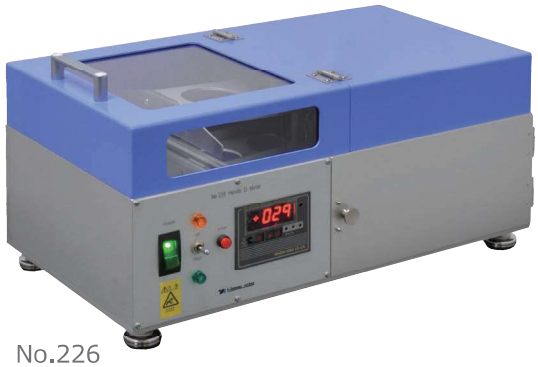
## No. 226 HANDLE-O-METER (SURFACE FRICTION AND FLEXIBILITY TESTER)



No.226

JIS-L1096, TAPPI-(T498), J.TAPPI-No.34

### FEATURE

This tester is used to evaluate the stiffness of paper, plastic film, and textile according to the Handle-O-Meter Method. The operator is to place the test specimen on the specimen base which has a clearance for calculating the rigid softness by measuring the resistance.

### SPECIFICATION

| | |
|---|---|
| Specimen | Max. W235 mm |
| Clearance | 5 mm, 6.35 mm, 10 mm, 20 mm |
| Pressing Board | Curvature R1 mm, L240 mm, Material: Aluminium |
| Folding Stroke | 12 mm |
| Measuring Range | Full Scale 245 mN (25 gf), 490 mN (50 gf) and 981 mN (100 gf) |
| Measuring Time | 15 sec |
| Accessories | Inspection Weight |
| Option | Software, Chart Recorder |
| Power Source | AC 100 V, 1-Phase, 3 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W550 × D330 × H300 mm/ 30 kg |

## No. 304-YPH MULLEN HIGH-PRESSURE TYPE BURSTING STRENGTH TESTER

## No. 305-YPL MULLEN LOW-PRESSURE TYPE BURSTING STRENGTH TESTER

No.304-YPH/ No.305-YPL

No.304-YPO/ No.305-YPO
Option: Pneumatic Clamp Spec

No.304-YPH/ No.305-YPL
(Touch Panel Type)

JIS-K6404-11, P8112, P8131, TAPPI-T403, T807, T810, ISO-2758, 2759

### FEATURE

This tester is used to evaluate the bursting strength of paper, paper board, liner film, cardboard, rubber, and plastic film. The operator is to clamp the test specimen and apply pressure with a rubber membrane mediator. The maximum pressure when the test specimen bursts will be the bursting strength of the test specimen. A high pressure type or the low pressure type can be selected according to the thickness and the bursting strength of the test specimen.

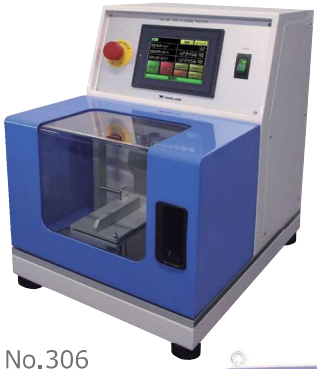
### SPECIFICATION

| Model | No.304-YPH (HIGH-PRESSURE TYPE) | No.305-YPL (LOW-PRESSURE TYPE) |
|---|---|---|
| Specimen | 100 × 100 mm or More | 60 × 60 mm or More, T0.64 mm or Less |
| Clamp | Upper φ31.5 ± 0.1 mm<br>Lower φ31.5 ± 0.1 mm<br>Upper and Lower both with 60˚V Groove | Upper φ30.5 ± 0.1 mm<br>Lower φ33.1 ± 0.1 mm<br>Upper and Lower both with 60˚V Groove |
| Pressing Speed | 170 ± 15 ml/min | 95 ± 5 ml/min |
| Pressure Gauge | Choose 2 kinds (2.0, 4.5, 7.0 MPa) | Choose 2 kinds (0.3, 0.6, 1.4 MPa) |
| Accessories | Rubber Membrane: 10 pcs, Membrane Gauge, Fixing Tool | |
| Option | Digital Pressure Gauge, Pneumatic Clamp Spec (YPO) | |
| Power Source | AC 100 V, 1-Phase, 10 A, 50/60 Hz | |
| Dimensions/ Weight (Approx.) | W400 × D400 × H850 mm/ 80 kg<br>W400 × D500 × H560 mm/ 85 kg (YPO) | |

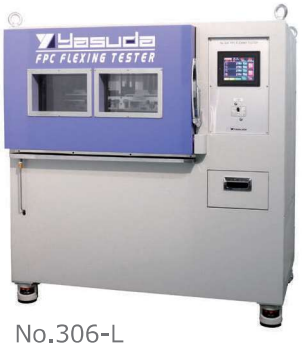
*Power source, dimensions, weight may differ by specifications.

# No. 306 FPC FLEXING TESTER

# No. 306-L FPC FLEXING TESTER (WITH REFRIGERATING MACHINE)



No.306




No.306-L

JIS-C5016

## FEATURE

■ No.306 FPC FLEXING TESTER

This tester is used to evaluate the folding endurance of plastic film and flexible print circuit board(FPC).
The operator is to set the test specimen onto a fixed board and a movable board so that the test specimen is attached at a certain radius. The movable board will bend left and right to flex the test specimen, and the operator is to check the number of flexes until electricity, which flows through the specimen, can no longer be detected.

■ No.306-L FPC FLEXING TESTER (WITH REFRIGERATING MACHINE)

This model is equipped with a low temp. chamber for testing at low temperatures.

