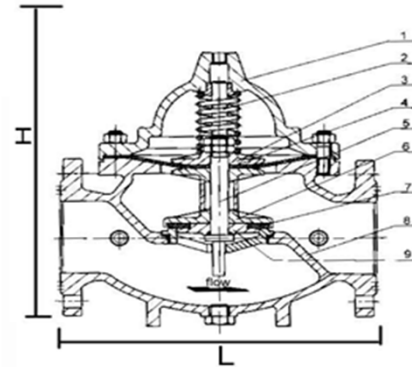
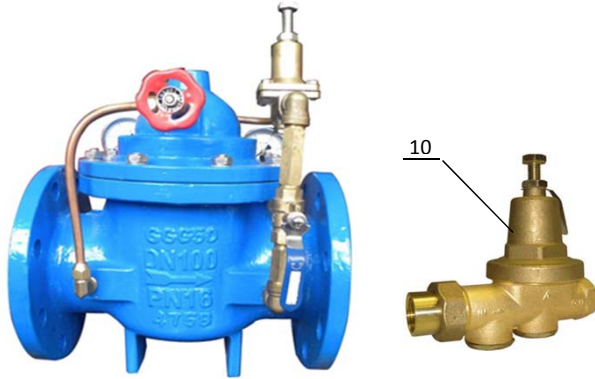


# AUT

## Pressure Reducing Valve PN10 / PN16 / PN25



### Parts

No.	Parts name	Material	Standard	Grade
1	Cover	Ductile Iron	BS 2789	500/7
2	Spring	Stainless Steel	BS 970 - part 1	431S29
3	Disc	Brass	BS 2874	CA 104
4	Diaphragm	Reinforced Synthetic Rubber	BS 2494	EPDM
5	Stem	Stainless Steel	BS 970 - part 1	431S29
6	Disc	Brass	BS 2874	CA 104
7	Seal	Reinforced Synthetic Rubber	BS 2494	EPDM
8	Body	Ductile iron	BS 2789	500/7
9	Seal disc	Gunmetal	BS 1400	LG2
10	Pilot Valve	Brass		

### Test

Norminal pressure	1.0MPa	1.6MPa	2.5MPa
Shell pressure	1.5MPa	2.4MPa	3.75MPa
Seal test pressure	1.1MPa	1.76MPa	2.75MPa
Maximum inlet pressure	1.0MPa	1.6MPa	2.5MPa
Adjustable outlet pressure ranges	0.09 ~ 0.8MPa	0.10 ~ 1.2MPa	0.15~1.6MPa
Max. Temperature	70°C		
Suitable medium	water		

### Designs

1	Flange face to face according to ANSI B16.10 / BS 1868 / ISO 5752 - 10
2	Flange drilled according to BS 4504 / DIN 2501, PN10 / PN16 / PN25
3	Inspection and test according to BS 6755
4	Internal and external coating by fusion bonded epoxy powder 250 micron thickness

### Dimensions

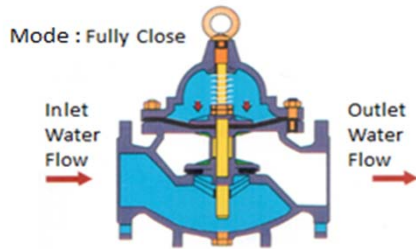
Unit : mm

DN	L	H	Dimensions of Flange (PN10 / PN16 / PN25)			
			Dia. of flange	Nos. of hole	Dia. of hole	P.C.D.
			PN10 / PN16 / PN25	PN10 / PN16 / PN25	PN10 / PN16 / PN25	PN10 / PN16 / PN25
50	205	305	165 / 165 / 165	4 / 4 / 4	18 / 18 / 18	125 / 125 / 125
65	216	312	185 / 185 / 185	4 / 4 / 8	18 / 18 / 18	145 / 145 / 145
80	260	354	200 / 200 / 200	8 / 8 / 8	18 / 18 / 18	160 / 160 / 160
100	292	457	220 / 220 / 235	8 / 8 / 8	18 / 18 / 22	180 / 180 / 190
125	330	517	250 / 250 / 270	8 / 8 / 8	18 / 18 / 26	210 / 210 / 220
150	356	575	285 / 285 / 300	8 / 8 / 8	22 / 22 / 26	240 / 240 / 250
200	500	730	340 / 340 / 360	8 / 12 / 12	22 / 22 / 26	295 / 295 / 310
250	605	810	395 / 405 / 425	12 / 12 / 12	22 / 26 / 30	350 / 355 / 370
300	698	1030	445 / 460 / 485	12 / 12 / 16	22 / 26 / 30	400 / 410 / 430
400	914	1150	565 / 580 / 620	16 / 16 / 16	26 / 30 / 36	515 / 525 / 550

