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TYCO VALVE CO., LTD

LIQUID CONTROL SOLUTIONS



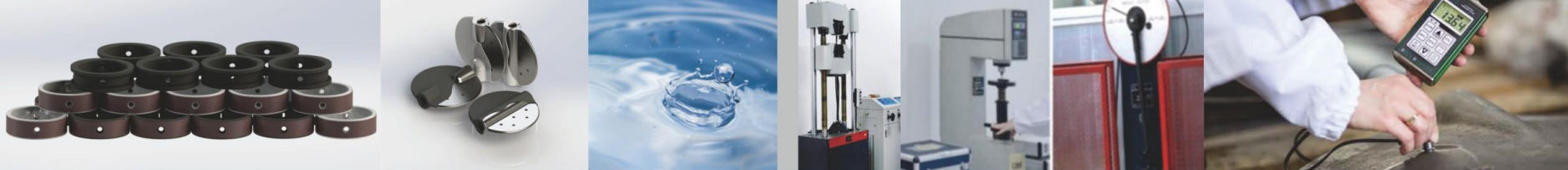
TKYCO

**TYCO VALVE CO., LTD**

**FLUID CONTROL  
SOLUTIONS**

全方位流体控制解决方案

中外合资 Sino Foreign Joint Venture



## Company Profile 企业简介

泰科阀门有限公司是一家集研发、设计、开发制造为一体的企业，拥有多处生产基地，引进先进的制造工艺和管理体系，通过国家ISO9001质量体系认证和ISO14001环境管理体系认证。

泰科阀门有限公司长期以来从事暖通、给排水、消防系统产品，市政工程、火灾产品等行业，具有很高的知名度和影响力。

泰科阀门有限公司一贯坚持以产品质量为企业生命的宗旨，给客户 provide 适合的产品和快捷的售前售后服务。

Tkyco Valve Co., Ltd. is an enterprise integrating R&D, design, development and manufacturing. It has many production bases, introduces advanced manufacturing technology and management system, and has passed the national ISO9001 quality system certification and ISO14001 environmental management system certification.

Tkyco Valve Co., Ltd. has long been engaged in HVAC, water supply and drainage, fire protection system products, municipal engineering, fire products and other industries, with high popularity and influence.

Tkyco Valve Co., Ltd. has always adhered to the purpose of taking product quality as the life of the enterprise, providing customers with suitable products and fast pre-sales and



## Production Workshop 生产车间

我公司拥有高精度的数控机床和加工中心，先进的设备及检测仪器，精良的工艺以及严格完善的质量管理体系，并聚集具有专业技术精英和领先水平的科技队伍，充分利用新技术、新工艺、新材料保证产品的稳定性和可靠性，产品质量取源于制造手段的先进，精品意识源于不断创新。

Our company has high-precision CNC machine tools and processing centers, advanced equipment and testing instruments, excellent technology and strict and perfect quality management system, and gathers professional technical elites and leading scientific and technological teams to make full use of new technologies, new processes and new materials to ensure the stability and reliability of products. The product quality comes from the advanced manufacturing means, High quality consciousness comes from continuous innovation.



# 800X Differential Pressure Balance (bypass) Valve



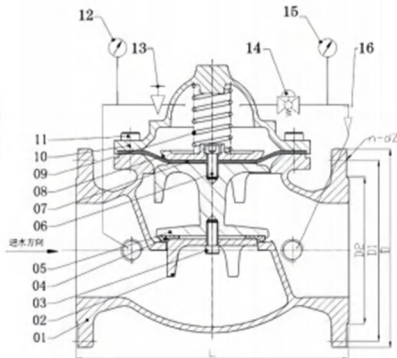
## Product introduction

The pressure difference balance (bypass) valve produced by the factory is mainly used in the air conditioning system between the supply/return water, to ensure that the pressure difference between the supply/return water is at a fixed value, improve the utilization rate of system energy, reduce noise, and prevent excessive pressure difference from damaging the system equipment, which is mainly composed of the main valve and pressure difference guide valve.

## Main technical performance

PN	1. 0MPa	1. 6MPa	2. 5MPa
Shell test pressure	1. 5MPa	24MPa	3. 75MPa
Seal test pressure	1. 1MPa	1. 76MPa	2. 75MPa
Suitable temperature	0°C-80°C		
Suitable medium	water		

## Outline of main dimensions and structure



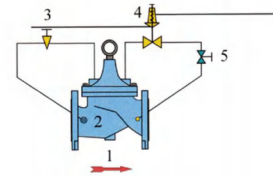
1. Valve body
2. Guide plate
3. Bolts
4. O-ring seal
5. Main valve disc
6. Bolts
7. Diaphragm
8. Diaphragm pressure plate
9. Spring
10. Valve cover
11. Bolts
12. Pressure Gauge
13. Needle valve
14. Differential pressure guide valve
15. Pressure Gauge
16. Needle valve

# 800X Differential Pressure Balance (bypass) Valve

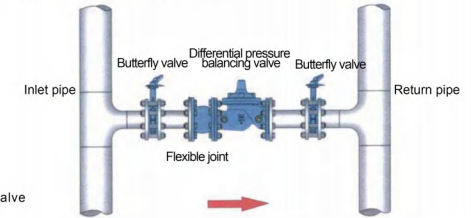


## Install

- 1, inspection before installation: after loading and unloading to the destination, first check and confirm according to the contents of the instructions, whether the piping is correct, whether the connection is reliable, whether there is damage to the valve during transportation, and whether various parts are complete.
- 2, the impurities in the pipeline should be cleaned before installation and the corresponding method should be checked. The pressure grade and nominal diameter of the flange of the valve should be consistent with that of the valve. Keep the pipe clear.
- 3, before and after the differential pressure balance (bypass) valve, two gate valves should be installed for testing and maintenance.
- 4, the pressure difference guide valve of the induction pressure pipeline should be directly connected to the water supply and return pipeline. To accurately reflect the pressure difference between supply and return. For the convenience of installation and use, the ball valve can be installed on the induction pipeline.



