No. 101-H TABER TYPE ABRASION TESTER

No. 101-HS TABER TYPE ABRASION TESTER (WITH WIND METER)

Main Body Refacer

No.101-H (1 Hanging, Refacer Attached)

No.101-H-2 (2 Hangings)

No.101-HS
Option: Safety Cover

No.101-K

JIS-A1453, (K5400), K5600-5-8/9, K5665, K6264-2, K6404-4, K6902, K7204, (L1018), L1085, L1096, ASTM-D1044, TAPPI-T476, JAS, (JASO-M403), ISO-4649, 5470-1, 7784-1/2, 9352

FEATURE

No.101-H TABER TYPE ABRASION TESTER

This tester is used to evaluate the abrading endurance of flat surface materials when they are abraded with an abrading wheel. The operator is to place the abrading wheel onto the rotating test specimen at a prescript load and abrade the test specimen. After the test is finished, the operator is to measure the abraded mass, volume, thickness, and the visual difference of the test specimen. This tester is widely used for testing plastic, rubber, decorative sheet, leather, paper, and paint surface.

No.101-HS TABER TYPE ABRASION TESTER (WITH WIND METER)

This is a tester a with Wind Meter attached to No.101-H TABER TYPE ABRASION TESTER.
The wind meter measures the air flow while vacuuming the abraded surface for increased accuracy.

SPECIFICATION

Main Body

Model	No.101-H	No.101-HS
Turn Table	φ150 mm	
Table Rotation Speed	60 ± 2 rpm, 70 ± 2 rpm, 72 ± 2 rpm	
Test Load	2.45 N (250 gf), 4.9 N (500 gf), 9.8 N (1,000 gf)	
Counter	6 Digits Preset Counter	
Suction Nozzle	Inner φ8 mm: 2 pcs	
Option	Inlet Pressure Gauge, Safety Cover	Safety Cover
Accessories	Abrasion Wheel: 1 set (2 sets for No.101-H-2), Thickness Guage: 2 pcs, Weight (4.9 N, 9.8 N): 2 pcs each Suction Device (Vacuum Cleaner): 1 set Power Plug Adaptor: 1 pc	
Power Source	1 Hanging (No.101-H-1): AC 100 V, 1-Phase, 15 A, 50/60 Hz 2 Hangings (No.101-H-2): AC 100 V, 1-Phase, 15 A × 2, 50/60 Hz *2 outlets required	AC 100 V, 1-Phase, 15 A, 50/60 Hz
Dimensions/ Weight (Approx.)	1 Hanging (No.101-H-1): W350 × D350 × H450 mm/ 24 kg 2 Hangings (No.101-H-2): W700 × D350 × H510 mm/ 45 kg	W400 × D400 × H385 mm/ 25 kg

No.101-K Refacer (For Abrasion Wheel)

Tool	Diamond
Rotation Speed	1,300 to 1,500 rpm (50 Hz) 1,550 to 1,800 rpm (60 Hz)
Accessories	Power Plug Adaptor: 1 pc
Power Source	AC 100 V, 1-Phase, 3 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W210 × D330 × H380 mm/ 10 kg

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

No. 102 GEER TYPE AGING OVEN

No.102-SHF-S

JIS-A5756, B7757, C3005, K6257, K6723, K7212, K7368,
ASTM-D573, D5374, D5423, E145, UL-746B,
IEC-60216-4-1, ISO-188, 4577

FEATURE

This tester is the most widely used heat aging tester for rubber and plastic. Unlike ordinary heating ovens, the GEER TYPE AGING OVEN satisfies specifications indispensable to aging tests such as having a closed mechanism, uniform air velocity in the oven, ventilation rate measurement, and being able to use a rotating specimen rack, which offers excellent reproducibility and reliable test results.

Model

SHF-S Type	SHF-SA Type
Equipped with air exchange rate measurement / display via touch panel. Damper is opened/ closed manually.	Equipped with air exchange rate measurement / display via touch panel. Automatic damper control.

SPECIFICATION

Inner Dimensions	[Standard] W450 × D450 × H500 mm	[Special] W600 × D600 × H600 mm
Chamber Capacity	225,225 cm^3	417,600 cm^3
Temperature range	Room Temperature + 20 to 300 ˚C *	
Air Velocity	Low: 0.5 ± 0.1 m/s, High: 1.0 ± 0.2 m/s (Controlled via Touch Panel)	
Air Exchange Rate Measurement	Power Consumption Method	
Air Exchange Rate Control	Adjustable between 3 to 10 times/hr, 5 to 20 times/hr or over 60 times/hr	
Hanger Rotation Speed	7.5 ± 2.5 rpm	
Safety Device	Overheat Detection Device, Circuit Braker	
Accessories	Specimen Hanger 2 stages, Clip 40 pcs, Shelf 2 pcs	
Option	CSV Output, Analog Voltage Output, Miniprinter, UL Type Air Exchange Rate 100 to 200 times/hr modification.	
Power Source	AC 200 V, 3-Phase, 30 A, 50/60 Hz When Air Exchange Rate is 100 to 200 times/hr; AC 200 V, 3-Phase, 40 A, 50/60 Hz	AC 200 V, 3-Phase, 40 A, 50/60 Hz
Dimensions/ Weight (Approx.)	[Standard] SHF-S: W1,180 × D700 × H1,560 mm/ 290 kg SHF-SA: W1,250 × D700 × H1,650 mm/ 300 kg	[Special] SHF-S: W1,350 × D900 × H1,650 mm/ 365 kg SHF-SA: W1,400 × D900 × H1,750 mm/ 371 kg

* Please contact us for 400 ˚C Type.

No. 122 TEST TUBE AGING TESTER

No.122

JIS-K6257, ASTM-D865, ISO-188

FEATURE

This tester is used for evaluating the heat resistance/ aging characteristics of vulcanized rubber and thermoplastic rubber. To prevent contamination by additives, a maximum of 4 test specimens can be put into the independent test tube and heated at a specified temperature for a specified duration of time. The tensile strength, cutting stretch, tension stress, and hardness of the test specimens, before and after the heating are to be compared and evaluated of the heat resistance and aging-characteristics.

SPECIFICATION

Tube Hangings	24 Hangings
Temperature Range	Max. 300 ˚C
Safety Device	Overheat Detection Device, Circuit Braker
Accessories	Test Tube (Outer Diameter φ38 × 300 mm): 30 pcs, Air Tube (Outer Diameter φ9 × 375 mm, φ9 × 405 mm): 48 pcs each Cork: 30 pcs, Specimen Hook: 30 pcs, Bush: 24 pcs, Washer: 150 pcs, Mercury Thermometer
Power Source	AC 200 V, 1-Phase, 20 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W700 × 560 × H700 mm/ 110 kg

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

No. 105 WILLIAMS PLASTOMETER

No. 105-AUTO WILLIAMS PLASTOMETER (AUTOMATIC)

No.105

No.105-AUTO

No.105-AUTO
Option: Heating Platen Type

JIS-K6249, ASTM-D926, ISO-7323

FEATURE

■ No.105 WILLIAMS PLASTOMETER

Placing the specimen on the parallel plate and adding a prescribed load for a specific amount of time, this tester measures the thickness of the specimen and multiplies the thickness 100 times to acquire the degree of plasticity.

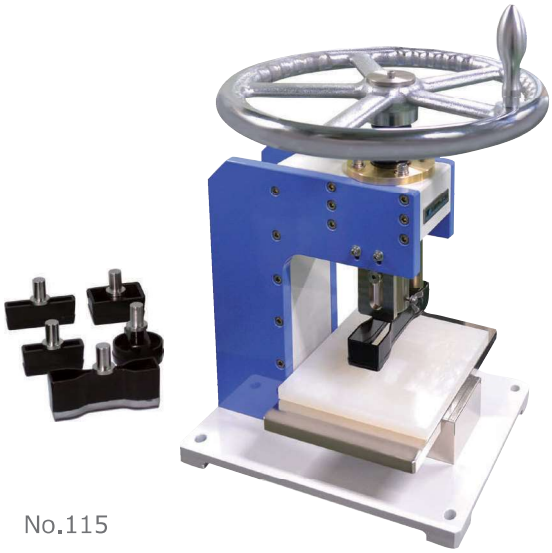
■ No.105-AUTO WILLIAMS PLASTOMETER (AUTOMATIC)

The 105-AUTO is the automated version of the WILLIAMS PLASTOMETER. The tester can plot the chronological change in thickness.

SPECIFICATION

Model	No.105	No.105-AUTO
Specimen	Cylindrical shaped, Volume 2 ± 0.02 cm^3 (φ16 mm, H10 mm)	
Parallel Plate	Upper: φ148 mm, T12 mm Lower: φ148 mm, T13 mm	
Test Load	Initial 24.5 N (2.5 kgf) to Max. 49 ± 0.05 N (5 kgf) (Standard 49 N ± 0.05 N)	
Dial Gauge	Scale 1/100 mm, Stroke Max. 20 mm	Scale 1/100 mm, Stroke Max. 20 mm, Digital Display
Software	-	Windows Compatible
Accessories	Dial Gauge, Weight (4.9 N: 1 pc, 9.8 N: 2 pcs), Hexagon wrench, Set Up Disk (105-AUTO), Power Plug Adaptor (105-AUTO)	
Option	-	Heating Platen Type, Safety Cover
Power Source	-	AC 100 V, 1-Phase, 5 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W175 × D175 × H330 mm/ 10 kg *With Dial Gauge Attached.	W365 × D250 × H500 mm/ 15 kg

No. 115 SCHOPPER TYPE SAMPLE CUTTER



No.115

FEATURE

This device is a handle type cutting machine to prepare specimens of non rigid plastic, rubber sheet, etc. The device is assorted with a variety of cutters which enables preparation of dumbbell, ring, and angle type specimens.

SPECIFICATION

Wheel	φ400 mm
Cutter Mount	Hole φ16 mm
Stroke	8 mm/ 1 turn
Accessories	PP Board
Dimensions/ Weight (Approx.)	W400 × D420 × H500 mm/ 75 kg

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

No. 118 OLSEN TYPE STIFFNESS TESTER (HEAVY LOAD TYPE)

No. 118-D OLSEN TYPE STIFFNESS TESTER (HEAVY LOAD TYPE) (DIGITAL)

No.118

No.118-D

JIS-K7106, ASTM-D747

FEATURE

■ No.118 OLSEN TYPE STIFFNESS TESTER (HEAVY LOAD TYPE)

This tester is used to measure bending properties (stiffness) of plastic materials using the cantilever beam method.
One end of the specimen is attached to the tester and the specimen is bent to a certain degree at a constant speed. The bending stiffness is determined from the opposite end. The tester is capable of measuring on the apparent elastic modulus; evalution of the level of deformation is beyond the scope of this tester.

■ No.118-D OLSEN TYPE STIFFNESS TESTER (HEAVY LOAD TYPE) (DIGITAL)

This is the digital version of the OLSEN TYPE STIFFNESS TESTER. It is equipped with a calculating device that can calculate the average and standard deviation values of the test result.

SPECIFICATION

Model	No.118	No.118-D
Moment	Max. 5 lb·in <1 lb = 453 g>	
Load Scale	0 to 100 % (Scale 1 %)	
Weight	0.5 lb: 1 pc, 1 lb: 2 pc	
Load Position	4" from Pivot	
Angle Scale	0 to 90° (Scale 1°)	
Chuck Rotation Speed	60°/min	
Specimen	W 5 ± 0.5 mm or 13 ± 0.5 mm, L 60 mm or more, T 1.0 ± 0.1 mm or 2.0 ± 0.2 mm	
Support Length	7 to 50 mm	
Chuck Width	30 mm	
Power Source	AC 100 V, 1-Phase, 5 A, 50/60 Hz	AC 200 V, 1-Phase, 3 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W340 × D300 × H460 mm/ 10 kg	W570 × D350 × H490 mm/ 15 kg

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

No. 119 DE MATTIA FLEX-CRACKING AND CRACK GROWTH TESTER

No. 119-L DE MATTIA FLEX-CRACKING AND CRACK GROWTH TESTER (WITH REFRIGERATING MACHINE)

No. 119-L-VR DE MATTIA FLEX-CRACKING AND CRACK GROWTH TESTER (WITH REFRIGERATING MACHINE/ PICTURE BREAK DETECTION FUNCTION)

No.119

No.119-L

No.119-L-VR

JIS-K6260, ASTM-D813, BS-903, ISO-132

FEATURE

■ No.119 DE MATTIA FLEX-CRACKING AND CRACK GROWTH TESTER

This tester is used to measure the appearance of cracks and the growth of the cracks to vulcanized rubber and thermo-plastic rubber by applying repetitive bending stress. The test is conducted by setting the test specimen onto the parallely allocated Chucks and applying repetitive bending stress.

