

Dual Solenoid Gas Valve Installation

Installation

IMPORTANT: These instructions are intended as a guide for qualified personnel installing or servicing FLYNN Gas Products. Carefully follow all instructions in this bulletin and all instructions on the appliance. Limit repairs, adjustments, and servicing to the operations listed in this bulletin or on the appliance.

WARNING: Risk of Fire or Explosion.
The system must meet all applicable local, national, and regional regulations. Improper installation may cause gas leaks, explosions, property damage, and injuries.

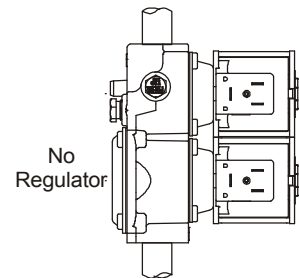
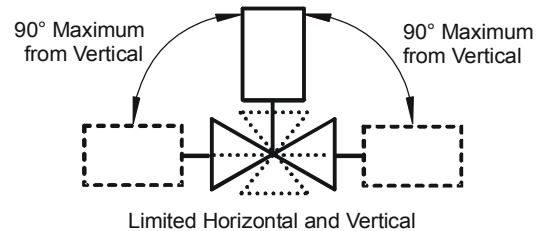
WARNING: Risk of Fire or Explosion.
To prevent leakage of upstream gas, shut off the gas supply at the main manual shutoff valve before installing or servicing the DUAL valve. Failure to shut off the gas supply can result in the release of gas during installation or servicing, which can lead to an explosion or fire, and may result in severe personal injury or death.

Mounting

CAUTION: Risk of Equipment Damage.
To prevent damage to the valve when mounting to pipework, do not use a wrench on any surface other than the casting flats provided at the inlet and outlet ends of the valve body.

To install the DUAL valve:

1. Ensure that the specified maximum ambient (surface) temperature is not exceeded (see the *Technical Data* section).
2. Ensure that the power supply voltage is compatible with the required control valve voltage.
3. Shut off the gas at the main manual shutoff valve.
4. When installing the valve on the manifold, ensure that the gas flows through the valve body in the direction indicated by the arrow on the valve body. If the valve is installed with the gas flow in the opposite direction of the arrow, leakage can occur.
5. Mount the valve to the pipework. The DUAL valve may be mounted on a horizontal manifold with the solenoid coils pointed up (vertical) or in any position not exceeding 90° from the vertical. The valve also may be mounted on a vertical manifold in any position around its axis (see Figure 1). **Do not** install the solenoid coil upside down. Install vertically wherever possible.



Vertical mounting may be 360° around its axis with the gas flow either up or down, but always in the direction of the arrow.

Figure 1: DUAL Valve Mounting Positions

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- Thread pipe (the amount shown in Table 1) for insertion into the control. Do not thread the pipe too far. Valve distortion or malfunction may result if the pipe is inserted too deeply.

Table 1: NPT Pipe Thread Length Into Valve

Pipe Size (NPT)	Thread Pipe Amount (in.)	Maximum Depth Pipe (in.)
1/2	3/4	1/2
3/4	13/16	3/4

- For any threaded connections, threads of pipe and nipples must be smooth and free of tears and burrs. Steam clean all piping inside diameter to remove foreign substances such as cutting oil or thread chips before installing into the valve. Apply a moderate amount of good quality pipe compound (do not use Teflon tape) to pipe only, leaving two end threads bare (see Figure 2). On LP in use compound resistant to LP gas.

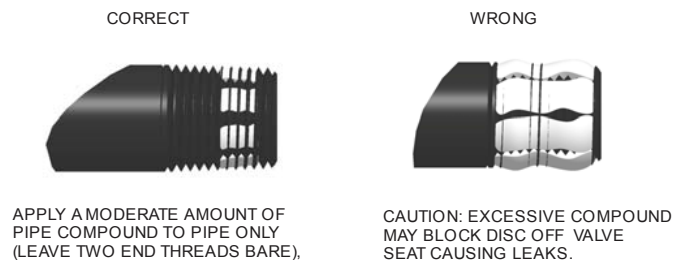
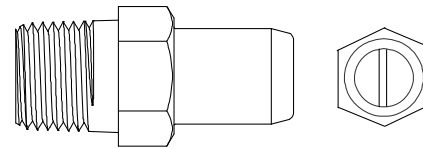


