

The logo for TOA.V, featuring the letters 'TOA.V' in a bold, white, sans-serif font. The background of the entire page is a blue gradient with large, overlapping, semi-transparent circular shapes in various shades of blue and teal.

GENERAL CATALOG CONTROL VALVE AND FITTING

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Control HVAC System



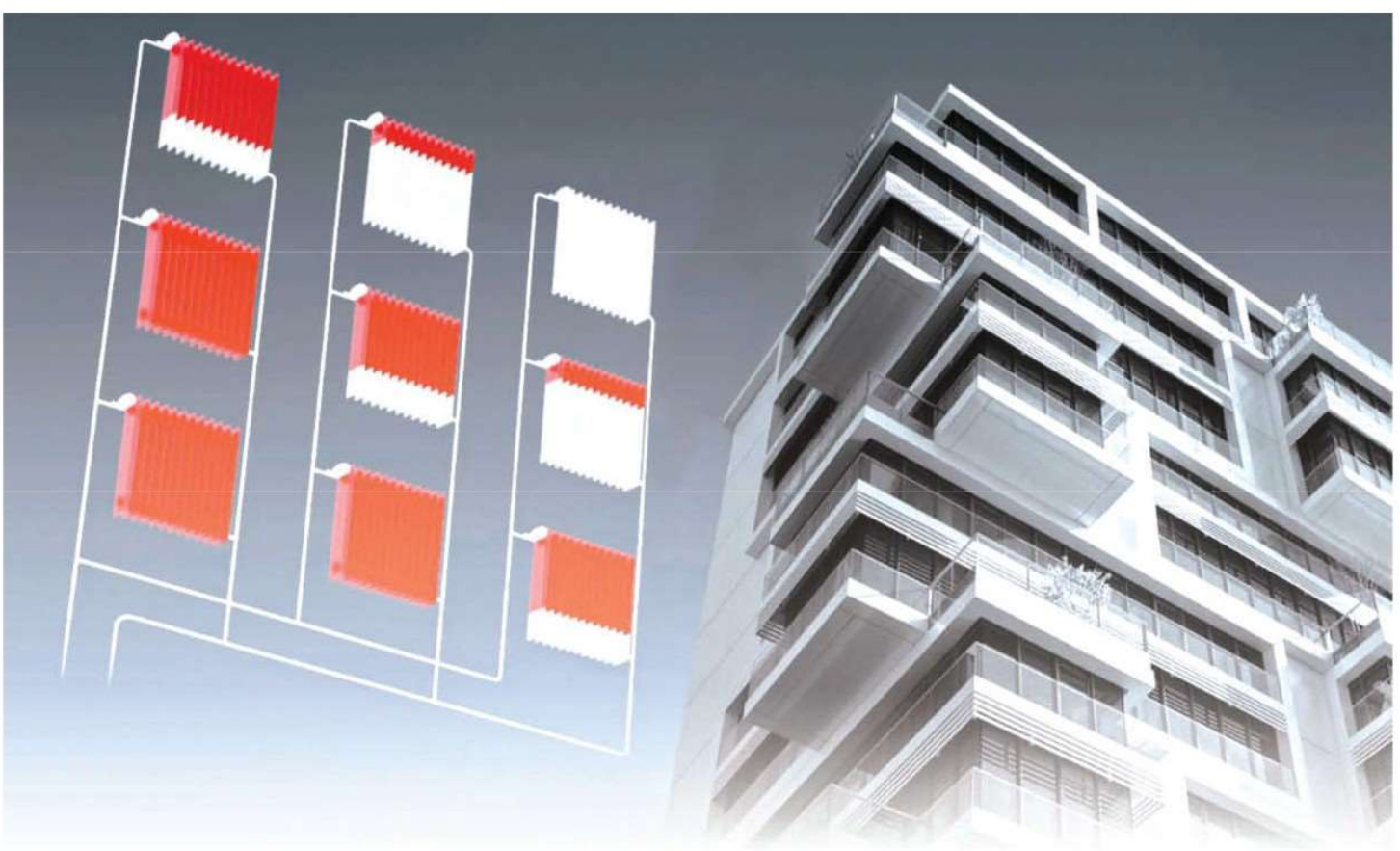
COMPANY PROFILE

TOA.V can provide comprehensive solutions of HVAC system and hydronic system, including main products such as Static Balancing Valves, Dynamic Balancing Valves, Two / Three Control valves, Room Thermostat, Thermostatic Control Valves and Compositive Manifolds, just to name a few. TOA.V will provide the highest quality green energy-saving products and the best quality service for the HVAC and heating industry to contribute significantly to energy conservation.

TOA.V insists on "Quality first, Customer first, Service first" as the spirit, taking effort to create more value and better life for customers and users. We are proud of many important and big projects in all over the world using our products, which is a critical motivation for TOA.V to non-stop research and develop to create new product lines with higher quality to bring the best value to our clients.

The advance of good products with a competitive price, and good time for delivery is manifested in our development orientation. Up to now, we commit to completing innovative solutions for problems including residential, commercial building and sustainable energy, and more importantly our clients will receive real values from TOA.V's solutions.





Hydronic Balancing

Hydronic balancing

The hydronic imbalance is divided into static hydronic imbalance and dynamic hydronic imbalance.

Static hydronic imbalance

In the pipeline system, the ratio of actual flow rate is inconsistent with the requirement of design flow for design, construction, equipment, material and other reasons. And then the total flow rate meets the demand of design flow rate, but terminal device is still not consistent with the design flow. So this is called static hydronic imbalance.

Feature of the Static hydronic imbalance

Steady and fundamental are inherent in the system itself.

