

## MODEL PRE & PRELF 1/2"- 2"

(36E & 36ELF SERIES)

### PRESSURE REDUCING VALVE WITH INTEGRAL BY-PASS FEATURE

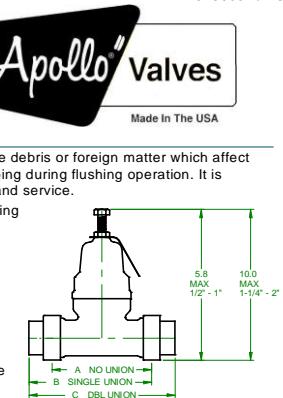
#### Installation

Prior to installation of the PRV, flushing of piping system thoroughly is required to remove debris or foreign matter which affect normal operation of the device. Use a jump kit (see below) and/or temporary by-pass piping during flushing operation. It is important that shut-off valve be installed upstream of the device to isolate during repair and service.

Install the device with the arrow pointing in the direction of flow and provide sufficient piping support. It can be mounted either in horizontal or vertical orientation.

Refer below for installation dimensions:

Size	Dimensions					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
A	3.7"	3.7"	3.7"	5.5"	5.5"	5.5"
B	4.5"	4.7"	4.8"	6.7"	6.8"	7.0"
C	5.5"	5.7"	6.0"	7.8"	8.2"	8.4"



Do not install the product in areas subject to freezing temperature conditions and provide convenient access during testing, repair and maintenance.

**CAUTION:** For solder end connections, solder/braze union tailpieces first prior to mounting the unit in the piping to prevent extreme conduction of heat from damaging internal components.

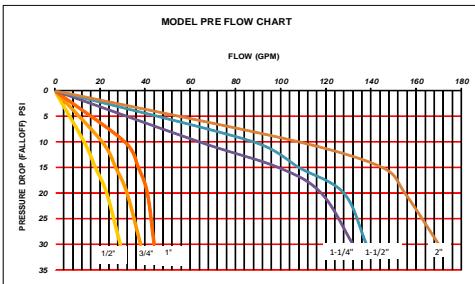
#### Operation

The PRV is designed to reduce pressure to a more functional level within its adjustment range. A pressure gauge downstream of the PRV is recommended to verify reduced pressure setting. To re-adjust reduced set pressure, loosen the lock nut and turn adjustment screw clockwise to increase set pressure and counter-clockwise to lower set pressure. Every adjustment, relieve downstream pressure by opening a fixture to determine required reduced static (no flow) pressure setting. Do not bottom out adjustment screw on cap assembly.

The integral by-pass relief feature is capable of opening to permit a reverse flow of water through the device and prevent a build-up of system pressure by thermal expansion with an increase of reduced pressure not to exceed 10 psig above the prevailing initial pressure at the inlet of the unit.

**Flow Capacity Example:** A 3/4" PRV with an inlet pressure of 100 psig and set outlet pressure of 50 psig (at static/no flow condition) will deliver 21 gpm when flowing at 40 psig (fall-off pressure of 10 psig). Refer to flow chart.

SIZE	JUMP KIT	CARTRIDGE REPLACEMENT	
		P/N	P/N
1/2' & 3/4"	36ESP1234		W954705
1"	36ESP1		
1-1/4"	36ESP114		W261605
1-1/2"	NA		
2"	NA		



**NOTE:** Although this chart shows curves at a 50 psi set differential, curves for other settings are similar. The curve shifts slightly to the left for a smaller differential and to the right for a greater differential. For a 25 psi set differential subtract 15% or for a 75 psi differential add 15% to the flow rate shown.

