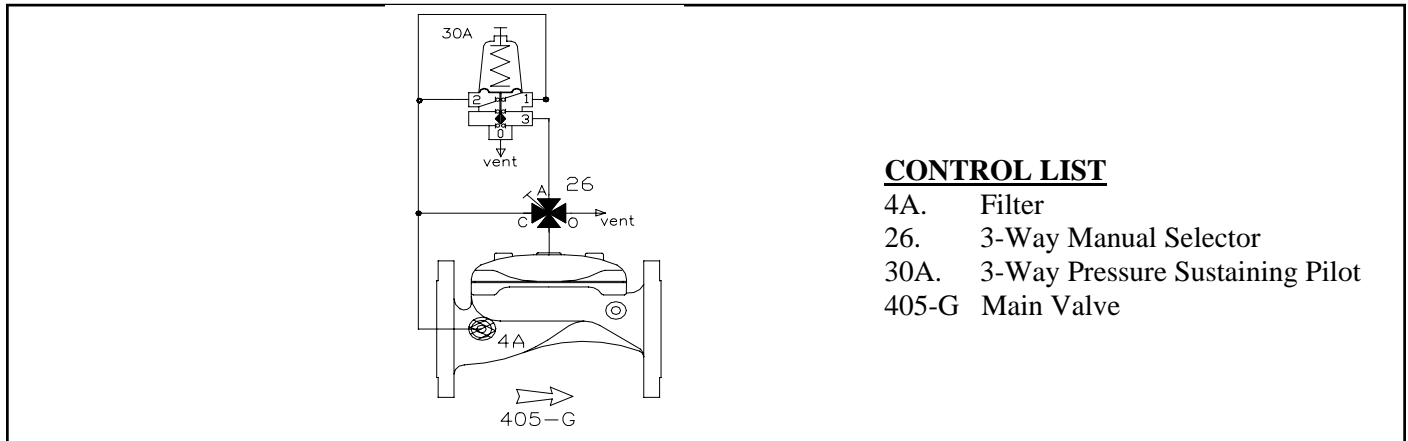




Model 430-Z-3W Pressure Sustaining Valve with Manual Selector



CONTROL LIST

- | | |
|-------|---------------------------------|
| 4A. | Filter |
| 26. | 3-Way Manual Selector |
| 30A. | 3-Way Pressure Sustaining Pilot |
| 405-G | Main Valve |

DESCRIPTION

The 430-Z-3W valve maintains a minimum preset upstream pressure regardless of changing demand. Differential pressure operates the valve which utilizes a 3-way pressure sustaining pilot to fix the main valve to maintain the upstream pressure setpoint.

When upstream pressure is lower than the setting of the pressure sustaining pilot, the pilot opens allowing inlet pressure to be directed to the upper diaphragm/cover of the main valve to close drip-tight. When upstream pressure gradually rises above the setting of the pressure sustaining pilot, the pilot blocks inlet pressure to the cover and opens the cover pressure to atmosphere causing the main valve to open and relieve the upstream pressure to maintain the desired pilot set point.

The main valve is also equipped with a 3-way manual selector. The manual selector allows the main valve to be either open, fully closed, drip-tight or in automatic mode to regulate upstream pressure.

INSTALLATION

1. Allow enough room around the valve assembly for making adjustments and for future maintenance and disassembly work.
2. Thoroughly flush the pipeline to remove dirt, scale, and debris. Failure to perform this operation may render the valve inoperable.
3. It is recommended that isolation gate valves be installed upstream and downstream of the Bermad control valve to allow for future maintenance operations.
4. Install the valve in the pipeline with the valve flow arrow on the body casting in the proper direction. Install the valve horizontally with the cover up for best performance. Make certain the valve is positioned so the cover assembly can be easily removed for future maintenance requirements.
5. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.

IN LINE STATIC TEST

Open Valve Static Test

1. Create flow. Turn Manual Selector 26 knob to "Open" position.
CAUTION: This will allow the valve to open w/no regulation. Make sure this condition will not cause system damage!
2. Check for leaks at the flange connection, fittings, etc...

