

**WHITE-RODGERS**

**36G32 & 36G33**  
Intermittent Pilot Single Stage  
Gemini® 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 36G32 & 36G33 Gemini® combination gas valves are designed for intermittent pilot (IP) system applications. These valves are equipped with redundant and main solenoid valves that control gas flow to the main burners, a solenoid valve that controls gas flow to the pilot burner, a main outlet gas pressure regulator and a two-position on/off switch for electrical shut-off of the solenoid valves. The 36G33 gas valve is equipped with a slow-opening feature for softer lighting characteristics.

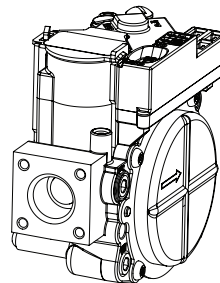


Figure 1 – 36G32 / 36G33 Gas Valve

**SPECIFICATIONS**

**Pressure Regulator Setting:** Refer to control label

**Pressure Regulator Adjustment Range:**

Nat. Gas – 2.5" to 5.0" W.C.

LP Gas – 7.0" to 12.0" W.C.

**Ambient Temperature:** -40° to 175° F

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

**Voltage:** 24 VAC

**Frequency:** 50/60 Hz

**Current:** .430 amps

**Mounting Positions:** Multipoise – Control may be mounted in any position.

**Pipe Size:** 1/2" x 1/2" NPT

**Capacity (@ 1" pressure drop across valve):**

Nat. Gas (1,000 BTU/cu. ft.) – 140,000 BTU/hr.

LP Gas (2,500 BTU/cu. ft.) – 226,800 BTU/hr.

**PRECAUTIONS**

**DO NOT BEGIN INSTALLATION UNTIL YOU READ THE FOLLOWING PRECAUTIONS. INSTALLATION SHOULD BE DONE BY A QUALIFIED HEATING AND AIR CONDITIONING CONTRACTOR.**

**! 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. Ensure proper wiring. Label all wires before disconnecting when replacing gas control. Mis-wiring could cause fire or explosion hazard.
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.
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.

# PRECAUTIONS

## ⚠ WARNING

Properly install gas piping to control.

- Do not remove protective inlet or outlet caps until ready to connect supply pipe to gas valve.
- Use new supply pipe, properly threaded, reamed, de-burred, and cleaned.
- Use backup wrench, applied only to provided wrench flats on inlet boss, when tightening the supply pipe. Do not grip bracket, solenoid or any other part of control.
- Do not over-tighten pipe to control (375 in-lbs max.)
- Always install sediment trap in the gas supply line to prevent contamination of gas valve.

Failure to install properly can cause gas leakage resulting in injury due to fire or explosion.

## ⚠ 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.).
3. Clean gas piping of contaminants, cutting fluid, or other chemicals which might react harmfully with the gas valve components before install.

# INSTALLATION

## 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 control may be installed in any position. The arrow on the side plate indicates the direction of inlet gas flow.
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. 3 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. (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.**

## PILOT GAS CONNECTION

### THIS VALVE REQUIRES A PILOT CONNECTION

Loosen the pilot fitting until it is finger-tight (refer to figure 2). 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 1-1/2" turns.

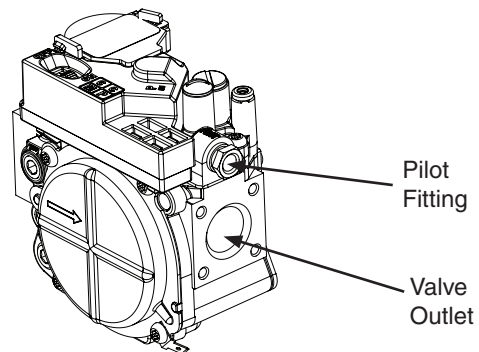
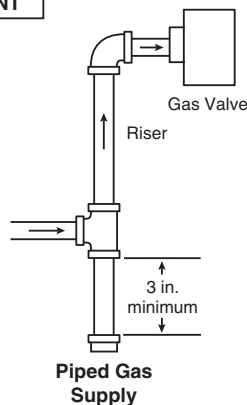
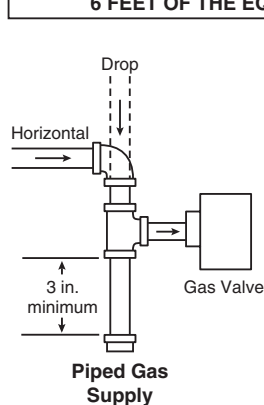
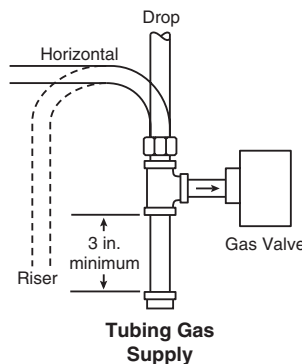


