



JIANENG VALVE

QUALITY
MEET THE DEMAND



Self-Operated Regulator



Specification Sheet

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HANGZHOU JIANENG VALVE CO., LTD



Self-Operated Regulator

ZZY Series

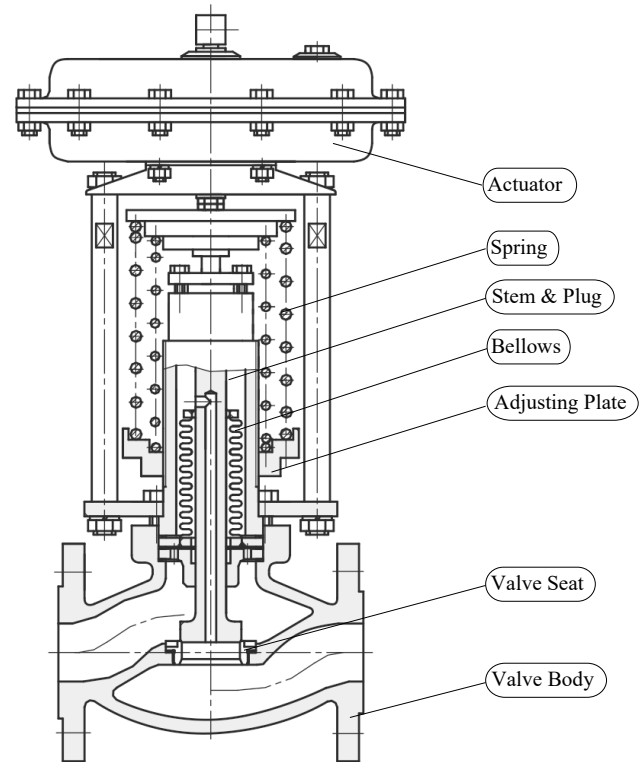
OVERVIEW

The self-operated regulator taps into the inherent power of the medium it regulates, eliminating the need for external power sources. This unique feature positions it as the go-to choice for workplaces devoid of electricity and gas supply, offering operational independence and energy conservation.

Adaptable to diverse working conditions, the regulator comes in three variants based on internal design: Single-Seat, Cage Type, and Double Seat. The selection among these variants can be tailored to specific working conditions, considering factors such as differential pressure, temperature, medium state, or leakage requirements.

The self-operated pressure regulator boasts a quick opening flow characteristic, ensuring rapid response and highly accurate adjustments with an error rate of less than 10%. This makes it an invaluable asset across various industries, including petroleum, chemical, electricity, metallurgy, food, textile, machinery, and civilian construction. Its application extends to reducing, releasing, or stabilizing the pressure of gases, steam, liquids, and more.

In essence, the Self-Operated Regulator emerges as a reliable and efficient solution, seamlessly integrating adaptability, energy efficiency, and precision in pressure regulation.



Diaphragm Actuator Regulator Assembly

1. BODY PART OPTIONAL SPECIFICATIONS

Series		ROS Self-Operated Regulator												
Nominal Diameter		20	25	32	40	50	65	80	100	125	150	200	250	300
Nominal Pressure		PN16~PN100; Class150~Class600												
Flow Rate Kv	Single Seat	7	11	20	30	48	75	120	190	300	480	760	-	-
	Cage Type	7	11	20	30	48	75	120	190	300	480	760	1210	1925
	Double Seat	-	-	22	33	53	83	132	209	330	528	836	1210	1925
Reduced bore	Seat Diameter	2				3	4	5	6	7	8	10	12	15
	Flow Rate Kv	0.01	0.02	0.04	0.06	0.08	0.12	0.2	0.32	0.5	0.8	1.8	2.8	4.4
	Rate Travel / mm	5												
Decompression ratio		Max 10:1, Min 1.25:1												
Flow Characteristic		Quick Open												
Basic Error		Diaphragm Actuator: $\pm 5\%$, Piston & Bellows Actuator: $\pm 10\%$												
Rate Travel / mm		8	10	14	20	25	40	50	60	70				

*The table lists the standard parameters that also can be customized to meet specific needs.