## SPECIFICATION

| Model | No.306 | No.306-L |
|---|---|---|
| Hanging | 1 Hanging | 4 Hangings (2 Hangings Simultaneous Drive × 2) |
| Flexing Radius | Max. 10 mm | |
| Flexing Speed | Max. 60 cpm | |
| Flexing Length | Reciprocate 20 (± 10) mm, 40 (± 20) mm, 60 (± 30) mm | |
| Counter | 6 Digits Preset Counter | |
| Temperature Range | - | -35 to 60 ˚C (Refrigerator) |
| Option | Conduction Device (for FPC) | |
| Power Source | AC 100 V, 1-Phase, 5 A, 50/60 Hz | AC 200 V, 3-Phase, 30 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W360 × D500 × H620 mm/ 35 kg | W1,160 × D730 × H1,200 mm/ 250 kg |

# No. 307 MIT TYPE FOLDING ENDURANCE TESTER

# No. 307-L MIT TYPE FOLDING ENDURANCE TESTER (WITH REFRIGERATING MACHINE)

No.307
(3 Hangings, Touch Panel Type)
Option: Safety Cover

No.307 (1 Hanging)
Option: Conduction Device


No.307-L

JIS-C5016, P8115, R3420, ASTM-D2176, TAPPI-T511, ISO-5626

## FEATURE

■ No.307 MIT TYPE FOLDING ENDURANCE TESTER

This tester is used to evaluate the folding endurance of paper, cardboard, plastic film, and flexible print circuit boards. Applying a certain load and folding the test specimen left and right at a 135°angle at a certain speed, the operator is to count the number of times the test specimen was folded until it fractures. The user can choose the type of loading between the Spring Loaded Method or the Dead Weight Method according to the extension of the test specimen. This tester is also used for evaluating the folding endurance of metallic foil such as aluminum foil used in condensers.

■ No.307-L MIT TYPE FOLDING ENDURANCE TESTER (WITH REFRIGERATING MACHINE)

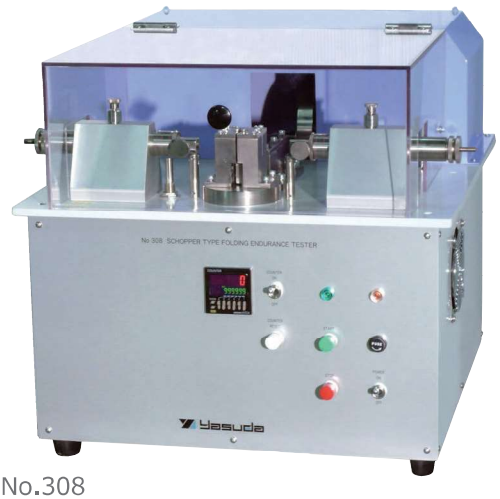
This model is equipped with a low temp. chamber for testing at low temperatures.

## SPECIFICATION

| Model | No.307 | No.307-L |
|---|---|---|
| Hanging | 1 Hanging, 3 Hangings, 5 Hangings (3 kinds) | |
| Specimen | W15.0 ± 0.1 mm, L110 ± 5 mm | |
| Test Load | 4.9 to 14.7 N (0.5 to 1.5 kgf) (Spring Loaded or Dead Weight) (Standard: 9.8 N) | |
| Folding Angle | 135˚ ± 2˚ (Option: 45˚, 90˚, 3 Stage Type) | |
| Folding Speed | 175 ± 10 times/min (Option: 45 times/min, 90 times/min, 3 Stage Type) | |
| Folding Top | R0.38 ± 0.02 mm, L19.0 ± 0.5 mm, Spacing 0.25 mm | |
| Counter | 6 Digits Preset Counter | |
| Temperature Range | - | -35 to 60 ˚C (Refrigerator) |
| Option | Conduction Device (for FPC) | |
| Power Source | Differs by Specifications. | |
| Dimensions/ Weight (Approx.) | Differs by Specifications. | |

*Power source, dimensions, weight may differ by specifications.

## No. 308 SCHOPPER TYPE FOLDING ENDURANCE TESTER




No.308

JIS-P8114, TAPPI-T423, ISO-5626

### FEATURE

This tester is used to evaluate the folding endurance of paper, paper board, and plastic film according to the Schopper Type testing method. By folding the test specimen that is vertically applied tensile force on the long side with the folding blade, the operator is to calculate the folding endurance from the number of bends the test specimen required to fracture.

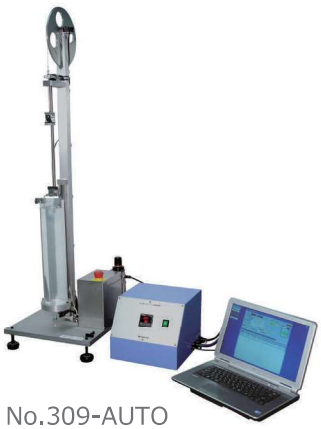
### SPECIFICATION

| | |
|---|---|
| Specimen | W 15.0 ± 0.1 mm, L100 mm, T0.25 mm or Less |
| Folding Blade | T0.5 ± 0.0125 mm, Slit Spacing 0.5 mm |
| Folding Roller | φ6 mm, L18 mm |
| Test Load | Initial 7.6 ± 0.1 N, Max. 9.8 ± 0.2 N |
| Folding Distance | 20 mm (Front-Back 10 mm) |
| Folding Speed | 115 ± 10 rpm |
| Counter | 6 Digits Preset Counter |
| Option | Safety Cover |
| Power Source | AC 100 V, 1-Phase, 10 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W450 × D480 × H430 mm/ 60 kg |

## No. 309 FENCHEL EXPANSION AND CONTRACTION TESTER

## No. 309-AUTO FENCHEL EXPANSION AND CONTRACTION TESTER (AUTOMATIC)

No.309



No.309-AUTO

J.TAPPI-No.27, ISO-5635

### FEATURE

■ No.309 FENCHEL EXPANSION AND CONTRACTION TESTER

This tester is used to measure the stretching properties of paper and paper board when submerged in water. After attaching the test specimen to the upper and lower chucks and applying tensile force, the test specimen is to be submerged into water for a certain amount of time. The stretching properties of the test specimen will be detected by transducer and the measurement value will be digitally displayed.

