

#### CAUTION

Prior to installing, the instructions provided herein should be completely reviewed and understood before operating or repairing this equipment. All CAUTION and WARNING notes must be strictly observed to prevent personal injury or equipment damage.

#### Description

The low pressure control valves are diaphragm operated valves designed to control flow in liquid or gas systems up to 300 psig (20.7 bar) working pressure from a 5 to 100 psig (0.34 to 6.9 bar) pneumatic actuating signal. They can be used for oil and water dump valves on low pressure separators and as burner valves for throttling or snap action service.

The valve's full line-sized opening provides high flowing capacity. This large orifice allows the valve to be operated in on/off mode. Reduced inner valve available for most models

Only use Kimray replacement parts.

#### Installation

Before installing the low pressure control valve, inspect it for shipment damage and for foreign material that may have collected during shipment. Inspect the openings in the valve and clean the pipe lines to remove scale, chips and debris. For flanged bodies, remove the masking sticker from the raised face of each end connection.

1. Be sure you fully understand the application, operation and connection of the device before installing.
2. Install the valve with the arrow on the body pointing in the direction of flow. The arrow signifies that the device will operate properly in the direction of flow as indicated and will not necessarily prevent flow in the opposite direction.
3. Install the valve using good piping practices. For flanged bodies use a suitable gasket between the body and the pipeline flanges. For threaded (NPT) bodies, use TFE tape or pipe thread sealant on external pipe threads.
4. The flanged valve bodies are rated ANSI class 150RF. Do not install the valve in a system where the working pressure can exceed ANSI class ratings.
5. Connect instrument gas supplied to the control pilot or thermostat to the actuator connection. The minimum required instrument gas pressure is from 1psig (0.7 bar); up to 90 psig (6.2 bar) is permissible for fully closed. You will only need 1/2 of upstream pressure.
6. Verify all pressure connections are tight before pressurizing the system.

**MT Pressure Closing Valve** - remove the plastic stopper from the tapped hole in the top of the bonnet (1" valve) or the lip of the bonnet 2"-6" valve, and install a tubing fitting (not provided on 2"-6" valve). Tubing must be installed from your source of instrument gas. (see figure 1)

**DA and ADA Pressure Opening Valve** - remove the plastic stopper from the tapped hole in the lip of the housing immediately below the bonnet and install a tubing fitting. The tubing must be installed from your source of instrument gas. (see figure 2)

#### Start-Up For Adjustable Low Pressure Control Valve

Loosen the locknut before adjusting pressure. Clockwise rotation of the adjusting screw increases set point pressure. Counter-clockwise rotation of the adjustment screw reduces set point pressure. Monitor the adjustment pressure during adjustment. Tighten the locknut after adjusting pressure.

