

# Autograph AGS-J

Shimadzu  
Table-top Type Universal Tester





All the necessary functions in a compact body!

AGS-J

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## Shimadzu Table-top Type Universal Tester

All the necessary functions in a compact body!

### High precision and high reliability in material testing

Forces are measured with a precision better than  $\pm 1\%$  of indicated values, within the range from 1/1 to 1/250 of the rated force.

### Exceptional ease of operation

All the operation is made via the simple and intuitive operation panel.

The digital LED displays show either actual force or stress and either elongation or strain, the selection being made by simple key operation.

### A large variety of convenient functions for high productivity of tests

- One-touch force zero adjustment
- One-touch crosshead zero positioning
- One-touch crosshead return to the origin
- Filing of testing parameters for easy setting in future
- Automatic detection of specimen breakdown point
- Fine positioning of crosshead
- Automatic force calibration

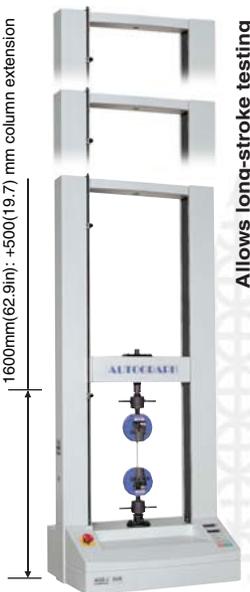
### Comformity with CE mark reguration



Simple and intuitive operation panel

#### Column extension type series

1100mm(43.3in): standard column length  
 1350mm(53.1in): +250mm(9.8in) column extension  
 1600mm(62.9in): +500(19.7) mm column extension



Allows long-stroke testing

#### Reinforced yoke series



- Permits downward tensile testing

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# High performance, high reliability and

## Record optimal force-displacement curves for all testing

Force-displacement curves can be recorded on any user-selected scale, within the range from 1/1 to 1/250 of the rated force. Also, the full scale for displacements (crosshead movements) can be arbitrarily adjusted.



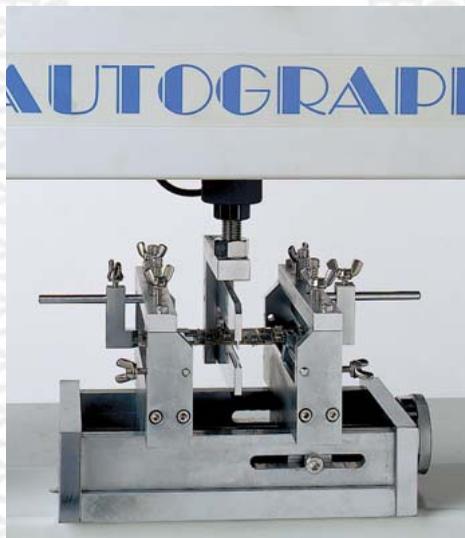
### Spring-characteristic evaluation jig

Used for evaluating spring characteristics. Spring software ensures efficient testing.



### 45° peel test jig for printed-circuit boards

This is a test jig for peel tests on components mounted on printed-circuit board.



### Cycle bending test jig

Subjecting the printed-circuit board to cyclic bending permits evaluation of resistance fluctuations due to repeated forces.



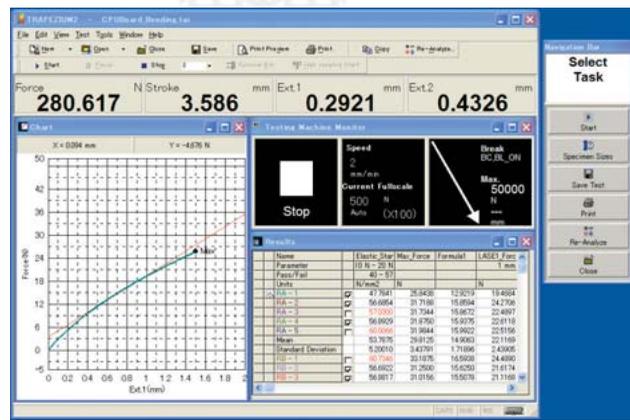
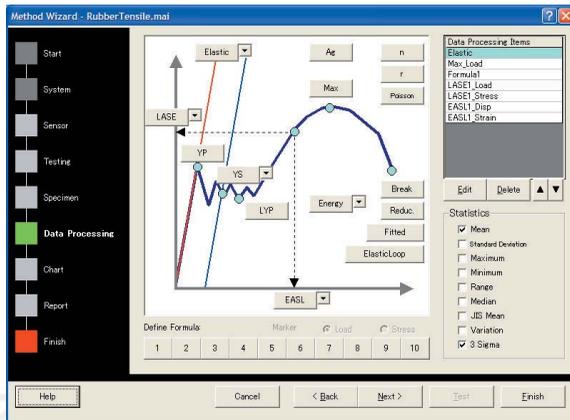
### Bending test jig

Bending test jigs perform testing in accordance with ISO178, ASTM D790, JIS K6911 and JIS K7171 etc.

