



LABORATORY TESTING INC.

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Cargo Parachute Release Can Handle the Load

The US Army "M-2" Cargo Parachute Release is used to deliver Army cargo weighing up to 25,000 lbs. from an aircraft to the ground. To be sure the M-2 can successfully carry a load of this weight, it is proof load tested at LTI.

Proof load testing is used to verify the greatest load that can be applied to an item without straining the piece beyond the elastic limit. Testing is performed to a much heavier weight than the intended use requires, to assure it is more than adequate to support the planned loads. If the target proof load is reached successfully with no distress, the test piece is considered suitable for its intended application.

The photo shows the "M-2" Cargo Parachute Release mounted for testing in LTI's 135,000 lb. tensile machine. The fully assembled system weighs 110 lbs. and is proof load tested to 90,000 lbs.



M-2 Cargo Parachute Release

When in use, cargo weighing up to 25,000 lbs. is secured to an aluminum platform that is attached to the M-2. The M-2 serves as an interface between this platform and up to eight parachutes which deploy after the load leaves the aircraft. When the loaded platform reaches the ground and the parachutes tilt to 22° off of vertical, the M-2 releases the parachutes to prevent wind from dragging the platform along the ground.

The M-2 is manufactured by United Terex, Inc., a defense contractor located in East Norriton, PA. United Terex has been a customer since the founding of our company. LTI also performs specialized functional and proof load testing of many other US Army cargo delivery systems manufactured by United Terex.

All New LTI Website



www.labtesting.com

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LAB NEWS

Detecting Surface-breaking Flaws

In this issue of *LabNews*, we feature the Nondestructive Testing (NDT) service called Liquid Penetrant Inspection (LPI or PT). This technique is very effective in detecting flaws that are open to the surface such as fatigue, quench or grinding cracks; forging cracks and bursts; overload and impact fractures; porosity; laps and seams. LPI is commonly used on materials such as metals, glass, plastics and fired ceramics. This method relies on the penetrant seeping into the flaw, then forming a surface indication that is observed under special lighting after the penetrant is given time to “bleed out” from the flaw.

The Process in Detail

The first step in Liquid Penetrant Inspection is to thoroughly clean the surface to be inspected to be sure it is free of oil, grease, water, heat-treat scale, paint, plating and other contaminants that may prevent penetrant from entering flaws. The part may also require etching if mechanical operations such as machining, sanding, or grit blasting have been performed because they can smear metal over the flaw opening and prevent the penetrant from entering.

Next, a red visible or fluorescent dye penetrant is applied to the part by spraying, brushing or immersing in a penetrant bath. The penetrant is left on the surface for a sufficient time to allow as much penetrant as possible to seep into a defect. Penetrant dwell time is the total time that the penetrant is in contact with the part's surface.

After the dwell time has elapsed, the excess penetrant is removed from the surface. Depending on the penetrant method used, this step may involve cleaning with a solvent (solvent-removable), direct rinsing with water (water-washable),

or first treating the part with an emulsifier (post-emulsifiable) before rinsing with water. When using the water-washable or post-emulsifiable methods, the part is placed in a low-temperature oven and allowed time to dry after rinsing.

A thin layer of developer is applied to the part to assist in drawing penetrant trapped in flaws back to the surface where it will be visible as indications. Developers may be applied by dusting (dry powder) or spraying (wet developers). These indications are larger than the actual flaw, and therefore, are more visible. When using fluorescent penetrants, indications must be viewed under



Fluorescent dye penetrant dip tanks, wash station & oven

darkened conditions with a high-intensity UV lamp.

The final step in the process is to thoroughly clean the surface to remove any residues.

Inspections at LTI

Our priority is meeting customer needs with accurate results, timely turnaround and quality service. Inspections are performed according to customer specifications and industry requirements by LTI certified technicians. Their certifications include ASNT SNT-TC-1A, NAS410/MIL-STD-410, Pratt & Whitney

PWA-NDTQ and MIL-STD-2132.