■ No.309-AUTO FENCHEL EXPANSION AND CONTRACTION TESTER (AUTOMATIC)

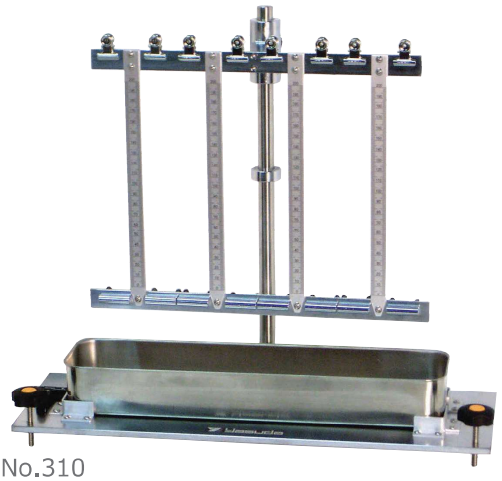
The stretching properties are measured via digital encoder with this model, automating the test procedure.

### SPECIFICATION

| Model | No.309 | No.309-AUTO |
|---|---|---|
| Specimen | W15 mm, L150 mm | |
| Chuck Distance | Max. 100 mm (Pitch 5 mm) | |
| Weight | 5 g, 10 g, 20 g and 50 g: 1 pc each | |
| Displacement Measurement | Differential Transducer: Scale 0.01 mm, Stroke 0 to ± 10 mm, 4 Digits Digital Display | Digital Encoder |
| Temperature Measurement | - | Digital Temperature Controller |
| Elevation Method | - | Air Cylinder |
| Software | - | Windows Compatible |
| Accessories | Glass Beaker | Plastic Beaker |
| Power Source | AC 100 V, 1-Phase, 3 A, 50/60 Hz | AC 100 V, 1-Phase, 3 A, 50/60 Hz |
| Air Source | - | 0.5 MPa or More |
| Dimensions/ Weight (Approx.) | Main Body: W250 × D300 × H1,050 mm/ 30kg Control Box: W400 × D300 × H150 mm/ 6 kg | Main Body: W400 × D400 × H1,400 mm/ 20 kg Control Box: W310 × D300 × H250 mm/ 8.5 kg |

*Power source, dimensions, weight may differ by specifications.

## No. 310 KLEMM CAPILLALY RISE TESTER



No.310

JIS-L1907, P8141

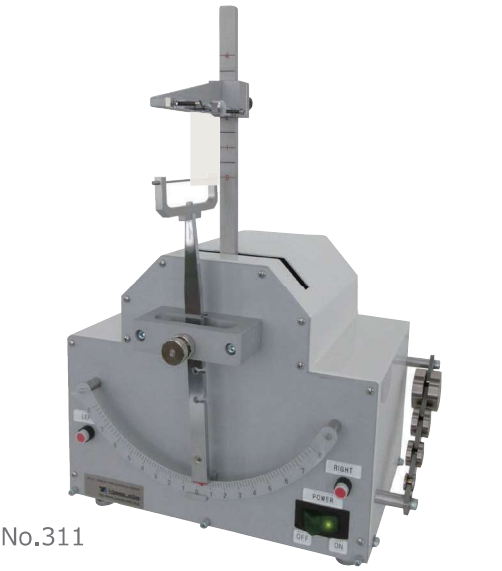
### FEATURE

This tester is used to evaluate the water absorbing capacity of paper and paper board with large water absorbability, according to the Klemm Method. Immersing the lower end of the test specimen vertically into water, the operator is to keep the test specimen in the water for 10 minutes and read the height which the water elevated due to the capillary effect.

### SPECIFICATION

| | |
|---|---|
| Hanging | 8 Hangings |
| Specimen | W15 mm, L200 mm or More |
| Scale | 0 to 200 mm (Scale 1 mm) |
| Dimensions/ Weight (Approx.) | W450 × D150 × H410 mm/ 6 kg |

## No. 311 GURLEY TYPE STIFFNESS TESTER



No.311

JIS-(L1018), L1085, L1096, TAPPI-T543

### FEATURE

This tester is used to evaluate the stiffness of firm paper, plastic film, and textile according to the Gurley Method. By attaching the test specimen to the movable arm and rotating it left and right at a prescript speed, the operator is to read the scale when the lower end of the test specimen separates from the pendulum, and calculate the stiffness of the test specimen.

### SPECIFICATION

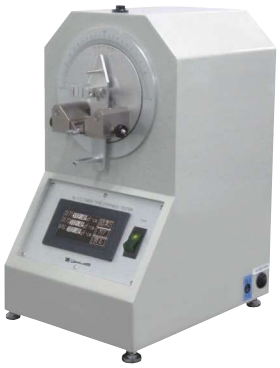
| | |
|---|---|
| Specimen | W: 1/2", 1", 2"<br>L: 1", 1·1/2", 2·1/2", 3·1/2", 4·1/2" |
| Chuck Position | 1/2", 1", 1·1/2", 2", 2·1/2", 3", 3·1/2", 4" from Pendulum Top |
| Arm Rotation Speed | 2 rpm |
| Weight | 5 g, 25 g, 50 g and 200 g |
| Load Position | 1", 2", 4" from Pivot |
| Scale RG | Left-Right 0 to 8 (Scale 0.2) |
| Power Source | AC 100 V, 1-Phase, 1 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W350 × D200 × H500 mm/ 13 kg |

*Power source, dimensions, weight may differ by specifications.

