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TMI

Coefficient of Friction/Peel Tester

Model 32-76e

Our NEW 32-76e coefficient of friction/peel tester uses advanced digital force signaling and high-speed data acquisition software to provide unmatched precision and repeatability in COF and peel testing.

FEATURES

- 7” full-color digital touchscreen display
- High speed data collection and analysis for precise measurement of static COF with 500 readings during the first second
- Selection of test type-COF/Friction, T-Peel and 180° Peel
- Selectable units (COF, g, N, kg, lbs, and ounce) n Selectable load cells from 5 to 100 N
- Automatically reports static and kinetic friction results after measurement
- Settable distance and time for static, kinetic and peel
- Peel results include average, minimum, maximum and SD of peel force
- Test storage including individual results up to 100 readings, average and standard deviation
- Direct drive arm with unique skid control
- Sled-connecting mechanism ensures level pulling action
- New magnetic sled simplifies testing and throughput
- Direct output to PC-based GraphMasterProTM software providing friction/peel curve analysis, storage and reports
- Mini USB output for PC connection (GraphMasterPro compatible)
- USB output for data storage

APPLICATIONS

Plastics film, packaging, paper, labels, coatings, cartons, adhesives, foils and printed materials

STANDARDS

COF conforms to ASTM D 1894, ISO 8295, TAPPI T 549 Peel conforms to ASTM D 1876, ASTM F 88, ASTM D 3330 PSTC-101, FINAT1

Digital Micrometer

49-86-00-0018

A precision digital linear encoder measuring system with an ultra-clear, easy-to-read digital display. The unit is designed for very thin materials such as plastic films, paper, non-woven textiles, and nonwoven board and battery separators. The motordriven instrument utilizes the dead weight micrometer principle for high accuracy and repeatability. Construction consists of a heavy, solid frame which supports the unit and houses the reflective linear encoder and associated circuitry. A digital readout is provided to automatically display the specimen thickness. The lower anvil and movable pressure foot are made from lapped, stainless steel.

Specifications

- Measurement range: 0-0.050 in. (0-1.27 mm)
- Range: 0-0.050 in. (0-1.27 mm)
- Resolution: 0.5 micron (0.02 mil)
- Accuracy: 1.0 micron (0.039 mil)
- Units: Microns, mils, millimeters or inches
- Dwell time: 100 ms - 6 sec
- Meets standards ASTM F 2251, ASTM D 6988, ISO 4593

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TMI

Hot Tack Tester & Seal

Tester SL-10

STANDARD FEATURES

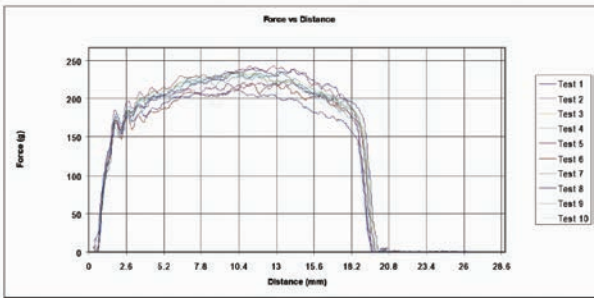
- Conforms to ASTM F1921 for hot tack seal testing
- Direct touch Color Screen
- Computer Controlled pressure, temperature and dwell time
- Windows® 7 Proffesional 32-bit operating system
- Ethernet port, Printer Port ,2 USB Ports, PS/2 Keyboard port, VGA Monitor Port
- Independent upper & lower sealing sample
- Dual load cells for consistent sealing surface sample
- Safety guards and switches for safe operation
- Microsoft® Officce Suite
- Case with Hardware
- Conforms to ASTM F2029 Standard Practices for making heatseals for Determination of Heatsealability of flexible webs as measured by seal strength

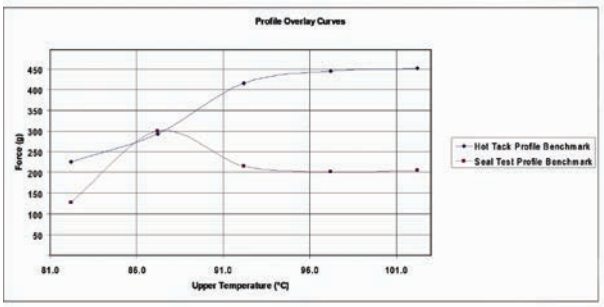
The 75-50 SL-10 Hot Track Tester and seal Tester, is the most Precise and consistent heat seal tester in the packaging insdustry!Testing capabilities include heat sealing, heat seal testing and hot Tack testing. The SL-10 Hot Tack and Heat Seal Tester provides Critical information needed to determine ideal sealing conditions for Packaging films.

•Safety guards and switches for safe operation
•Microsoft® Officce Suite
•Case with Hardware
•Conforms to ASTM F2029 Standard Practices for making heatseals for Determination of Heatsealability of flexible webs as measured by seal strength

AUTOMATIC SAMPLE LOADING TRAY

The automatic sample loading tray assures accurate test results by eliminating any chance of user inconsistencies in testing procedures. The automatic tray inserts the sample without variation and enhances safety.





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TMI

75-58 Heat Sealer TS-12

Model 80-20

The heat sealer is designed to produce heated crimp seals for flexible packaging materials. The digitally controlled heat sealer allows independent upper and lower seeal jaw temperature and accurately controls the temperature across entire length of seal.

STANDARD FEATURES

- Digitally controlled temperature
- Digitally controlled dwell time
- Independent upper and lower sealing temperatures
- Footswitch
- Safety guards and switches for sale operation
- Auto cycle switch allows continuous cycling of sealing jaws for quick sample seating.This feature helps reduce operator fatigue by eliminating the need to use foot switch for each seal.

Model 75-58

Digital Ink Rub Tester

Model 10-20

The Digital Ink Rub Tester is designed to measure scuffing or rubbing resistance. Several tests can be performed including dry rub-the amount of transfer ink from one dry surface to another, wet rub-the amount of transfer of ink from wetted surface to another, wet bleed or transfer-ink transfer to a water-saturated blotter, wet smear-similar to wet bleed with the addition or rub cycles, functional rub/ wet rub-smear or transfer tests using a liquid other than water and hot abrasion. An optional heated weight provides a uniform test for evaluating hot abrasion resistance of printed cartons, labels etc.