Figure 2: Use a Moderate Amount of Pipe Compound

- Ensure the gas flows through the valve body in the direction indicated by the arrow on the body. If the valve is installed with the gas flow in the opposite direction of the arrow, leakage can occur. Connect pipe to gas control inlet and outlet. Use a wrench on the square ends of the control. If a flange is used, place the wrench on the flange rather than on the controls. This process should be used for both the installation and removal of the valve in a gas system (see Figure 5).
- If you desire to measure the outlet pressure, use the bottom cast pressure test fitting (see Figure 4) or use the Y99AX pressure test fitting (see Figure 3) and an approved pipe joint compound on the male threads and replace the marked pressure tap plug, which is optional on the inlet or outlet of the valve body. Screw the fitting into threaded port of the valve, which replaces the pressure tap plug.



**Figure 3: Y99AX-1 (1/8-27 NPT) Pressure Test Fitting
Y99AX-2 (1/8-28 BSPT) Pressure Test Fitting**

- Check for leakage before making any valve adjustments.
 - Shut off the gas at the main manual shutoff valve and open the pressure connection between the manual shutoff valve and the DUAL valve.
 - Connect air tubing with a maximum pressure of 1-1/2 times the valve's maximum operating pressure (as indicated on the valve) to the opened pressure connection.
 - Paint all valve body connections with a rich soap and water solution.

If bubbles occur, this is an indication of a leak. To stop a leak, tighten joints and connections. Replace the part if the leak cannot be stopped.

If bubbles do not occur, remove the air tubing and close the pressure connection.
- Make wiring connections. Refer to the *Wiring* section for specific wiring instructions.
- Check for leakage at the bleed hole. Paint the bleed hole with a rich soap and water solution (or use acceptable gas leak detection equipment). If bubbles occur, this is an indication of a gas leak. To stop a leak, tighten the needle screw. Replace the valve if the leak cannot be stopped.
- Observe at least three complete operating cycles to ensure that all components are functioning correctly before leaving the installation.

