



## Model: RCAF-1031-4

### INSTALLATION AND OPERATING INSTRUCTIONS

THIS IS A SINGLE-FUNCTION WIRELESS REMOTE CONTROL SYSTEM  
FOR OPERATING A HI/MED/LOW STEP MOTOR

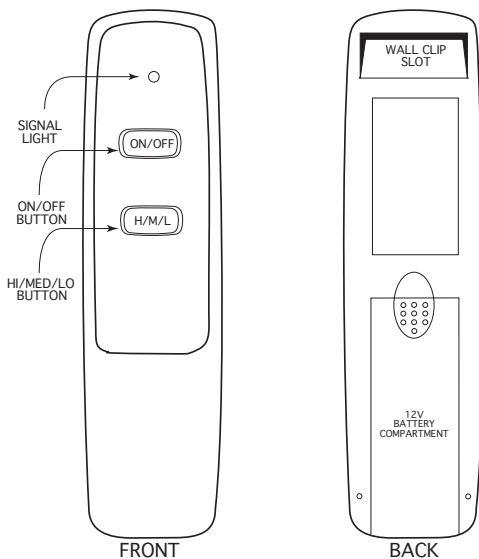
IF YOU CANNOT READ OR UNDERSTAND THESE INSTALLATION INSTRUCTIONS DO NOT  
ATTEMPT TO INSTALL OR OPERATE

#### **INTRODUCTION**

This remote control system was developed to provide a safe, reliable, and user-friendly remote control system for gas heating appliances. The system is operated manually from the transmitter. The system operates on radio frequencies (RF) within a 20-foot range using non-directional signals. The system operates on one of 65,536 security codes that are programmed into the transmitter at the factory; the remote receiver must learn the transmitter code prior to initial use.

Review THERMO SAFETY SECTION under RECEIVER section. This high temperature safety feature shuts down the appliance when a potentially unsafe condition exists.

#### **TRANSMITTER**



This remote control SYSTEM offers the user a battery-operated remote control to power a DC ON/OFF and HI/MED/LO Step motor such as those used with gas valves used in some decorative gas logs, gas fireplaces and other gas heating appliances.

The step motor circuit uses the battery power from the receiver to operate a step motor. The circuit has reversing polarity software, which reverses the positive (+) and negative (-) output of the receiver's battery power to drive the step motor forward/backward (ON/OFF and HI/MED/LO flame control). The remote transmitter controls the system.

The transmitter operates on a 12-V battery (A-23). Before using the transmitter install the 12-V battery in the battery compartment.

It is recommended that ALKALINE batteries always be used for longer battery life and maximum operational performance.

The transmitter has ON/OFF and HI/MED/LO functions that are activated by pressing the buttons on the face of the transmitter. When a button on the transmitter is pressed, a LED signal light on the transmitter illuminates to verify that a signal is being sent. Upon initial use, there may be a delay of three seconds before the remote receiver will respond to the transmitter. This is part of the system's design. If the LED signal light does not illuminate, check the position of the transmitter's battery.

#### **REMOTE RECEIVER**

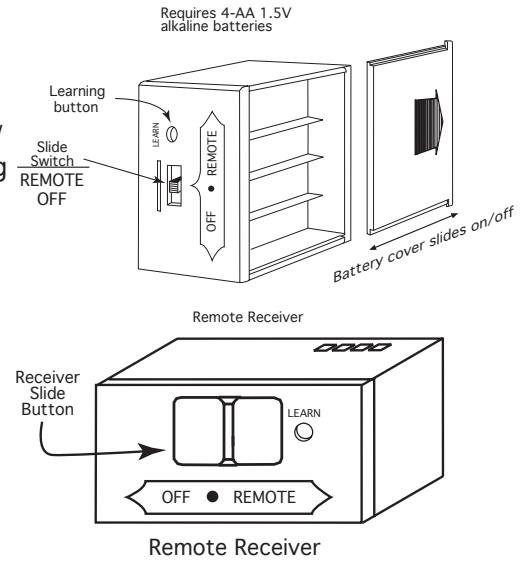
**IMPORTANT:** THE REMOTE RECEIVER SHOULD BE POSITIONED WHERE AMBIENT TEMPERATURES DO NOT EXCEED 130° F.

The remote receiver (right) operates on four 1.5V AA-size batteries. It is recommended that ALKALINE batteries be used for longer battery life and maximum microprocessor performance. **IMPORTANT:** New or fully charged batteries are essential to proper operation of the remote receiver as a step motor power consumption is substantially higher than standard remote control systems.

