



*For Immediate Release*  
October 24, 2011

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*Important Customer Notice:*  
**LECO Relocates Hydrostatic and Proof Testing of  
Calorimeter Vessels to Headquarters in Michigan**

*St. Joseph, Mich.*—Effective immediately, LECO Corporation has relocated combustion vessel hydrostatic and proof testing services for its AC350, AC500, and AC600 calorimeters to its world headquarters in St. Joseph, Michigan. Testing was previously conducted at the LECO Tem-Pres location in Bellefonte, Pennsylvania.

For general overhaul and hydrostatic and proof testing of their LECO oxygen combustion vessels, customers should contact their local LECO Representative (USA users, call 1-800-292-6141; international customers, call 269-983-5531) to obtain an RMA number, then complete the *Combustion Vessel Hydrostatic and Proof Testing Return Form* (203-505-443), which includes the new mailing address. For your reference, this form, as well as the *Hydrostatic and Proof Testing Description Form* (203-505-418) and *Oxygen Combustion Vessel Safety Notice* (203-505-118), are attached to this document.

The contact person listed on the *Combustion Vessel Hydrostatic and Proof Testing Return Form* will be notified concerning testing, repair costs, or other issues encountered in the testing of the vessel. The testing process will not be started without a valid purchase order. Vessels should be assembled with matching serial numbers, and mismatched vessel parts will be replaced at additional cost.

For more information, please see the attached forms, or contact your LECO Representative.

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## Hydrostatic and Proof Testing

General overhaul and hydrostatic and proof testing of vessels includes the following:

- Disassembly, cleaning and visual inspection of all of the vessel parts
- Confirmation of matching serial numbers for vessel body, cap, and cap nut
- Polishing inner surfaces of the vessel cap and body
- Re-assembling vessel with new insulator, ceramic washer, o-rings and electrodes if necessary
- Hydrostatic and proof testing of the vessel as prescribed by the American National Standards Institute and the American Society for Testing and Materials (ANSI/ASTM) E144-94 (2006)

The general overhaul and hydrostatic and proof testing service is normally completed within 3 business days from the receipt of the vessel. If the vessel cap, cap nut, or body must be replaced, the necessary parts will be invoiced at current LECO US List prices. If the vessel fails to pass hydrostatic and proof testing, it will be destroyed. The non-usable vessel will only be returned to the customer upon request.

For general overhaul and hydrostatic and proof testing of LECO oxygen combustion vessels, contact your local LECO Representative (for USA users call 1-800-292-6141) to obtain an RMA number, then complete the combustion vessel hydrostatic and proof testing return form (203-505-443). Return the form with the cleaned oxygen combustion vessel to the address below.

**LECO Corporation**  
Attn: RMA \_\_\_\_\_  
1444 Hilltop Road  
St. Joseph, Michigan, USA 49085  
Phone: 1-800-292-6141

The contact person listed on the combustion vessel hydrostatic and proof testing return form will be contacted concerning testing, repair costs, or other issues encountered in the testing of the vessel. The testing process will not be started without a valid purchase order. Vessels should be assembled with matching serial numbers. Mismatched vessel parts will be replaced at additional cost.



## Combustion Vessel Hydrostatic and Proof Testing Return Form

Contact Name \_\_\_\_\_ Company Name \_\_\_\_\_

LECO Acct No. \_\_\_\_\_ Phone \_\_\_\_\_

Fax \_\_\_\_\_ e-mail \_\_\_\_\_

Ship to Address \_\_\_\_\_ Bill to Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Vessel Part Number \_\_\_\_\_ Vessel Serial Number \_\_\_\_\_

RMA # \_\_\_\_\_

Method of Payment \_\_\_\_\_ Purchase Order (Number) \_\_\_\_\_

Shipping (UPS unless otherwise specified) \_\_\_\_\_

Collect (if UPS or FedEx, your collect account number is required) \_\_\_\_\_

Special Instructions / Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Returned Vessels are required to be cleaned and assembled with matching serial number vessel body, cap and cap nut.