2. PERFORMANCE INDICATORS

Item	Diaphragm Actuator	Piston Actuator	Bellows Actuator
Basic Error	± 5.0	± 10.0	
Adjustable Ratio	Max 10:1, Min 1.25:1		
Recommend Range of Set Point / KPa	15~50, 40~80, 60~100, 80~140, 120~180, 160~220, 200~260, 240~300, 280~350 330~400, 380~450, 430~500, 480~560, 540~620, 600~700, 680~800, 780~900 880~1000, 950~1500, 1000~2500, 2000~3000, 2500~3500		

*The pressure adjustment range of the set point should be selected near the middle of the range, as specified in the table above, to ensure that the commonly used pressure setpoints fall within this optimal range.

*The self-operated regulator is a regulation system that requires a certain pressure drop. To maintain the accuracy of the downstream pressure set point, the upstream pressure must be within a specific range, which is at least 1.25 times the set point.

3. MAIN COMPONENT MATERIALS

Component	Commonly Used Materials	
Valve Body	WCB	CF3M/ CF8M/ CF3/ CF8
Seat	304/316+Stellite	304/316+Stellite
Stem & Plug	Metal Seal	304/316+Stellite
	Soft Seal	304/316+R.PTFE
Cage	304/316	304/316
Bellows	304/316/304L/316L	304/316/304L/316L
Packing	Graphite/ PTFE	
Diaphragm	NBR/ EPDM/ FKM	
Bonnet	WCB	CF3M/ CF8M/ CF3/ CF8

*The table lists commonly used materials that also can be customized to meet specific needs.

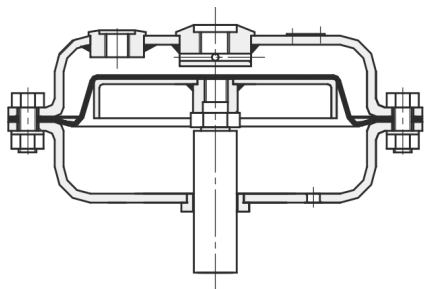
● WORKING TEMPERATURE RANGE AND LEAKAGE WITH DIFFERENT MATERIALS

Valve Body Material	WCB		CF3/ CF8/ CF3M/ CF8M
Temperature Range			
Actuator	Diaphragm	-5~160°C	≤ 350°C
	Piston	-5~200°C	≤ 350°C
	Bellows	-29~560°C	
Plug	Metal Seal: -196~450°C, Soft Seal: -29~200°C, Overlay Welding of Stellite: -196~560°C		
Packing	PTFE: -40~160°C, PTFE + Graphite: -60~-20°C/ 140~200°C, Graphite: -196~560°C		
Gasket	F4: -60~200, Stainless Steel + Graphite: -196~560		
Leakage			
Plug	Metal Seal (Class IV), Soft Seal (Class VI), Overlay Welding of Stellite (Class V)		

*If you need to use the valve at temperatures outside of its standard range, please consult us.

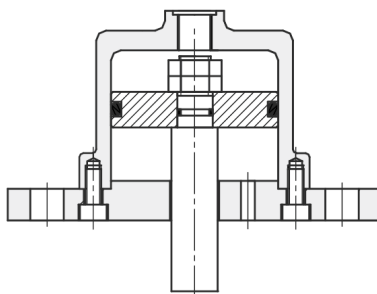


4. ACTUATOR



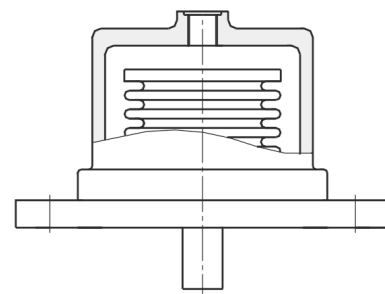
Diaphragm Actuator

Suitable for applications where the set pressure is less than or equal to 0.6 MPa, and requires sensitive operation.