APPLICATIONS

Inks, Plastic film, Packaging, Paper, Labels, Coatings, Cartons, and Printed Materials

STANDARDS

Meets ASTM D 5264, TAPPI T-830, ASTM F-1571, FINAT FTM 27, ASTM F 2497

Model 10-20

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TMI

Compression Tester

Model 17-76

FEATURES

- Load capacity 1000 LB (4448 N)
- Platen size 7 x 7 in (178 x 178 mm)
- Test speed 0.2 – 20 in/min (5.08-508 mm/min)
- Return speed 10in/min (254 mm/min)
- Color LCD display
- Menu-driven software
- Test results and statistics are displayed on screen
- Preset keys for all relevant tests
- Automatic fast return platen saves testing access
- Pre –programmed with 3 languages
- 8 corrugated test methods for quick access
- Measuring units: N, N/m2, lb, lb/in2, kg, or kg/m2
- RS232C serial data output
- Built-in printer
- Compatible with GraphMaster™ software

APPLICATIONS

Corrugated, Tubes and Cores, Bottles and Cans, Flexible Packaging, Plastic Products, Building produts

OPTIONAL OPENINGS

8, 16and 24 inch

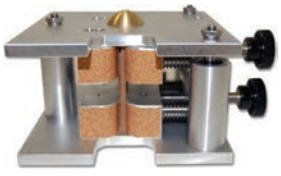
OPTIONAL ACCESSORIES

22 – 76 Sample cutter

Sample holders for RCT,CCT,ECT and SQT (see reverse)

Designed in close cooperation with industry, the 17-76 Compression Tester is rugged enough for any production testing environment. Utilizing intuitive hardware features and menu-driven software, the 17-76 is designed to provide highly accurate measurement of compressive strength for a variety of materials.

RCT: Ring Crush Test fixture
17-11-13



ECT: Edge Crush Test fixture
17-11-49

PAT: Ply Adhesion Test fixture
17-11-09

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TMI

Twin Blade Precision Sample Cutter

Model 22-34

The TMI Twin Blade Cutter is designed to cut a precision sample strip from a sheet of material. The robust design features two hardened ground steel blades which provide a precision cut over a base sheer. After extended use, a reconditioning service is available which includes sharpening the blades and replacing the base sheer. Applications include cutting thin plastic films, paper, laminations, foils, non-wovens and other sheet materials. Includes safety shields.

Specifications

- Catalog Number 22-34-00
- Sample widths include 15 mm, 25 mm, 50 mm, 63 mm, 0.5 in., 1 in., and 2 in.
- Blades parallel to 0.0254 mm (0.001 in.)
- Hardened steel blades

Tensile Testing Machine

Model 84-01

A fully digital tensile testing system with precise control and accuracy. It includes automated computer control of test methods using high resolution auto-ranging load cells with accuracies better than +/-0.5% down to 1/1000th of the load cell capacity for accuracy and simplicity of operation.

Specifications

- Aluminum alloy load frame provides high strength and stiffness
- Fully digital testing system with precise control and accuracy, includes automated computer control of test methods to simplify operation
- High resolution auto-ranging load cells with accuracies better than +/-0.5% down to 1/1000th of the load cell capacity
- Automatic recognition and calibration of load cells and extensometers with instant calibration check facility
- 800% overload capability of load cells without damage
- Compact footprint to economize on bench and floor space

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Lab Master® Release and Adhesion Tester

Model 80-91

The Lab Master® Release and Adhesion testing system operates with Windows® based software and features the ability to create user-defined test set-up, individual test speed selection, user-definable default areas for analysis, exporting graphs or data to Microsoft™ Excel and SPC programs, and enhanced calibration - verifies existing and new calibration, and keeps a calibration log for ISO record keeping. Test data visually represents the characteristics of the peel.

FEATURES

- Integrated touch screen display
- Analysis of raw data collected from pull for immediate feedback of test results
- Intuitive user-friendly controls
- Accurate field calibration with built-in ISO 9000 compliance record-keeping with on-screen user definable "calibration due" alerting
- PC Network compatibility for output of other lab management systems
- Test materials at 90°, 135°, and 180° angles of peel
- Piezoelectric s ensing system
- Windows® 7 operating system (Upgrade kits also available for most existing units)

Internal Bond™ Tester

Model 80-20

The Internal BondTM Tester is designed to determine the internal bond strength of a varietyof paper and board materials according TAPPI 569 and ISO 16260. The Instrument designed is based on a falling pendulum which creates a high speed impact on a paper specimen. The paper specimen is sandwhiched between two double-coated tape substrates. The pendulum impact measures the total energy required to delaminate the internal fibers of a specimenin a "Z"type direcction into two piles.

FEATURES

- Storage and editing of up to 500 readings
- Selectable units (ft.lb/in2, J/M2 and Kg·cm)
- RS-232 serial output
- Report printout with built-in printer
- Magnetic hammer release
- Automatic calibration
- Automatic specimen hold-down during test sequence
- Settable limits, statistic-average, standard deviation, high/low results
- Safe automated sample cutting procedure eliminates manual use of cutting knives
- 5.7inch LCD color display with 320x240 resolution
- 15 characer alphanumeric keypad
- 6 function keys for easy test setup
- 10 soft key icons allow simple intuitive navigation of test functions

APPLICATIONS

Newsprint, Fine Paper, Liner Board, Book Stock, Carton Board, Medium, Coatings, Laminates

STANDARDS

Conforms to TAPPI standard T 569
ISO 16260 Paper and Board-Determination of Internal Bond Strength

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Digital Micrometer

MODEL 49 - 56

Measuring thickness The model 49-56 Digital Micrometer combines unmatched accuracy and resolution with a modern contemporary look. The Micrometer can be configured to meet ISO, ASTM, TAPPI, EDANA or other international specifications. The Micrometer offers a cantilever balance system to allow low pressure measurements. This feature also allows adding or removing additional weights for multiple pressure applications. The instrument is supplied with a sensing eye next to the anvil. When a sample is detected the test cycle automatically starts.

Features

- Easy-to-use
- Small foot print
- Low foot pressure capabilities
- Units include, mm, µm, mil
- Optional strip feeder
- Suitable for multiple material applications
- Computer compatible with GraphMaster™ software

Applications

- Paper, corrugated, cloth, plastic, plastic film, textile fabrics, nonwovens,battery separators, felts, leather, tissue paper and others

International Standards

- ASTM D374, D1777, D5729, D6988, ISO 534, 3034, 4593:1993, 5084,9073-2, 12625-3, APPITA 1301.426, TAPPI T-411, EDANA 30.4, PAPTAC D.4, DIN 53370, BS 2782-6
- WSP 120.1, WSP 120.6

Reducing drift
The solid base of the micrometer is machined out of one piece. This, combined with improved electronics, limits the drift to nearly zero.

Cantilever
A cantilever mechanism allows for very light pressures. Compressible materials such as thin films and paper tissue can be measured.

Testing made easy
Testing is quick and easy. Parameters are software controlled and can be adapted, such as gap height, auto test mode, auto-zero and dwell time.

Increase the pressure
The micrometer has the option to vary pressure. A variety of pressure foot weights are available to increase the pressure on the upper anvil.

Combination anvil
An optional combination anvil allows the operator to change the diameter of the pressure foot. Different standards can be tested on one unit.

