C224-E055B

SHIMADZU
Excellence in Science

Table-Top Universal Testing Instruments

EZ Test

Compact solutions for performing tests

EZ Test

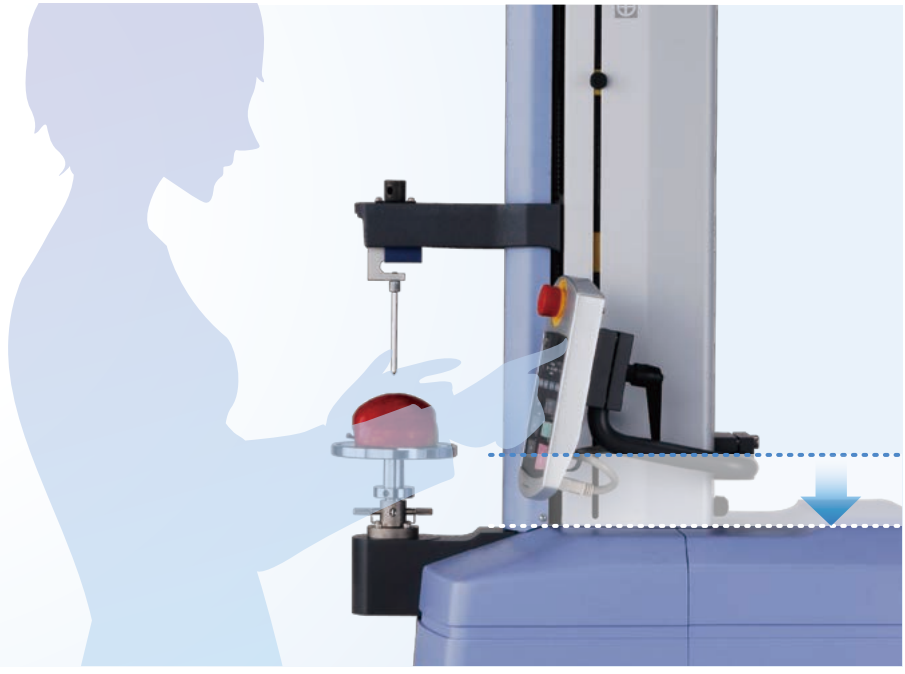
Table-Top Universal Testing Instruments

Lightweight and Compact

The compact size fits easily on table tops.
An "open table" design provides open access from both sides of the table to ensure a large work space.

Convenient to Use

The table height was significantly lowered. This makes it easier to exchange jigs and samples, and to perform a wide variety of operations.



Finger-Tip Operation

An adjustable controller, which enables finger-tip control of crosshead positioning and test start operations, is included standard.
This allows adjusting the control panel position and angle to match the posture of the operator.

High-Precision Testing System

Test Force Measurements Guaranteed with a High-Precision Load Cell with a Capacity of 5 kN Max.

The system uses a high-precision load cell that guarantees accuracy to within ±0.5% of the indicated value (high-precision type) over a wide range from 1/500 to 1/1 of the rated capacity. This helps ensure highly reliable evaluation tests over a wide range of loads.

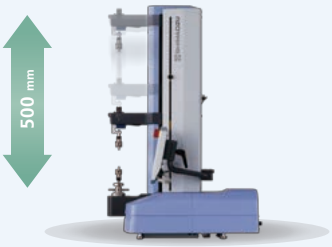
Compliance

- JIS B7721 Class 1
- ISO 7500-1 Class 1
- EN 10002-2 Grade 1
- ASTM E4

Note: Shimadzu recommends validation at an installation site that meets the requirements specified in these standards.

Ample Product Line to Meet a Wide Variety of Requirements

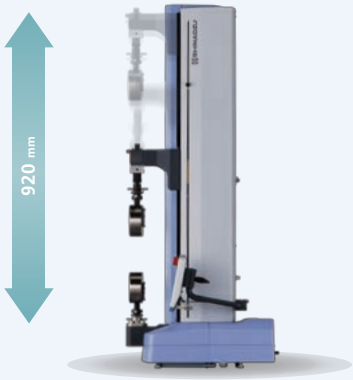
With 3 tester models and 12 types of load cells available, the optimal system can be selected from 32 possible combinations.
A high-speed model with a return speed of 3000 mm/min significantly shortens test cycle times.
Furthermore, power consumption was reduced by over 55% compared to previous models.



EZ-SX Short Model

This is ideal for testing food texture, pharmaceuticals and their packaging, and electrical/electronic parts. With a wide range of testing speeds, it can accommodate all sorts of evaluation testing applications.

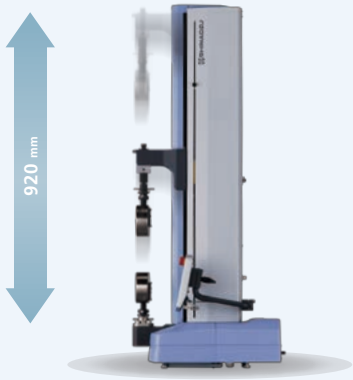
Max. Capacity	500 N
Max. Stroke	500 mm
Test Speed Range	0.001 to 1000 mm/min
Max. Return Speed	1500 mm/min



EZ-LX Long-Stroke Model

With a 5 kN maximum capacity, this is perfect for tensile testing and bend testing of plastics. The 920 mm stroke capacity also makes it perfect for testing rubber, film, and other materials with long elongation.

Max. Capacity	5 kN
Max. Stroke	920 mm
Test Speed Range	0.001 to 1000 mm/min
Max. Return Speed	1500 mm/min



EZ-LX HS Long-Stroke and High-Speed Model

The long stroke improves productivity. The 3000 mm/min return speed significantly reduces the wait time between tests, even for tests with long displacements.

Max. Capacity	2 kN
Max. Stroke	920 mm
Test Speed Range	0.001 to 2000 mm/min
Max. Return Speed	3000 mm/min

Ideal for All Sorts of Evaluation Testing Currently Required by Customers

Physical evaluation testing is now required in more fields than ever before.
EZ Test testers offer an ample selection of specialized jigs and applications to support a wide variety of customer requirements.

- Food products
- Pharmaceuticals, medical devices, and household items
- Electrical/electronic parts
- Plastics and rubbers

Evaluating Food Texture

Evaluation of Bread by Compression Test

25 mm thick bread was compression tested using a 36 mm diameter cylindrical jig. Stress was measured at 40% deformation at a test speed of 100 mm/min, in accordance with standard AACC test methods.

① Cylindrical Press Jig ø36mm
⑥ Lower compression plate ø200mm

Evaluation of Apple Surface by Hardness Test

Piercing test jigs are used for piercing and penetration tests. They make it possible to evaluate the surface hardness (yield point) of peelings, coatings, etc, on samples such as vegetables, fruits, and jelly beans.

③ Piercing needle jig ø3mm
⑥ Lower compression plate ø118mm
㊽ Waterproof tray

Evaluation of Jam by Piercing Test

Multi-piercing jigs make it possible to evaluate the hardness or cohesiveness of samples containing food pieces (large number of small pieces with varying shape) or air bubbles dispersed throughout the sample, such as jam with pieces of fruit, ice cream with cookie pieces, or vegetables. To minimize measurement differences between locations tested, this jig enables evaluation of average characteristics.

② Multi-Piercing Jig
⑥ Lower compression plate ø118mm

Evaluation of Potato Croquette by Teeth Shear Test

This jig is designed to simulate the shape of various types of teeth. It is used to test the compressive, shear, crush, and other characteristics of food specimens. It enables compartative testing of crispiness, brittleness, chewiness, and other characteristics.

⑮ Toothed Pushrod B
⑥ Lower compression plate ø118

Evaluation of Butter by Shear Test

This wire cutter jig uses a 0.3 mm diameter stainless steel wire for shear testing of samples such as butter, margarine, cheese, and noodles. It makes it possible to evaluate the surface and internal firmness of samples.

⑱ Wire Cutter
⑥ Lower compression plate ø118

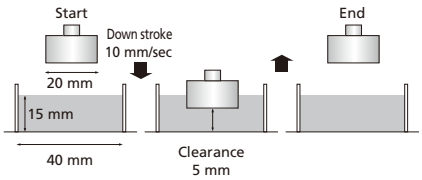
Evaluation of Butter by Hardness Test

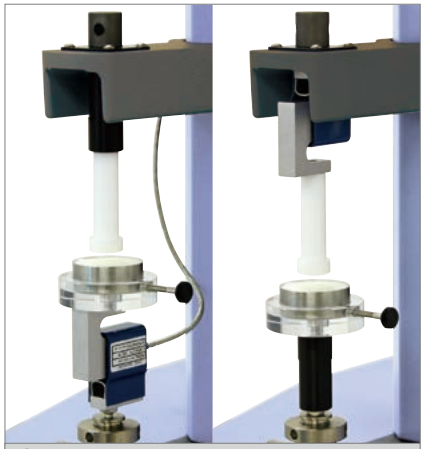
Conical press jigs are used for compression or piercing testing for samples that exhibit thermal plasticity, such as butter, margarine, and bar soap. They are used to evaluate characteristics such as the hardness and spreadability of specimens.

