Advanced Pipe Testing Technologies

Universal Testing Machines
Impact Testers
Hardness Testers
Metallography
MFL Corrosion Detection Pipe Scan
Holiday Detector
Ultrasonic Thickness Gauges
Ultrasonic Flaw Detectors
Portable Microscopes
Video Borescopes
Universal Testing Machines

Q-Series Advanced Universal Testing Machines
www.WorldofTest.com/utm.htm

The Q-Series Universal Tensile/Compression Testing Machines, with a stylish look and state-of-the-art design, meet the highest demands of quality-testing professionals and test applications in the pipe manufacturing industry.

The Q-Series UTMs’ high resolution and the capability to extend the load cell user field to 1/500 allows users to perform accurate tests at very low loads, enabling the widest range of coverage with a single load cell.

Other advantages of the new Q-Series tensile testers starting from Q5 and up include minimum test speed of 0.0005 mm/min., stroke reading of 0.5 µm and a two-year warranty.

Programming tests and monitoring results can be performed through the powerful and intelligent GraphWork test software, which allows complete and accurate data management, in accordance with North American and international test standards. The advanced, modular software comes with a comprehensive library of test standards—in accordance with American Society for Testing and Materials (ASTM) and international norms—included at no extra cost.

The Q-Series UTMs are available with capacities up to 2,000 kN (440,000 lbf) in electro-mechanical design used for higher strength materials such as metals and composites. Qualitest also offers extended height or width loadframes for higher elongation materials or oversized samples.

<table>
<thead>
<tr>
<th>Models</th>
<th>Capacity</th>
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<tbody>
<tr>
<td>Q50 Double column</td>
<td>50 kN / 11,000 lbf / 5,000 kgf</td>
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<tr>
<td>Q100 Double column</td>
<td>100 kN / 22,000 lbf / 10,000 kgf</td>
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<tr>
<td>Q200 Double column</td>
<td>200 kN / 45,000 lbf / 20 Tons</td>
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<tr>
<td>Q250 Double column</td>
<td>250 kN / 56,000 lbf / 25 Tons</td>
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<tr>
<td>Q600 Double column</td>
<td>600 kN / 134,000 lbf / 60 Tons</td>
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<tr>
<td>Q1000 Double column</td>
<td>1,000 kN / 224,000 lbf / 100 Tons</td>
</tr>
<tr>
<td>Q1200 Double column</td>
<td>1,200 kN / 269,000 lbf / 120 Tons</td>
</tr>
<tr>
<td>Q2000 Four column</td>
<td>2,000 kN / 448,000 lbf / 200 Tons</td>
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</table>

Insert sets used with Pneumatically operated Wedge Grips. Typically the samples are cut/machined from a pipe section (vertical axis) into a dumbbell type test sample. The insert set has one convex and one concave face to grip the sample correctly.

Compression Testing on Pipe

Q1200 1,200 kN UTM
Impact Testers

Drop Weight Tear Testers
www.WorldofTest.com/dwtt.htm

Charpy / Izod Pendulum Impact Tester
With 300J, 450J, 600J, 800J Capacities for Charpy / IZOD / Tensile Impact Tests
www.WorldofTest.com/pendulum.htm

A range of drop weight impact testers for measuring the fracture characteristics and fracture ductility of steel specimens according to the following standards: API recommended practice 5L3, EN 10274, ASTM-E 436 and ‘Pellini’.
Available Models:
- DWT40-25 impact energy up to 24,500J
- DWT40-42 impact energy up to 40,500J
- DWT100-35 impact energy up to 103,000J

Charpy Notch Broaching Machine (Hand Operated)
This machine will cut Charpy V and U notches and Izod V notches in 10mm square alloy steel specimens up to a hardness of 42 Rockwell C.
Intended for bench mounting, this robustly constructed machine cuts the notches by means of a specially designed Multi-Toothed Broach which is drawn across the specimen by rotating the spoked handwheel.
A simple Hand Vice for holding the specimen is built onto the machine body and the tooling includes the adjusters and end stops necessary to ensure notch depth and position are correctly set.
Attachments are available to facilitate Izod single V notching in 0.45” dia. specimens and Izod multiple V notching in 10mm sq. and 0.45” dia. specimens.
This machine will cut Charpy V and U notches and Izod V notches in 10mm square alloy steel specimens up to a hardness of 42 Rockwell C. It is a free standing unit of simple, robust construction requiring only a single phase electrical supply for its operation.
The cutting of notches is achieved by means of a specially designed Multi-Toothed Broach which is drawn across the specimen at the touch of a button.
A simple Hand Vice for holding the specimen is built onto the machine top-plate and is complete with the adjusters and end stops necessary to ensure that notch depth and position are correctly set.
Attachments are available to facilitate Izod single V notching in 0.45” dia. specimens and Izod multiple V notching in both 10mm square and 0.45” dia. specimens.
The Vari Speed machine is made available to satisfy demand for broaching notches in material up to RC60. The slower cutting speed is also desirable to extend the life of the broaching tools between sharpenings when cutting these harder materials.
Portable Hardness Testers for Welds