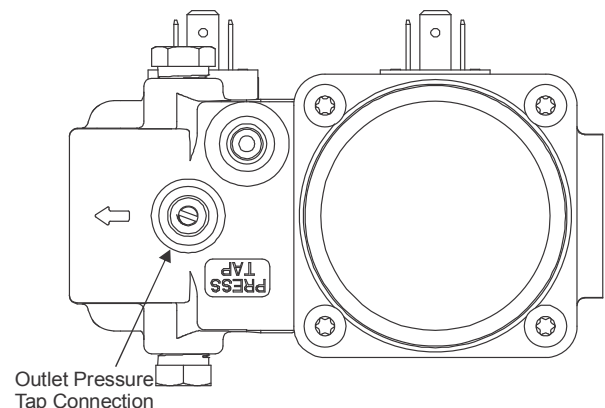


Figure 4: Underside of Valve

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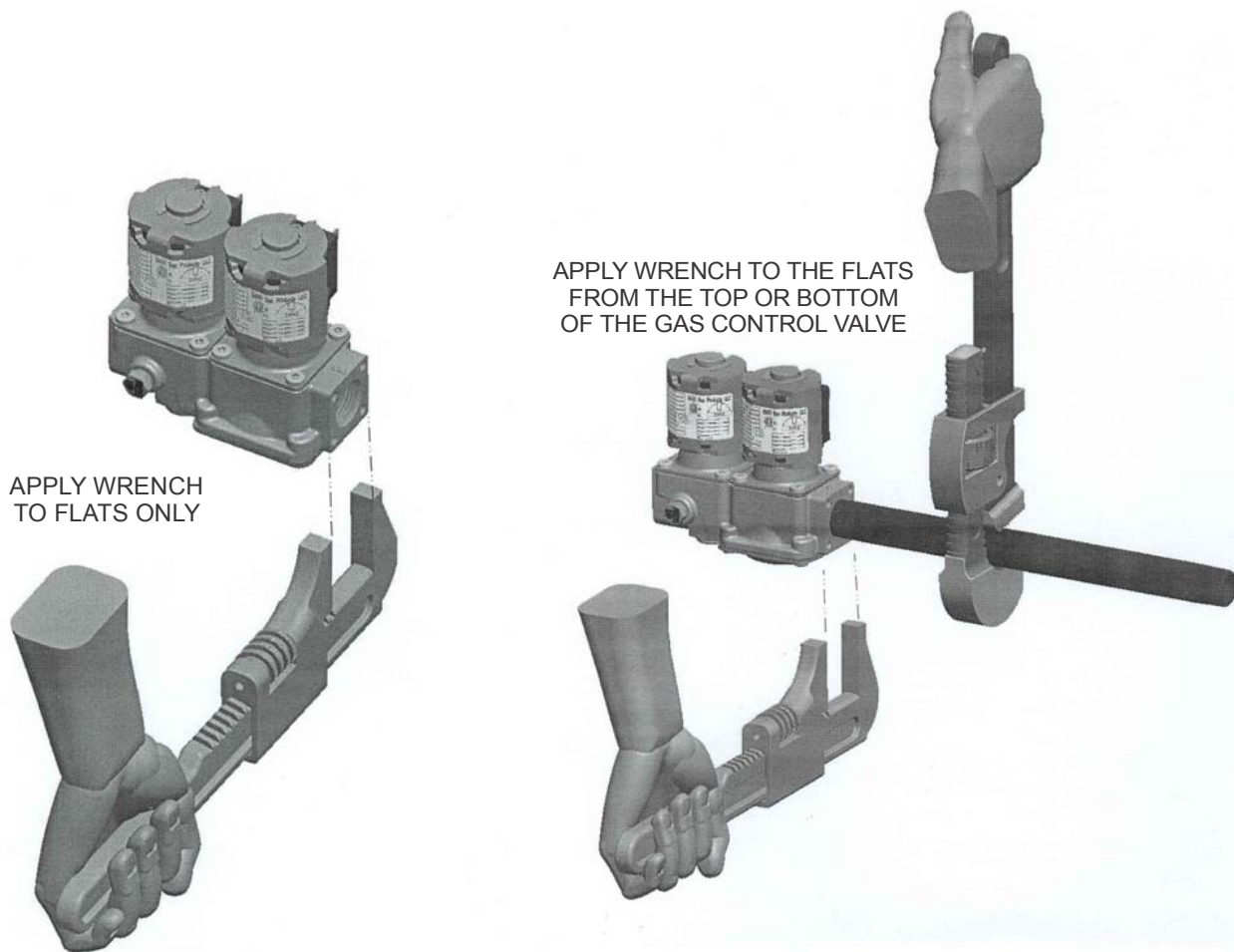


Figure 5: Proper Use of Wrench on Gas Control

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Wiring



WARNING: Risk of Electrical Shock.

Disconnect the power supply before making electrical connections to avoid electrical shock or equipment damage. Ensure that the operating voltage is identical to the information on the product identification label.

The DUAL valve is supplied with 3-tab or 2-tab electrical connections. The solenoid coils are male tabs and electrical connections should be made using 6.35 x 0.8 mm (1/4 in.) female, fully insulated push-on terminals. The earth ground is clearly labeled.

The electrical wiring to a twin solenoid valve from an electronic intermittent proven pilot ignition system is comprised of two lines; a common and an independent earth ground. Wiring can be done using a single 4-wire cable. The wiring connections for a 4-wire cable are shown in Figure 6.

Route the electrical cable for the valve solenoid from the burner sequence control to the valve and make wiring connections in accordance with Figure 6.

Note: Electrical connections can also be made using electrical plugs (DIN 43650 Form B [ISO 4400]). Available from a FLYNN Gas Products distributor.

Note: All wiring must be in accordance with national and local electrical codes and regulations.

Setup and Adjustments

Checkout



WARNING: Risk of Fire or Explosion.

Follow this or an equivalent checkout procedure after installation. Before leaving the installation, verify that the gas valve functions properly and that the system has no gas leaks. Gas leaks can lead to an explosion or fire, and may result in severe personal injury or death.

IMPORTANT: All adjustments must be made in conjunction with the gas appliance and in accordance with the appliance manufacturer's instructions. Only authorized personnel should make adjustments.