■ No.119-L DE MATTIA FLEX-CRACKING AND CRACK GROWTH TESTER (WITH REFRIGERATING MACHINE)

The L type of the DE MATTIAFLEX-CRACKING AND CRACK GROWTH TESTER is assorted with a refrigerating Machine.
This enables for flex-cracking and crack growth testing at low temperatures.

■ No.119-L-VR DE MATTIA FLEX-CRACKING AND CRACK GROWTH TESTER (WITH REFRIGERATING MACHINE/ PICTURE BREAK DETECTION FUNCTION)

This tester is equipped with a super-high-speed camera, which enables the operator to observe and save the status and progression of the growth of the cracks. Since the test can be monitored by the super-high-speed camera, the test can be run without any discontinuance.

SPECIFICATION

Model	No.119	No.119-L	No.119-L-VR
Hangings	6 Hangings	6 Hangings or 20 Hangings	12 Hangings
Specimen	W25 ± 0.1 mm, L140 to 155 mm, T6.30 ± 0.15 mm, Groove of R2.38 ± 0.03 mm		
Chuck Distance	Max. 75 $^{+1}_{0}$ mm		
Flexing Distance	Max. 60 mm (Standard 57 $^{+0.5}_{0}$ mm)		
Flexing Speed	300 ± 10 times/min		
Counter	6 Digits Preset Counter, 6 Digits Running Counter		8 Digits Preset Counter, 8 Digits Running Counter
Timer	-	-	Max. 999 hr
Temperature Range	-	-35 to 150 °C (Refrigerator)	
Break Detection	-	-	High Speed Digital Picture Camera
Accessories	Specimen Setting Gauge, Notching Blade		
Option	Notching Device		
Power Source	AC 200 V, 3-Phase, 15 A, 50/60 Hz	AC 200 V, 3-Phase, 40 A, 50/60 Hz	AC 200 V, 3-Phase, 40 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W700 × D610 × H980 mm/ 180 kg	6 Hangings: W920 × D830 × H1,650 mm/ 470 kg 20 Hangings: W920 × D830 × H1,650 mm/ 500 kg	W1,100 × D1,000 × H1,825 mm/ 450 kg

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

No. 120-FWP MELT FLOW INDEX TESTER (MANUAL)

No.120-FWP

No.120-FWP-W

JIS-K6719-1/2, K6921-2, K6922-2, K6923-1, K6924-1, K6926-2, K7210-1, ASTM-D1238, ISO-1133-1

FEATURE

This tester is used for measuring the melt flow index, known as melt-flow rate(MFR) and melt-volume rate(MVR) of thermo-plastic resin. The tester is compatible with both Method A (volmetoric measurement) and Method B (flow distance measurement) testing. Tests can be conducted easily, from setting the test condition up to data analysis, using a 5.7" full color touch panel.

SPECIFICATION

Hangings	1 Hanging
Die	φ2.095 ± 0.005 mm, L8.000 ± 0.025 mm
Piston	Head Diameter φ9.474 ± 0.007 mm, Head Length L6.35 ± 0.10 mm
Cylinder	Inner φ9.550 ± 0.025 mm, L160 mm
Temperature Range	Max. 400 ˚C
Test Load	Initial 0.325 kgf Choose 1 kind from 1.20, 2.16, 3.80, or 5.00 kgf. (Option: 10.00 and 21.60 kgf)
Test Method	Method A: Manual (Option: Automatic Cutter) Method B: Automatic
Data Processing	Method A: Automatic (Measuring the weight of the cut off specimen is to be done manually) Method B: Automatic
Method B Measuring	Rotary Encoder
Standard Specification	SD Card Slot, LAN Port
Option	Mini Printer, Method A Air Pressure Type Automatic Cutter, Manual Type Die Plug, Safety Cover with Interlock Attached, Half Die, Air Pressure Type Automatic Loader (No.120-FWP-W)
Accessories	Cleaning Rod (Die, Cylinder), Injection Rod, Funnel, Die Gauge, Method A Cutting Knife, Spirit Level, Gauze
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz or, AC 200 V, 1-Phase, 10 A, 50/60 Hz
Air Source	0.5 MPa or More (For Method A Automatic Cutter or Automatic Loader)
Dimensions/ Weight (Approx.)	W700 × D450 × H1,070 mm/ 90 kg

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

No. 120-SAS MELT FLOW INDEX TESTER (AUTOMATIC)

No. 120-LABOT MELT FLOW INDEX TESTER (FULL AUTOMATIC)

No.120-SAS

No.120-LABOT

JIS-K6719-1/2, K6921-2, K6922-2, K6923-1, K6924-1, K6926-2, K7210-1, ASTM-D1238, ISO-1133-1

FEATURE

■ No.120-SAS MELT FLOW INDEX TESTER (AUTOMATIC)

This model is the automatic version of the MELT FLOW INDEX TESTER, equipped with a robotic mechanism, which can conduct a complete test cycle from measurement to cleaning. The melt flow index is acquired from the weight or the volume of the extruded specimen at a specified cylinder temperature and with a specified load of piston through the die. The tester is assorted with an automatic cleaning system which enables performing on entire test cycle without discontinuation.

■ 120-LABOT MELT FLOW INDEX TESTER (FULL AUTOMATIC)

This model is the fully automated version of the MELT FLOW INDEX TESTER, equipped with a robotic mechanism which enables full automatic melt flow index tests up to a maximum of 50 samples (standard of 12 samples). The test conditions and the outputs can be set and observed through the computer software.

SPECIFICATION

Model	No.120-SAS	No.120-LABOT
Hangings	1 Hanging or 3 Hangings (2 kinds)	12 Hangings, 24 Hangings or 50 Hangings (3 kinds)
Die	φ2.095 ± 0.005 mm, L8.000 ± 0.025 mm	
Piston	Head Diameter φ9.474 ± 0.007 mm, Head Length L6.35 ± 0.10 mm	
Cylinder	Inner φ9.550 ± 0.007 mm, L160 mm	
Temperature Range	Max. 300 ˚C (Option: 400 ˚C)	
Test Load	Choose the Largest Load from 0.325, 1.20, 2.16, 3.80, 5.00, 10.00 or 21.60 kgf	
Test Method	Method A: Manual (Option: Automatic), Method B: Automatic	
Specimen Feeding	Automatic	
Weight Loading	Automatic	
Weight Change	Manual (Option: Automatic)	
Cylinder Cleaning	Automatic (Solvent cleaning can also be automatic)	
Die Cleaning	Automatic	
Piston Cleaning	Manual (Option: Automatic)	Automatic
Die Cleaning Rod Cleaning	Manual (Option: Automatic)	Automatic
Cleaning Gauze Feeding	Manual	Automatic
Data Processing	Method A: Manual (Option: Automatic) Method B: Automatic	
Method B Measuring	Rotary Encoder	
Software	Windows Compatible	
Accessories	Cleaning Rod (Die & Cylinder), Solvent Cleaning Device, Specimen Sample Cup, Cup Holder, Funnel, Die Gauge, Spirit Level, Dust Box, Gauze, Air Gun	
Option	Air Compressor, Temperature Calibration Device	Specimen Purging Device, Specimen Drying Device, Air Compressor, Temperature Calibration Device, Exhaust Fan, Smoke-Detection Sensor
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz AC 200 V, 1-Phase, 20 A, 50/60 Hz (ISO-1133-2 Compatable Type)	
Air Source	0.5 MPa or More	
Dimensions/ Weight (Approx.)	1 Hanging: W625 × D600 × H1,150 mm/ 100 kg 3 Hangings: W625 × D680 × H1,150 mm/ 120 kg	12, 24 Hangings: W950 × D700 × H1,750 mm/ 300 kg 50 Hangings: W1,100 × D700 × H1,750 mm/ 350 kg

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

No. 140-SAS AUTOMATIC CAPILLARY RHEOMETER

No.140-SAS (Light Load Type)

No.140-SAS (Heavy Load Type)

JIS-K7199, ASTM-D3835, ISO-11443

FEATURE

This tester evaluates the flow properties of molten plastic during the forming process. The molten test specimen, inside the cylinder heated to a specific temperature, is extruded from the capillary die. During the extrusion, the shear stress and the shear viscosity is measured for calculating the melt viscosity of the test specimen. The tester is equipped with an automatic cleaning system which enables the operator to continuously run a single complete test cycle (option of 3 test cycles). The tester can be chosen between a Light Load Type and a Heavy Load Type according to the test specimen's maximum load.

SPECIFICATION

Model	No.140-SAS (Light Load Type)	No.140-SAS (Heavy Load Type)
Hangings	1 or 3 Hangings (2 kinds)	
Maximum Load	Max. 10 kN	Max. 20 kN
Load Measuring	Load Cell: Max. 10 kN (Scale 0.1 N)	Load Cell: Max. 20 kN (Scale 0.1 N)
Ram Speed	0.5 to 500 mm/min	0.5 to 1,000 mm/min
Capillary Die	φ0.5 to φ2 mm (To be specified)	
Piston	φ9.510 ± 0.005 mm, L6.35 ± 0.10 mm	
Cylinder	Inner φ9.550 ± 0.025 mm, L160 mm	Inner φ9.550 ± 0.025 mm, L200 mm
Temperature Range	Max. 400 ˚C	
Software	Windows Compatible	
Accessories	Cleaning Rod (Die & Cylinder), Solvent Cleaning Device, Powder Specimen Compatible Sample Cup, Cup Holder, Funnel, Spirit Level, Dust Box, Gauze, Air Gun, Ratchet Wrench	
Option	Hastelloy Spec, Specimen Purging Device, Specimen Drying Device, Air Compressor, Temperature Calibration Device, Exhaust Fan, Smoke-Detection Sensor	
Power Source	AC 200 V, 1-Phase, 10 A, 50/60 Hz	
Air Source	0.5 MPa or More	
Dimensions/ Weight (Approx.)	W600 × D630 × H1,070 mm/ 180 kg	W600 × D630 × H1,280 mm/ 200 kg

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

No. 121 BRITTLENESS TEMPERATURE TESTER

No. 121-R BRITTLENESS TEMPERATURE TESTER (WITH REFRIGERATING MACHINE)

No.121

No.121-R

JIS-C3005, K6261, K6723, K7216, ASTM-D746, ISO-812, 974

FEATURE

■ No.121 BRITTLENESS TEMPERATURE TESTER

This tester is used to measure the 50% impact brittleness temperature of plastic, rubber, and electric insulated wire at low temperatures. By attaching one end of the test specimen to the holder and impacting the other end, the operator is to check for any damage to the test specimen. The 50% impact brittleness temperature is calculated from the amount of damaged samples. The refrigerating method is dry ice for this model.

■ No.121-R BRITTLENESS TEMPERATURE TESTER (WITH REFRIGERATING MACHINE)

This tester is used to measure the 50% impact brittleness temperature of plastic, rubber, and electric insulated wire at low temperature. By attaching one end of the test specimen to the holder and impacting the other end, the operator is to check for any breaks to the test specimen. This model type is equipped with a refrigerator.

SPECIFICATION

Model	No.121	No.121-R
Hangings	5 Hangings (1 Holder)	
Specimen	W6.0 ± 1.0 mm, L26 to 40 mm, T2.0 ± 0.2 mm (Type A)	
Striker Edge	Top R1.6 ± 0.1 mm, Distance to Chuck 6.4 ± 0.2 mm, Distance to Striking Point 8.0 ± 0.2 mm	
Striking Speed	2.0 ± 0.2 m/s	
Temperature Range	Room Temperature to -70 ˚C (Dry Ice & Refrigeration Medium)	Room Temperature to -70 ˚C (Refrigerator & Refrigeration Medium) (Option: Combined with Liquid Nitrogen -100 ˚C)
Accessories	Tightening Rod, Torque Driver, Specimen Cutter	
Option	Rotary Holder (5 Hangings × 4 Holders), Specimen Holder (Type B)	
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz	AC 200 V, 3-Phase, 30 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W770 × D830 × H550 mm/ 140 kg	W830 × D950 × H1,650 mm/ 400 kg

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

No. 121-RA BRITTLENESS TEMPERATURE TESTER (WITH REFRIGERATING MACHINE/ ROTARY HOLDER TYPE)

No. 121-AUTO BRITTLENESS TEMPERATURE TESTER (FULLY AUTOMATIC)

No.121-RA

No.121-AUTO

JIS-C3005, K6261, K6723, K7216, ASTM-D746, ISO-812, 974

FEATURE

■ No.121-RA BRITTLENESS TEMPERATURE TESTER (WITH REFRIGERATING MACHINE/ ROTARY HOLDER TYPE)

This tester is equipped with a rotary holder to continuously run a maximum of 4 tests. The test conditions (test temperature and dip time) for each of the 4 tests can be set via touch panel screen, enabling continuous efficient testing.