1. Main valve 2. Filter 3. Needle valve 4. Guide valve 5. ball valve



## Use

- 1, Check whether all gate valves, ball valves and needle valves are in full pass state before use.
- 2, Observe the pressure between supply/return water, adjust the pressure differential guide valve according to the pressure difference value, unscrew the top cap above the guide valve, rotate the top screw with an adjustable wrench, from the top down, the pressure difference increases when rotating clockwise, the pressure difference decreases when rotating counterclockwise, rotate according to the required pressure difference value, when the pressure difference reaches the required requirements, screw on the top cap. At this time, the pressure difference will be guaranteed at the set pressure difference value, regardless of the pressure change of the pipeline.
- 3, the action speed of the main valve can be adjusted by the needle valve, when the clockwise rotation of the action slowed down, when the counterclockwise rotation of the action accelerated, under normal circumstances, the needle valve has been set, without the need for adjustment.

## Maintenance

- 1, should regularly check whether the pressure difference between the supply/return water is within the required range.
- 2, Possible situations  
The pressure difference between supply and return water is less than the set value: Check the main valve for non-shuttable operation because it is stuffed with foreign matter. Check whether the needle valve is securely closed or almost closed. The pressure difference between supply/return water is greater than the set value: check whether the outlet ball valve is closed.

## Matters needing attention

- Differential pressure balance (bypass) valves should not be applied outside the scope recommended by the supplier, the following warnings are not all, but are helpful.
- A. Differential pressure balance (bypass) valves should not be used on pipelines with higher than nominal pressure.
  - B. Differential pressure balance (bypass) valve should not be used on other unsuitable recommended media.
  - C. Differential pressure balance (bypass) valves should not be exposed to freezing temperatures.



## Product introduction

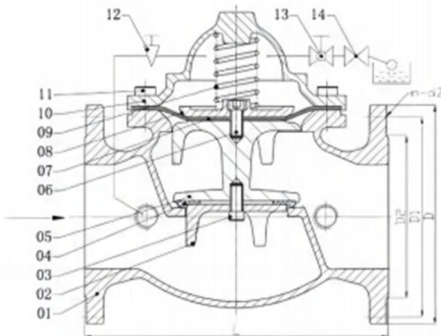
The product is designed and manufactured by the engineering and technical personnel of our factory with reference to the same type of advanced products at home and abroad. The valve body adopts the full-channel streamline design, the fluid resistance is small, the flow is large and the sealing effect is good. As the main valve is equipped with a conduit control system, the use of hydraulic operation, can automatically control the water level of the water tower or pool, simple maintenance, flexible and durable, high accuracy of level control, water level is not disturbed by water pressure and close tight water leakage, welcome to buy.

## Main technical performance

PN	1.0MPa	1.6MPa	2.5MPa
Shell test pressure	1.5MPa	24MPa	3.75MPa
Seal test pressure	1.1MPa	1.76MPa	2.75MPa
Suitable temperature	0°C-80°C		
Suitable medium	water		

## Outline of main dimensions and structure

The valve is composed of a main valve, a needle valve, a ball valve, a float valve and a micro-filter, as shown in Figure 1.



1. Valve body
2. Guide plate
3. Bolts
4. O-ring seal
5. Main valve disc
6. Bolts
7. Diaphragm
8. Diaphragm pressure plate
9. Spring
10. Valve cover
11. Bolts
12. Needle valve
13. Ball Valve
14. Float ball valve

Figure 1

## Main Dimensions (1)

DN	L	D			D1			D2			Z-φd		
		PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
50	203	165	65	165	125	125	125	99	99	99	4-φ19	4-φ19	4-φ19
65	216	185	185	185	145	145	145	118	118	118	4-φ19	4-φ19	8-φ19
80	241	200	200	200	160	160	160	132	132	132	8-φ19	8-φ19	8-φ19
100	292	220	220	235	180	180	190	156	156	156	8-φ19	8-φ19	8-φ23
125	310	250	250	270	210	210	220	184	184	184	8-φ19	8-φ20	8-φ28
150	356	285	285	300	240	240	250	211	211	211	8-φ23	8-φ23	8-φ28
200	457	340	340	360	295	295	310	266	266	274	8-φ23	12-φ28	12-φ31

## Main Dimensions (2)

DN	L	D			D1			D2			Z-φd		
		PN1	PN1	PN2	PN1	PN1	PN2	PN1	PN1	PN2	PN10	PN16	PN25
250	490	395	405	425	350	355	370	219	219	330	12-φ23	12-φ28	12-φ31
300	535	445	460	485	400	410	430	370	370	389	12-φ23	12-φ28	16-φ31
350	625	505	520	550	460	470	490	430	430	503	16-φ22	16-φ26	16-φ34
400	745	565	580	620	515	525	550	482	482	548	16-φ26	16-φ30	16-φ36
450	\	615	640	670	565	585	600	532	545	\	20-φ26	20-φ30	20-φ36
500	\	670	715	\	620	650	\	580	609	\	20-φ26	20-φ33	\
600	\	780	840	\	725	770	\	682	720	\	20-φ30	20-φ36	\

## Working principle

When the pipe is fed water from the inlet end of the valve, because the needle valve 12, ball valve 13 and float valve 14 are normally open, the water through the needle valve 12 into the valve cover control room, and then through the ball valve 13 and float valve 14 flow into the water tank, the control room can not form pressure, then into the main valve disc under the inlet pressure to lift the main valve disc, open the main valve disc to the water tank. When the water level in the tank gradually rises and the float ball is lifted, the float ball valve 14 is closed, and the water in the valve cover control room gradually increases the pressure until the main valve disc is closed, which plays the role of automatic remote control.

