

White-Rodgers

36J27-554

DSI and HSI Modulating Combination Gas Valve INSTALLATION INSTRUCTIONS

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

DESCRIPTION

The 36J27 combination gas valve is designed for direct spark ignition (DSI) and hot surface ignition (HSI) system applications. This control is equipped with redundant main solenoid valves that control gas flow to the main burners, a pressure regulator and a two-position on/off switch for regulation and electrical shut-off of the solenoid valves. Upon signal from an integrated furnace control, the valve modulates outlet pressure.

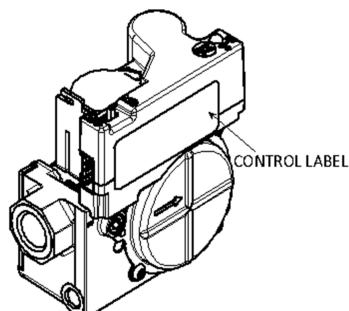


Fig. 1 – 36J27 Modulating Gas Valve

SPECIFICATIONS

Pressure Regulator Adjustment Range (inches W.C.)

Pipe Sizes	CSA Std. Gas .64 Sp. Gr. (1000 BTU/CU. FT.)	LP Gas 1.53 Sp. Gr. (2500 BTU/CU. FT.)	Adjustment Range (NAT., IN. W.C.)	Adjustment Range (LP., IN. W.C.)
1/2" x 1/2" NPT	20,000 – 210,000 BTU/HR	32,600 – 340,000 BTU/HR	0.40 – 4.0	1.3 – 11.5

For L.P. Gas Use Conversion Kit F92-1021

1.0" Pressure Drop Capacity

Pipe Sizes (NPT)	CSA Std. Gas .64 Sp. Gr. (1000 BTU/CU. FT.)	LP Gas 1.53 Sp. Gr. (2500 BTU/CU. FT.)
1/2" x 1/2" (Vertical or Upright)	140,000 BTU/HR	226,800 BTU/HR

Ambient Temperature..... -40° to 175°F

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

Voltage..... 24 VAC

Frequency..... 60 Hz

Total Current..... 1.0A

Pulse Width Modulation (PWM):

Low level: 0 – .03 volts

High level: 3 – 5.5 volts

Modulation..... 35% – 100% opening
with 1% increments

Regulator Vent Outlet..... accepts 5/16" I.D. hose

Rotary dip switch for pressure regulation adjustment

Precalibrated for LP – simplifies conversion

CONTENTS

Description	1
Specifications	1
Mounting Positions.....	2
Precautions	3
Installation	4
System Wiring	
Adjustment	5
Pressure Regulator Adjustment	
Lighting Instructions.....	6