■ No.121-AUTO BRITTLENESS TEMPERATURE TESTER (FULLY AUTOMATIC)

This tester is the fully automatic version of the BRITTLENESS TEMPERATURE TESTER. By inputting the test conditions via computer software, the operator can continuously run 40 tests (200 samples) in a row.

SPECIFICATION

Model	No.121-RA	No.121-AUTO
Hangings	5 Hangings × 4 Holders (Total 20 Hangings), Automatic Operation System	5 Hangings × 40 Holders (Total 200 Hangings)
Specimen	W6.0 ± 1.0 mm, L26 to 40 mm, T2.0 ± 0.2 mm (Type A)	
Striker Edge	Top R1.6 ± 0.1 mm, Distance to Chuck 6.4 ± 0.2 mm, Distance to Striking Point 8.0 ± 0.2 mm	
Striking Speed	2.0 ± 0.2 m/s	
Temperature Range	Room Temperature to -70 °C (Refrigerator & Refrigeration Medium)	
Software	-	Windows Compatible
Accessories	Tightening Rod, Torque Driver, Specimen Cutter	
Option	Specimen Holder (Type B)	
Power Source	AC 200 V, 3-Phase, 30 A, 50/60 Hz	
Air Source	0.5 MPa or More	
Dimensions/ Weight (Approx.)	W830 × D950 × H1,650 mm/ 400 kg	W1,200 × D1,000 × H2,150 mm/ 450 kg

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

No. 145-A CREEP TESTER (PULLEY TYPE)

No. 145-B CREEP TESTER (BALANCE TYPE)

No.145-A (PULLEY TYPE)

No.145-B (BALANCE TYPE)

JIS-K7115, ASTM-D2990, ISO-899-1

FEATURE

This tester is used to measure the creep buildup by applying static load to plastic test specimens. By choosing the Chuck, the tester is compatible with conducting tensile tests, condensation tests, and bending tests. The tester can also be assorted with test functions such as relaxation tests, heat shrinkage tests, and thermal impulse tests.

SPECIFICATION

Model	No.145-A	No.145-B
Hangings	3 Hangings, 6 Hangings, 10 Hangings (3 kinds)	
Specimen	See JIS-K7162 for reference	
Load Method	Pulley Wheel Type	Balance Scale Type
Test Load	Max. 500 N (50 kgf)	Max. 5 kN (500 kgf)
Displacement Measurement	Potentiometer: Scale 0.1 mm, Stroke 0 to Max. 300 mm	Differential Transformer: Scale 0.01 mm, Stroke 0 to Max. ± 40 mm
	Differential Transformer: Scale 0.01 mm, Stroke 0 to Max. ± 40 mm	
Temperature Range	Max. 200 °C	
Software	Windows Compatible	
Option	Compression Jig, Bending Jig, Low Temperature Oven, Constant Temperature & Humidity Oven, Divided Oven,Gauge Length Measuring Spec	
Power Source	Differs by Specifications.	
Dimensions/ Weight (Approx.)	Differs by Specifications.	

No. 145-SV CREEP TESTER (SERVOMOTOR TYPE)

No.145-SV

JIS-K7115, ASTM-D2990, ISO-899-1(CREEP TEST),
JIS-K6263, ISO-3384(STRESS RELAXATION TEST)

FEATURE

By adding a servomotor to the usual actual load type creep tester, and detecting the load using a load cell, the servomotor type creep tester can effectively reduce impact when the test specimen breaks, simultaneously saving space. By choosing the Chuck, the tester is compatible with conducting tensile stress relaxation tests and condensation stress relaxation tests. The tester can also be assorted with test functions such as thermal contraction testing and thermal impact testing.

SPECIFICATION

Hangings	3 Hangings, 6 Hangings, 10 Hangings (3 kinds)
Specimen	See JIS-K7162 or JIS-K6263 for reference
Load Method	Servomotor Type
Test Load	Max. 5 kN (500 kgf)
Load Detection	Load Cell
Displacement Measurement	Potentionmeter: Scale 0.1 mm, Stroke 0 to Max. 300 mm Differential Transformer: 0.01 mm, Stroke 0 to Max. ± 40 mm
Temperature Range	Max. 200 °C
Software	Windows Compatible
Option	Compression Jig, Bending Jig, Low Temperature Oven, Constant Temperature & Humidity Oven, Divided Oven, Gauge Length Measuring Spec
Power Source	Differs by Specifications.
Dimensions/ Weight (Approx.)	Differs by Specifications.

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

No. 145-D RETENTIVITY TESTER

No.145-D

JIS-Z0237

FEATURE

This tester is used to evaluate the retentivity of adhesive tape and sheet. By attaching 25 mm of one end of the test specimen to the testing plate and applying load to the other end of the test specimen which is vertically hung down, the tester will measure the distance of disalignment or the time required for the specimen to fall off from the testing plate.

SPECIFICATION

Hangings	3 Hangings, 6 Hangings, 10 Hangings or 20 Hangings (4 kinds)
Specimen	W25 mm or 12 ± 0.5 mm, L150 mm
Test Plate	W50 mm, L125 mm, T1.1 mm or More, Material: SUS304 Made
Test Load	Initial 200 gf to Max. 1 kgf (Standard 1,000 g ± 5 g)
Chuck	Upper: Hook Type Lower: Flat Type (W30 mm)
Upper and Lower Chuck Distance	200 mm
Chuck Stroke	Max. 45 mm, Electric Concurrent Elevating Device (Up and Down Automatic Stop)
Temperature Range	Max. 150 ˚C
Timer	Preheating Time Setting, Drop Time Measuring, Test Time Setting
Option	Displacement Measurement Spec, Refrigerating Machine, Constant Temperature & Humidity Oven, Oven Light, 90˚Peeling Spec
Power Source	Differs by Specifications.
Dimensions/ Weight (Approx.)	Differs by Specifications.

No. 145-L TR TESTER

No.145-L
Option: Safety Cover Attached

JIS-K6261, ASTM-D1329, ISO-2921

FEATURE

This tester is used to measure the low temperature elastic recovery of vulcanized rubber and thermoplastic rubber. After the test specimen has been elongated under low temperature, the tester will measure the temperature at which the test specimen recovers elasticity while the temperature is continuously raised.

SPECIFICATION

Hangings	4 Hangings or 6 Hangings (2 kinds)
Specimen	I-shape, Chuck Area: 6.5 × 6.5 mm, Parallel Area: W2.0 ± 0.2 mm, L100.0 ± 0.2 mm or 50.0 ± 0.2 mm, T2.0 ± 0.2 mm
Chuck Distance	50 mm and 100 mm
Displacement Measurement	Optical Scale Sensor, Accuracy of ± 0.1 mm, Scale 0.1 mm, Stroke Max. 200 mm
Temperature Range	-70 to 30 ˚C (Refrigerator & Refrigeration Medium) (Option: Combined with Liquid Nitrogen -100 ˚C)
Heat-Up Speed	1 ˚C/min
Software	Windows Compatible
Accessories	Specimen Setting Gauge, Specimen Cutter (100 mm and 50 mm): 1 pc each
Option	Safety Cover
Power Source	AC 200 V, 3-Phase, 30 A, 50/60 Hz
Dimensions/ Weight (Approx.)	4 Hangings: W950 × D670 × H1,870 mm/ 320 kg 6 Hangings: W1,090 × D670 × H1,870 mm/ 350 kg *Rack Lifted Height H2,255 mm

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

No. 145-G GEHMAN STIFFNESS TESTER

No.145-G

JIS-K6261, ISO-1432

FEATURE

This tester is used to determine the relative stiffness characteristics of vulcanized or thermoplastic rubber. The tester will record the torsion angle of the test specimen 10 seconds after being twisted 180 degrees. This procedure is done from 23 °C to the lowest test temperature of the test, so that the temperature (T2, T5, T10, and T100) of which the modulus values are at 2, 5, 10, and 100 can be obtained from the Temp. - Angle curve diagram.

SPECIFICATION

Hangings	4 Hangings
Specimen	W3.0 ± 0.2 mm, L40.0 ± 2.5 mm, T2.0 ± 0.2 mm
Torsion Wire	L: 65 ± 8 mm, Torsional Constant: 2.81 mN·m/rad (Standard Wire)
Chuck Distance	25 ± 3 mm
Torsion Angle Measurement	Rotary Encoder, Detection: 0.1°
Temperature Range	-70 to 30 °C (Refrigerator & Refrigeration Medium)
Temperature Rise	5 °C interval (Condition Controlling Time: 5 min)
Software	Windows Compatible
Accessories	Specimen Setting Jig, Specimen Cutter, Torsion Wire Jig: 1 pc each
Power Source	AC 200 V, 3-Phase, 20 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W650 × D780 × H1,840 mm/ 200 kg

No. 153 GEL TIME TESTER (MAGNET TYPE)

No. 153-GTR GEL TIME TESTER (TORQUE METER TYPE)

No.153 (2 Hangings)

No.153 (5 Hangings)

No.153-GTR

FEATURE

■ No.153
GEL TIME TESTER
(MAGNET TYPE)

This tester is made to easily measure the gelatinization time of thermoset plastic resin. The operator is to put the test specimen into the test tube with a rotating rotor. As the gelatinization progresses and a certain torque forms in the test specimen, the magnetic coupling system will drop from the rotor to indicate that the test specimen has gelatinized.

■ No.153-GTR
GEL TIME TESTER
(TORQUE METER TYPE)

This tester continuously records the time series variation of torque during the gelatinization process of thermoset plastic resin.

SPECIFICATION

Model	No.153	No.153-GTR
Hangings	2 Hangings or 5 Hangings (2 kinds)	1 Hanging
Detecting Torque	3.7 to 4.0 gf·cm	Max. 20.0 mN·m
Temperature Range	Max. 200 °C (Option: Refrigerator 10 to 200 °C)	
Rotor Rotation Speed	25 rpm (50 Hz), 24 rpm (60 Hz)	
Timer	Max. 999,999 s or Max. 99 hr 59 min 59 sec	
Accessories	Rotor (φ5 × 110 mm): 100 pcs each Test Tube (Outer Diameter φ12 × 90 mm): 100 pcs each	
Option	Silicon Oil	Silicon Oil, Software, Chart Recorder
Power Source	AC 100 V, 1-Phase, 10 A, 50/60 Hz	
Dimensions/ Weight (Approx.)	2 Hangings: W360 × D360 × H610 mm/ 26 kg 5 Hangings: W650 × D375 × H600 mm/ 50 kg	W530 × D450 × H700 mm/ 40 kg

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

No. 148-HD HEAT DISTORTION TESTER

No. 148-HDA HEAT DISTORTION TESTER (FULLY AUTOMATIC)

No. 148-HD500 HIGH TEMPERATURE HEAT DISTORTION TESTER

No.148-HD

No.148-HDA

No.148-HD500

JIS-K7191-1, K7206, ASTM-D648, D1525, IEC-335-1, ISO-75-1, 306

FEATURE

■ No.148-HD HEAT DISTORTION TESTER

This tester is used to evaluate the heat resistance of plastic. By applying specified bending stress to the test specimen while increasing the temperature of the oil bath at a certain rate, the operator is to measure the temperature at which the test specimen reaches standard deflection. The tester can also conduct VICAT softening temperature tests and ball pressure tests.

■ No.148-HDA HEAT DISTORTION TESTER (FULLY AUTOMATIC)

This tester is the fully automatic version of the HEAT DISTORTION TESTER. The robotic mechanism enables the operator to conduct heat distortion tests and VICAT softening temperature tests automatically. By setting the test specimen to the specimen feeder, the computer software will continuously conduct tests for a maximum of 120 samples.

■ No.148-HD500 HIGH TEMPERATURE HEAT DISTORTION TESTER

This tester adapts the air circulating heating system to test the heat resistance of plastic (usually super engineering plastic) up to 500 ˚C. The specimen racks are made by glass quartz to prevent measuring disturbances caused by deflections of the racks themselves.

