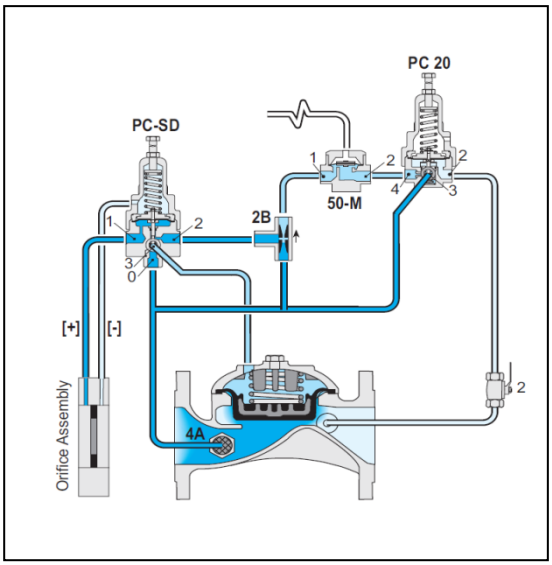
Flow Control & Pressure Reducing Valve

with Hydraulic Control

(Sizes 3"- 12"; DN80-DN300)



Description:

The BERMAD Flow Control and Pressure Reducing Valve with Hydraulic Control is a hydraulically operated, diaphragm actuated control valve that performs three independent functions. It controls system demand to a preset maximum flow rate; it reduces downstream pressure to a constant preset maximum, and it either opens or shuts in response to a remote pressure command.

Installation:

1. Ensure enough space around the valve assembly for future maintenance and adjustments.
2. Prior to valve installation, flush the pipeline to insure flow of clean fluid through the valve.
3. For future maintenance, install Isolation gate valves upstream and downstream from Bermad control valve.
4. Install the valve in the pipeline with the valve flow direction arrow in the actual flow direction.
5. The orifice assembly should be attached to the valve inlet flange, with a resilient gasket between them. Determine tightening bolts length according to flanges, gaskets and orifice assembly thickness.
   Note: if the valve end connections are Thread, then the orifice assembly is already connected to the valve.
6. Install the orifice assembly in the flow direction and confirm connection of the sensing ports, marked [+] and [-], according to the attached drawing.
7. For best performance, it is recommended to install the valve horizontally and upright.
8. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.

Commissioning & Calibration:

1. Confirm that the In-line filter (4A) arrow direction is in the valve flow direction.
2. Allow the valve to start regulation by opening the cock valve [2]. (Handle is parallel to cock valve body).
3. Open fully the upstream isolating valve and slowly open the downstream isolating valve, to fill-up, carefully, the consumers' line downstream from the Valve.
4. Vent air from the valve's control loop by loosening cover tube fitting at the highest point, allowing all air to bleed. Then Retighten the tube fitting.
5. The IR-472-50-RUb is factory set according to the design. The set pressure is marked on each of the pilot's label.
   - 5.1. The set flow on the Flow Control Pilot [FCP] (PC-SD) label.
   - 5.2. The set downstream pressure on the Pressure Reducing Pilot [PRP] (PC-20) label.
6. If the set flow and/or pressure reduce are either different from the design or the requirements have been changed, change settings according to the following:
   - 6.1. Unlock the PRP locking nut and slowly turn the pilot adjusting screw Clock-Wise [CW] to increase set pressure and Counter -Clock-Wise [CCW] to decrease it. Allow the 472-50-RUb to react and the downstream pressure to stabilize, lock the PRP locking nut and open fully the downstream isolating valve.
   - 6.2. Confirm/create demand higher than the required new set point
   - 6.3. Unlock the FCP locking nut and slowly turn the pilot adjusting screw CW to increase set flow and CCW to decrease it. Allow the 472-50-RUb to react and the flow to stabilize, lock the FCP locking nut.
7. Connect the remote control to the opening port in the hydraulic relay valve (50 –M).