Optional stripfeeder
When measuring long strips of samples a stripfeeder can be helpfull. The stripfeeder can be set to measure any distance and can be used for any material

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Burst Tester

MODEL 13-6X

Short test with strong results The Burst Tester is used as a multi-directional test to identify failure in the direction showing least resistance. This test shows the physical strength and fiber bond. Different models are available for paper, board or textile. This instrument is also used for other applications such as plastic, rubber, aluminum and felts. The sample is pneumatically clamped, the rubber membrane is pushed upwards by hydraulics. The force at fracture is recorded.

Features
- Compensation of membrane force
- Starting test with one button
- Changing settings all in one screen
- Hydraulic testing increases accuracy
- Shield to enables safe operation
- When the shield is not used two hand operation
- Accuracy 1% of value International Standards
- ASTM standard D-774, 3786,
- ISO 2758, 2759, 1328-2:1999, 2960
- BS 4768

Short Span Compression Tester

MODEL 17 - 36

Compression strength The 17-36 Short Span Compression Tester measures the compression strength of paper and board. The distance or free span can be set from 0.3 - 0.7mm (steps of 0.1). When performing a compression test on such a short distance the stability of the clamps and instrument is very important. The 17-36 Short Span directs all the forces of the clamped sample to the load cell, making it one of the most accurate instrument available on the market.

Features
- Compact and modern design
- Automatic clamping of sample
- Touch screen
- Intuitive user interface
- Unique clamping mechanism
- Statistical information
- GraphMasterPro™ compatible
- Serial printer output International Standards
- ISO 9895
- TAPPI T-826
- DIN 54518
- SCAN P46
- AS/NZ 1301.4SO RP
- BS 7325

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Bending Resistance Tester

Model 79-25

Not only for Bending Resistance The Bending Resistance tester is an easy to operate and a high accuracy instrument. Besides the Bending Resistance, six other test can be performed. These are Score Bend, Score Perforation, Break Force, Taber Stiffness, Spring Back and of course the Crease Line. The two point method secures the sample with a pneumatic clamp. The auto touch senses that the sample is in the correct place and the test will start. In this way variation during operations are eliminated.

Features

- Automatic clamping of sample
- Automatic positioning of load cell
- Auto touch of sample
- Overload protection of load cell
- Easy calibration
- Bending Resistance, Score Bend, Score Perforation, Break Force, Taber Stiffness, Spring Back, Crease line
- Paper, paperboard, non-woven materials, plastic film, medical tuning wire

International Standards

- ISO 2493
- AS/NZ 1301-4535
- BS 3748
- DIN 53121
- SCAN P29
- TAPPI T556

Tear Tester

Model 83-20

Quick accurate and repeatable The Tear Test measure the force required to tear a sample. The sample can be paper, paperboard or textile. The test is also known as the Elmendorf Test. This instrument pneumatically clamps the sample, after closing the safety hood, the sample is precut and automatically torn. Since not all samples require a pre-cut, this option can be switched off. The tear tester is supplied with different weights making sure you can always measure with the correct range.

Features

- Two models (64,000 or 100,000)
- Automatic testing
- Automatic recognition of pendulum weight
- Test with multiple sheets
- Verification weights available
- Pneumatic clamping
- Very accurate at low range

International Standards

- Tappi T414,
- APPITA P 400,
- ASTM D 689, D 1922, D1424
- NEN 1760,
- BS 4468,
- SCAN P11,

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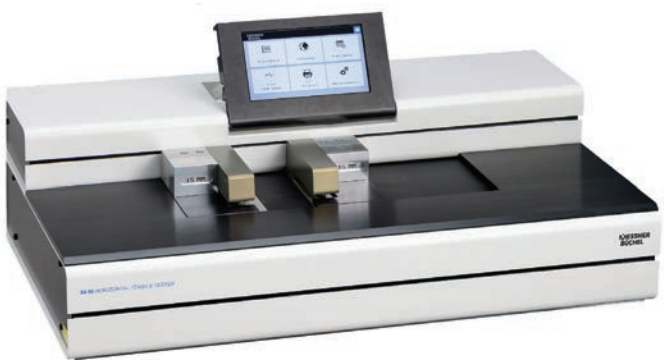
Horizontal Tensile Tester

MODEL 84-56

Slide in your sample and test The Horizontal Tensile Tester tests the tensile strength and elongation of a sample. After placing the sample the sensor detects the sample and the test starts. Special guides are supplied to center the sample correctly. The guides can be replaced when another test width is required. The wide workbench enables you to easily perform your tests. The auto detect option frees your hands to slide in your sample. The touchscreen has clear buttons makes navigation quick and easily. As an option, the instrument can be adapted for wet test according to ISO 12625-5.

Features

- Sample with of 15, 25, 50 and 75mm or ½", 1", 2" and 3" test width
- Test speed 10-200mm/min (0,2-0,8 inch/min) • Sample length 50 – 180mm
- Wet test options
- Load cell ranges: 50, 100, 250, 500 or 1000N
- Auto detect of sample



International Standards

- ISO 12625-4, ISO 12625-5 wettest
- TAPPI T 494
- AS/NZ 1301.448
- BS EN ISO 1924-2/3
- DIN 53112
- SCAN P38, JIS P8113, CPPA D34

Crush Tester

MODEL 17 - 56

The Crush Tester is suitable for a wide variety of samples, including corrugated board, tubes, paper and plastics. The special sample holders extend the instrument's possibilities. The accuracy is achieved with a precision load cell, which is even accurate at low force values.

Features

- Solid and robust instrument
- Ergonomic design
- Precision load cell
- Load cell up to 5000 Newton
- Special sample holders available
- Easy to use interface
- Suitable for: RCT, CMT, CCT, PAT, ECT, FCT, SQT test

International Standards

- DIN 53134, 53149
- PPITA/AS 1301.429s
- FEFCO No. 11, No. 8, No. 6
- SCAN P34, P27, P33. P32, P42
- ISO 12192, 7263, 3037, 13821, 3035
- APPITA/AS 1301.407s, 1301.434s, 1301.430s, 1301.444s
- TAPPI T822, T809, T843, T821, T811, T823, T838, T839, T825, T829

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Absorption Characteristic Tester *Model 61-76*

New type of data and possibilities The Absorption Characteristics Tester or ACT, monitors water uptake continuously across a 100cm2 sample. The ACT, in addition to giving you a Cobb number, will measure water absorption (Cobb) of the sample from the first tenth of a second. Once the operator has inserted the test specimen, the test is done automatically, thereby operator involvement is reduced to a minimum. The dynamic data opens new possibilities in better understand the specimen characteristics.

Features

- Water absorption (Cobb Value) reading from the moment the water enters the specimen
- Fully automated test cycle
- Programmable test times from 10 sec to 60 min
- Graphic Overlay of absorption curves over time
- Lower test times option by software predictions

Pocket Goniometer PGX+

Model 68-76

Small and easy to handle The PGX+ measures contact angle (dynamic and static), surface tension, and surface energy. The PGX+ makes a drop in µl according to the size that is set. The drop is automatically released and 80 images per second are made. The instrument is used for paper & board, solar cell panels, windshields, metal cylinders and similar surfaces. For most tests deionized water is used, however using other liquids is also possible. Contact us if you want to use any other liquids.

