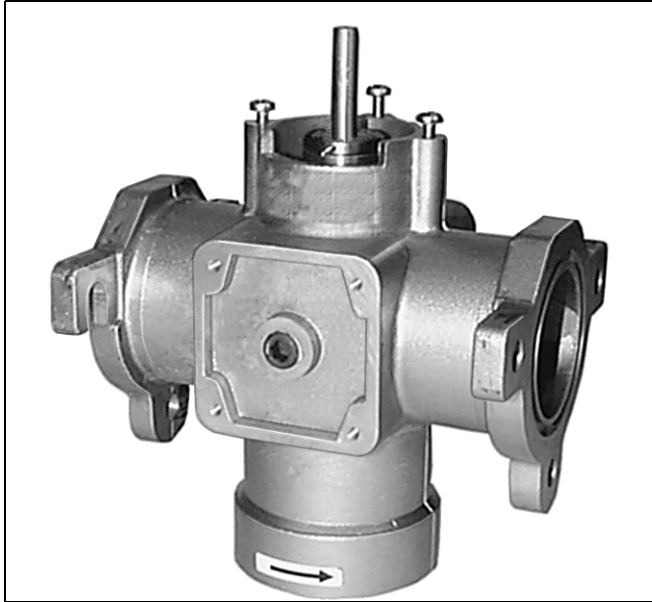


V5197A Firing Rate Gas Valve

PRODUCT DATA



FEATURES

- Used with air, natural, manufactured or liquefied petroleum (LP) gases.
- For modulating applications that do not require final shutoff service of firing rate valve.
- Two valve body types (small and large) applicable to seven pipe sizes:
 - Small body type for 3/4 in. (19 mm), 1 in. (25 mm), 1-1/4 in. (32 mm), 1-1/2 in. (38 mm) and 2 in. (51 mm) pipes.
 - Large body type for 2 in. (51 mm), 2-1/2 in. (64 mm) and 3 in. (76 mm) pipes.
- Two downstream 1/4 in. NPT threaded pressure taps available.
- Accepts C6097 Pressure Switch mounted directly to flange (downstream pressure tap only).
- Unpainted cast aluminum body.
- Suitable for electric or pneumatic operators with the appropriate linkage.
- May be used with manufacturers own linkage and drive motor.
- Flow adjustment screw on bottom of valve controls maximum flow.
- Visual position indicator.

APPLICATION

The V5197A is a firing rate valve used to provide variable flow control of air, natural gas, liquefied petroleum (LP), and manufactured gases. The V5197A is actuated by a firing rate motor that can be mounted directly on the valve. The V5197A is not applicable as a safety shutoff valve.

The V5197A is specially designed to provide fine control of gas flow in applications where a high turn down ratio is required.

The maximum flow adjustment screw on the bottom of the valve allows adjusting the maximum flow of gas through the V5197 while maintaining the linear modulating characteristics and stroke.

The V5197A is part of the Honeywell Integrated Valve Train System that allows gas train components to be directly bolted together.

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SPECIFICATIONS

IMPORTANT

The specifications in this publication do not include normal manufacturing tolerances; therefore, an individual unit may not exactly match the specifications listed. Also, this product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Models:

V5197A1003: Small body.

V5197A1011: Large body. (Available January 2001.)

Type of Gas: Air, natural, manufactured, mixed or liquefied petroleum (LP) gases only.

Pipe Size of the gas train: 3/4 in. (19 mm), 1 in. (25 mm), 1-1/4 in. (32 mm), 1-1/2 in. (38 mm), 2 in. (51 mm), 2-1/2 in. (64 mm), 3 in. (76 mm).

Pressure Rating: Maximum operating pressure of 15 psi.

Maximum Valve Capacities:

SCFH gas: 0.64 sp. gr. at 1 in. wc pressure drop across valve (flow limit adjustment set at 100% open).

Small Body: 8000 SCFH.