## No. 312 TABER TYPE STIFFNESS TESTER

## No. 312-D TABER TYPE STIFFNESS TESTER (DIGITAL)

No.312



No.312-D

JIS-P8125, TAPPI-T489, ISO-2493

### FEATURE

■ No.312 TABER TYPE STIFFNESS TESTER

This tester is used to evaluate the stiffness of paper board according to the Load Bending Method. By fixing one end of the test specimen and bending it 7.5° or 15° at a constant speed, the operator is to acquire the bending momentum and bending effect when the loading length reaches 50 mm.

■ No.312-D TABER TYPE STIFFNESS TESTER (DIGITAL)

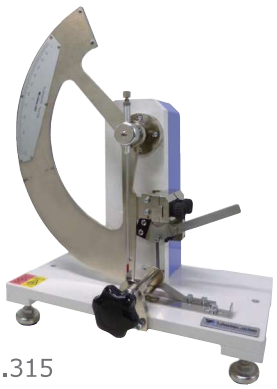
This is the digital model of the TABER STIFFNESS TESTER where the stiffness of paper board can be directly read. The stiffness level will be indicated in mN-m terms. The tester can also calculate the resistance to bending(mN) automatically.

### SPECIFICATION

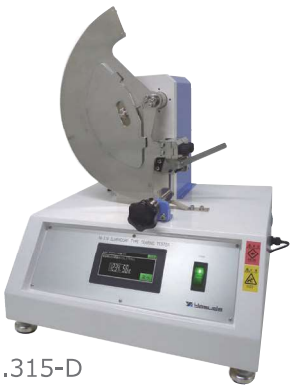
| Model | No.312 | No.312-D |
|---|---|---|
| Moment | Max. 490 mN·m (5,000 gf·cm) | |
| Load Scale | Left-Right 0 to 100 | |
| Test Load | 100 gf, 200 gf and 500 gf | |
| Load Position | 100 mm from the Pivot | |
| Bending Angle | Left-Right 15° or 7.5° | |
| Bending Speed | 180 ± 40°/min | |
| Specimen | W30 to 40 mm (Standard: 38.0 ± 0.2 mm), L 70 mm, T3.2 mm or Less | |
| Roller | φ8.60 ± 0.05 mm for Test, φ8.93 ± 0.05 mm for Adjusting | |
| Power Source | AC 100 V, 1-Phase, 3 A, 50/60 Hz | AC 100 V, 1-Phase, 3 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W300 × D350 × H500mm/ 25kg | W300 × D350 × H500mm/ 25kg |

## No. 315 ELMENDORF TYPE TEARING RESISTANCE TESTER

## No. 315-D ELMENDORF TYPE TEARING RESISTANCE TESTER (DIGITAL)



No.315



No.315-D

JIS-K7128-2, P8116, TAPPI-T414, ISO-1974, 6383-2

### FEATURE

■ No.315 ELMENDORF TYPE TEARING RESISTANCE TESTER

This tester is used to evaluate the tearing resistance of paper, paper board and plastic film according to the Elmendorf Type Tearing Method. By swinging the fan shaped pendulum from a prescript height to tear the test specimen that has been cut beforehand, the operator is to read the workload to calculate the tearing resistance.

■ No.315-D ELMENDORF TYPE TEARING RESISTANCE TESTER (DIGITAL)

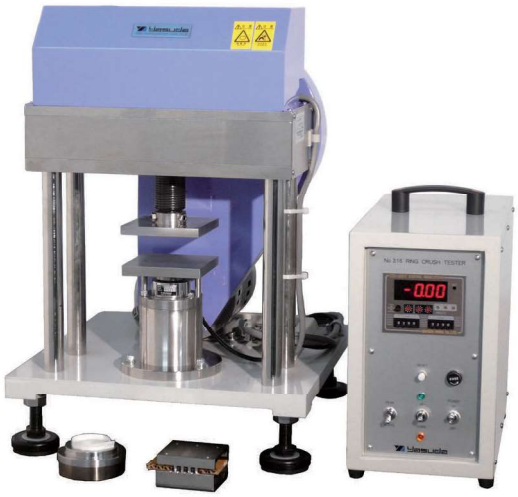
This is the digital model which automatically calculates the tearing resistance by putting in the amount of test specimen to the touch panel. The digital panel is also equipped with a energyloss calibration function so that the pure tearing resistance of the test sample can be measured.

### SPECIFICATION

| Model | No.315 | No.315-D |
|---|---|---|
| Standard Sheet | Standard 16 sheets (Scale 20 to 80 %) | |
| Capacity | 0 to 1,000 mN (Scale 1 sheet/ 16 sheets) | |
| Specimen | W63 ± 0.2 mm, L76 mm | |
| Slit Length | 20 mm (Rest 43.0 ± 0.5 mm) | |
| Chuck | W36 mm, D15.0 ± 0.1 mm, Spacing 2.8 ± 0.3 mm | |
| Option | - | Digital Display Ver., Air Chuck |
| Power Source | - | AC 100 V, 1-Phase, 3 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W400 × D260 × H500 mm/ 20 kg | W580 × D380 × H600 mm/ 40 kg |

*Power source, dimensions, weight may differ by specifications.

## No. 316 RING CRUSH TESTER



No.316

JIS-P8126, ISO-12192(Option: Z0402, Z0403-1, Z0403-2)

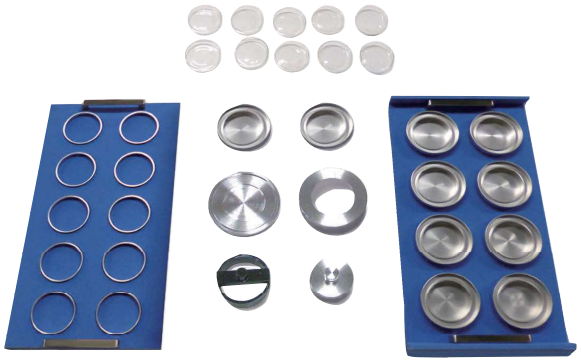
### FEATURE

This tester is used to evaluate the compressive strength of ring shaped paper board according to the Ring Crush Method. By changing the jig (option), the tester can be used for conducting adhesive power tests of cardboard, flat surface compression tests, and vertical compression tests.

