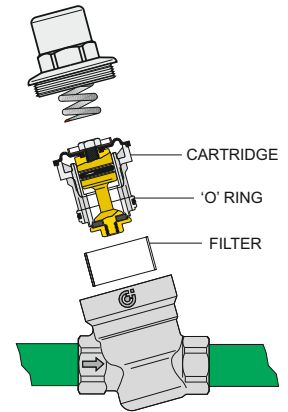
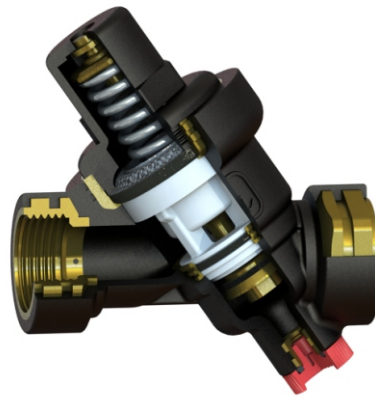
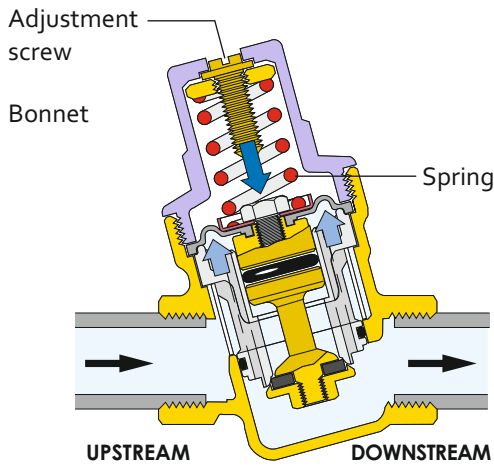


# User Manual W21



## 1. PIPING ARRANGEMENT :

- Install a ball valve before W21 to be able to shut off supply whenever maintenance is needed.
- Installation- The W21 is suitable for use in horizontal (most ideal), vertical or inclined pipeline- i.e. in any position.

## 2. INSTALLATION :

- Thoroughly clean or flush out piping system to remove any foreign material etc. otherwise it could cause damage to seating surfaces during valve operations.
- Leave sufficient clearance from the wall or other obstruction to install or remove the valve from pipe line also leave sufficient Clearance above the black colored bonnet so that it can be removed easily for maintenance purpose.
- While installing PRV check that arrow is in flow direction. (indicated by arrow on valve body .)
- 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.
- After installation, the line should be cleaned by flushing to remove any foreign material.
- Ensure no leakage is there from the threaded joints.

## 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 in project installations the Varie (specialized) pressure testing kit is recommended which has built-in arrangement for air Release which helps taking correct readings and faster work where many PRV's are to be checked.

Individual home owners can use a simple pressure gauge also. W21 G has a 1/4" BSP thread for pressure gauge. W21 N and W21 S has 1/8" BSP threads.

Gauge can be of 60mm dial with side mounting(not back mounted) with pressure range of 1 to 7 bar.

## 4. Procedure of setting / checking pressure with pressure gauge

First shut off supply by closing the Ball Valve before PRV. If not provided, then close Ball Valve installed in the pipe outside in duct. Open blanking plug along with "O" ring filled on it. Allow residual water in line to empty out through the open port. Thread-in the pressure gauge in the BSP threaded port. (Ensure 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 using a spanner till water leak stops.
- Ensure that 'no flow' of water is there in any tap, as pressure checking/setting has always to be done in 'static' or 'no-flow' condition.
- To increase pressure setting turn screw on bonnet clockwise until desired pressure is achieved. To decrease pressure turn it anticlockwise.
- Allow some water to flow there the PRV by opening a tap and close 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 till same pressure reading is seen on pr. Gauge in no flow condition.
- 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.



## 5. INSPECTION AND MAINTENANCE

### 5.1 Checking Pressure (annually):

- Ensure all taps on downstream are closed.
- Check outlet pressure with a pressure gauge when 'no-flow' is occurring. Pressure should not rise. If pressure is not stable and slowly rises, then proceed as described under 4.2.

### 5.2 Removing and checking Cartridge / Filter.

The following should be carried out by trained personnel, within the time interval depending on the site conditions:-

- Close Ball valve before PRV
- Relieve pressure in PRV by opening blanking plug and allowing water to go out.
- Loosen adjustment screw by turning anticlockwise to loosen spring tension. (Fig 5)
- Remove bonnet with spanner. (Fig 6)



- Lever out cartridge; use plier if needed. (Fig 7) Check if diaphragm, washer and other 'O' rings are in good Condition. Replace cartridge if any part is damaged. Reassemble as explained in 4.4

### 5.3 Cleaning Built-in-Filter

Filter can be cleaned after removing cartridge from body. Clean the Filter mesh fitted on Cartridge in running tap water (Do not use detergents etc) Still if very fine particles, mud or moss is stuck on filter mesh clean it with an \ old tooth brush. Reassemble cartridge as explained in 4.4

### 5.4 Reassemble Cartridge/ Filter :

- Ensure filter is fitted properly over cartridge.
- Refit 'O' ring on Cartridge if it has come out.
- Insert Cartridge into body and push it gently so that 'O' ring will squeeze into the body.
- Press-in the diaphragm with a finger around its circumference.
- Tighten bonnet
- Start supply and ensure there is no leakage from Bonnet.
- Re-Adjust the pressure as described in 3.



## 6. Technical Specifications

Scope of application	: water	Outlet pressure	: 1.5 to 5 bar
Model name	: W21	Operating temp.	: 70° C in W21 G
Max. Inlet pressure kg/cm2	: 16 bar		: 55° C in W21 N / W21 S

## 7. 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 in cartridge is worn out or damaged.	Replace cartridge
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
	Filter in pressure reducing valve is choked due to dirt.	Clean or Replace filter
	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 in pressure reducing valve has torn.	Replace filter
	Cartridge or 'U'seal is contaminated or worn out.	Replace cartridge and / or 'U'seal
	Rising pressure on outlet (e.g. in boiler)	Check NRV
	Upper profile of filter where 'U'seal sits is damaged or worn out.	Replace the filter
	Dirt has entered the mechanism / cartridge	Clean the entire cartridge or replace it.
	Plumber may have removed filter from PRV	Refit filter in its place to avoid dirt from entering internals