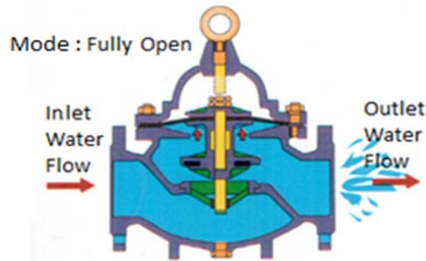
## Pressure Reducing Valve User Manual

### Operation Principles

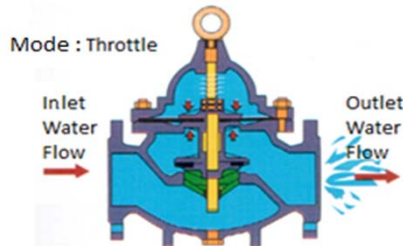
Pressure reducing valve (PRV) is installed at upstream pipe to ensure downstream maintain at desired pressure. It is control by pilot valve to modulate the pressure between bonnet and main valve to create a driving force to regulate diaphragm movement. It is fully automated with three operating modes : fully close , fully open and throttle.



When upstream water flow into main valve, bonnet and at the same time close the ball valve that locates at outer of main valve. The main valve will in fully closed mode.



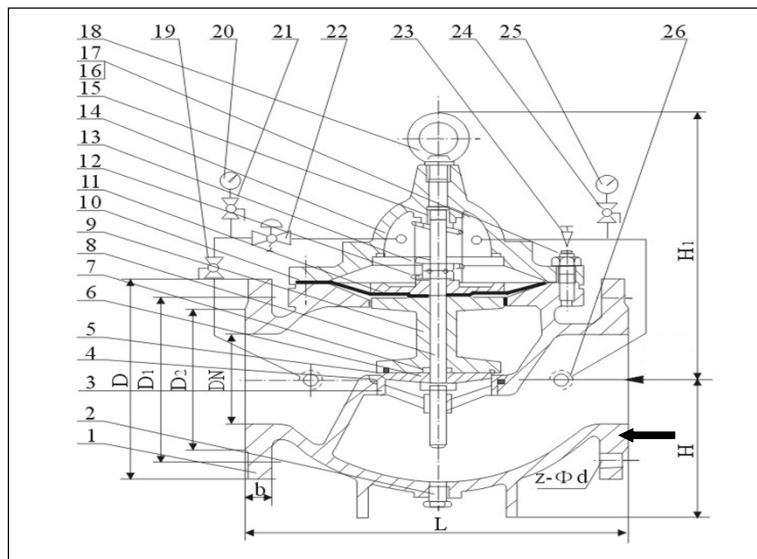
When the ball valve that locates at outer of main valve is open, water in bonnet will be released. As the bonnet pressure becomes lower and pressure push-up the diaphragm thus the main valve is in fully open mode.



When the ball valve that locates after the pilot valve is open, it allows water flow through needle valve and ball valve to maintain self-sustaining pressure. The main valve will in throttle condition.