Flow curves: See Fig. 1 through 4.

NOTE: The percentage settings listed on the figures refer to the setting of the flow adjustment screw on the bottom of the V5197. Pressure drops are shown as solid, broken or dotted lines on the figures.

Bolt/Nut Fasteners (Provided with the valve):

Small body:

3/8-16 by 1-3/8, Grade 5 bolt. Metric equivalent M8x1.25x35mm, class 9.8.

Large body:

1/2-13 by 2.00, Grade 5 bolt. Metric equivalent M12x1.75x50mm, class 9.8.

Tapping and plug: Two downstream 1/4 in. NPT taps. Plugs : 1/4 in. hex socket.



Ambient Operating Temperature Rating: -40°F to +150°F (-40°C to +66°C).

Material: Cast aluminum body, brass and stainless steel internal parts, NBR seals.

Mounting: Directly bolted to Integrated Valve Train components or IVT adapters.

Maximum flow adjustment (Fig 5):

Located on the bottom of the valve with a 1/4 in. (6 mm) hex key:

Turn clockwise  to decrease the maximum flow, counterclockwise  to increase the maximum flow.

Mounting position: Any position.

Dimensions: See Fig. 6.

Weight: Small Body—5-1/4 lb (2.4 kg).

Approvals:

Underwriters Laboratories, Inc. (UL).
CSA.

ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Home and Building Control Sales Office (check white pages of your phone directory).
2. Home and Building Control Customer Logistics
Honeywell, 1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386 (612) 951-1000

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Scarborough, Ontario M1V 4Z9.

International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

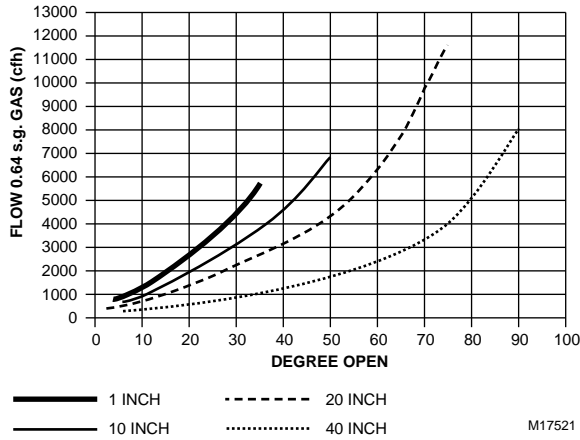


Fig. 1. V5197A (small body) flow curves at stated pressure drops with flow adjustment set at 100%.

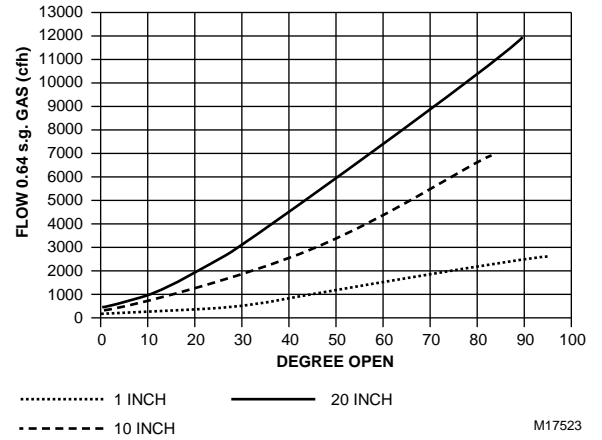


Fig. 3. V5197A (small body) flow curves at stated pressure drops with flow adjustment set at 50%.