SPECIFICATION

Model	No.148-HD	No.148-HDA	No.148-HD500
Hangings	3 Hangings, 4 Hangings, 6 Hangings (3 kinds)	3 Hangings, 6 Hangings (2 kinds)	3 Hangings
Temperature Range	Max. 300 ˚C (Oil Bath)		Max. 500 ˚C (Air Chamber, Nitrogen Gas Filling Device Attached)
Heat-Up Speed	120 ± 10 ˚C/hr, 50 ± 5 ˚C/hr		
Bending Stress	1.80 MPa, 0.45 MPa		1.80 MPa, 0.45 MPa
Test Load	DTUL: Choose 2 type from Initial 76.5 gf to Max. 3,210 gf Option: VICAT 10 ± 0.2 N, 50 ± 1 N Option: Ball Pressure: 0.4 to 2.0 N		
Displacement Measurement	Differential Transformer: 0.001 mm, Stroke 0 to ± 2 mm		
Pressure Foot	DTUL: R3.0 ± 0.2 mm Option: VICAT 1.000 ± 0.015 mm^2 Option: Ball Pressure φ5 mm		
Support Length	64 ± 1 mm, 100 ± 2 mm (Universal)		
Refrigerating Device	Water Circulating System Option: Self Contained Refrigerator *For cooling of High Temperature or when Test Start Temperature is 20 to 23 ˚C		Fan type (Air Fan Cooling), 3 Fans, Carbon Gas Injection Cooling System
Churning Device	Propeller type 3 and 4 Stations: 2 Propellers 6 Stations: 3 Propellers		Propeller type, 3 propellers
Test Specimens	-	40 pcs × 3 Cassettes (Total 120 pcs) *When T10 mm	-
Software	Windows Compatible		
Accessories	Pressure Foot Adjustment, Specimen Holder		
Option	Silicon Oil, Safety Cover, Simultaneous Loading Device (Standard for No.148-HDA), Borosilicate Glass		Safety Cover, Simultaneous Loading Device, Borosilicate Glass
Power Source	AC 200 V, 1-Phase, 30 to 40 A, 50/60 Hz	AC 200 V, 3-Phase, 40 A, 50/60 Hz	AC 200 V, 1-Phase, 30 A, 50/60 Hz
Air Source	-	0.5 MPa or More	-
Dimensions/ Weight (Approx.)	W700 to 1,000 × D500 × H1,300 mm/ 170 to 220 kg	W930 to 1,150 × D600 × H1,300 mm/ 350 to 400 kg	W1,100 × D650 × H1,500 mm/ 250 kg

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

No. 149 STRESS-CRACKING TESTER

No.149

JIS-K6922-2, Z1703, ASTM-D1693, ISO-1872-2

FEATURE

This tester is used to test the constant strain environmental stress cracking of plastic. The tester is used by fixing notched test specimen to the test specimen holding jig and dipping it into a test tube that is filled with test liquid adjusted to 50°C. The operator is to observe the time required for stress cracks to arise.

SPECIFICATION

Specimen	W13 ± 0.8 mm, L38 ± 2.5 mm, T3 mm or 2 mm
Notching Jig	Notch Depth 0.5 mm, 0.3 mm, Notch Length 19.1 ± 0.1 mm
Bending Jig	1 set
Transfer Jig	1 set
Accessories	Test Tube (Outer Diameter φ30 × 200 mm), Cork Cap, Aluminum Foil, Specimen Fixing Jig: 5 sets each
Dimensions/ Weight (Approx.)	W350 × D150 × H100 mm/ 3 kg (Notching Jig)

No. 150 LAMBOURN ABRASION TESTER

No.150

JIS-K6264-2, ISO-4649

FEATURE

This tester is used to evaluate the abrading resistance of vulcanized rubber and thermoplastic rubber. The test sample is abraded with the abrading wheel, which rotates independently at a different speed. Using the rotating speed difference of the test sample and the abrading wheel, and the test load applied at the abrading surface, the operator is to measure the abraded mass of the test specimen. This tester is usually used on test specimens that are applied for tires, belts and shoe soles.

SPECIFICATION

Specimen	Disk Shape, φ49 mm, T5 mm
Specimen Rotation Speed	10 to 200 m/min
Abrasion Wheel	φ175 mm, T25 mm, Material: C, Grit #80, Coupling K
Wheel Rotation Speed	10 to 200 m/min
Slip Angle	0˚
Slip Ratio	0 to 50 %
Compression Device	Loading Load: 5 to 80 N, Additional Method: Servomotor, Detection: Load Cell (Feedback Method)
Test Axis Torque	Max. 5 N·m
Temperature Range	Max. 150 ˚C (Option: Refrigerator -35 to 150 ˚C)
Grit Supply Device	Carborundum #80, Container 2 L, Drop Amount: 10 to 30 g/min
Software	Windows Compatible
Power Source	AC 200 V, 3-Phase, 50 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W1,250 × D1,260 × H1,670 mm/ 250 kg

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

No. 151 DIN ABRASION TESTER

No. 151-H DIN ABRASION TESTER (WITH CONSTANT TEMPERATURE CHAMBER)

No.151

No.151-H

JIS-K6264-2, ISO-4649, DIN-53 516

FEATURE

■ No.151 DIN ABRASION TESTER

This tester is used for evaluating the abrasion resistance of vulcanized rubber and thermoplastic rubber. By pressing the test specimen against the rotating drum that has an abrasive cloth on the surface with a certain test load, the operator is to acquire the abrading mass of the test specimen. Test specimens include materials used for tires and belts.

■ No.151-H DIN ABRASION TESTER (WITH CONSTANT TEMPERATURE CHAMBER)

This version is equipped with a chamber for conducting the test at high temperatures such as 100 ˚C.

SPECIFICATION

Model	No.151	No.151-H
Test Method	Method A and B	
Specimen	Disc shape, φ16.0 ± 0.2 mm, T6 to 10 mm	
Rotating Drum	φ150 mm, L460 mm	φ150 mm, L450 mm
Drum Rotation Speed	40 ± 1 rpm	10 to 100 rpm (Standard: 40 ± 1 rpm)
Feed Speed	2.8 mm/s	1.5 to 15 mm/s (Standard: 2.8 mm/s)
Test Load	10.0 ± 0.2 N or 5.0 ± 0.1 N	
Abrasive Cloth	W400 mm or More, Material: Alumina, Grit P60	
Temperature Range	-	Max. 100 ˚C
Accessories	Suction Device (Vacuum Cleaner), Specimen Setting Gauge, Standard Specimen: 1 sheet, Metal Specimen: 2 pcs, Specimen Cutter	
Power Source	AC 100 V, 1-Phase, 10 A, 50/60 Hz	AC 200 V, 3-Phase, 20 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W750 × D320 × H280 mm/ 60 kg	W1,100 × D800 × H700 mm/ 200 kg

*We also provide low temp. testing compatible types.

No. 152 AKRON RUBBER ABRASION TESTER

No.152

JIS-K6264-2, ISO-4649, DIN-53 516

FEATURE

This tester is used for evaluating the abrasion resistance of vulcanized rubber and thermoplastic rubber. By pressing the rotating circular test specimen on to the circumference surface of the abrading wheel at a certain test load, the operator is to acquire the abrading mass of the test specimen. The test specimen will usually be materials used for tires and shoe soles.

SPECIFICATION

Specimen	φ63.5 ± 0.5 mm, T12.7 ± 0.5 mm, φ12.7 ± 0.1 mm
Specimen Rotation Speed	250 ± 5 rpm
Inclination Angle	0 to 30˚ (Normal: 15˚)
Test Load	27.0 N (2.75 kgf), 44.1 N (4.50 kgf)
Option	Suction Device (Vacuum Cleaner)
Power Source	AC 220 V, 1-Phase, 15 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W500 × D500 × H560 mm/ 50 kg

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

No. 156 MARON MECHANICAL STABILITY TESTER

No. 156-AUTO MARON MECHANICAL STABILITY TESTER (AUTOMATIC)

No.156
Option: Safety Cover

No.156-AUTO
Option: Safety Cover

No.156-AUTO
Option: Heating Plate Type

JIS-(K6387), (K6392), (K6828)

FEATURE

■ No.156 MARON MECHANICAL STABILITY TESTER

This tester is used to evaluate the mechanical stability of synthetic latex and synthetic resin emulsion. By rotating the rotary disk at a constant speed with constant pressure to the polyethylene liner set at the bottom of the specimen container, the tester will measure the coagulum content formed within the test specimen.

■ No.156-AUTO MARON MECHANICAL STABILITY TESTER (AUTOMATIC)

This tester is the automatic version of the MARON MECHANICAL STABILITY TESTER. The loading system is equipped with a physical dead weight loading system, and the rotary disk will go down into the specimen container automatically. After a certain amount of time, which is set by the operator, the rotation of the rotary disk will stop automatically. By using the changeover switch, the loading can be done manually using the pressurizing handle.

SPECIFICATION

Model	No.156	No.156-AUTO
Specimen	50 ± 0.5 g	
Rotor Disk	φ50 mm, T13 mm	
Rotor Disk Rotation Speed	1,000 ± 20 rpm	
Load Method	Lever Loading	Dead Weight (Motorized Weight Loading)
Load Measuring	Balance, Max. 100 kgf (Scale 0.05 kgf) (Standard 5 kgf, 10 kgf, 15 kgf)	
Specimen Cup	Inner φ76 mm, H85 mm	
Timer	Max. 99 hr 99 min	
Accessories	Polyethylene Liner: 10 pcs	
Option	Heat Plate, Safety Cover	
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz	AC 100 V, 1-Phase, 15 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W400 × D460 × H1,060 mm/ 70 kg	W450 × D700 × H1,060 mm/ 120 kg

No. 159 FLOOR MATERIAL FATIGUE TESTER

No.159

JIS-A1454(Anti-Caster Test: B method), L1021-11, (L1023), L4406, DIN-54 342

FEATURE

This tester enables anti-caster tests for floor materials and floor cloth. By placing casters with a prescript load onto the continuously rotating circular specimen table, the operator is to evaluate the abrasion resistance of the test specimen by comparing the thickness of the test specimen before and after testing.

SPECIFICATION

Specimen	φ700 mm
Turn Table	φ800 mm ± 5 mm, T8 ± 1 mm (Acrylic Board)
Table Rotation Speed	19 rpm
Roller Holder	R130 mm, Caster Attachment: 3 pcs
Holder Rotation Speed	10 to 50 rpm (Standard 50 rpm)
Caster	Free Motion, φ30 to 70 mm
Test Load	Initial 10 kgf to Max. 120 kgf (Standard: 90 kgf)
Counter	6 Digits Preset Counter, 6 Digits Running Counter
Reverse Timer	1 to 999 sec
Suction Device	Vacuum Cleaner: 25 to 30 L/s
Power Source	AC 200 V, 3-Phase, 20 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W1,200 × D1,200 × H1,600 mm/ 700 kg

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

No. 162 SLIP TESTER

No. 162-S5 5 HANGINGS SLIP TESTER

No.162

No.162-S5

JIS-P8147(Gradient Method), ASTM-D1894, D3248, TAPPI-(T503), (T542), T815

FEATURE

■ No.162 SLIP TESTER

This tester is used to measure the friction coefficient of plastic film and paper according to the inclination method. By inclining the inclination board at a constant speed, the static friction coefficient can be measured at the tangent at which the test specimen starts to slip.

■ No.162-S5 5 HANGINGS SLIP TESTER

This tester is the digital 5 hangings version of the SLIP TESTER. The tester enables the operator to measure the static friction coefficient of 5 test specimens per test. The static friction coefficient can be displayed on the LCD screen and can also be printed out. The computer system of the tester will also calculate the average static friction coefficient of 5 test specimens.

SPECIFICATION

Model	No.162	No.162-S5
Sled	W60 mm, L100 mm, Mass 1,000 g	W41 mm, L26 mm, Mass 150 g, 5 pcs
Inclination Board	Upper Glass Plate, Slip Surface Affective Length: 600 mm	W320 mm, L325 mm
Inclination Angle	0 to 70° (Analog Scale, Unit 0.2°)	0 to 70° (Scale 0.1°)
Inclination Speed	1°/s	1°/s
Return Speed	-	3°/s, Automatic Return System
Power Source	AC 100 V, 1-Phase, 3 A, 50/60 Hz	AC 100 V, 1-Phase, 10 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W750 × D350 × H425 mm/ 29 kg	W550 × D600 × H320 mm/ 50 kg

No. 162-FS SLIP TESTER (HORIZONTAL METHOD)

No.162-FS
Option: Safety Cover Attached

No.162-FS
Option: Heating Plate Spec.