Piston Actuator

Suitable for high-pressure applications where the set pressure is greater than or equal to 0.6 MPa.

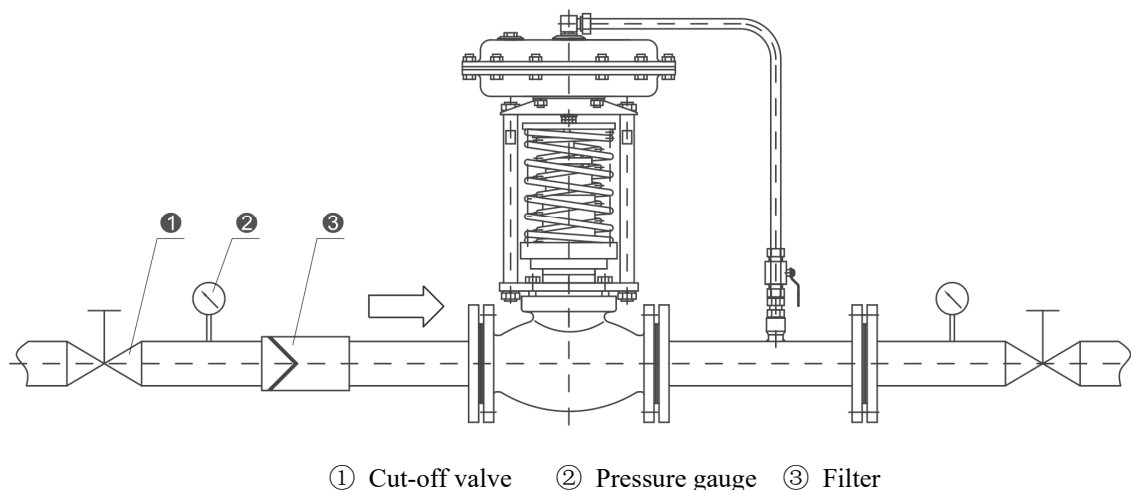


Bellows Actuator

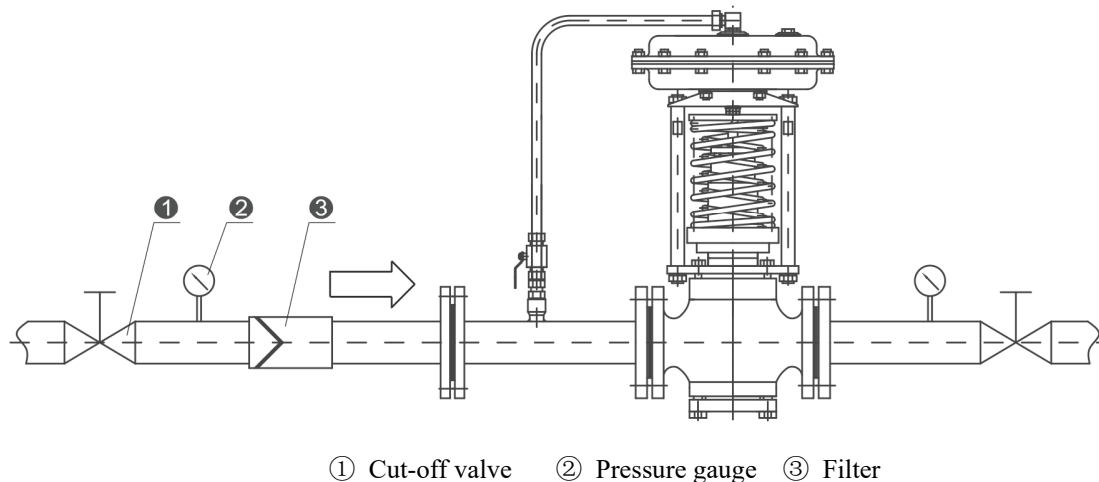
Suitable for special applications where rubber and diaphragms cannot be used.