Handy EsaTest - Accurate patented hardness tester, ideal for testing the hardness of welds and heat affected zones on pipes. www.WorldofTest.com/handyesatest.htm

Portable Hardness Testers for General Pipe Applications

HT-100 - Standard Rebound-type Hardness Tester with separate impact devices. www.WorldofTest.com/ht100.htm

DynaTest - Heavy Load Digital Hardness Tester, most suitable for Cast Iron (Oil Pipes or similar - Turbine Blades, etc.) and Forged Steel. www.WorldofTest.com/dynatest.htm


Bore Hardness Tester - For hardness measurement inside the bores, holes, pipes, cutting dies, keyways, etc. www.WorldofTest.com/borehardness.htm

TeleBrineller - Low cost Portable Telebrineller System permits the accurate and convenient determination of the “Brinell Hardness” of metals and metal products, independent of their dimensions, shape, and location. www.WorldofTest.com/telebrineller.htm

Other Hardness Testers & Metallography Equipment

Hardness Testers
www.WorldofTest.com/hardnesstester.htm

Rockwell Bench-top Hardness Testers
HardRocker and QualiRock series are our lower cost and traditional type Rockwell hardness testers available in Rockwell Regular, Superficial or Twin variations.

Brinell Bench-top and Floor Model Hardness Testers
HBE-3000A is our lower cost Brinell tester suitable for low to medium volume testing requirements, while we recommend BRE-AUT or M5 Series for high demand production and laboratory environments.

Micro / Vickers Hardness Testers
You can find a wide array of various models starting from our lower cost HV series up to M1C advanced models with automatic image analysis. www.WorldofTest.com/microhardnesstester.htm

In-Line Hardness Testers for Pipes and Tube
Efficient, fast and accurate In-line hardness testing solutions for high volume pipe and tube production environments. We offer fully or semi-automated hardness testing solutions for any of Rockwell, Brinell or Vickers scales. As a sample application our In-Line Brinell testers can come with automatic milling with capacity of 120 tests per hour. Please consult with Qualitest for your special applications.

Metallography
www.WorldofTest.com/metallography.htm

Metallography is the science of revealing and evaluating the internal structures of materials. It is one of the most important methods of materials research today, indispensable to the scientist as well as to the engineer. More recently, advanced materials such as high tech metal alloys, ceramics, composites and polymers have appeared which made metallography become an increasingly vital part of modern industry.

Through a process of cutting, mounting, grinding and polishing, a smooth surface is obtained to reach the materials true structure. In order to achieve high preparation quality and reproducible results; a combination of “Right equipment, Correct preparation method and Right consumables” which we call “Total Preparation Solution”; is required.

CUTTING
The first step in preparing a specimen for metallographic or microstructural analysis is to locate the area of interest. Sectioning or cutting is the most common technique for obtaining this area of interest. Proper sectioning guarantees minimal microstructural damage. Excessive subsurface damage and damage to secondary phases (e.g. graphite flakes, nodules or grain pull-out) should be avoided.

MOUNTING
After cutting the specimen, the next step is mounting. The aim of mounting is to handle small or odd shaped specimens and to protect fragile materials, thin layers or coating during preparation as well as to provide good edge retention. Mounting produces specimens with uniform size so that it is easier to handle in automatic holders for further preparation steps.

GRINDING & POLISHING
In order to obtain a highly reflective surface that is free from scratches and deformation, the specimens must be carefully grinded and polished before they can be examined under the microscope. Qualitest offers high quality instruments and consumables for achieving this goal.

CONSUMABLES
High sample quality and reproducible results can only be achieved with high quality consumables. Selecting the right consumables for each specific application is not just a matter of preparation quality - it is also the best way to save time and money.
Our cutting, mounting, grinding & polishing consumables for microstructural analysis are produced to match to your specific requirements for high preparation quality. Chosen from a wide selection, designed and tested for use on our metallographic equipments as well as on competitive units.
Pipescan is an easy to use, cost effective, portable, magnetic flux leakage inspection system for the detection of random internal corrosion in pipe runs. The latest magnetic material coupled with a unique mechanical design enables coverage of all pipe diameters from 6" to 96" / 50 mm to 2.4 metres with just two adjustable scanning heads. Unlike some other inspection methods, MFL is not affected by product flowing through the pipe runs so surveys can be carried out both on-line and off-line. Use of Pipescan, with its high probability of detection, to locate actual internal corrosion, coupled with A scan ultrasonic monitoring of corrosion growth, provides a cost effective accurate system for the determination of plant integrity.

