



# L-K Industries

*Oil Testing Equipment Suppliers Worldwide Since 1930.*

## LP Gas Corrosion Test Heater

Owner's Manual



### Test Heater

Model E-4-12-D or E-4-115-D

The L-K logo is displayed in a black serif font on a red triangular background.

## PRODUCT WARRANTY

L-K Industries warrants products manufactured by L-K Industries to be free of defective material and workmanship for one year from the date of shipment by L-K Industries. The liability of L-K Industries for defective equipment shall be limited to the factory repair or replacement during the warranty period without charge for parts or labor. L-K Industries shall be so liable only if L-K Industries is contacted in regard to such defect immediately after its discovery.

Buyer should return the defective product under warranty to L-K industries only after receipt of L-K Industries' specific permission to do so. This warranty does not extend to any L-K Industries product which has been subject to misuse, neglect, accident, modification or improper installation, or any product which has been repaired or altered by persons not expressly approved by L-K Industries. L-K Industries will not be liable for damages, loss or expense directly or indirectly arising from the use of the products or for any liability from their use either separately or in combination with other equipment or material or for any other cause.

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# Table of Contents

<b>1</b>	<i>Getting Started</i>	<i>1</i>
<b>2</b>	<i>Installation</i>	<i>1</i>
	12 VDC Model. . . . .	1
	115 VAC Model . . . . .	2
<b>3</b>	<i>Maintenance</i>	<i>2</i>
	Replacement Parts & Repair Service. . . . .	2
<b>4</b>	<i>Be Careful</i>	<i>3</i>
<b>6</b>	<i>Operation</i>	<i>4</i>
<b>6</b>	<i>Troubleshooting</i>	<i>5</i>



# 1 Getting Started

Your L-K L-P Gas Corrosion Test Cylinder Heater comes fully assembled and ready for installation. Refer to the wiring diagram for installation.

## 2 Installation

### 12 VDC Model

You will need:

- Crimp tool for wiring terminals
- Solenoid or relay (15 amp continuous rating)

For best results mount the Sample Heater in an enclosure to protect it from the outside elements. The unit is not designed to be exposed to the elements. Windy conditions and rain can significantly lower the heating efficiency of the unit.

Mount the Sample Heater in your tool box, car trunk, etc. using the

1/4" bolts, 1/4" washers and 1/4-20 lock nuts provided in the hardware package.

For wiring the Sample Heater to your 12 Volt negative ground system refer to the wiring diagram and follow the instructions below. Make sure all switches are in the off position before proceeding with this installation. Wire this unit on a dedicated circuit. DO NOT take power from any existing vehicle wiring.

There are 2 wires that extend from the Sample Heater. Attach the ground lug on the black wire to your chassis using a 1/4" bolt,

star washer, ¼” washer and lock nut. Be sure the connection point is a good ground. If additional wire length is needed, add only what is needed, maintaining the same gage wire. Keep the ground wire as short as possible.

Attach the red wire to a dedicated solenoid or relay (recommended, not supplied) wired to the ignition system of your vehicle. The solenoid or relay should have a

minimum 20 amp continuous rating.

### 115 VDC Model

The 115 VAC unit is manufactured as intrinsically safe and as such should be hard wired by qualified electrical personnel in accordance with local electrical codes for hazardous locations.

Refer to the wiring diagram.

# 3 Maintenance

Vibration, especially when operating on the washboard roads, can loosen the most secure screw. Periodically, check the Sample Heater and it’s mounting for loose screws.

Clean your unit after each test. Build-up of oil residues can cause problems with the efficient operation of your Sample Heater.

### Replacement Parts & Repair Service

Replacement parts for all L-K Sample Heaters are available and are usually in stock. When ordering replacement parts, please have

the model and serial number of your heater available.

Parts may be ordered by phone (713-926-2623), fax (713-926-7736) or email ([parts@lk-ind.com](mailto:parts@lk-ind.com)).

L-K Industries’ USPS mail address is L-K Industries, 6952 Lawndale St. Houston, Texas, 77023.

The physical address, for shipping purposes, is L-K Industries, 6952 Lawndale St. Houston, Texas, 77023.