**NOTE:** The remote receiver will only respond to the transmitter when the 2-position slide button on the remote receiver is in the REMOTE position. The remote receiver houses the microprocessor that responds to commands from the transmitter to control system operation.

**FUNCTIONS:**

- With the slide switch in the REMOTE position, the system will only operate if the remote receiver receives commands from the transmitter. Upon initial use, or after an extended period of no use, the remote REMOTE/OFF button may have to be pressed for up to three seconds before activating step motor. If the system does not respond to the transmitter on initial use, see LEARNING TRANSMITTER TO RECEIVER in the GENERAL INFORMATION section.
- With the slide in the OFF position, the system is OFF.
- It is suggested that the slide switch be placed in the OFF position if you will be away from your home for an extended period of time. Placing the slide switch in the OFF position also functions as a safety "lock out" by both turning the system OFF and rendering the transmitter inoperative.



**INSTALLATION INSTRUCTIONS**

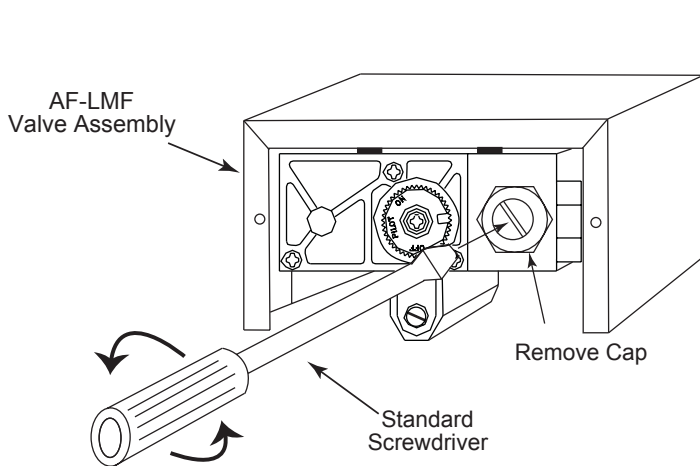
**WARNING**

DO NOT CONNECT REMOTE RECEIVER DIRECTLY TO 110-120VAC POWER. THIS WILL BURN OUT THE RECEIVER. FOLLOW INSTRUCTIONS FROM MANUFACTURER OF GAS VALVE FOR CORRECT WIRING PROCEDURES. IMPROPER INSTALLATION OF ELECTRIC COMPONENTS CAN CAUSE DAMAGE TO GAS VALVE AND REMOTE RECEIVER.

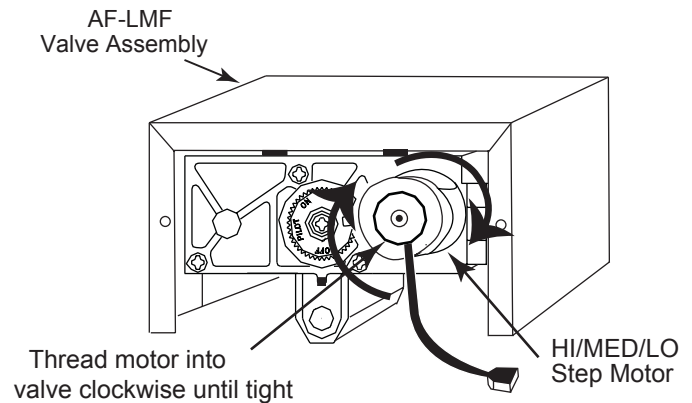
**INSTALLING THE HI/MED/LO DC STEP MOTOR**

**NOTE:** The AF-LMF valve kit comes with a aluminum cap that must be removed from the gas valve before the HI/MED/LO DC step motor can be installed. Under this cap fitting there is a unique safety seal that prevents gas leakage after the cap has been removed. This allows the cap to be removed and the HI/LO DC motor drive to be installed with out shutting OFF the main gas valve that supplies gas to the AF-LMF valve kit.

1. Remove the (2) screws from the front metal faceplate then remove the faceplate on the AF-LMF valve kit and set aside.
2. Using a screwdriver remove the cap. Note Figure 1 (Retain the cap so if the DC step motor is removed the cap can be reinstalled)
3. Install the ON/OFF and HI/MED/LO DC step motor into the threaded hole on the gas valve that the cap was removed from and screw into place and do not over tighten. **NOTE:** Figure 2
4. Reinstall AF-LMF front original faceplate that came installed on the AF-LMF and reinstall the (2) screws and tighten.
5. Make sure to locate the wires with 4-pin connector on the step motor so they come out the back of the AF-LMF to connect to wire harness then to the receiver.