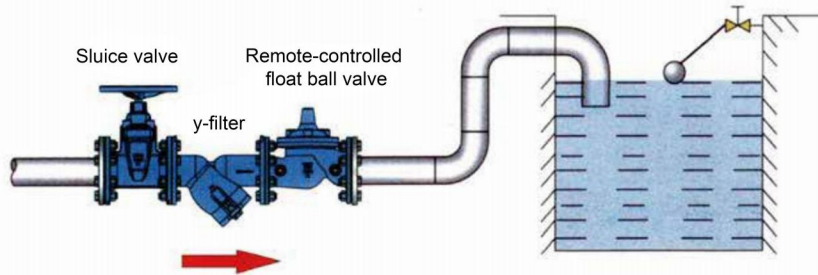
# 100X remote control float ball valve



## Installation and maintenance

- 1, The main room is installed on the water inlet pipe of the pool or the high water tower, the best installation method is to install it horizontally on the pipeline, with the cabinet facing upward, and other installation methods, can also achieve the operation function.
- 2, before installation to thoroughly remove the debris in the pipeline, thoroughly flush the pipeline, when installing, pay attention to the arrow indicating the water flow outside the main room and follow the direction of installation.
- 3, before the main room to install a brake room and a filter, after the main room to install a gate valve, in order to facilitate maintenance.
- 4, When testing the water, slowly open the gate in front of the main room, slowly increase the pressure, and pay attention to whether the control pipeline outside the main width leaks.
- 5, float ball valve installed on the main room, for the factory packaging convenience.

## Installation diagram



## Instructions

- 1, this installation method is suitable for any caliber valve, for the convenience of future maintenance, please leave a large enough entry hole.
- 2, If the main valve is installed in the shaft, there should be enough maintenance space around the main valve. When the main valve is a piston type, the entry hole should be located at the upper end of the main valve to facilitate the lifting of the piston during maintenance.

# 300X Slow Closing Check Valve



## Product introduction



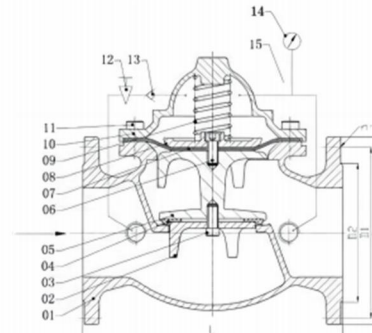
The product is designed and manufactured by our engineering and technical personnel with reference to the advanced products of the same type in the United States, France and China. The valve body adopts the full-channel streamline design, the fluid resistance is small, the flow is large, and the sealing effect is good. Since the main valve is equipped with a conduit control system, the hydraulic automatic operation can make the main valve disk get the best opening or closing speed, so as to prevent the phenomenon of water hammer and water hammer, so as to achieve the effect of slow closing and noise reduction. This product is the ideal product for high-rise building water supply system and other water supply system to prevent water backflow, welcome to buy.

## Main technical performance

PN	1.0MPa	1.6MPa	2.5MPa
Shell test pressure	1.5MPa	24MPa	3.75MPa
Seal test pressure	1.1MPa	1.76MPa	2.75MPa
Suitable temperature	0°C-80°C		
Suitable medium	water		

## Structural pattern

The valve is composed of a main valve, a needle valve, a check valve and a pressure gauge. Since check valves, needle valves and pressure gauges are connected to the main valve with a catheter, they are collectively referred to as the catheter control system, as shown in the figure below.



1. Valve body
2. Guide plate
3. Bolts
4. O type sealing ring
5. Main valve disc
6. Bolts
7. Diaphragm
8. Diaphragm pressure plate
9. Spring
10. Valve cover
11. Bolts
12. Needle valve
13. Check valve
14. Pressure Gauge
15. Ball Valve

# 300X Slow Closing Check Valve



## Main Dimensions (1)

DN	L	D			D1			D2			Z-φd		
		PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
50	203	165	165	165	125	125	125	9	99	99	4-φ19	4-φ19	4-φ19
65	216	185	185	185	145	145	145	118	118	118	4-φ19	4-φ19	4-φ19
80	241	200	200	200	160	160	160	132	132	132	8-φ19	8-φ19	8-φ19
100	292	220	220	235	180	180	190	156	156	156	8-φ19	8-φ19	8-φ23
125	310	250	250	270	210	210	220	184	184	184	8-φ19	8-φ19	8-φ28
150	356	285	285	300	240	240	250	211	211	211	8-φ23	8-φ23	8-φ28
200	457	340	340	360	295	295	310	266	266	274	8-φ23	8-φ28	8-φ31

## Main Dimensions (2)

DN	L	D			D1			D2			Z-φd		
		PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
250	490	395	405	425	350	355	370	219	219	330	12-φ23	12-φ28	12-φ31
300	535	445	460	485	400	410	430	370	370	389	12-φ23	12-φ28	16-φ31
350	625	505	520	550	460	470	490	430	430	503	16-φ22	16-φ26	16-φ34
400	745	565	580	620	515	525	550	482	482	548	16-φ26	16-φ30	16-φ36
450	/	615	640	670	565	585	600	532	545	/	20-φ26	20-φ30	20-φ36
500	/	670	715	/	620	650	/	580	609	/	20-φ26	20-φ33	/
600	/	780	840	/	725	770	/	682	720	/	20-φ30	20-φ36	/

## Working principle

When the pipe is fed from the inlet end of the valve, the water through the needle valve 12 and check valve 13 enters the valve cover control room. It is then excreted downstream through the catheter. Due to the small opening of the needle valve, generally open 1/4 circle can be, so the discharge speed in the control room is greater than the inlet water refill speed, thus reducing the pressure in the control room, and the inlet pressure that has been acting under the main valve disc lifts the main valve disc, thus opening the main valve disc to the downstream water supply. When the pipe stops supplying water, water downstream begins to flow back. Due to the role of check valve 13 a part of the backflow water can not flow out after entering the valve cover control room by the catheter, and gradually increase the pressure, and finally make the main valve disc tightly closed, prevent the downstream water back-flow and play a slow closing and muffing check effect.