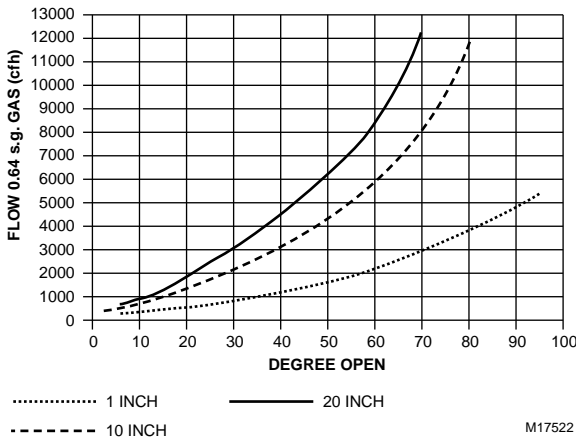


Fig. 2. V5197A (small body) flow curves at stated pressure drops with flow adjustment set at 75%.

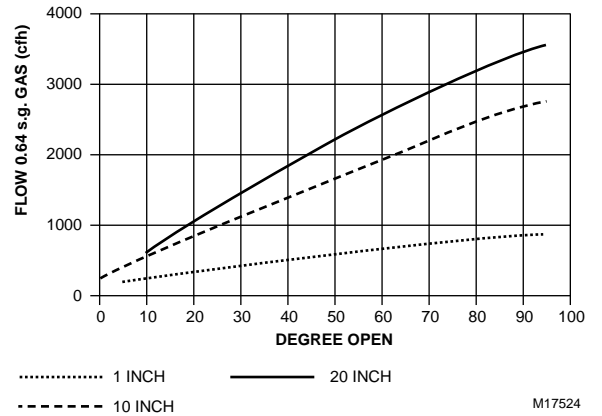


Fig. 4. V5197A (small body) flow curves at stated pressure drops with flow adjustment set at 25%.

V5197A FIRING RATE GAS VALVE

Accessories:

Pipe Adapters:

- 32000109-001 3/4 in. (19 mm).
- 32000109-002 1 in. (25 mm).
- 32000109-003 1-1/2 in. (32 mm).
- 32000109-005 2 in. (51 mm)--small body valve only.
- 32000109-004 1-1/2 in. (38 mm).
- 32001605-001 2 in. (51 mm).
- 32001605-002 2-1/2 in. (64 mm).
- 32001605-003 3 in. (76 mm).

4074EYF Bag assembly (bolts, nuts and washers), supplied.

4074EYK Bag Assembly (O-rings and tube of lubricant), supplied.

The following non-part-numbered items are provided with the valve:

- ML7999 Actuator Mounting Bracket
- Mounting Bracket Screws
- Valve Drive Stem

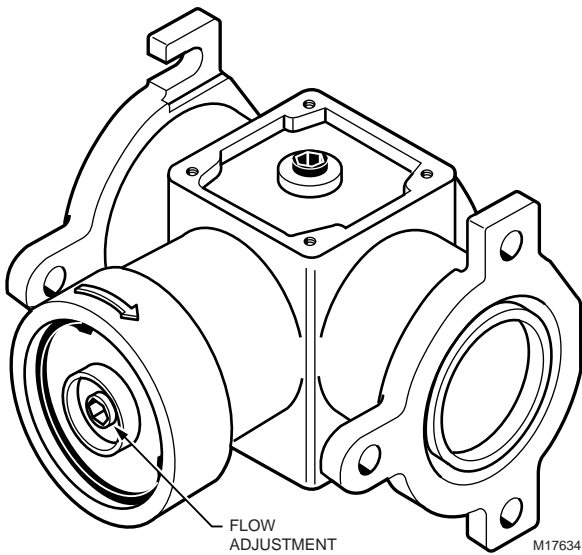


Fig. 5. V5197 Flow Adjustment.

