



## INSTALLATION INSTRUCTIONS

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Dallas, Texas, USA

## GAS KITS & ACCESSORIES

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# GAS VALVE/IGNITION CONTROL REPLACEMENT KIT

## INSTALLATION INSTRUCTIONS FOR GAS VALVE IGNITION CONTROL REPLACEMENT KITS 51K27 (LB-57394BD), 51K28 (LB-57394BE), AND 51K29 (LB-57394BF) USED WITH LD3E AND LF3E UNITS USED WITH NATURAL GAS

### Shipping & Packing List

#### Package 1 of 1 contains the following:

- 1 - Ignition control (Honeywell)
- 1 - Stand-off bracket
- 1 - Gas valve
- 1 - Main burner assembly with pilot burner assembly
  - 1 - Pilot burner
  - 1 - Flame sensor
  - 1 - Pilot tube
- 7 - Wires
- 1 - Bag assembly containing
  - 4 - #8 32 X 1/2" sheet metal screws
  - 4 - #10 32 X 1/4" sheet metal screws
  - 2 - Wire ties
  - 2 - Ignition lead support clips
  - 1 - Lighting instruction
  - 3 - Wiring diagram stickers
  - 1 - Terminal adapter

### Shipping Damage

Check equipment for shipping damage. If you find any damage, immediately contact the last carrier.

### General

These instructions are intended as a general guide and do not supersede local codes in any way. Consult authorities having jurisdiction before installation.

## ⚠ WARNING



**Danger of explosion and fire. Can cause injury, death, or property damage. You must follow these instructions exactly. A qualified installer must perform the installation.**

### Application

These kits can be applied to LD3E and LF3E units that have an intermittent pilot ignition used with natural gas. Using this kit, you will replace the existing gas valve, main

burner assembly (with pilot burner assembly), and the ignition control. These kits include a Honeywell ignition control. See table 1 for unit model numbers and replacement kit part numbers.

## ⚠ CAUTION

**This kit is for use with natural gas units only. Do not use this kit with LP/propane gas units.**

TABLE 1  
Unit Model Numbers and  
Replacement Kit Part Numbers

Unit Model No.	Kit LB No.	Kit Catalog No.
LF3E-110	LB-57394BD	51LK27
LF3E-137		
LF3E-165	LB-57394BE	51K28
LF3E-220		
LD3E-220	LB-57394BF	51K29
LF3E-275		
LF3E-330		
LD3E-330		

### Requirements

Installation must be made in compliance with local codes. In absence of local codes, the installation must comply with the current National Fuel Gas Code (ANSI-Z223.1) and the current National Electrical Code (ANSI-NFPA No. 70).

The National Fuel Gas Code is available from  
11 West 42nd Street  
New York, NY 10036

The National Electrical Code is available from  
National Fire Protection Association  
1 Batterymarch Park  
P.O. Box 9101  
Quincy, MA 02269-9101

## Safety Inspection of Existing Unit

The following procedure is intended as a guide to help you determine if the existing unit is properly installed, and if it can continue to operate safely.

These generalized procedures cannot anticipate all situations. Therefore, in some cases deviation from this procedure may be necessary to determine if the equipment is operating safely. Perform this procedure before attempting to modify the unit or install the replacement kit. If you determine there is a condition which could result in unsafe operation, shut off the unit, and advise the owner about the unsafe condition. Follow the procedures below to make a safety inspection.

- 1 - Visually inspect the venting system for proper size and horizontal pitch. Make sure that there is no blockage or restriction, leakage, corrosion, or other factor which could cause an unsafe condition.
- 2 - Shut off gas to the unit. Use the shut-off valve in the supply line to the unit.
- 3 - Inspect the heat exchanger for cracks, openings, or excessive corrosion.
- 4 - Place the unit into operation. Follow the lighting instructions (see the Start-Up & Adjustment section). Adjust the thermostat so the unit will operate continuously.
- 5 - Visually determine that the main burner is burning properly (i.e., no floating, lifting, or flashback). Adjust the primary air shutter(s) as required.
- 6 - Test for spillage at the draft hood relief opening after the unit has been operating for 5 minutes.
- 7 - You may need to check the gas input if problems arise.