## Installation and regulation

1. the best way to install the main valve is horizontally installed on the pipeline, the valve cover is facing up, other installation methods can also achieve the use of the function.
2. to thoroughly remove the debris in the pipeline before installation. Pay attention to the arrow indicating the water flow outside the main valve body during installation, and follow the direction of installation.
3. A gate valve and a filter should be installed before the main valve, and a gate valve should also be installed after the main valve for easy maintenance.
4. the pipe must be thoroughly flushed before the water.
5. When testing water, slowly open the gate valve in front of the main valve, slowly increase the pressure, and pay attention to whether the control pipeline outside the main valve body leaks.

# 500X Pressure Relief (holding pressure) Valve



## Product introduction

The valve is designed and manufactured by engineering and technical personnel of our company with reference to the advanced products of the same type in the United States, France and China. The transmission mode adopts hydraulic operation and can be started and controlled. The valve body adopts the streamlined design, the internal water head loss is small. The main feature of the valve is that it can be used as a pressure relief valve and a pressure holding valve. When used as a pressure relief valve, it can release the pressure in the water pipe that exceeds the safety set value of the guide valve, and maintain the pressure in the pipe below a safety set value to prevent the high pressure or sudden pressure damage to the pipeline or equipment. It can be used for the pressure relief of the circulating system and other water supply systems in high-rise buildings to prevent the system danger caused by excessive water pressure; When the pressure holding valve is used, the upstream water supply pressure of the main valve can be maintained above a certain set value to ensure the pressure of the upstream water supply area of the main valve. In short, this product is the ideal product for water supply system, welcome to buy.

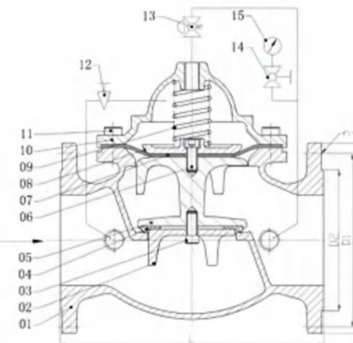


## Main technical performance

PN	1. 0MPa	1. 6MPa	2. 5MPa
Shell test pressure	1. 5MPa	2. 4MPa	3. 75MPa
Seal test pressure	1. 1MPa	1. 76MPa	2. 75MPa
Differential opening and closing pressure	≤0. 1MPa		
Suitable temperature	0~80℃		
Suitable medium	water		

## Structural pattern

The valve consists of a main valve, a pilot valve, a needle valve, a ball valve, a pressure gauge, etc. Because the pilot valve, needle valve, ball valve and pressure gauge are connected with the main valve with a catheter, they are collectively referred to as the catheter control system, as shown in the figure below.



1. Valve body
2. Guide plate
3. Bolts
4. O-ring seal
5. Main valve disc
6. Bolts
7. Diaphragm
8. Diaphragm pressure plate
9. Spring
10. Valve cover
11. Bolts
12. Needle valve
13. Pilot valve
14. Ball Valve
15. Pressure Gauge

# 500X Pressure Relief (holding pressure) Valve



## Main Dimensions (1)

DN	L	D			D1			D2			Z-φd		
		PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
50	203	165	165	165	125	125	125	99	99	99	4-φ19	4-φ19	4-φ19
65	216	185	185	185	145	145	145	118	118	118	4-φ19	4-φ19	8-φ19
80	241	200	200	200	160	160	160	132	132	132	8-φ19	8-φ19	8-φ19
100	292	220	220	235	180	180	190	156	156	156	8-φ19	8-φ19	8-φ23
125	310	250	250	270	210	210	220	184	184	184	8-φ19	8-φ19	8-φ23
150	356	283	285	300	240	240	250	211	211	211	8-φ23	8-φ23	8-φ23
200	457	340	340	360	295	295	310	266	266	274	8-φ23	12-φ28	12-φ31

## Main Dimensions (2)

DN	L	D			D1			D2			Z-φd		
		PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
250	490	395	405	425	350	355	370	219	219	330	12-φ23	12-φ28	12-φ31
300	535	445	460	485	400	410	430	370	370	389	12-φ23	12-φ28	16-φ31
350	625	505	520	550	460	470	490	430	430	503	16-φ22	16-φ26	16-φ34
400	745	565	580	620	515	525	550	482	482	548	16-φ26	16-φ30	16-φ36
450	/	615	640	670	565	585	600	532	545	/	20-φ26	20-φ30	20-φ36
500	/	670	715	/	620	650	/	580	609	/	20-φ26	20-φ33	/
600	/	780	840	/	725	770	/	682	720	/	20-φ30	20-φ36	/