⑤ Conical Press Jigs Angle 60°
⑥ Lower compression plate ø118mm
㊷ Upper jig

Evaluation Tests of Nursing Care Foods

This jig set is used to test foods intended for people with difficulty in swallowing, based on the notification issued by the Japanese Consumer Affairs Agency, or to test "universal design foods" advocated by the Japan Care Food Conference. It is designed to accurately measure even small test force profiles obtained from soft foods.
A 40 mm diameter container is filled to a depth of 15 mm with the sample, which is then compression tested with a 20 mm diameter plunger.

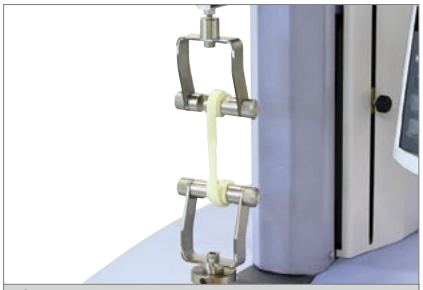




㉜ Universal-design food test set

Evaluation of Noodles by Tensile and Shear Tests

This jig is used to tensile-test various types of noodles, such as udon (thick wheat noodles), soba (buckwheat noodles), or spaghetti. Two jig types can be selected, where one secures the noodles by pinching them between two surfaces and the other secures the noodles by wrapping them and using the tightening force of the noodle itself. It allows evaluation of characteristics such as the tensile strength and elongation of noodles.



㊴ Noodle tensile jig (Roller Type)

Jig Platform

The upper plate portion can be replaced with various jig attachments including a tray for catching extruded or spilled samples and a waterproof tray. Without any attachments, the platform can be used as a table.

㊶Jig platform

Evaluation of Asparagus by Shear Test

The Volodkevich bite jig simulates a human incisor tooth biting through a sample. This jig is used to measure the softness or hardness of meat, the shear force required to bite through asparagus or celery or other fibrous fruits or vegetables, or for piercing testing.

㉑ Bortkiewicz bite jig
㊶Jig platform
㊷Upper jig

Evaluation of Gelatin by Viscoelasticity Test

This makes it possible to perform gelatin tests (JIS K 6503) or viscosity tests of other gelatinous samples. It uses a 85 mm tall glass container with a 60 mm internal diameter and a 0.5 inch (12.7 mm) compression plunger (cylindrical jig).

㉝ Gelatinous sample strength evaluation set
㊶Jig platform
㊷Upper jig

Evaluation of Sausage by Shear Test

This jig enables shear tests of cutting with a blade. In addition to V-cuts for Werner Platzer tests, it also allows replacing blades with other edge profiles. It is used to evaluate shearing of foods such as meats, sausage, cheese, vegetables, and snack bars.

㉒ Blade shear jig (60° V-Cut)
㊶Jig platform

Evaluation of Cereal by Compression Shear Test

The Kramer shear cell is a specialized jig that uses multiple blades to perform compression, shear, and extrusion tests. It allows evaluation of cereals, beans, sauces containing food pieces, and other samples with non-uniform shapes with good repeatability.

㉞ Kramer shear cell, 5-blade type
㊶Jig platform

Evaluation of Beans by Compression Shear Test

This specialized mini-Kramer shear cell allows testing of smaller sample quantities. Just as with the standard size jig, this is used to evaluate samples by shearing, compressing, and extruding the samples.

㉟ Mini Kramer shear cell / Ottawa cell set
㊶Jig platform

Evaluation of Margarine by Spreadability Test

This jig set is used to evaluate how easy it is to spread samples that are normally spread in a thin layer, such as margarine or car wax. The jig set measures the test force required to spread a sample between the upper and lower jigs.

㉖ Spreading jig
㊶Jig platform
㊷Upper jig

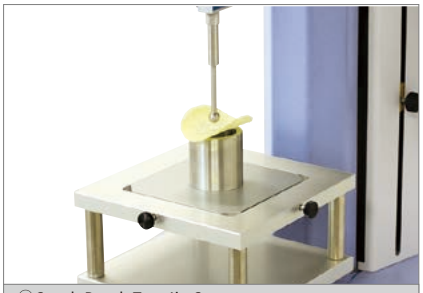
Evaluation of Cookies by Three-Point Bending Test

This makes it possible to evaluate the breaking strength or brittleness of samples by performing a bending test.
It is ideal for testing the three-point bending strength of samples such as biscuits or chocolate bars. Different types of upper punches or supports can be selected based on the sample.

㉓ Three-point bending test jig (R2.5mm)
㊶Jig platform

Evaluation of Potato Chips by Break Strength Test

This jig is used for penetration testing items such as snack foods and potato chips. Measuring the test force required to break samples allows the measurement values to be used as an index for evaluating brittleness or crispiness.



㉗ Snack Break Test Jig Set
㊶Jig platform

Evaluation of Fruit by Crush Test

Ottawa cells are specialized jigs that compress samples and measure the compressive or extrusion force required to extrude the sample through a slit in the bottom. They are used to evaluate samples such as vegetables, fruits, beans, and cereals.

㊱ Ottawa cell set
㊿ Jig platform

Evaluation of Liquids by Extrusion Force Test

This jig makes it possible to measure the test force required to extrude samples through a hole. The extrusion hole size can be changed based on the concentration and viscosity of the sample. It is used to evaluate liquids such as sauces, pastes, and gels.

㊲ Tubing test jig
㊿ Jig platform

Evaluation of Liquids by Viscoelasticity Test

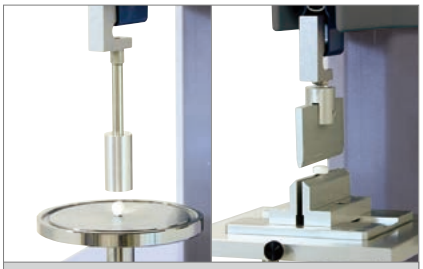
This is used to evaluate the viscosity of viscous samples, such as yoghurt, cream, sauces, ground fruit or vegetables, or paint. Different compression plates are used based on the viscosity, content of food pieces, or size of samples.

㊳ Overflow test jig set
㊿ Jig platform
52 Upper jig

Evaluation of Pharmaceuticals, Medical Devices, and Household Goods

Evaluation of Pills by Compression and Splitting Tests

By compression testing, pills, tablet candies, and other such items are evaluated in terms of hardness, powder molding, and surface coating characteristics. The type of compression plate and spherical press jig can be selected based on the tablet size.



Compression tests ① Cylindrical Press Jig ø20
⑥ Lower compression plate ø118
Splitting Tests ㉓ Three-point bending test jig R0.1
㊿ Jig platform

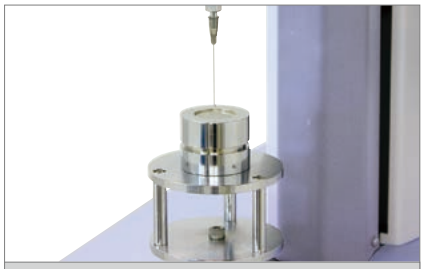
Evaluation of Tablets by Press-Dispense Test

This is used to evaluate the force necessary to press tablets or capsules out of press-through packaging (PTP). By replacing adapters, it can accommodate various shapes of PTP packaging.

㊺ Tablet press-dispense jig set
㊿ Jig platform
52 Upper jig

Evaluation of Syringe Needles by Injectability Test

This is used to evaluate the test force required to pierce a vial cap, film, or other material with a syringe needle. The inserted portion of the needle is designed in accordance with dimensions specified in regulations, which makes it possible to reproduce installation of the needle into the syringe.



㊸ Syringe needle attachment jig
㊶ Boil-in-bag piercing stand
52 Upper jig
53 Lower jig

Evaluation of Lipstick by Hardness Test

This jig is used to evaluate the hardness of lipstick. The lipstick is secured in a horizontal position and compressed in a vertical direction for evaluation.

㉕ Lipstick test jig set
53 Lower jig

Evaluation of Adhesive Bandages

The physical properties of adhesive bandages are evaluated by testing the force required to peel open the bandage packaging, its adhesiveness, tensile strength, and so on.

⑦ 500 N Tensile Jig

Extrusion Test of Syringe

This jig makes it possible to measure the test force required to extrude samples from a shringe. By replacing adapters, it can accommodate maximum diameter 30 mm of syringe.

