CNZPV
ZHIPENG AUTOMATIC CONTROL VALVE
智鹏控制阀

Installation And Operation Instruction

Fluorine-Lined Regulating Valve
-ZPL500 Series

智鹏阀门集团有限公司
ZHIPENG VALVE GROUP CO., LTD

◆Products Introduction

The ZPL500 series of fluorine-lined control valves are coated with a layer of fluoroplastic on the surface of the valve body and valve core that comes into contact with the fluid, completely cutting off the corrosive media from contact with metal and effectively blocking the corrosive media from corroding all metal materials. It has good sealing performance, sensitive action, precise flow characteristic, and is widely used in strong corrosive media such as acids, alkalis, salts and gaseous and liquid media that are easy to volatilize and penetrate.

The Classification Of ZPL500 series:

1.ZPL510F Packing Gland Seal Fluorine-Lined Regulating Valve;

2.ZPL510WF Bellows Pipe + Packing Gland Seal Fluorne-Lined Regulating Valve;

3.ZPL520F Fluorine-Lined Balanced Regulating Valve.

The 3rd Generation

The 4th Generation

ZPL510F Series

◆Application And Characteristics

ZPL510F fluorine-lined regulating valve (packing seal) is constructed with a high-temperature molding process lining material, ensuring that the inner surface and internal components of the valve are covered with fluoroplastic. With roughed processing on metal , the lining material is securely bonded to it, significantly enhancing both its working life and performance.
This valve effectively isolates corrosive mediums from contacting any metal materials within its structure, providing exceptional resistance against corrosion. With excellent sealing capabilities, responsive action, and precise flow characteristics, it finds extensive applications in environments involving strong corrosive media such as acids, alkalis, salts as well as volatile and penetrative gas or liquid substances.

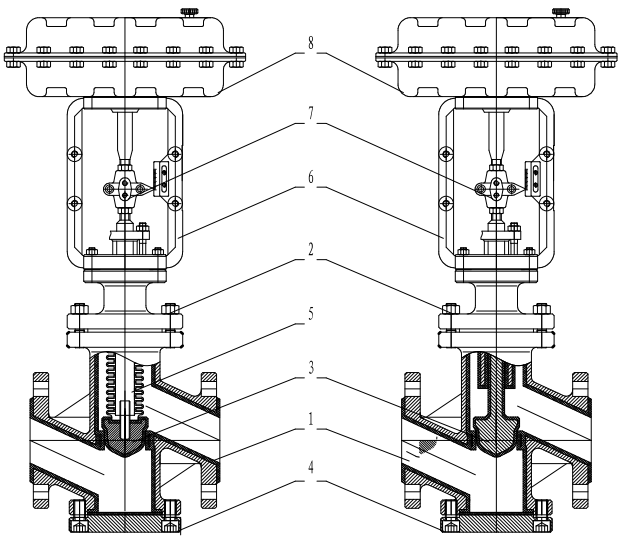
ZPL510WF PTFE-lined control valve (Bellows pipe and packing seal) has the performance of ZPL510F valve stem seal structure, and adds PTFE Bellows pipe seal and V-shape PTFE packing as two combination seals. This eliminates any leakage of the media from the valve stem. It can achieve multiple sealing protection to prevent media leakage and provide better sealing guarantee for demanding media (chlorine, liquid chlorine, etc., which are highly toxic and strongly corrosive).

The Advantage Of ZPL510WF:
1. Corrosion resistance: corrosion resistance of almost all media (including concentrated nitric acid and aqua regia).
2. Good sealing performance: PTFE Bellows pipe or HC sealing and V-shape PTFE packing two kinds of combined sealing structure to ensure no leakage.
3. Low leakage：achieved through the utilization of soft seals for both the valve core and valve seat.

Users can select the suitable valve goods based on specific operating conditions (including pressure differential, temperature, and medium state)

- ◇ The ZPL510F fluorine-lined regulating valve (packing seal) is specifically designed for general corrosive media applications.
- ◇ The ZPL510WF fluorine-lined regulating valve (Bellows pipe and packing seal) is specially engineered to handle highly toxic and extremely corrosive media with strong penetration capabilities, such as chlorine, liquid chlorine, bromine, etc.
- ◇ The product is suitable for low-pressure differentials (within 0.5MPa) and corrosive media, with a temperature range of -35℃ to 160℃, applicable for pipe diameters up to DN50. For high-pressure differential corrosive media like liquid chlorine, we recommend selecting our metal regulating and cut-off valves

◆Product Structure



ZPL510WF ZPL510F

1. Body
2. Bonnet
3. Core
4. Bottom Plate
5. Bellows Pipe
6. Bracket
7. Split Nut
8. Pneumatic Actuator

◆Materials For Main Parts

Body/Upper Bonnet Material	LCB,16Mn,WCB,304,316,316L
Core Material	F304,F316,HC
Inner-Lined Material	F40(ETFE),F46(FEP),PFA
Bellows Pipe Material	TFM1600,HC276
Stem Material	17-4PH,HC276,304
Valve Type	Straight-through type, Angle type, Jacket insulation type
Upper Bonnet Type	Standard Type
Temp. Range	-40℃ to 160℃
Stem Seal Form	Standsrd packing seal, Corrugated pipe seal