## Working principle

When the pressure relief valve is used, the main valve is installed in the drainage bypass, that is, it is connected with the main pipeline. When the upstream pressure gradually exceeds the set value of pilot valve 13, the main valve quickly opens the water relief and pressure reduction, until the upstream pressure drops below the set value of pilot valve 13, the main valve slowly and smoothly closes, avoiding the occurrence of water hammer and ensuring the safety of the pipeline. As a pressure relief valve, it is mainly used to eliminate the excessive pressure that gradually increases because the flow supply is greater than the demand, such as the initial fire fighting stage of the hydrant system, automatic spray and the water pump outlet of various water supply systems. When the pressure holding valve is used, the main valve is installed on the main road, that is, installed in series with the main pipeline. As long as the water supply pressure upstream of the main valve is lower than the set value of 13 the main valve is in the closed state. When the water supply pressure upstream of the main valve exceeds the set value of the pilot valve 13, the main valve will open and supply water down stream to the main valve, thus ensuring the water supply pressure upstream of the main valve. It is mainly used to maintain the minimum water supply pressure of the main pipe in the city, especially in the case of fire, which can prevent the branch pipe user from overpumping and reducing the pressure.

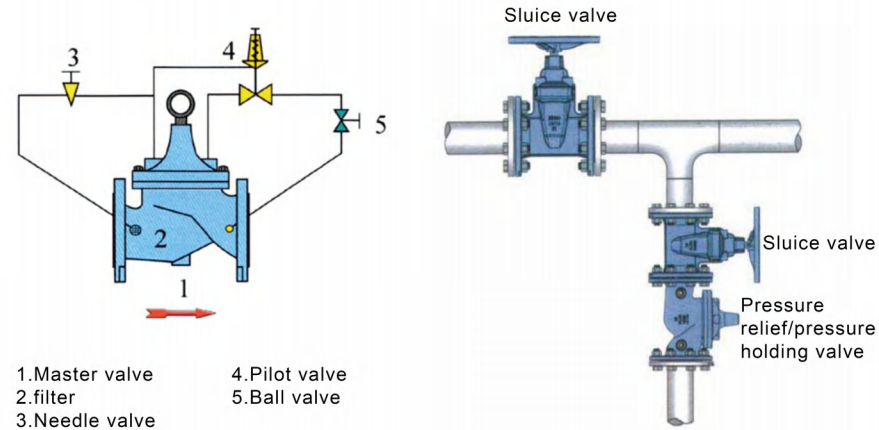
# 500X Pressure Relief (holding pressure) Valve



## Installation and regulation

1. The best installation method of the main valve is horizontal installation, the valve cover is facing up, and other installation methods can also achieve the function of use. The debris in the pipe should be thoroughly removed before installation. Pay attention to the arrow indicating the water flow outside the main valve body, and follow the direction of installation. After installation, ensure that no piping stress acts on the valve body and valve internals.
2. A gate valve and a filter should be installed before the main valve, and a gate valve should also be installed after the main valve for easy maintenance.
3. Before pressure adjustment, first close the needle valve 12 and then open half a circle. When adjusting the pressure, first loosen the locking nut of the pilot valve, and then turn the pilot valve bolt clockwise to increase the pressure, otherwise to reduce the pressure, and lock the locking nut after adjusting.
4. The pipe must be thoroughly flushed before the water.

## Installation diagram



# 200X Pressure Reducing Valve



## Product introduction

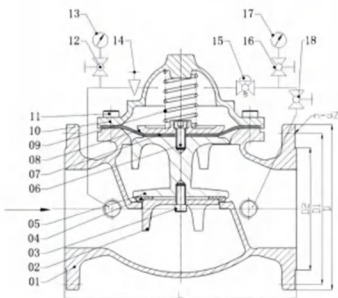
This product is designed and manufactured by our engineering and technical personnel with reference to the advanced products of the same type in the United States, France and China. The valve body adopts the full-channel streamline design, the fluid resistance is small, the flow is large. Hydraulic operation is adopted in the transmission mode, that is, the water pressure in the pipeline is used to automatically operate the up and down movement of the main valve disc, control the opening of the valve port, adjust the downstream pressure, so that the downstream pressure is maintained on the pressure value set by the pilot valve spring. When the downstream pressure exceeds the set value, the pressure reducing valve will automatically close to ensure that the outlet pressure is unchanged. In short, this product is the ideal product for domestic water supply, fire protection system and industrial water supply system, welcome to buy.

## Main technical performance

PN	1.0MPa	1.6MPa	2.5MPa
Shell test 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
Outlet pressure adjustable range	0.09~0.8MPa	0.15~1.2MPa	0.15~1.6MPa
Suitable temperature	0° C~80° C		
Suitable medium	water		

## Structural pattern

The valve consists of a main valve, a pilot valve, a needle valve, a ball valve, and a pressure gauge. Because the pilot valve, needle valve and pressure gauge are connected to the main valve with a catheter, they are collectively referred to as the catheter control system, as shown in the figure below.



- |                             |                    |
|-----------------------------|--------------------|
| 1. Valve body               | 11. Bolts          |
| 2. Guide plate              | 12. Ball Valve     |
| 3. Bolts                    | 13. Pressure Gauge |
| 4. O-ring seal              | 14. Needle valve   |
| 5. Main valve disc          | 15. Pilot valve    |
| 6. Bolts                    | 16. Ball Valve     |
| 7. Diaphragm                | 17. Pressure Gauge |
| 8. Diaphragm pressure plate | 18. Ball Valve     |
| 9. Spring                   |                    |
| 10. Valve cover             |                    |