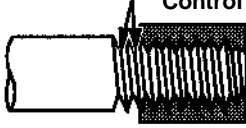
## Installation

- 1 - Turn off the electric power and the gas supply to the unit.
- 2 - Disconnect and discard the wires between the existing gas valve and the ignition control. Disconnect and mark the rest of the wires at the ignition control.
- 3 - Remove the existing ignition control and stand-off bracket and discard it.
- 4 - Disconnect the main and pilot gas supply piping at the gas valve.
- 5 - Remove the existing gas manifold. Then, remove the existing gas valve and discard it.

- 6 - Remove the existing main burner assembly including the pilot burner assembly from the heat exchanger. Disconnect the pilot tubing from the pilot burner. Discard the existing main burner assembly and the pilot burner assembly (including the sensor wire and ignitor wire).
- 7 - Connect the replacement white high-temperature sensor wire and the existing pilot tubing to the replacement pilot burner assembly. (If the existing pilot tubing is not serviceable, use the new provided tubing.)
- 8 - Slide the replacement main burner assembly and pilot burner assembly into the heat exchanger.
- 9 - Install the replacement gas valve onto the existing gas manifold. See figure 1 for standard piping practices.

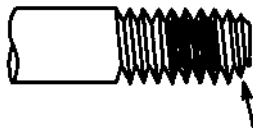
### Standard Piping Practice

**Two imperfect threads Control**



**Thread pipe the correct length.**

**Use moderate amounts of dope.**



**Leave two end threads bare**

Length of Standard Pipe Threads		
Pipe Size	Effective Length of Thread	Overall Length of Thread
1/2" 13mm	1/2" 13mm	3/4" 19mm
3/4" 19mm	1/2 - 9/16" 13 - 14mm	3/16" 21mm

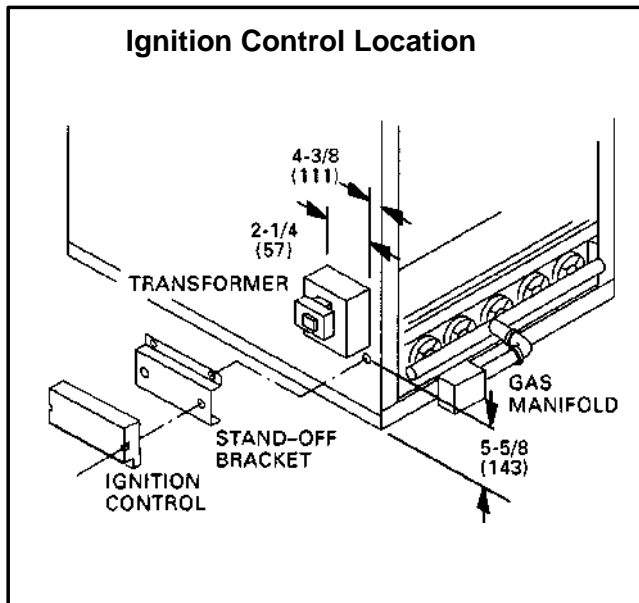
**Prepare & Install Pipe**

- 1 - Use new, properly reamed pipe that has no chips.
- 2 - Do not thread the pipe too far. Valve distortion or malfunction may result from excess pipe control.
- 3 - Apply moderate amounts of good quality dope to the pipe only. Leave two end threads bare. For LP gas, use compound that is resistant to liquified petroleum gases.
- 4 - Check the gas supply pipe to assure it has a drip leg. If not, one must be installed.

**FIGURE 1**

- 10 - Re-install the gas manifold assembly. Check for the correct burner positioning and crossover alignment. Connect the pilot tubing to the gas valve.
- 11 - Use two of the provided #8 32 X 1/2" sheet metal screws to assemble the replacement ignition control to the replacement stand-off bracket. Position the ignition control assembly horizontally

onto the side panel as shown in figure 2. Drill two 5/32" holes, and use two of the provided #10 32 X 1/4" sheet metal screws to secure the ignition control assembly to the panel .



**FIGURE 2**

12 - Rewire as shown in figures 3 and 4. Route wires as required and wire tie them into a bundle. Separately route the flame sensor and ignition wires.

### **! IMPORTANT**

Attach the ignition lead to the pilot tubing using the provided support clips. Do not include the ignition lead in any group of bundled wires. Also, do not allow it to be exposed to high temperatures or electrically grounded surfaces.

13 - Reconnect the gas supply piping.

14 - Restore gas to the unit at the shut-off valve.