### Return Vessels to:

LECO Corporation  
Attn: RMA \_\_\_\_\_  
1444 Hilltop Road  
St. Joseph, Michigan, USA 49085  
Phone: 1-800-292-6141

# Oxygen Combustion Vessel Safety Notice

All LECO oxygen combustion vessel assemblies are proof tested as prescribed by the American Society for Testing and Materials (ASTM) E144-94 (2006)e1.



## Explosion Potential

The operator must observe safe operating practices when using high pressure oxygen combustion vessels. Operating personnel must be trained to practice safe operation and maintenance of oxygen combustion vessels.

WARNING

## Safety Notice

Prior to use of a calorimeter, all operating personnel should be thoroughly familiar with all instructions pertaining to the safe operation of oxygen combustion vessels.

After every 500 firings the oxygen combustion vessel should be disassembled for cleaning and the o-rings should be replaced. Hydrostatic and proof tests shall be repeated if any of the following have occurred:

- Five thousand (5000) firings.
- Firing with an excessive charge of either sample (>35000 Joules\*) or oxygen (>500 PSI).
- Ignition of any internal part of the vessel, including crucible.
- Excessive corrosion or surface defects.
- A noticeable change in thread play between vessel enclosure and capnut; Thread tolerance should not be more than 0.010 inch axial and 0.020 inch diametrical.



\*This is the combustion vessel safety limit. Do NOT exceed this limit. Exceeding this limit could result in vessel failure causing death, serious personal injury, and/or property damage.

WARNING

## Additional Safety Precautions

The recommendations outlined in the following section are in accordance with ASTM E 144-94 E144-94 (2006)e1, which defines the Standard Practice for Safe Use of Oxygen Combustion Bombs. Additional safety practices may be necessary to comply with internal laboratory safety procedures and alternative international standards.

- If an unknown sample is suspected of having a higher heat combustion value, a smaller sample shall be used during the first analysis.
- Never fire the oxygen combustion vessel with a sample that might react explosively.
- Never combust benzoic acid (or other acids) in powder form except when benzoic acid powder is used as a spike. Powdered acids must be pelletized for safe combustion.
- Use caution when combusting dry samples, which may combust rapidly thereby igniting the elastomer seals.
- Use caution when combusting fluffy or fibrous material that may result in the dispersal of uncombusted sample or residue on the inner surfaces and seals of the oxygen combustion vessel.
- Do not ignite volatile samples without using a sealed sample holder.
- Do not fire an oxygen combustion vessel after any event in which the sample may have been spilled within the vessel.
- Do not fire an oxygen combustion vessel that is leaking oxygen. Check the oxygen combustion vessel for leaks in an external reservoir prior to use.
- The pressure regulator is equipped with a pop-off valve set for 500 psi (34.5 bars) and should be tested periodically. The correct oxygen pressure is 420 psi (29.0 bars).
- Always maintain the oxygen combustion vessel in good condition. Any parts that show signs of deterioration must be replaced immediately.
- Always use matched sets of oxygen combustion vessel bodies, oxygen combustion vessel caps, and capnuts.
- Always stand away from the oxygen combustion vessel during ignition and for at least 20 seconds afterward.
- Never fire the oxygen combustion vessel unless it is completely submerged in water.
- Never handle the oxygen combustion vessel for 3 minutes after firing.
- Never fire an oxygen combustion vessel that has been mechanically modified. Such alterations can result in vessel failure during operation, which may cause injury and/or death.

## Hydrostatic and Proof Testing

For general overhaul and hydrostatic and proof testing of LECO oxygen combustion vessels, contact your local LECO Representative (for USA users call 1-800-292-6141) to obtain an RMA number, then complete the combustion vessel hydrostatic and proof testing return form (203-505-443). Return the form with the cleaned oxygen combustion vessel to the address below.

### LECO Corporation

Attn: RMA \_\_\_\_\_

1444 Hilltop Road

St. Joseph, Michigan, USA 49085

Phone: 1-800-292-6141

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