ENGINEERING TECHNOLOGY

PRINCE

ENGINEERING TECHNOLOGY

PROCESS CONTROL INSTRUMENT
&
LABORATORY EQUIPMENT
FOR PULP, CRAFT PAPER TISSUE ,
ABSORBMENT AND ETP ETC

Microprocessor Based Motorised Basis Weight Control Valve

The basis weight, substance or Grammage is obviously most fundamental property of paper board.

All paper machines are designed to manufacture paper in a given basis weight range. Tighter the range and more efficient will be the machine but still it is common for paper manufacturers to seek methods to improve basis weight control. PET introduce Micro control based Motorised Basis Weight Valve to control the Grammage and save the time in maintaining GSM & grade change in pulp, paper industries.

Model No. PET 901

- Flange less V-notch ball valve with combination of Electro-Mechanical Actuator & Controller.
- V-notch ball valve offers equal % characteristics for precise control.
- Actuator with almost negligible backless.
- Digital valve position indicator.
- Easy to install and user friendly.
- Can be hooked to DCS/QCS system.
- Backed up by skilled service personal.
- Strong support of prominent after sales service.

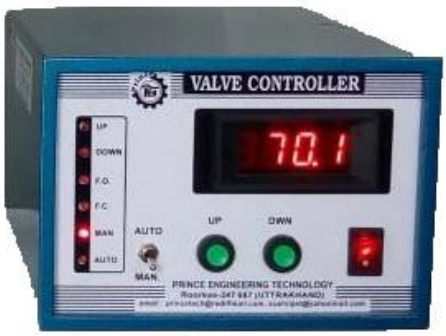
Technical Specification

Type of Construction	:	"V" notch shear control valve
Size	:	80mm to 200mm
End Connection	:	Flange less
Body Material	:	SS316
Characteristic	:	Equal Percentage
Pressure Drop	:	10% of Inlet Pressure
Actuator	:	Aluminium
Temperature	:	Ambient
Opening Time	:	as per valve size
Resolution Step	:	15,000-35,000
Output Torque	:	200Nm-500Nm (as per valve size)
Gear Ratio	:	1:150 (min.), 1:500 (max.)
Feedback Output	:	2K ohms
AC Supply	:	220V/50Hz

Valve Controller

Features

- Auto-Manual selector in Auto mode the actuator operates as per the incoming control command
- LED indications for valve opening/closing
- Digital Display of signal error & feed-back error
- Digital Valve position indicator, Indicates %age opening of valve



Model No. PET 902

Technical Specification

Display	:	0-100%
Input Signal	:	pulses/4-20M (selectable)
Pulse Width	:	0.9mili sec (minimum)
Least Count	:	0.1
Output	:	4-20 mA
Output Accuracy	:	0.025%
Power Supply	:	220V AC
Feedback Input	:	1-5 volt
Drive Input	:	220V AC

Motorized Basis Weight Control Valve

The basis weight, substance or Grammage is obviously most fundamental property of paper board.

All paper machines are designed to manufacture paper in a given basis weight range. Tighter the range and more efficient will be the machine but still it is common for paper manufacturers to seek methods to improve basis weight control. PET introduce Micro control based Motorised Basis Weight Valve to control the Grammage and save the time in maintaining GSM & grade change in pulp, paper industries.

Model No. PET 923

- Flange less V-notch ball valve with combination of Electro-Mechanical Actuator & Controller.
- V-notch ball valve offers equal % characteristics for precise control.
- Actuator with almost negligible backless.
- Digital valve position indicator.
- Easy to install and user friendly.
- Can be hooked to DCS/QCS system.
- Backed up by skilled service personal.
- Strong support of prominent after sales service.

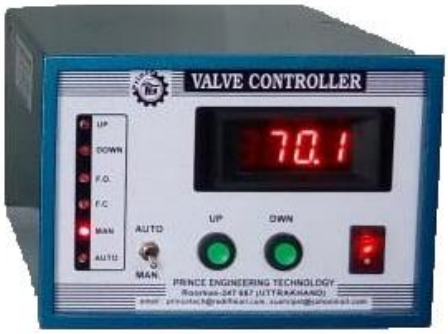
Technical Specification

Type of Construction	:	"V" notch shear control valve
Size	:	80mm to 200mm
End Connection	:	Flange less
Body Material	:	SS316/SS304
Characteristic	:	Equal Percentage
Pressure Drop	:	10% of Inlet Pressure
Actuator	:	Brass, Gulmetal, C1
Temperature	:	Ambient
Opening Time	:	as per valve size
Resolution Step	:	15,000-35,000
Output Torque	:	200Nm-500Nm (as per valve size)
Gear Ratio	:	1:150 (min.), 1:500 (max.)
Feedback Output	:	2K ohms
AC Supply	:	220V/50Hz

Valve Controller

Features

- Auto-Manual selector in Auto mode the actuator operates as per the incoming control command
- LED indications for valve opening/closing
- Digital Display of signal error & feed-back error
- Digital Valve position indicator, Indicates %age opening of valve



Model No. PET 902

Technical Specification

Display	:	0-100%
Input Signal	:	pulses/4-20M (selectable)
Pulse Width	:	0.9mili sec (minimum)
Least Count	:	0.1
Output	:	4-20 mA
Output Accuracy	:	0.025%
Power Supply	:	220V AC
Feedback Input	:	1-5 volt
Drive Input	:	220V AC

Consistency Transmitter (Blade Type)

Model No. PET 917

The basis weight is obviously most fundamental property of paper board. It is common for paper manufacturers to seek methods to improve basis weight control. PET introduce Micro control based Consistency Transmitter to control the pulp consistency at wet end to maintain GSM of paper.