Features

- Easy to handle, small sized
- Registration with 80 frames/ second
- Purity of liquids, Surface Tension, Static and Dynamic Contact Angle
- Multiple test fluids possible
- Runs on every office computer
- Power from USB connection
- No sample preparation
  International Standards
- TAPPI T458
- ASTM D-724
- ASTM D-5946

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CMC-KUHNKE produced the world's first computerized double seam inspection system in the 1980s and in 2005 sold the first completely automated version of this system.

Unsurpassed Quality

CMC-KUHNKE has long had the reputation for providing the highest quality and accuracy of gauging. CMC-KUHNKE is committed to quality and guarantees it with a Gauge Quality Guarantee: In conjunction with the customer, a standard for the gauge is agreed upon and confirmed with extensive R&R testing prior to shipment.

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The SEAMscan SPC System for Food Cans

Affordable High Resolution Double Seam Inspection

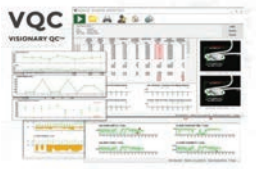
The SEAMscan SPC System is an affordable high-resolution tool for double seam inspection and measurement. SEAMscan SPC gives you a precision optical seam scanner and a powerful SPC database, packaged in a friendly user interface for both novice and expert computer users. The SEAMscan SPC System is made up of three products essential for proper double seam maintenance and is often bundled with a technical support plan:

SEAMview Inspection Software
Software to automatically measure, compare and evaluate double seam images.

- Capture, measure & save seam images in < 1 second!
- Customize inspection screens, zooms & alert colors
- E-mail image files or use in a report document

Video Seam Imager
High-resolution digital seam scope.

- Patented auto-focusing can holder
- Clearly illuminates & captures images of seams
- High-resolution USB camera & precision optics
- Rugged and reliable



Visionary SPC Software
Database software for can inspection and statistical process control.

- Easy Data Entry
- Secure Database
- Intuitive Reports

Combination Seam Gauge 360°

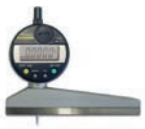
CSG-2360 Semi-Automatic Seam Gauge with Complete 360° Seam Thickness Profile

The semi-automated CSG-2360 adds the capability of a complete 360 degree profile of the critical seam thickness measurement to our popular CSG series of gauging.

Running in standard mode, the CSG-2360 provides automated seam thickness and countersink depth measurements at multiple locations around the can.

- Complete Seam Thickness Profiling with graph - extremely useful for locating and measuring problematic compound bumps
- Can is Rotated Automatically, significantly increasing inspection accuracy and reducing inspection time
- 1000 Readings per second in 360° mode

Seam Thickness Gauge
STG-4000



Countersink Depth Gauge
CDG-3000

Seam Stripper

Beverage Seam Saw
AGS-2300

Heavy Duty Seam Saw
MK-2000

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CMC-KUHNKE

The SEAMscan XTS*

Non-Destructive Double Seam Measurement

The SEAMscan XTS is a semi-automated gauge designed to measure the internal parameters of the double seam.

All measurements are non-destructive resulting in no product spoilage due to double seam teardown.

Measurements include: Seam Height, Body Hook, Cover Hook, Overlap, Seam Gap, % Tightness, % Primary Sealing Area, Wrinkle Amplitude.

XTS Virtual Seam Teardown Technology

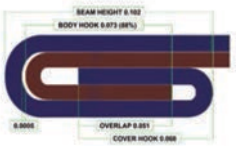
Non-Destructive Double Seam Inspection

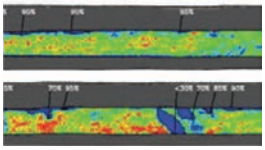
- Faster than conventional cross-sectional methods
- No Product Spoilage
- 360° Measurement
- Safer than conventional cross-sectional methods
- Operator Independent
- World Class R&R
- Complete Tightness Scan
- Excellent X-Ray- Shielding (TÜV Rheinland tested to < 0.1 mSv per year)

The XTS is a revolutionary, Non-Destructive tool for operator- independent double seam measurement.

No More Double Seam Teardowns
Designed specifically for can-makers and brand-owners, SEAMscan XTS delivers a high- resolution X-ray seam scope in a compact and user-friendly package.

Available as a Fully-Automated In-Line Unit for Complete Double Seam Inspection: The AUTO-XTS Measures: Seam Thickness, Countersink Depth, Seam Height, Body Hook, Cover Hook, Overlap, Seam Gap, % Body Hook Butting) Wrinkle Rating (% Tightness) with option of Can Height.





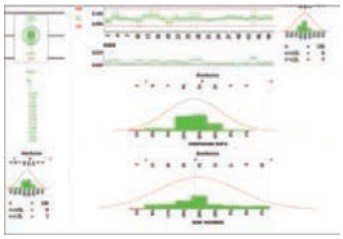
Visionary QCTM Software

Dynamic Data Collection & Statistical Process Control

Designed specifically for the canning industry, Visionary QCTM is CMC-KUHNKE's most comprehensive data acquisition software to date.

Visionary QC™ provides flexibility for those working at advanced technology levels, yet is simple enough for less experienced technicians.

- Easy Data Entry
- Secure Database
- Intuitive Reports



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OxySense® Model 8100e

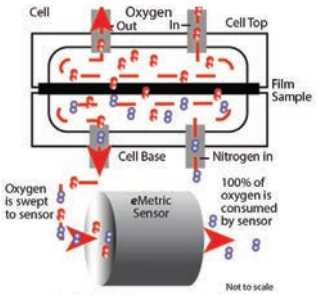
Oxygen Transmission Rate Analyzer

Setting the new benchmark in oxygen transmission rate measurement instruments, the All-NEW OxySense® Model 8100e oxygen transmission rate analyzer incorporates the latest in coulometric sensor technology with high sensitivity and the widest test range. It is simple to operate, reduces testing costs, and increases productivity.

Industry Standards:

- ASTM D3985
- ASTM F1927
- DIN 53380-3
- JIS 7126
- ASTM F1307
- ISO CD 15105-2

- Latest coulometric sensor technology ASTM D3985 compliant
- High sensitivity
- Widest test range
- Easy to operate
- Fully automatic
- Expandable Satellites
- Expandable up to 32 cells
- *"Test Condition Matrix" (TCM™)* - to test a sample at up to ten different conditions of temperature and relative humidity



Coulometric sensors perform according to Faraday's Law.