### SPECIFICATION

| | |
|---|---|
| Specimen | W12.7 ± 0.1 mm, L152.4 to 2.5 mm, T580 µm or Less |
| Specimen Holder | Outer Frame: Inner Diameter φ49.30 ± 0.05 mm, D6.35 ± 0.25 mm<br>Inner Frame: 9 kinds (To be Specified) |
| Load Measuring | Load Cell: Max. 1,999 N |
| Compression Plate | 100 × 100 mm |
| Compression Speed | 12.5 ± 2.5 mm/min |
| Option | Pin Attachment, Vertical Compression Jig |
| Power Source | AC 100 V, 1-Phase, 10 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | Main Body: W350 × D400 × H540 mm/ 60 kg<br>Control Box: W135 × D350 × H250 mm/ 10 kg |

## No. 318 WATER VAPOUR PERMEABILITY CUP



No.318

JIS-(K5400), K6549, Z0208, TAPPI-T448, T464, ISO-2528

### FEATURE

This tester is used to evaluate the permeability of plastic film and moisture-proof packaging material for processed paper and coating according to the Cup Method. The permeability value obtained by this method is the mass of vapour that passed through the membranal material during a specific amount of time under prescript temperature and humidity conditions.

### SPECIFICATION

| | |
|---|---|
| Specimen | φ70 mm |
| Vapour Transmission Area | 28 $cm^2$ (Inner Diameter of Cup φ60 mm) |
| Accessories | Cup, Ring, Glass Dish: 10 pcs each<br>Guide, Base, Weight, Cutter: 1 pc each |
| Test Method | A Method: Temperature 25 ± 0.5 °C, Humidity 90 ± 2 %<br>B Method: Temperature 40 ± 0.5 °C, Humidity 90 ± 2 %,<br>Air Velocity 0.5 to 2.5 m/s |
| Dimensions/ Weight (Approx.) | W450 × D250 × H230 mm/ 8 kg (Including Case) |

*Power source, dimensions, weight may differ by specifications.

# No. 323 GURLEY TYPE DENSOMETER

# No. 323-AUTO GURLEY TYPE DENSOMETER (AUTOMATIC)

No.323

No.323-AUTO

JIS-L1096, P8117, ASTM-D726, TAPPI-T460, ISO-5636-5

## FEATURE

### ■ No.323 GURLEY TYPE DENSOMETER

This tester is used to evaluate the air permeability of paper, cardboard, and textile. The operator is to measure the time which a certain amount of compressed air passes through the clamped test specimen. The user can choose between the manual type, which the time is measured by stop-watch, or the automatic type, which the time is measured by digital timer.

### ■ No.323-AUTO GURLEY TYPE DENSOMETER (AUTOMATIC)

This tester is the automatic version of the GURLEY TYPE DENSOMETER, which is equipped with a touch panel and can display the permeability(s) and ISO permeability (μm/(Pa·s)) of the test specimen.

## SPECIFICATION

| Model | No.323 | No.323-AUTO |
|---|---|---|
| Specimen | 50 × 50 mm | |
| Clamp | φ28.6 ± 0.1 mm (Permeation Area 642 mm$^2$) | |
| Outer Cylinder | Inner Diameter φ82.6 mm, H254 mm, Marker 127 mm from Bottom | |
| Inner Cylinder | Outer Diameter φ76.2 mm, Inner Diameter φ74 mm, H254 mm, Mass 567 ± 0.5 g | |
| Air Volume | 0 to 100 ml (Scale 25 ml), 100 to 350 ml (Scale 50 ml) | |
| Time Measuring | Manual (Stopwatch) | Automatic: Max. 99999.9 sec<br>Detection: Micro Optical Sensor |
| Accessories | Machine Oil | |
| Option | Attachment (φ10 mm) | |
| Power Source | - | AC 100 V, 1-Phase, 3 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W150 × D230 × H420* mm/ 13 kg<br>*H580 mm: When Inner Cylinder is set in the test position. | Main Body: W150 × D230 × H420* mm/ 16 kg<br>*H580 mm: When Inner Cylinder is set in the test position.<br>Control Box: W250 × D360 × H250 mm/ 8 kg |

# No. 324 CANADIAN STANDARD FREENESS TESTER

No.324
Option: Stand Attached

JIS-P8121, TAPPI-T227, ISO-5267-2

## FEATURE

This tester is used to evaluate the freeness of pulp. By filtrating a certain amount of test specimen, the operator is to read the amount of discharged test specimen that flowed out from the side tube. The operator is to use the correction table so that the test data is calibrated to the Canadian standard freeness conditions of a standard density of 0.3 % and standard temperature of 20 °C.

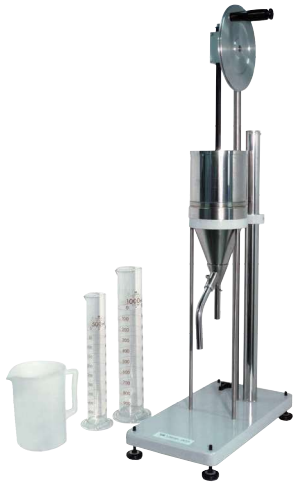
## SPECIFICATION

| | |
|---|---|
| Specimen | Bone-Dried 3 g, Concentration 0.3 %, Solution 1,000 ml |
| Drainage Chamber | Inner Diameter φ101.5 ± 0.4 mm<br>H127 mm (Wire Screen to Rim)<br>Air Cock Hole φ4.7 mm or More |
| Wire Screen | φ111.0 ± 0.4 mm, 80 mesh |
| Measuring Funnel | Opening φ204 mm<br>Overall L280 mm<br>Bottom Orifice φ3.05 ± 0.01 mm<br>Side Orifice Inner Diameter φ13 mm |
| Accessories | Measuring Cylinder, Jug |
| Option | Stand |
| Dimensions/ Weight (Approx.) | W300 × D270 × H720 mm/ 22 kg |

*Power source, dimensions, weight may differ by specifications.

