1 %R.O.
Temp.compensation range	-10~+70 ℃	Allowable compensation range	-20~+80 ℃

Standard Softwares

FS-700 (MODEL-1016 Series Basic Dedicated Software)





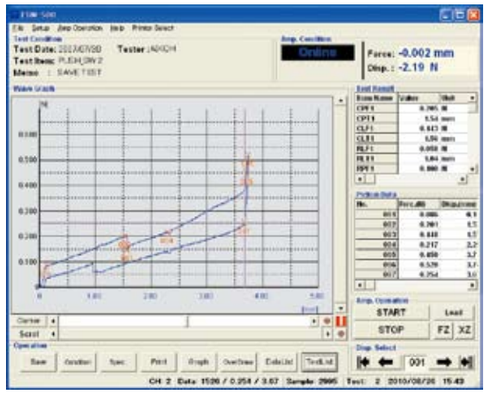


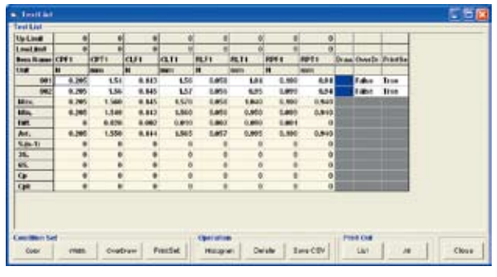
This is data processing application software dedicated to MODEL-1016 series amplifiers. Real-time data output and waveform drawing at high-speed sampling is possible. For tests, almost all conditions of MODEL-1016 series can be set on a PC. Not only continuous testing, but the X.LS format and CSV format to directly save data to Excel are possible. The available print styles include overlapped, shifted and split print. (The PC and Excel are to be provided by the user.)

Recommended Environment

Japanese Windows7
Memory: 1G bytes or more
38400bps serial port: 1
CD-ROM drive for program installation: 1
Internet Explorer 5.0 or later
English OS accepted
MODEL-1016 Series Basic Version only

FSN-500 (V-103/V-103A Switch Feeling Dedicated Software)





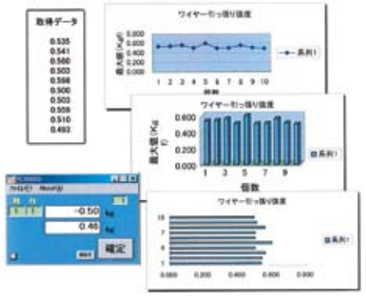
This is application software dedicated to V-103 and V-103A switch feeling. When the optional ROM card V-103 or CF card V-103A is used, measured data/graph data can be loaded to a PC and processed, saved and printed. (The PC and Excel are to be provided by the user.)

Recommended Environment

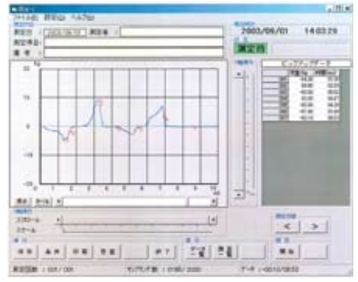
Japanese Windows7
Memory: 1G bytes or more
38400bps serial port: 1
CD-ROM drive for program installation: 1
Internet Explorer 5.0 or later
English OS accepted

Standard Softwares

RX-2003 (Software exclusive for the RX Series)



Software for Microsoft Excel



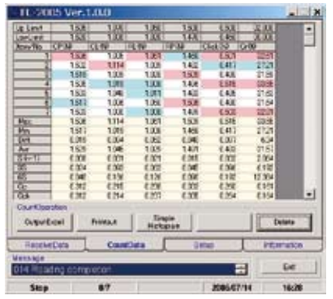
Real-time waveform

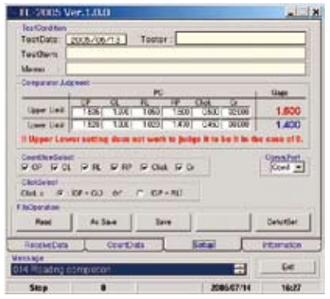
The RX-2003 reads real-time data into a PC and displays the waveform graph and maximum value. It has a cursor function for picking up any intended data. It is also capable of reads displayed or memorized data onto sheets using Microsoft Excel. (The PC and Excel are to be provided by the user.)

Recommended Environment

Japanese Windows7
Memory: 1G bytes or more
38400bps serial port: 1
CD-ROM drive for program installation: 1
Internet Explorer 5.0 or later
English OS accepted

FL-2005 (Software exclusive for the RX-FL Series)





The FL-2005 is data loading application software designed exclusively for the RX-FL Series. It runs on Microsoft Windows operating systems. It receives feeling measurement data output by the RX-Fl Series, which is connected to the RS232C port of a PC with RX-OP-2, carries out GO/NG judgment, data recording and other processing. It has various functions: Judgment, Various types of totalization processing, Printing, Simple histogram display, Data storage in CSV files, etc.

Recommended Environment

Japanese WindowsXP
Memory: 1G bytes or more
38400bps serial port: 1
CD-ROM drive for program installation: 1
Internet Explorer 5.0 or later