Trouble-Shooting:

Symptoms	Cause	Remedy
Valve fails to open	1. Cock valve [2] is closed. 2. Hydraulic control command. 3. Not sufficient inlet pressure. 4. Not sufficient flow. 5. Adjusting screws.	1. Check Cock valve status. 2. Check no existence hydraulic command in the relay. 3. Check for sufficient inlet pressure. 4. Create demand/flow, confirm pilot setting. 5. Check that the Pilot adjusting screw is not loose.
Valve fails to close	1. Hydraulic control command. 2. Control circuit is clogged. 3. Debris. 4. Diaphragm.	1. Check existence of hydraulic command in the relay (50 -M). 2. Check for any debris trapped in the valve control circuit. 3. Check for any debris trapped in the valve body. 4. Check diaphragm is not leaking.
Valve fails to regulate	1. Not sufficient inlet pressure. 2. Not sufficient flow. 3. Pilots setting. 4. Air trapped in the control chamber.	1. Check for sufficient inlet pressure. 2. Create demand/flow, confirm pilot setting. 3. Check Pilot setting. 4. Release air trapped in the control chamber.

Preventive maintenance:

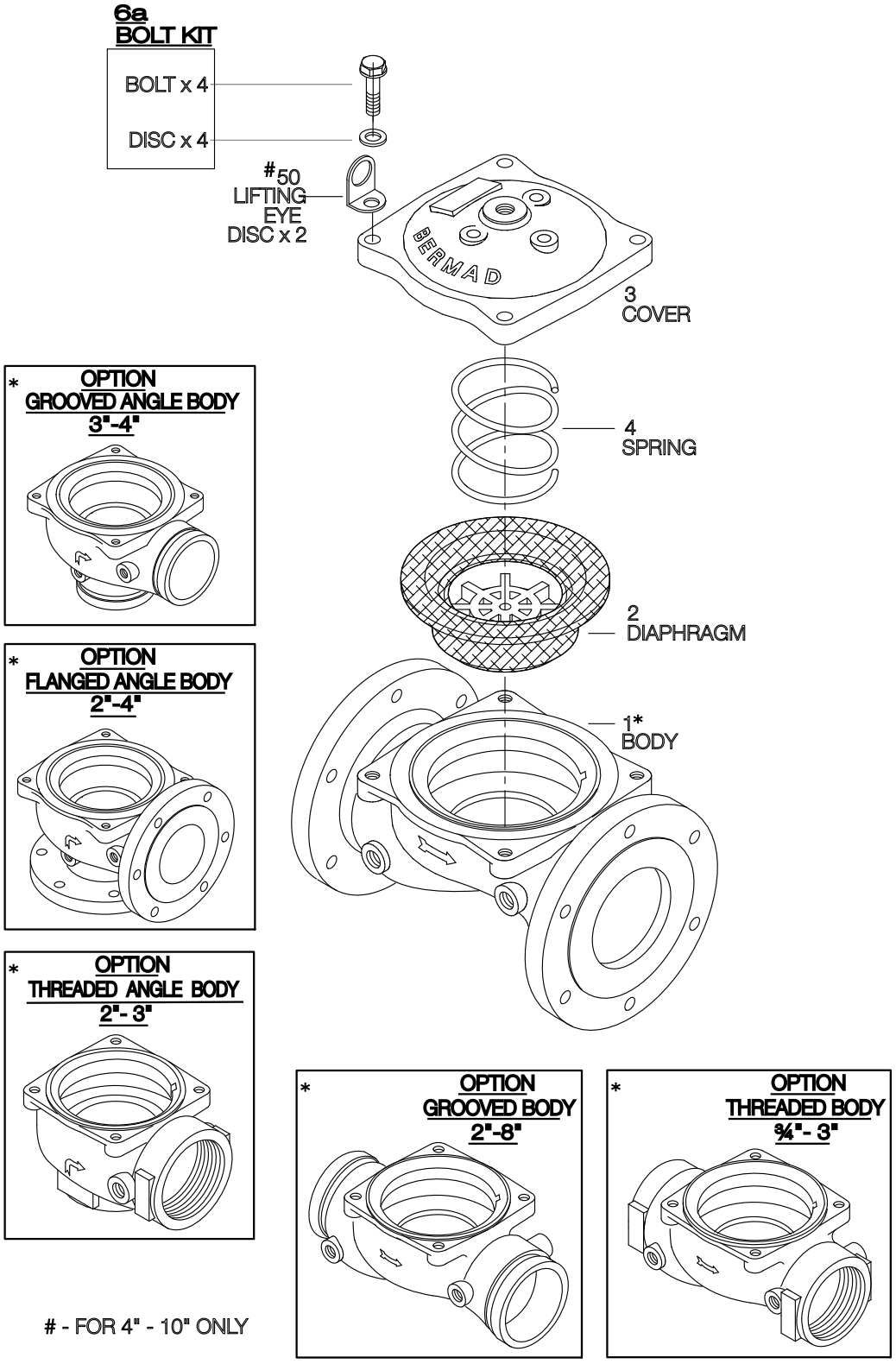
1. System operating conditions that effect on the valve should be checked periodically to determent the required preventative maintenance schedule.
2. Maintenance instructions:
   - 2.1. Tools required:
     - 2.1.1. Metric and imperial wrenches
     - 2.1.2. Anti-seize grease
     - 2.1.3. Visual inspection to locate leaks and external damages
   - 2.2. Functional inspection including: closing, opening and regulation.
   - 2.3. Close upstream and downstream isolating valves (and external operating pressure when used)
   - 2.4. Once the valve is fully isolated vent pressure by loosening a plug or a fitting.
   - 2.5. Open the screw nuts and remove the cover unit from the valve body. Disassemble necessary control tubs.
   - 2.6. It is highly recommended to stock a reserve parts assembly for each size. This allows minimum system field work. And system down time.
   - 2.7. Disassemble the cover and examine the inside parts carefully for signs of wear, corrosion, or any other abnormal conditions.
   - 2.8. Replace worn parts and all the Elastomers. Lubricate the bolts and screws threads with Anti seize grease.
   - 2.9. Winterizing /freezing prevention: drain the valve & the valve accessories (pilot, solenoid) on time.