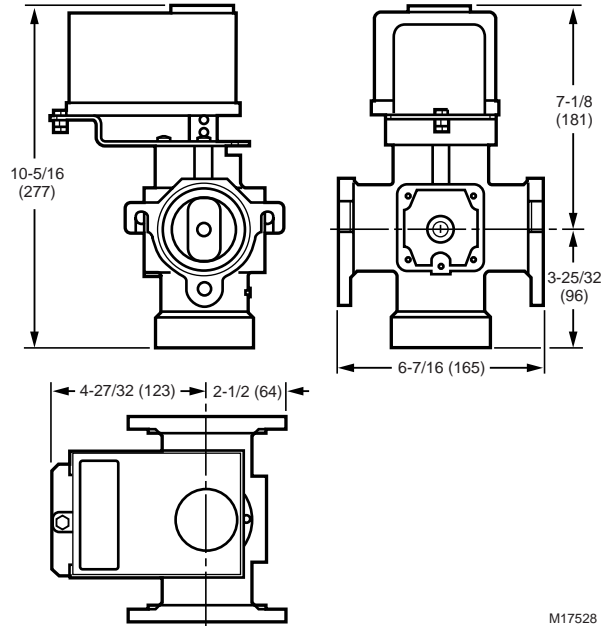


Fig. 6. V5197A Firing Rate Gas Valve, with mounting bracket (included) and ML7999 Actuator (not supplied), dimensions in in. (mm).

INSTALLATION

When Installing this product...

1. Read these instructions carefully. Be sure to follow Warning information carefully.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced flame safeguard control technician.
4. After installation is complete, check out product operation as provided in these instructions.

⚠ WARNING

**Explosion Hazard And Electrical Shock Hazard.
Can cause explosion, serious injury or death.**

1. Turn off gas supply before starting installation.
2. Disconnect power supply for valve actuator (if applicable) before beginning installation. More than one disconnection can be involved.

Installation

IMPORTANT

Install the valve so the arrow on the valve body points in the gas flow direction.

Installing the Valve Drive Stem in the V5197

1. Place the short end of the Valve Drive Stem in the top of the V5197 Valve drive so that the square portion of the drive stem is fully engaged in the square hole in the valve drive assembly. See Fig. 9.

NOTE: The short end of the Valve Drive Stem is 1 in. (25 mm) in length (measured from the square portion of the stem); the long end of the Valve Drive Stem is 1-1/8 in. (35 mm) long.

2. Tighten the valve position indicator setscrew (located in the valve drive assembly) to a torque setting of 5 inch-pounds (80 inch-ounces). See Fig. 7.

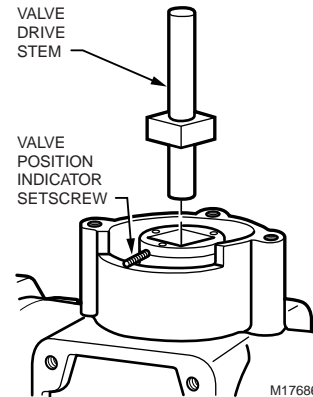
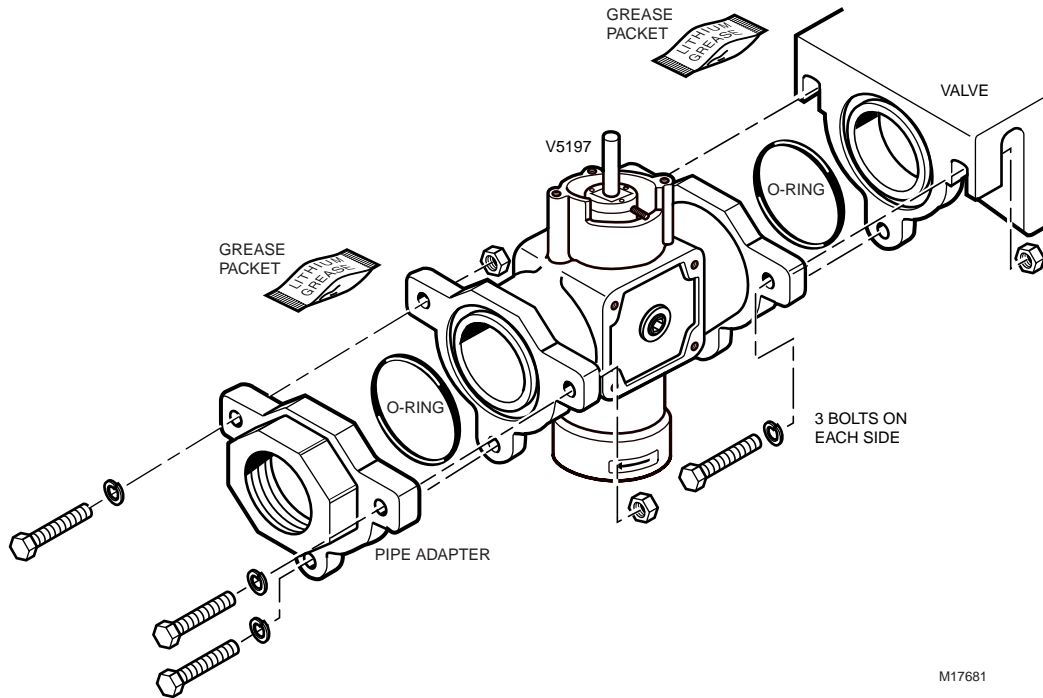


