

Self-Operated Pressure Control Valve

Code	Actuator	Action	Air Fail Position	Control	Structure	Body Material	Sealing Material	Core Material	Connection	DN	PN
LPI11-	0 Others	A Outlet pressure control B Inlet pressure control	0 Others	B Self-regulating 0 Others	7 Normal 0 Others	A CF3M B CF8M C CF8 D WCB I CF3 L CE3MN 2 Ti 5 WCC 0 Others	P PTFE Y FEP(F46) R BODY S Stellite 3 Gr 4 WC 0 Others	A CF3M B CF8M C CF8 I CF3 L CE3MN 2 Ti 0 Others	1 Flange 0 Others		



Overview

LPI11 self-operated (inlet/outlet) pressure control valve is composed of the control valve, actuator and a spring used for pressure setting.

It is suitable for controlling after-valve pressure in the pipes of non-corrosive liquids, gases and steams. When the after-valve pressure rises, the control valve is closed.

The main features are as follows:

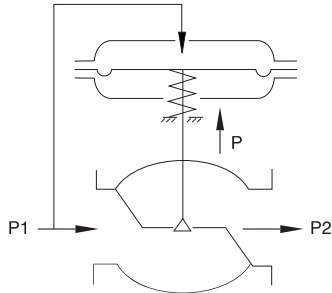
1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance.
3. The standard modular design is adopted.
4. Various combined controls can be carried out through the assemblies.

Working Principle

A. Self-Operated Inlet Pressure Regulating Valve

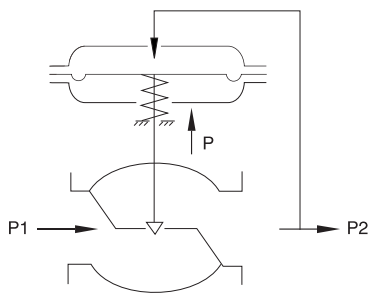
After throttling by the plug and seat, the before-valve pressure P1 of the process medium is changed into the after-valve pressure P2. Through the control pipeline, P1 is input to the upper diaphragm chamber of the actuator and acts on the top disc. The acting force produced balances the reacting force of the spring, determining relative positions of the plug and seat and controlling the before-valve pressure. When the before-valve pressure P1 increases, the acting force of P1 that acts on the top disc will increase accordingly. At the time, the acting force on the top disc is higher than the reacting force of the spring to make the plug move away from the seat, until the acting force on the top disc balances the reacting force of the spring. At the time, the flow area between the plug and seat is increased, the flow resistance becomes lower and P1 is reduced to the set value. Likewise, when the before-valve pressure P2 decreases, the acting direction is reverse to the above. This is the working principle during the control of before-valve pressure.

When it is necessary to change the set value of before-valve pressure P1, please adjust the adjusting nut.



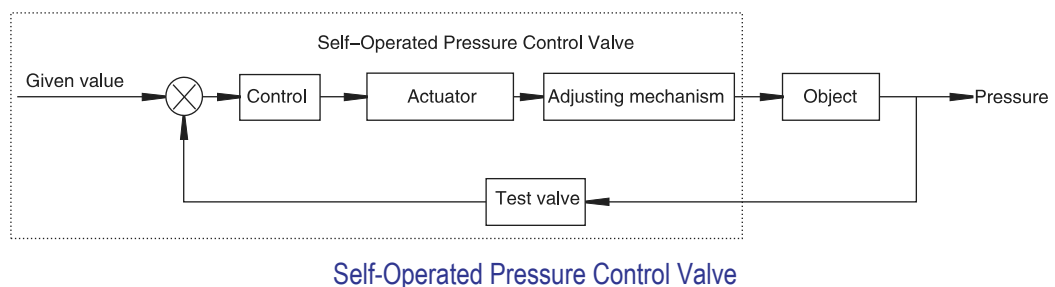
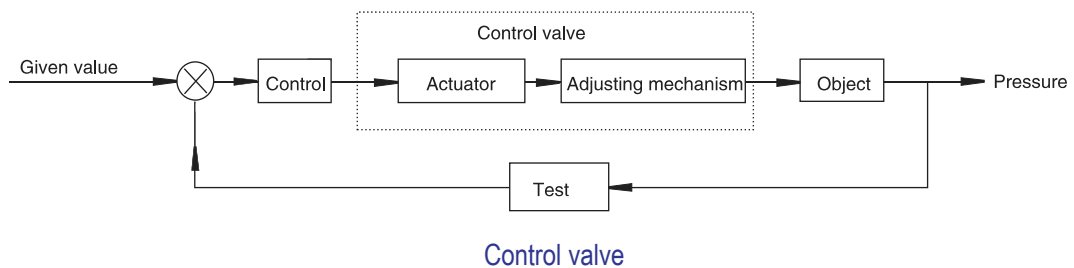
B. Self-Operated Outlet Pressure Regulating Valve

After throttling by the plug and seat, the before-valve pressure P_1 of the process medium is changed into the after-valve pressure P_2 . Through the control pipeline, P_2 is input to the lower diaphragm chamber of the actuator and acts on the top disc. The acting force produced balances the reacting force of the spring, determining relative positions of the plug and seat and controlling the after-valve pressure. When the after-valve pressure P_2 increases, the acting force of P_2 that acts on the top disc will increase accordingly. At the time, the acting force on the top disc is higher than the reacting force of the spring to make the plug close towards the seat, until the acting force on the top disc balances the reacting force of the spring. At the time, the flow area between the plug and seat is reduced, the flow resistance becomes higher and P_2 is reduced to the set value. Likewise, when the after-valve pressure P_2 decreases, the acting direction is reverse to the above. This is the working principle during the control of after-valve pressure.