# exceptional ease of operation!

Windows®2000/XP-compatible TRAPEZIUM2 data processing software improves test efficiency

- For tensile, compression, 3-point bending, 4-point bending, peel, tear, cycle, and creep testing
- Wizards simplify setting conditions and testing
- Customization functions for the position and contents of icons and menus
- Functions for additional testing, re-testing, and re-calculation after testing was complete
- Point-picking function simplifies graph reading
- Available English, Spanish or Japanese
- Units of system N, gf, tf, lb, kip mm, inch



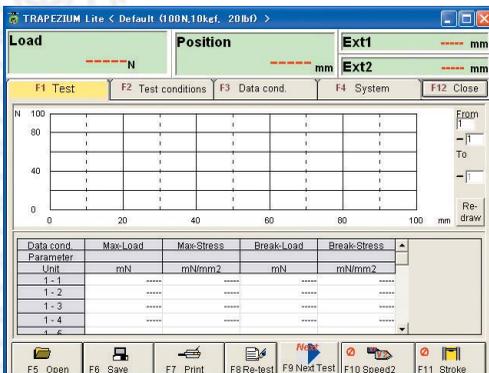
< Test condition wizard and test screen >

## Comprehensive dedicated software for every application (Windows®2000/XP)

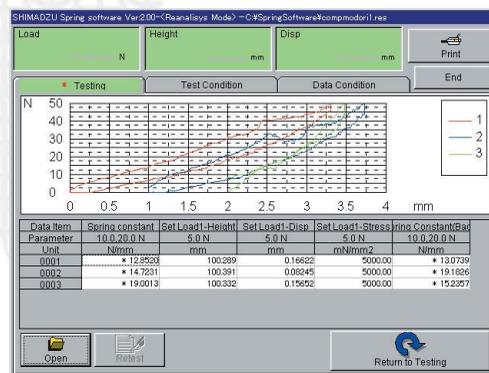
Easy-to-use specialized software is available for customers with limited testing applications.

- TRAPEZIUM Lite**
- Trapezium Rheometer**
- Spring software**

For repeated testing with even simpler operation  
 Texture evaluation software for the food and pharmaceutical industries  
 Software for the compression and tensile testing of coil springs



< Trapezium Rheometer >



< Spring software >

# Specifications

1. Model *1	AGS-20NJ	AGS-50NJ	AGS-100NJ	AGS-500NJ	AGS-1kNJ	AGS-5kNJ	AGS-10kNJ
2. Capacity	20N	50N	100N	500N	1kN	5kN	10kN
3. Loading method	High-precision constant speed strain control method via non-backlash ball screw drive						
4. Force measurement	Accuracy	±1% max. of indicated value within the range from 1/1 to 1/250 load cell rated capacity. Conforms to ISO7500/1(Class 1),ASTM E4,BS 1610 Grade1,DIN51221 Class1 and JIS B7721 • B7733 Class1					
	Amplification	Continuously adjustable from x 1 to x 250					
	Calibration	Automatic calibration for tensile and compression forces					
5. Crosshead speed range	0.5 to 500mm/min(0.0197 to 20in/min)						
6. Crosshead speed accuracy	±0.5% or ±0.025mm/min(0.001in/min),whichever is greater						
7. Crosshead speed and permitted force	Full speed in rated capacity						
8. Spacing of crosshead and face for mounting jig	Standard type : Max. 1100mm(43.3in) Extension type +250mm(9.8in) : Max.1350mm(53.1in) Extension type +500mm(19.7in) : Max.1600mm(62.9in)						
9. Distance of grip to grip *2	930mm(36.6in) SCG Type	900mm(35.4in) SCG Type	750mm(29.5in) MWG Type 850mm(33.5in) SCG Type		720mm(28.3in) MWG Type		
10. Effective test width	420mm(16.5in)						
11. Crosshead position detection	Measurement by optical encoder. Display resolution : 0.01mm(0.0004in)						
12. Crosshead control	Control for cycle test(repeated tensile/compression test);control for single test; manual control(For fine crosshead positioning)						
13. Standard functions	Automatic detection of specimen breakdown with automatic stop and automatic crosshead return Test parameter file functions Arbitrary setting of crosshead speed Display functions;Select between force value and stress value display Select crosshead stroke display Display peak force,stroke and displacement at breaking point Units of system : N, gf, lbf, mm, inch Selectable RS-232C interface(For data processing software), Analog Out put: 0 to 5V DC						
14. Dimensions and weight	Standard length type:Approx. 660(W)x520(D)x1580(H)mm,80kg(26(W)x20.5(D)x72.0(H)in, 176.4lb) Extension type +250mm(9.8in):Approx. 660(W)x520(D)x1830(H)mm,90kg(26(W)x20.5(D)x72.0(H)in, 198.42lb) Extension type +500mm(19.7in):Approx. 660(W)x520(D)x2080(H)mm, 100kg(26(W)x20.5(D)x81.9(H)in,220.46lb)						
15.Power requirements	Single phase 100/110- 120/220-240V(Selectable) 600VA, Grounding Class D(100Ω less than)						
16. Ambient requirements	Temperature:5-40°C,Humidity:20-80%(No condensation), Source voltage fluctuation:less than ±10%						