# 4

## Be Careful!

Your L-K sample heater was designed to optimize operator safety. Realizing the limits of any powered device and carefully following safety guidelines will help assure accident-free use. Observe and follow carefully all instructions and guidelines in this manual as well as OSHA safety standards.

- Turn all switches off when not in use
- NEVER leave the Sample Heater unattended while the heat is on.
- NEVER leave the Sample Heater unit powered “ON”
- Turn the heater “OFF” when not heating a sample
- Always heat samples in pairs, better yet, all four chambers at a time. This will produce the best heating results.
- This unit gets hot to the touch. Care should be taken to avoid unnecessary contact with the housing
- Disconnect the power supply before removing or replacing electrical or mechanical parts
- DO NOT leave oily rags or any type of combustible material in or around your Sample Heater
- DO NOT allow unauthorized visitors access to your Sample Heater.

# 5 Operation

The 12 VDC Sample Heater should not be operated without the vehicle's engine running. Depending on its condition, your battery can run down in a very short time when the heaters are left on.

This unit was designed and fabricated to work in compliance with API & ASTM standards. For optimum results, we recommend you use L-K sample products. All L-K sample tubes and test cylinders are produced in strict compliance with API & ASTM standards. You can view the various style tubes and cylinders that are available on the L-K web site ([www.lk-ind.com](http://www.lk-ind.com)).

When heating a sample, turn the Heater Switch on to bring the sample temperature up to the desired temperature for testing. Once the set point is reached, the temperature will be maintained within the required tolerance of  $\pm 1^{\circ}$  F.

When heating a sample, always keep samples in all pockets. This will extend the life of the heating elements. This heater is capable of developing high temperatures quickly. Care must be taken to avoid overheating the samples and/or the instrument. After removing the samples, turn the heater off.

The heater is factory programmed at  $100^{\circ}$  F as called for in ASTM Method D-1838-07 (Standard Test Method for Copper Strip Corrosion by Liquefied Petroleum (LP) Gases).

To adjust the set point, press and hold the select (SEL) button on the left side of the controller face. The unit will ask for a code. Using the reset (RST) button, enter the code "055". The controller will now ask for the new set point. Again using the reset button enter the new value. Then push and hold the select button to exit and store the new value.



Refer to the Red Lion bulletin CUB5RT-H in the appendix

Keep the lid closed other than when loading/unloading the samples into/ out of the heater.

This will minimize heat loss and provide greater operator safety.

When the Sample Heater is not in use, be sure all switches are turned off.

# 6 Troubleshooting

If the unit does not heat when powered on:

- Make sure power source is supplying proper voltage to your unit

- Check current and continuity through the unit using an Ohm meter.
- Check the fuse.
- Check the circuit breaker.

# Index

## Symbols

12 VDC Model 1  
115 VDC Model 2  
(RST) button 4  
(SEL) button 4

## A

ASTM 4  
ASTM Method  
D-1838-07 4

## C

circuit breaker 5  
Clean your unit after  
each test 2  
code “055” 4

## D

Disconnect 3  
DO NOT 3

## E

enclosure 1

## F

factory programmed  
4  
fuse 5

## H

hard wired 2  
Heater Switch 4

## I

intrinsically safe 2

## L

L-K web site (www.  
lk-ind.com). 4  
L-P Gas Corrosion  
Test Cylinder  
Heater comes  
fully assem-  
bled 1

## M

Mount the Sample  
Heater 1

## N

NEVER 3

## O

one year from the  
date of ship-  
ment iii  
operator safety 3  
overheating 4

## P

PRODUCT WAR-  
RANTY iii

## R

Replacement Parts &  
Repair Service  
2

## S

switches off 3

## U

USPS mail address 2

## V

Vibration 2

## W

When the Sample  
Heater is not  
in use 5  
wiring diagram 2  
wiring the Sample  
Heater 1





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L-K Industries 6952 Lawndale ✕ Houston TX 77023 ✕ 713 926•2623, fax 713 926•7736 ✕ [www.lk-ind.com](http://www.lk-ind.com)



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