The transmitter's operation is based on shear force measurement. As consistency changes the movement on diaphragm changes the electrical signal, which is generated by Eddy Current Probe. And this electric output signal is directly proportional to change in consistency. The transmitter is supplied within an operating unit.

Features

- Mounted directly in the process pipe line.
- Single Blade for all pulp furnish.
- No moving parts only one blade (sensor) is in touch with pulp.
- Transmitter module can be serviced in-line.
- Microprocessor based Single Calibrator (display unit) with auto calibration switches & inbuilt single loop PID controller.
- Digital display of set point, actual consistency & valve opening.
- Digitally adjustable span & zero control.
- Economical & low maintenance requirement.
- Compact design, Light weight, Easy to install.
- Fast and accurate measurement.
- Low initial & installation cost.
- Micro-computer controls, Menu Driven Software.

- User Friendly software guides the operators through all steps of program selection.
- Can be hooked to DCS/QCS system.
- Backed up with skilled service personals.

Technical Specification:-

Consistency Range	:	1.2% to 6.5%
Repeatability	:	0.3% of reading
Span	:	100g to 2000g
Process Temperature	:	4^{o} to 60^{o}
Process Pressure	:	20 bar (max.)
Input Signal	:	4-20mA
Output Signal	:	4-20mA
Power Supply	:	220 V AC

Motorised Dilution Valve

The basis weight, substance or Grammage is obviously most fundamental property of paper board.
All paper machines are designed to manufacture paper in a given basis weight range. Tighter the range and more efficient will be the machine but still it is common for paper manufacturers to seek methods to improve basis weight control. PET introduce Micro control based Motorised Basis Weight Valve to control the Grammage and save the time in maintaining GSM & grade change in pulp, paper industries.

Model No. PET 922

- Flange less V-notch ball valve with combination of Electro-Mechanical Actuator & Controller.
- V-notch ball valve offers equal % characteristics for precise control.
- Actuator with almost negligible backless.
- Digital valve position indicator.
- Easy to install and user friendly.
- Can be hooked to DCS/QCS system.
- Backed up by skilled service personal.
- Strong support of prominent after sales service.

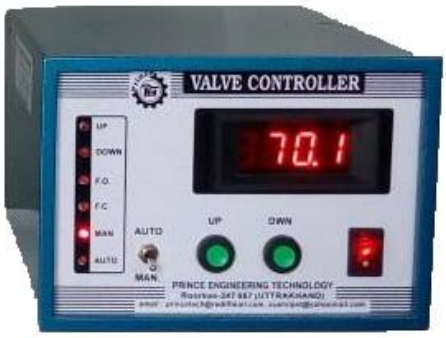
Technical Specification

Size	:	50mm, 65mm, 80mm
End Connection	:	Flange less
Type of Construction	:	“V” notch shear control valve
Body Material	:	S.S.304
Characteristic	:	Equal Percentage
Temperature	:	Ambient
Actuator	:	Aluminium
Output Torque	:	90Nm
Gear Ratio	:	1:200 (max.)
Feedback Output	:	2K ohms
AC Supply	:	220V/50Hz

Valve Controller

Features

- Auto-Manual selector in Auto mode the actuator operates as per the incoming control command
- LED indications for valve opening/closing
- Digital Display of signal error & feed-back error
- Digital Valve position indicator, Indicates %age opening of valve



Model No. PET 902

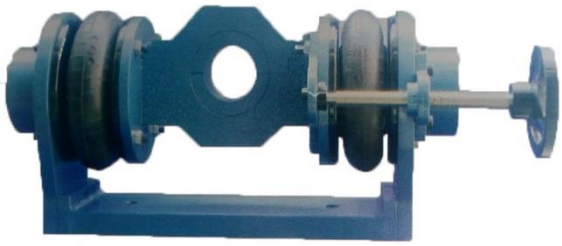
Technical Specification

Display	:	0-100%
Least Count	:	0.1
Output	:	4-20 mA
Power Supply	:	220V AC
Feedback Input	:	1-5 volt
Drive Input	:	220V AC

Auto Guide

Auto guide are designed for wire, felt & fabric run regulation of paper machines. Guide is a device which sets a guide roll into a needed position according to evaluation of sensor impulses.

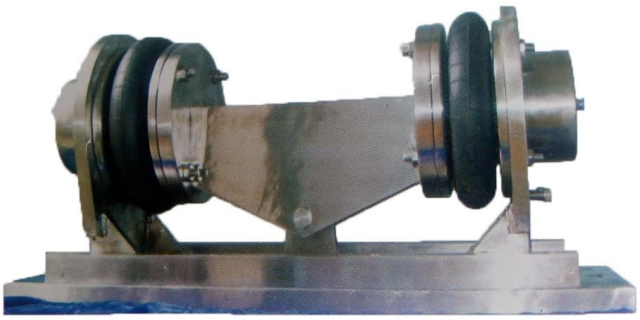
Generally, the sensing element works like a distributor valve forcing the pressure air to enter particular pneumatic bellows. The sensor dislocation is due to palm swinging to the right or to the left from the central position of the longitudinal equipment axis.