Spare Parts

Bermad has a convenient and easy to use ordering guide for valve spare-parts and control system components.
For solenoid valves refer to model and S/N on solenoid tags.

Basic Control Valves For Irrigation (IR)

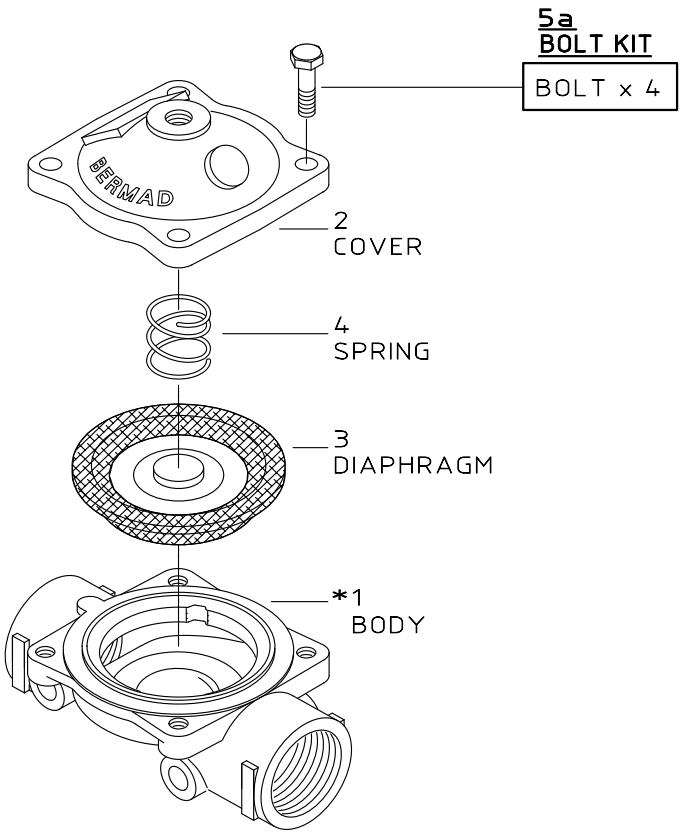
Sizes: ¾-10"; DN20-250

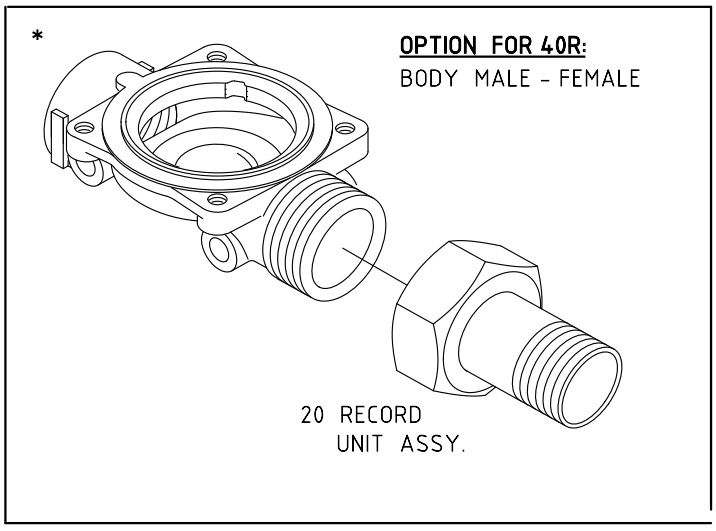


- FOR 4" - 10" ONLY

Basic Control Valves For Gardening (LS)