Figure 2 – Pilot fitting location

**NOTE: A MANUAL SHUTOFF VALVE MUST BE INSTALLED WITHIN 6 FEET OF THE EQUIPMENT**



**NOTE: ALWAYS INCLUDE A DRIP LEG IN PIPING**



### NOTE

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

Figure 3 – Typical gas valve piping

## SYSTEM WIRING

**WARNING** Fire or Explosion Hazard. Risk of personal injury or property damage.

Before startup, refer to and follow the appliance manufacturer's wiring diagram. Ensure that the Main (M), Pilot (P) and Common (C) terminals of the gas control are connected to their proper lead wires. Refer to Fig. 4 for terminal identification.

### 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.

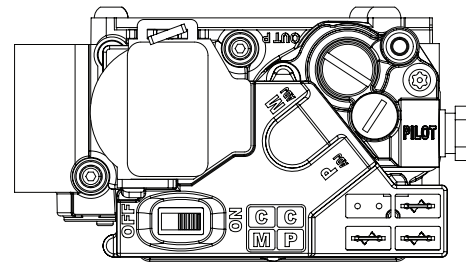


Figure 4 – Top view of gas valve

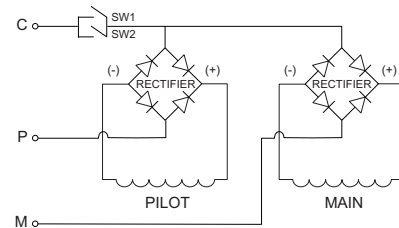


Figure 5 – Electrical schematic

## ADJUSTMENT

### PRESSURE REGULATOR ADJUSTMENT

These controls are shipped from the factory with the regulator set as specified on the control label. Consult the appliance rating plate to ensure burner manifold pressure is as specified. If another outlet pressure is required, follow these steps.

### NOTE

If a valve has been factory-adjusted within the 2.5 to 5 inches W.C. range, it cannot be field-adjusted outside that range. This is also true for valves adjusted within the 7.0 to 12 inches W.C. range for LP gas.

1. Turn off all electrical power to the system.
2. Remove plug from outlet pressure tap\* (see fig. 6). Install hose barb fitting.
3. Attach a hose and manometer to the outlet pressure tap hose barb fitting.
4. Turn on system power and energize valve.
5. Remove regulator cover screw and turn regulator adjust screw clockwise (↻) to increase pressure, or counterclockwise (↺) to decrease pressure (see fig. 8). Always adjust regulator to provide the correct pressure according to the original equipment manufacturer's specifications listed on the appliance rating plate. Replace regulator cover screw and tighten securely.
6. Turn off all electrical power to the system.
7. Remove manometer hose from outlet pressure tap hose barb fitting.
8. Remove hose barb fitting. Replace plug and tighten to 60 in-lb.
9. Turn on system power and energize valve.
10. Using a leak detection solution or soap suds, check for leaks at pressure tap plug. Bubbles forming indicate a leak. SHUT OFF GAS AND FIX ALL LEAKS IMMEDIATELY.

\*Some models feature pressure tap towers (see figure 7). To attach a manometer, loosen the screw inside the tower 1 turn using a 3/32" hex wrench (the screw need not be removed). Attach the manometer using a 5/16" I.D. hose inserted over the tower. After regulator adjustment, remove the hose and re-tighten the screw to 13 to 19 in-lbs. torque.