**Figure 1.** Removing cap.

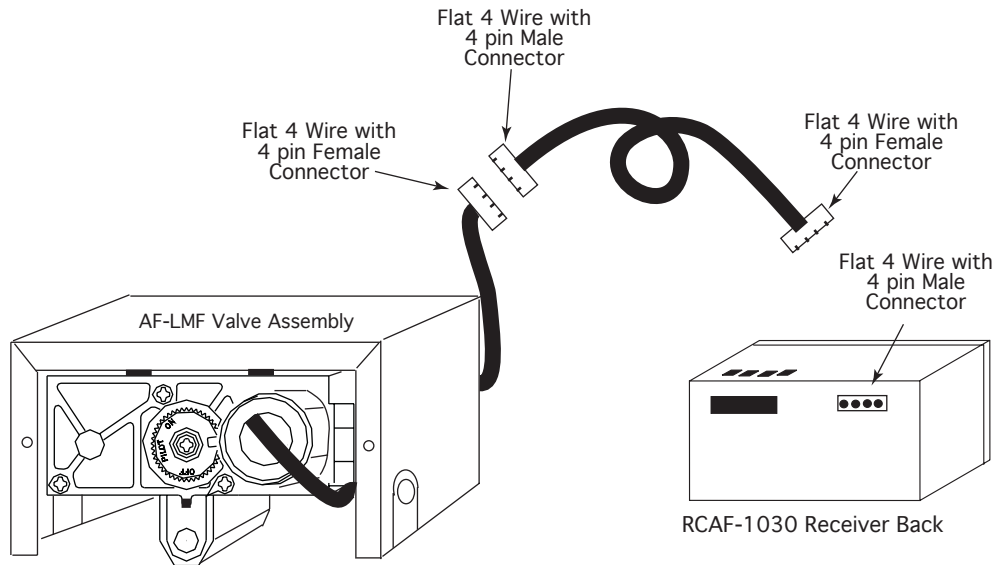


**Figure 2.** Installing step motor.

## **WIRING INSTRUCTIONS**

### **CONNECTING THE RECEIVER TO THE AF-LMF VALVE KIT WITH THE HI/MED/LO DC STEP MOTOR**

1. Connect the 4-pin female connector from the HI/MED/LO DC step motor to the 4-pin male connector on the wire harness. **Note:** Figure #3 below.
2. Connect the 4-pin female connector on the wire harness to the 4-pin connector on the back of the RCAF-1031-4 receiver. **Note:** Figure #3 below.
3. After receiver is connected to the HI/MED/LO DC step motor using the supplied wire harness make sure the receiver shield is located over the receiver and then locate the receiver in an area that will not exceed the 130°F. This location will always be away from the AF-LMF towards the front of the firebox. .



**Figure 3.** Connecting the wiring harness.

## **THERMO-SAFETY FEATURE** - INSIDE RECEIVER

When the ambient temperature at the THERMISTOR, inside the receiver case reaches 130°F, the RECEIVER will automatically send power to the step motor on the valve to shut the fireplace system off and the RECEIVER will begin emitting a series of 4 “beeps” every 2 seconds. When the ambient temperature at the RECEIVER drops between 120° F and 130° F, the user can reactivate the fireplace by pushing ON/OFF button on the transmitter. When the ON/OFF button is pressed, the THERMISTOR “resets” itself and the fireplace will begin operating again. However, the “beeping” will continue, if the ambient temperature remains between 120° F and 130° F. This “beeping” alerts the user that the RECEIVER should be repositioned so the ambient temperature drops below 120° F.

When the temperature drops below 120°F, the “beeping” will cease, providing the user has “reset” the THERMISTOR by pushing the ON/OFF button to operate the fireplace. Allow sufficient time for receiver to cool below 120° F, and then press transmitter button to stop beeping.

## **GENERAL INFORMATION**

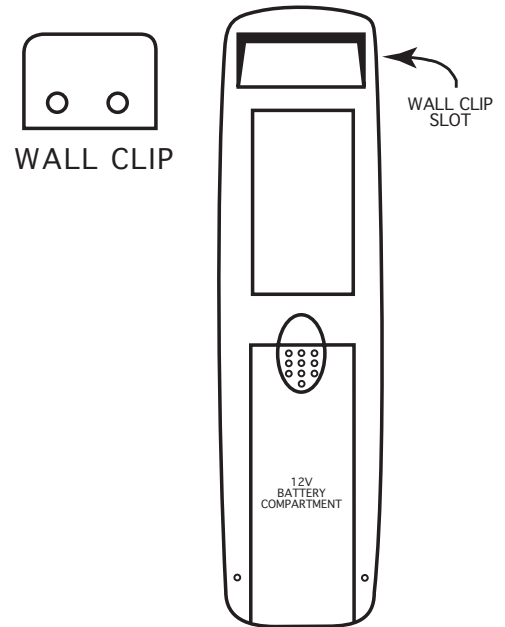
### **LEARNING TRANSMITTER TO RECEIVER**