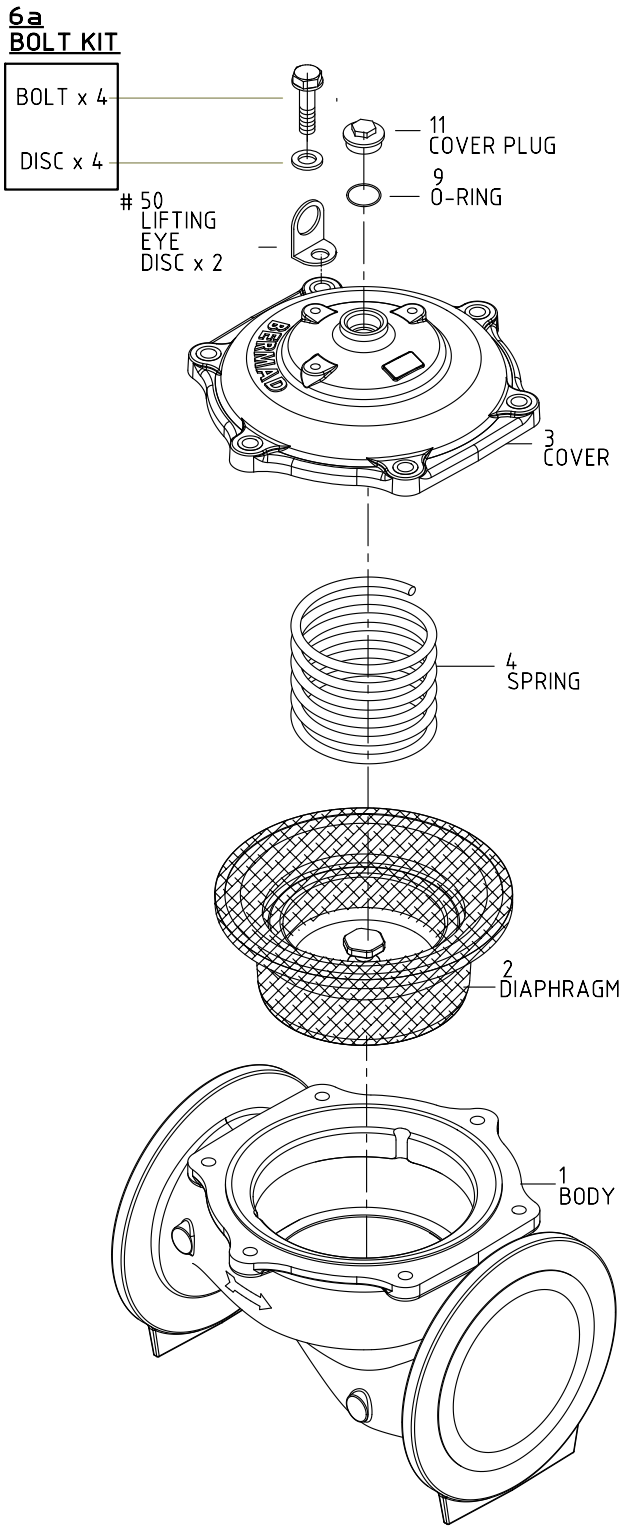
Sizes: ¾-2"; DN20-50





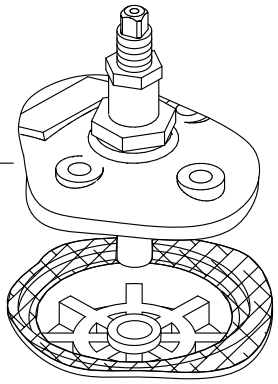
Basic Control Valves (IR & WW)

Sizes: 12-14"; DN300-350

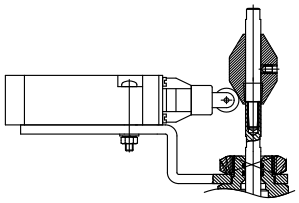


Accessories

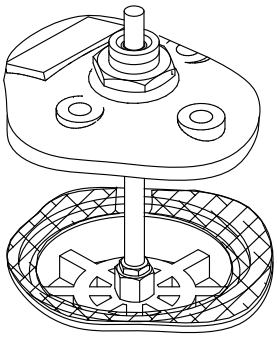
51
FLOW
STEM
ASSY.
2" - 10"



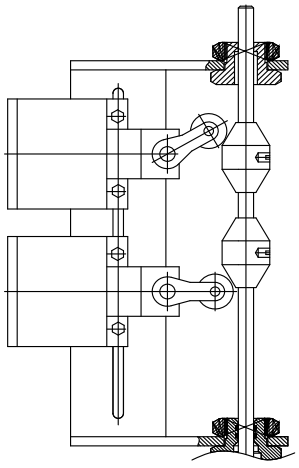
94
LIMIT
SWITCH
ASSY. 2" - 14" (SINGLE)



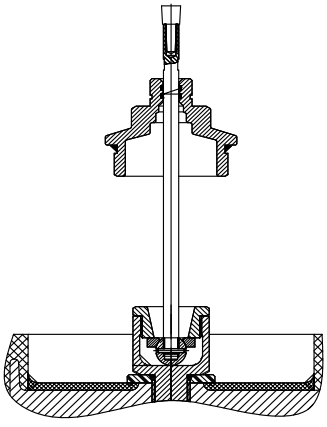
52
INDICATOR
ASSY.
2" - 3"