Model No. PET 924 (A)

Features

- Guide consists of a bearing housing in which guide roll is fitted
- Antifriction bearing are used for fast response
- Imported bellows (Norgern or Fire-Stone) for long life
- Direct acting position control provides fast & precise response
- Customize design for individual needs
- Fully automatic/Manual operation
- Low operating cost, Easy Mounting
- Smooth Operation



Model No. PET 924 (B)

Technical Specification

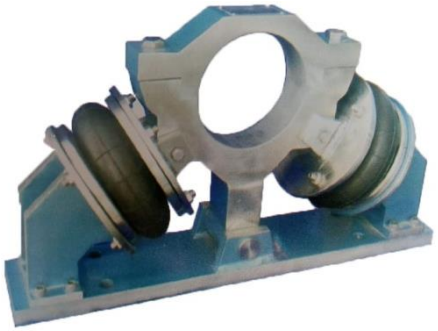
Working stock of Guide	:	± 40mm to ± 60mm
Maximum dia. of housing	:	220mm
Minimum Input Air Pressure	:	1.0kg/sq cm
Maximum Input Air Pressure	:	1.5-2.0kg/sq cm
Mode of Control	:	Different cum Proportional

Material

Guides available in MS AND SS

Auto Guide (Taper Model, Type-M)

Features



Model No. PET 924 (C)

- Guide consist of a bearing housing in which guide roll is fitted
- Bearing are not used for long trouble-free & maintenance free life
- Can be installed in any position (Horizontal, Vertical, Inclined position)
- Imported bellows (Norgern/Fire-Stone/Dunlop) for long life
- 2.0 times more life compare to other ordinary Auto Guide
- Direct acting position control provides fast & precise response
- Customize design for individual needs. Smooth Operation
- Fully automatic/Manual operation. Low operation g. Low operating cost, Easy Mounting

Material

Guides available in MS and SS

Technical Specification

Working stock of Guide	:	± 60mm to ± 80mm
Maximum dia. of housing	:	220mm
Minimum Input Air Pressure	:	1.0kg/sq cm
Maximum Input Air Pressure	:	1.5-2.0kg/sq cm

Pneumatic Palm Sensor Assembly

Palm Sensor Assembly is designed to control the air flow by adding/bleeding air to & from the guide. The control valve controls the air volume within the air bellows of pneumatic below guide or the chamber of a pneumatic piston guides.

Sensor Assembly is designed to guide the auto guide in a straight path. The palm will feel the smallest linear movement and correct the guide to a stable position by moving the guide roll in the appropriate direction

Features

- MOC is SS304 to avoid corrosion
- Two Models for machine speed up-to 300mpm & 500mpm
- Can be fit with any type of Guide System (pneumatic bellow guide or pneumatic piston guide)
- Mode of Control: Different cum Proportional
- Suitable for wire, felt, screen & fabrics of machine
- Low air consumption & maintenance free operation
- Highly sensitive control valve. Can be used in wet/dry location
- Travel of guide can be designed as per client requirement
- No Air venting during balance position of guide
- Easy installation & economical

Valley Laboratory Beater

Valley Beater is used for laboratory beating of pulp under a controlled mechanical treatment to determine the behavior of pulp when subject to define beating schedule. A measured amount of pulp of specified stock concentration is beaten between the roll bars and bedplate of a laboratory beater. Samples re withdraw at regular intervals during treatment to determine their beating degree and to be made into laboratory hand-sheets for evaluation.

Model No. PET 925

The laboratory beater is made completely of stainless steel materials. The tub has a capacity of 23 1, which allows the beating of 360g of pulp. The diameter of the roll with 32 in number of fly-bars inserted is 194mm. The thickness of each fly-bar is 4.8mm and the width of the roll shall be 152 ±1mm. The bed plate consists of seven bars with a thickness of 3.2mm. They are made of chromium steel with wooden spacers between them. The bed plate is sealed to the tubby a rubber membrane. The large one-piece splash cover on top the tub ensures safe operation.

Features

- Stainless steel tub
- Chrome steel bedplate band fly-bars, stainless steel holder
- Discharge drain closed by stopper
- Beating pressure adjustable by means of weight
- Volume: 23 1 (at a consistency of 1.57%)
- Beatable amount of pulp: 360g (o.d.)

Applicable standards: TAPPI T 200m TAPPI 1 205m

Pulp Disintegrator

Standard Pulp Disintegrator is used for disintegrating pulp to a homogeneous suspension prior to making hand sheet without significantly changing the physical characteristics of the pulp prior to subsequent evaluation.

Model No. PET 916

Features

- Stainless steel construction throughout, housing, shaft, propeller
- Digital counter with preset value and automatic shut off
- Dual safety interlock ensures safe operation
  Stainless steel disintegrator pot
- Motor is 200W with gear belt & pulley drive
- Safety System: Start only when container & drive unit is on correct position

Technical Specification

Capacity	:	2 liter Container
Propeller	:	three Blade propellers
Max. Count	:	99,999
East Count	:	1
Power Supply	:	440V/ 50Hz 3Ø

Hand Sheet Former

This stainless steel device produces laboratory hand sheets to allow the test and evaluation of the physical properties of pulp.

The conditions of sheet making should be similar to commercial production. Sheet Former is intended for production of laboratory sheets for physical tests. The design of the dewatering vessel gives a constant flow across the entire wire, thus permitting extremely uniform sheets.

Model No. PET 915

Features

- Meets TAPPI T-205, ISO 5269/1, SCAN-C 26
- Stainless steel construction throughout
- Valve lifting and agitation of pulp ensures the instrument is easy to use
- The phosphor bronze wire is non-corrosive for low maintenance
- Calibrated nozzle, Bench mounted (optional)
- Trouble free running and long service life
- Easy operating and long service life
- Easy operating and almost zero maintenance
- Efficient and prompt after-sale service by competent engineers/technicians.

Technical Specification

Sheet Size	:	165mm dia = 274cm2 area (SCA)
		165mm × 165mm square (KCL)
Trimmed Size	:	200cm^2
Wire Screen (upper)	:	150 mesh (TAPPI std.)
Wire Screen (support)	:	20 mesh
Suction Height	:	800mm

Standard Accessories : Stirrer, Couch Roll, Couch Plate etc.