㊷ Syringe extrusion test jig

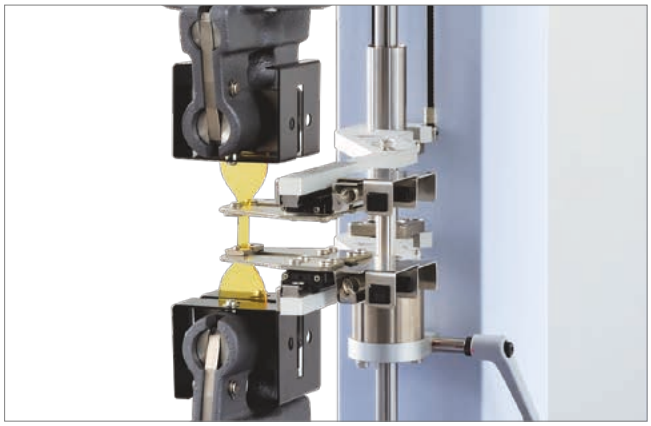
Evaluation of Plastics and Rubbers

Tensile Test of Rubber Dumbbells

In this example, a rubber dumbbell was tensile-tested using pneumatic flat grips. These grips are able to use air pressure to grip specimens with a constant force, which makes it possible to securely grip rubber and other specimens that decrease in thickness as tension is applied. Also, using an DSES-1000 extensometer allows elongation to be accurately measured all the way to the break point.

DSES-1000 is compliant with various rubber tensile testing standards.

JIS K6251:2010	JIS K6272:2003
ISO 37:201	ISO5893:2002
ASTMD412-06a	GB/T528-2009



• 1 kN Screw Type Flat Grips
• Long Travel Extensometer for Soft Specimens DSES-1000

Tensile Test of Film

In this example, film was tensile-tested using grips intended for foil. These grips have a special grip face surface that reduces the breakage of film and copper foil specimens at the chuck during testing. When used in combination with a TRViewX non-contact digital video extensometer, elongation and lateral displacement can be accurately measured, which means the modulus of elasticity can be calculated as well.

• 1 kN Grips for Foil
• Video Type Non-Contact Extensometer TRView X Series

Tensile Test of Plastic Dumbbell Specimens

In this example, a plastic tensile test was performed using 5 kN non-shift wedge type grips. The grip faces move horizontally to tighten the grip on the specimen, without moving in the vertical direction. This makes it easy to set the distance between grips and minimize any vertical test forces acting on the specimen during initial tightening. When a tensile test force is applied, it causes the wedges to hold the specimen securely. Furthermore, compliance with ISO standards is possible by using an SSG-H strain gauge type one-touch extensometer.

• 5kN Manual Non-Shift Wedge Type Grips
• Strain Gauge Type One-Touch Extensometer SSG-H Series

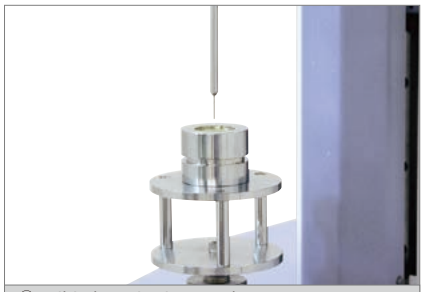
Bending Test of Plastics

In this example, a 3-point bending test jig for plastics is used to test the bending of plastic. This 3-point bending test jig for plastics was designed to meet JIS, ISO, and ASTM standards and allows testing for any thickness applicable within the scope of the standards by replacing support sets.
It also includes a jig for setting the distance between supports and checking the parallelism between punches and supports, which makes it easy to adjust the test jig.

⑩ Plastic three-point bending jig

Evaluation of Film by Piercing Test

This jig makes it possible to measure the piercing strength of various film materials, such as those used in retort (boil-in-bag) pouches. Test samples are cut into circles about 20 mm in diameter for testing.



㊶ Boil-in-bag piercing stand
㊷ Upper jig
㊸ Lower jig

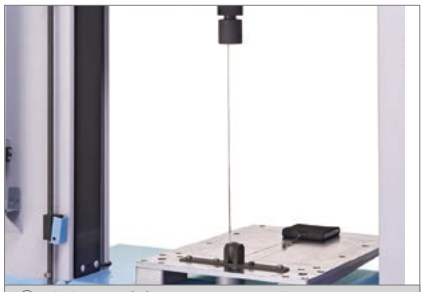
Evaluation of Fibers by Tensile Test

This jig includes capstans to grip thread, cords, and other narrow fibrous samples so that an initial tension force can be applied and breakage can be prevented at the chuck. Samples are gripped pneumatically.

• 1 kN Pneumatic Capstan Type Grips for Yarn
㊹ Adapter for AGS Series jig ø16

Evaluation of Friction Modulus

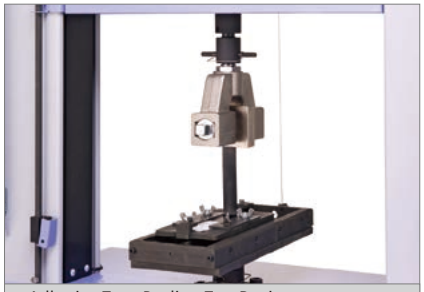
This test device measures the friction between plastic films and between plastics and other materials. Both static and dynamic frictional forces can be measured seamlessly.



⑭ Friction modulus measurement jig

Adhesive Tape Peeling Test

The sample table slides in synchronization with the upper grip movement to maintain a 90° peeling angle. Peeling test jig compliant with JIS Z0237 and JIS Z1528.



• Adhesive Tape Peeling Test Device

O-ring Tensile Test

The O-ring is hooked onto rollers, which rotate during tensile testing. Conforms to JIS K6251, JIS K7312, ISO 37, and ASTM D412 test standards.

• 1 kN Roller Type Grips

Evaluation of Springs by Compression Test

The compression strength of springs can be measured by compressing the spring between upper and lower compression plates. The lower compression plate is designed so that fine adjustments can be made to the parallelism of the plates.

⑬ Spring Test Jigs

Evaluation of Electrical and Electronic Parts

Evaluation of Surface Mounted Devices by 45-Degree Peel Test

This test jig set is used to measure the peel strength of electronic parts, particularly the pins of IC chips.

⑫ Peeling Test Jig Set

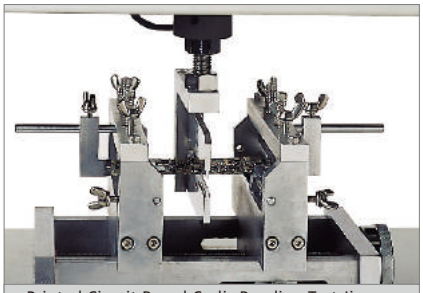
Evaluation of Electronic Components by Shear Test

This test jig set is used to press vertically on the components to measure the shear strength.

⑪ IC Pin Test Jig

Evaluation of Printed Circuit Boards by Cyclic Bending Test

This test jig is for cyclic bending tests of printed circuit boards. It allows observation of fluctuations in resistance in response to cyclic loads and other properties. It enables reproducing tests where thermal expansion and contraction of solder are repeated.