WARNING: Risk of Fire or Explosion.

The minimum flow rate of the valve must not be adjusted below the minimum safe working rate of the appliance. This may cause gas leaks, which can lead to an explosion or fire and may result in severe personal injury or death.

Make sure all components are functioning properly by performing the following test:

1. Test all joints and connections for leaks with a soap solution.
2. Close the main upstream shutoff valve and wait at least 5 minutes for unburned gas to escape from the appliance, and then reopen the shutoff valve.
3. Turn on the main electrical power switch and close the thermostat contacts. The appliance should operate in accordance with the manufacturer's specified sequence of operation.
4. Turn the thermostat to a low dial setting to open the contacts. All burner flames should be extinguished. Repeat Steps 3 and 4 at least three times.
5. Return the thermostat to a normal setting before leaving the installation.

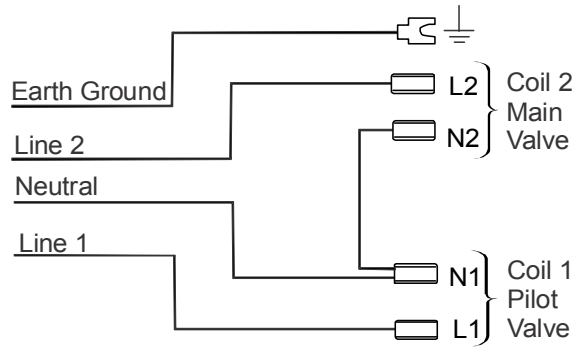
Repairs and Replacement

Table 2: Replacement Solenoid Coil

Part Number	Description
RSDA16A-12	12 VDC; 2-tab 15 VA Coil
RSDA16A-25	25 VAC; 50/60 Hz; 3-tab 15 VA Coil
RSDA16A-25V	25 VDC; 3-tab 17 VA Coil
RSDA16A-120	120 VAC; 50/60 Hz; 3-tab 15 VA Coil
RSDA16A-240	240 VAC; 50/60 Hz; 3-tab 15 VA Coil

Field repairs other than solenoid coil replacement **must not** be made to the DUAL valve. Any attempt to repair this assembly voids the manufacturer's warranty. For a replacement valve, contact the original equipment manufacturer or the nearest FLYNN Gas Products distributor.

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Twin Solenoid Wiring Using 4-Wire Cable

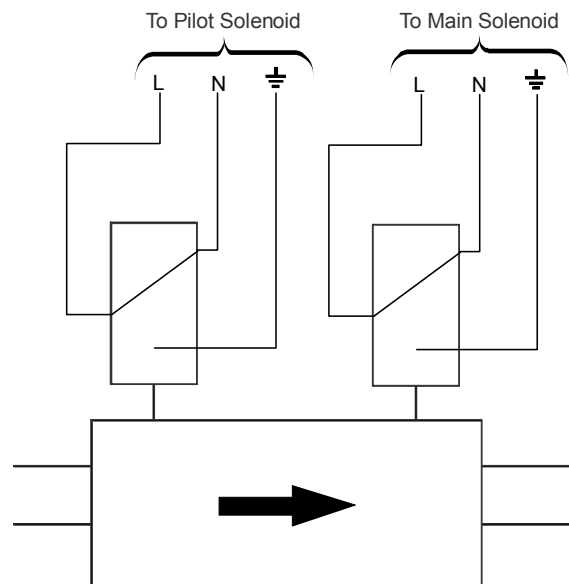
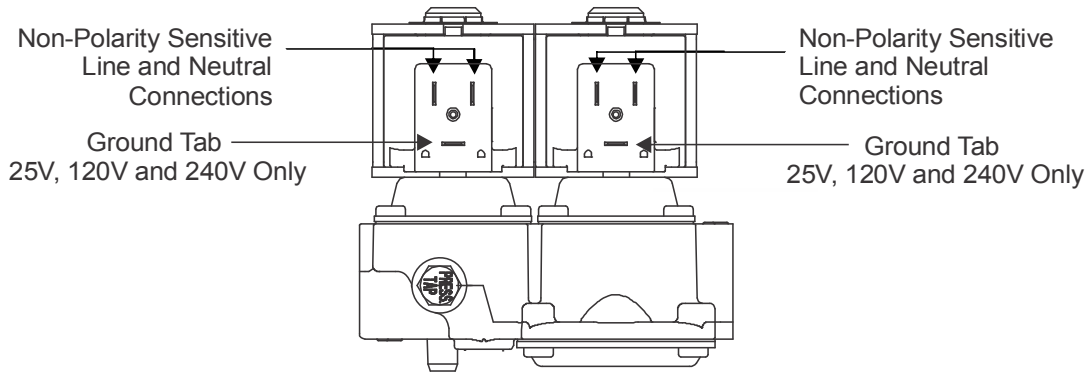