## No. 325 SCHOPPER-RIEGLER TYPE FREENESS TESTER

OTHER



No.325

JIS-P8121, ISO-5267-1

### FEATURE

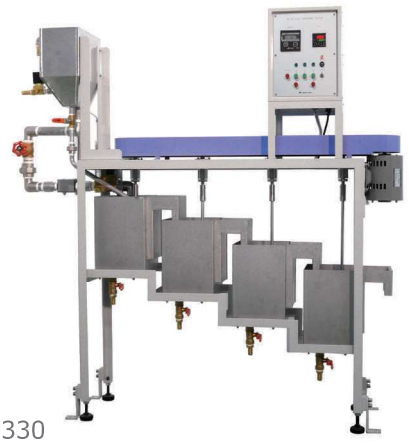
This tester is used to evaluate the freeness of tenuous pulp. By filtrating a certain amount of test specimen, the operator is to read the amount of discharged test specimen that flew out from the side tube to calculate the Schopper Freeness. The down flow of the test specimen will be done by pulling the circular coned valve upwards.

### SPECIFICATION

| | |
|---|---|
| Specimen | Bone-Dried 2 g, Concentration 0.2 %, Solution 1,000 ml |
| Drainage Chamber | Inner Diameter φ137 mm, H150 mm (Wire Screen to Rim) |
| Wire Screen | φ112.9 ± 0.1 mm, 100 mesh |
| Measuring Funnel | Opening φ115 mm, H150 mm, Bottom Orifice φ2.4 mm |
| Accessories | Measuring Cylinder, Jug |
| Dimensions/ Weight (Approx.) | W250 × D460 × H1,100 mm/ 18 kg |

## No. 330 PULP SCREENING TESTER

OTHER



No.330

JIS-P8207

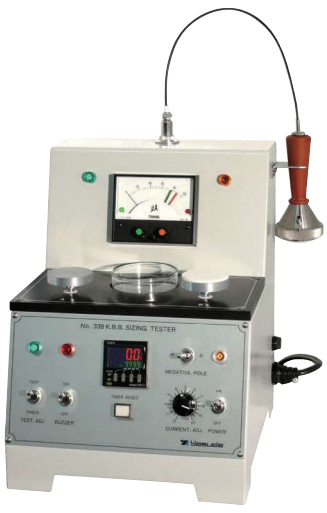
### FEATURE

This tester is used to evaluate the fiber length distribution of pulp used for paper. The 4 tanks which have different sizes of metal mesh, screen the test specimen. The operator is to measure the absolute dry mass of pulp in each tank to calculate the screening degree.

### SPECIFICATION

| | |
|---|---|
| Specimen | Bone-Dried 10 g, Concentration 1 %, 1,000 ml |
| Test Bath | 191 × 191 × 290 mm |
| Stirrer Rotation Speed | 800 rpm |
| Water Feed | 8.3 l/min |
| Wire Screen Diameter | φ102 mm |
| Screen Combination | 710, 355, 180, 106 μm/<br>1180, 600, 300, 150 μm/<br>1400, 850, 600, 300 μm |
| Option | Flow Meter, Timer |
| Power Source | AC 100 V, 1-Phase, 15 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W1,350 × D300 × H1,400 mm/ 120 kg |

## No. 338 AUTOMATIC K.B.B. SIZING TESTER



No.338

J.TAPPI-No.13/1, JIS-K8122

### FEATURE

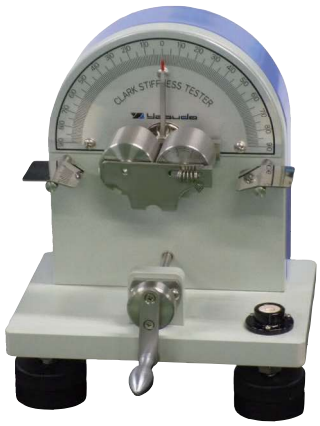
This tester is used to measure the K.B.B. Size (water resistance) of paper and paperboard. The operator is to clamp the test specimen onto a pair of zinc and bronze electrodes and soak the surface of the test specimen with an electrolyte liquid that with a constant density. The tester will automatically measure the time for electricity to start flowing caused by the electrolyte liquid.

### SPECIFICATION

| | |
|---|---|
| Specimen | 90 × 90 mm |
| Moveable Electrode (Anode) | Bronze Made |
| Fixed Electrode (Cathode) | Zinc Made, For One Side Penetration,<br>For Both Side Penetration |
| Micro Current Meter | 0 to 100 μm |
| Timer | Max. 99999.9 sec, Digital Display Ver. |
| Electrolyte Solution | Potassium Chloride Solution (1 %) |
| Power Source | AC 100 V, 1-Phase, 3 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W400 × D350 × H500 mm/ 20 kg |

*Power source, dimensions, weight may differ by specifications.

## No. 342 CLARK TYPE STIFFNESS TESTER



No.342

JIS-(L1018), L1096, P8143, TAPPI-(T451)

### FEATURE

This tester is used to evaluate the stiffness of paper, plastic film, and textile according to the Clark's Method. The operator is to clip the test specimen between 2 rolls and rotate the specimen left and right until the test specimen falls over 90°. When the test specimen falls over 90°, the operator is to measure the critical length to calculate the stiffness.