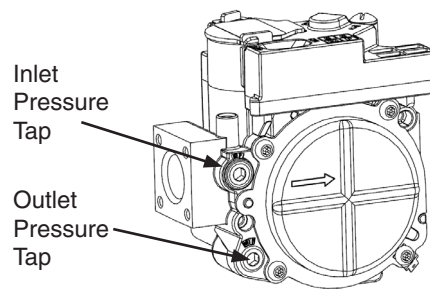


Figure 6 – Pressure tap locations

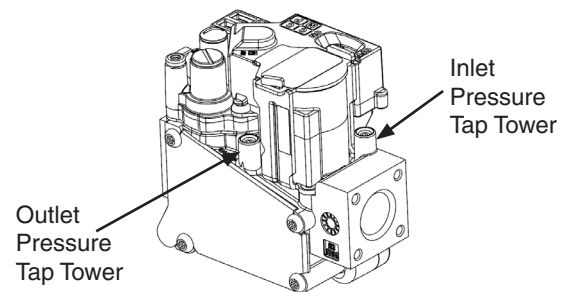


Figure 7 – Pressure tap tower locations

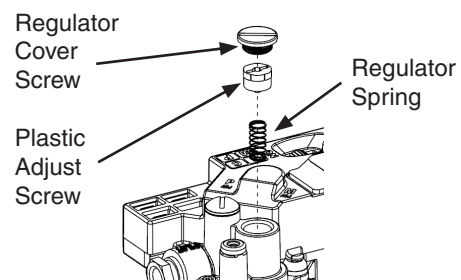


Figure 8 – Pressure regulator adjustment detail

## ADJUSTMENT

### PILOT FLAME ADJUSTMENT

If the pilot flame is low and does not engulf the 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 to sense "low" heat.

To adjust the pilot gas pressure, remove the pilot adjust cover screw. Take care to avoid losing the small gasket located beneath the screw (See fig. 9). **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 the gasket and cover screw. Tighten Cover screw to 8 to 20 in. lbs. torque.

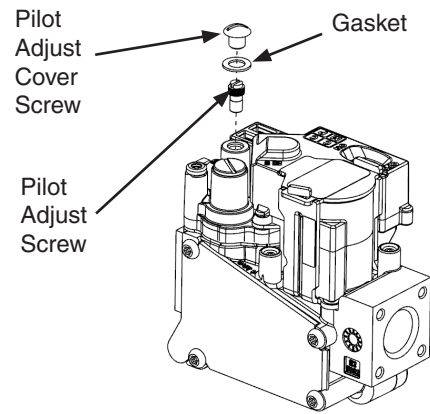


Figure 9 – Pilot flame adjustment detail

## LIGHTING INSTRUCTIONS

### 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.

- This appliance is equipped with an intermittent ignition device which automatically lights the pilot. Do not try to light the pilot by hand.
- 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.

- If you cannot reach your gas supplier, call the fire department.
- Use only your hand to move the gas control switch. **Never use tools.** If the switch 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.
  - 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

- STOP! Read the safety information above.
- Set the thermostat to lowest setting.
- Turn off all electric power to the appliance.
- This appliance is equipped with an ignition device which automatically lights the pilot. Do not try to light the pilot by hand.
- Remove control access panel.
- Wait (5) minutes to clear out any gas. If you then smell gas, STOP!

Follow "B" in the safety information above. If you don't smell gas, go to the next step.

- Push gas control switch to "ON." NOTE: Do not force.
- Replace control access panel.
- Turn on all electric power to the appliance.
- Set thermostat to desired setting.
- 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

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

## GAS CONVERSION KITS & ACCESSORIES

The following parts are included or available.

#### PART NO.

**F92-0656** – LP to Natural Regulated Gas Conversion Kit

**F92-0659** – Natural to LP Regulated Gas Conversion Kit

**F92-0737** – Natural to Unregulated LP Gas Conversion Kit

**F27-0400** – 3/8" NPT Inlet / Outlet Right Angle Flange Mount Kit

**F69-0727** – Pilot Fitting for 1/4" O.D. Pilot Tube

**F92-0983** – 1/2" NPT to 3/8" NPT Reducer Bushings (2)