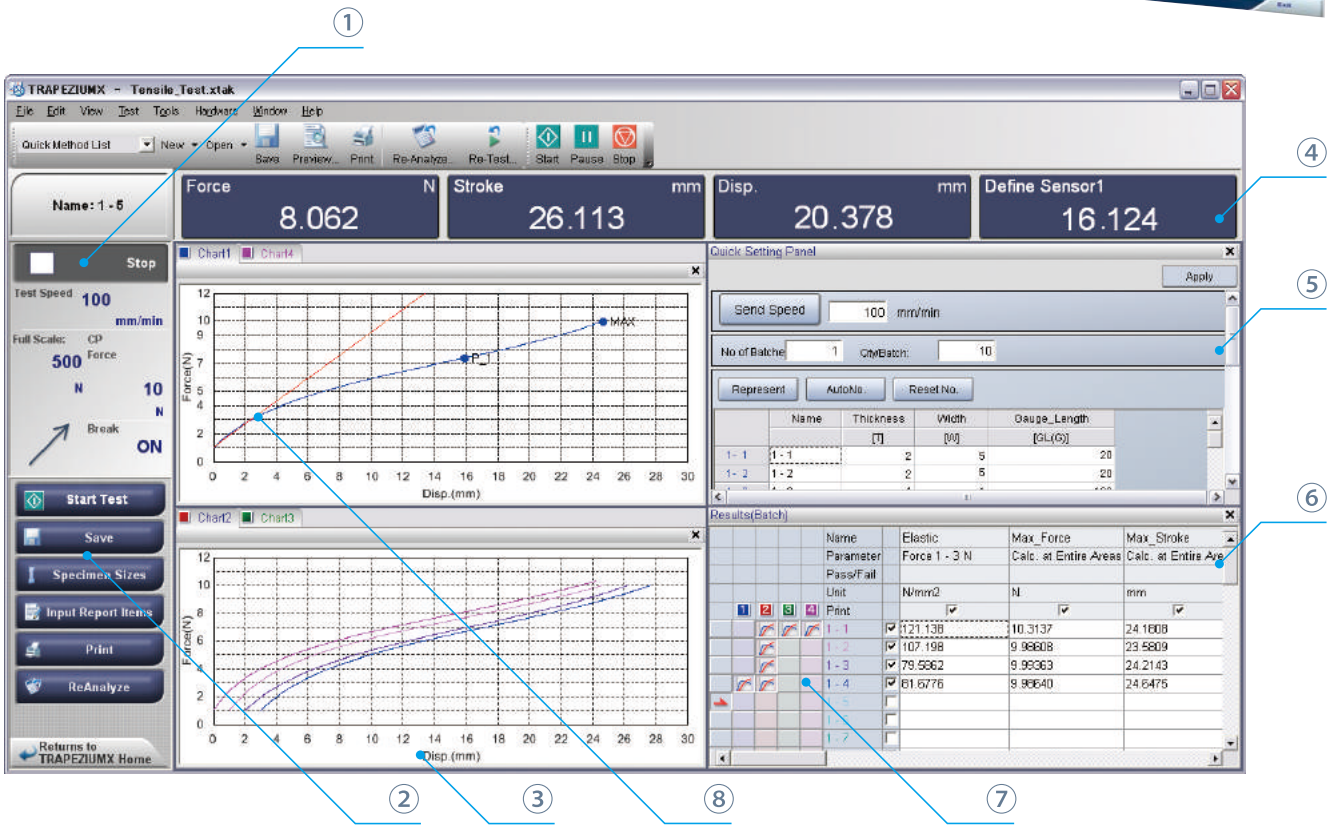


• Printed Circuit Board Cyclic Bending Test Jig

Supported by a Thoroughly Refined Operation System

TRAPEZIUM X Material Testing Operation Software

By registering frequently-used parameters in a Quick Parameter List, tests can be started with a single step.



① Test Method & Situation Panel

Confirm testing conditions and the situation from the main window.

② Advanced Navigation System with a Learning Function

The Navigation Bar shows only the functions required for selected situations. In addition, the "Learning Function" records user actions for each situation and adds frequently-used functions as navigation buttons. This improves work efficiency by matching functions to a user's operational style.

③ Multiple Graph Function

Enables displaying up to four graphs. The graph can set two axes, respectively. In addition, a maximum of 50 graphs can be overlaid and point picking allows acquiring the value of a random point. This provides for a more detailed examination.

④ Real-time Data Display Panel

Displays the test force, stroke (strain), extensometer or strain gauge value and other input values, enabling one-window monitoring.
In addition, the random calculation value can be display simultaneously for smooth confirmation of data.

⑤ Quick Panel

Quickly enter the speed, dimension, and report information from the main window.

⑥ Result Panel

In addition to re-testing and extra lot tests, this panel allows changing a variety of settings before and after testing. Specimens can be inserted in any position or added to only a specific batch, and the specimen order can be changed after completing the test.

⑦ Checkbox to Select Display Curve

In each graph screen it is possible to display selected graphs, which make it easy to compare each result and S-S curve, and each curves that drawn by arbitrary axis.

⑧ Rich Data Processing Items

Data processing items are prepared in advance. Simply press buttons on the figure to select settings. The figure and buttons change according to the test mode and specimen material.

Single

The Single software is specialized for standard testing of plastics, rubber, fibers, textiles, film, paper, electronic components, and other items that involve a single direction of movement.

Tensile tests, compression tests, 3 and 4-point bending tests, peel tests, and more

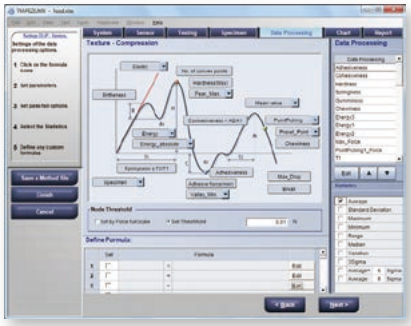
TRAPEZIUM LITE X is software based on the Single module of TRAPEZIUM X software. Linking the tester to a computer significantly improves the efficiency of routine testing. It is particularly ideal for applications such as quality control testing, which involves performing tests frequently, using a given set of test parameters.

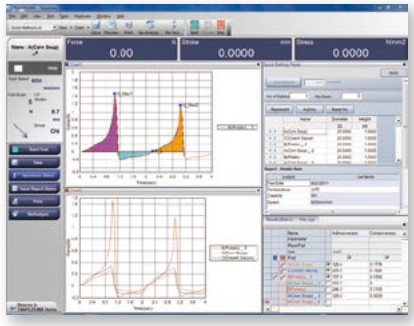
* You can not add the Texture, Cycle and Control software modules to Trapezium Lite X.

Texture

This software is ideal for measuring the texture of foods, evaluating various quality parameters, or measuring the physical properties of pharmaceuticals, cosmetics, and other specimens. It allows creation of user-defined control patterns that enable creation of data processing parameters specialized for foods, such as hardness, brittleness, and energy.

Compression tests (piercing, penetration, and break analysis tests), tensile tests, texture tests (two-bite method), indentation tests, gel strength tests, shear/cutting tests, adhesiveness tests, hardness tests, and more





Cycle

This software enables performing endurance testing and other tests that involve repetitive vertical movement. It is especially well suited to testing actual objects of electronic devices or testing the endurance of printed circuit boards and connectors.

Control

This software enables freely creating a user-specified testing machine movement routine.
It makes it possible to configure complicated combinations of tensile, compression, and holding steps.

EZ Test Specifications

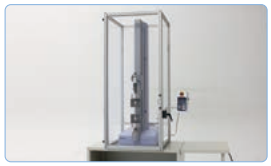
Name		EZ Test		
		EZ-SX	EZ-LX	EZ-LX HS
Tester Load Capacity (note 1)		Max. 500 N	Max. 5 kN	Max. 2 kN
		The load cell type can be selected from 9 types; 1 N, 2 N, 5 N, 10 N, 20 N, 50 N, 100 N, 200 N, and 500 N.	The load cell type can be selected from 12 types; 1 N, 2 N, 5 N, 10 N, 20 N, 50 N, 100 N, 200 N, 500 N, 1 kN, 2 kN and 5 kN. (Up to 2 kN for EZ-LX HS)	
Load Method		High-precision constant-speed strain measurement using backlash-free ball screw drive		
Test Force Measurement	High-Precision Type (note 2)	±0.5 % of indicated value (within 1/500 to 1/1 of load cell rated capacity)		
		Conforms to JIS B 7721 class 0.5, ISO 7500-1 class 0.5, EN 10002-2 grade 0.5, and ASTM E4.		
	Standard-Precision Type (note 2)	±1 % of indicated value (within 1/500 to 1/1 of load cell rated capacity)		
		Conforms to JIS B 7721 class 1, ISO 7500-1 class 1, EN 10002-2 grade 1, and ASTM E4..		
	Range	1 range (rangeless)		
	Test Force Calibration	Automatic calibration using calibration cable		
Crosshead Speed Range		0.001 to 1000 mm/min		0.001 to 2000 mm/min
Maximum Return Speed		1500 mm/min		3000 mm/min
Crosshead Speed Accuracy (Note 3)		Within ±0.1% of test speed		
Crosshead Speed and Allowable Test Force		Up to the capacity of the load cell used at all speeds		
Distance Between Crosshead and Jig Mounting Surface		500 mm	920 mm	
Maximum Grip Space		Maximum Grip Space 395 mm (500 N max. load cell + tensile jig)	700 mm (5 kN load cell + 5 kN screw type flat grips)	
			755 mm (1 kN load cell + 1 kN screw type flat grips)	
			860 mm (500 N max. load cell + tensile jig)	
Depth of Test Space		100 mm (table section)		
Crosshead Position Detection	Measurement & Display	Optical encoder measurement, digital display (display resolution: 1 μm)		
	Accuracy	0.1% of indicated value or 0.01 mm, whichever is greater		
Crosshead Control		Single test control (single-direction tension or compression test), cycle test control (repetitive tension or compression test)		
Sampling Speed		1 ms MAX (TRAPEZIUM X/TRAPEZIUM LITE X is needed for this function)		
Standard Functions Included		Constant test force (creep) control (note 4)		
		Auto-stop and auto-return functions when specimen fracture is detected (crosshead auto home-position return)		
		Test condition file function, user-settable crosshead speed function		
		Display function: Actual test force display or stress display (user settable)		
		Crosshead displacement display in mm or %/GL (user selectable)		
		Peak point test force and stroke		
		Test force and displacement analog output: 0 V to 5 V DC full scale, respectively (for external recorder)		
		USB interface		
		Manual crosshead position fine adjustment		
		Adjustable controller		
		Touch load alarm		
Dimensions and Weight		W400 × D530 × H885 mm, Approx. 33 kg	W400 × D530 × H1315 mm, Approx. 55 kg	
Input Power Supply Voltage (Note 5)		Single phase, 100 V to 150 V AC, 50/60 Hz, or 200V to 230V AC, 50/60 Hz		
Power Capacity		700 VA	850 VA	
Installation Environmental Conditions		Temperature: 5°C to 40°C, Humidity: 20% to 80% (no condensation)		
		Power voltage fluctuation: Within ±10%, Vibration: 10 Hz max., amplitude 5 μm max.		