5. TYPICAL APPLICATIONS

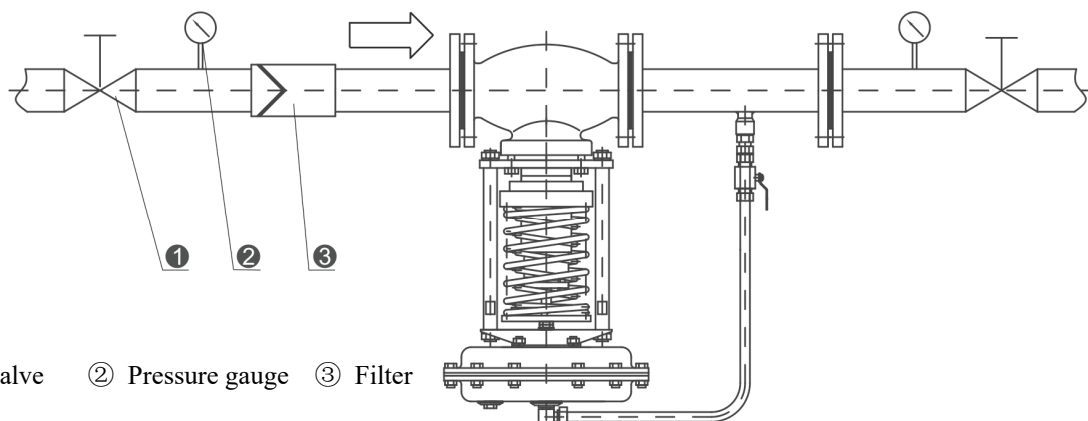
● FOR GAS, PRESSURE-REDUCING TYPE, FLITER IS OPTIONAL



● FOR GAS, BACK-PRESSURE TYPE, FLITER IS OPTIONAL

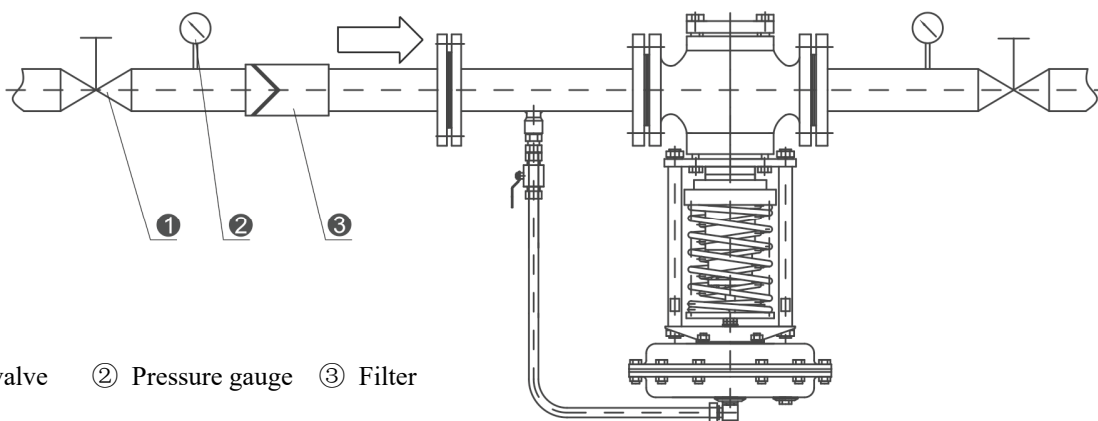


- FOR LIQUID, PRESSURE-REDUCING TYPE, FILTER MUST BE INSTALLED WHEN FLUIDS CONTAINING IMPURITIES.



