

1. PIPING ARRANGEMENT

- A) It is essential to provide a stop valve (Ball Valve) in the down take line-before the PRV so that water supply can be cut off when the PRV is under repair / maintenance.
- B) Since the W6 PRVs do not have in built filter it is advisable to provide a separate EasyClean strainer before the PRV to prevent malfunction due to dirt, sand particles.
- C) Installation - W6 models are suitable for use in horizontal pipeline only with bonnet facing up.

PRV should be positioned such that they are easily accessible for setting or for future maintenance.

It is necessary during installation to follow codes of good practice, to follow the installation instructions. The installation location should be ideally protected against frost and direct rain water and be easily accessible.

2. INSTALLATION:

- A) Thoroughly clean or flush out piping system to remove any foreign material etc. otherwise it could cause damage to sealing surfaces during valve operations.
- B) Piping should be properly aligned and supported to reduce undue mechanical loading on the end connections.
- C) Verify that the space available is adequate to allow the PRV to be installed and to be operated, comfortably.
- D) Insufficient clearance for removal of the Bottom plate and Bonnet may cause difficulty in opening valve for maintenance in future. Also sufficient clearance should be allowed for threaded valves to rotate on it's axis during installation.
- E) Install pressure reducing valve
 - Check that arrow is in flow direction, (indicated by arrow on valve body)
 - Install in horizontal pipeline only with bonnet facing up.
 - Install without tension of bending stresses.
- F) End Connection: - Check condition of threads on mating pipe. Apply compound for fixing valve to the male end of joint usually the pipe only. This will prevent compound from entering the internals of PRV. In case of flanged end connection ensure gasket is fitted properly between mating flanges.

Note: Remove PRV whilst making soldered connections to avoid high temperatures damaging important internal working components

- G) PRV is now ready for use.

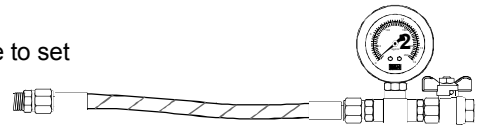
H) Post - installation Procedures

After installation, the line should be cleaned by flushing to remove any foreign material.

With the line pressurized, check the valve end connections for any leaks. The packing may have to be tightened to stop packing leakage/ sweating at the system pressure.

3.SETTING OUTLET PRESSURE

Even if a PRV is calibrated for a certain outlet pressure from factory it is good practice to set & verify pressure at site with help of Varie pressure testing kit* or a pressure gauge.



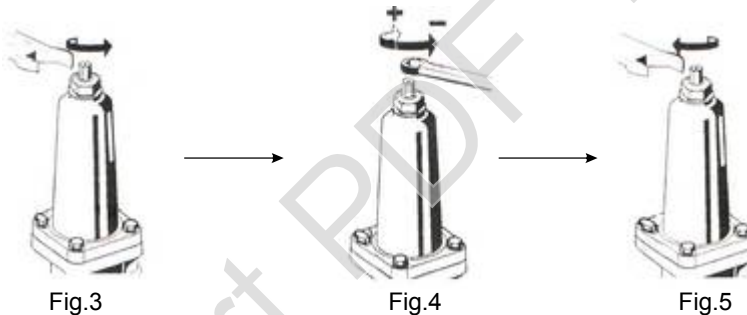
For fast and efficient work the Varie specialized pressure testing kit is recommended which has built-in arrangement for air release which helps getting correct readings and faster work. (The procedure of setting / checking with pressure testing kit is supplied with the kit.)

If the pressure testing kit is not used a simple pressure gauge with following specifications can be used:

- 50 mm dial 1/4' BSP end connection
- Ideally back mounted but side mounted will also do.

Procedure of setting/ checking pressure with pressure gauge

- Close the shut off valve (Ball valve) installed before PRV. If not provided then close shut off valve installed at the Start of down take on terrace (or uptake line in case of hydro pneumatic system.)
- Open & remove blanking plug along with 'O' ring on its collar with hand. Use spanner only if required.
- Allow residual water in line to empty out through the open port.
- Thread-in the pressure gauge in the 1/4" BSP threaded port.(Apply few turns of Teflon tape on thread of pressure gauge for sealing), **Do not tighten completely.** (to ensure removal of air)
- Turn on supply by opening the shut-off valve before PRV.
- Allow some water to come out thru the threads of the pressure gauge (to ensure that air is removed).
- Tighten pressure gauge completely using a spanner till water stops leaking from threads.
- Ensure that 'no flow' of water is there on outlet, as pressure checking/ setting has always to be done in 'static' or 'no-flow' condition only. i.e. all taps on outlet should be closed.
- Loosen lock nut by turning it anticlockwise (fig.3). Turn the adjustment screw with spanner clockwise to increase pressure till desired pressure is obtained.(Turn anticlockwise to reduce pressure) (fig.4)



- Allow some water to flow thru the PRV by opening a tap on downstream and closing it again till a perfect no-flow condition is achieved.
- Re-check pressure on gauge.
- If same reading is coming then the PRV is set correctly at pressure shown on pressure gauge. If not reset pressure and repeat procedure. (If consistent reading is not coming call technician or follow 4.2;6)
- Again close the shut-off valve before PRV. Remove pressure gauge with residual Teflon tape on the inside threads of the port and refit the blanking plug with 'O' ring (**tighten with hand only! not spanner**)
- Start the supply of water. Ensure that NO water is leaking from the Blanking plug.
- Tighten the lock nut again.(fig.5) PRV is ready for use.