Note 1: When the load cell capacity is smaller than the tester load capacity, the former is the maximum test force.
Note 2: Shimadzu recommends validation at an installation site that meets the requirements specified in these standards.
Note 3: Crosshead speed accuracy is calculated from the crosshead travel within a prescribed time at a constant speed between 0.5 mm/min and 500 mm/min.
Note 4: The test force is kept constant at 70 % or less of the tester load capacity, for within 12 hours.
Note 5: Ground resistance should be 100 Ω or less.

Option

Tester Options

Jog Controller
346-55922-01
The jog dial is provided to allow finger-tip operation of the crosshead position.



Safety Cover
EZ-SX: 346-57107-01
EZ-LX: 346-57107-02
This is used to ensure safety when specimen fragments are scattered during specimen fracture.

Control I/O Expansion Box
346-55920-01
Increases the number of the control I/O ports to four. Multiple options can be simultaneously connected to the control I/O ports.

Analog Recorder
X-T type: 346-59210-01
Plots test force - time curves.

X-YT type: 346-51736-01
Plots test force – time curves and test force – stroke curves.

Sensor I/O Expansion Box
346-55920-02
Increases the number of the tester sensor I/O ports to two. Multiple options can be simultaneously connected to the sensor I/O ports. BNC cables can be connected to the analog I/O ports (2 ports each).

Power Cable
For EU (VDE standard)
348-34063-03

For China (GB standard)
348-34063-02

For Japan and North America (UL, CSA, PSE standards)
348-34063-01 is provided as standard.

A variety of other options are also available. For details, refer to the separate catalog (Optional Accessories for Autograph).

Additional Load Cell Kits

Select a load cell kit if load cells are to be added to the tester unit kit. The additional load cell kit comprises a cell set (load cell and calibration cable), cell bolt (if required), and upper joint jig (if required).

LOAD CELL SET (Load cell, calibration cable and calibration)

CLASS	EZ-TEST	EZ-LX											
		-	EZ-LX HS										
		-			EZ-SX								
	P/N	5 kN	2 kN	1 kN	500 N	200 N	100 N	50 N	20 N	10 N	5 N	2 N	1 N
1	346-55939-XX	10	14	9	13	12	07	06	05	04	03	02	01
0.5	346-55942-XX	10	14	9	13	12	07	06	05	04	03	02	01

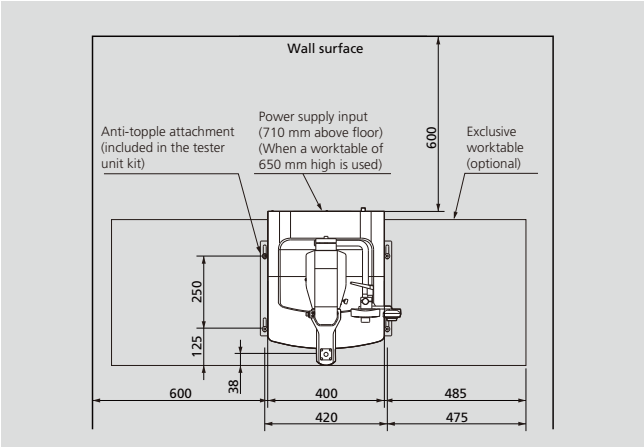
Thermostatic Chamber

Allows testing within an ambient temperature range of -70°C to 250°C. Thermostatic chambers are available only for EZ-L type testers.
The chambers are custom-ordered. For details, please make a separate inquiry.

Other Options

Description	P/N	Remarks
Exclusive worktable	340-48580-02	Worktable for EZ Test testers
Anti-topple attachment for EZ-SX/EZ-LX	346-55037-12	Secures the tester unit to the worktable.
	346-55037-11	Secures the tester unit to the worktable, or the worktable to the floor.

Installation Space



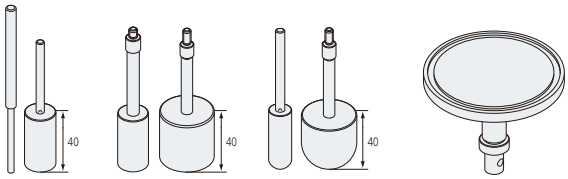
Note: A similar installation space is required for both EZ-SX and EZ-LX.

Jig Part Number List

*1 : Ⓢ An upper adapter jig is necessary *2 : Ⓢ An Lower adapter jig is necessary *3 : Ⓢ An Jig platform is necessary

Probes

① Indentation elasticity test jig / Cylindrical press jig



Indentation elasticity test jig / cylindrical press jig Lower compression plate

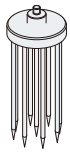
Indentation elasticity test jig set		346-52284-01
Breakdown	Indentation elasticity test jig dia. 3 mm	346-51687-01
	Indentation elasticity test jig dia. 5 mm	346-51687-02
	Lower compression plate dia. 118 mm	346-51687-12

List of Part Numbers by Size, Material and Capacity

Diameter (mm)	Material	Capacity	P/N
ø1	SS	5 N	346-38590-02
ø2	SS	20 N	348-38504-02
ø3	SS	50 N	348-38504-03
	Steel	50 N	346-51687-01
ø4	SS	200 N	348-38504-04
ø5	SS	500 N	348-38505
	Steel	500 N	346-51687-02
ø6	SS	500 N	348-38506-01
ø7	SS	500 N	348-38506-02
ø8	SS	500 N	348-38506-03
ø9	SS	500 N	348-38506-04
ø10	SS	500 N	348-38506-05
	acrylic	100 N	346-57801-04
ø11.3 (cross section: 1 cm²)	SS	100 N	346-57801-03
	acrylic	100 N	346-57801-07
ø15	SS	100 N	346-57801-08
	acrylic	100 N	346-57801-09
ø20	AL	100 N	346-57801-01
	acrylic	100 N	346-57801-05
	AL	500 N	346-57802-09
	acrylic	500 N	346-57802-18
ø25	AL	500 N	346-57802-01
	acrylic	200 N	346-57802-11
ø30	AL	500 N	346-57802-20
	acrylic	200 N	346-57802-21
ø35	AL	500 N	346-57802-02
	acrylic	200 N	346-57802-12
ø36	AL	500 N	346-57802-03 (AOAC, bread compression test)
ø40	AL	500 N	346-57802-04
	acrylic	200 N	346-57802-13
ø45	AL	500 N	346-57802-05
	acrylic	200 N	346-57802-14
ø50	AL	500 N	346-57802-06
	acrylic	200 N	346-57802-15
ø6.4 (ø1/4")	SS	500 N	348-38506-06
ø12.7 (ø1/2")	AL	100 N	346-57801-02
	acrylic	100 N	346-57801-06 (JIS/ISO, gelatin test)
ø25.4 (ø1")	AL	500 N	346-57802-07
	acrylic	200 N	346-57802-16
ø38.1 (ø3/2")	AL	500 N	346-57802-10
	acrylic	200 N	346-57802-19
ø50.8 mm (ø2")	AL	500 N	346-57802-08
	acrylic	200 N	346-57802-17
ø1/2" (round tipped)	SS	500 N	346-57803-01
	acrylic	500 N	346-57803-11
ø1" (round tipped)	SS	100 N	346-57803-02
	acrylic	100 N	346-57803-12

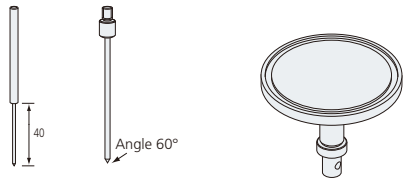
② Multi-piercing jig

Capacity : 500 N
Each Prove : ø3 mm, Angle 15° (9 Proves)



Multi-piercing jig	346-57804

③ Piercing needle jig / Indentation test jig



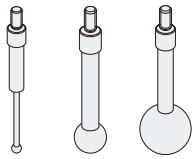
Piercing needle jig / indentation test jig Lower compression plate