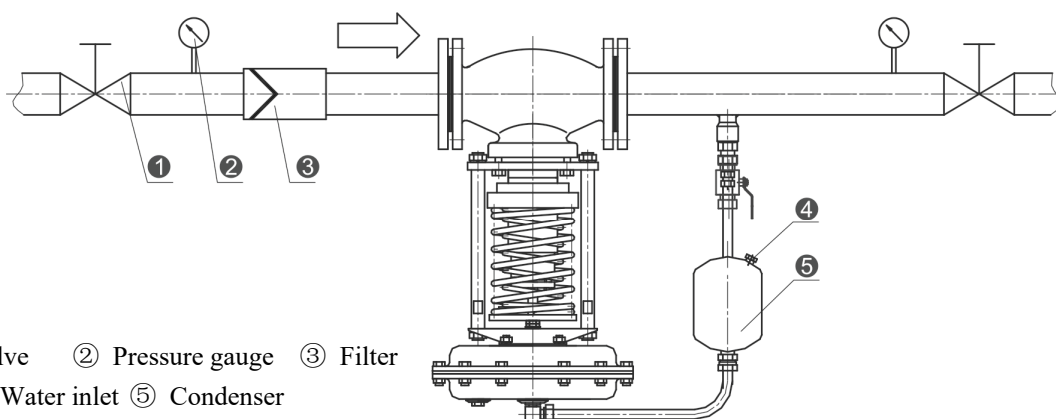
① Cut-off valve ② Pressure gauge ③ Filter

- FOR LIQUID, BACK-PRESSURE TYPE, FILTER MUST BE INSTALLED WHEN FLUIDS CONTAINING IMPURITIES.



① Cut-off valve ② Pressure gauge ③ Filter

- FOR STEAM, PRESSURE-REDUCING TYPE, A CONDENSER SHOULD BE INSTALLED, AND A FILTER IS RECOMMENDED.



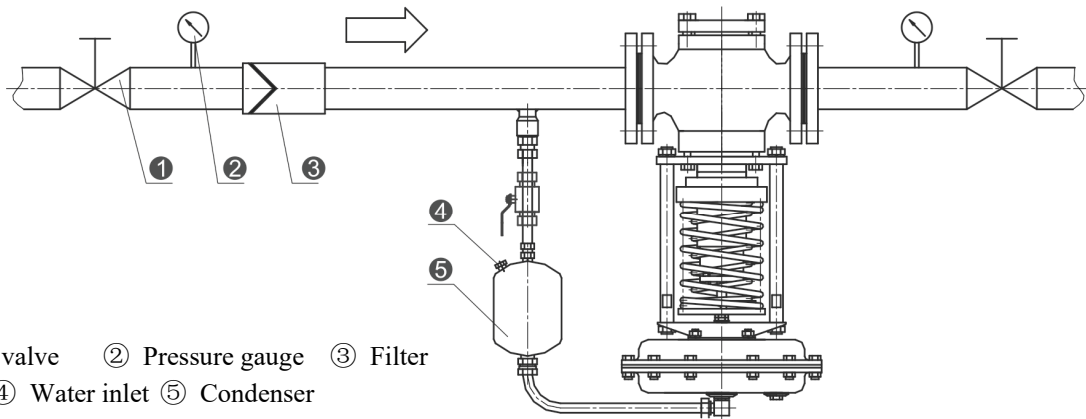
① Cut-off valve ② Pressure gauge ③ Filter
④ Water inlet ⑤ Condenser

*When installing the condenser, attention should be paid to its position, ensuring it is higher than the actuator but lower than the process pipeline to ensure the condenser is filled with condensate.

*Before using the condenser, open the water inlet plug and fill it with pure water or condensate; it must be filled completely.



- **FOR STEAM, PRESSURE-REDUCING TYPE, A CONDENSER SHOULD BE INSTALLED, AND A FILTER IS RECOMMENDED.**



*When installing the condenser, attention should be paid to its position, ensuring it is higher than the actuator but lower than the process pipeline to ensure the condenser is filled with condensate.

*Before using the condenser, open the water inlet plug and fill it with pure water or condensate; it must be filled completely.