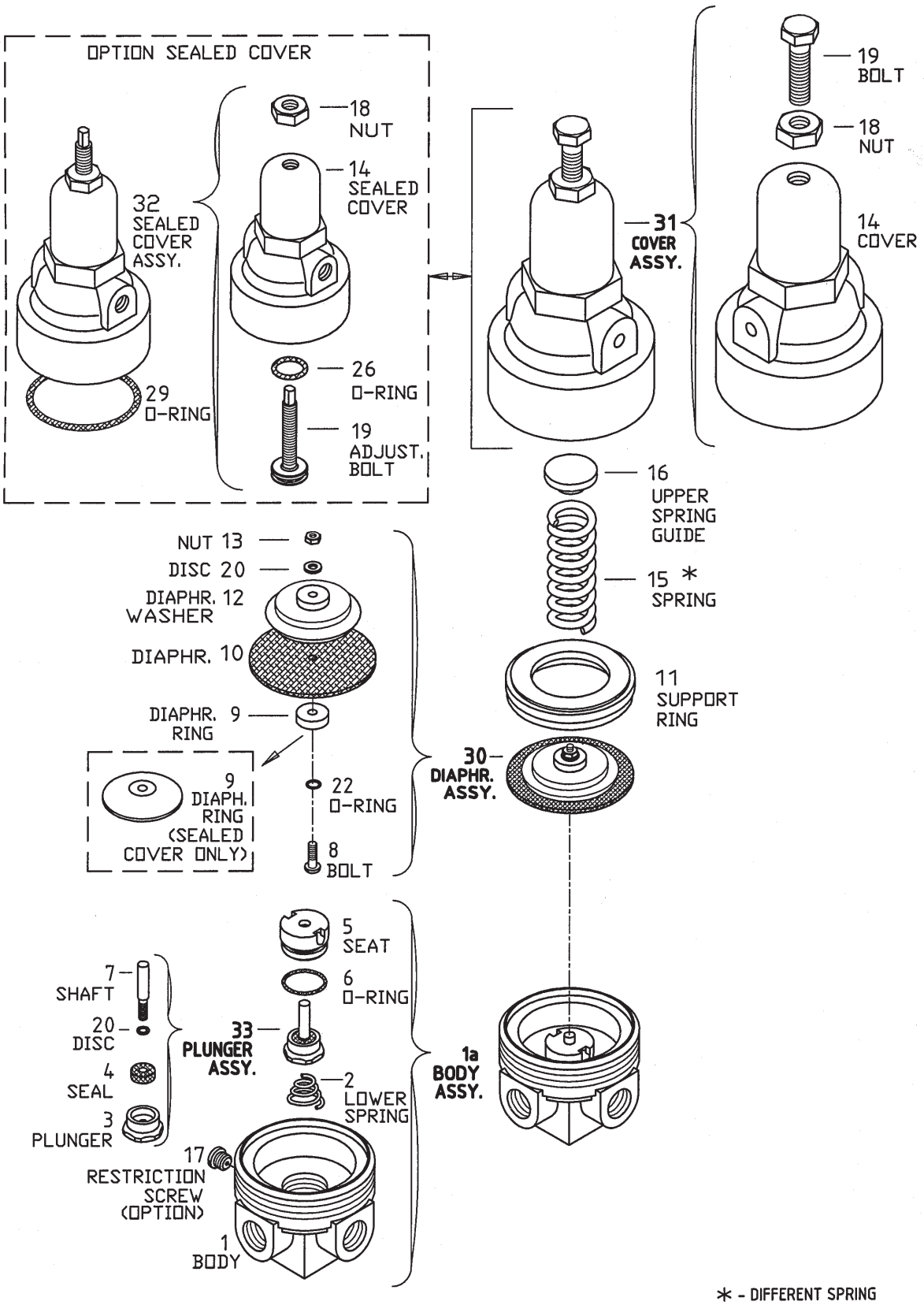
94
LIMIT
SWITCH
ASSY. 2" - 14" (DOUBLE)