Indentation elasticity test jig set		346-52283-01
Breakdown	Indentation elasticity test jig dia. 3 mm	346-51813-01
	Indentation elasticity test jig dia. 5 mm	346-51813-02
	Lower compression plate dia. 118 mm	346-51687-12

List of Part Numbers by Size, Material and Capacity

Diameter (mm)	Material	Capacity	P/N
ø1 (60° taper)	SS	5 N	346-57829-01 *1
ø2 (60° taper)	SS	20 N	348-38503-02 *1
ø3 (60° taper)	SS	50 N	348-38503-03 *1
	SS	50 N	348-38502-01
ø4 (60° taper)	SS	200 N	348-38503-04 *1
	SS	200 N	348-38502-02
ø5 (60° taper)	SS	500 N	348-38503-05 *1
	SS	500 N	348-38502-03

④ Spherical press jig / Viscosity test jig

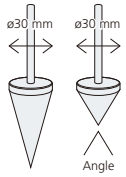


List of Part Numbers by Size and Material

Diameter (mm)	Material	Capacity	P/N
ø3	SS	100 N	348-38511-01
ø4	SS	100 N	348-38511-02
ø5	SS	100 N	348-38511-03
ø6	SS	100 N	348-38511-04
ø7	SS	500 N	348-38511-05
ø8	SS	500 N	348-38511-06
ø9	SS	500 N	348-38511-07
ø10	SS	500 N	348-38511-08
ø15	SS	500 N	348-38512-01
ø20	SS	500 N	348-38512-02
ø25	SS	500 N	348-38512-03
ø3.2 (ø1/8")	SS	20 N	348-38511-09
ø6.4 (ø1/4")	SS	100 N	348-38511-10
ø12.7 (ø1/2")	SS	500 N	348-38511-11
ø19.1 (ø3/4")	SS	500 N	348-38512-04
	acrylic	500 N	348-38555-01
ø25.4 (ø1")	SS	500 N	348-38512-05
	acrylic	500 N	348-38555-02

⑤ Conical press jigs

Jig Diameter: ø30 mm

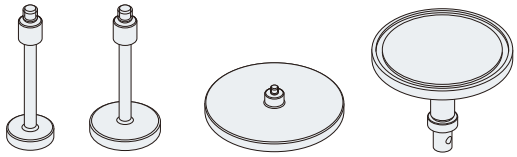


List of Part Numbers by Size and Material

Angle	Material	Capacity	P/N
90°	acrylic	100 N	346-57806-01 *1
60°	acrylic	100 N	346-57806-02 *1
45°	acrylic	100 N	346-57806-03 *1
	SS	100 N	346-57806-04 *1
40°	acrylic	100 N	346-57806-05 *1
	SS	100 N	346-57806-06 *1
30°	acrylic	100 N	346-57806-07 *1
	SS	100 N	346-57806-08 *1

Compression Jigs

⑥ Compression plate



Compression jig set			346-52282-01
Breakdown	Upper compression plate	ø8	346-51687-03
		ø10	346-51687-04
		ø15	346-51687-06
		ø20	346-51687-08
		ø30	346-51687-10
		ø118	346-51687-11
	Lower compression plate	ø118	346-51687-12

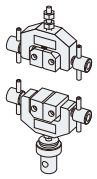
List of Part Numbers by Size, Material and Capacity

Diameter (mm)		Material	Capacity	P/N
Upper compression plate	ø8	Steel	500 N	346-51687-03
	ø10	Steel	500 N	346-51687-04
	ø11.3 (cross section: 1 cm^2)	Steel	500 N	346-51687-05
	ø13	SS	500 N	348-38554
	ø15	Steel	500 N	346-51687-06
	ø16	Steel	500 N	346-51687-07
	ø20	Steel	500 N	346-51687-08
	ø25	Steel	500 N	346-51687-09
	ø30	Steel	500 N	346-51687-10
	ø50	AL	500 N	346-57815-01
	ø75	AL	500 N	346-57815-02
	ø100	AL	500 N	348-38556
	ø118	Steel	500 N	346-51687-11
	ø200 (for 1 kN to 5 kN load cells)	AL	500 N	346-57816-01
Lower compression plate	ø118	Steel	500 N	346-51687-12
	ø118 (markings at every 20 mm)	Steel	500 N	346-51687-32
	ø200	AL	500 N	346-57816-02
	ø200 (markings at every 30 mm)	AL	500 N	346-57816-12

Tensile and Peeling Test Jigs

⑦ 500 N tensile jig

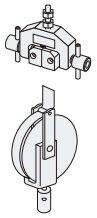
Capacity : 500 N
Applicable specimen thickness : 5 mm
Grip face width : 25 mm



500 N tensile jig set (one each for upper and lower grips)	346-57262-03
500 N upper grip	346-57262-01
500 N lower grip	346-57262-02

⑧ Noodle tensile jig

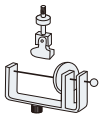
Capacity : 500 N
Applicable specimen size : W 12.7 mm (1/ 2 in) × T 1.5 to 2 mm



Peeling test jig set		346-52289-01
Breakdown	Rotary drum jig, 1 pc	343-07949-02
	500 N upper grip	346-57262-01

⑨ Peeling test jig

Capacity: 500 N

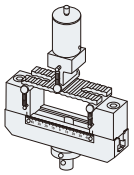


Peeling test (cell) jig	346-52265-01 *2

Application Jigs

⑩ Plastic three-point bending jig

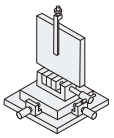
Capacity : 5 kN
Applicable standards : ISO178, JIS K7171, ASTM D790



Plastic three-point bending jig (for 1 to 500 N load cells)	346-57265-01
Plastic three-point bending jig (for 1 to 5 kN load cells)	346-57265-02

⑪ IC Pin test jig

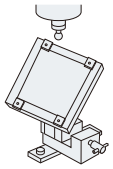
Capacity : 500 N
Applicable specimen size : W 40 × L 40 to W 100 × L 100
* Positioning of test piece is made by XY stage.



IC pin test jig set	346-52292-01

⑫ Peeling test jig set

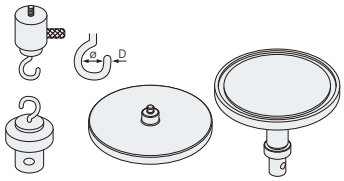
Capacity : 500 N
Applicable specimen size : W 40 × L 40 to W 100 × L 100
* Positioning of test piece is made by XY stage.



PCB peeling test jig set	346-52292-02

⑬ Spring test jigs

Capacity
: Fuck 1 for Tensile Test: 140 N (ø20, D5)
: Fuck 2 for Tensile Test: 20 N (ø8, D2)
: Compression Plate: 500 N (ø118)



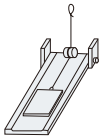
Spring tensile test set		346-52293-02
Breakdown	Spring tensile test jig set, 1 set	346-52174-02
	Spring software, 1 set	345-47052

Spring compression test set		346-52293-03
Breakdown	Upper compression plate dia. 118 mm, 1 pc	346-51687-11
	Lower compression plate for spring, 1 pc	346-52189
	Spring software, 1 set	345-47052

Spring test set (tensile/compression)		346-52293-01
Breakdown	Spring tensile jig set	346-52174-02
	Upper compression plate dia. 118 mm	346-51687-11
	Lower compression plate for spring	346-52189
	Spring software	345-47052

⑭ Friction modulus measurement jig

Capacity : 500 N
Applicable standards : (ISO) ISO8295, JIS K7125
(ASTM) ASTM D1894, JIS K7312



Friction modulus measurement jig (ISO)	346-53933-72
Friction modulus measurement jig (ASTM)	346-53933-71

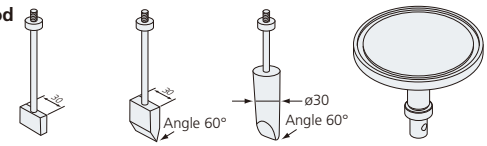
Jig Part Number List

*1 : ⓢAn upper adapter jig is necessary *2 : ⓢAn Lower adapter jig is necessary *3 : ⓢAn Jig platform is necessary

Application Jigs

⑮ Toothed pushrod

Capacity : 500 N
Punch width : 30 mm



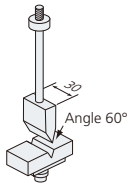
Toothed pushrod A | Toothed pushrod B | Toothed pushrod C | Lower compression plate

Toothed pushrod set		346-52285-01
Breakdown	Toothed pushrod B	346-51814-02
	Toothed pushrod C	346-51815-02
	Lower compression plate dia. 118 mm	346-51687-12