6. SPECIAL REQUIREMENTS

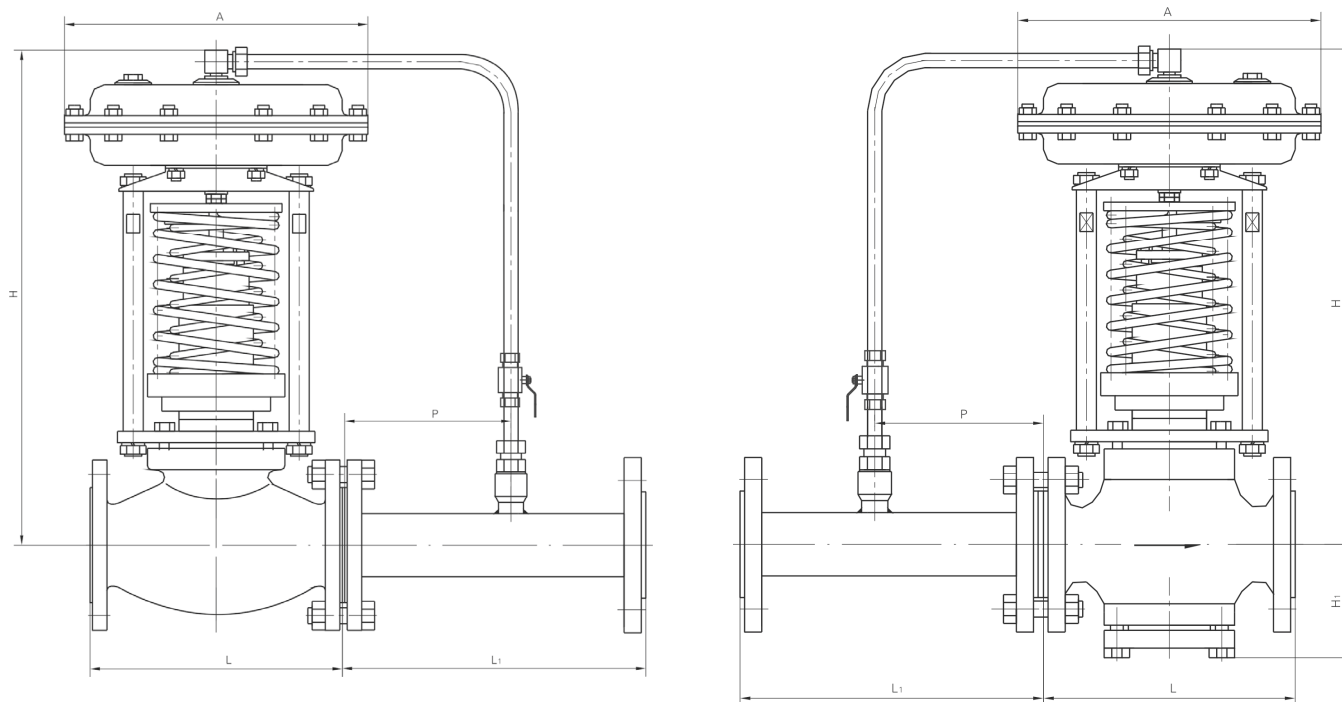
- Special inspection
- Use under vacuum conditions
- Complete oil and water removal treatment
- Special medium (oxygen, etc.)
- Copper-free treatment
- Use of stainless steel fittings
- Special interface and fitting
- Specified coating color

* If you have any of these special requirements for your valve purchase, please let us know. We offer customization to meet your specific needs.