\*1:Models AGS-20NJ to AGS-10kNJ are supplied with a load cell set of indicated capacity installed on the AGS-J main unit.

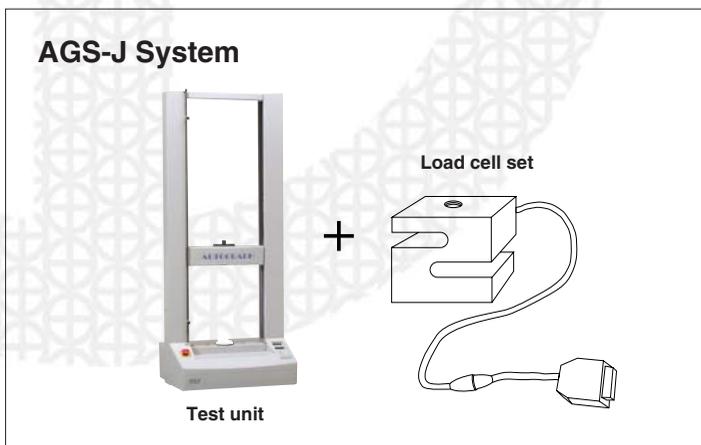
\*2:The distance of grip to grip is shown when either MWG-type grip(Non-shift wedge-type grip)or SCG-type grip(Screw-type flat grip) is mounted.

# Configurations

The basic Autograph AGS-J System comprises the test unit and a load cell set. Select the appropriate load cell set from the table to the right.

Test unit: Part No. 346-52886-XX

Load cell set: Part No. 346-52872-XX



## Test unit

Name	Part No.
AGS-J unit (standard)	346-52886-01
AGS-J unit (Extension type +250mm(9.8in))	346-52886-02
AGS-J unit (Extension type +500mm(19.7in))	346-52886-03

## Modification for downward tensile testing (reinforced yoke)

Name	Part No.
AGS-J unit (reinforced yoke modification)	346-52821

## Load cell set

Capacity	Load cell set Part No.-XX	Cell bolt Part No.
10kN	346-52872-10	345-06363-03
5kN	346-52872-09	345-06363-04
1kN	346-52872-08	
500N	346-52872-07	345-09114
100N	346-52872-05	
50N	346-52872-04	
20N	346-52872-03	
10N	346-52872-02	
5N	346-52872-01	

# Optional Test Jigs

## ■ Linking Components for Tensile Test

These components are required for tensile testing with AGS-J. These link the AGS-J unit to the tensile testing grips. Upper and lower joints are required. The following joint sets (upper and lower joints) are available to suit the load cell capacity.

Name	Part No.	Load cell
Linking joints 10kN	346-51295-03	10kN
Linking joints 5kN	346-51295-06	5kN
1kN		1kN
500N		500N
Linking joints 100N	346-51770-03	100N
Linking joints 50N	346-51770-06	50N
Linking joints 20N	346-51770-07	20N 10N 5N

Note: These joints are specific to the AGS-J. They cannot be used with the AG-I.

## ■ Grips

Compact non-shift wedge-type grips, non-shift wedge-type grips, and screw-type flat grips are available.