MOUNTING POSITIONS

UPRIGHT, OR 0° TO 90° FROM UPRIGHT

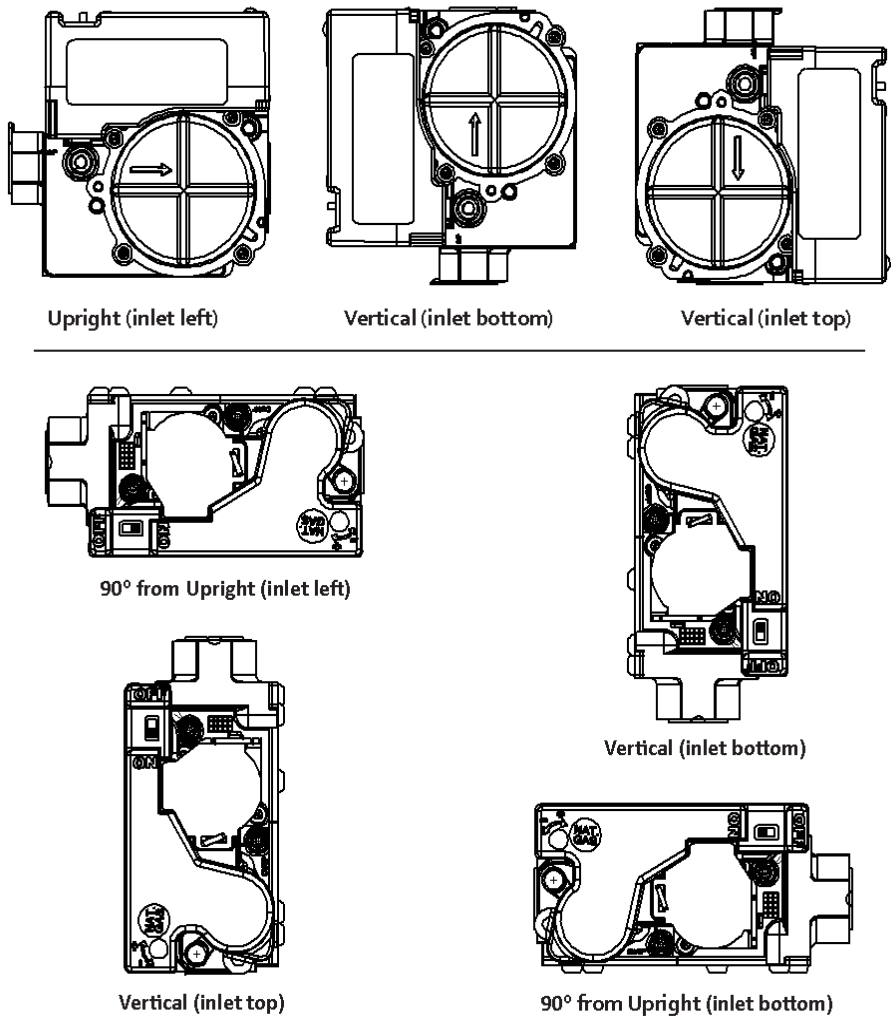


Fig. 2 – Valve Mounting

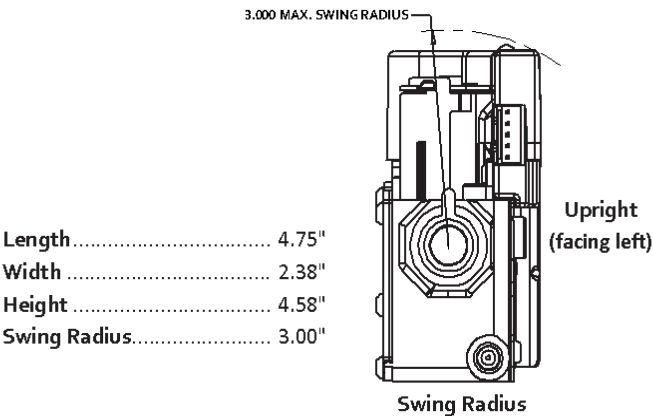



Fig. 3 – Dimensions

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.		
<table border="0"><tr><td data-bbox="327 526 790 1088"><ol style="list-style-type: none">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 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.</td><td data-bbox="790 526 1268 1088"><ol style="list-style-type: none">5. Do not use a gas valve which appears to be damaged. A damaged valve may cause personal injury and/or property damage due to shock, gas suffocation, fire, and/or explosion. Contact supplier to replace any valve that appears to have been damaged.6. Do not use a gas valve which appears to be damaged. A damaged valve may cause personal injury and/or property damage due to shock, gas suffocation, fire and/or explosion. Contact supplier to replace any valve that appears to have been damaged.7. Do not use a gas valve that has been in direct contact with water. Water entering gas valve may result in concealed internal damage to gas valve. Personal injury and/or property damage, gas suffocation, fire and/or explosion may result.</td></tr></table>		<ol style="list-style-type: none">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 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.	<ol style="list-style-type: none">5. Do not use a gas valve which appears to be damaged. A damaged valve may cause personal injury and/or property damage due to shock, gas suffocation, fire, and/or explosion. Contact supplier to replace any valve that appears to have been damaged.6. Do not use a gas valve which appears to be damaged. A damaged valve may cause personal injury and/or property damage due to shock, gas suffocation, fire and/or explosion. Contact supplier to replace any valve that appears to have been damaged.7. Do not use a gas valve that has been in direct contact with water. Water entering gas valve may result in concealed internal damage to gas valve. Personal injury and/or property damage, gas suffocation, fire and/or explosion may result.
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⚠ CAUTION

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.