7. DIMMENSIONS AND WEIGHT

● PRESSURE-REDUCING TYPE , BACK-PRESSURE TYPE



● PRESSURE-REDUCING TYPE

Unit: mm

Nominal Diameter, DN		15	20	25	32	40	50	65	80	100	125	150	200	250	300
L	PN16, PN40	150	150	160	180	200	230	290	310	350	400	480	600	650	740
	PN63, PN100	206	206	210	230	251	286	311	337	394	450	508	650	690	770
H		495	495	502	514	517	522	600	605	653	708	770	785	877	990
A		Ø132, Ø196, Ø232, Ø282, Ø308													
L ₁		233	233	233	332	332	373	572	552	673	980	900	1200	1270	1600
P _≥		45	45	70	102	140	185	245	325	425	550	660	900	1135	1350
Weight/ Kg		26	26	26	36	37	42	73	90	115	130	145	180	200	250

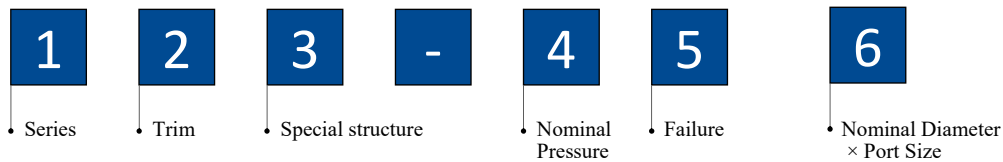
● BACK-PRESSURE TYPE

Unit: mm

Nominal Diameter, DN		15	20	25	32	40	50	65	80	100	125	150	200	250	300
L	PN16, PN40	150	150	160	180	200	230	290	310	350	400	480	600	650	740
	PN63, PN100	206	206	210	230	251	286	311	337	394	450	508	650	690	770
H		495	495	502	514	517	522	600	605	653	708	770	785	877	990
H ₁		83	83	83	93	95	110	128	140	160	215	230	268	385	420
A		Ø132, Ø196, Ø232, Ø282, Ø308													
L ₁		233	233	233	332	332	373	572	552	673	980	900	1200	1270	1600
P _≥		45	45	70	102	140	185	245	325	425	550	660	900	1135	1350
Weight/ Kg		26	26	26	37	39	45	76	98	120	143	151	189	212	273



BASIC MODEL NUMBERS



① Series

ZZY	Self-Operated Regulator
ZZV	Micro Pressure Self-Operated Regulator
ZZY-II	Pilot Drive Self-operated Regulator
ZZW	Self-Operated Temperature Control Regulator

② Trim

P	Single Seat
M	Cage Guided
G	Single Seat Balanced
N	Double Seats
X/ Q	Three Way
S	Angle

③ Special structure

S	Standard Bonnet (can be omitted)
E	Extension Bonnet
B	Bellows Bonnet
C	Cryogenic Bonnet
J	Jacket Insulation
L	Low Noise

④ Nominal Pressure

6	PN6
10	PN10
16	PN16
20	PN20, Class150
25	PN25
40	PN40
50	PN50, Class300
63	PN63
100	PN100, Class 600
250	PN250, Class 900
320	PN320, Class 1500
420	PN420, Class 2500

⑤ Failure

B	Pressure Reducing Type
K	Back-Pressure Type

⑥ Nominal Diameter × Port Size

Nominal Diameter/ mm (inch) : 15(1/2"), 20(3/4"), 25 (1"), 32(1 1/4"), 40(1 1/2"), 50(2"), 65(2 1/2"), 80(3"), 100(4"), 125(5"), 150(6"), 200(8"), 250(10"), 300 (12"), 350(14"), 400(16")
Port Size/ mm (inch) : 2, 3, 4, 5, 6, 7, 8, 10, 12, 15 (1/2"), 20(3/4"), 25(1"), 32(1 1/4"), 40(1 1/2"), 50 (2"), 65(2 1/2"), 80(3"), 100(4"), 125(5"), 150(6"), 200(8"), 250(10"), 300(12"), 350(14"), 400(16")

*For full size valve, the Port Size can be omitted.

Example: ZZYP-16K DN50x32 indicates an ZZY series single seat self-operated valve, standard bonnet, nominal pressure PN16, pressure reducing valve, nominal diameter DN50, and port size of 32mm.

specifications are subject to change without notice.



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