### **! IMPORTANT**

Carefully check all piping connections for gas leaks. Pilot line connections must be checked while the unit is operating. (intermittent ignition systems)

### **! CAUTION**

Some soaps used for leak detection are corrosive to certain metals. Rinse the piping thoroughly after you have completed the leak test. Do not use matches, candles, flame, or other sources of ignition to check for gas leaks.

15 - Affix the replacement wiring diagram over the existing one. Install the unit operation sticker (LB-96301) in a visible location.

16 - Follow the start-up and adjustment section.

## **Start-Up & Adjustment**

*BEFORE LIGHTING, smell all around the appliance for gas. Be sure to smell next to the floor because some types of gas are heavier than air and will settle on the floor.*

*Use only your hand to move the gas control knob. Never use tools. If the knob will not move by hand, do not try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.*

*NOTE - When you start the unit, you may need to repeat steps 1 through 7 to purge air from the pilot line.*

### **Placing the unit into operation**

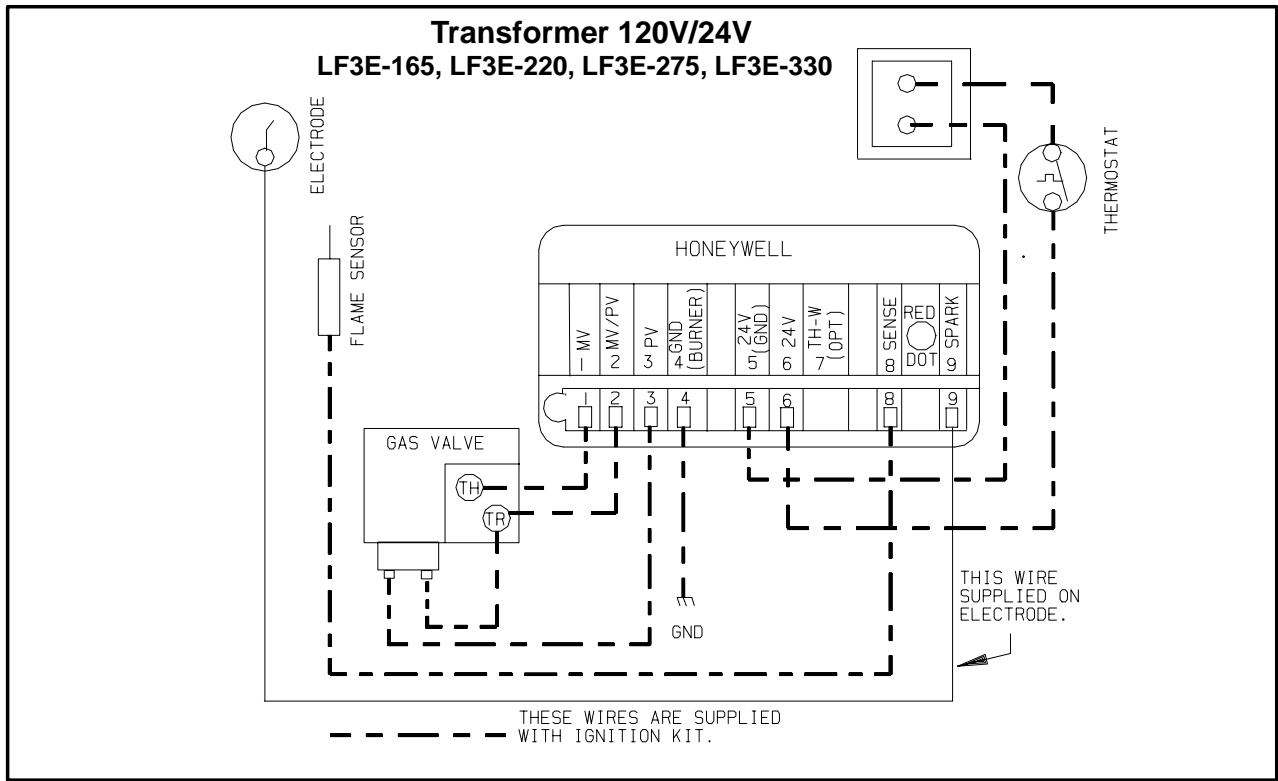
1. Make sure the thermostat is set below room temperature, and that the power is turned off to the unit.
2. This unit is equipped with an ignition device which automatically lights the pilot burner. **DO NOT** try to light the pilot burner by hand.
3. Turn the gas knob to **OFF**. Do not force the knob.
4. Wait 5 minutes to clear out any gas. If you then smell gas, immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions. If you do not smell gas, go to the next step.
5. Turn the knob on the gas valve to **ON**.
6. Turn on all electric power to the unit.
7. Set thermostat higher than the room temperature.
8. Check the gas line supply pressure while the unit is operating. The minimum pressure as shown on the name plate must be available. Then check and adjust the manifold pressure to the value indicated on the unit name plate.
9. For electronic thermostat anticipator settings, see the thermostat instructions. For heat anticipator settings for electro-mechanical thermostats, see table 2.