Consistency Determination Apparatus

This apparatus offers a simple and quick determination of pulp suspension consistency. It is more rapid than a Bucha funnel and suitable for all types of pulp. Measured stock is poured on to the grid plate of equipment and drained under suction. After drying the sheet consistency can be determined by weighting that sheet.

Model No. PET 926

Technical Specification

Capacity : 1 liter Container

Cover : Top easily removable

Clamping : Rapid action & efficient

Grid Plate : Fitted with a supporting lattice to facilitate removal of the pulp mat from the wire

Beating & Freeness Tester (Schopper Riegler Type)

The 'Schopper Riegler' beating and freeness tester is designed to determine the rate of drainage or freeness of a dilute pulp suspension. The rate of drainage is related to the work done on the fiber during beating and refining.

Model No. PET 903

Features

- Stainless steel structure
- Cast iron base with leveling feet for correct installation
- Stainless steel drainage chamber funnel spreader cone and sealing cone
- 1000ml Plexiglas measuring cylinder, graduate in SR scale
- Phosphor bronze / Stainless steel wire is non corrosive for low maintenance
- Calibrated nozzle
- 2 SR measuring beakers

Technical Specification

Speed of sealing cone	:	100 + 10mm/s
Calibrated bottom orifice	:	150.0 ± 10s for 1000ml of water
Drainage chamber volume	:	1000ml
Drainage Area	:	100sq.cm
Sample (Dry Weight)	:	2.0gm

Pneumatic Beating & Freeness Tester (Schopper Riegler Type)

The 'Schopper Riegler' beating and freeness tester is designed to determine the rate of drainage or freeness of a dilute pulp suspension. The rate of drainage is related to the work done on the fiber during beating and refining.

Model No. PET 927

Features

- Stainless steel base with leveling feet for correct installation.
- Semi-automatic valve lifting (pneumatic lifting)
- Stainless steel drainage chamber funnel spreader cone and sealing cone.
- 1000ml Plexiglas measuring cylinder, graduate in SR scale
- Stainless steel wire is non corrosive for low maintenance
- Calibrated nozzle
- 2 SR measuring beakers

Technical Specification

Speed of sealing cone	:	100 + 10mm/s
Calibrated bottom orifice	:	150.0 ± 10s for 1000ml of water
Drainage chamber volume	:	1000ml
Drainage Area	:	100sq.cm
Pneumatic	:	2.0kg f / sq.cm
Sample (Dry Weight)	:	2.0gm

Digital Grammage Tester

The Digital Grammage Tester is used for basis weight checking of Paper & Board. A Test Sample of paper, board or other sheet materials (std. size) is kept in the ring/flat for accurate measurement of GSM is seen on the screen provided.

Model No. PET 904

Features

- Fast & Easy Operation & Response, Micro Processor based Controller
- Check GSM directly. No need of calculation
- Four Template size can be selected at single scale
- Selectable Template size: (10×20,20×25 & 20×50cms)
- High brightness LED Long Life, High Stability Indication
- Avoids Calculation error
- Scale's other opacity available on request

Technical Specification

Scale Capacity	:	0-1000 GSM
Readability	:	0.01 digits
Accuracy	:	± 0.1 GSM

Manual Bursting Strength Tester (Mullen Type)

Bursting Strength of any material is its strength under multidirectional force and is defined as the hydrostatic pressure required to produce rapture of the material when pressure is applied at a controlled increasing rate through a rudder diaphragm.

Model No. PET 905 (A)

Features

- Manual Clamping
- One Touch Push the button operation
- Auto reserve
- Measure & retain Peak Pressure
- Automatic zero setting
- Test result are displayed on display window
- Measuring Results in Kg/sq.cm
- Latest & Compact design with digital control display
- Design to give a long and trouble free life

Technical Specification

Pressure (Capacity)	:	0-7 Kg/sq.cm (for Paper)
Resolution	:	0.01 Kg/sq.cm
Accuracy	:	± 1% of measured value
Power Supply	:	220 V/ 50Hz

Semi Automatic Digital Bursting Strength Tester (Micro-Control Based)

Bursting Strength of any material is its strength under multidirectional force and is defined as the hydrostatic pressure required to produce rapture of the material when pressure is applied at a controlled increasing rate through a rudder diaphragm.

Model No. PET 905 (B)

Features

- Manual Clamping
- One Touch Push the button operation
- Auto reserve
- Measure & retain Peak Pressure
- Automatic zero setting
- Test result are displayed on display window
- Measuring Results in Kg/sq.cm
- Latest & Compact design with digital control display
- Design to give a long and trouble free life

Technical Specification

Pressure (Capacity)	:	0-7 Kg/sq.cm (for Paper)
Resolution	:	0.01 Kg/sq.cm
Accuracy	:	± 1% of measured value
Power Supply	:	220 V/ 50Hz

Fully Automatic Bursting Strength Tester

Bursting Strength of any material is its strength under multidirectional force and is defined as the hydrostatic pressure required to produce rapture of the material when pressure is applied at a controlled increasing rate through a rudder diaphragm.

Model No. PET 905 (C)

Features

- Auto Pneumatic Clamping.
- One Touch Push the button operation.
- Auto reserve.
- Measure & retain Peak Pressure.
- Automatic zero setting.
- Test result are displayed on display.
- Measuring Results in BS, BF, PSI and Index for Paper.
- Latest & Compact design with digital control display.
- Design to give a long and trouble free life.

Technical Specification

Pressure (Capacity)	:	0-7 Kg/sq.cm (for Paper)
Resolution	:	0.01 Kg/sq.cm
Accuracy	:	± 1% of measured value
Power Supply	:	220 V/ 50Hz

Portable Digital Bursting Strength Tester (Digital)

Portable Burst Tester is specially design to attend the complaint of Burst Factor in paper at the end user site. This Portable Tester is small in size and can carry easily in a small bag. For accurate measurement a digital display is given on the front panel. It is widely used by industries as a reliable instrument.