JIS-K7125, P8147, ASTM-D3247, ISO-8295, TAPPI-T816

FEATURE

This tester is used to measure the friction coefficient of plastic film and paper according to the horizontal method. The operator is to attach the test specimen to the sliding surface and sliding sled, then pull the sled with a metal wire that is connected to a load cell to acquire the static coefficient of friction and dynamic coefficient of friction.

SPECIFICATION

Test Method	Paper and Paperboard	Plastic Film
Weight	W60 mm, L100 mm, Mass 1,000 g	63 × 63 mm (Abrading Surface 40 cm^2), Mass 200 ± 2 g (1.96 ± 0.02 N)
Flat Board	W200 mm, L380 mm	
Specimen	Surface: W100 mm, L250 mm Sled: W60 mm, L120 mm	W80 mm, L200 mm, T0.5 mm or Less
Friction Measuring	Load Cell: Max. 10 N, 20 N, 50 N	
Speed	10.0 ± 0.2 mm/min	100 ± 10 mm/min or 500 ± 10 mm/min
Accessories	-	Accessory Plate (Mass Less than 5 g)
Option	Variable Speed Spec, Software, Recorder, Heating Plate Spec.	
Power Source	AC 100 V, 1-Phase, 5 A, 50/60 Hz	
Dimensions/ Weight (Approx.)	W570 × D280 × H330 mm/ 27 kg	

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

No. 162-OY O·Y PULL SLIP TESTER

No.162-OY
Option: Specimen Holder

JIS-A1454, A1509-12

FEATURE

This tester evaluates the slippage of floor material. The coefficient of slip resistance can be measured by the maximum tensile load at the point when the test specimen and the slip head come into contact. The slip head is pulled 18° upwards with a prescript load/speed to acquire the maximum tensile load for calculation of the coefficient of slip resistance (C.S.R). As an option, slippage of clay tiles can also be tested. In addition to the usual C.S.R, C.S.R-B can also be calculated.

SPECIFICATION

Specimen	100 × 120 mm or More (Ceramic Tile: 90 × 135 mm or More)
Sled	Bottom Surface 80 × 70 mm
Vertical Weight Load	Initial 294 N (30 kgf) to Max. 785 N (80 kgf) (Standard: 785 N)
Tension Angle	18°
Tension Load Measuring	Load Cell, Max. 5 kN (Scale 1 N)
Tension Load Speed	785 N/s
Software	Windows Compatible
Option	Specimen Holder (Standard and Nosing Edge type), Ceramic Tile Spec (with Sled, Testing Powder, C.S.R.-B Measuring Software)
Power Source	AC 100 V, 1-Phase, 10 A, 50/60 Hz
Dimensions/ Weight (Approx.)	Main Body: W1,500 × D500 × H1,100 mm/ 300 kg Control Box: W230 × D310 × H210 mm/ 5 kg

No. 170 CLASH-BERG TORSION FLEXIBILITY TESTER (MANUAL)

No. 170-AUTO CLASH-BERG TORSION FLEXIBILITY TESTER (AUTOMATIC)

No.170

No.170-AUTO

JIS-(K6734), (K6745), K6773, K6924-2, ASTM-D1043, ISO-458

FEATURE

■ No.170 CLASH-BERG TORSION FLEXIBILITY TESTER (MANUAL)

This tester is used to measure the softening temperature of plastic. The test specimen is to be attached to the upper and lower Chucks of the tester and then dipped into water which the temperature is raised at a constant speed. At every 5 ˚C the water temperature has risen, the operator is to leave the test specimen untouched for 3 minutes. After the 3 minutes duration, twisting torque is applied to the test specimen so that the rigidity coefficient can be calculated from the twisting angle. The softening temperature will be acquired from the temperature-rigidity coefficient curving line.

■ No.170-AUTO CLASH-BERG TORSION FLEXIBILITY TESTER (AUTOMATIC)

This tester reads the twisting angle of the test specimen via encoder to calculate the rigidity coefficient. The temperature-rigidity coefficient curving line will be displayed on the PC to acquire the softening temperature.

SPECIFICATION

Model	No.170	No.170-AUTO
Specimen	W6.35 ± 0.03 mm, L64 mm, T0.8 to 1.5 mm	
Chuck Distance	40 mm	
Angle Scale	0 to 360˚ (Scale Unit 1˚) *Max. Angle 270˚	0 to 270˚ (Scale Unit 0.1˚), Detection: Rotary Encoder
Temperature Range	-60 to 100 ˚C (Dry Ice Cooling)	
Heat-Up Speed	2 ˚C/min	
Torque Device	Pulley Type	
Weight	5 g, 10 g, 20 g and 50 g	
Software	-	Windows Compatible
Accessories	Notching Tool, Specimen Setting Gauge	
Power Source	AC 100 V, 1-Phase, 10 A, 50/60 Hz	
Dimensions/ Weight (Approx.)	W300 × D400 × H780 mm/ 40 kg	Main Body: W400 × D450 × H1,050 mm/ 40 kg Control Box: W350 × D500 × H300 mm/ 13 kg

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

No. 171 COMPRESSION SET TESTER

No.171

JIS-A5756, K6262, ASTM-D395, ISO-815

FEATURE

This tester measures the compression set of vulcanized rubber and thermo-plastic rubber at room temperature, low temperatures, and high temperatures to acquire the settling of the test specimen. The compression ratio can be set by changing the spacer.

SPECIFICATION

	Large Specimen	Small Specimen
Test Method	φ29.0 ± 0.5 mm T12.5 ± 0.5 mm	φ13.0 ± 0.5 mm T6.3 ± 0.3 mm
Spacer	12 pcs, T9.3 to 9.4 mm (25 % Compression)	12 pcs, T4.7 to 4.8 mm (25 % Compression)
Dimensions/ Weight (Approx.)	W290 × D150 × H145 (20 × 3 Stages) mm/ 20 kg	

No. 181 FILM IMPACT TESTER

No. 181-L FILM IMPACT TESTER (WITH REFRIGERATING MACHINE)

No.181

No.181-L
Option: Digital Display Ver.

ASTM-D3420

FEATURE

■ No.181 FILM IMPACT TESTER

This tester is used to evaluate the impact hole punching endurance of plastic film, paper, etc. A hemispherical impact ball is attached to the head of the pendulum so that the impact workload to punch a hole into the test specimen can be directly read on the scale. The tester can also be assorted with a low temperature chamber to conduct the impact test at low temperatures.

■ No.181-L FILM IMPACT TESTER
(WITH REFRIGERATING MACHINE)

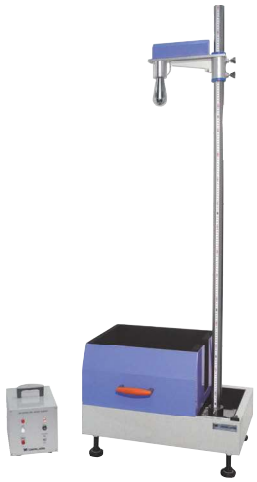
This tester can also be equipped with a low temperature chamber in order to conduct tests at low temperatures.

SPECIFICATION

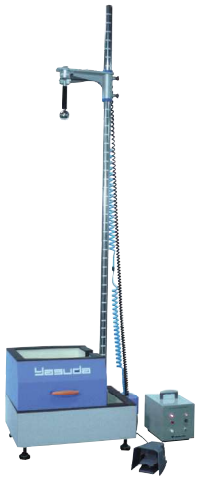
Model	No.181	No.181-L
Capacity	0 to 1.5 J (Scale 0.05 J)/ 0 to 3.0 J (Scale 0.1 J) (2 ranges) 0 to 3.0 J (Scale 0.1 J)/ 0 to 6.0 J (Scale 0.2 J)	
Impact Head	Hemispherical Shape, R12.7 mm, R6.35 mm	
Lift-Up Angle	90° (Additional Weight type)	60°, 90° (2 Stage Type)
Specimen	φ80 mm	
Clamp	Inner φ60 mm	
Temperature Range	-	-30 to 60 °C (Refrigerator)
Option	Digital Display Ver.	
Power Source	-	AC 200 V, 3-Phase, 20 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W600 × D190 × H460 mm/ 32 kg	W1,080 × D700 × H930 mm/ 150 kg

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

No. 183 FALLING BALL IMPACT TESTER



No.183 (Magnet Holder Type)



No.183 (Air Holder Type)

JIS-(K5400), K5600-5-3, (K6718), (K6745), K7211, ISO-6272

FEATURE

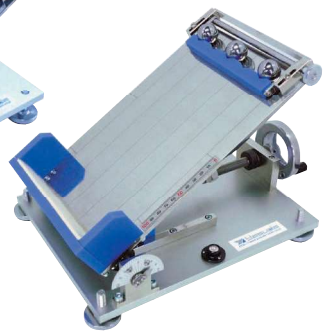
This tester is used to evaluate the impact resistance of rigid plastic, coating, etc. The operator is to observe the destruction status of the test specimen after impact from a falling weight dropped from a given testing height.

SPECIFICATION

Falling Height	50 to Max. 1,000 mm (Pitch 50 mm) 50 to Max. 2,000 mm (Pitch 50 mm)
Falling Weight	Depends on Standard
Specimen Holder	Depends on Standard
Accessories	Spirit Level: 1 pc, Foot Switch
Power Source	AC 100 V, 1-Phase, 3 A, 50/60 Hz
Dimensions/ Weight (Approx.)	Main Body: W660 × D460 × H2,000 to 2,500 mm/ 100 to 115 kg Control Box: W200 × D280 × H215 mm/ 7 kg

No. 183-BT BALL TACK TESTER

No.183-BT (Fixed Type)



No.183-BT (Adjustable Type)

JIS-Z0237

FEATURE

This tester is used to evaluate the tackiness of adhesive tape with a simple method. The operator is to measure the largest ball that stops rolling within the measurement site of the inclination board.

SPECIFICATION

	Fixed Type	Adjustable Type
Gate	5 Places	
Inclination Board	Inlet Length: 100 mm Measurement Length: 100 mm	
Inclination Angle	30°	15° to 45°
Ball	φ1/16" to φ1" (31 kinds, 1 pc each): 1 set	
Dimensions/ Weight (Approx.)	W240 × D315 × H230 mm/ 5.5 kg	W240 × D315 × H230 mm/ 10 kg

No. 183-S FALLING DART IMPACT TESTER

No.183-S

JIS-K6742, K6743

FEATURE

This tester is used to evaluate the impact resistance of hard vinyl chloride pipes (HIVP) and hard vinyl chloride pipe joints (HITS). The operator is to observe the destruction status of the test specimen impacted by a falling weight dropped from a given testing height.

SPECIFICATION

Falling Dart	Flat Cylinder Bottom: Mass 1 kg, 3 kg, 9 kg (3 kinds) Circular Cone: Mass 9 kg
Receiver	Flat type, V type (2 kinds)
Falling Height	100 to Max. 2,000 mm
Falling Device	Solenoid Coil
Repeated Impact Prevention Device	Ratchet-Operated
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W800 × D800 × H3,000 mm/ 200 kg

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

No. 184-A MCBURNEY INDENTATION TESTER

No. 184-B RESIDUAL INDENTATION TESTER

No.184-A

No.184-B

JIS-A1454, A5705

FEATURE

■ No.184-A MCBURNEY INDENTATION TESTER

This tester is used to test the indentation of floor material. After adjusting the dial gauge to 0 within 5 seconds after setting an initial load of 9 N, the operator is to apply the 133 N load onto the test specimen and read the indentation depth after 1 minute has past.

■ No.184-B RESIDUAL INDENTATION TESTER

This tester is used to test the residual indentation of floor material. The operator is to apply 356 N of load onto the test specimen for 10 minutes (if the test specimen is a foamed material, 222 N of load for 5 minutes). After the test duration is met, the load is removed and the indentation depth of the test specimen after the load has been removed is measured after 60 minutes has passed.

SPECIFICATION

Model	No.184-A	No.184-B
Test Load	Initial 9 N, Total 133 ± 1 N	356 ± 1 N, 222 ± 1 N
Indenter	Hemispherical Shape, φ6.35 ± 0.01 mm	Standard: Flat Shape, φ4.5 mm Famed Material: Hemispherical Shape, φ19 mm
Dial Gauge	Scale 1/100 mm, Stroke Max. 10 mm	Scale 1/100 mm, Stroke Max. 10 mm
Option	-	Automatic Loading Device, Timer
Dimensions/ Weight (Approx.)	W180 × D180 × H360 mm/ 18 kg	W350 × D350 × H800 mm/ 65 kg

No. 187 OZONE AGING TESTER

No.187

JIS-K6259, ISO-1431

FEATURE

This tester is used to evaluate the ozone resistance of vulcanized rubber and thermo-plastic rubber while exposed to static tensile strain, with air containing a definite concentration of ozone and at a definite temperature to examine the ozone resistance through observation of cracks. The tester can also apply dynamic tensile strain as an option. To control the ozone consistency, the tester adopts the ultraviolet absorption method.