# 200X Pressure Reducing Valve



## Main Dimensions (1)

DN	L	D			D1			D2			Z-φd		
		PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
50	203	165	165	165	125	125	15	99	99	99	4-φ19	4-φ19	4-φ19
65	216	185	185	185	145	145	145	118	118	118	4-φ19	4-φ19	8-φ19
80	241	200	200	200	160	160	160	32	132	132	8-φ19	8-φ19	8-φ19
100	292	220	220	235	180	180	190	156	156	156	8-φ19	8-φ19	8-φ23
125	310	250	250	270	210	210	220	184	184	184	8-φ19	8-φ19	8-φ28
150	356	285	285	300	240	240	250	211	211	211	8-φ23	8-φ23	8-φ28
200	457	340	340	360	295	295	310	266	266	274	8-φ28	8-φ28	12-φ31

## Main Dimensions (2)

DN	L	D			D1			D2			Z-φd		
		PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
250	495	395	405	425	350	355	370	219	219	330	12-φ23	12-φ28	12-φ31
300	540	445	460	485	400	410	430	370	370	389	12-φ23	12-φ28	16-φ31
350	625	505	520	550	460	470	490	430	430	503	16-φ22	16-φ26	16-φ34
400	745	565	580	620	515	525	550	482	482	548	16-φ26	16-φ30	16-φ36
450	/	615	640	670	565	585	600	532	545	/	20-φ26	20-φ30	20-φ36
500	/	670	715	/	620	650	/	580	609	/	20-φ26	20-φ33	/
600	/	780	840	/	725	770	/	682	720	/	20-φ26	20-φ36	/

## Working principle

Hydraulic electric control valves are normally open and normally closed two types. Normally open type powered main valve closes, normally closed type powered main valve opens.

Working principle of normally open hydraulic electric control valve: Normally open hydraulic electric control valve, solenoid valve 13 must also be normally open and needle valve 12 and ball valve 15 are always normally open, so when the pipeline from the inlet end of the valve, through the needle valve 12 water into the valve cover control room, and then through the solenoid valve 13 and ball valve 15 flow to the outlet, the control room pressure is less than the inlet pressure, Therefore, the inlet pressure acting under the main valve disc lifts the main valve disc and opens the main valve disc to supply water downstream. When the main valve needs to be closed, just press the switch, the solenoid valve 13 is closed, then the water entering the control room can not flow to the outlet, the pressure in the control room is equal to the inlet pressure, due to the relationship between the pressure difference on the disc, so that the main valve is also closed.

For normally closed hydraulic electric control valve, the solenoid valve 13 must also be normally closed, the principle of action is the opposite of normally open, need to open, as long as one press the button, the solenoid valve 13 opens, the main valve also opens.



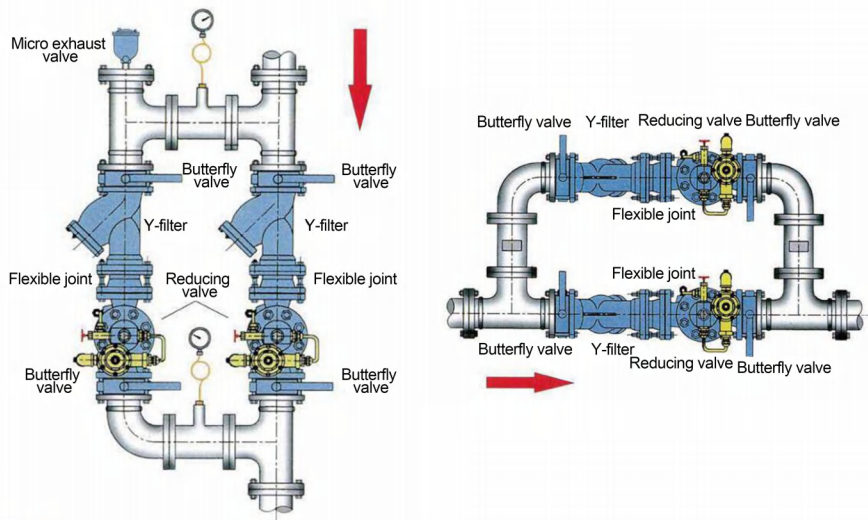
# 200X Pressure Reducing Valve



## Installation and regulation

1. The best way to install the main valve is horizontally installed on the pipeline, the valve cover is facing up, other installation methods can also achieve the use of the function, before installation to thoroughly remove the debris in the pipeline. Pay attention to the arrow indicating the water flow outside the main valve body, and follow the direction of installation. After installation, ensure that no line stress acts on the valve body and valve internals.
2. A gate valve and a filter should be installed before the main valve, and a gate valve should also be installed after the main valve for easy maintenance.
3. The pipeline system must be thoroughly flushed before water.
4. The important water supply pipeline should be in accordance with the bypass valve.
5. Pressure regulation method:
  - 1) Close the upstream isolation valve, open the downstream isolation valve pressure relief, reduce the downstream pressure less than 0.1MPa, close the downstream isolation valve;
  - 2) Screw the pilot valve adjusting screw to the top position;
  - 3) Slowly open the upstream isolation valve to full open;
  - 4) Tighten the pilot valve adjusting screw downward, and the outlet pressure will gradually increase until the adjusting screw is locked when the setting value is set;
  - 5) If the pressure is too much, it must be re-adjusted from the first step, that is, only from low pressure to high pressure.

## Installation diagram



# ZYC-16 Self-operated Differential Pressure Control Valve

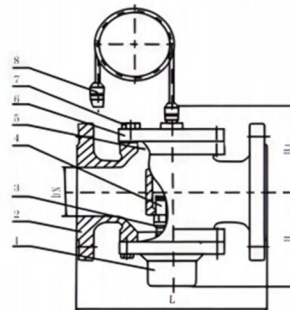


## use

Self-operated differential pressure control valve is an energy-saving product that uses the pressure change of the medium itself to self-control and keep the media differential pressure unchanged through the controlled system. Suitable for air conditioning, the heating method adopts the pressure difference control of the double pipe system, but also suitable for household metering heating system and variable flow air conditioning system, to ensure that the pressure difference of the system is basically unchanged, reduce noise, balance resistance, and eliminate the hydraulic imbalance of the heat network. Divided into water supply type (G) and return water type (H) according to installation location

## Structural pattern

As shown in the following figure, it is mainly composed of lower cover, valve body, valve core, upper cover, differential pressure regulator, connecting pipe, joint, diaphragm and spring.