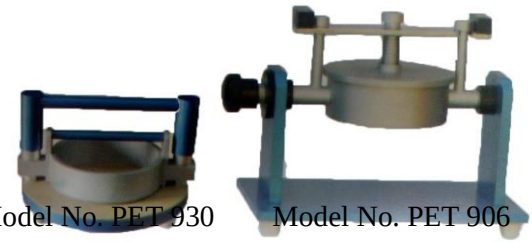
Model No. PET 929

Technical Specification

Pressure	:	0-7 Kg/sq.cm (for Paper)
Resolution	:	0-01 Kg/sq.cm
Accuracy	:	± 1% of measured value
Weight	:	10 Kg max.
Power Supply	:	220 V/ 50Hz

Cobb Tester

Cobb tester is used to determining the quality of water absorbed by paper, paperboard and corrugated fiberboard in a specified time. Cobb value is the mass of water absorbed in a specific time by a 1 sq. meter sample of paper, board or corrugated under specified condition.



Model No. PET 930 Model No. PET 906

Cobb Tester is available in SS & Aluminum.

Stainless Steel Hand Roll having a smooth surface Width 270mm (8”) and Diameter 88mm (3.6”).

Model No. PET 931

Optional Accessories

Stop watch, Graduated cylinder 100ml

Ash Incinerator

The Electric Incinerator is designed to determine ash content in paper. Ash in paper ad board may arise from various sources. Ash testing can be performed on a wide variety of substances and determines the amount of inorganic residues left after ignition at 525ºC. Ash content is determined from the dry weight of the sample and the weight of the ash.

Model No. PET 932

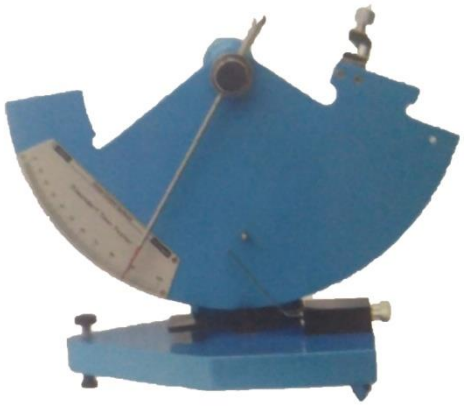
Features

- Electrically safe
- Replaceable heating elements
- Stand with adjustable holder
- 525ºC operating temperature

- Digital Temperature Controller

Elmendorf Tear Tester

The Elmendorf Tear Tester uses the Elmendorf principle to determine the internal tearing resistance of paper and board. Elmendorf Tear Tester measures the force perpendicular to the plane of the paper required to tear multiple plies through a specified distance after the tear has been started. The measured results can be used to calculate the approximate tearing resistance of a single sheet.



Model No. PET 910

Features

- Suitable for paper & cardboard specimens with max. 1,600g capacity
- Incision knife of hardened and ground spring steel
- Dual leveling screws, Extra light low friction
- Precision clamps with controlled jaws, made of stainless steel
- Adjustable cutting blade provides precise tearing length to meet test standard

Digital Micrometer (Manual Model)

Technical Specification

Range	:	0-5000 microns
Resolution	:	0.001 mm & 0.01 mm
Measuring Accuracy	:	± 0.5% of measured value
Repeatability	:	0.1% of range
Test area	:	2 sq. cm, 10 sq. cm

Digital Micrometer (Motorized Model)

The Micrometer is designed for the accurate measurement of thickness & bulk of paper, board, tissue and other materials. Thickness or Caliper of paper is measured as the perpendicular distance between two circular, plane, parallel surfaces under a standard pressure.

Meets SCAN P47, ISO 5084, TAPPI T-411, ISO 534, Single push button operation, Dial Bench Micrometers. Electronic compensation minimizes displacement transducer non-linearity. Rigid cast aluminum base assures thermal and mechanical stability. Contact pressure 2.0 ± .1 kpa & lowering speed of 1 ± .2mm/sec.

Containing area and pressure between testing head and specimen conform to the relative standards strictly. Special configuration design guarantee the parallel of the upper & lower test surfaces.

Technical Specification

Range	:	0-5000 microns
Resolution	:	0.001 mm & 0.01 mm
Measuring Accuracy	:	± 0.5% of measured value

Repeatability	:	0.1% of range
Test area cm	:	2 sq. cm, 10 sq.

Digital Ring Crush Tester (Microproccessor based)

The Ring Crush test correlates with edgewisecompresion strength of paperboard. The compressive force is extended on a specimen held in ring from in a special jig and place between two platens of a compression machine, by causing the upper platen approach the lower platen at a uniform speed until te specimen collapses, RCT sample holder and emovable disc (8 nos) for a thickness of 0.15mm to 0.49mm are provided with the main unit.

Model No. PET 906 (A)

Features

- Menu Driven Software, Measure & retain Peak Load
- Measuring Results: Breaking force in kgf & RCT in N/m.
- Test result & statistics are displayed on display window
- Direct result of RCT Value on Digital Display

- Force measurement by Load cell
- Automatic zero setting

Technical Specification

Display	:	LCD
Testing Speed	:	12.0 ± 1mm/min
Measuring Range	:	0-2000N
Load Indicator Accuracy	:	± 0.5% of full Scale
Rupture Sensitivity relevent max. load	:	2-10% of the

Option

Precision Test Strip Punch & Die Cutter for preparation of test pieces towards use in Ring Crush Tests. Width 12.7mm.