Large-volume orders and products of all shapes and sizes are efficiently inspected in our 2,500 sq. ft. LPI area. We are equipped with three large penetrant dip tanks, a 40 ft. by 3 ft. dwell tank for pipe, tubing, bar, etc., and a large inspection room with three high-intensity black lights. All orders are processed with only the highest quality Magnaflux inspection materials.

Advantages and Limitations

Liquid Penetrant Inspection offers a fast and relatively inexpensive means of surface inspection since large areas and quantities of parts or materials can be inspected quickly. The process is flexible for inspecting parts of almost any shape and for most materials that are not extremely rough or porous. Indications are produced directly on the surface of the part and provide a visual representation of the flaw. LPI is

highly sensitive to small surface discontinuities.

One of the major limitations of a penetrant inspection is that flaws must be open to the surface. Also, surface finish and roughness can affect inspection sensitivity. Pre-cleaning of parts is critical since contaminants can mask defects, and post-cleaning is required to remove residues.

For more information on NDT services, please call Mark Tierney at 800-219-9095, ext. 125 or e-mail mtierney@labtesting.com.

Growing to Serve You Better

Construction of our new 12,000 sq. ft. building addition and 65-space parking lot are progressing nicely. We broke ground for the addition on August 6th and are looking forward to completion of the project in late February.

This new space will be home to our Calibration Lab and an expansion of our Machine Shop. Most of the area previously used for calibration will be turned over to Nondestructive Testing, and a small section will enlarge the Shipping/Receiving Department. The additional space will make room for new equipment in our departments and more storage space throughout the building, so we can handle larger materials and an increasing number of orders more efficiently.

Stop by the Tradeshows

NACE Corrosion
March 16-20; New Orleans, LA
Design-2-Part
April 23-24; Valley Forge, PA
MD&M East
June 3-5; New York, NY
Fabtech Int'l/AWS
October 6-8; Las Vegas, NV
Power-Gen
December 2-4; Orlando, FL

E-mail Certifications

It's easy to sign up for quick and convenient E-mail Certifications. Just contact any of our Customer Service Reps at 800-219-9095 with your name and e-mail address. Your certifications will be e-mailed as PDF attachments.

Holiday Closings

Over the next few months, LTI will close for the following holidays:

Good Friday, March 21st
Memorial Day, Monday, May 26th
Independence Day, Week of June 30th

A Well-deserved Thank You



Five years ago, I took on a challenge from an employee who has been with LTI since our beginning in 1984. He jokingly announced during a company

meeting that LTI should reward the employees with a trip for their great track record in meeting the company's annual sales goals. I went for the challenge and said we would take a team-building/training trip, if we continued to reach our goals for the next five years in a row.

I am proud to acknowledge the hard work of all LTI employees and their success in surpassing our sales goals for the past five years. To celebrate, LTI will be closed the week of June 30th through July 4th, 2008 for our company team-building event. This time was chosen to minimize any inconvenience to our customers, since this is a popular vacation week and many companies also will be closed at least part of the week for the holiday.

All of us at LTI never lose site of the fact that we would not be here without our loyal customers. We thank you for your business and your role in helping us celebrate a milestone for LTI.

We will make every effort to complete your priority orders before the end of June. Please keep our Customer Service Representatives informed of orders you will be sending in around that time.

Michael J. McVaugh

LAB NEWS

Visitors are Welcome



Last month, representatives from the U.S. Navy toured LTI as part of a day-long group tour to initiate Captain Dennis Gannon into his new position as Commanding Officer-Defense Contract Management Agency, Naval Special Emphasis Operations (NSEO). Also pictured with Captain Gannon (center) are Mike Daniels, industrial specialist; Mike McVaugh, LTI president; Dave Reiner, government quality representative; Don Landis, NSEO team leader.

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