OxySense Model 8100e Technical Specifications

Sensor	cc/(m² • day)	cc/(100 in² • day)	cc/(pkg • day)	Resolution cc/(m² • day)	Repeatability cc/(m² • day)
E-Metric Unmasked	0.01 to 432,000	0.0006 to 28,000	0.00004 to 2000	0.005	0.03 or ±1% whichever is greater

Test Conditions	
Test Temperature Range	10°C to 40°C ± 0.1°C
Controlled RH Testing Ranges	Films- Carrier and Test gas: 0% to 90% ± 2% Packages - Ambient or controlled by external enviromental chamber

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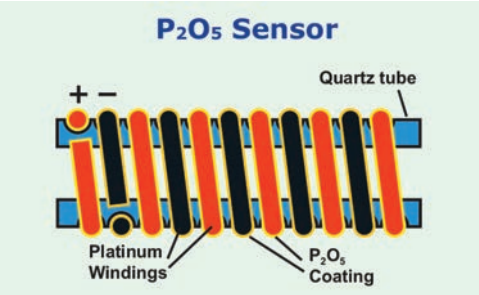
Water vapor permeation analyzer 7000

Modular systems for precision water vapor permeabilty testing of packaging lm barriers.

The 7000 water vapor analyzer range utilises the sensitive and stable P2O5 sensor for absolute moisture measurement. These water vapor analyzers oer a wide measurement range of 0.002-1000 g/m^2/day and precision temperature, humidity and ow control. Providing accurate and repeatable results for research and development testing of water transmission rate (wvtr) in both current and newly formulated packaging lm materials and fast testing for Quality Control.



Specications

Industry : Packaging
Gas : Water Vapor
Application : Permeation
Measurement range : 7001 Unmasked 0.002 - 10 g/m2/day, Masked 0.02 - 70 g/m2/day.
Measurement range : 7002 Unmasked 0.002 - 70 g/m2/day, Masked 0.02 - 1000 g/m2/day
Test temperature range : 5 to 50°C (41 to 122°F)
Test RH range : 20 to 90% RH
Dimensions : 533 x 533 x 305 (mm)
Weight : 23.6 kg

Features and benefits

Analytical Systems Manufactured traceable to NIST (products/I80-5000)
System validation with certied gas or lm for speed and convenience
Over 25 years experience of Proprietary Coulometric P2O5 sensor
Absolute moisture measurement - no calibration required
Wide measurement range providing research grade exibility
Flow, temperature and humidity control for ultimate responsiveness and repeatability intuitive Windows based softwareNo liquid coolants, catalysts or special gas mixtures required.

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Carbon dioxide and oxygen headspace gas analyzer Gaspace Advance Micro

The Micro is designed to analyze very low volumes of headspace, less than 1cc, using: Timed Tests, AutoSense, Peak/Valley, Syringe Direct Injection or Continuous Testing. Using AutoSense a number of packs can be tested quickly with just one button press, saving time and making Quality Assurance more ecient.

Pass and Fail messages speed up the analysis process and remove any uncertainty with interpreting results.

Features and benefits

- Ability to analyse very low volumes of headspace, less than
- Easy to use touch screen
- 5 dierent test methods
- Easy to set up and use
- Intuitive menu
- Auto calibrate and auto diagnosis
- Set tests for pass or fail
- Built in Printer
- Computer software option with easy keyboard entry of data
- Documentation for Quality Management Systems (IQ, OQ, PQ)
- 21CFRII Compliant

Oxygen and carbon dioxide headspace gas analyzer GS6000

These highly advanced instruments are equipped with integral sampling systems, unique, miniature, longlife, zirconia and infrared sensors, and microprocessor control to deliver the most accurate and repeatable performance possible.

The internal microprocessor manages calibration, autoranging, ow control, test duration and many other functions to ensure consistent, error-free results. One touch automated calibration and product analysis make these analyzers easy to use. Response is typically less than ve seconds for oxygen and ten seconds for carbon dioxide.

An accessory for the GS6000 is the can piercing station which is simple to use and proven to be stable and reliable in hundreds of demanding applications. It supports rigid cans and jars for accurate analysis using a standard needle probe. A 45° Adaptor is also available to aid measurement of small volumes of headspace.

User-friendly software parameters are easy to enter and can be secured against accidental change.

Features and benefits

- Easy to set up and use
- AccuFlow transducer
- Intuitive menu
- One-Touch calibration
- Set tests for pass and fail
- Lightweight and easy to move around
- USB port for diagnostic software

Optional:

- external printer via RS232
- computer software
- can piercing station
- 45° adaptor for can piercing s

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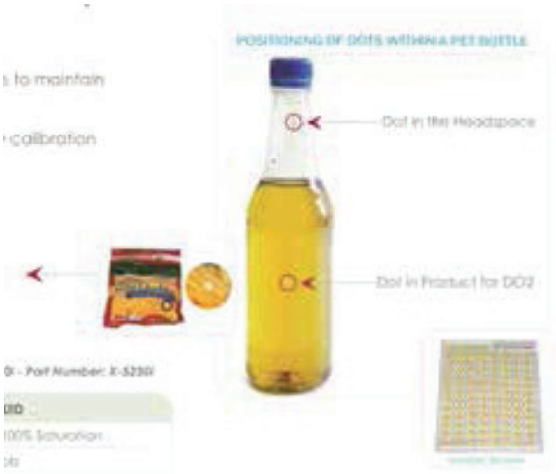
Oxysense

Non-Invasive Optical Oxygen Analyzers, Permeation Analysis / OTR Oxygen Transmission Rate Testing, In-line Process Monitoring and Oxygen Measurement Accessories.

The OxySense oxygen measurement system is unique not only for its ability to measure oxygen non-invasively, but also for its ability to measure oxygen in headspace as well as dissolved in liquids. It is an optical system that can measure oxygen concentration within packages that are transparent, semi-transparent, and translucent; and as long as the packaging material can transmit blue and red light (at approximately 470nm and 610nm respectively), oxygen measurements can be made. Our oxygen analyzers comply with the ASTM standard F2714-08



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Test Sample Injection Moulding Apparatus

The Test Sample Injection Moulding Apparatus has been specifically designed to produce a wide variety of laboratory test samples such as color plaques, tensile and impact test specimens as well as small components required for mechanical testing procedures. The unique low cost moulding machine has a compact design for vertical bench mounting making the apparatus ideal for Research and Development institutes, universities, laboratories and workshops.

Specifications

- Pneumatically operated
- Maximum air line pressure: 150 psi/10 bar
- Maximum polymer pressure: 6500 psi/450 bar
- Maximum shot size: 47cm^3
- Max. sample size 175mm (L) x 45 (W) x 12.7 (T)
- Digital Temperature Control
- Automatic nozzle-to-tool locking device.
- Cam-lock Tool Block
- Quick Change Cylinder, Nozzle & Die

6MPCA Advanced Melt Flow System

The 6MPCA is the most advanced digital model offered within the Ray-Ran range of melt flow index testers. The operating procedure is simple to undertake using its on-board advanced microprocessor technology. The large LCD provides onscreen instructions, reducing user error, and test parameters are easily entered via the keypad. The apparatus can accurately determine results for MFR, MVR and Density at test temperature.