Model No. PET 906 (B)

Reflectance Meter-Photovolt Type

Reflectance Meter or Brightness Tester is used for electronically measuring and digitally presenting he Brightness, Opacity and Gloss of the paper and other similar material by angular reflectance (Photovolt Type). This method requires an instrument employing 45° illumination and 0° viewing geometry with the illuminating and viewing beams adjuasted so that translucent materials are evaluated on an arbitrary but specific scale. The measurement is not suitable for paper or paperboard containing added coloring matter (such as yellow or green dyestuff) which appreciably absorbs light in that part of the spectrum extending from about 400 to 500nm.

Model No. PET 933

Features

- Meets standards TAPPI 452, IS (1060 Part II).
- This instrument employing 45° illumination and 0° viewing geometry
- Provides unmatched stability & Sets up in just few seconds
- Digital Direct read out.
- Measured Brightness, Opacity and Gloss
- Design to give a long and trouble free life
- Compact design, attractive appearance and easy to operate

Technical Specification

Measurement Area	:	20mm Dia.
Light Source	:	12V, white lamp
Filters	:	Brightness & Opacity
Sensor	:	Photocell
Power Supply	:	200 volts/50Hz

Brightness Tester (ISO)

Brightness is defined as the percentage reflectance of blue light only at a wavelength of 457nm. Brightness is arbitrarily defined, but carefully standardized, blue reflectance that is used throughout the pulp and paper industry for the control of mill process and in certain types of research and development programs.

Model No. PET 907

Features

- Meets standard TAPPI 525
- Diffuse reflectance is measured at an effective wavelength of 457nm by using a suitable filter set or an equivalent having diffuse illumination and perpendicular observation geometry.
- Provides unmatched stability & Sets up in just few seconds
- Design to give a long and trouble free life

Technical Specification

Integrating sphere diameter	:	150mm
Measurement Area	:	10mm Dia.
Filters	:	Brightness & Opacity
Sensor	:	Photocell
Sensitivity	:	0.1%
Accuracy	:	± 0.5%
Display	:	Digital LCD

Power Supply : 220 volts/50Hz

Microprocessor based Tensile Strength Tester (Vertical)

Model No. PET 908 (A)

The Tensile Tester is used to test tensile strength and stretch to paper. A test piece is clamp between two jaws without slipping and pulling apart so that the breaking occurs. The maximum load at which the sample breaks measured by load cell.

Features

- Meets standards TAPPI 494
- Measurement: Dry Tensile Strength (Kn/m), Breaking Elongation (mm), Breaking Force (N) and Breaking Length (km)
- Micro-computer controls, Menu Driven Software
- Easy Calibration facility & Automatic zero setting
- Display System: Digital Direct read out
- Push Button Operated, Frequent Calibration not require
- Provides unmatched stability & Sets up in just few seconds
- Compact design, attractive appearance and easy to operate
- User friendly software guides the operators through all steps of program selection

Technical Specification

Capacity	:	0-500 N
Sensitivity	:	0.01 Kg
Clamps	:	SS clamp of 15 mm
Jaw Separation	:	25 mm to 300 mm max
Elongation Resolution	:	0.1 mm
Elongation Accuracy	:	± 0.5%
Accuracy	:	0.1%

Model No. PET 908 (B)

Microprocessor based Wet Strength Tester (Horizontal)

Wet strength Tester is specially design to measure the wet tensile strength and performance of tissue and absorbent paper. Wet tensile strength is the maximum force supported by the unit width of a wet test piece of tissue/absorbent paper until the onset of rupture using a tensile test.

Model No. PET 934

Features

- Meets standards TAPPI 456
- Measurement: Wet Tensile Strength kN/m), Elongation (mm), Breaking Force (N)
- Easy Calibration & Automatic zero setting
- Display System: Digital Direct read out
- Manual/Pneumatic Sample Clamping

- Push Button Operated, Frequent Calibration not require
- Compact design, attractive appearance and easy to operate
- User friendly software guides the operators through all steps of program selection

Technical Specification

Capacity	:	0-50 N
Accuracy	:	0.01%
Sensitivity	:	0.01 Kg
Elongation Resolution	:	0.1mm

Twin Folding Tester, Digital

Folding endurance tests have been used for the estimation of the suitability of paper in use to withstand repeated bending, folding and creasing.

The Instrument measure the number of folds until the sample breaks and will suitable for paper having a thickness of 0.25mm or less.

Model No. PET 935

Features

- Meets standards TAPPI 423
- Measured Nos. of Folds

- Used upto 0.25mm thickness
- Easy Calibration facility & Automatic zero setting
- Push Button Operated, Frequent Calibration not require
- Provides unmatched stability & Set up in just few seconds
- Compact design, attractive appearance and easy to operate
- User friendly software guides the operators through all steps of program selection

Technical Specification

Capacity	:	9,999 fold (max.)
Least county	:	1 fold
Tension	:	min. 7.5 N/max. 9.0 N
Sample Size	:	15mm × 100mm
Speed	:	100 strokes/ min.

Smoothness, Porosity and Softness Tester, Gurley Type, Automatic

This instrument is used for testing the average Smoothness, Porosity and Softness of paper and films by determining the time necessary for a certain volume of air to flow through the inserted sample, under a uniform pressure.

Model No. PET 936

Smoothness Test	Lateral flow between several sheets.
Porosity Test	Rate of flow through one square inch.
Software	Rate of flow over the surface which has been constructed by a given Weight.