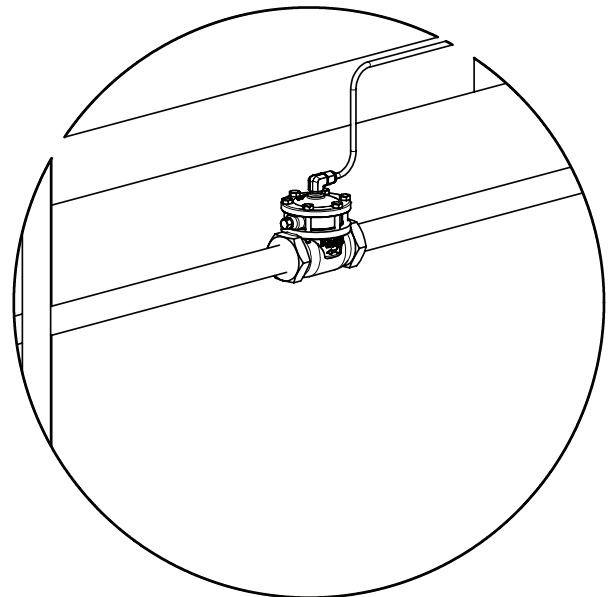


Figure 1

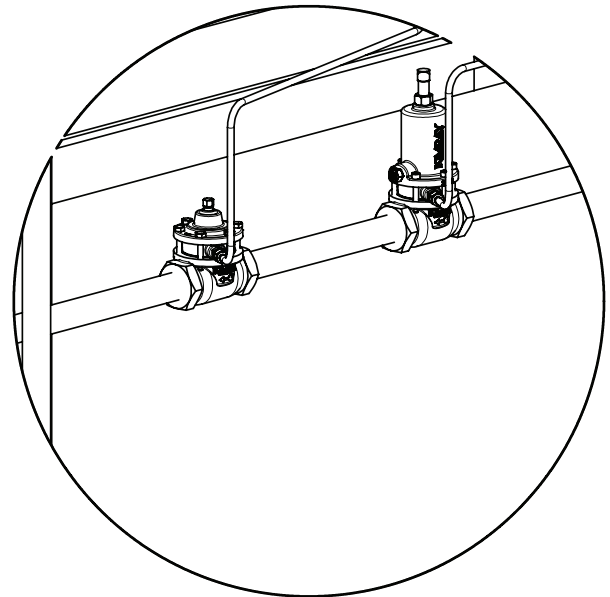


Figure 2

#### CAUTION

When ordered, the Low Pressure Control Valve configuration and construction materials were selected to meet specific pressure, temperature, pressure drop and fluid conditions. Since some body/trim material combinations are limited in their pressure drop and temperature ranges, do not subject the Low Pressure Control Valve to any other conditions without first contacting the Kimray Inc, sales office or a sales / applications representative.

## QUICK START GUIDE

### Start-up and Test

With the installation completed and appropriate relief and check valves installed and set, slowly open the upstream and downstream shutoff valves. In order to test the function of the valve, allow only a small amount of upstream pressure to flow through the upstream shutoff valve.

### Maintenance

Maintenance should be performed on a regular basis. An initial inspection interval of 6 months is recommended. Depending on the service conditions of the valve, the inspection interval may be decreased or increased.

The valve can be repaired without being removed from the piping.

Only use genuine Kimray replacement parts.

Repair kits and detailed repair instructions are available for each valve.

Visit [www.kimray.com](http://www.kimray.com) or contact your Kimray authorized distributor for additional product information and / or literature.

Inspection Schedule	
Body	Under normal conditions, the body will last years. Severe conditions will require inspection more frequently. The body should be inspected every time valve trim is inspected.
*Valve Seat	Inspect every 6 months under normal service and conditions. Under severe service conditions such as sand, corrosion, salt, or high pressure drop, inspect regularly until a predictable pattern can be established.
Seals	Should be replaced every time valve is disassembled. Check for cracks, swelling or if the seals feel hard.
* Under severe operating conditions the following maintenance schedule will not be adequate and a shorter time schedule may be required.	

Trouble Shooting		
Problem	Possible Cause(s)	Possible Solution
Fluid leaking from actuator	Stem packing or the stem itself is worn.	Replace stem with packing.
Fluid leaking from body/actuator joint.	Screws attaching actuator to body are loose.	Tighten screws. Check diaphragm.
Valve will not cycle when instrument air is applied to actuator	Diaphragm is ruptured or torn. Diaphragm plate is loose. Actuator vent is plugged.	Lower housing is too tight. Loosed slightly & replace diaphragm. Replace damaged parts. Clean vent
Excessive trim leakage with the valve closed.	Debris is interfering with seat contact. Insufficient shut-off force from actuator. Seat surfaces are worn or damaged.	Clean debris. Check for interference. Replace seat.
Instrument gas leaks from outer edge of diaphragm housing.	Screws holding the bonnet are loose.	Tighten screws.
Instrument gas leaks from actuator vent.	Diaphragm is torn or ruptured.	Replace diaphragm.
Valve stem movement is sticky or jerks.	Valve stem is bent or misaligned.	Replace stem.

### WARNING

Before beginning installation:

- Read and follow instructions.
- Make sure the valve cannot operate during installation.

Do not exceed the maximum supply pressure specified on the valve name-plate.

Never tighten any fitting or the main connections to the valve while there is pressure on the line.

### WARNING

Before any service, be certain that the valve is fully isolated and that all pressure upstream and downstream has been relieved. Use bypass valves or fully shut off the process.

Be sure that any operating or instrument gas lines have been disconnected.

Never stand directly in front of or over a valve when the system is pressurized. The valve could suddenly open, blowing debris into the person's face and eyes.

### WARNING

A leaking valve is an indication that service is required. Failure to take valve out of service immediately may cause a hazardous condition.

### NOTE

If conditions indicate the possibility of backward flow you may wish to install check valves. Never assume that a check valve is fully blocking the downstream line.

For questions or comments, contact your local Kimray authorized distributor, or visit [www.kimray.com](http://www.kimray.com).

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