Toothed pushrod A (flat end face)	346-52258-02
Toothed pushrod B (60° cut end face)	346-51814-02
Toothed pushrod B (60° cut end face)	346-51815-02

⑯ Cutting force test jig

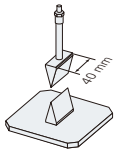
Capacity : 500 N
Punch width : 30 mm
Punch Angle : 60°
Base width : 30 mm
V-Groove angle of base : 60°



Cutting force test jig	346-51817-01
	346-51817-02 *1 *2

⑰ Wedge type jig

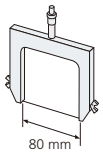
Capacity : 500 N
Wedge width : 40 mm



Wedge type jig (30° tip, 40 mm wide)	346-57812 *3
Wedge type jig (45° tip, 40 mm wide)	346-57812-01 *3
Wedge type jig (60° tip, 40 mm wide)	346-57812-02 *3

⑱ Wire cutter

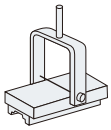
Capacity : 5 N
Effective Test Width : 80 mm
Wire diameter : ø0.32 mm (SS Wire)



Wire cutter (upper)	346-57817

⑲ Cutting stress test jig

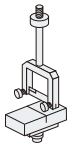
Capacity : 500 N
Wire Diameter : ø0. 32 mm
Jig Size : Effective test width : 26 mm
Base size : W15 mm × L60 mm Groove depth : 4 mm



Cutting stress test jig	346-52268-01 *1 *2

⑳ Razor blade cutting jig

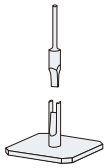
Capacity : 500 N
Effective Test Width : 32 mm
Base width : 30 mm



Razor blade cutting jig	346-51816-01
	346-51816-02 *1 *2

㉑ Bortkiewicz bite jig

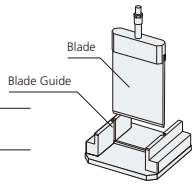
Capacity : 500 N
Upper and lower teeth width : 10 mm



Volodkevich bite jig set	346-57805 *1 *3

㉒ Blade shear jig

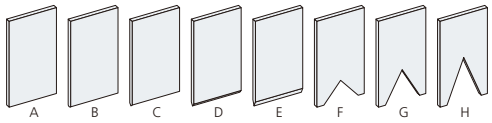
Capacity : 500 N
Blade size : W70 mm T3 mm
Blade guide width : 66 mm



Blade shear jig set (60° cut end face, 3 mm thick, with blade)	346-57807 *3

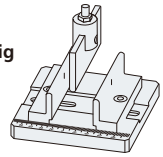
Individual Blade Part Numbers

A : Flat end face, 3 mm thick	348-38521
B : Round end face (R1.5), 3 mm thick	348-38523
C : 60° cut end face, 3 mm thick	346-58522-03
D : 45° cut end face, 3 mm thick	348-38522-01
E : 30° cut end face, 3 mm thick	348-38522-02
F : 90° V-cut flat end face	348-38524-01
G : 60° V-cut flat end face	348-38524-03
H : 45° V-cut flat end face	348-38524-02



㉓ Three-point bending test jig

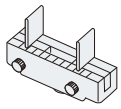
Capacity : 500 N



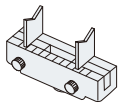
Punch Radius × Width	Support Radius × Width	Distance between support	P/N
R0.1 mm × 80 mm	R0.1 mm × 80 mm	0.2 mm to 100 mm	346-57820-01 *3
R0.1 mm × 15 mm	R0.1 mm × 80 mm	2 mm to 100 mm	346-57820-02 *3
R1 mm × 80 mm	R1 mm × 80 mm	2 mm to 99 mm	346-57820-03 *3
R2.5 mm × 80 mm	R2.5 mm × 80 mm	5 mm to 95 mm	346-57820-04 *3

㉔ Lower broken core jig

Capacity : 500 N
Distance between support : 40 to 60 mm
Support width : R0. 2 mm
Support radius : 26 mm



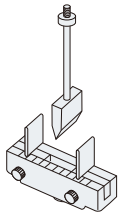
Flat support type



V-Cut support type

Lower broken core jig Flat support type	346-51818-01
Lower broken core jig (V-Cut support type)	346-51818-02 *2

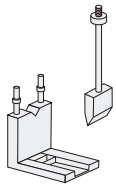
Broken core jig set		346-52290-01
Breakdown	Toothed pushrod B, 1 pc	346-51814-02
	Lower broken core jig	346-51818-01



㉕ Lipstick test jig set

Capacity: 500 N

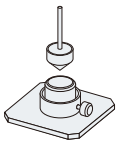
Lipstick test jig set		346-52294-01 *2
Breakdown	Horizontal lipstick holder	346-52022-01
	Toothed pushrod B, 1 pc	346-51814-02



㉖ Spreading jig

Capacity : 50 N
Conical Press Jigs: 90° angle
Sample Cup : 90°

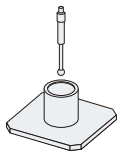
Spreading jig (with 5 sample containers)	346-57810 *1 *3
Additional sample container, 5 pcs	346-57810-01



㉗ Snack break test jig set

Capacity : 500 N
Cyrinder Base : ø40 mm t5 mm
Spherical Press Jig: ø8

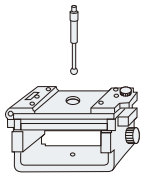
Snack break test jig set (with 8 mm dia. spherical press jig)	346-57809 *3



㉘ Base for food elasticity test

Capacity : 500 N
Spherical Press Jig : ø8 mm
Hole diameter of base: ø12 mm

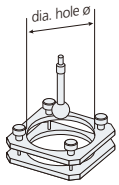
Base for food elasticity test	346-52275-02 *2



㉙ Tortilla break test set

Capacity : 500 N
Spherical Press Jig: ø20 mm

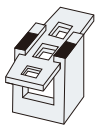
Tortilla break test set, 80 mm dia. hole	346-57814 *3
Tortilla break test set, 60 mm dia. hole	346-57814-01 *3
Tortilla break test set, 40 mm dia. hole	346-57814-02 *3



㉚ Breaking stress

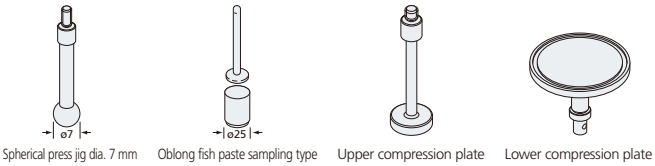
Capacity: 500 N

Fixing base for chewing gum breaking stress test	346-52274-01 *2



㉛ Oblong fish paste test set

Capacity: 500 N

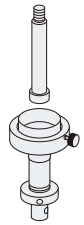


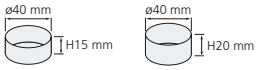
Oblong fish paste test set		346-52286-01 *1
Breakdown	Spherical press jig dia. 7 mm, 1 pc	346-52252-03
	Oblong fish paste sampling type, 1 pc	346-52267-02
	Upper compression plate dia. 20 mm, 1 pc	346-51687-08
	Lower compression plate dia. 118 mm, 1 pc	346-51687-12

㉜ Universal-design food test set

Capacity : 500 N
Applicable standard : Test of foods intended for people with difficulty in swallowing, based on the notification issued by the Japanese Consumer Affairs Agency Test of "universal design foods" advocated by the Japan Care Food Conference
Plunger : ø20 mm H8 mm
Sample cup : ø40 mm H15 mm

Nursing care foods testing set (with 10 sample cups (H15))	346-57825
Additional sample cups (H15)	346-57825-11
Additional sample cups (H20)	346-57825-12

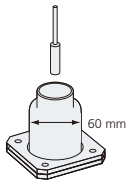




㉝ Gelatinous sample strength evaluation set

Capacity : 100 N
Applicable standard: JIS K6503
Glass Bottle : Internal Diameter ø60 mm
Plunger : ø12. 7 (ø1/2")

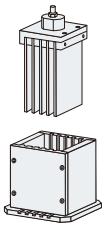
Gelatinous sample strength evaluation set (with 10 glass bottles)	346-57824 *1 *3



㉞ Kramer shear cell

Capacity : 500 N
Cell internal size: W63 mm × D68 mm × H84 mm

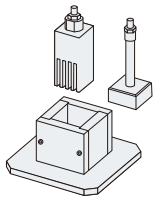
Kramer shear cell, 5-blade type	346-57808-01 *3
Kramer shear cell, 10-blade type	346-57808-02 *3



㉟ Mini kramer shear cell / Ottawa cell set

Capacity : 500 N
Cell internal size: □ 33 mm × H44 mm

Mini kramer shear cell / Ottawa cell set	346-57811 *3



Jig Part Number List

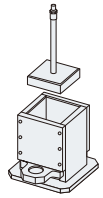
*1 : ㉟An upper adapter jig is necessary *2 : ㉟An Lower adapter jig is necessary *3 : ㉟An Jig platform is necessary

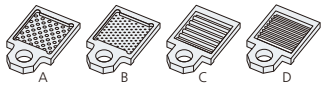
Application Jigs

㊱ Ottawa cell set

Capacity : 500 N
Cell Internal size: □57 mm

Ottawa cell set (accessories)		
Accessories	Plate with 3 mm dia. hole	346-57821 *3
	Plate with 6 mm dia. hole	
	Plate with 3 mm dia. wire	
	Plate with 6 mm dia. wire	

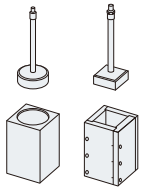




Option

Inner product reduction adapter (dia. 46 mm)	346-57821-11
Inner product reduction adapter (37 × 37 mm)	346-57821-12

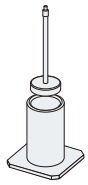
Inserting the adapter in the Ottawa cell can reduce the inner product.
The adapter comes in a set with compression plates.