SPECIFICATION

Ozone Density	20 to 250 pphm
Ozone Generator	Ozone Lamp
Inner dimensions	500 × 500 × 500 mm (Volume of 0.125 m^3)
Ozone Density Measuring and Adjusting Device	Ultraviolet Absorption Method Indication and Recording, PID Control
Temperature Range	Max. 70 °C
Timer	Test Timer (Reset Type), Lamp Life Timer (Running Type)
Static Tensile Device	Tensile Strain 0 to 100 %, 16 Hangings, Rotation Speed 2 rpm
Dynamic Tensile Device (Option)	Reciprocal Motion Frequency 0.5 ± 0.025 Hz (30 ± 1.5 times/min), 12 Hangings
Option	Revolution Static Tensile Strain Device
Power Source	AC 200 V, 3-Phase, 20 A, 50/60 Hz
Dimensions/ Weight (Approx.)	Differs by Specifications.

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

No. 189-PFA SAMPLE FORMING MACHINE (AUTOMATIC)

SAMPLE

No.189-PFA

FEATURE

This machine enables the operator to prepare dumbbell type test specimens by cutting rigid plastic sheets with 2 spiral cutters. The rotating speed of the cutters, cutting pressure, and the sending speed can be adjusted to provide the operator with optimum preparation of dumbbell type test specimens.

SPECIFICATION

Spiral Cutter	φ25 mm, T25 mm
Cutter Rotation Speed	100 to 1,200 rpm
Pressure Gauge	Max. 1 MPa (Scale 0.05 MPa)
Clamp Feed Speed	0.3 to 10 mm/s
Forming Jig	To be Specified
Accessories	Suction Device (Vacuum Cleaner)
Option	Air Compressor
Power Source	AC 200 V, 3-Phase, 20 A, 50/60 Hz
Air Source	0.5 MPa or More
Dimensions/ Weight (Approx.)	W810 × D510 × H560 mm/ 100 kg

No. 189-PFA-S SAMPLE FORMING MACHINE (FULLY AUTOMATIC)

SAMPLE

No.189-PFA-S

FEATURE

This model is the fully automated version of the SAMPLE FORMING MACHINE, which can cut sheet material into pieces in the dumbbell or rectangle shapes.

SPECIFICATION

Spiral Cutter	φ25 mm, T25 mm
Cutter Rotation Speed	1,000 to 3,000 rpm
Pressure Gauge	Max. 1 MPa (Scale 0.05 MPa)
Clamp Feed Speed	30 to 300 mm/min
Forming Jig	To be Specified
Accessories	Cutter 2 sets (2 pcs/set), Suction Device (Vacuum Cleaner), Air Gun (Built In)
Safety Device	Safety Cover, Overcurrent Protection
Power Source	AC 200 V, 3-Phase, 40 A, 50/60 Hz
Air Source	0.5 to 0.65 MPa
Dimensions/ Weight (Approx.)	W1,350 × D1,150 × H1,830 mm/ 710 kg

No. 189-PN NOTCHING MACHINE

SAMPLE

No.189-PN

JIS-K7144, ISO-2818

FEATURE

This machine is used to notch test specimens for Charpy and Izod impact tests. When replacing the notch cutter blade, the blade can be independently taken off, adding to low running costs.

SPECIFICATION

Clamp	Opening Max. 40 mm (Standard: 4 mm × 10 pcs), Feed Speed 1.75 mm/ 1 turn
Cutter Rotation Speed (Approx.)	600 rpm
Notch Depth	Manual, Range 0 to 4 mm (Scale 0.01 mm)
V-Notch Cutter	Single Tooth Tip, Outer Diameter φ75 mm, T5 mm, Top Angle 45˚, Top R0.25 mm, Material: High Speed Steel (Option: Cemented Carbide)
Option	Pneumatic Clamp, U-Notch Cutter
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W420 × D530 × H380 mm/ 50 kg

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

No. 189-PNA/PNCA NOTCHING MACHINE (AUTOMATIC)

SAMPLE

No.189-PNCA
(Closed Image)

No.189-PNCA
(Open Image)

JIS-K7144, ISO-2818

FEATURE

Adding an electronic specimen sending system together with side cutting and electronic notch depth adjusters to the usual NOTCHING MACHINE, the automated series enables the operator to conduct optimal notching conditions for impact test samples.

SPECIFICATION

Model	No.189-PNA	No.189-PNCA
Clamp	Opening Max. 80 mm (4 mm × 20 pcs), Feed Speed 50 to 600 mm/min	
Cutter Rotation Speed (Option)	150 to 1,780 rpm	
Notch Depth	Automatic, Range 0 to 4 mm (Scale 0.01 mm)	
V-Notch Cutter	Single Tooth Tip, Outer Diameter φ75 mm, T5 mm, Top Angle 45°, Top R0.25 mm, Material: High Speed Steel (Option: Cemented Carbide)	
Side Cutter	-	L80 mm (Standard), Outer Diameter φ100 mm, T1.6 mm
Accessories	Suction Device (Vacuum Cleaner)	
Option	Pneumatic Clamp, U-Notch Cutter	
Power Source	AC 100 V, 1-Phase, 15 to 20 A, 50/60 Hz	
Dimensions/ Weight (Approx.)	W810 × D510 × H560 mm/ 60 kg	

No. 191-TM/WM TEST MIXING ROLL

No.191-TM
Option: Y-Shape Type Emergency Stop Bar
Area Optical Sensor

JIS-K6742, K6743

FEATURE

This machine is designed compactly with the purpose of installation in testing labs. The machine is prioritized on safety by being equipped with a variety of emergency shutdown systems. The machine can be assorted with either an electric heating or a steam heating system.

SPECIFICATION

Model	No.191-TM	No.191-WM
Roll	φ3" × 8", φ4" × 8", φ5" × 12", φ6" × 15", φ8" × 20" (5 kinds)	
Heating Method	Electric Heating (Cartridge Heater)	Steam Heating (Rotary Joint)
Temperature Range	Max. 200 °C (Option: Max. 300 °C)	Max. 200 °C (Vapor Pressure of 1.5 MPa or more)
Gear Ratio	1: 1.25	
Roll Rotation Speed	Front 12.5 to 31.25 rpm, Rear 10 to 25 rpm	
Safety Device	Knee Punch Stop Plate, Emergency Stop SW, Overload Protecting Metal Breaker (Option: Y-Shape Type Emergency Stop Bar, Area Optical Sensor, Inverse Rotation Device)	
Oiler	Needle Valve Type	
Accessories	Shifting Plate: 1 set, Mill Pan, High-Temp. Specific Lubricant	
Option	Variable Speed Control Spec, Single Driving Spec, Digital Temperature Controller, Automatic Lubricating Device, Doctor Device, Hot Water Circulation Tank (Only for WM Model), Oil Circulating Device (Only for WM Model)	
Power Source	AC 200 V, 3-Phase, 20 to 50 A, 50/60 Hz	
Dimensions/ Weight (Approx.)	Differs by Specifications.	

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

No. 196 ELECTRIC HEATING SYSTEM TEST PRESS

SAMPLE

No.196
Option: Safety Cover

No.196
Option: Electric Hydraulic Pump Type
Safety Cover

FEATURE

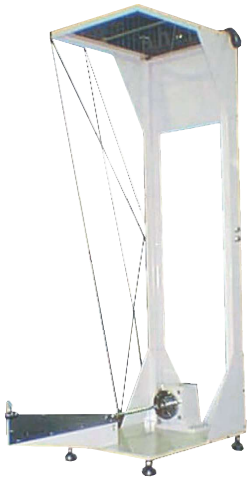
This machine is for compressing plastic and rubber. The heat platen is heated electronically and pressure is applied with a manual oil pressure pump. The upper platen can be adjusted and fixed to the optimal position with a limit nut to provide optimal operability.

SPECIFICATION

Platen Size	355 × 305 mm
Platen Opening	Max. 550 mm
Ram Diameter	φ150 mm
Ram Stroke	Max. 200 mm
Maximum Pressure	Max. 20.6 MPa (210 kgf/cm^2)
Maximum Force	Max. 37 ton
Temperature Range	Max. 250 ˚C (Option: Max. 400 ˚C)
Option	Hydraulic Pump System, 2 Stages, Water Cooling Platen, Safety Cover
Power Source	AC 200 V, 3-Phase, 40 to 50 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W630 × D470 × H1,550 mm/ 600 kg

No. 200 LUPKE TYPE REBOUND RESILIENCE TESTER

JIS-K6255, ISO-4662



No.200

FEATURE

This tester is for measuring the rebound resilience of vulcanized rubber and thermo-plastic rubber. The iron made pendulum, hung from a height of 2,000 mm by 4 hanging wires, impacts the test specimen horizontally at a height of 100 mm. The rebound resilience can be read to the quotient (1/100).

SPECIFICATION

Hammer	Hemispherical Shape, φ12.50 ± 0.05 mm, L356 mm, Mass 0.35 ± 0.01 kg
Impact Speed	1.40 ± 0.01 m/s
Hammer Falling Height	100 mm
Hammer Hanging Height	2,000 mm
Specimen	Cylindrical Shape, T12.5 ± 0.5 mm, φ29.0 ± 0.5 mm
Clamp	Inner φ20 mm, Outer Diameter φ35 mm
Power Source	AC 100 V, 1-Phase, 3 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W1,460 × D900 × H2,270 mm/ 60 kg

No. 212 YSS HEAT SEALER

SAMPLE

No.212
Option: Safety Cover, Jig for Hot Tack
Specimen Retaining

FEATURE

This tester is used to evaluate the thermal adhesion of cellophane tape, plastic film, etc. The operator can set the thermal adhesion condition such as temperature, pressure, and time of heat sealing. The pressure is applied by air cylinder to provide stable results.

SPECIFICATION

Seal Plate	Min. W5 mm to Max. W20 mm, L300 mm
Temperature Range	Max. 300 ˚C *The surface flatness will only be ensured at the specified temperature.
Pressing Method	Pneumatic Cylinder, Stroke Max. 45 mm
Pressure Gauge	Max. 0.5 MPa (Scale 0.01 MPa)
Timer	Max. 99.99 sec
Accessories	Foot Switch
Option	Safety Cover, Jig for Hot Tack, Specimen Retaining, Air Compressor
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz
Air Source	0.5 MPa or More
Dimensions/ Weight (Approx.)	Main Body: W460 × D350 × H550 mm/ 70 kg Control Box: W200 × D330 × H400 mm/ 35 kg

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

No. 213 JIS HEAT SEALER

No.213

JIS-Z1514, (Z1521), Z1707

FEATURE

This tester is used to heat seal cellophane, plastic film, etc., according to the JIS standard. The tester can provide an accurate weight load by applying a dead weight load to the specimen.

SPECIFICATION

Seal Plate	20 × 40 mm × 3 line or 20 × 180 mm × 1 line
Temperature Range	Max. 300 °C *The surface flatness will only be ensured at the specified temperature.
Pressing Method	Dead Weight, Opening 8 mm
Load Pressure	49 to 294 kPa (0.5 to 3.0 kgf/cm^2)
Timer	Max. 99.99 sec
Accessories	Foot Switch
Power Source	AC 100 V, 1-Phase, 10 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W750 × D350 × H670 mm/ 65 kg

No. 214 OXYGEN INDEX FLAMMABILITY TESTER

No.214

No.214-ISO

No.214-HT (High-Temp. Compatibility)
Option: Oxygen Level Meter

JIS-K6269, K7201, L1091, ASTM-D2863, ISO-4589-2, Japanese Fire Services Act

FEATURE

This tester is used to evaluate the oxygen index flammability of plastic and rubber. The operator is to check the lowest oxygen level (the oxygen level is acquired from a mixture gas of oxygen and nitrogen) of which the test specimen is capable of burning inside the flaming column.