Features

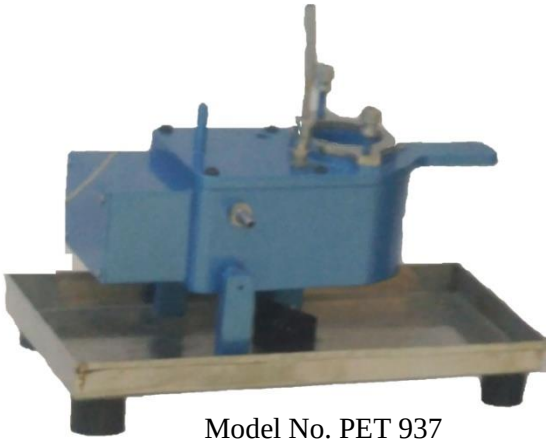
- Weight of inner cylinder 567 ± 7g, provided with the ring mark for measuring air leakage through the specimen.
- Outer cylinder of Stainless Steel
- Inner cylinder of light metal with top of Aluminum Alloy
- Support spring for the inner cylinder in the raised position.
- Self aligning clamping plate of stainless steel with ground top surface
- Rubber Gasket for air tight sealing for sample
- ORIFICE Area 1 sq. inch.

Option:

Electronic self starting timer for automatic measuring of either 25, 50, 700, 200, or 300cm3 air to pass through the test specimen. The timer starts automatically when the zero slit of the graduated ruler pass an optional read fork and stops automatically as soon as the predetermined volume of air has been passed through the sample. Uniform clamping pressure is provided by a lever arm, to which weight can be attached.

COP Tester or Oil Penetration Tester [William Type]

The apparatus is designed for determining the penetration time of oil or other liquid through paper and some other flat materials. A WILLIAMS's standard tilting type penetration testing apparatus consist of a chamber with Office 6.03 cm diameter for holding the liquid medium (castor oil) and a clamping device for holding the paper.



Model No. PET 937

Digital temperature of 35 ± 1C, Apparatus consists automatic digital timer for measuring the penetration time in seconds.

Specification

Temperature Range: Ambient to 100°C. Electronic PID digital temp. Controllers control the temp. of the liquid 35 ± 1 degree C.

Penetration timer: 999 second with 0.1 second.

Water Absorption Tester [Klemn Type]

The capillary rise of water in paper is the distance water will rise in a strip of Paper suspended vertically with lower end immersed in water. This method is Applicable to blotting paper and other un-sized paper where water absorption is too high. Test pieces are cut in machine and cross direction from a conditional specimen and vertically suspended with the lower and immersed in water to a depth of 10mm. the capillary rise of the water is measured after 5 minutes.

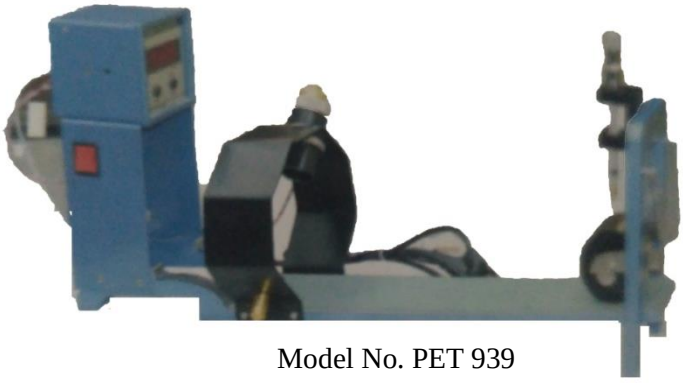
Model No. PET 938

Apparatus: One or more vertically suspended test pieces are to be lowered into water to a depth of 10 ± 1mm. in the device.

The device is provided with scale for measuring the capillary rise above the water level in millimeter

Paper Surface Oil Absorbency Tester [SOAT]

This instrument is used for determining the oil absorption resistance of the surface of paper and paper board provided with Electronic self starting timer.



Model No. PET 939

A specimen is placed on a inclined plane surface covered with rubber offset blanket, the standard oil drops on brass roller and is rolled against the rubber blanket and the oil film on brass roller is transferred to the specimen surface. The oil absorption time is measured in seconds.

The SOAT is the time taken for the 75% of the surface covered by oil to have absorbed the oil.

Specification

- Inclined plane 500 × 100mm with a 4.5 degree gradient. Inclined plane covered with rubber offset blanket. Brass Roller 2.1Kg, 76mm diameter and 55mm.
- Oil-burette delivers 0.02 Goil droplet.
- Steel holder for oil burette
- Automatic digital timer for measuring the time taken for oil absorption by the surface.

Internal Bond Tester, Manual

Ply bond testing is used to determine the internal strength of paper and board material. The ply bond test measures the energy required to determinate a multiply board structure.

It is a dynamic test that measures and defines strength in terms of energy absorption. The Scott Internal Bond Tester has been used to monitor the effects dry strength additives and to evaluate stock preparation and refining.

Test specimen are built, from bottom to top, consisting of a stainless steel sample base, layer of double-sided tape, the paper or board sample, layer of double-sided tape, and an aluminum angle.

Model No. PET 940

Features

Solid stainless steel pendulum Provided with two measuring scale: 0-250 lbs & 0-500 lbs Measuring Unit: ft.lbs

Applicable standard

TAPPI T-569

Internal Bond Tester, Digital

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Features

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Applicable standard

TAPPI T-569

Bending Stiffness Tester, Digital

This tester is used to measure the resistance to banding stiffness of paper, paper board and other flexible material having strong bending resistance.

Model No. PET 918

Features

- Applicable standards TAPPI T-566
- Automatic zero setting.
- Bending resistance of specimen in one single step.
- One touch selection of units (mN or Taber)
- One touch selection of bending degree (7.5 degree or 15 degree)
- Measuring result of Stiffness in gmf/ mN/ Taber

Technical Specification

Capacity	:	0-5000 mN
Bending angle	:	7.5^{O}, 15^{O}
Bending Speed	:	5 degree/s
Specimen size	:	38 × 70mm
Least count	:	1 mN
Accuracy	:	± 0.1% of display value

Power Supply : 220V AC

Bending Stiffness Tester, Manual

This tester is used to measure the resistance to banding stiffness of paper, paper board and other flexible material having strong bending resistance.

