



LABORATORY TESTING INC.

2331 Topaz Drive, Hatfield, PA 19440

November 2006, Volume XIX

A Publication from *Laboratory Testing Inc.*

CT Scanner Part Inspected with Radiography

Computed Tomography (CT) is an x-ray procedure that uses computers to generate cross-sectional views and three-dimensional images of the internal organs and structure of the body. CT can see inside parts of the body that cannot be seen on regular x-ray examinations.



The value of CT imaging is that it shows bone, organs and blood vessels with great clarity. Radiologists interpret the scans to help diagnose cancers, cardiovascular disease, infectious disease, trauma and musculoskeletal disorders.

The CT scanner is a large machine with a doughnut-shaped center. The patient lies still on a table that moves into the opening in the center of the unit.

Inside the machine, a thin x-ray beam rotates around the patient's body to

produce the images. Each time the x-ray tube and detector circle around the patient and the x-ray passes through the patient's body, the image of a thin section or a slice of the body, is acquired. These images are then compiled by a computer to show a cross-section of body tissues and organs.

At LTI, we are able to x-ray a major component of the CT unit for our customer, Boose Aluminum Foundry Co. Radiography is used to determine if there is shrinkage, cracking, porosity or other internal flaws that would affect the performance of the machine. Each piece is



approximately 6 ft. in diameter and 500 lbs., and easily fits into our 20 ft. by 20 ft. radiography room.

In This Issue

CT Scanner Part Inspected with Radiography	1
New Equipment, New Capabilities	2
Machinists Prepare Test Specimens	3
Meeting Requirements of the RoHS Directive	3
Certifications by E-mail	3
Frequently Asked Questions	4
Holiday Closings	4
Going to the Tradeshows	4

LAB NEWS

New Equipment, New Capabilities

Calibration for CMM Accuracy

Assure that your Coordinate Measuring Machine (CMM) is reading within specifications, and that your



CMM calibration with ball bar & step gauge

certification provides the information you need to meet quality requirements. Our field service technicians will perform preventive maintenance and calibrate your CMM. We begin with a thorough cleaning of the machine's parts, then proceed with a calibration of performance characteristics including the probe tip, linearity of X, Y, & Z axes, bi-directional linearity, volumetric accuracy of the cube, flatness and surface wear of the plate, and overall repeatability.

The calibration is performed according to customer or manufacturer specifications. Our procedures are in accordance with ASME B89.4.1B-2001 and ISO-10360.

Testing Effects of Temperature & Humidity

Environmental test chambers are ideal for ensuring the reliability of products, especially electronic items, through exposure to certain environmental conditions. All types and shapes of products, up to 10 cubic feet, can be temperature and

humidity tested in our new Weiss Atlas chamber. Your products can be subjected to thermal cycling, fast temperature cycling, and extreme temperature and humidity conditions. Temperature testing is avail-



Weiss Atlas environmental chamber

able in the range of -94°F to +356°F (-70°C to +180°C). Humidity testing is in the range of 10% to 96% relative humidity. The climate and temperature working ranges comply with DIN, ISO, MIL, IEC, DEF and ASTM testing standards.

Identifying All Elements

Optical Emission Spectroscopy



SPECTROMAXx OES Spectroscopy

(OES) is used to identify chemical elements in materials through an emitted light spectrum. OES determines major, minor and trace elements and is particularly useful for low atomic number elements such as boron, aluminum, calcium, magnesium and phosphorous.

The new SPECTROMAXx spectrometer at LTI can analyze all common elements in your metals and alloys, and perform elemental chemistry on routine materials like copper, aluminum, steel, nickel and cobalt alloys. It also expands our OES analytical capabilities into the soft metals with programs for tin, lead and zinc.