### Parts

This unit is consist of pressure reducing valve as a main valve, pilot valve, needle valve, ball valve, pressure gauge meter and filter. Pilot valve, needle valve, ball valve and pressure gauge meters are connected to the pressure reducing valve. Hence it is called self-regulated control valve system, the detail schematic diagram as below :



Schematic Diagram ← Water Flow Direction

1	Body
2	Plug Screw
3	Seat
4	O Ring
5	O Ring
6	Seal
7	O Ring
8	Stem
9	Valve Disk
10	Diaphragm
11	Diaphragm Pressing Plate
12	Nut
13	Spring
14	Bonnet
15	Valve Guide
16	Nut
17	Bolt
18	Ring
19	Ball Valve
20	Pressure Gauge Meter
21	Ball Valve
22	Pilot Valve
23	Needle Valve
24	Ball Valve
25	Pressure Meter
26	Strainer

## Pressure Reducing Valve User Manual

### Install and Tuning

1. The appropriate installation method of pressure reducing valve is installed to the same level at pipe line and bonnet facing top. It must to ensure there is no debris inside the pipe, valve must be installed at the correct direction according to the arrow mark on valve body. Pressure reducing valve after installation onto pipe the mechanical strain stress must not exert on valve body and internal valve parts.

2. Install the valves in this sequence : before pressure reducing valve is gate valve and Y-strainer; after pressure reducing valve install a gate valve for easy maintainance and repair.

3. The strainer (26) on pressure reducing valve need to be clean regularly.

4. Pipe must be clean before use pressure reducing valve.

5. By-pass valve is recommended to install at critical water supply pipe line.

6. Pressure Tuning Method:

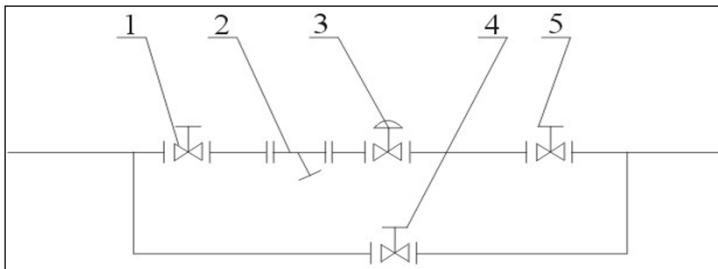
a. To close upper stream isolated gate valve, open the lower stream isolated gate valve. When lower stream pressure reaches to 0.1MPa, fully closed the down stream isolated gate valve.

b. Tune on pilot valve's screw to maximum which is top position.

c. Slowly open the upper stream isolated gate valve to fully open.

d. Then slowly adjust down the pilot valve's bolt position, output flow water pressure will gradually increase. The pressure will increase to require pressure and tighten the nut.

e. Redo above steps if tuning pressure is not achieved. The valve only allows to tune from low pressure to high pressure.



1	Resilient seat gate valve
2	Y-strainer
3	Pressure reducing valve
4	Resilient seat gate valve
5	Resilient seat gate valve

### Maintenance

Pressure reducing valve using water for lubrication purpose, no lubrication oil is needed to lubricate the valve. Please follow below procedure if valve parts damage. ( Parts that easy to damage : diaphragm and gasket. Metal parts are rarely damage) Firstly, close up the gate valve at the front and back of the pressure reducing valve. Loosen the nut on bonnet top to release pressure inside bonnet. When the pressure become zero, loosen all the screw and nut. Also the brass pipe on the valve. Take out the bonnet and spring gently. Then, take off shaft, diaphragm etc. Beware that do not damage the diaphragm. Visual inspection on these parts, if there is no damages, please do not disassemble these parts. If there are damage on diaphragm or gasket, loosen nut on the shaft and remove them accordingly. Then replace them with new parts. Also inspect the valve inlet for any damages. Then clear up debris inside the valve. Re-assemble the valve parts accordingly.

### Troubleshooting List

Defect Cases	Possible causes	Solutions
Pressure Reducing valve unable to reduce pressure	Install valve upside down	Turn over and reinstall
	Main valve diaphragm crack / damage	Replace new diaphragm
	Needle valve in close condition	Open needle valve
	Ball valve in close condition	Open ball valve
	Pilot diaphragm crack / damage	Replace new diaphragm
	Debris / object in valve body	Clear out object inside valve body
Pressure Reducing Valve noisy while operating	Debris / object in valve body	Clear out object inside valve body
	Valve disc close rapidly in abnormal speed	Regulate needle valve opening percentages