



WHITE-RODGERS

Type 36C74
Combination Gas Valve
INSTALLATION INSTRUCTIONS

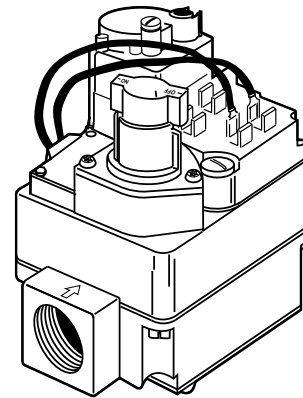
Operator: Save these instructions for future use!

FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

DESCRIPTION

The 36C74 Gas Valve is for use on systems providing automatic ignition of the pilot and/or main burners and incorporates the following features: pilot/redundant solenoid valve, main valve, integral pressure regulator and male spade terminals for point-to-point wiring.

This gas valve is also equipped with a step-opening feature to provide for quieter main burner ignition. The valve opens partially until main burner flame is established, then the valve opens to full operating pressure.



SPECIFICATIONS

Electrical Rating:

24 VAC (30 Volts max. Voltage), 60 Hz.

Types of Gases: Natural or LP Gas

Pressure Rating: 14" W.C. (1/2 PSI)

Ambient Temperature: -40° to 175°F (-40° to 79°C)

Regulator Adjustment Range:

Natural Gas: 2.5" to 5.0" W.C. (Full flow)

LP Gas: 7.5" to 12.0" W.C. (Full flow)

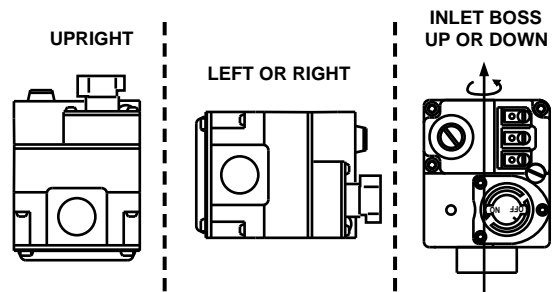
(Step pressure not adjustable)

PIPE SIZES/CAPACITIES

Pipe Size (inches)	Capacity (BTU/hr) at 1" pressure drop across valve	
	Nat. Gas (1000 BTU/cu. ft., 64 Sp. Gr.)	LP Gas (2500 BTU/cu. ft., 1.53 Sp. Gr.)
1/2" x 3/8"	100,000	162,000
1/2" x 1/2"	230,000	372,600
1/2" x 3/4"	230,000	372,600
3/4" x 3/4"	280,000	453,600

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Upright, 90° from upright or vertical



NOTE: Control shown may not be identical to replacement control.

Figure 1. Mounting Positions



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EMERSON ELECTRIC CO.
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PRECAUTIONS

DO NOT BEGIN INSTALLATION UNTIL YOU READ THE FOLLOWING PRECAUTIONS.

⚠ WARNING



If you do not follow these instructions exactly, a fire or explosion may result, causing property damage, personal injury or loss of life.

1. Failure to turn off electric or main gas supply to heating system could cause personal injury and/or property damage by shock, gas suffocation, fire, and/or explosion.
2. Do not use this control on circuits exceeding specified voltage. Higher voltage will damage the control and may cause shock or fire hazard.
3. **NEVER USE FLAME OR ANY KIND OF SPARK TO CHECK FOR GAS LEAKS—COULD CAUSE FIRE AND/OR EXPLOSION.**
4. **DO NOT USE WIRE JUMPER** on pilot systems, such as standing pilot, proven pilot, or spark-to-pilot ignition—a fire and/or explosion may result.
5. Do not use a control set for natural gas with LP gas, or a control set for LP gas with natural gas. Personal injury and/or property damage, gas suffocation, fire, and/or explosion may result.

⚠ CAUTION

1. Do not short out terminals on gas valve or primary control to test. Short or incorrect wiring can cause equipment damage, property damage, and/or personal injury.
2. This control is not intended for use in locations where it may come in direct contact with water. Suitable protection must be provided to shield the control from exposure to water (dripping, spraying, rain, etc.).

MAIN PIPING CONNECTIONS

NOTE

All piping must comply with local codes, ordinances, and/or national fuel gas codes.