Fig. 7. Inserting the Valve Drive Stem in the V5197 Valve.

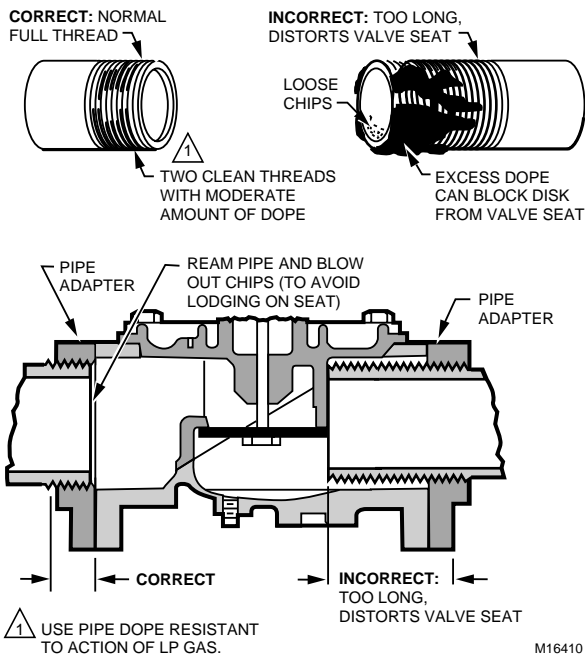
Installing the V5197 in the IVT.

1. Install the V5197 Valve so the arrow on the valve body points in the gas flow direction. (Normally, the V5197 will be located downstream of the safety shutoff valve(s) in the Integrated Valve Train.) Refer to form 66-1099 or the following steps.
2. Using the grease packet provided (or equivalent, general purpose, lithium grease), grease the O-rings provided with the valve. Make sure the grease is applied evenly around the O-ring. See Fig. 8.
3. Connect the V5197 Valve to the safety shutoff valve (SSOV) using three bolts, nuts and lockwashers as shown in Fig. 8.
4. Connect the pipe adapter to the other end of the V5197 Valve using three bolts, locks and washers.
5. Assemble the downstream gas piping:
 - a. Use new, properly reamed, pipe, free from chips.
 - b. Apply moderate amounts of good quality pipe dope, resistant to the action of liquid propane (LP) gas, on the pipe threads. See Fig. 9.
 - c. Do not thread pipe too far into pipe adapter. The pipe should end flush with the O-ring sealing surface of the pipe adapters. Valve distortion or malfunctions can result from excess pipe in the valves.
6. Mount the ML7999 Actuator on the V5197 Valve and secure the actuator to the mounting bracket.
7. Wire the ML7999 Actuator according to instructions in form no. 65-0239.
8. Restore power to the system.