### ● Non-shift Wedge-type Grips

Grip capacity	Part No.	Standard grip faces			
		Surface	Clearance	Width	Length
5kN	346-52653-03	Filed	0 to 7 mm (0 to 0.27 in)	25 mm (0.98 in)	55 mm (2.16 in)
10kN	346-52653-01				

Applicable temperature: -70~+300°C

### ● Screw-type Flat Grips

Grip capacity	Part No.	Standard grip faces			
		Surface	Clearance	Width	Length
5kN	346-52325-04	Filed	0 to 16 mm (0 to 0.62 in)	60 mm (2.36 in)	50 mm (1.96 in)
1kN	346-52325-04		0 to 15 mm (0 to 0.59 in)	50 mm (1.96 in)	30mm (1.18 in)
50N	346-52328-04	Flat	0 to 14 mm (0 to 0.55 in)	35 mm (1.37 in)	25 mm (0.98 in)

Applicable temperature: -70~+300°C

## ■ Compression Test Jigs

Compression test jigs are required to conduct compression or bending testing with the AGS-J.

These link the AGS-J unit to the compression/bending jigs.

Name	Part No.	Load cell
Compression Test Jigs 10kN	346-51531-05	10kN
Compression Test Jigs 5kN	346-51531-03	5kN
		1kN
		500N
Compression Test Jigs 100N	346-51531-04	100N
		50N
		20N
		10N
		5N

## ■ Analog Recorder

Two types of recorder are available: an X-T recorder for plotting force vs. time curves and an X-Y-T recorder for plotting force vs. time or displacement (stroke) curves.

Name	Part No.
X-T recorder AR-228	346-51735
X-Y-T recorder AR-6122	346-51736

### ● Analog recorder specification

Part name	X-T recorder	X-Y-T recorder
Effective recording width	X axis (force): 250mm	X axis (force), Y axis (displacement): both 250mm
Paper feed speed	24 steps 23 speeds (10, 15, 20, 30, 40, 60 mm/min., cm/min., mm/h, cm/h)	10, 20, 50, 100, 200 mm/min.
Pen travel time	X axis: 1/3s	X axis: 1s Y axis: 2s
Measurement range	X axis: 0 to 5VDC	X axis, Y axis: both 0 to 5VDC

## ■ Dataletty 521

This dedicated printer incorporates data-processing software to conduct online data processing during testing and print out the results after testing is complete.

Name	Part No.
Dataletty 521	346-51805

### Major data-processing features

- Force values (or stress values) and stroke values (or strain values) at maximum force.
- Stroke values (or strain values) at breaking point.

## ■ Data-processing software

The following Windows®2000/XP-compatible data-processing software packages are available for the AGS-J.

Name	Part No.	Applications
TRAPEZIUM2 SINGLE	345-47151-01	Tensile, Compression, Bending, Peel
TRAPEZIUM2 CYCLE	345-47151-02	Cyclic
TRAPEZIUM2 CONTROL	345-47151-03	Control
TRAPEZIUM2 SET	345-47151	Tensile, Compression, Bending, Peel, Cyclic, Control
TRAPEZIUM Lite	345-47147	Tensile, Compression, Bending, Peel
TRAPEZIUM Rheometer	345-47537	Tensile, Compression, Cyclic
Spring Software	345-47045	Tensile, Compression

Refer to the appropriate software catalog for details about the software specifications and the computer system required.

## Applied Test Attachments

Various applied test attachments are available to further enhance the performance of the AGS-J series.

### Attachments for studies of physical properties including strength

- Grips for tensile tests
- Compression plates for compression tests
- Jigs for bending tests · Jigs for peeling tests
- Jigs for shear tests · Jigs for adhesion strength tests
- Jigs for pulling out strength tests



Grips of pneumatic capstan type

### Attachments for tests in desired environments

- Various constant temperature chamber
- Constant temperature and humidity chambers



TCE-N300 thermostatic chamber

### Attachments for displacement measurement

- Differential transformer type extensometers
- Strain gauge type extensometers
- Video extensometers
- Devices to measure the distance between compression plates
- Bending/deflection measurement device



DVE-101/201 video extensometer



SES-1000 extensometer

### Attachments for automating tests

- Automatic specimen size measuring devices
- Automatic extensometers
- Automatic specimen feeding devices
- Data processing units



JQA-0376

Founded in 1875, Shimadzu Corporation, a leader in the development of advanced technologies, has a distinguished history of innovation built on the foundation of contributing to society through science and technology. We maintain a global network of sales, service, technical support and applications centers on six continents, and have established long-term relationships with a host of highly trained distributors located in over 100 countries. For information about Shimadzu, and to contact your local office, please visit our Web site at [www.shimadzu.com](http://www.shimadzu.com)

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