SPECIFICATION

Model	No.214	No.214-ISO
Glass Column	Inner φ75 + 3 mm, H450 ± 5 mm	Inner φ95 mm, H450 mm, Upper Seal φ40 mm
Flow Meter	Oxygen: Max. 8.6 l/min (Scale 0.1 l/min) Nitrogen: Max. 11 l/min (Scale 0.1 l/min)	Oxygen: Max. 20 l/min (Scale 0.1 l/min) Nitrogen: Max. 20 l/min (Scale 0.1 l/min)
Pressure Gauge	Oxygen: Max. 0.1 MPa (Scale 0.002 MPa) Nitrogen: Max. 0.1 MPa (Scale 0.002 MPa) Mixed Gas: Max. 0.1 MPa (Scale 0.002 MPa)	
Burner	Flame L6 to 25 mm (Adjustable)	
Specimen	Plastic, Rubber and Textile	
Accessories	U-shape Specimen Holder, Glass Bead	U-shape Specimen Holder
Option	Thermometer (for measurements inside the flaming column), Jig for Hoist Specimen, HighTemperature Testing Spec (HT), Oxygen Density Analyzer	
Power Source	-	AC 100 V, 1-Phase, 5 A, 50/60 Hz
Heat Source	Propane Gas or Urban Gas	
Gas Supply	Oxygen and Nitrogen	
Dimensions/ Weight (Approx.)	W600 × D290 × H660 mm/ 30 kg	W600 × D250 × H560 mm/ 20 kg

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

No. 216 UNIVERSAL MATERIAL TESTER

No.216-5kN

No.216-10kN
Option: Extensometer

FEATURE

This universal tensile elongation / compression tester (Auto Strain / Strograph) is best suited for plastic and rubber. The tester capacity comes in either a maximum of 5 kN or 10 kN respectively. The test specimen is attached to chucks on both ends and is applied elongation / compression force continuously through loadcell until breakage. Tester control and tensile strength calculation are both conducted via touch panel interface.

SPECIFICATION

Model	No.216-5kN	No.216-10kN
Test Load	Max. 5 kN	Max. 10 kN
Stroke	1,000 mm*	
Test Speed	1 to 1,000 mm/min	1 to 500 mm/min
Accessories	Chuck shapes are to be consulted.	
Option	CSV Export Software, Extensometer (Stroke: 50 to 500 mm, Accuracy: ± 0.5 mm)	
Power Source	AC 100 V, 1-Phase, 10 A, 50/60 Hz	AC 100 V, 1-Phase, 10 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W550 × D700 × H1,630 mm/ 130 kg	W730 × D750 × H1,560 mm/ 180 kg

* The length of Chucks/ Loadcell is not included.

No. 219 ELECTRIC HEATING SYSTEM MINI TEST PRESS

SAMPLE

No.219

FEATURE

This press machine is used to compress plastic and rubber. It is designed compactly so that it can be installed in testing labs.

SPECIFICATION

Platen Size	200 × 200 mm
Platen Opening	Max. 90 mm
Cylinder Diameter	φ45 mm
Max. Force	Max. 100 kN (Hydraulic: 62.9 MPa)
Temperature Range	Max. 300 ˚C (Option: Max. 400 ˚C)
Option	Water Cooling Platan
Power Source	AC 200 V, 1-Phase, 20 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W410 × D335 × H760 mm/ 130 kg

No. 220 DART IMPACT TESTER

No.220

JIS-K7124-1, Z1702, Z1707, ASTM-D1709, ISO-7765-1

FEATURE

This tester is used to evaluate the impact resistance of plastic film and plastic sheet according to the stair case method. The operator is to free fall a dart from the prescribed height to determine the weight of the dart that destructs 50 % of the test specimen.

SPECIFICATION

Dart	Method A: Hemispherical shape, φ38 ± 1 mm, Mass 40 g Method B: Hemispherical shape, φ50 ± 1 mm, Mass 320 g
Dart Mass	Method A: Max. 890 g, Method B: Max. 1,410 g
Falling Height	Method A: 0.66 ± 0.01 m, Method B: 1.50 ± 0.01 m
Pneumatic Clamp	Inner Diameter φ125 ± 2 mm
Pressure Gauge	Max. 1 MPa (Scale 0.05 MPa)
Accessories	Spirit Level: 1 pc, Foot Switch
Option	Air Compressor, Low Temperature Oven Spec, Safety Cover
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz
Air Source	0.5 MPa or More
Dimensions/ Weight (Approx.)	W620 × D350 × H2,150 mm/ 60 kg

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

No. 252-UL-94 PLASTIC FLAMMABILITY TESTER

No.252-UL-94 (MANUAL)

No.252-UL-94 (ELECTRIC SYSTEM)

UL-94, JIS-K6911, ASTM-D635, D3801, D4804, D5025, D5207, ISO-1210

FEATURE

■ No.252-UL-94 PLASTIC FLAMMABILITY TESTER (MANUAL)

This tester is used to evaluate the burn-resistance of plastic according to the vertical flaming test (VB) and horizontal flaming test (HB). By adding the option jigs, the tester can also carry out other test methods (5V, VTM, HBF, HF).

■ No.252-UL-94 PLASTIC FLAMMABILITY TESTER (ELECTRIC SYSTEM)

The tester has been improved so that the operator can conduct the test easily using the jog dial type controller and touch panel display, which is equipped with voice guidance. With these functions, the operator can concentrate on observing the condition of the test specimen, while controlling the burner to adjust the distance between the flame and the test specimen.

SPECIFICATION

Model	No.252-UL-94 (Manual)	No.252-UL-94 (Electric System)
Chamber	1,000 × 555 × 905 mm (Volume Approx. 0.5 m^3)	1,000 × 555 × 905 mm (Volume Approx. 0.5 m^3)
Specimen	L125 ± 5 mm, W13.0 ± 0.5 mm, T13 mm or less	
Burner	L100 ± 10 mm, Inner Diameter φ9.5 ± 0.3 mm	
Burner Base	Slide type (With Operation Handle), Inclination Angle 45 ± 2˚, 20 ± 5˚ (5 V)	Slide type (With Jog Dial Type Controller), Inclination Angle 45 ± 2˚, 20 ± 5˚ (5 V)
Burner Calibration Device	Flow Meter: Max.150 ml/min (Scale 2 ml/min) (Standard 105 ml/min) Flow Meter: Max. 1,000 ml/min (Scale 10 ml/min) (Standard 965 ml/min) Manometer: Max. 200 (± 100) mmH_2O (Scale 1 mmH_2O) (Standard 10 mmH_2O) Timer, Built-In Thermometer	
Accessories	Flame Gauge (20 mm) (Option: 125 mm & 38 mm), Ring Stand, Wire Mesh, Dry Cotton Pad, Fireproof Gloves, Gas Lighter	
Option	Horizontal Burning Support Fixture (HB), Plaque Support Fixture (5 V), Spring Clamp (VTM), Foam Support Fixture	
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz	AC 100 V, 1-Phase, 10 A, 50/60 Hz
Heat Source	Methane Gas (Purity: Over 98 %)	
Dimensions/ Weight (Approx.)	W1,510 × D610 × H1,100 mm/ 200 kg	W1,500 × D615 × H1,100 mm/ 230 kg

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

No. 258 IMPACT TESTER

No.258
Option: Digital Touch Panel Ver.
Curtain for Litter Control, Mini Printer etc.

JIS-K7110, K7111-1, ASTM-D256, D6110, ISO-179-1, 180

FEATURE

This is a pendulum type impact tester best suited for testing plastic materials. Both Charpy impact testing and Izod impact testing can be conducted by replacing the hammer and anvil.
The tester can be assorted with a rotary encorder, which enables automatic scale reading and calculation (Digital Touch Panel/ PC spec.), in addition to the standard analog ver.
The tester specifications are determined by selecting the base model, and adding the necessary options.

SPECIFICATION

Standard	JIS/ISO			ASTM	
Test Method	Charpy Impact Test		Izod Impact Test	Charpy Impact Test	Izod Impact Test
Base Standards	JIS B7739: 2011, ISO 13802: 1999			-	
Reference standards	JIS K7111-1: 2012 ISO 179-1: 2010		JIS K7110: 1999 ISO 180: 2000	ASTM D6110-10	ASTM D256-10
Hammer Capacity*1 (J)	0.5, 1, 2, 4, 5	7.5, 15, 25*2	1, 2.75, 5.5, 11, 22	2.7 or More (Track Record: 0.5, 1, 2, 4, 5, 7.5, 15, 25)	2.7 to 21.7 (Track Record: 1, 2.75, 5, 11, 22)
Anvil	JIS/ISO Charpy Anvil		JIS/ISO/ASTM Izod Anvil	ASTM Charpy Anvil	JIS/ISO/ASTM Izod Anvil
JIS/ISO Charpy Anvil Lift	Necessary	-	-	-	-
Hammer Impact Point Setting Gauge	JIS/ISO Hammer Impact Point Setting Gauge			ASTM Hammer Impact Point Setting Gauge	
Specimen Setting Gauge	JIS/ISO Charpy Specimen Setting Gauge		JIS/ISO Izod Specimen Setting Gauge	ASTM Charpy Specimen Setting Gauge	ASTM Izod Specimen Setting Gauge*3
Option	Digital (Touch Panel, PC) Ver., Safety Cover (Full Cover), Curtain for Litter Control, Hammer Additional Weight, Mini Printer (Thermal paper 10 rolls)*4, CSV Down load Tool (includes LAN cable) *4, Analog Scale & Pointer, Windows PC*5, Additional Weight for Main Body*6				
Impact speed	2.9 m/s	3.8 m/s	3.5 m/s	3.46 m/s	3.5 m/s
Lift-up Angle	150°				
Hammer Edge	R2 ± 0.5 mm, Angle: 30 ± 1°		R0.8 ± 0.2 mm	R3.17 ± 0.12 mm, Angle: 45 ± 2°	R0.8 ± 0.2 mm
Anvil Edge Radius	R1 ± 0.1 mm		-	R3.17 ± 0.12 mm	-
Anvil Supporting Edge	-		R0.2 ± 0.1 mm	-	R0.25 ± 0.12 mm
Anvil Supporting Length	$62\ ^{+0.5}_{0}$ mm*7		-	101.6 ± 0.5 mm	-
Anvil-Edge Distance	-		22 ± 0.2 mm	-	22 ± 0.05 mm
Dimensions (Approx.)	W500 × D350 × H850 mm (Digital Touch Panel Spec: D + 250 mm, Curtain for Litter Control: W + 520 mm, Safety Cover: W + 500 × H + 275 mm)				
Weight (Approx.)	125 kg (Digital Ver.: + 5 kg, Curtain for Litter Control: + 5 kg, Safety Cover: + 75 kg)				
Power Source	Curtain Type: 1-Phase, AC 100 to 240 V, 3 A, 50/60 Hz, Full-cover Type: 1-Phase, AC 100 V, 5 A, 50/60 Hz, 1-Phase, AC 220 V, 3 A, 50/60 Hz				
Accessories	Assortment of Tools				

*1 Custom Hammers can also be provided. kgf·cm Hammers are also available. 2 kinds of additional weights can be attached to a single hammer./
*2 50 J Hammer is not available./ *3 Setting Gauge differs depending on the size of specimen thickness./
*4 Available when Digital Touch Panel Spec. is chosen./ *5 Required for the CSV Download Tool for the Digital Touch Panel Type spec., and Digital PC Type spec./
*6 Required when more than 15 J Hammer is used./ *7 This length is for JIS K7111-1. If other lengths are required, please let us know.

Example

1 Analog Ver.,Charpy (JIS/ISO 7.5 J)

Charpy JIS/ISO 7.5 J Hammer, JIS/ISO Charpy Anvil, JIS/ISO Hammer Impact Point Setting Gauge,
JIS/ISO Charpy Specimen Setting Gauge, Curtain for Litter Control, Analog Scale & Pointer

The operator needs to check the pointer value after each test. Test results are calculated manually.

2 Digital Touch Panel Ver., Charpy (JIS/ISO 2 J)/ Izod (ASTM 2.7 J)

Digital Touch Panel Ver., JIS/ISO Charpy 2 J Hammer, ASTM Izod 2.7 J Hammer, JIS/ISO Charpy Anvil,
JIS/ISO/ASTM Izod Anvil, JIS/ISO Charpy Anvil Lift. JIS/ISO Hammer Impact Point Setting Gauge,
ASTM Hammer Impact Point Setting Gauge, JIS/ISO Charpy Specimen Setting Gauge,
ASTM Izod Specimen Setting Gauge (for each specimen thickness variation), Curtain for Litter Control, Mini Printer,
CSV Down load Tool, Windows PC

The operator can check the test result calculated automatically on the Touch Panel, and transfer data to PC.
Human error is minimalized as the test result is automatically measured by encoder and caluculated automatically.