52
INDICATOR
ASSY.
4" - 14"

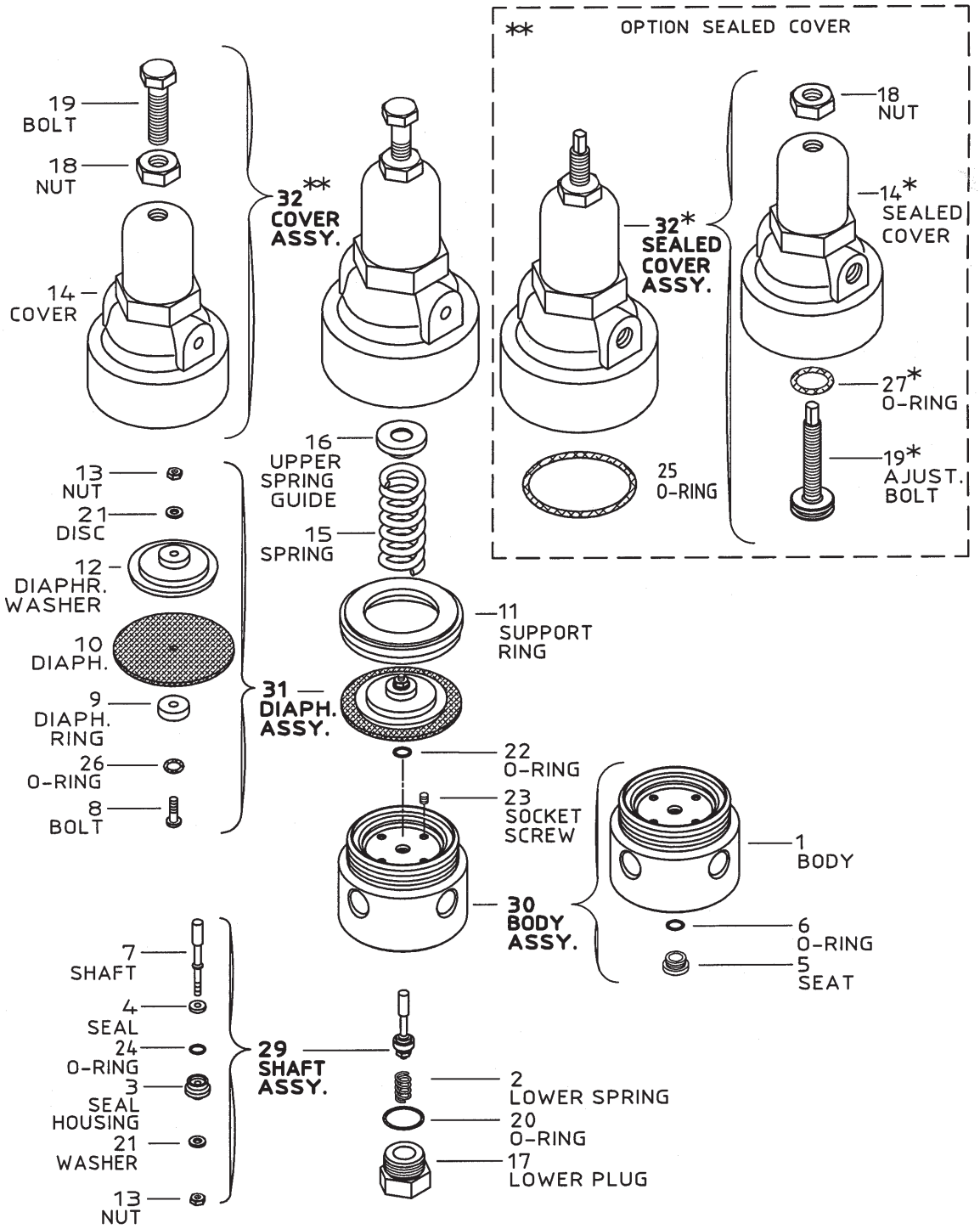


PC-20-AM Metal – 2-way Pressure Reducing Mini Pilot Valve



* - DIFFERENT SPRING

#2PB 2-way Pressure Reducing Pilot Valve



* - FOR SEALED COVER ONLY