



WHITE-RODGERS

36C21 Series

Main Gas Valves

INSTALLATION INSTRUCTIONS

Operator: Save these instructions for future use!

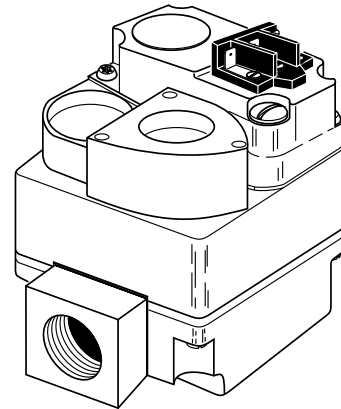
FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

DESCRIPTION

These Gas Valves control the flow of gas to the main burner under command of a room thermostat. They are suitable for use on all gases and may be used with all types of gas heating equipment. They may be mounted in any position except upside down.

NOTE

Some parts of this gas valve are also used to make more complex combination gas controls. Disregard the notations "Pilot", "Pilot Adj." and "Vent ". Although these notations do appear on the valve, they are not functional on model 36C21 Series controls.



SPECIFICATIONS

Electrical Rating:
Main Valve

Model No.	Voltage	Current
36C21U	750 MV	D.C.
36C21	24 volts	.23 Amp
36C21A	120 volts	.035 Amp

Maximum Pressure Rating:

14" W.C. (1/2 lb. per sq. in.)

Ambient Temperature: -40° to 175°F

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

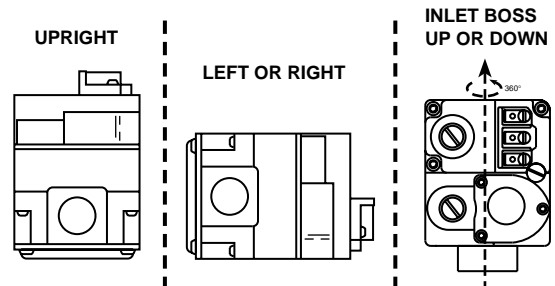
CAUTION

Do not use this valve on indoor LP gas furnaces except with 100% shut-off system.

Mounting: Any position except upside-down

MOUNTING POSITIONS:

Upright, 90° from upright or vertical



WHITE-RODGERS DIVISION
EMERSON ELECTRIC CO.
9797 REAVIS ROAD
ST. LOUIS, MISSOURI 63123-5398

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Replaces 37-4048, 37-2570, 37-1972
9615

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

⚠ WARNING

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.

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 control may be installed in any orientation **except upside down**. The arrow on the valve indicates the direction of gas flow through the control.
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. 1 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.**

NOTE

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

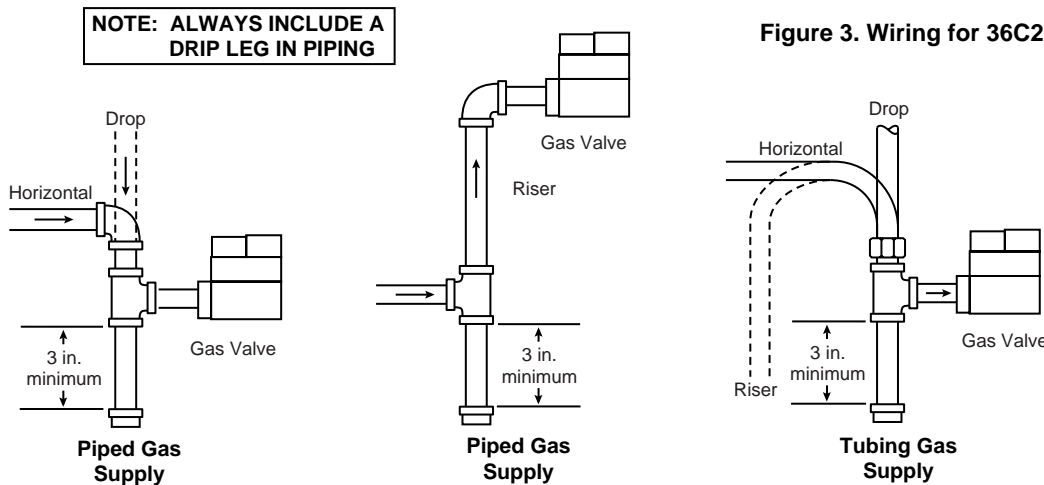


Figure 1. Typical gas valve piping

SYSTEM WIRING

⚠ CAUTION

To prevent electrical shock and/or equipment damage, disconnect electrical power to system at main fuse or circuit breaker box until installation is complete.

NOTE

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

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

These typical wiring diagrams (figs. 2 and 3) show only the terminal identification and wiring hook up. Always refer to wiring instructions provided by equipment manufacturer for system hook-up and operation.

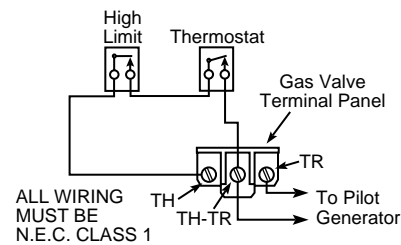


Figure 2. Wiring for 36C21U

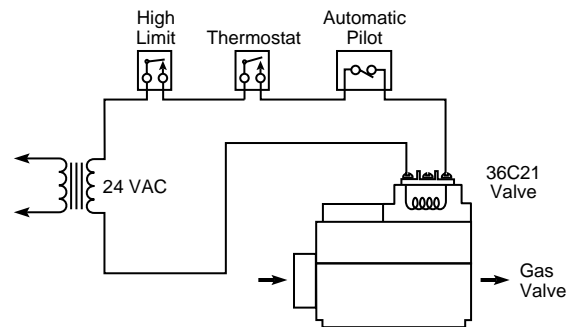


Figure 3. Wiring for 36C21 and 36C21A Models

ADJUSTMENT

PILOT GAS ADJUSTMENT

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 gas pressure:

Remove the cover screw (see fig. 4).

To REDUCE pilot pressure, turn the pilot adjust screw (beneath the cover screw) clockwise.

To INCREASE pilot pressure, turn the pilot adjust screw counterclockwise.

Replace and tighten cover screw.

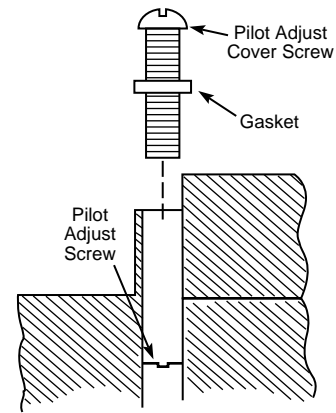


Figure 4. Pilot gas adjustment

PILOT LIGHTING

Before lighting the pilot burner flame, remove one of pilot generator leads from the valve. This will prevent main gas valve from opening during the pilot lighting procedure, even if thermostat should be calling for heat.

If you need further information about this product, please write to

White-Rodgers Division, Emerson Electric Co.
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St. Louis, MO 63123-5398
Attention: Technical Service Department

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