Each transmitter uses a unique security code. It will be necessary to press the LEARN button on the receiver to accept the transmitter security code upon initial use, if batteries are replaced, or if a replacement transmitter is purchased from your dealer or the factory. In order for the receiver to accept the transmitter security code, be sure the slide button on the receiver is in the REMOTE position; the receiver will not LEARN if the slide switch is in the OFF position. The LEARN button is located on the front face of the receiver; inside the small hole labeled LEARN. Using a small screwdriver or end of a paper-clip gently Press and Release the black LEARN button inside the hole. When you release the LEARN button the receiver will emit an audible “beep”. After the receiver emits the beep press the ANY transmitter button and release. The receiver will emit several beeps indicating that the transmitter’s code has been accepted into the receiver.

The microprocessor that controls the security code matching procedure is controlled by a timing function. If you are unsuccessful in matching the security code on the first attempt, wait 1 - 2 minutes before trying again--this delay allows the microprocessor to reset its timer circuitry--and try up to two or three more times.

## TRANSMITTER WALL CLIP

The transmitter can be hung on a wall using the clip provided. If the clip is installed on a solid wood wall, drill 1/8" pilot holes and install with the screws provided. If it is installed on a plaster/wallboard wall, first drill two 1/4" holes into the wall. Then use a hammer to tap in the two plastic wall anchors flush with the wall; then install the screws provided.



## OPERATION

1. This remote control will operate the gas valve ON/OFF and HI/MED/LO flame control.
2. When the ON/OFF button is depressed the transmitter sends a RF signal to the receiver. The receiver then sends a pulse of 6 volts of power to the step motor. The step motor controls the ON/OFF functions to open and close the gas flow to the burner.
3. When the HI/MED/LO button is depressed the transmitter sends a RF signal to the receiver. The receiver then sends a pulse of 6 volts of power to the step motor. The step motor then controls the HI/MED/LO flame functions.
4. If the system is turned OFF the system will remember the last flame setting HI - MED or LO and when the system is turned back on it will default back to the previous flame setting.
5. The remote control will only work with the hand held transmitter. The receiver slide switch is only for positive OFF or REMOTE operation.

**NOTE:** Extensive operation HI/MED/LO of the STEP MOTOR will reduce the receiver's battery life significantly.

## BATTERY LIFE

Life expectancy of the alkaline batteries in the RCAF-1031-4 can be up to 12 months depending on use of the servomotor function. Check all batteries annually. When the transmitter no longer operates the remote receiver from a distance it did previously (i.e., the transmitter's range has decreased) or the remote receiver does not function at all, the batteries should be checked. It is important that the remote receiver batteries are fully charged, providing combined output voltage of at least 5.0 volts. The transmitter should operate with as little as 9.0 volts battery power.

## **TROUBLE SHOOTING**

If you encounter problems with your fireplace system, the problem may be with the fireplace itself or it could be with the RCAF-1031-4 remote system. Review the fireplace manufacturer's operation manual to make sure all connections are properly made. Then check the operation of the remote in the following manner:

1. Make sure the batteries are correctly installed in the RECEIVER. One reversed battery will keep receiver from operating properly.
2. Check battery in TRANSMITTER to ensure contacts are touching (+) and (-) ends of battery. Bend metal contacts in for tighter fit.
3. Be sure RECEIVER and TRANSMITTER is within 20 to 25-foot operating range.
4. Keep RECEIVER from temperatures exceeding 120° F. Battery life shortened when ambient temperatures are above 115° F.
5. If RECEIVER is installed in tightly enclosed metal surround, the operating distance will be shortened.

## **SPECIFICATIONS**

BATTERIES: Transmitter 12V - (A23) Remote Receiver 6V - 4 ea. AA 1.5 Alkaline  
FCC ID No.'s: transmitter - K9L1001; receiver - K9L1030THRX  
Operating Frequency: 303.8 MHZ  
Canadian ISC ID No.'s: transmitter – 2439A-1001; receiver – 2439A-1030THRX

### **FCC REQUIREMENTS**

**NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.**

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