The bending moment required to deflect the free end of (1.5") wide vertically damped specimen 15 degree for its center line when the load is applied 50mm away from the clamp. The stiffness of the material is calculated from the bending moment.

Model No. PET 940

Features

- Mounted on telescoping tripod legs
- Electronic component are sealed in a rugged housing
- Light weight for early portability

Technical Specification

Clamp opening	:	3.2mm
Specimen size	:	38 × 70mm
Measuring Range	:	5000 gf cm at 15°

Motor	:	5W, 2 rpm
Power Supply	:	220/ 50Hz

Digital Muffle Furnace

Muffle Furnace is used for incineration of solids. Energy Regulator indicates exact temperature and controls the heat temperature and controls the heat temperature. Complete unit having front panel with two lights Indicator, one pyrometer, Thermocouple, Silver Thermal Fuse and one Meter Main Load Wire to work on 220-230 Volts A.C

Salient Features

- Casings is made of thick mild sheet reinforced with iron angles and painted with powder coating.
- Heating Chamber consisting of regular horizontal shape totally enclosed muffle baked at 1500ºC.
- Heating Chamber is surrounded by High quality temperature insulation brick and insulation powder.
- Forefront Chamber is fitted with imported pierrite- 40 heat and electric resistance sheet.
- Furnace are equipped with dependable indicator pyrometer having a scale calibrated in 25 increments a 1200ºC.
- Complete with Pyrometer and Thermocouple.
- All heating elements are made from the best 80/20- composition nickel/chromium imported KANTHAL wire.
- Light ceramic insulation provided into Furnace body. Light in weight with Ceramic Fibre Insulation.

- Silver fuse is provided to protect the heating elements pyrometer.
- Furnace can be operated continuously upto 1100°C.

Box Compression Strength Tester

Model No. PET 941

Corrugated and solid fiber board boxes are subjected to compressive forces when stacked and during transportation. It is vital to determine the Compression Strength of the Box in order to make sure that the Box will be able to resist the anticipated compressive forces and to determine the load that the Box will be to withstand during transit and storage. This equipment is designed to measure ability of the container to resist external compression loads during transit and storage. Compression Strength Tester also serves as a useful index of overall quality of the material and workmanship of the Box. Suitable for Testing as per following Standards. IS 7028 (PART VI)-1973 7028 (PART IX)-1975 TPPI T-8040 om-89 ASTM D 642-90 Features: Force: A precision load cell is used to measure the applied forces and a linear transducer measures the test sample deflection. Construction: The construction is of ?A? frame type. Crosshead Assembly: Motor driven ball screw, for fast and accurate operation, reposition the crosshead assembly. Power Pack: The power pack and all the controls are in a separate cabinet, and both are Micro-processor Based. Salient Features: ? Direct Digital Readout of compression strength. ? Available in capacities: 0-1000 kgf & 0-2000 kgf. ? Peak and hold facility provide. ? Testing speed: Minimum 10 ? 5 mm/minute. ? Provision of faster speed for approach and return to top of specimen. ? Provision for termination of test at pre-selected load.

Direct Digital Readout of Compression Strength Sophisticated electronic controls for precision and easy operation with over load protection

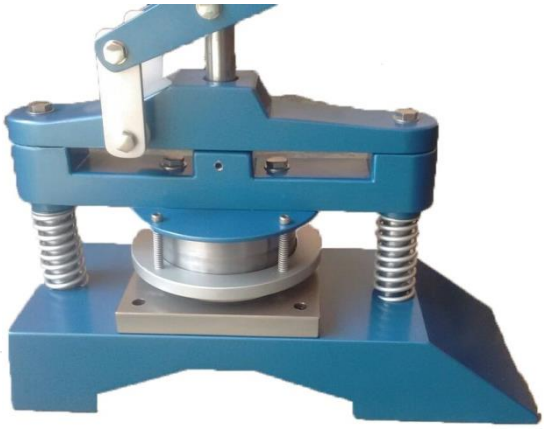
Available in Capacities:0-1000 kgf

- Electronic Digital Display Panel with least count of 1 kgf
- Menu driven
- Easy Calibration
- Membrane Touched Keyboard
- Peak-hold facility provided
- Testing speed: 10 ± 3 mm/minute
- 4 × 20 character alphanumeric LCD with backlit
- Window based software for DATA transfer to computer thru RS-232 serial communication
- Provision of automatic faster speed for approach and return to top of specimen
- Results of the tests are stored IN MEMORY UPTO 500 RECORDS

Weight in Kgs: 700kgs (approx) Capacity: 1000 kgf.

Round Sample Punch (die Punch)

Sample punches for preparation of 100 sq. cm round sample useful for GSM testing. The punch having heavy-weight construction which consist of a hand leaver, an upper serrated knife and a lower knife, through which the sample is ejected. The sample falls on inclined plate, thus the sample taken out easily. The sample cutter is appropriate to paper, tissue & single layer Paper board.



Model No. PET 928

RCT Strip Cutter (die Punch)

RCT Strip Cutter for preparation of 12.7mm × 152.4mm Strip useful for RCT Tester. The punch having heavy-weight construction which consist of a hand leaver, an upper serrated knife and a lower knife, through which the sample is ejected. The sample falls on inclined plate, thus the sample taken out easily. The RCT Strip Cutter is appropriate to paper, craft paper & single layer Paper board.