Measuring Hardenability

Hardenability is the capacity of a metal alloy to be hardened by heat treatment. Our jominy end-quench testing measures hardenability at regularly spaced intervals along the length of a test specimen that has been heat treated, then quenched



Jominy end-quench testing

on one end and cooled to room temperature. The results indicate the relationship between hardness and cooling rates.

For your convenience, jominy test specimens can be prepared in our machine shop.

Machinists Prepare Test Specimens



Front from left: Frank D'Orazio, Bob Heckenswiler, John Fackler, Andy Giordano, Ken Groff
Back: Andy Franco, Jay Work, Doug Holloway (supervisor), Brett Lightcap, Andrew Iwanowski

Our machinists will prepare your test specimens for jominy, tensile, bend, pull, charpy, stress rupture and other mechanical tests. They also provide low-stress grinding and EDM. LTI is on NIST's Qualified Manufacturers List to machine Charpy V-Notch Impact verification specimens.

Computerized numerical control (CNC) equipment is used for precision machining, including an Okuma Turning Center, Haas Milling Machines and Sodick EDM Machine Centers. All machining is performed in accordance with ASTM A-370, ASTM E-8, ASTM E-23 and customer specifications.

Meeting Requirements of the RoHS Directive

Most manufacturers, retailers and distributors that provide electrical or electronic equipment to the European Market, must comply with RoHS Directive 2002/95/EC. It was drawn up in the European Union to protect human health and the environment from hazardous substances.

The Directive restricts the use of six hazardous materials in this equipment, including lead, cadmium, hexavalent chromium, mercury, polybrominated biphenyls (pbb) and polybrominated diphenyl ethers (pdbe). Any equipment that contains more than the allowed level of these hazardous materials has not been permitted on the European Market since July 1, 2006.

To assure compliance with the RoHS Directive, your material content can be

verified through chemical analysis at LTI. We provide testing and certification for lead, mercury, cadmium and hexavalent chromium. If pbb and pdbe testing are required, we can offer our assistance in selecting a vendor.

To help us process your order quickly, please include complete information about the samples you send in for testing (i.e. plating type, base metal, type of plastic, etc.).

Certifications by E-mail

If your company is moving towards a paperless record system, you can receive your certifications by e-mail. To make arrangements, contact us with your e-mail address at sales@labtesting.com.

Frequently Asked Questions

For a convenient source of information about the services at LTI, visit our website at www.labtesting.com. Choose the Frequently Asked Questions button to find out about our quality program, turn-around, required sample sizes, and other important facts.

Holiday Closings

LTI will close during the following upcoming holidays. Please let us know in advance, if you will require rush service near any of these dates, so we can schedule your order appropriately.

Thanksgiving - November 23 & 24

Christmas - December 25 & 26

New Year's Day - January 1

Enjoy the holidays!

Contact LTI

President

Mike McVaugh

Vice Pres./Facilities Mgr.

Tom McVaugh

Admin. Mgr./Dir. of H. R.

Joan Bentley

Destructive Testing Mgr.

Glenn Derstine

NDT Manager

Mark Tierney

Metrology Manager

Mike McVaugh

Quality Assurance Mgr.

Frank Peszka

Sales/Cust. Service Mgr.

Rick Heist

Marketing/Advertising Mgr.

Sharon Bentzley

800-219-9095

Fax: 800-219-9096

E-mail: sales@labtesting.com

Web: www.labtesting.com

Going to the Tradeshows

LTI is scheduled to exhibit at four tradeshows through mid-2007. Please be sure to stop by our booth, if you're attending any of the shows.

NACExpo

March 11-15, 2007; Nashville, TN

Design-2-Part

April 11-12, 2007; Valley Forge, PA

Power-Gen

November 28-30, 2006; Orlando, FL

MD&M East

June 12-14, 2007; New York, NY

LABORATORY TESTING INC.

FIRST CLASS
PRESORT
U.S. POSTAGE
PAID
SSD

2331 Topaz Drive, Hatfield, PA 19440
LABORATORY TESTING INC.