Specifications

- Molten polymer extrusion via controlled orifice using set temperature and pressure parameters
- Electronic temperature controller with dual zone heating
- Temperature accurate to +/- 0.1 °C, range 0 to 400°C and resolution +/- 0.1 °C
- Digital encoder accurate to +/- 0.02mm
- Conforms to ASTM D1238, ASTM D3364, ISO 1133, DIN 53735 and others
- Electrical characteristics: 110v@60hz and 220v@50hz - fuse rating: 10amp

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3 or 6 Column Auto Density Measurement System

The Auto Density Gradient Column System is available in either a 3 column unit or 6 column unit. According to ASTM D1505, column gradient measurement systems are the world's benchmark for accurate density measurement of small polymer specimens.". The built in, on-board Microprocessor System accurately calculates the specimen's density more quickly and more accurately by using the latest linear encoder technology that measures the samples position in the column relative to the calibrated glass marker floats. Once the correct position of the sample is recorded the density is displayed on the LCD screen.

Specifications
- Automatic density calculation
- Automatic calibration system
- Resolution 0.0001 g/ml
- Accuracy 0.0001 g/ml
- Variable speed pumped filling system
- Twin conical filling flasks
- Automatic magnetic stirrer
- 7x optical microscope

Hand Operated Test Sample Cutting Press

Specifically designed to cut test samples such as tensile bars from relatively flexible sheet, the RayRan Hand Operated Test Sample Cutting Press will produce samples from plastics, fabrics, boards and paper. In most cases, the thickness of the material that can be cut will not just depend on the strength of the material, but also on the lateral flexibility of the material to allow the cutter to penetrate down into, and pass through the material.

Specifications
- Hand operated
- 30cm x 15cm sample platform
- Cutting force up to 6KN
- Polypropylene cutting board
- Adjustable cutting arbor with locking handle
- Suitable for rubber, plastic, paper, fabric or laminates
- Product user manual
- CE declaration certificate
- 1 year return to base warranty

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Pneumatically Operated Test Sample Cutting Press (PCP)

Specifically designed to cut test samples such as tensile bars from relatively flexible sheets, the RayRan Pneumatically Operated Test Sample Cutting Press will produce samples from plastics, fabrics, boards and paper. In most cases, the thickness of the material that can be cut will not just depend on the strength of the material, but also on the lateral flexibility of the material to allow the cutter to penetrate down into, and pass through the material.

Specifications

- Pneumatically operated up to 10 bar (150 psi)
- Automatically operated
- Polycarbonate guard
- Cutting force up to 50KN
- 25cm x 15cm sample platform
- Polypropylene cutting board
- Adjustable cutting arbor with locking handle
- Suitable for rubber, plastic, paper, fabric or laminates
- Product user manual

CNC Test Sample Profile Cutter

Designed and manufactured by Ray-Ran the Model 1 CNC Sample Profile Cutter is rapidly becoming the best bench top milling machine in its class. The 3 axis rapid prototyping vertical milling machine is ideal for cutting hard dense polymer sheets and laminates up to 40mm thick as well as polyethylene and polypropylene pipes that are used within the gas and water industry.

Specifications

- 300mm x 250mm x 100mm XYZ axis
- 500 mm x 440 mm table size
- High Quality 0.5KW Router Spindle
- Variable spindle speeds from 2400 rpm to 24,000 rpr
- High quality guide rail and lead screw system
- Positional homing switches
- Enclosed safety cabinet for user protection
- Internal lighting
- Computer interface with Windows™ Flashcut CNC PC software

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Notching Cutte
22-80

To produce precise stress concentrated notch profiles on Impact and Charpy specimens look no further than the Ray-Ran Autocycle Notch Cutter for Izod and Charpy Impact Tester Sample preparation. A world leader by design, this machine will cut accurate notch profiles to international test standards such as ISO 179, ISO 180 and ASTM D256 on impact machines from TMI, Ray-Ran, and other impact tester manufacturers.

Specifications
- Advanced dedicated microprocessor control
- Easy to read LCD
- Touch membrane keypad
- Memory feature
- Cutter speed range from 350 rpm to 2500 rpm
- Traverse speed range 0.06 mm/rev to 1.0 mm/rev
- Metric and imperial traverse speeds units
- Anti-vibration linear motion slide
- Multi-sample loading
- Cutter wheel 0.25mm radius included

Bulk Density Apparatus (ASTM D1895 Method A)

Bulk density apparatus is testing equipment used to measure the bulk density property of powder, granules and other “divided” solids, especially used in reference to mineral components (soil, gravel, sand), chemical substances, (pharmaceutical), plastics like polyethylene (hdpe or mdpe) pvc, polystyrene etc, or foodstuff and any other masses of granular or particulate matter. The Method A tester is primarily used to measure the apparent density of fine granules that can be poured readily through a “V” shaped funnel, the material under test is allowed to flow into a cylindrical cup with a known volume of 100cm^3.

Specifications
- V shaped funnel
- Measuring cup 100cm^3
- Stand with funnel shut off
- Special funnels and cups are available to meet your requirements Tests that can be conducted are:
- Apparent Density
- Bulk Factor
- Pourability

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Izod/Charpy/Tension Impact Tester

Tester utilises advanced microprocessor technology to determine the energy required to break or rupture plastics, composites, ceramics and non-ferrous metals to International testing methods for Izod, Charpy and Tension Impact Testing. Along with Pipe Testing, Component Testing and Puncture Impact testing, the Ray-Ran Universal Pendulum Impact Tester should exceed all of your testing requirements.

Specifications

- Advanced dedicated microprocessor control
- Touch membrane Alpha/Numeric keypad
- Easy to read liquid crystal display
- Sequence logic menu auto prompt selection
- RS232 interface connector
- Ethernet Interface connector for LAN Networking
- Self-calibration procedure for wind and bearing resistance
- Variable pendulum velocity up to 3.8 m/s
- Meets ASTM D256, ISO 180 for IZOD; ASTM D6110, ISO 179 for Charpy; ASTM D4508 for Chip Impact; ASTM D4812 for Un-Notched Cantilever Beam and ISO 5286 Tension Impact Method A.

2 Station HDT/Vicat Softening Point Apparatus

Designed and built to cover multiple international testing standards, the Ray-Ran Advanced HDT/Vicat Apparatus utilises microprocessor technology to accurately determine the deflection and softening point characteristics of all thermo plastic test specimens.