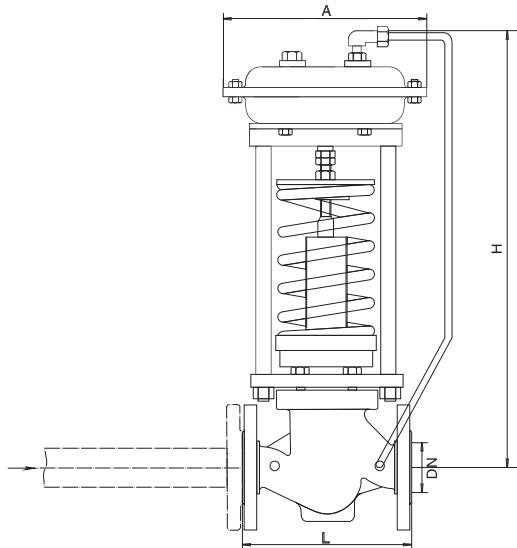


When it is necessary to change the set value of after-valve pressure P_2 , please adjust the adjusting nut.

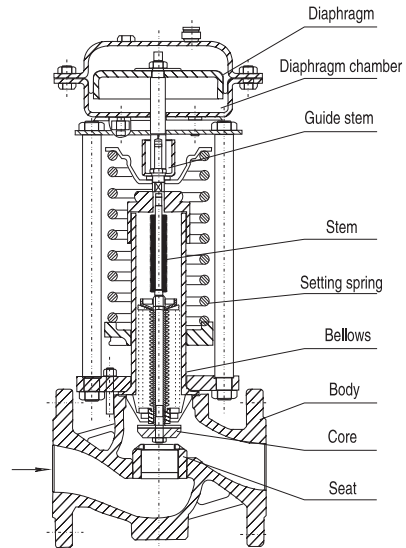
For the difference between the pressure regulating valve and control valve:



Dimensions and Weight



Exploded View



Specifications

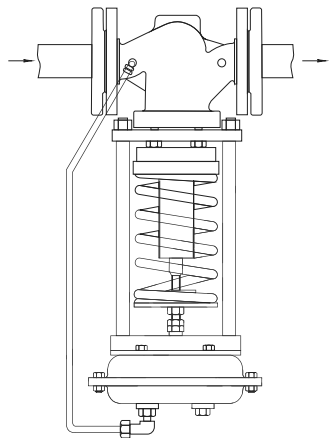
Kv ≥ 3.2

DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
KV	3.2	5	8	12.5	20	32	50	80	125	190	280	420	500	710
PN	1.6, 2.5, 4.0, 6.4, 10, 15													
Pressure setting range	10-60, 20-120, 80-250, 200-500, 450-1000, 800-1600, 1000-2200, 2000-2800													
Pressure balance devices	Bellows							Cage						
Allowable differential pressure (MPa)	PN1.6	1.6						1.5	1.2	1.0				
	PN2.5-PN15	2.0(Single) / 3.5 (Double)						1.5	1.2	1.0				
Medium temperature	Gas ≤ 80°C, Liquid ≤ 140°C, With tank ≤ 350°C													
Characteristics	Quick opening													
Connection	JIS B2201-1984, ANSI B16.5-1981, GB/T 9112-9124-2000													
Signal interface	M14×1.5													
Action	Inlet control (K type) , Outlet control (B type)													
Reducing ratio	10:1-1.25:1													

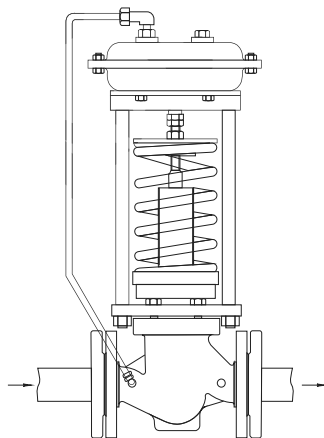
Kv ≥ 3.4

DN	20, 25, 40													
Diameter	6				8				11				14	
KV	0.01	0.03	0.09	0.14	0.21	0.34	0.54	0.85	1.4	2.1	3.4			

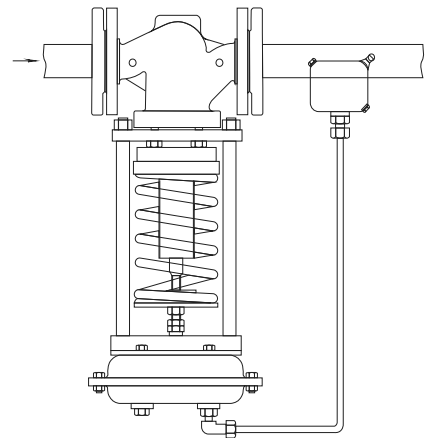
Installation Drawing



Control the liquid pressure



Control the gas pressure



Control the steam pressure

DN		15	20	25	32	40	50	65	80	100	125	150	200	250	300	
L		160	160	160	180	200	230	290	310	350	400	451	543	673	737	
Pressure adju- sting range	20~120	H	475		520		540		710		780	840	880	915	940	1000
		A	402			402										
	80~250	H	450		495		510		680		750	790	860	870	890	950
		A	297													
	200~500	H	455		500		520		690		760	800	870	880	900	960
		A	234													
	450~1000	H	430		480		500		670		740	780	850	860	880	940
		A	176						234							
	800~1600	H	420		470			650				740		860		
		A	158			176										
	1000~2800	H	410		450			640				730		850		
		A	158						176							
	Weight(KG)		26		37		43		70	90	110	130	146	182	200	260
	Pressure pipe thread interface		M14 x 1.5													