1. Lower cover
2. Valve body
3. Spring
4. Spool
5. Diaphragm
6. Cover
7. Differential pressure regulator
8. connecting pipe, joint (1/2 ")

## Main dimensions and performance parameters (Flange size according to GB/T17241.6)

DN (mm)	Connection mode	L (mm)	H	H1	Flow rate m <sup>3</sup> /h	Applicable medium	Medium temperature
32	Flange	200	91	94	1-4	water	0~80°C
40		200	147	112	1.5-6		
50		200	120	112	2-8		
65		210	125	120	3-12		
80		260	188	133	5-20		
100		280	208	160	10-30		
125		290	226	175	15-45		
150		33	258	195	30-80		
200		405	301	230	40-180		
250		450	367	265	100-300		
300		600	430	300	150-500		
350		/	504	340	200-700		
400		/	396	400	275-900		
500		/	480	490	430-1400		
600		/	570	580	500-2000		

Nominal pressure: 1.0, 1.6, 2.5MPa

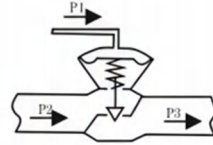
Applicable temperature: 0-80°C, 80°C~150°C (need to be customized)

# ZYC-16 Self-operated Differential Pressure Control Valve



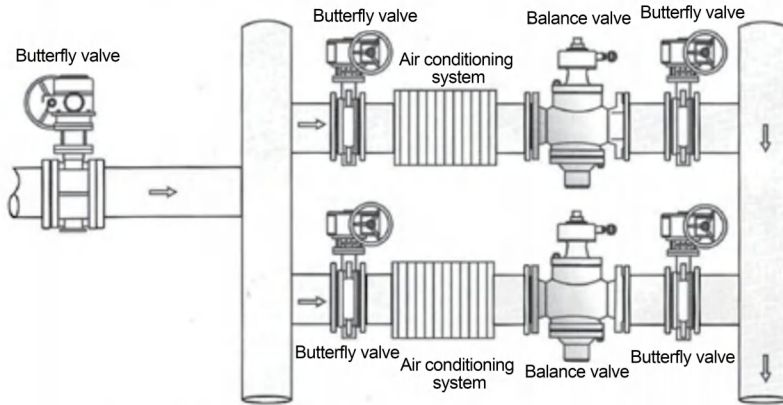
## Working principle

This paper takes the self-operated differential pressure control valve installed on the return water pipeline as an example to explain the working principle. When the water supply pressure  $P_1$  increases or decreases, the signal is passed into the upper cavity of the diaphragm by the connecting tube, which drives the valve core to move down or up, so that the flow area of the valve seat decreases or increases, and  $P_2$ - $P_3$  also increases or decreases until the original value of  $P_1$ - $P_2$  remains constant. When the return water pressure  $P_3$  increases or decreases, the flow rate from the seat to the outlet decreases or increases, and the pressure  $P_2$  under the diaphragm also increases or decreases at this instant, driving the valve core to move up or down until the force of the diaphragm is re-balanced,  $P_2$  recovers the original value, and  $P_1$ - $P_2$  maintains the original value, thus ensuring that the pressure difference between the water supply and return of the system is basically unchanged.



## Install

Install according to the water flow direction shown by the arrow on the valve body, the return water pressure differential control valve must be installed on the return water pipe, install the connecting pipe installation joint in the water supply pipe, and confirm that its inner hole is connected with the water supply pipe (the installation joint is 1/2 pipe thread), and then connect the other end of the connecting pipe with the control hole on the valve, the water supply pressure differential control valve must be installed on the water supply pipe. The connecting pipe and the backwater are communicated as shown in the figure below.



## Matters needing attention

1. The valve has no closing function, and a gate valve needs to be installed before and after the valve for easy maintenance;
2. in order to facilitate debugging, it is recommended to install ball valves at the junction of connecting pipes and pipelines;

# ZL47F-16 Dynamic Balancing Valve



## Use

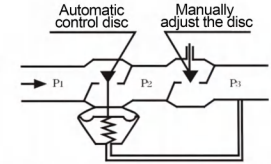
ZL47F-16 self-operated balancing valve produced by our unit is used in water systems requiring flow control, especially for the flow control of non-corrosive liquid media such as heating and air conditioning. A one-time adjustment before operation can make the system flow automatically constant at the required setting value.

## Peculiarity

1. Can make the system flow automatically balance at the required setting value;
2. Can automatically eliminate the hydraulic imbalance caused by various factors in the water system, maintain the user's required flow, customer service "uneven hot and cold", provide heating, air conditioning room temperature pass rate;
3. Can effectively customer the "large flow, small temperature difference" bad operation mode, provide system energy efficiency, to achieve economic operation.

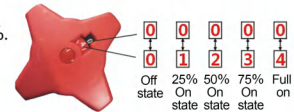
## Working principle

The self-balancing valve is composed of two parts: automatic regulating valve disc and manual regulating valve disc. The working pressure of the system fluid is  $P$ , and the pressure distribution of the front and back of the manually adjusted valve disc is  $P_2$  and  $P_3$ . When the valve disc is manually adjusted to a certain position, the "set flow" and the corresponding fixed ( $P_2$ - $P_3$ ) value are manually determined. When the system flow rate increases, the actual value of ( $P_2$ - $P_3$ ) exceeds the allowable given value, the automatic control valve plate automatically closes down until the flow rate is restored to the set flow rate, and vice versa.



