CONTROL VALVE

SPECIFICATIONS

ZZY Self-Operated Pressure Regulator

OVERVIEW

The ZZY series self-operated pressure regulator is a kind of which does not need outside power but take advantage of the power from medium to act and adjust by itself. The most notable feature of this series regulator is that it can be used in the working place without the electricity and gas supplying, which saves the power at the same time. In the specific range, the pressure setting can be adjusted at will. Based on the difference of any working condition, the ZZY series self-operated pressure regulator can be classified in to 3 types according to its inside part: ZZYP (single seat self-operated pressure regulator); ZZYM (cage type selfoperated pressure regulator); ZZYN (double seat selfoperated pressure regulator), customers can also choose the type by the local actual working condition(differential pressure, temperature, medium state) or leakage requirement. There are 3 different bonnet types according to the working condition: standard (normal condition), long neck type(big range for pressure adjusting), heat radiation type(temperature 350~550°C). The ZZY series

Self-operated pressure regulator applies with the quickopening flow characteristic, which is quickly acted and highly accurate adjusted (error≤10%), so it can be widely used in many fields like petroleum, chemical, electricity, metallurgy, food, textile, machinery and civilian building and so on to reduce/release or stabilize the pressure of the gas, steam and liquid and so on.



ZZY(Diaphragm type, Downstream Pressure Setting)
Body 2. Gasket 3. Seat 4. Plug 5. Grand 6. Double Stud
6. Seal Gasket 7. Bolts 8. Bonnet 9. Bolts 10. Standing Pillar
11. Adjusting Plate 12. Travel Gasket 13. Inside Spring 14.
Outside Spring 15. Packing 16. Thrust Needle Bearings 17.
Gasket 18. Nuts 19. Spring Seat 20. Actuator

SPECIFICATIONS Valve Body

Plug Type	Single-Seated(ZZYP), Cage Type(ZZYM), Double-Seated(ZZYN)
Action Type	Control Upstream Pressure(B Type) and Control Downstream Pressure(K Type)
Nominal Diamter	DN15mm ~ 300mm(1/2" ~ 12")
Flow Characteristic	Quick Open
Adjusting Accuracy	±3~10%
Working Temperature	≤350
Pressure Reduction Rate	Max. 10, Min. 1.25
Trim Material	Standard Material, Working Temperature, Pressure Range and Leakage Information, Please Refer to Sheet 1 and Figure 1.
Nominal Pressure	PN1.6MPa, 4.0MPa, 6.3MPa, 10.0MPa, Class 150, 300, 600.
Connection Type	Flanged Ends, Welded Ends and Threaded Ends.
Body & Bonnet Material	WCB, WC9, CF8, CF8M
Actuator Type	Diaphragm, Piston/Cylinder, Bellows
Packing	PTFE, Flexible Graphite

Valve	Body	WCB, WCC, WC6, WC9, LCB								
Valve Dlug	Material	SS304/316	SS304/316	SS304/316	SS304/316					
valve Plug	Treatment	RTFE	Rubber	ST	SS					
Value Seet	Material	SS304/316	SS304/316	SS304/316	SS304/316					
valve Seat	Treatment	RTFE	-	ST	SS					
Allowed Leakage	Class Rating	IV/V/VI	IV/V/VI	IV/V	IV/V					
Allowed Leakage	Standard	GB/T4213, ANSI								
Working Temperature(°C)	WCB, WCC	$-5 \sim +160$	-20~+100	-5 ~ +425	-5 ~ +425					
	WC6, WC9	WC6, WC9 -5 ~ +160		$-5 \sim +538$	-5 ~ +538					
	LCB	-45 ~ +160	-20~+100	-45 ~ +350	-45 ~ +350					

Valve Body Material: Carbon Steel. (Sheet 1-1)

Valve Body Material: Stainless Steel. (Sheet 1-2)

Valve Body		CF3, CF8, CF3M, CF8M								
Value Dhug	Material	SS304/316	SS304/316	SS304/316	SS304/316					
valve Flug	Treatment	RTFE	Rubber	ST	SS					
Valve Seat	Material	SS304/316	SS304/316	SS304/316	SS304/316					
	Treatment	RTFE	-	ST	SS					
Class Rating		IV/V/VI	IV/V	IV/V						
Allowed Leakage	Standard	GB/T4213, ANSI								
Working Temperature(°C)		-45 ~ +160	-20~+100 -196~+52		-196 ~ +538					

Trim Material Figure 1.





Figure 1-2 Soft Seat



Packing Material Figure 2.



Figure 1-2 Flexible Graphite



Plug Material Figure 1.

Figure4-1 RTFE Plug



Figure 4-2 STL Sealing Plug



Rated Kv Value · Rated Travel · Adjusting Pressure Range(Sheet 2)

Nominal Diameter DN(mm)		20	25	32	40	50	65	80	100	125	150	200	250	300
D (171	Single-Seated	7	11	20	30	48	75	120	190	300	480	760	-	-
Characteristic	Cage Type	7	11	20	30	48	75	120	190	300	480	760	-	-
Kv	Double-Seated	-	-	22	33	53	83	132	209	330	528	836	1210	1925
Rated Travel (mm)			8	1	0	14	2	20	25	4	0	50	60	70
Adjusting Pres	sure Range(kPa)	15~50, 480~56 1530~1	40~80, 6 0, 540~6 800, 178	0~100, 80 20, 600~ 0~2000,	0~140, 12 700, 680~ 1980~230	20~180, 1 ~800, 780 00, 2280~	60~220, ~900, 88 ~2500	200~260 0~1000,	, 240~30 950~110	0, 280~3 0, 1080~	50, 330~4 1250, 123	400, 380~ 30~1400,	-450, 430 1380~15	~500, 50,

Main Parameters & Specification For Micro-Flow, Single-Seated (Sheet 3)

Nominal Diameter DN(mm)	20, 25												
Seat Diameter(mm)		6								8	10	12	15
Rated Flow Characteristic Kv	0.01	0.01 0.02 0.048 0.06 0.08 0.12 0.2 0.32							0.5	0.8	1.8	2.8	4.4
Rated Travel (mm)			8		8	•	5	:		:	•		

Flow Characteristic Figure 5



Construction Type



A. Control downstream pressure, when outlet pressure is rising then valve shutoff.



B. Use piston type balance trim to control downstream pressure.



C. Use metal bellows to balance inlet and outlet pressure, then control the downstream pressure.



D. Use metal bellow to seal and balance inlet and outlet pressure, then control downstream pressure.





H. Construction of cage type and control downstream pressure.



I. Construction of doubleseated, and use piston/ cylinder type actuator to control upstream pressure.



J. Construction for blocking low noise

Installation



1. Filter 2. Self-operated pressure regulator 3. Connecting pipe 4. Condenser

CONFIRMATION BEFORE ORDER

1. Medium Flow Rate(Q) ____(T/H)

2. Inlet Pressure P1 ____(Mpa)

3. Outlet Pressure P2 ____(Mpa)

4. Medium Name _

5. Temperature of Medium ____(°C)

6. Other Requirement

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