Figure 6: 3-Tab Electrical Connections

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Technical Specifications

Product	DUAL CE Approved Class A Gas Valve	
Types of Gas	2nd (Natural Gas), and 3rd (LP Gas) Family Gases	
Permissible Ambient (Surface) Temperature	-29 to 79°C (-20 to 175°F)	
Electrical Ratings	12 VDC, 1.0A 25 VDC, 0.675A 25 VAC, 50/60 Hz, 0.595A 120 VAC, 50/60 Hz, 0.13A 240 VAC, 50/60 Hz, 0.063A	
Rated Inlet Pressure	North America:	2 psi
	Europe:	138 mbar
	Australia:	13.8 kPa
Maximum Working Pressure (CE)	138 mbar	
Reverse Pressure Ratings	150 mbar (15 kPa [60 in. W.C.]) Class A (EN 161); Class 1 (AS 4629)	
Body Connections	3/8 or 1/2 NPT, 3/8 or 1/2 BSPP (Thread ISO 7-Rp), 3/8 or 1/2 BSPT (Thread ISO 7-Rc) with Flange Connection Holes (M4 x 0.7 mm pitch x 6 mm deep)	
Valve Torsion Group	Group 2 (EN 161)	
Pressure Connection	1/8 BSPP (Thread ISO 7-Rp), 1/8 BSPT (Thread ISO 7-Rc), 1/8 NPT Left-hand and/or Right-hand, or M5 x 0.8 Thread Bottom	
Pilot Connections	1/8 BSPP (Thread ISO 7-Rp), 1/8 BSPT (Thread ISO 7-Rc), 1/8 NPT Left-hand and/or Right-hand or 1/4 in. cc Fitting Bottom	
Dirt Strainer	0.9 mm (0.036 in.) Mesh (CE only or upon request)	
Operating Time Rating	100% Continuous	
Valve Timings	Closing Time	≤1 Second
	Opening Time	≤1 Second
	Dead Time	≤1 Second
Power Ratings	15 VA per Coil (except 25 VDC, 17 VA)	
Electrical Connections	3-Tab Solenoid Coil	2 x 6.35 mm (1/4 in) + 6.35 mm (1/4 in) Earth Ground
	2-Tab Solenoid Coil	2 x 6.35 mm (1/4 in)
Coil Insulation Class	Class F	
Packaging	Bulk pack supplied to original equipment manufacturer (individual pack optional).	
Bulk Pack Quantity	30 per carton	
Bulk Pack Weight	35 kg (77 lb) per carton	

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Technical Specifications (continued)

Agency Listings CSA (AGA/CGA) Certificate Number 229521-1656041
EC Type Examination Certificate Number EC-86/10/062
UL File Number MH5939
Australian Gas Association Certificate Number 7934

Specification EN 161
Standards Standards Complying with EMC Directive
Standards Complying with Low Voltage Directive
Australian Standard AS 4629
ANSI Standard Z21.21
Canadian Standard CSA 6.5
UL Standard 429

Performance specifications are nominal and conform to acceptable industry standards. All agency certification of FLYNN products is performed under dry and controlled indoor environmental conditions. Use of FLYNN products beyond these conditions is not recommended and may void the warranty. Product must be protected if exposed to water (dripping, spraying, rain, etc.) or other harsh environments. The original equipment manufacturer or end user is responsible for the correct application of FLYNN products. Consult FLYNN BURNER for questionable applications. FLYNN BURNER shall not be liable for damages or product malfunctions resulting from misapplication or misuse of its products.