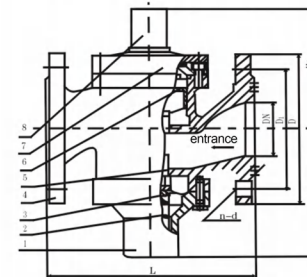
## Usage method

When the switch is turned to the 0 to 0 position, the valve is fully closed.  
 When the switch is turned to the 0 to 1 position, that is, the valve is open 25%.  
 When the switch is turned to the 0 to 2 position, the valve is 50% open.  
 When the switch is turned to the 0 to 3 position, the valve is open 75%.  
 When the switch is turned to the 0 to 4 position, the valve is fully open.



## Structural pattern

The valve is mainly composed of the valve body, upper and lower cover, automatic regulating valve disc, manual regulating valve disc, diaphragm and spring, as is shown in the picture on the right:



1. Lower cover
2. Spring
3. Diaphragm
4. Valve body
5. automatic control valve disc
6. Manually adjust the valve disc
7. Cover
8. Hand wheel

# ZL47F-16 Dynamic Balancing Valve



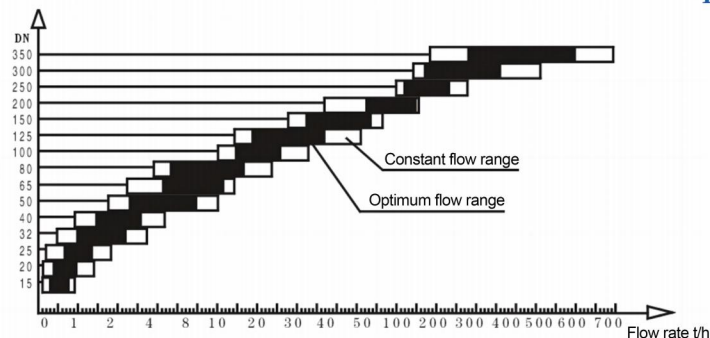
## Main dimensions and performance parameters

DN	L	D	D1	n-d	H <sub>1</sub>	H <sub>2</sub>	Flow control range M <sup>3</sup> /h
15	110	Threaded connection			72	70	0.1~1
20	110				72	70	0.1~1.5
25	115				81	74	0.2~2
32	200	135	100	4-18	108	91	0.5~4
40	200	145	110	4-18	138	147	1~6
50	200	160	125	4-18	138	147	2~10
65	210	180	145	4-18	143	154	3~15
80	260	195	160	8-18	170	189	5~25
100	280	215	180	8-18	193	211	10~35
125	290	245	210	8-18	208	227	15~50
150	336	280	240	8-22	254	260	30~80
200	405	335	295	8-22	289	303	40~180
250	450	405	355	8-26	325	367	100~300
300	600	460	410	8-26	357	430	150~500
350	670	520	470	8-26	372	495	200~700

## Product design and selection

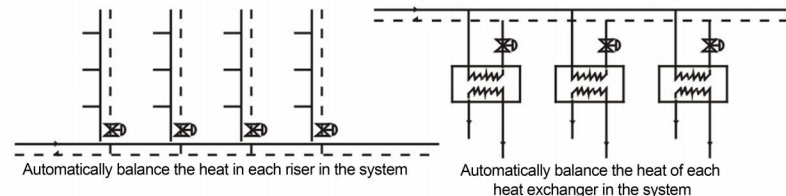
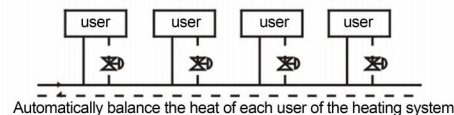
- Generally in the pipe network of large branch points, hot inlet, indoor risers should be designed and installed self-balancing valves to improve system regulation performance.
- The selection can refer to (main appearance size and performance parameter table) and (self-balancing valve selection diagram), the design flow should be selected in the black part of the figure.
- Self-balancing valve can be installed on the water supply pipe, can also be installed on the return pipe. When the working pressure of the system fluid exceeds the allowable working pressure of the radiator, for safety reasons, the self-balancing valve should be installed on the water supply pipe.
- The maximum operating temperature of 13°C, nominal pressure of 1.6MPa.
- Applicable pressure difference range: 20~300Kpa. When the working pressure difference on the system fluid exceeds 300Kpa, measures should be taken to consume the excess head in order to prevent noise.
- Self-operated balance valve does not have a turn-off function, according to the need to set another turn-off valve.
- Choose DN15~DN25 caliber self-balancing valve, must indicate the connection method.

# ZL47F-16 Dynamic Balancing Valve



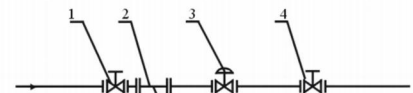
Self-balancing valve selection drawing

## ZL47F-16 self balancing valve is applied in the system



## Installation and commissioning

- Installation mode: horizontal, vertical can;
- When installing, pay attention to the water flow indicating arrow outside the valve body, follow the direction of installation;
- Before installation to thoroughly remove the debris in the pipeline, before the water must be thoroughly flushed pipeline;
- Flow adjustment method: remove the cap → loosen the locking nut → rotate the manual control valve disc clockwise with an adjustable wrench, pay attention to the flow value on the dial, align the required setting value with the marking line → tighten the locking nut → install the cap.



1. butterfly valve 2. filter 3. self-balancing valve 4. butterfly valve

Installation diagram of user entrance of hot water heating system