

Ouncers Pilot



HPG Pilot



PG Pilot

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INTRODUCTION

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.

Scope

This installation manual includes instructions and maintenance information for the Kimray pressure pilots.

Do not install, operate, or maintain a pressure pilot without being fully trained and qualified with the Kimray installation and maintenance manual. To avoid personal injury or property damage, it is important to carefully read, understand, and follow all the contents of this manual, including all safety cautions and warnings. If you have any questions about these instructions, contact your Kimray applications support group before proceeding.

Description

The gas operated pressure pilot produces a proportional signal when the monitored pressure deviates from the desired set pressure. The pilot may be remotely installed to operate a control valve, and the two working together function as a pressure regulator.

Specification

Table 1 - Ounces Pilot	
Valve Description:	Cast Iron,
Normal Service:	Liquids or Gas
Pressure Range:	Ounces to 20 psig
Supply Pressure:	Equal to or not less than 60% of maximum upstream pressure when used to operate low pressure motor valves. See catalog section E2. 20 to 30 psig when used to operate high pressure motor valves. See catalog section E1.
Connection Type:	NPT

WARNING

Do not exceed the maximum pressure specified on the pressure pilot nameplates. Under no circumstances should the regulator supply pressure ever exceed the maximum psig.

In the pilot a spring is compressed with an adjusting screw. This places a force against a thick diaphragm which is in contact with the controlled pressure on the side opposite the spring. As the two forces work against each other, they continually reposition a small three-way valve (pilot plug and seats) which modulates the output pressure.

This is most often used to control diaphragm pressure in a control valve. Proper function can best be accomplished when the gas flowing through the pilot is clean and free of liquid.

Table 2 - HPG Pilot	
Valve Description:	Ductile Iron
Normal Service:	Liquids or Gas
Pressure Range:	5 to 300 psig
Supply Pressure:	0-300 psig, (60% or more of upstream pressure is recommended for operating control valves).
Connection Type:	NPT

Table 3 - PG Pilot	
Valve Description:	Steel, SS6
Normal Service:	Liquids or Gas
Pressure Range:	50 PG, 75-500 psig 75 PG, 75-750 psig 150 PG, 125-1500 psig 250 PG, 200-2500 psig
Supply Pressure:	20 & 30 psig
Connection Type:	NPT

CAUTION

When ordered, the pressure pilot configurations 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 pressure pilots to any other conditions without first contacting the Kimray Inc, sales office or a sales / applications representative.

Installation and Maintenance

Installation

Before installing pressure pilots, inspect it for shipment damage and for foreign material that may have collected during shipment. Inspect the openings in the pilots and clean the pipe lines to remove scale, chips and debris.

Verify all pressure connections are tight before pressurizing the system.

Over pressure protection should also be provided if the regulator inlet pressure may exceed the safe working pressure of the equipment downstream.

To avoid injury or damage, install pressure-relieving or pressure limiting devices to prevent service conditions from exceeding those limits. Consult the appropriate code, regulations, or standards.

Consideration should be given to the potential risk of injury or property damage due to escaping fluid. To avoid such risks, install the regulator in a safe location.

Note

Check all vents periodically to be certain they are clear. If a vent should become blocked the regulator could lose control. Verify all pressure connections are tight before pressurizing the system.