Compact DC Holiday/Porosity Detector (previously known as the Hi-Lighter) is small and lightweight with a clip-on battery pack, and features: digital display of applied voltage; constant test current, fully adjustable voltage and sensitivity controls. It can be used in most applications including pipelines, steel structures and tankwork. Commonly known as holiday detectors, spark testers or jeepers. Complies with the requirements of ASTM and AS3894.1-2002. CE Compliant.
Ultrasonic Thickness Gauges and Flaw Detectors

2000B-Series Digital Ultrasonic Thickness Gauges

2000B-Series Digital Ultrasonic Thickness Gauges are economical, user-friendly, menu driven, and multi-functional units offering extensive features from basic measurements (model 2000B) to extended memory and RS 232 output capabilities (model 2002B). This dynamic series of UT gauges are designed to measure the thickness of metallic and non-metallic materials such as steel, aluminum, titanium, plastics, ceramics, glass and any other good ultrasonic wave conductor as long as it has parallel top and bottom surfaces. The 2000B-series gauges will accurately display readings in either inch or millimeter after a simple calibration to a known Thickness or sound velocity.

MX-3 Thickness Gauge

The MX-3 ultrasonic thickness gauge is the first model in the MX line with the ability to field calibrate on the fly. This model offers extreme flexibility and accuracy to calibrate to a variety of materials instantly. The MX-3 is also equipped with a two point calibration option and comes with the high speed scan mode. 5 Year Limited Warranty is included with MX-3.

MVX Advanced A/B Scan Thickness Gauge

MVX is a full function A-Scan and B-Scan thickness gauge with a widest variety of modes and features for extra versatility. The physical size, weight, and display resolution are just a few of the benefits of the MVX. The adjustable square wave pulser provides the flexibility necessary for both high resolution and penetration requirements. The MVX is equipped with multiple viewing options to provide users with a complete set of inspection tools: (RF waveform, +/- Rectified waveform, Time based B-Scan, and Large Digits). The A-Scan rectified mode is commonly used for detecting flaws/pits in pulse-echo mode and measuring thru-paint and coatings in echo-echo mode, while the time-based B-Scan feature of the MVX displays a cross section of the test material. It is commonly used to display the profile of the bottom surface of the test material. Built-in hardware AGC gain control for thrupaint measurements in multi-mode operation.

Ultrasonic Flaw Detectors

Our advanced, easy to use, compact, rugged and affordable Ultrasonic Flaw Detectors, can quickly and accurately detect various defects (cracks, impurity, air holes, discontinuity) in pipes and other work pieces Non-destructively. Our Ultrasonic Flaw Detectors meet and exceed wide ranges of applications such as inspection and quality control in manufacturing, welding, material processing and petrochemical industry.
Optical Inspection Tools

Portable Microscopes
www.WorldofTest.com/metalloscope.htm

SM 500 Metalloscope is a self-contained portable metallurgical microscope ideally used for metallographical inspection of metals in laboratory or in-situ. With fully handheld design and unique magnetic stand, SM 500 can be mounted directly against the surface of ferrous metals at any angles for non-destructive examination on flat, curved as well as other complicated surfaces. SM 500 also can be used with digital camera or CCD image processing system to download metallurgical image on to PC for data transfer, analysis, storage and printout.

www.WorldofTest.com/metalloscope.htm

DG-3 is the new generation of digital portable Microscopes, featuring large 3.5 inch LCD display, 2x digital zoom, and many more advanced functions. This user-friendly digital microscope with 2,300,000 pixels weighs under 500g (1 lb) and is powered by a Ion-Lithium battery. The LCD panel is equipped with a video output which allows transfer of the images to an external monitor, or TV. With the touch & view technology, you no longer need to bring the samples to your lab. Capture images on-site and maximize your efficiency. Data can also be stored on a CF card.

www.WorldofTest.com/digitalmicroscope.htm

ForeEyes 2020 Video Borescope System
www.WorldofTest.com/foreeyes.htm

The ForeEyes 2020 combines a pocket digital video recorder, complete with a 3.5” color display, and a whopping 20 GB (expandable to 80 GB) built in hard drive, which connects to the waterproof ccd camera on the SnakeEye and the SnakeEye’s accessories and other borescopes via a video in. The ForeEyes 2020 allows the user to plug in the SnakeEye camera, wand and cable, turn on the lights with variable adjustability and interface with the pocket video recorder. The product weighs less than 2 lbs (.9Kg) and comes with a chess harness with display protecting foldable sunshade (Three or two sided for access to the keypads). The operator can quickly and easily view, play back and record all their inspections, with up to 4 hours of battery life!!!.

Best of all, the operator now has one hand free. The Pouch also collapses against the chest when climbing ladders. Also included is a microphone on the unit as well as a jack for the use of an external microphone in a loud environment. Files can be downloaded as .avi with sound to your computer to archive the files and create snap shots on the p.c. Since the ForeEyes 2020 will have a video interface, it is possible to connect with other borescopes and heads up displays and external monitors.

Qualitest offers a wider range of Metal Testing Technologies as well as Plastics Pipe Testing Equipment for Hydrostatic Pressure & Impact Testing and much more.

Qualitest Locations:
USA: Plantation, Florida
    Buffalo, New York
    California
Canada: Markham, Ontario
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