M17681

Fig. 8. Mounting the V5197 Valve in the IVT.



M16410

Fig. 9. Preparing pipes.

Mounting

Refer to the Integrated Valve Train Installation instructions (form 66-1099) for complete instructions on mounting a V5197A in a Honeywell Integrated Valve Train System.

Allow sufficient clearance for assembling the motor and linkage (if applicable), and for general servicing.

IMPORTANT

Install the valve so the arrow on the valve body points in the gas flow direction. Make sure the O-ring seals (provided) are properly positioned and seated at the inlet and outlet flange connections.

Mounting the ML7999 Mounting Bracket

The ML7999 Actuator and mounting bracket can be installed in one of four positions, depending on accessibility of the valve and actuator. See Fig. 10.

1. Choose the actuator and bracket position best suited for your location and place the mounting bracket over the drive shaft of the V5197 valve. See Fig. 11.
2. Secure the mounting bracket with the three screws provided.

Mounting the ML7999 Actuator

NOTE: Use the self-centering shaft reduction piece (included with the actuator) to mount the ML7999 Actuator to the V5197 Valve drive stem.

1. Place the actuator over the shaft. Position and seat the actuator.
2. Secure the actuator to the mounting bracket using a bolt, nut and locking washer.
3. Partially tighten the hub setscrews to ensure that the actuator seats firmly against the mounting bracket with the shaft centered in the actuator hub.
4. Tighten the anti-rotation bolt to the torque recommendation for the selected bolt/nut.
5. Tighten the hub setscrews against the shaft to a torque of 60 lb-in. See Fig. 12.

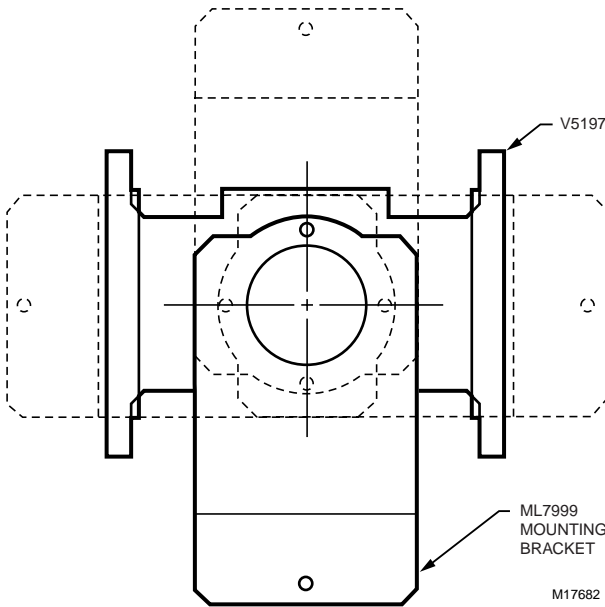


Fig. 10. Possible mounting positions of the ML7999 Actuator and mounting bracket.

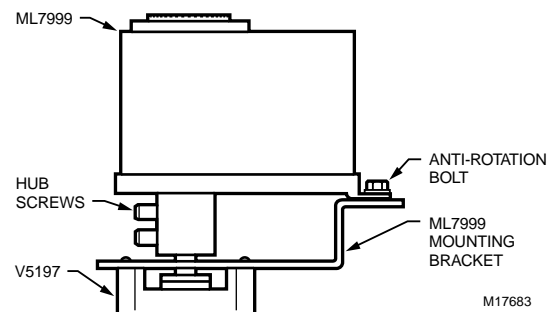


Fig. 12. Mounting the ML7999 Actuator on the V5197 Valve.