1. Turn off electrical power to the system at the fuse box or circuit breaker. Also turn off the main gas supply.
2. If replacing an existing valve, disconnect all plumbing and electrical connections from the old control.
3. The valve may be installed in any position **except upside down**. The arrow on the bottom plate indicates the direction of gas flow through the valve.
4. You should use new pipe that is properly chamfered, reamed, and free of burrs and chips. If you are using old pipe, be sure it is clean and free of rust, scale, burrs, chips, and old pipe joint compound.
5. Apply pipe joint compound (pipe dope) or teflon tape **that is approved for all gases, only to the male threads of the pipe joints. DO NOT** apply compound or teflon tape to the first two threads (see fig. 2 for typical piping connections).
6. If you are using a vise or open-end wrench to hold the valve while installing piping, do not tighten excessively, as this may damage the valve.
7. See **SYSTEM WIRING** when making electrical connections. After all gas and electrical connections are completed, turn gas on and check for gas leaks with leak detection solution or soap suds. Bubbles forming indicate a leak. **SHUT OFF GAS AND FIX ALL LEAKS IMMEDIATELY.**

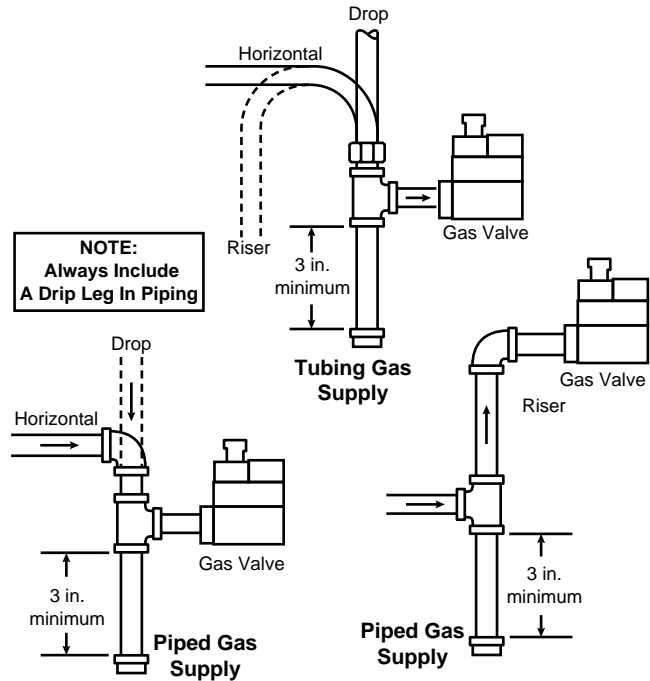


Figure 2. Typical gas valve piping

PILOT GAS CONNECTION

The valve is shipped with the pilot outlet plugged. For installations requiring pilot gas, remove the plug and use the fitting packed separately with the control.

Install fitting into pilot gas outlet (see fig. 3), turning until finger-tight. Insert clean, deburred tubing all the way through the fitting. While holding the tubing securely, slowly tighten fitting until you feel a slight “give”. Tighten the fitting an additional 1½ turns.

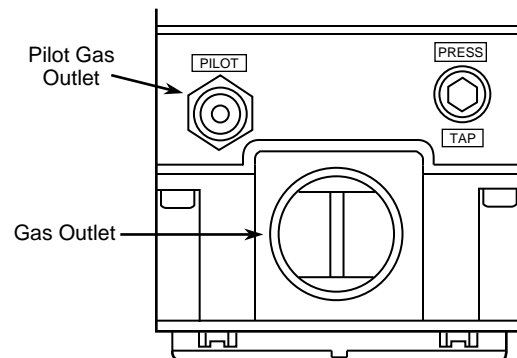


Figure 3. Gas valve side view

INSTALLATION (con't)

SYSTEM WIRING

NOTE

REFER TO AND FOLLOW THE APPLIANCE MANUFACTURER'S WIRING DIAGRAM. REFER TO FIG. 4 FOR TERMINAL IDENTIFICATION.

All wiring should be installed in accordance with local and national electrical codes and ordinances.

Check that the electrical power supply used agrees with the voltage and frequency shown on the gas control.

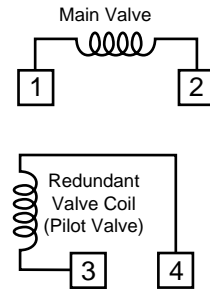


Figure 4. Typical gas valve wiring

ADJUSTMENT

PILOT FLAME ADJUSTMENT

This control was factory preset and will not normally require additional adjustment of pilot flame.

If the pilot flame is low and does not engulf the bulb of the mercury flame sensor, the system will not energize the main valve.

If pilot gas pressure is too high, gas will sputter past the ignition electrode, and may not ignite. High pilot gas pressure may also cause the flame to lift off the burner, causing the flame sensor bulb to sense "low" heat.

