



# MODEL PRH (36H & LEAD FREE 36H SERIES) High Capacity Water Pressure Reducing Valve

I-5957-00  
Rev. M

## INSTALLATION

The APOLLO PRH must be installed in a conveniently accessible location to facilitate testing, repair and maintenance. Flush upstream piping thoroughly to remove any foreign matter prior to installing the device. It is important that this unit be installed between shut-off valves in order to isolate the unit during repair and service. INSTALL THE DEVICE WITH THE ARROW ON THE VALVE POINTING IN THE DIRECTION OF FLOW. Do not install this unit in areas subject to freezing temperatures. Provide sufficient support on the piping system upon installation of this unit.

**CAUTION:** Anytime a reducing valve is adjusted, a pressure gauge must be used downstream to verify a correct pressure setting. Maximum pressure will be obtained prior to bottoming out adjustment screw. DO NOT BOTTOM ADJUSTMENT BOLT ON BELL HOUSING.

## OPERATION

Do not install the unit in areas subject to freezing temperatures.

The PRH are designed to reduce high supply pressure (up to 400 psig) to a lower outlet pressure within it's adjustment range. The standard unit is factory set at 50 psig outlet pressure (static condition), and is adjustable from 25 to 75 psig (low and high pressure setting option available). During static (no-flow) conditions, the valve is closed because the magnitude of the diaphragm force exposed to the downstream pressure is greater than the valve spring force. The balance of the forces on the supply and spring pressure (which tends to open the valve) against the diaphragm pressure, determines the outlet or reduced pressure downstream of the valve. Increasing the spring load through the adjusting screw will increase the set pressure. By decreasing the spring load (turning the adjusting screw counterclockwise), the set pressure decreases.

Under flow conditions, the pressure under the diaphragm will start to fall below the set pressure causing the spring and the supply pressure to open the valve and allowing more water to flow. The amount of water that will pass through the valve depends on the difference between the inlet and the outlet pressure. As the pressure differential increases, the volume of water increases.

## MAINTENANCE

Regular inspection, testing and cleaning of water pressure reducing valve and other components in a piping system assures maximum life and proper function.

The PRH is designed so that it can be serviced through the bottom plug without removing the cap and disturbing the pressure setting. Both the seat and seat disc assembly can be accessed through the bottom plug. NOTE: PRIOR TO DISASSEMBLING THE UNIT, SHUT-OFF WATER SERVICE AND RELIEVE PRESSURE DOWNSTREAM.

### a) DISASSEMBLY OF SEAT

1. Unscrew bottom plug.
2. Unscrew seat disc holder.
3. Remove seat.

### b) DISASSEMBLY OF SEAT DISC

1. Remove bottom plug and seat disc holder.
2. In the seat disc holder, remove seat disc by unscrewing the seat screw.

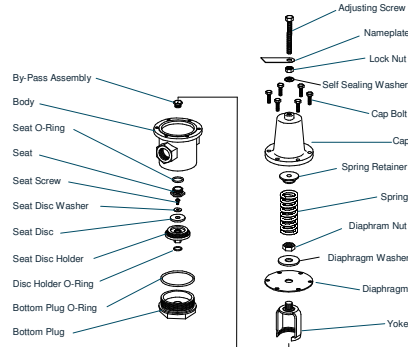
### c) DISASSEMBLY OF DIAPHRAGM

CAUTION: CAP IS SPRING LOADED. RELIEVE SPRING PRESSURE BY UNSCREWING THE ADJUSTING SCREW BEFORE ATTEMPTING TO REMOVE CAP!

1. Remove cap bolts.
2. Remove cap, spring retainer, and spring.
3. Unscrew diaphragm nut.
4. Remove diaphragm washer and diaphragm.

### d) DISASSEMBLY OF BY-PASS ASSEMBLY

1. Unscrew bottom plug and remove seat disc holder.
2. Relieve spring pressure on the cap and remove cap bolts. Dismantle the spring retainer and spring.
3. Remove yoke with diaphragm attached. Do not unscrew diaphragm nut.
4. Unscrew the by-pass assembly.



FRONT

## PROBLEM

1. Inlet pressure equalizes outlet pressure at no flow conditions.

## POSSIBLE CAUSE

Leakage within the valve may be due to the following:  
(a) Seat disc not sealing tight against seat  
(b) Seat O-ring may be cut or damaged  
(c) Damaged or cut diaphragm  
(d) By-pass leaking

2. Outlet pressure rises above inlet pressure.

By-pass assembly not opening or clogged  
Thermal expansion downstream

3. Excessive noise within the pipeline at the PRH.

High water velocity at the pipeline can sometimes cause a whistling noise or hum.

## SOLUTION

-Inspect and replace if defective.

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-Replace

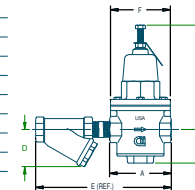
-Replace by-pass washer and rubber ball. Rubber ball should move freely inside the housing. If defective replace the by-pass assembly.

-Disassemble the unit, clean and replace the by-pass assembly, if defective.  
-Rubber ball should move freely inside the housing.

-Slight adjustment on the PRH may eliminate the noise. If not, the line or the PRH may be too small for the application.

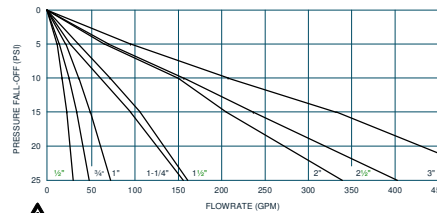
## DIMENSIONS (in.) & WEIGHTS (lbs.)

Size (NPT)	A	B	C	D	E	F	WGT. W/STRAINER	WGT. W/OUT STRAINER
1/2"	4-1/8	2-1/4	7	1-7/8	8-3/8	4	7	6
3/4"	4-1/8	2-1/4	7	2-7/16	9	4	7	6
1"	4-1/8	2-5/16	7-1/2	4	10-1/4	4-11/16	12	8
1-1/4"	6-3/4	3-3/16	10	3-3/8	12-1/2	6-1/2	29	24
1-1/2"	6-3/4	3-3/16	10	3-7/8	13-1/8	6-1/2	29	23
2"	8-1/8	3-1/2	12-1/2	4-5/8	16	7-5/8	47	38
2-1/2"	8-1/8	3-1/2	12-1/2	5-15/16	16-11/16	7-5/8	49	37
3"	10-3/8	3-15/16	15-1/8	6-15/16	20-1/2	9-3/4	87	70
Flanged								
2"	10-3/8	3-1/2	12-1/2	6-1/4	20	7-5/8	79	49
2-1/2"	10-3/8	3-1/2	12-1/2	7-1/8	21-11/16	7-5/8	105	55
3"	12-1/2	3-15/16	15-1/8	8-1/8	24-1/2	9-3/4	136	92



## FLOW CURVES

Flow curves are based on static conditions of: Inlet pressure = 100 psig.  
Outlet pressure = 50 psig



EXAMPLE: At static (no flow) conditions, inlet pressure of 100 psig and outlet set pressure of 50 psig (standard), a PRH-3/4" unit will deliver 23 gpm of water with a 10 psi fall-off (40 psi reduced flow pressure). If outlet set pressure at static condition is less than 50 psig, deduct 20% from capacity shown.

NOTES: 1) Repair kits contact factory



**CALIFORNIA PROP 65: WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**FOR NON-LEAD FREE VALVES:** It is illegal to use this product in the United States for potable water services (water intended for human consumption).

**FOR LEAD FREE VALVES:** This product complies with U.S. Safe Drinking Water Act (SDWA). Suitable for potable water applications intended for human consumption.



BACK