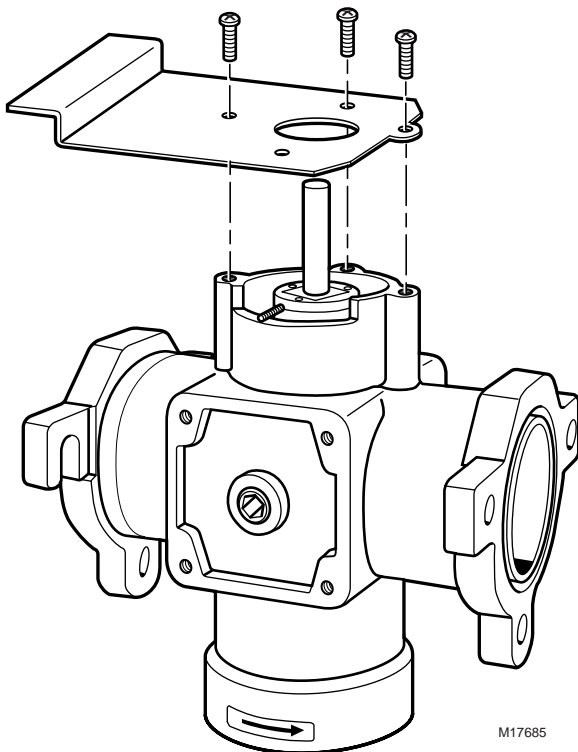


Fig. 11. Attaching the ML7999 Actuator mounting bracket to the V5197 Valve.

CHECKOUT AND OPERATION

Checkout

WARNING

Explosion Hazard and Electrical Shock Hazard.
Can cause explosion, serious injury or death.

1. Do not allow fuel to accumulate in the combustion chamber for longer than a few seconds without igniting. An explosive mixture can result.
2. Do not put the system into service until you have satisfactorily completed the following Valve Leak Test, all applicable tests described in the Checkout section of the instructions for the flame safeguard control, and any other tests required by the burner manufacturer.
3. All tests must be performed by a trained, experienced flame safeguard control technician.
4. Close all manual fuel shutoff valves as soon as trouble occurs.

After the installation is completed, cycle the valve several times with the manual fuel shutoff cock closed. Make sure the valve and actuator function properly. Also perform the Valve Leak Test before putting the valve into service.



Valve Leak Test

This is a test for checking the leakage tightness of the firing rate gas valve only. It should be performed only by trained, experienced flame safeguard control technicians during the initial startup of the burner system, or whenever the valve is replaced (see Service Information section). It is recommended that this test also be included in the scheduled inspection and maintenance procedures.

NOTE: Additional leakage and closure tests may be required for other gas train components (for example, safety shutoff valves [SSOV]).

1. Close the downstream manual gas valve(s).
2. Energize the valve train to apply gas pressure.
3. Test with rich soap and water solution to make sure there is no leak at any pipe adapter/valve mating surfaces.
4. Restore the system to normal operation.

Operation

A V5197A Firing Rate Gas Valve is operated by an actuator. The valve opens counterclockwise  and closes clockwise . When closed, the valve does not totally seal off the gas flow and has no safety shutoff function. For further information, refer to the actuator instructions.

Make sure that the actuator does not force the V5197 Valve beyond the limits of the valve stroke (90 degrees). This can damage or destroy the valve position indicator setscrew.

SERVICE INFORMATION

WARNING

Explosion Hazard and Electrical Shock Hazard.
Can cause explosion, serious injury or death.

1. Turn off the gas supply and disconnect all electrical power to the valve actuator before servicing.
2. Properly position and seat the seals in ends of the valve body to prevent a hazardous gas leak.

Read these instructions and form 66-1099 carefully for servicing information.

IMPORTANT

Only trained, experienced flame safeguard control technicians should attempt to service or repair flame safeguard controls and burner assemblies.

Scheduled Inspection and Maintenance

Set up and follow a schedule for periodic inspection and maintenance for the burner, all other controls and the valves. It is recommended that the valve leak test in the Operation and Checkout section be included in this schedule. Refer to the instructions for the primary safety control and safety shutoff valve(s) for more information.

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