Specifications

- HDT/Vicat testing enabled
- Manual Raise/Lower of test stations
- Advanced microprocessor control
- 2 sample test stations
- Digital temperature control
- Temperature range to 300°C
- Oil bath stirrer
- Solenoid operated cooling system
- Integrated safety thermostat
- HDT Heads (1 per station)
- Vicat Nibs (1 per station)

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Static and Dynamic Friction Tester

Model RR/FT provides accurate, repeatable test results for Static and Dynamic Friction co-efficient values. The load cell measuring range is 1 kg. Applications include COF and peel for any combination of packaging materials using a standard test sled or specific peel attachment. Ray-Ran Friction tester includes Windows™-based Techni-Test software which allows user-defined test data to automatically download to the apparatus for report information and for the operator to analyze all aspects of the friction test curve.

Specifications

- 1 kg load cell
- Touch membrane keypad
- Easy to read liquid crystal display,
- Ethernet interface connector for LAN Networking
- Tabular and graphical statistical analysis
- Temperature display for heated bed option
- Variable speed sled velocity up to 1800 mm/min
- Standards include: ASTM D 1894, ISO 8295 COFPlastic Films, TAPPI T594 Paper, TAPPI T 549 Corrugated

Dart Drop Puncture Impact Tester

RR-FT

Model 43-26-27 Falling Dart Impact Tester determines the mechanical puncture resistance of packaging materials such as plastic films and laminates according to ASTM D 1709 methods A and B. These methods cover the determination of the energy that causes polyethylene film to fail under specified conditions of impact of a free-falling dart The dart consists of a hemispherical part of aluminum with polished surface and a diameter of 38.1 mm (1.5 in.), having a vertical shaft in the center of the flat top surface. Around the shaft additional weights can be fitted. The base includes a test clamp to secure the film.

Specifications

- Drop height 660 mm for ASTM D-1709 method A
- Drop height 1500 mm for ASTM D-1709 method B
- Weight of falling dart-50 gr.
- Additional weights:
- 10 pcs of 5 gr
- 8 pcs of 15 gr
- 8 pcs of 30 gr
- 8 pcs of 60 gr

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Linear Thermal Film Shrinkage

The Ray-Ran Unrestrained Linear Thermal Film Shrinkage apparatus, also referred to as the liquid immersion method, is used to determine thermal shrinkage of plastic film and sheeting. As a result of manufacturing, internal stresses may be locked into a film or sheet which can then be released by heat, causing shrinkage of the material. The amount of shrinkage is dependent upon the temperature during the test. The results are plotted on a graph showing percentage shrinkage against temperature.

Specifications
- Determination of Unrestrained Film Shrinkage
- Liquid immersion method
- Simple to operate
- PID electronic temperature control
- Resolution 0.1°C
- PT100 PRT sensor accurate to 0.1°C
- Integrated stirrer motor
- Stainless steel liquid bath
- Sample cutting template, 100mm x 100mm

Hot Plate Film Shrinkage

Designed and manufactured by Ray-Ran, the Hot Plate Thermal Film Shrinkage Apparatus is used to determine the thermal shrinkage of plastic film and sheeting. It is ideal for most quality control procedures where precise results are essential. The principal of the hot plate method to determine film shrinkage is similar to the liquid immersion method, notably to determine the amount of shrinkage of a film when heated to release the internal stresses produced due to manufacturing.

Specifications
- Simple determination of Unrestrained Film Shrinkage
- Hot plate method
- Simple to operate
- PID electronic temperature control
- Resolution 0.1°C
- PT100 PRT sensor accurate to 0.1°C
- Electronic timer HR:MIN:SEC
- Sample cover plate

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Eagle Vision

ABOUT EAGLE VISION:

Eagle Vision is specialist in delivering in-line quality control inspection systems based on vision. We are active in the industrial markets of food, beverage, and packaging industries. Our customers prefer Eagle Vision because we excel in know-how, experience, flexibility and cost-effective solutions.

The Basic Scout is Eagle Vision's modular inspection platform, the solution for various inspection inquiries to ensure your quality and production guidelines. Thanks to the modular set-up a single system combines multiple inspections. And it makes us extra flexible in installing the system in existing production lines.

PROVEN RELIABLE INSPECTIONS:

•Up to 60.000 products per hour
•Customer specific solutions possible

MODULAR SET-UP :

•Easy to combine multiple inspections in one system
•Flexible installation on existing and new lines
•Connects 1-10 optical units (camera+ illumination)

COMPACT :

•Control cabinet, touchscreen size
•Flexible installation on existing and new lines
•Optimal geometrics

EASY MAINTENANCE:

•Remote maintenance with modem or network
•Self calibration/learning
•No moving parts, no product handling

STANDARD CONFIGURATION:

•Same look-and-feel for all inspections in factory
•Stand-alone system or integrated in network
•High Performance processing

Key products:

- Code Inspection Module
- Empty Can Inspection Module
- 360° Inspection Module
- Seam Inspection Module
- Cap Inspection Module
- Starch Mould Inspection Module

GOOD PRICE:

•Modular system pricing
•Low cost of ownership
•Rent possible

Other inspection modules

Eagle Vision

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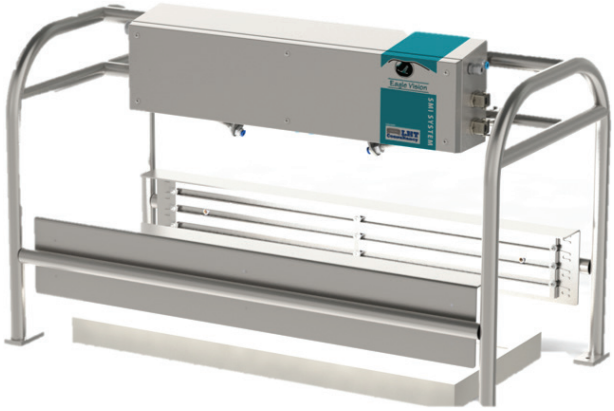

Dirty Tray Vision System

DTV SYSTEM LHTechnology was established in 2004 to focus on efficiency and quality of the production in starch moulding. It developed the DTV System (dirty tray vision system). The first and best innovative solution since 25 years to prevent bad imprints and dirty trays during starch moulding production.

THE PROBLEM Between 0,2% and 1% of the trays should not be deposited and cause a loss of time, efficiency and quality. The failures include poorly filled trays, poor quality starch-imprints, missing models in the mouldboard, residual product sticking in the new filled printed tray and damaged filled trays.

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TME's new Intelligent Package Test System

The TME BT Integra-Pack© is a bench-top, high-resolution (0.001 psig) test instrument with a small footprint and user-friendly ease of operation. Electronic pressure and flow controls provide precise and repeatable test conditions, while automatic and high flow output allow testing of large porous packages. Applications cover a range of flexible or rigid, porous and non-porous, open or sealed packages.