**CAUTION: SETTING THE DEVICE BELOW AND ABOVE THE RECOMMENDED OUTLET NAMEPLATE RATED PRESSURE RANGE AT NO FLOW CONDITION WILL CAUSE THE UNIT NOT TO FUNCTION NORMALLY.**

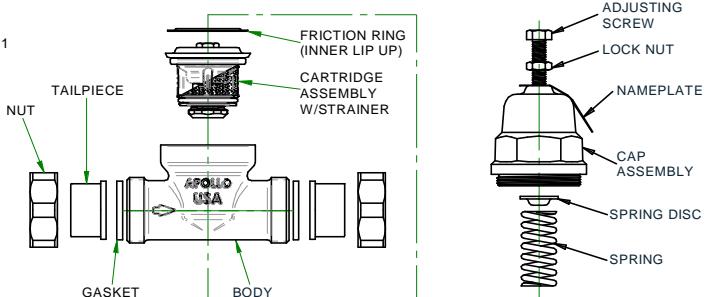
#### TURNDOWN RATIO:

Optimal performance is achieved at a 2:1 pressure differential ratio, such as 100 psig inlet pressure with 50 psig outlet pressure. Turndown ratio of 3:1 and 4:1 are possible, however, factors such as pressure, size, flow, velocity and fall-off can result in noise or premature wear as the ratio increases. Multiple devices in series is highly recommended for large pressure differential.

1915600 rev.G



FIGURE 1



#### Maintenance

The 36E & 36ELF Series PRV can be serviced by removing the cap assembly. Routine servicing usually requires that the strainer be inspected to remove captured debris. Over time a clogged strainer can severely limit flow resulting in a high pressure loss across the device. Less frequently the rubber seat disc may need to be replaced as it sometimes becomes embedded with grit and other foreign particles. Both the strainer and seat assembly can be accessed by removing the cap. See figure 1. Replacement cartridge assemblies which include the strainer and seat assembly are available.

#### CAUTION: ALWAYS ISOLATE THE PRV PRIOR TO SERVICING!

Shut-off inlet water supply valve. Always relieve the spring pressure by unscrewing the adjusting screw before attempting to unscrew the cap assembly. Measure the height of the adjusting screw prior to loosening to return the valve to its original pressure setting.

Unscrew the cap assembly by placing a wrench on the 1-3/4" hex and turn counter-clockwise. The cartridge assembly can be carefully pulled out of the body using pliers on the hex bolt. Clean the strainer and inspect the cartridge assembly for any damage. Inspect the valve body for any debris. Apply a non-toxic or NSF approved lubricant on the cartridge o-ring prior to installation. Install the cap and tighten. Reset the adjusting screw to the previously measured height and tighten the lock nut. ALWAYS use a gauge to check the pressure in the downstream line. Flow a small amount of water and recheck the setting.

#### Trouble-Shooting

PROBLEM	POSSIBLE CAUSES
1. Gauge indicates outlet set pressure rises above the original setting.	A. If the rise is slow and not immediately noticed, the problem could be thermal expansion in the downstream line. If this is the problem, the pressure should drop immediately after flow resumes. If the pressure is not relieved and rises to equal the inlet pressure to the PRV, the by-pass feature then will prevent any further increase by bypassing the pressure upstream. B. A PRV that quickly rises above its set outlet pressure indicates some sort of seal leakage within the valve. Remove the clean-out plug and inspect the plug O-rings and the seat disc for cuts or particles. Clean or replace as necessary.
2. Lack of flow.	A. Lack of pressure at the supply. Fluctuations at the source may be temporary and correct itself. B. Several fixtures in the downstream line may be open creating a high demand. It may be necessary to adjust the PRV to a higher setting if a higher flow demand is required. C. Clogged strainer in the PRV. Remove clean-out plug and rinse strainer.
3. Excessive noise within the pipeline at the PRV.	High water velocities can sometimes cause a whistling or hum. A slight adjustment of the PRV may eliminate the noise. If not, the line size may be too small for the flow rate. See Chart 1 for capacities of the different PRV sizes.
4. Leakage from cap.	Loose cap, damaged diaphragm, or loose center bolt on cartridge assembly. If tightening the cap will not correct the leakage, then inspect the cartridge assembly. Check to see if the center bolt is tight. If the diaphragm is damaged, replace the cartridge assembly.

**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.

**⚠ CALIFORNIA PROP 65: WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov**

For more information visit [www.apollovalves.com](http://www.apollovalves.com)