Before beginning installation of the pressure pilots

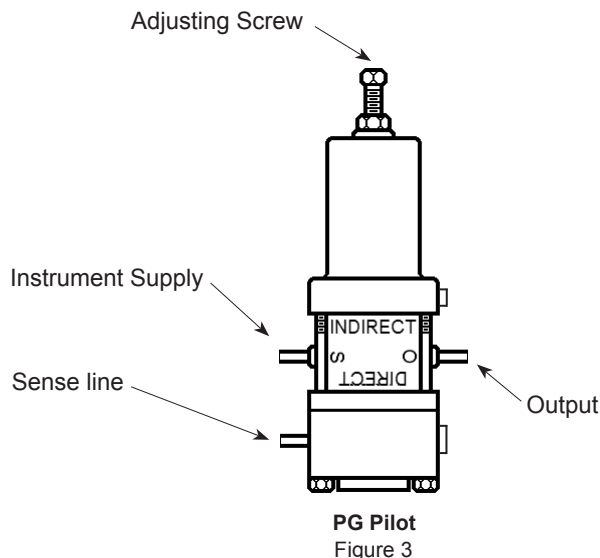
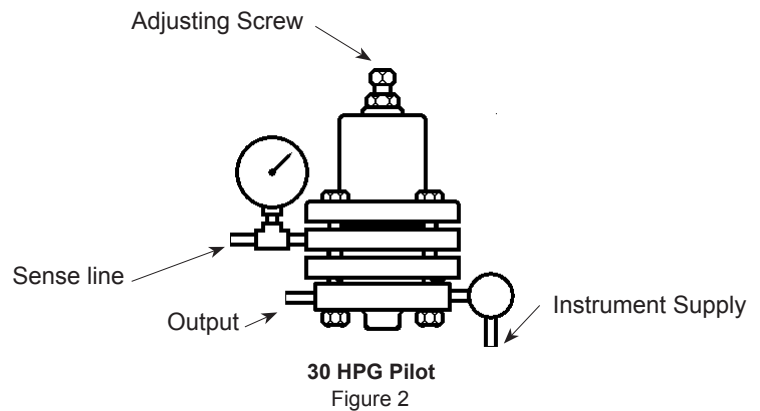
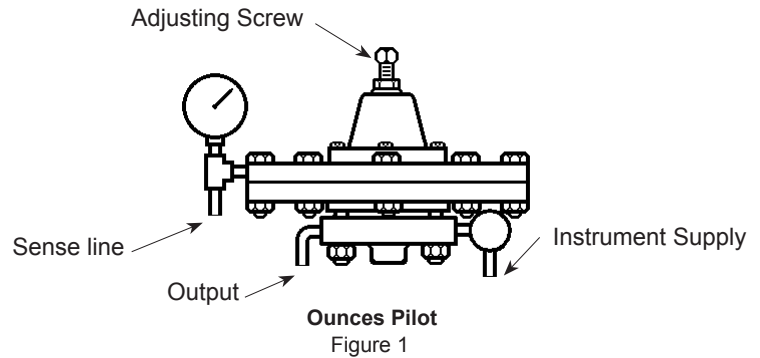
- Read and follow instructions.
- Follow all safety warnings of the pressure pilot.
- Make sure the pilot cannot operate during installation.
- Observe all pressure, ratings and requirements for the devices and the operating environment.
- Make sure all pressure has been removed from the vessel before opening any connections.

Remove the plastic plugs from the 1/4" NPT openings. 1/4" or 3/8" tubing (not provided) must be installed:

1. From process being controlled, designated sense line.
2. From the source of instrument gas, designated instrument supply.
3. To the diaphragm housing on the control valve being operated, designated output.

WARNING

Do not exceed the maximum supply pressure specified on the pilot nameplate. Under no circumstances should the pressure pilot supply pressure ever exceed maximum psig.



Note

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

Installation and Maintenance

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. With a small amount of pressure on the sense line (10 to 20 psig), turn the adjusting screw out so it does not engage the spring. At this point a valve operated by the pilot will be positioned as shown below.

Pilot	Output	Valve Action	Valve Position
Indirect	No	Pressure Opening	Closed
Indirect	No	Pressure Closing	Open
Direct	Yes	Pressure Opening	Open
Direct	Yes	Pressure Closing	Closed

Turn the adjusting screw on the pilot clockwise two or three turns. As you turn the adjusting screw clockwise, the set point pressure will increase. At this point a valve operated by the pilot will be positioned as shown below.

Pilot	Output	Valve Action	Valve Position
Indirect	Yes	Pressure Opening	Open
Indirect	Yes	Pressure Closing	Closed
Direct	No	Pressure Opening	Closed
Direct	No	Pressure Closing	Open

Maintenance

Maintenance should be performed on a regular basis. An initial inspection interval of 12 months is recommended. Depending on the service conditions of the valve, the inspection interval may be decreased or increased.

WARNING

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

Repair Tips

- If pilot bleeds gas continuously, the pilot plug seat may be dirty.
- Evenly tighten the screws which hold the bonnet on.
- Diaphragms will harden with age.

Note

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

Never assume that a check valve is fully blocking the downstream line.

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

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

Detail repair instructions are available for your specific valve.

Repair kits are available. packing slip enclosed with each valve for the correct repair kit number.

Trouble Shooting		
Problem	Possible Cause(s)	Possible Solution
Regulator leaks through to downstream.	Over tightened seat nut can cause seat to bulge and leak.	DO NOT OVER TIGHTEN seat.
Pilot bleeds gas continuously.	The pilot plug seat may be dirty.	Clean pilot plug seat.
Minimum set point cannot be set to zero.	Bonnet screws are over tightened.	DO NOT OVER TIGHTEN bonnet screws.
Constant output when none should be present.	A pilot seat may be loose. Instrument supply is above 30 psig (direct acting pilots only).	Tighten the pilot seat.



Pressure Pilots

Models Oz, 30 HPG, 50 PG, 75 PG, 150 PG, 250 PG

Installation and Maintenance

Related Publications:

See Catalog Page Y:140.1, Y:160.1, Y:195.1

Kimray is an ISO 9001- certified manufacturer.
Kimray quality assurance process maintains strict controls
of materials and the certification of parts used in Kimray pressure pilots.