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.).

INSTALLATION

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 upright, + or - 90° from upright, or vertical (refer to fig. 2). The arrow on the valve indicates the direction of inlet gas flow.
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. (Torque: 375 in-lb maximum.) Do not cross-thread during installation 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.

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) that is approved for all gases, only to the male threads of the pipe joints. DO NOT apply compound to the first two threads (see figure 4 for typical piping connections).

SYSTEM WIRING

Refer to and follow the appliance manufacturer's wiring diagram. Refer to figure 5 for terminal identification.

NOTE

All wiring should be installed according to 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.

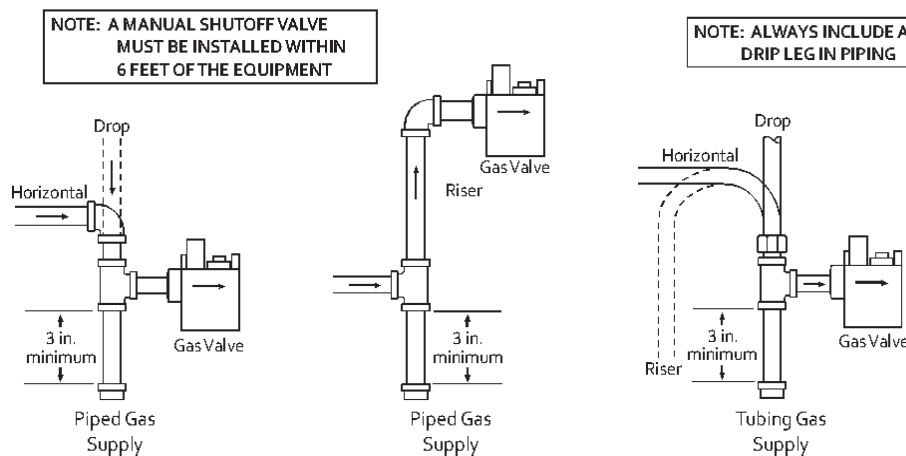
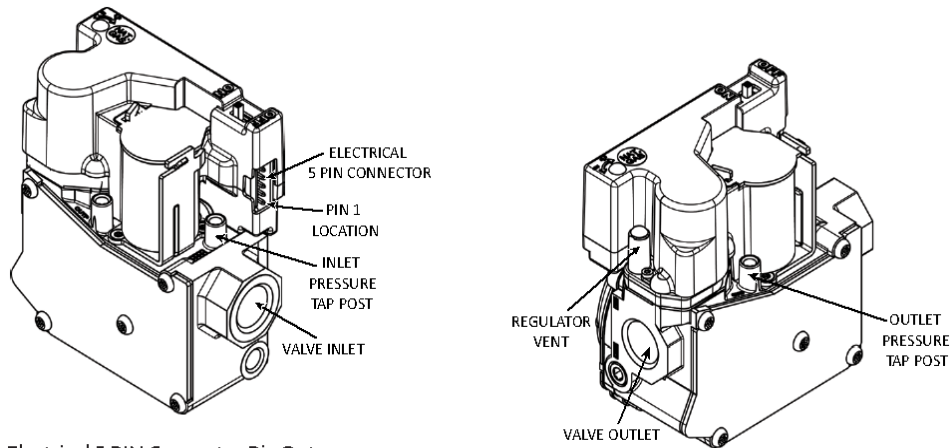