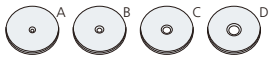


㊲ Tubing test jig

Capacity : 500 N
Sample container: ø50 mm
Disks with hole (3, 5, 7or10 mm dia.) is included.

Tubing test jig		
Accessories	A: Adapter with 3 mm dia. hole	346-57818 *3
	B: Adapter with 5 mm dia. hole	
	C: Adapter with 7 mm dia. hole	
	D: Adapter with 10 mm dia. hole	

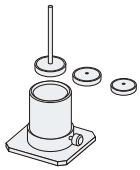




㊳ Overflow test jig set

Capacity : 50 N
Sample Container: Internal Diameter ø50 mm

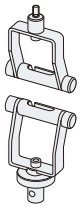
Overflow test jig set		
Accessories	A: ø45 mm Compression plate adapter	346-57813 *1 *3
	B: ø40 mm Compression plate adapter	
	C: ø35 mm Compression plate adapter	



㊴ Roller type noodle tensile jig (Roller type)

Capacity : 100 N
Roller diameter: ø16 mm

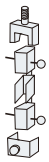
Roller type noodle tensile jig	346-57826



㊵ Noodle tensile jig (Sponge grip type)

Capacity: 50 N

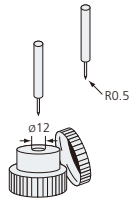
Noodle tensile jig	346-522640-01



㊶ Boil-in-bag piercing stand

Capacity : 20 N
Piercing rod : ø1 R0. 5mm
Hole of piercing stand: ø12

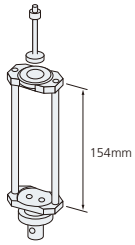
Boil-in-bag piercing stand and rod	346-52271-01 *1 *2
Boil-in-bag piercing rod	347-52778 *1



㊷ Syringe extrusion test jig

Capacity : 500 N
Applicable syringe size: Maximum syringe diameter ø30mm

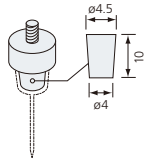
Syringe extrusion test jig		346-57828
Breakdown	Adapter with 30 mm dia. hole	348-38626-06
	Adapter with 25 mm dia. hole	348-38626-05
	Adapter with 20 mm dia. hole	348-38626-04
	Adapter with 15 mm dia. hole	348-38626-03
	Adapter with 10 mm dia. hole	348-38626-02
	Adapter without hole (You can make any diameter hole.)	348-38626-01



㊸ Syringe needle attachment jig

Capacity : 500 N
Needle holder size: ø4 to 4.5 mm, L10 mm

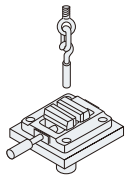
Syringe needle attachment jig	346-51688-02



㊹ Toothbrush jig set

This jig set makes it possible to measure the drawing force of bristles of tooth brush and interdental brush.
Capacity : 20 N
Applicable standard: JIS S3016
Vice Capacity : 30 mm

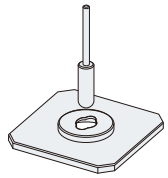
Toothbrush jig set (vice)	346-52291-01

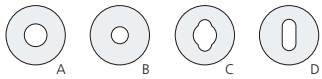


㊺ Tablet press-dispense jig set

Capacity : 500 N
Punch size: ø1/2" (round tipped)

Tablet press-dispense jig set		346-57819 *1 *3
Accessories	A: Adapter with 17 mm dia. hole	348-38604-02
	B: Adapter with 12 mm dia. hole	348-38604-01
	C: Adapter with 17 mm dia. hole + R5 /L23 mm slotted hole	348-38567
	D: R5 /L23 mm slotted hole (Applicable to No. 1 to 5 capsules)	348-38603

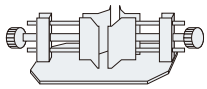




Application Testing Base

㊻ Beaker fixing base

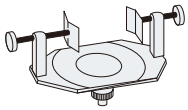
Capacity: 500 N



Beaker fixing base	346-51819-02 *2

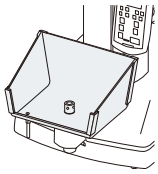
㊼ Fixing base

Capacity: 500 N
Fixable sample size: ø25 to 60 mm



Fixing base	346-51819-01

㊽ Waterproof tray

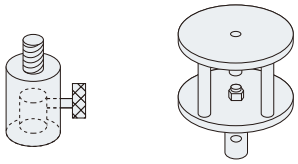


Waterproof tray	346-57115

Jig Mounting Adapters

㊾ Sun scientific jig mounting adapter set

Jigs from Sun Scientific Co., Ltd. can also be used for EZ Test.

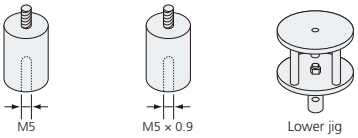


Upper jig　　Lower jig

Sun scientific jig mounting adapter set		346-52295-01
Breakdown	Upper jig, 1 pc	346-52280-01
	Lower jig, 1 pc	346-52281-02

㊿ Rheotech jig mounting adapter set

Jigs from Rheotech can also be used for EZ Test.



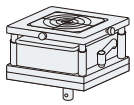
M5　　M5 × 0.9　　Lower jig

Rheotech jig mounting adapter set		346-51820-03
Breakdown	M5 screw	346-51820-01
	M5 0.9 mm pitch screw	346-51820-02

Lower jig	346-52281-01

(51) Jig platform

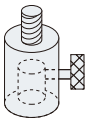
*3 Can be used for various tests by removing the plate on the platform and replacing the jig with a different type.



Jig platform (with standard plate and sample tray)	346-57823-02 *2

(52) Upper jig

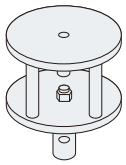
*1 An upper adapter jig is necessary to allow smooth probe replacement.



Upper jig	346-52280-01

(53) Lower jig

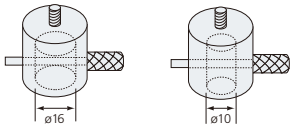
*2 Attaching a probe to the upper jig and an adapter to the lower jig allows smooth replacement of different types of test jigs.



Lower jig	346-52281-02

(54) Adapter for AGS series jig

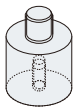
Use these adapters when mounting the Shimadzu AGS Series Precision Universal Tester jig to the EZ Test tester.



AGS series jig adapter dia. 16 mm	346-51692-01
AGS series jig adapter dia. 10 mm	346-51692-02

(55) 1 to 5kN load cell adapter

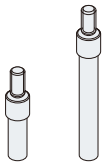
Use this adapter when mounting a jig to a 1 kN, 2 kN or 5 kN load cell.



M12 conversion adapter	347-55350-01

(56) Probe extension adapter

Use these adapters when expanding probe lengths.
Handle with care not to put the bending force to a load cell.



Probe 30-mm extension adapter	348-38500-03
Probe 60-mm extension adapter	348-38500-04
Probe 30-mm extension adapter (with lock nut)	346-59376-01
Probe 30-mm extension adapter (with lock nut)	346-59376-02

Testing and Evaluation Machines

Table-Top Type Universal Testing Instruments
AGS-X Series

Electromagnetic Force Fatigue / Endurance Testing System
EMT Series

Electromagnetic Force Micro Material Tester
Micro-Servo MM Series

High-Speed Tensile Testing Machine
HITS Series

Dynamic Ultra Micro Hardness Tester
DUH Series

Constant Test Force Extrusion Type Capillary Rheometer
Flowtester CFT-EX Series

Application videos are available on YouTube !

YouTube Shimadzu an

Please watch "Compact Table-Top Universal Tester" in the playlist of Shimadzu YouTube Channel.

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