4. INSPECTION AND MAINTENANCE

We recommend the user to have a planned maintenance schedule and this should include the Following operations:

4.1 Pressure Checking (annually)

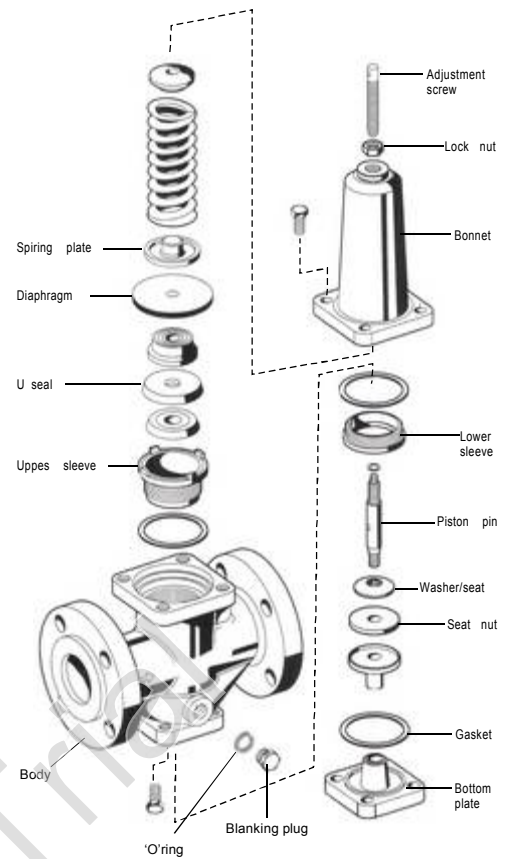
- a. Ensure all taps on downstream are closed.
- b. Check outlet pressure with a pressure gauge (as explained above or with a pressure testing kit) when 'no-flow' is occurring. Pressure should not rise. If pressure is not stable and slowly rises, then proceed as described under 4.3 or call technician.

4.2 Removing and Checking Internals.

Maintenance should be ideally carried out by trained personnel. However for immediate action following guidelines can be followed :

1. Close Ball Valve before PRV to stop supply.
2. Remove pressure from PRV by opening any tap or the blanking plug provided on PRV.
3. Loosen Bonnet nut and turn Adjustment Screw fully anticlockwise (till the end) to decompress the spring.
4. Remove Bonnet bolt 4 Nos. (after opening 1st bolt open the bolt diagonally across and then the others). Ideally loosen all 4 bolts slightly in above sequence and then remove completely.

5. Remove Bonnet with Spring and other parts in the Bonnet.
6. Hold the Piston Pin by inserting Screw Driver on hole provided on Piston Pin.
7. Remove Spring Plate by turning it anticlockwise with help of a spanner
8. Now Press Diaphragm from Center & Remove Diaphragm. If it is difficult to remove Diaphragm it can be removed after step 14.
9. Then Remove Bottom Plate Bolts (after opening 1st Bolt open bolt which is diagonally across it and then remove other 2 bolts. Ideally loosen all bolts slightly in above sequence and then remove them completely.)
10. Remove Bottom Plate Gasket.
11. Now hold the Piston Pin by inserting Screw Driver on hole provided on Piston Pin on upper part & Remove Seat holder from the bottom part (i.e. from other side where bottom plate is fitted.) by turning it anticlockwise with a spanner.
12. Now Remove washer & seat nut.
13. Then Remove Cartridge from Body by pulling out entire Piston Pin from top.
14. Hold Diaphragm Disc in a vice to Dis-assemble Cartridge (Rotate Piston Pin and remove Piston Pin from Diaphragm Disc then remove 'U'seal Disc & 'U'seal)
Check All rubber parts for damage or wear & tear. Viz: Diaphragm, 'U'seal, Washer/Seat. And replace wherever necessary.
15. Also check inside surface of upper sleeve where 'U'seal is sliding. If damaged, same has to be replaced with its gasket (Upper Sleeve can be removed only with a special Jig. Contact Service Center.)
16. Check the profiled diameter on lower sleeve (which contacts the washer/seals) & if there are any cuts or dents on same. If damaged same has to be removed (along with the gasket) with special Jig and replaced with a new piece (contact Service Center)
17. The entire valve can be reassembled in reverse order.



5. SCOPE OF APPLICATION: Water, Compressed air, Nitrogen.

Models	:	W6
Max. Inlet pressure kg / cm ²	:	16
Outlet pressure kg / cm ²	:	1.5 to 5
Max Operating temp.	:	70°C# (For higher temp. special valves are supplied)

6. TROUBLESHOOTING:

Problem	Cause	Remedy
Beating sounds	Pressure reducing valve is too large or too small for pipe size	Call our Technical Customer Services
Water is escaping from the spring bonnet	Diaphragm is worn out or damaged.	Replace Diaphragm
	Bonnet is not tightened properly	Tighten all bolts.
Too little or no water pressure	Shutoff valves up- or downstream of the pressure reducing valve are not fully open	Open the shutoff valves fully
	Pressure reducing valve is not set to the desired outlet pressure	Increase outlet pressure
	Strainer before PRV is choked due to dirt.	Clean strainer.
	Pressure reducing valve is not fitted in flow direction.	Fit pressure reducing valve in flow direction (note direction of arrow on housing)
The outlet pressure set does not remain constant	Filter screen of strainer before PRV has torn	Replace filter element of strainer
	'U'seal, Seat is contaminated or worn out.	Replace 'U'seal / Seat
	Rising pressure on outlet (e.g. in boiler)	Check NRV.
	Profile on 'lower sleeve' where washer seat seals is damaged.	Replace 'lower sleeve'
	Dirt has entered the mechanism	Clean the entire internals.
	Finish of inside diameter of 'upper sleeve' is damaged.	Replace 'upper sleeve'.