**TABLE 2**

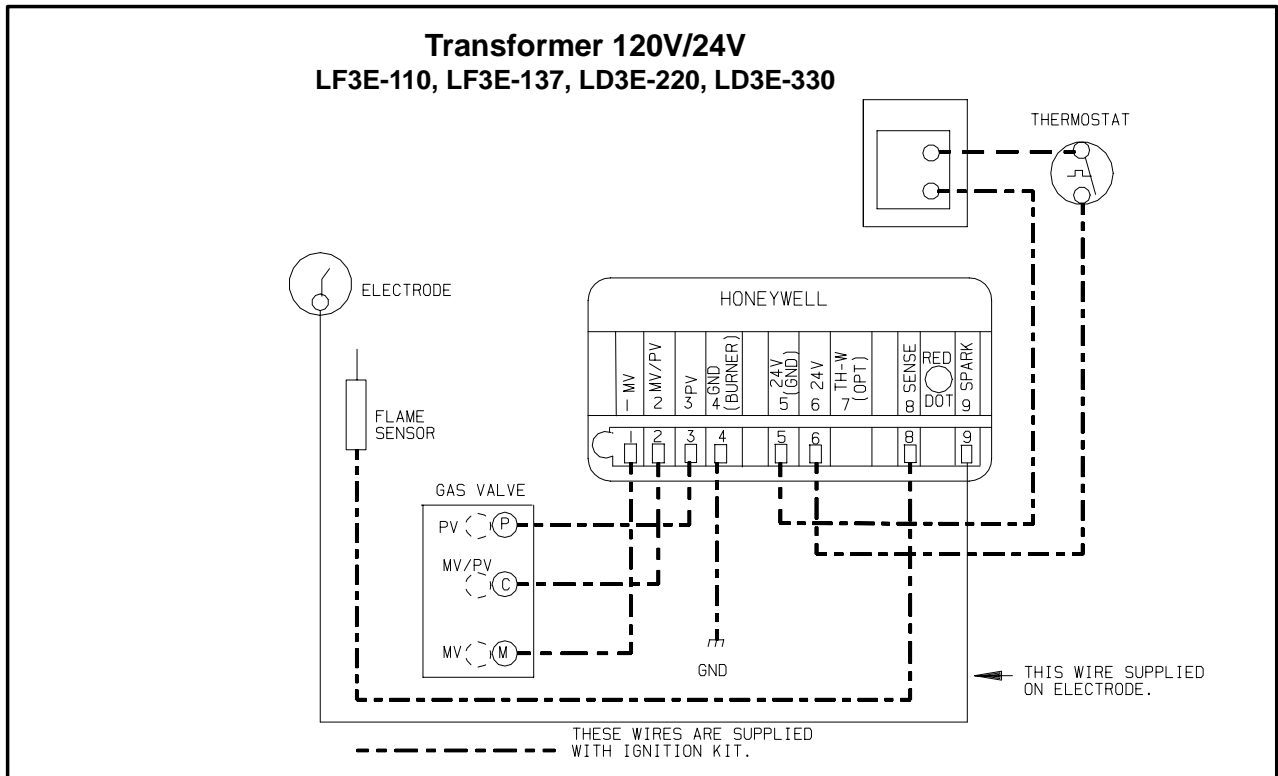
### **Heat Anticipator Settings for Electro-mechanical Thermostats**

AMP	Valve
0.75	Robertshaw 7000 DERHC
0.65	Honeywell VR8200
0.60	Robertshaw 7000 BDER

10. Run the unit through a minimum of three complete cycles to ensure that it is operating normally.
11. Set the thermostat to the desired setting.
12. Replace the burner/control access panel.



**FIGURE 3**



**FIGURE 4**