



Installation, Operation and Maintenance Instructions

Automatic Control Valves

Pressure Relief Control

Model PV20-C

The Watts PV20-C Pressure Relief Control is a direct acting, spring loaded, diaphragm type relief valve that opens on an increasing pressure in its sensing chamber. This control is used as the pilot valve on the Watts PV20 Pressure Relief Series Valves and may be used as a self contained relief valve as well, opening and closing within very close pressure limits.

Operation:

The PV20-C Pressure Relief Control is normally held closed by the force of the compression spring positioned above the diaphragm assembly.

The control responds to pressure as it is applied to the sensing chamber under the diaphragm. When the pressure exceeds the spring setting, the disc is lifted off the seat, allowing flow through the control. When the sensing chamber pressure drops below the spring setting, the force of the spring returns the control to its normally closed position.

Installation:

The PV20-C may be installed in any position and has a flow symbol (↘) cast in the body casting (#1). The pressure sensing line is connected to the spacer (#50).

Adjustment:

The PV20-C Pressure Relief Control can be adjusted to hold any pressure within the spring range specified on the nameplate attached to the brass cap over the adjustment screw. By turning the adjustment screw, which in turn varies the compression of the spring on the diaphragm, the inlet pressure setting may be increased or decreased. The greater the compression of the spring, the higher the pressure setting.

A. Clockwise adjustment of the screw (#53) increases the relief setting.

B. Counterclockwise adjustment of the screw (#53) decreases the relief setting.

C. Tighten the lock nut (#51) after adjustment and replace the protective cap. Seal the cap to the cover with the sealing wire supplied.

D. Adjustment of this control should be made after it is installed in the line and under normal pressure conditions.

Maintenance:

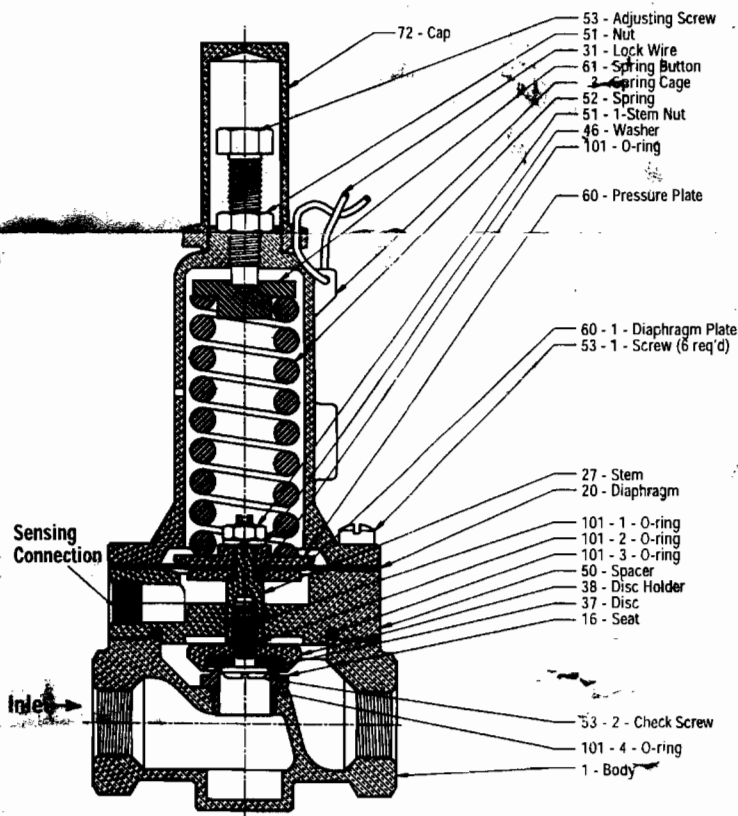
Disassembly

1. Remove the cap (#72).
2. Backoff the adjusting screw (#53) until no compression is felt on the spring.
3. Remove the six stainless steel screws (#53-1).
4. Remove the spring cage (#3).
5. Remove spring (#52).
6. Remove spacer from body (#50).

7. Remove stem nut (#51-1) and washer (#46).
8. Remove pressure plate (#60), diaphragm (#20) and diaphragm plate (#60-1).
9. Slip stem (#27) with disc holder (#38) and disc (#37) out of the spacer (#50).
10. Check O-rings (#101, 101-1, 101-2, 101-3, 101-4) and replace if they are cut or worn.
11. Reassemble in reverse order of disassembly.

NOTE: A small amount of silicone grease applied to the O-rings is suggested before reassembly. Use grease sparingly.

When installing the stem in the spacer it is a good idea to use a rotating motion with minimum pressure to let the stem and O-ring slide into the spacer.



Size	Spring EDP Code#	Adjustment Range (psi)
1/2" 3/4"	1052644	0-30
1/2" 3/4"	1052643	25-100
1/2" 3/4"	1052631	20-200
1/2" 3/4"	1052632	100-300

SERVICE SUGGESTIONS

Problem	Probable Cause	Solution
Fails to open.	Control pressure too low.	Back off adjusting stem until valve opens.
Fails to open with spring compression removed.	Mechanical obstruction, corrosion, scale build up on stem.	Disassemble and remove obstruction and scale.
Leakage from cover vent hole when controlling pressure is applied.	Diaphragm damage.	Disassemble replace damaged diaphragm.
	Loose Diaphragm assembly.	Tighten diaphragm nut.
Fails to close.	No spring compression.	Re-set pressure adjustment.
Fails to close with spring compression.	Obstruction in the valve.	Disassemble and remove obstruction.

CALIFORNIA PROPOSITION 65 WARNING

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (Installer: California law requires that this warning be given to the consumer.)

For more information: www.wattsind.com/prop65

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LIMITED WARRANTY: Watts Regulator Company warrants each product against defects in material and workmanship for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge. This shall constitute the exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental or consequential damages, including without limitation, damages or other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemicals, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product. THE COMPANY MAKES NO OTHER WARRANTIES EXPRESS OR IMPLIED EXCEPT AS PROVIDED IN THIS LIMITED WARRANTY.