Fig. 4 – Typical Gas Valve Piping

INSTALLATION



Electrical 5 PIN Connector Pin Out

- PIN 5 - TH - Main Valve 24 VAC (top pin, with the cover pointing up)
- PIN 4 - TR - Ground
- PIN 3 - TX - Communication to IFC
- PIN 2 - RX - Communication to Stepper
- PIN 1 - TH - Board 24VAC (bottom pin, with the cover pointing up)

Fig. 5 – 36J27 Valve Features

ADJUSTMENT

The gas valve outlet pressure was pre-adjusted for both Nat. and LP at the factory, but fine adjustment is possible by removing the access plug and turning the fine-adjustment screw with a 1/8" flat blade screwdriver. Adjustment must only be done while monitoring outlet pressure with a suitable manometer properly attached to the outlet pressure tap. The outlet pressure tap must be leak checked after resealing (refer to Notes and Fig. 6 below).

Notes:

1. The maximum outlet pressure adjustment using the fine adjustment screw is approximately $\pm 15\%$ from the original factory setting.
2. The fine adjustment screw has 16 detents and can be rotated infinitely 360° in either direction. However, at some point in the rotation, the outlet pressure will switch from $+15\%$ to -15% or vice versa, depending on the direction of rotation.
3. The fine adjustment screw affects the entire modulation range. Therefore, once adjustment is made, the valve outlet pressure must be checked at both the minimum and maximum extremes of the modulation range. (Refer to the appliance manufacturer's instructions.)

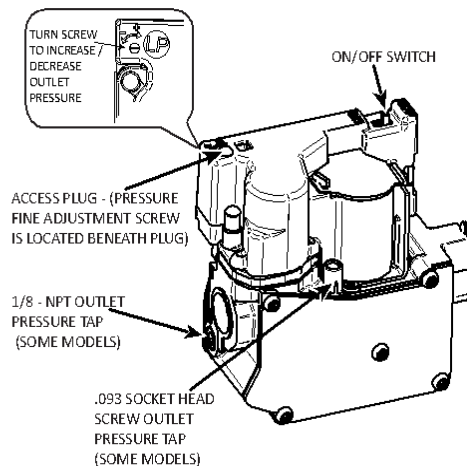


Fig. 6 – 36J27 Modulating Gas Valve

LIGHTING INSTRUCTIONS

FOR YOUR SAFETY READ BEFORE OPERATING

⚠ WARNING



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

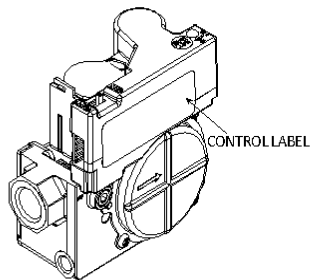
- A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do **not** try to light the burner by hand.
- B. **BEFORE OPERATING** smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than 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 your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- C. Use only your hand to move the gas control switch. **Never use tools.** If the switch will not move by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or 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 which has been under water.

OPERATING INSTRUCTIONS

1. **STOP!** Read the safety information above on this label.
2. Set the thermostat to lowest setting.
3. Turn off all electric power to the appliance.
4. **HSI MODELS:** This appliance is equipped with an ignition device which automatically lights the burner. Do **not** try to light the burner by hand.
5. **PROVEN/INTERMITTENT PILOT MODELS:** This appliance is equipped with an ignition device which automatically lights the pilot. Do **not** try to light the burner by hand.
6. Remove control access panel.
7. Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** Follow "B" in the safety information above on this label. If you don't smell gas, go to the next step.
8. Push gas control switch to "ON."
- NOTE: Do not force.
9. Replace control access panel.
10. Turn on all electric 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.



TO TURN OFF GAS TO APPLIANCE

1. Set the thermostat to lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Remove control access panel.
4. Push gas control switch to "OFF." **Do not force.**
5. Replace control access panel.