### SPECIFICATION

| | |
|---|---|
| Specimen | Paper: W15 to 50 mm (Standard 30 mm), L75 mm or More<br>Textile: W20 mm, L150 to 200 mm |
| Roller | φ29.0 ± 1.0 mm |
| Angle Scale | Left-Right 0 to 90° (Scale 1°) |
| Chuck Rotation Speed | 1.0 ± 0.1 rpm (Manual) |
| Dimensions/ Weight (Approx.) | W250 × D200 × H260 mm/ 3 kg |

## No. 349 TAPE ADHESION ROLLER (MANUAL)

SAMPLE

## No. 349-M TAPE ADHESION ROLLER (ELECTRIC SYSTEM)

SAMPLE

No.349

No.349-M (1 Hanging)

No.349-M-3 (3 Hangings)

JIS-C2107, Z0237

### FEATURE

■ No.349 TAPE ADHESION ROLLER (MANUAL)

This tester is used for evaluating the tack strength of adhesive tape and adhesive sheet, by pressure bonding the test specimen to the testing board. The tester is designed so that only the mass of the roller is applied to the test specimen when testing.

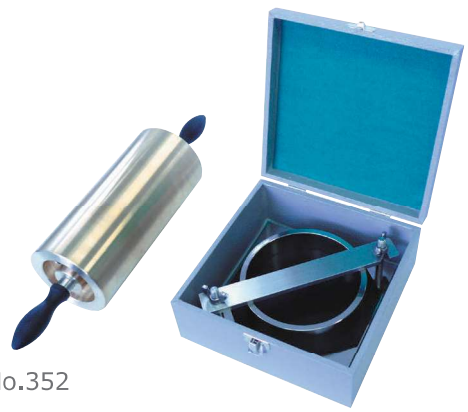
■ No.349-M TAPE ADHESION ROLLER (ELECTRIC SYSTEM)

This tester is the automated version which is electronically controlled to make the Bonding Speed even throughout the test.

### SPECIFICATION

| Model | No.349 | No.349-M |
|---|---|---|
| Roller | Mass: 2,000 g or 1,000 g<br>W45 mm,<br>Outer Diameter: 97 mm (φ85 mm + Rubber T6 mm × 2)<br>Rubber Thickness: 6 mm,<br>Rubber Stiffness: A80 | |
| Bonding Speed | - | 10 mm/s |
| Power Source | - | AC 100 V, 1-Phase, 5 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W175 × D130 × H115 mm/ 2.5 kg or 1.5 kg | W500 × D260 × H300 mm/ 30 kg |

## No. 352 GURLEY TYPE WATER ABSORPTIVENESS TESTER (COBB METHOD)



No.352

JIS-P8140, TAPPI-T441, ISO-535

### FEATURE

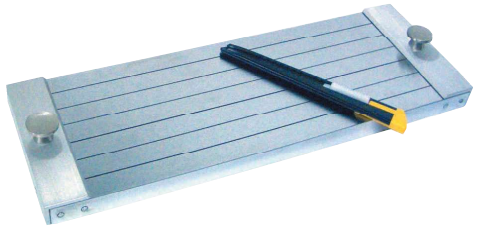
This tester is used to evaluate the absorbability of non-water-absorbing paper and paper board according to the Cobb's Method. The mass of water, that a specified area of one side of the test specimen absorbs in a certain amount of time, will be recorded as the absorbability of the test specimen.

### SPECIFICATION

| | |
|---|---|
| Metal Cylinder | Inner φ112.8 ± 0.1 mm (Test Area 100 $cm^2$),<br>H25 mm, T6 mm |
| Water | 100 ± 5 ml |
| Option | Metal Roller |
| Dimensions/ Weight (Approx.) | W150 × D150 × H60 mm/ 1 kg |

*Power source, dimensions, weight may differ by specifications.

## No. 353 STANDARD SAMPLE CUTTER



No.353

### FEATURE

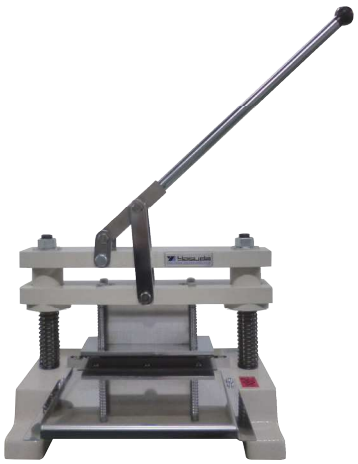
This device enables the operator to accurately extract paper, paper board, and plastic film test specimens for tensile testing. The operator is to cut the test specimen with the cutter knife along the grooves of the device.

### SPECIFICATION

| | |
|---|---|
| Specimen Size | W15 mm, L250 mm |
| Number of Cuts | 5 pcs |
| Dimensions/ Weight (Approx.) | W310 × D100 × H35 mm/ 5 kg |

*Models with custom dimensions can also be specially manufactured.

## No. 355 DOUBLE BLADE SAMPLE CUTTER



No.355

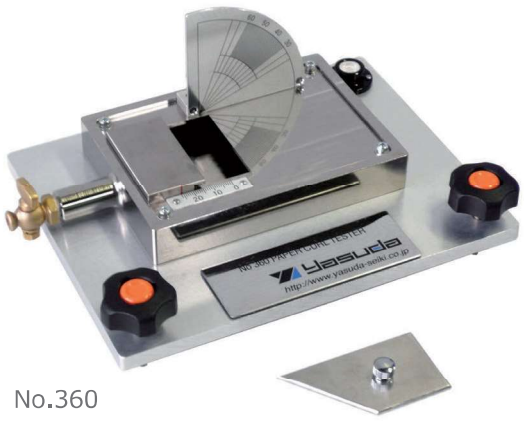
### FEATURE

This device is used to extract paper board test specimens for ring crush tests. The operator can easily obtain test specimens just by lowering the lever.