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

No. 258-L IMPACT TESTER (WITH REFRIGERATING MACHINE)

No. 258-UTL IMPACT TESTER (WITH ULTRA LOW TEMP. REFRIGERATING MACHINE)

No.258-L
Option: Acrylic Safety Cover

No.258-UTL
Option: Acrylic Safety Cover

JIS-K7110, K7111-1, ASTM-D256, D6110, ISO-179-1, 180

FEATURE

This tester enables the operator to conduct Charpy and Izod impact tests in low temperature conditions. The low temperature chamber is double-sealed and the inner door is equipped with working gloves so that the temperature inside the oven can be kept constant while the operator is setting the test specimen.

SPECIFICATION

Model	No.258-L	No.258-UTL
Temperature Range	-35 °C to 60 °C (Refrigerating Machine)	-50 °C to 60 °C (Refrigerating Machine)
Hammer Capacity (J)	Track Record Charpy Impact Test: 0.5, 1, 2, 4, 5, 7.5, 15, 25 Izod Impact Test: 1, 2.75, 5, 11, 22	
Safety Device	Interlock System on the Upper Door, Torque Adjustment Device (Only for Izod) Acrylic Safety Cover (Option)	
Others	Refer to the list (No. 258 Impact Tester) on the left.	
Power Source	AC 200 V, 3-Phase, 40 A, 50/60 Hz	AC 200 V, 3-Phase, 30 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W1,110 × D1,050 × H1,770 mm/ 450 kg	W1,670 × D1,480 × H2,130 mm/ 710 kg

No. 258-ZA IMPACT TESTER (FULLY AUTOMATIC)

No.258-ZA

JIS-K7110, K7111-1, ASTM-D256, D6110, ISO-179-1, 180

FEATURE

This is the fully automatic version of the IMPACT TESTER (Charpy and Izod). A maximum of 210 impact tests can be continuously conducted just by setting the test specimen into the preparation cassette and inputting the test conditions into the computer software. The test specimen will automatically be set from the preparation cassette which is located inside the low temperature oven. The test specimen will be impacted within 5 seconds after being transferred from the preparation cassette.

SPECIFICATION

Hammer Capacity*1 (J)	Capacity 0.5 to 25 J (Charpy),7.5 J (Izod), Automatic Lift-Up Device, Automatic Stop Device
Anvil	Automatic Specimen Setting Device, Rejection Device for Tested Specimens
Test Specimen	70 pcs × 3 Cassettes (Total 210 pcs) *When specimen size is W10 × T4 × L80 mm
Software	Windows Compatible
Option	Hammer Height Adjustment Device (Only for Charpy), Low Temperature Oven, Specimen Size Measuring Device, Collect Turn Table for Tested Specimen (20 pcs)
Power Source	AC 100 V, 1-Phase, 10 A, 50/60 Hz Low Temp. Oven: AC 200 V, 3-Phase, 30 A, 50/60 Hz
Air Source	0.5 MPa or More
Dimensions/ Weight (Approx.)	W1,150 × D1,050 × H1,950 mm/ 700 kg

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

No. 260 FOAM RUBBER REPETITIVE COMPRESSION TESTER

No.260
Option: Safety Cover

JIS-(K6382), K6400-4

FEATURE

This tester is used to test repeated compression residual strain of polyurethane foam and latex foam soft material, according to the constant displacement method. The test specimen is placed between two parallel plates and is repeatedly compressed 80,000 times so that the test specimen's thickness becomes 50% of the initial size. 30 minutes after the test specimen has been repeatedly compressed, the decreasing rate of the test specimen's thickness is to be measured.

SPECIFICATION

Hanging	2 Hangings
Specimen	T20 mm or More, Width or Length 50 mm or More
Compression Platen	310 × 310 mm, Vent φ6 mm (Pitch 20 mm)
Compression Stroke	10 to 100 mm (2 Lines Adjustable)
Compression Speed	60 times/min
Counter	6 Digits Preset Counter
Option	Safety Cover
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W900 × D600 × H1,050 mm/ 170 kg

No. 268 UNIVERSAL IMPACT TESTER

No.268
Option: Mini Printer

JIS-K7111, ASTM-D256, D6110, ISO-179, 180

FEATURE

This pendulum type Charpy impact tester can automatically conduct the impact test cycle, and is capable of testing at extremely low temperatures (as low as -70°C). Test conditions are inputted via touch screen and a maximum of 210 specimens can be continuously tested. Due to the high capability of the refrigerating system, it is both time and cost efficient when compared to any other model due to the refrigerator capacity.

SPECIFICATION

Temperature Range	-70 ˚C to 60 ˚C (Refrigerator)
Hammer	Please consult with a YSS Sales Representative.
Anvil	Automatic Specimen Setting Device, Ejection Device for Tested Specimens
Test Specimens	70 pcs × 3 Cassettes (Total 210 pcs) *When Specimen size is W10 × T4 × L80 mm
Software	Windows Compatible
Option	Mini Printer (Thermal Dot Method), Specimen Size Measuring Device
Power Source	AC 200 V, 3-Phase, 20 A, 50/60 Hz *Power consumption differs according to options.
Air Source	0.5 MPa or More
Dimensions/ Weight (Approx.)	W1,300 × D1,355 × H1,980 mm

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

No. 270 ROSS FLEXING TESTER

No. 270-L ROSS FLEXING TESTER (WITH REFRIGERATING MACHINE)

No.270 (4 Hangings)

No.270 (12 Hangings)

No.270-L

ASTM-D1052

FEATURE

■ No.270 ROSS FLEXING TESTER

This tester is used to evaluate the durability of rubber by observing the growth of bending stress induced cracks. The test specimen is usually taken from shoe soles. The test specimen is applied a 2.5 mm crack and is to be bended to a 90°angle until the crack grows to a maximum of 500%. Every 100% the crack grows, the operator is to record the number of bends the test specimen has received. The tester can also be assorted with a low temperature chamber (L type).

■ No.270-L ROSS FLEXING TESTER (WITH REFRIGERATING MACHINE)

This model is equipped with a low temp. chamber for conducting flexing tests at low temperatures.
The durability of the specimen is evaluated by the number of bends it takes for the crack to grow every 100% up to 500%.

SPECIFICATION

Model	No.270	No.270-L
Hangings	12 Hangings (W25 mm) or 4 Hangings (W100 mm) (2 kinds)	
Specimen	W25 ±1 mm, L153 mm, T6.35 ± 0.03 mm (Standard)	
Flexing Angle	90° (Option: 45°, 2 Stage Type)	
Flexing Speed	100 ± 5 times/min	
Roller Stroke	0 to 50 mm (Adjustable)	
Counter	6 Digits Preset Counter	
Temperature Range	-	-35 to 60 °C (Refrigerator)
Accessories	Notching Tool	
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz	AC 200 V, 3-Phase, 30 A, 50/60 Hz
Dimensions/ Weight (Approx.)	12 Hangings: W700 × D450 × H300mm/ 50 kg 4 Hangings: W700 × D450 × H300mm/ 50 kg	W1,100 × D690 × H1,020 mm/ 300 kg

No. 271 NBS RUBBER ABRASION TESTER

No.271

ASTM-D1630

FEATURE

This tester is used for evaluating the abrasion resistance of vulcanized rubber and thermo-plastic rubber. By pressing the test specimen with a constant load onto the abrasive paper which is wrapped around the rotating drum, the operator is to acquire the abrasion resistance by the number of rotations of the drum.

SPECIFICATION

Hangings	3 Hangings
Specimen	25 × 25 × T6.35 mm
Rotating Drum	φ150 mm
Drum Rotation Speed	45 ± 5 rpm
Abrasive Paper	W250 mm, Material: G, Grit #40
Counter	6 Digits Preset Counter
Dial Gauge	Scale 1/100 mm, Stroke Max. 10 mm
Weight	2,265 gf: 3pcs
Air Nozzle	3 pcs, Air Pressure 241 ± 35 kPa
Accessories	Fixing Band: 4 pcs
Power Source	AC 100 V, 1-Phase, 10 A, 50/60 Hz
Dimensions/ Weight (Approx.)	W715 × D500 × H500 mm/ 55 kg

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

No. 274 PUMMEL TESTER

No.274

FEATURE

This tester is used for evaluating the bondage of PVB film fragments inside safety glass composites, which are used for automobiles.
The glass is constantly impacted by hammer while moving in an S shape. The specimen is then evaluated according to the Pummel value by the level of exposed PVB surface.

SPECIFICATION

Specimen	305 × 160 × 2.5 to 10 mm
Hammer	Striking Method: Hammer Striking Down Method + Assist Spring Impact Adjustment: Spring Screw Adjust Method
Horizontal Distance	Stroke: 150 mm
Vertical Distance	Stroke: 90 mm
Testing Speed	Approx. 120 sec. for 1 pc
Other Standard Specification	Room Light, Blank Shot Prevent System (Specimen Detection Sensor)
Power Source	AC 200 V, 1-Phase, 10 A, 50/60 Hz
Dimensions/ Weight (Approx.)	Main Body: W900 × D1,100 × H1,150 mm/ 350 kg Control Box: W700 × D700 × H1,350 mm/ 70 kg

No. 275 WILLIAMS ABRASION TESTER

No.275

JIS-K6264-2, ISO-4649

FEATURE

This tester is used for evaluating the abrasion resistance of vulcanized rubber and thermo-plastic rubber. The operator is to determine the volume loss due to the abrasive action of rubbing two flat and non rotating test specimens to an abrading wheel. This tester is usually used on test specimens that are used for tires and shoe soles.

SPECIFICATION

Specimen	(20 ± 0.5) × (20 ± 0.5) × T10 mm
Specimen Position	Left-Right 63.5 mm from wheel center
Test Load	35.5 N (3.62 kgf)
Abrasion Wheel	Outer Diameter φ165 mm, Inner Diameter φ70 mm, Material C, Grit #70
Wheel Rotation Speed	37 ± 3 rpm
Air Nozzle	Vent φ1.0 mm (Pitch 6 mm): Upper & Lower 3 pcs each, Air Pressure 180 kPa
Pressure Gauge	Max. 1 MPa (Scale 0.1 MPa)
Timer	Max. 99 min 59 sec
Accessories	Specimen Cutter
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz
Air Source	0.5 MPa or More
Dimensions/ Weight (Approx.)	W700 × D520 × H560 mm/ 55 kg

No. 276 HEAT SEAL TESTER

No.276

FEATURE

This tester is used to measure the optimal temperature when sealing cellophane tape, plastic film, etc. After setting the sealing pressure and the sealing time identicaly for the 5 heating platens, the operator can evaluate the thermal adhesion among the 5 different testing temperatures.

SPECIFICATION

Seal Plate	10 × 25 mm: 5 pcs or 7 pcs (2 kinds)
Temperature Range	Max. 200 °C
Pressing Method	Pneumatic Cylinder, Stoke Max. 45 mm
Pressure Gauge	Max. 0.5 MPa (Scale 0.01 MPa)
Timer	Max. 99.99 sec
Accessories	Foot Switch
Option	Safety Cover, Air Compressor
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz
Air Source	0.5 MPa or More
Dimensions/ Weight (Approx.)	W760 × D350 × H900 mm/ 80 kg (7 pcs)

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

No. 283 PLASTIC SLIDING ABRASION TESTER

No.283

JIS-K7218

FEATURE

This tester is used to conduct sliding abrasion tests for plastic. Contacting tabular and hollow cylinder type test specimens onto the edge face of another material at a constant load, a high speed sliding and rotation movement is applied, and the operator is to measure the abrasion force and the abraded volume of the test specimen.

SPECIFICATION

Specimen	Square shape: 30 × 30 × T2 to 5 mm Disc shape: φ40 × T2 to 5 mm Cylindrical shape: Outer Diameter φ25.6 mm, Inner Diameter φ20 mm, L15 mm
Co-Specimen	Cylindrical shape: Outer Diameter φ25.6 mm, Inner Diameter φ20 mm, L15 mm
Pressing Load	10 to 500 N (Dead Weight)
Friction Load Measuring	Load Cell: 8 to 200 N·cm (Option: Chart Recorder)
Friction Speed	0.2 to 200 cm/s (Standard 50 ± 2.5 cm/s)
Option	Constant Temperature Oven, Oil Bath
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz AC 200 V, 3-Phase, 30 A, 50/60 Hz (Constant Temperature Oven)
Dimensions/ Weight (Approx.)	W820 × D770 × H1,720 mm/ 200 kg

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