Leakage Level	ANSI B16.104 Grade VI
Flow Characteristic	Linear, EQ%,ON/OFF,Cut-off
Ends	Flang(RF/FM)
Adjustable Scale	30:1 50:1
Flange Connection Standard	HG20592-2009,ANSI B16.5
Available Actuators	Pneumatic Diaphragm Type(ZP6100)
	Pneumatic Piston Type(ZP6200)
	Electric Type
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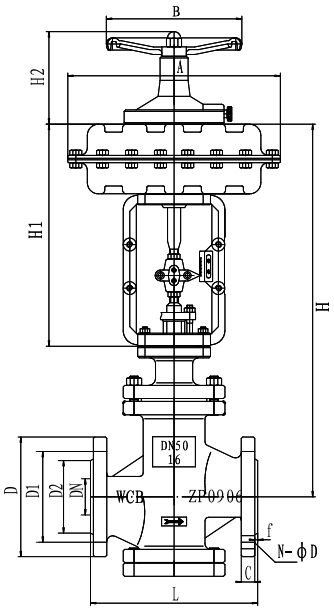
◆Parameters & Indicators

- Rated CV Value & Travel-Length

Nominal Diameter	Seat Size	Rated CV Value		Travel-Length
		EQ%	Linear	
20	6	0.4	—	16
	8	1.0	---	16
	10	1.6	---	16
	15	4.0	---	16
	20	6.3	10	16
25	6	0.4	---	16
	8	1.0	---	16
	10	1.6	---	16
	15	4.0	---	16
	20	6.3	10	16
	25	10	16	16

Nominal Diameter	Seat Size	Rated CV Value		Travel-Length
		EQ%	Linear	
32	32	17	25	25
40	40	24	35	25
50	50	44	55	25
65	65	68	85	40
80	80	99	135	40
100	100	175	210	40
125	125	275	345	60
150	150	360	466	60
200	200	640	735	60
250	250	960	1000	100
300	300	1300	1500	100

◆Outer Size



Outer Size

Nominal Diameter	L	H	H1	H2	A	B	Travel-Length
DN15	130	465	295	125	290	190	16
DN20	150	465					
DN25	160	465					
DN32	180	530	325	125	290	190	25
DN40	200	530					
DN50	230	530					
DN65	290	660	380	165	365	230	40
DN80	310	660					
DN100	350	665					
DN125	400	900	495	215	475	280	60
DN150	480	900					
DN200	600	920					

Flange Connecting Size(PN16)

Nominal Diameter	D	D1	D2	C	f	N-ΦD
DN15	95	65	45	16	3	4-Φ14
DN20	105	75	55	18	3	4-Φ14
DN25	115	85	65	18	3	4-Φ14
DN32	140	100	75	18	3	4-Φ18
DN40	150	110	85	18	3	4-Φ18
DN50	165	125	100	18	4	4-Φ18
DN65	185	145	120	18	4	8-Φ18
DN80	200	160	135	20	4	8-Φ18
DN100	220	180	155	20	4	8-Φ18
DN125	250	210	185	22	4	8-Φ18
DN150	285	240	210	22	5	8-Φ22
DN200	340	295	265	24	5	12-Φ22

(The size of the product is subject to the physical object)

◆ Installation Notice

1.After carefully inspecting the valve (Tag No. , type, nominal diameter, nominal pressure, material, etc.) prior to installation, ensure that it complies with the required specifications and that the flow direction indication on the valve's body with the fluid flow direction in the pipeline.
2.The valves should be installed vertically on horizontal pipelines with the actuator positioned above, and Inclined installation should be avoided. Vertical installation is strictly prohibited for valves with a diameter of 65mm or above (including 65mm).
3.If the pipe or valve connection flange is composed of a metallic material., a fluoroplastic sealing gasket must be used to prevent the valve sealing surface from being damaged and leaking prematurely.
4.The installation of a bypass can guarantee uninterrupted production in the event of product maintenance or failure.
5.The product is meticulously designed and manufactured in strict accordance with the specified parameters outlined in the technical specifications. In case of any changes to the usage parameters, please promptly contact our company (special requirements should be communicated prior to placing an order).
6.The product has undergone thorough inspection and calibration prior to delivery. If feasible, it is recommended to perform an additional examination of the sealing and external leakage before installation.
7.The product's accessories have been carefully adjusted to the optimal position prior to delivery, therefore it is advised not to make any random adjustments.
8.The pipeline must undergo blowing and testing both before and after installation. In this particular scenario, it is essential for the valve to be fully open.

◆ Repair & Maintenance

1.Fluorine-lined control valves are used in highly corrosive media., it is essential to wear protective gear during maintenance and operation. Strict adherence to the operating procedures is crucial in order to prevent accidents during disassembly.
2.During maintenance, operators should position themselves beside the valve rather than in front of it. Especially at the time of dealing with hazardous substances such as toxic, flammable, and explosive media.
3.When there is a leakage in the seal, close off the signal source to enable automatic closure of the valve. If no further leakage occurs in the seal subsequently, it means signal drift has occurred. Then adjust the signal accordingly.If there is still leakage, close the pipeline and inspect for any potential damage to the seal. If no damage is found, clean the impurities and reinstalling it. In case of any damage there, replace the valve immediately and discontinue its usage.
4.When there is a leakage in the packing, it is typically resolved by tightening the cover nut (3 to 5 rounds is enough). If the leak persists even after tightening more than 5 rounds, immediate cessation of work is required and an inspection for cracks and corrosion in the valve must be conducted. It is strictly prohibited to replace the packing under pressured pipelines containing toxic, flammable, explosive, or highly corrosive media.
5.Before installation, it must be confirmed that the technical parameters of the valve are consistent with the specifications, otherwise the valve will vibrate. The vibration can also be solved by changing the flow direction (high inlet and low outlet). If it still cannot be solved, please contact us to redesign the production. It is strictly prohibited to continue use to prevent vibration-induced valve stem fracture.
6.For conditions where crystallization occurs easily (soft conditions), it is important to diligently inspect for any blockages caused by the crystallization process and take measures to prevent a decrease in flow rate and pressure.

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