Closed Package
Test Fixture Assembly

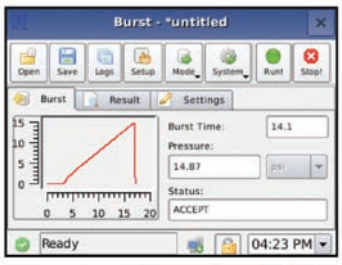
Compliance to standards :
ASTM F-2054, F-1140I, F-2095
ISO - 11607
FDA CFR 21 Part 11

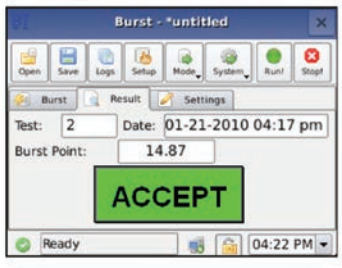
Standard Test Modes :
Burst Test
Creep Test
Creep-to-Failure Test
Pressure Decay Leak Test

Standard I/O Functions :
USB Connection to PC, Mouse, keyboard or printer
USB drive support for program data storage and data export
LAN remote instrument control
and data transfer and data transfer

"Smart" Test Systems

- **Sample measuring units for quick, accurate measurement:**
  - -Micrometer type, reading to 0.001mm (0.00005 in)
  - -Caliper type, reading to 0.01mm (0.0005in). Can also be used for elongation measurement.
  - -Dial indicator type, reading to 0.025, 0.0025 or 0.00025mm (0.001, 0.0001 or 0.00001in).
- **Upgrades for computer system: per customer request.**
- **Automated testing software systems:**
  - -Makes the testing process fully automatic.
  - -Automatic program control of load rate, strain rate, and crosshead speed.
- **Do repetitive cycling:**
  - -Position, strain or load.
  - -Count cycles.
  - -Record limit values.
  - -Auto shutdown on failure or over-limit values.
- **Compatible test programs for every application.**
- **Wide variety of grips and fixtures to accommodate all standard testing applications.**
- **Customized grips and fixtures for special testing applications.**
- **Choice of contact or non-contact style extensometer for most any material and strain measurement application.**
- **Environmental chambers for high or low temperature testing applications.**
- **Extra load frame height and/or width for special applications.**





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UTS

With over 50 years in business, United has become one of the world's premier manufacturers of state-of-the-art material testing systems. United offers universal testing machines for compression and tensile testing, hardness testers, material test fixturing, accessories and software.

"SMART" Test Systems
OPTIONAL EQUIPMENT AND FEATURES

- Sample measuring units for quick,accurate measurement:
  - -Micrometer type ,reading to 0.001mm (0.00005 in)
  - -Caliper type, reading to 0.01mm (0.0005in). Can also be used for Elongation measurement.
  - -Dial indicator type, reading 0.025. 0.0025 or 0.00025mm (0.001, 0.0001 or 0.00001 in)
- Upgrades for computer system per customer request
- Automated testing software systems :
  - -Makes the testing processfully automatic
  - -Automatic program control of load rate, strain rate, and crosshead speed
- Do repetitive cycling
  - -Position, stain or load
  - -Count cycles
  - -Record limit values
  - -Auto shutdown on failure or over limit value
- Compatible test programs for every application
- Wide variety of grips and fixtures to accommodate all standard testing applications
- Customized grips and fixtures for special testing applications
- Choice of contact or non-contact style extensometer for most any Material and strain measurement application
- Environmental chambers for high or low temperature \ testing applications
- Extra load frame height and/or width for special application

SHFM Series Test Systems
SERVO-CONTROLLED HYDRAULIC FLOOR MODEL

Universal testing machines for today's high capacity applications require sturdy load frames along with computer data acquisition and control capabilities. The fully-accessorized UNITED SHFM Series Testers include a complement of support hardware and accessories to immediately commence testing for tensile or compressive strength as well as bend and flex testing. Load cells are standard equipment for SHFM Series machines. United SHFM Series Test Systems are available in capacities from 300kN to 2,000 kN (67,500 Lbf to 450,000 Lbf).

By incorporating proven hardware plus USB-connectivity for high speed data acquisition and control, the SHFM Series takes full advantage of our extensive library of Windows®-based test methods. These test methods generate test results that are fully compliant with internationally recognized standards such as ASTM, ISO, EN, JIS, DIN and BS.

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TRU-BLUE II

Rockwell Hardness Tester

CLOSED-LOOP | ALL SCALE

MEETS ASTM E 18 AND ISO 6508 requirements
Manufactured by United Calibration Corporation Huntington Beach, CA 92649 | www.unitedtesting.com Made in the USA

TRU-BLUE II SPECIFICATIONS

Vertical Capacities: 10 in. (25.4 cm),
14 in. (35.6 cm), 18 in. (45.7 cm).
Throat Depth: 5.5" (14 cm). Optional 9.5" (24cm).

- Regular Scales: A, B, C, D, E, F, G, H, K, L, M, P, R, S, and V. Forces: 10kg., 60 Kg., 100 Kg., and 150 Kg.
- Superficial Scales: 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y. and 45Y. Forces: 3kg., 15 Kg., 30 Kg., and 45 Kg.
- 4 ASTM E-18 dwell time settings plus NIST SRM timing.
- Plastics dwell time settings in accordance with ASTM D-785.
- Computer Controlled digital closed-loop technology. Forces measured via inline load cell.
- 4x20 Bright Vacuum Fluorescent Display.· Front panel controls with Piezo-Electric switches.
- Statistical Summary including Average, Range, Standard Deviation, High, Low and Number of Tests.
- Auto correction of hardness values for cylindrical parts.
- Built-in ASTM E-140 Conversion Charts and ASTM A-370 Tensile Strength Values (steel material only).
- Parts IN/OUT of Tolerance Settings with Adjustable Audible Alert.
- Languages: English, Spanish, French, German, Italian and Portugese.
- Connection for pc keyboard used to input parts ID data.
- RS-232 Interface and Parallel Printer ports (Dot Matrix).
- Bi-directional application of testing via elevating unit or control panel.
- Auto self diagnostic test.
- Removable parts clamp used to secure irregularly shaped or oversize parts. Illustration at top right of page!
- 20 bit analog to digital converters for force and depth measurements.
- Co-Axial mounting of Force and Depth transducers.
- Logical setup and operating menu from front panel keys.
- Elevating unit dust cover.
- Manual, indenter installation tool and power cord.
- Factory Certificate for Direct Verification of Load, Depth, Hysteresis and Dwell Timing included.
- Factory Certificate for Indirect Verification is available but customer must provide United with 1" or larger flat anvil and indenters for each specified scales.
- Manual, Indenter installation tool and Power cord.
- 2 Year Factory Warranty.
- CE Certified. Power required:100-240 VAC 50/60 Hz, Single Phase. 1 Amp. Hardness testing accessories sold separate.

MODEL	L X D X W IN. (CM)	WEIGHT LB. (KG)
TBII-H10-D5.5	33x20x8 (84x51x20)	185 (83.9)
TBII-H14-D5.5	38x20x8 (97x51x20)	195 (87.7)
TBII-H18-D5.5	42x20x8 (107x51x20)	205 (92.3)

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