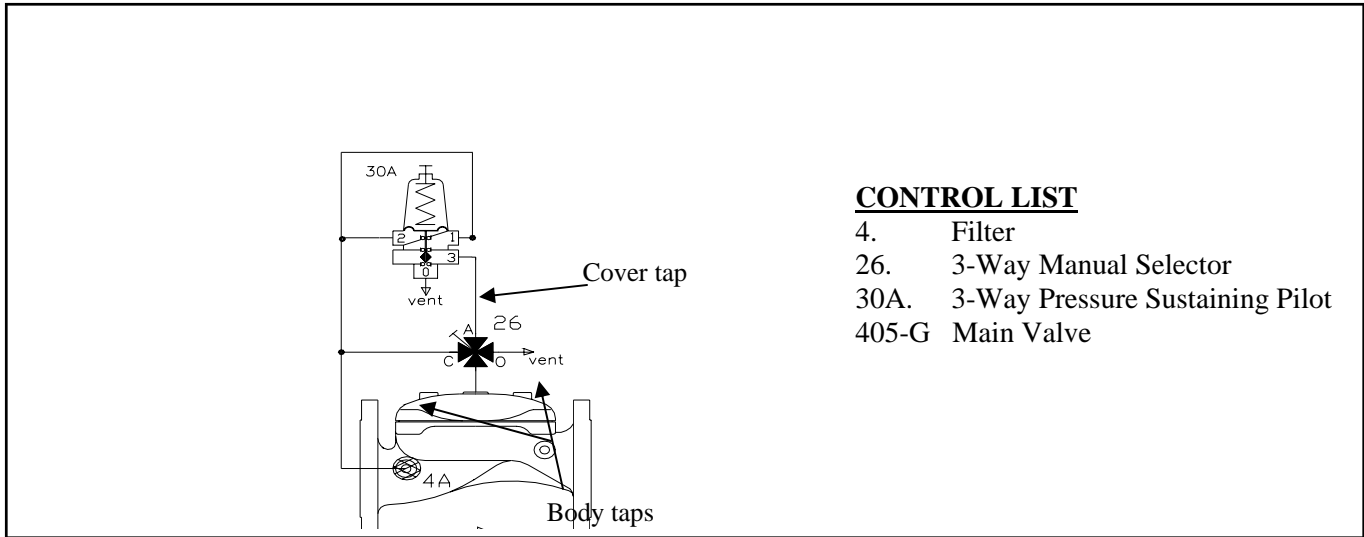
Closed Valve Static Test

1. Create flow. Turn Manual Selector 26 knob to "Closed" position.
2. Bleed air from cover by loosening "Closed" port fitting or cover fitting/plug. Check the valve cover and diaphragm area for leaks. Tighten fittings and nuts-bolts if necessary.

START-UP OPERATION

NOTE: **There must be available flow** through the valve and system to check and adjust the valve. Set the desired upstream pressure by boosting pump pressure, opening bypass, creating demand or trapping the desired setting pressure to set the pilot 30A.

1. Turn manual selector 26 to "Auto" position.
2. Turn adjusting screw on sustaining pilot 30A in fully clockwise (CW) until all spring tension is loaded. Main valve will close.
3. Open fully pipeline gate or butterfly valves if applicable. Main valve should still remain closed.
4. Vent trapped air in the main valve cover by turning manual selector 26 just slightly to the "Open" position to release air trapped in the cover. Turn back to the "Auto" position.
5. Slowly turn adjusting screw on reducing pilot 30A (CCW) until the valve just begins to open. Stop. Turn adjusting screw 1/2 turn (CW) and tighten locknut.
6. Check the pilot setting by increasing and/or decreasing inlet pressure to verify valve opens and closes accordingly.
7. To increase upstream pressure setting turn adj. screw in clockwise (CW) and to decrease setting turn screw out counter-clockwise (CCW). Manual selector 26 must be left in the "Auto"-matic regulation Mode position to regulate upstream pressure.



CONTROL LIST

- 4. Filter
- 26. 3-Way Manual Selector
- 30A. 3-Way Pressure Sustaining Pilot
- 405-G Main Valve

TROUBLESHOOTING

SYMPTOM

CAUSE

REMEDY

Valve Fails to Open

Insufficient inlet pressure-10 psi min../
No downstream demand.
Cover tap/Plumbing plugged.
Excessive spring compression on
pressure sustaining pilot 30A.

Manual Selector 26 is in “Closed”
position.

Check/create inlet pressure/Create demand-
flow.
Clean Cover tap /plumbing & fittings.
Turn adjusting screw on pressure sustaining
pilot 30A out counter-clockwise (CCW).

Turn Manual Selector 26 to “Open” or “Auto”
position.

**Valve Fails to Close
or Regulate**

Filter 4A/Body-Cover taps/Plumbing/
Parts-Devices plugged.

Regulated pressure pulsates or hunts.

Debris trapped in main valve/
Diaphragm in main valve leaking.

Manual Selector 26 is in “Open”
position.

Insufficient spring compression on
pressure sustaining pilot 30A.
Insufficient inlet pressure-10 psi min../
No downstream demand.

Remove filter 4A/Body-cover tap plumbing to
clean and clean filter screen/devices-parts
needed.

Bleed air from valve cover (See closed Valve
Static Test). Ensure flow rate is above
recommended minimum.

Remove valve cover and diaphragm to inspect
seat area/remove debris. Isolate the valve and
relieve pressure from system/valve. Loosen the
four cover bolts/nuts and remove the cover.
Take diaphragm assy. from valve body.
Inspect/Replace Diaphragm.

Turn Manual Selector 26 to “Closed” or
“Auto”-(Regulation Mode) position

Turn adjusting screw on pressure sustaining
pilot 30A in clockwise CW.
Check/create inlet pressure/Create demand-
flow.