### SPECIFICATION

| | |
|---|---|
| Specimen Size | W12.7 mm, L152.4 mm |
| Dimensions/ Weight (Approx.) | W550 × D400 × H650 mm/ 32 kg |

## No. 360 CURL SIZE TESTER



No.360

TAPPI-(T466), J.TAPPI-No.14

### FEATURE

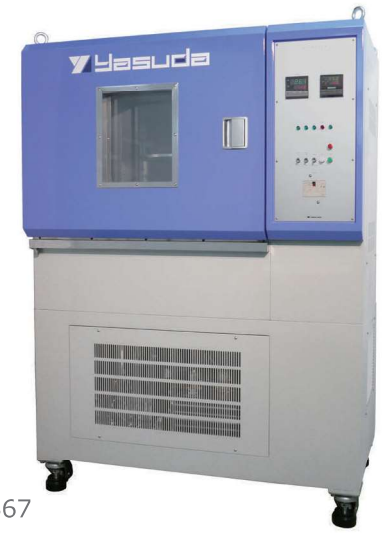
This tester is used to measure the curl size and the degree of curl of paper. The operator is to damp one side of the paper and measure the time required to curl up to its maximum curl size. The tester is usually used on test specimens that are used for printing papers.

### SPECIFICATION

| | |
|---|---|
| Specimen | W38 mm, L38 to 70 mm |
| Float | W0 to 25.4 mm (Adjustable), D50.8 mm |
| Angle Scale | 30 to 60˚ (Scale 1˚) |
| Accessories | Specimen Mold |
| Dimensions/ Weight (Approx.) | W210 × D160 × H110 mm/ 2 kg |

*Power source, dimensions, weight may differ by specifications.

## No. 367 WATER VAPOUR PERMEABILITY TEST CHAMBER



No.367

JIS-(K5400), K6549, L1099, Z0208, TAPPI-T448, T464, ISO-2528

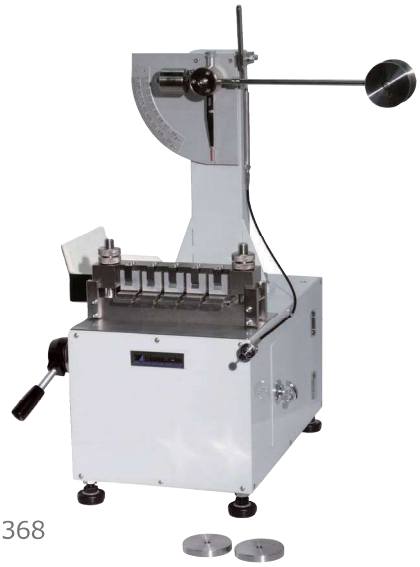
### FEATURE

This device is a constant temperature and moisture oven for conducting vapour permeability tests on plastic film, moisture-proof packaging materials for processed paper, leather, coating, and textile.

### SPECIFICATION

| | |
|---|---|
| Inner dimensions | W450 × D450 × H500 mm |
| Range | Temperature 10 to 80 °C, Humidity 30 to 95 % |
| Air Velocity | 0.5 to 2.5 m/s |
| Table Rotation Speed | 5 rpm |
| Power Source | AC 200 V, 3-Phase, 30 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | W1,200 × D700 × H700 mm/ 400 kg |

## No. 368 INTERNAL BOND TESTER


No.368

TAPPI-T569, UM403

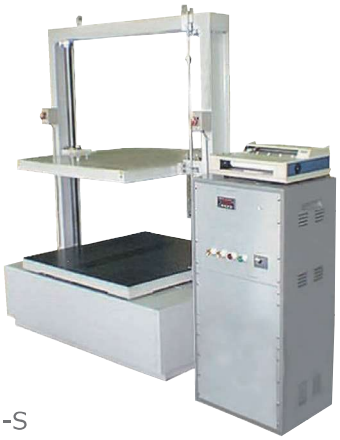
### FEATURE

This tester is used to evaluate the internal bonding strength of paper and paper board. The operator is to measure the workload required for the hammer to peel the L-shaped clasp, which is attached to the test specimen and the test specimen adhesion board.

### SPECIFICATION

| | |
|---|---|
| Capacity | 0 to 0.4 J (Scale 0.005 J)<br>0 to 0.8 J (Scale 0.02 J) (2 ranges) |
| Lift-Up Angle | 90° |
| Bonding Area | 25.4 × 25.4 mm (1 × 1"): 5 pcs |
| Bonding Pressure | 50 to 200 psi (20 to 90 kgf/in²): 5 pcs |
| Accessories | L-shape Mounting Jig: 10 pcs, Bonding Plate: 5 pcs |
| Option | Digital Display Ver. |
| Dimensions/ Weight (Approx.) | W320 × D450 × H630 mm/ 50 kg |

## No. 371-S CARDBOARD CONTAINER COMPRESSION TESTER


No.371-S
Option: Chart Recorder Attached

JIS-Z0212, TAPPI-T804

### FEATURE

This tester is used to conduct compression tests on packaged cargo and containers. The tester is especially suitable for evaluating the compression strength of packaged cargo when stacked during the logistic transportation.

### SPECIFICATION

| | |
|---|---|
| Maximum Load | Max. 30 kN |
| Compression Plate | 1,000 × 1,000 mm |
| Plate Opening | Max. 1,100 mm |
| Compression Speed | 10 ± 3 mm/min |
| Accessories | Chart Recorder |
| Power Source | AC 200 V, 3-Phase, 10 A, 50/60 Hz |
| Dimensions/ Weight (Approx.) | Main Body: W1,500 × D1,000 × H2,300 mm/ 1,200 kg<br>Control Box: W520 × D400 × H1,200 mm/ 70 kg |

*Power source, dimensions, weight may differ by specifications.