To adjust the pilot flame, remove the pilot adjust cover screw and gasket (see fig. 6) to expose adjusting screw. **To REDUCE pilot flame**, turn the pilot adjust screw clockwise. **To INCREASE pilot flame**, turn the pilot adjust screw counterclockwise. Replace and tighten cover screw and gasket.

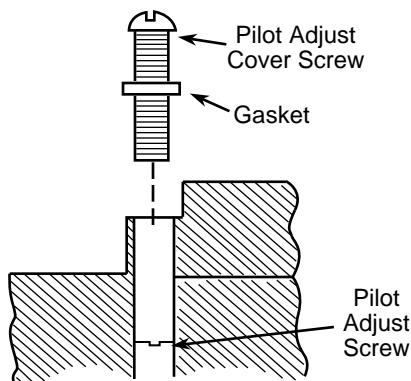


Figure 5. Pilot flame adjustment

PRESSURE REGULATOR ADJUSTMENT

The pressure regulator has been factory adjusted for 3.5" W.C. (Natural Gas, full flow) or 11.0" W.C. (LP Gas, full flow). Although additional adjustments will not normally be necessary, the regulator may be adjusted if required. **Do not force the adjusting screw beyond the limits that it can easily be adjusted.**

1. Attach a manometer to the outlet pressure tap of the valve.
2. Energize valve to ignite main burner.
3. Remove "Reg. Adj." cover screw (see fig. 6).
4. **To DECREASE outlet pressure**, turn the adjusting screw (beneath the cover screw) counterclockwise. **To INCREASE outlet pressure**, turn the adjusting screw clockwise.
5. Replace the cover screw. Cycle the valve two or three times to verify regulator setting.

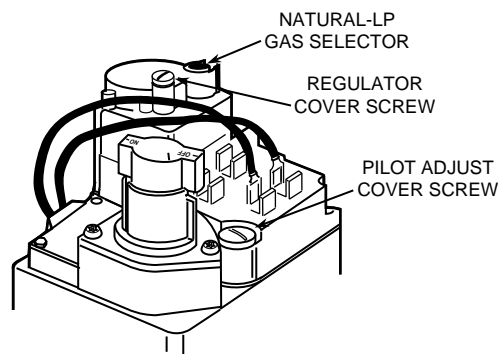


Figure 6. Gas valve top

PILOT LIGHTING INSTRUCTIONS AND PRECAUTIONS

FOR YOUR SAFETY READ BEFORE LIGHTING

⚠ WARNING



If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- A. This appliance is equipped with an intermittent ignition device which automatically lights the pilot. Do **NOT** try to light the pilot by hand.
- B. **BEFORE LIGHTING**, smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

FOR YOUR SAFETY "WHAT TO DO IF YOU SMELL GAS"

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call you gas supplier from a neighbor's

phone. Follow the gas supplier's instructions.

- If you cannot reach your gas supplier, call the fire department.
- C. Use only your hand to push in or turn the gas control knob. **Never use tools.** If the knob will not push in or turn by hand, don't try to repair it; call a qualified service technician. Force or attempted repair may result in a fire of explosion.
- D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control that has been under water.

LIGHTING INSTRUCTIONS

1. **STOP!** Read the precautionary information above.
2. Set the thermostat to lowest setting.
3. Turn off all electrical power to the appliance.
4. This appliance is equipped with an intermittent ignition device which automatically lights the pilot. Do **NOT** try to light the pilot by hand.
5. Remove the pilot access panel(s) located under the gas control unit.
6. Push in gas control knob slightly and turn clockwise to **OFF** (see Figure 7).
7. Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** Follow **B** in the precautionary information above. If you don't smell gas, go to next step.
8. Turn knob on gas control counterclockwise to **ON**.
9. Replace pilot access panel(s).
10. Turn on all electrical power to the appliance.
11. Set thermostat to desired setting.
12. If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" and call your service technician or gas supplier.

NOTE: Knob cannot be turned to **OFF** unless knob is depressed slightly. Do not use tools or excessive force.

TO TURN OFF GAS TO APPLIANCE

1. Set the thermostat to lowest setting.
2. Turn off all electrical power to the appliance if service is to be performed.
3. Remove control access panel
4. Depress gas control knob slightly and turn clockwise to **OFF**. **Do not use tools or excessive force.**
5. Replace control access panel.

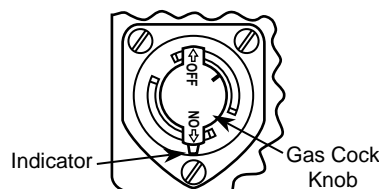


Figure 7. Gas Cock Knob

If you need more information about this product, please write to us at:

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