Static hydronic balancing

By adding the static hydraulic balance device in the pipeline of water system, and the ratio of the actual flow is regulated in the initial system debugging regulation, the flow ratio consistent with the design requirements. The total design flow rate up to total design flow rate, and then the flow rate of each terminal equipment to meet the demand of design flow and realize the static hydronic balance.

Dynamic hydronic imbalance

During the actual operation of the system, when some of their terminal valve opening changes caused by water flow. The pressure of the system is fluctuating, so will other terminal flow change, so this is called dynamic hydronic imbalance.

Features of the Dynamic hydronic imbalance

Dynamic and mutative, which is not inherent, but in the process of running the system.

Dynamic hydronic balancing

By adding the dynamic hydronic balancing device in the pipeline of water system. Through the shielding application of dynamic hydronic balance device, the flow of the device does not change, and the flow of terminal equipment does not interfere with each other, and then achieved dynamic hydronic balance.

The Total Hydronic Balancing: Static hydronic balancing + Dynamic hydronic balancing

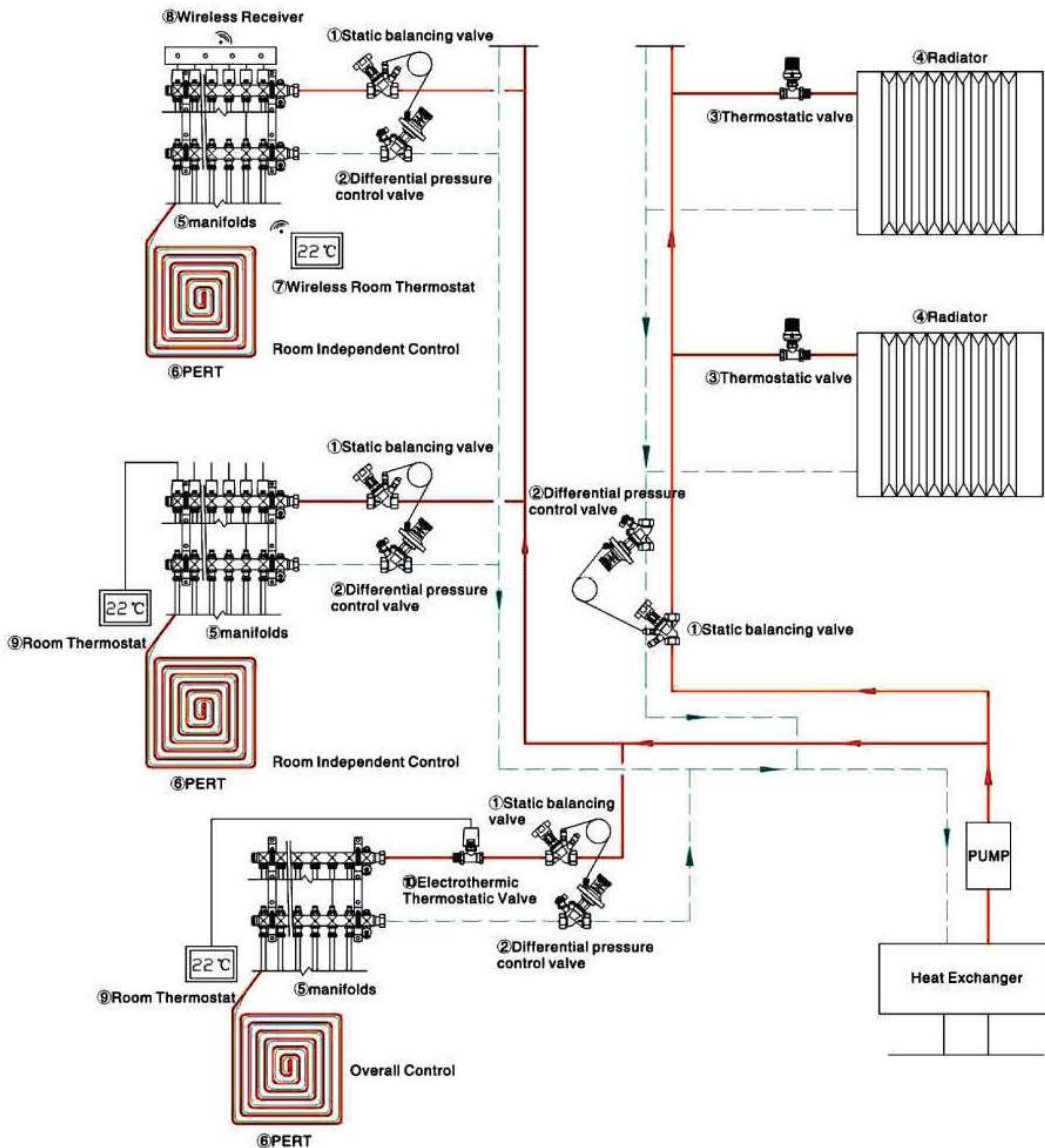
The advantage of total hydronic balancing system in HVAC system

I Energy-conservation: Compared to the traditional system save 6-20%.

I Efficiency: Greatly reducing the debugging time, the system has a higher efficiency.

I Comfortable: Temperature regulation is more accurate, it is more comfortable than traditional variable flow systems.

I Steady: Due to greatly reduce the mutual interference of their terminal equipment, so compared to the traditional system more stable.



Static balancing valves are installed in the manifolds, the level of pipe from each floor and main branch pipe so as to achieve the static hydraulic balance.

Differential pressure control valves are installed in branch pipes of the air-chilled water system, the main pipe, branch pipe and vertical pipe in the heating system to keep a constant pressure difference.

The hydraulic balancing scheme consists of a Static Balancing Valve and a Differential Pressure Control Valve, which can avoid imbalance of hydraulic and non-uniform temperature occurring in the heating area.

For the heating system, several control schemes can be adopted as follows:

1. Radiator control scheme

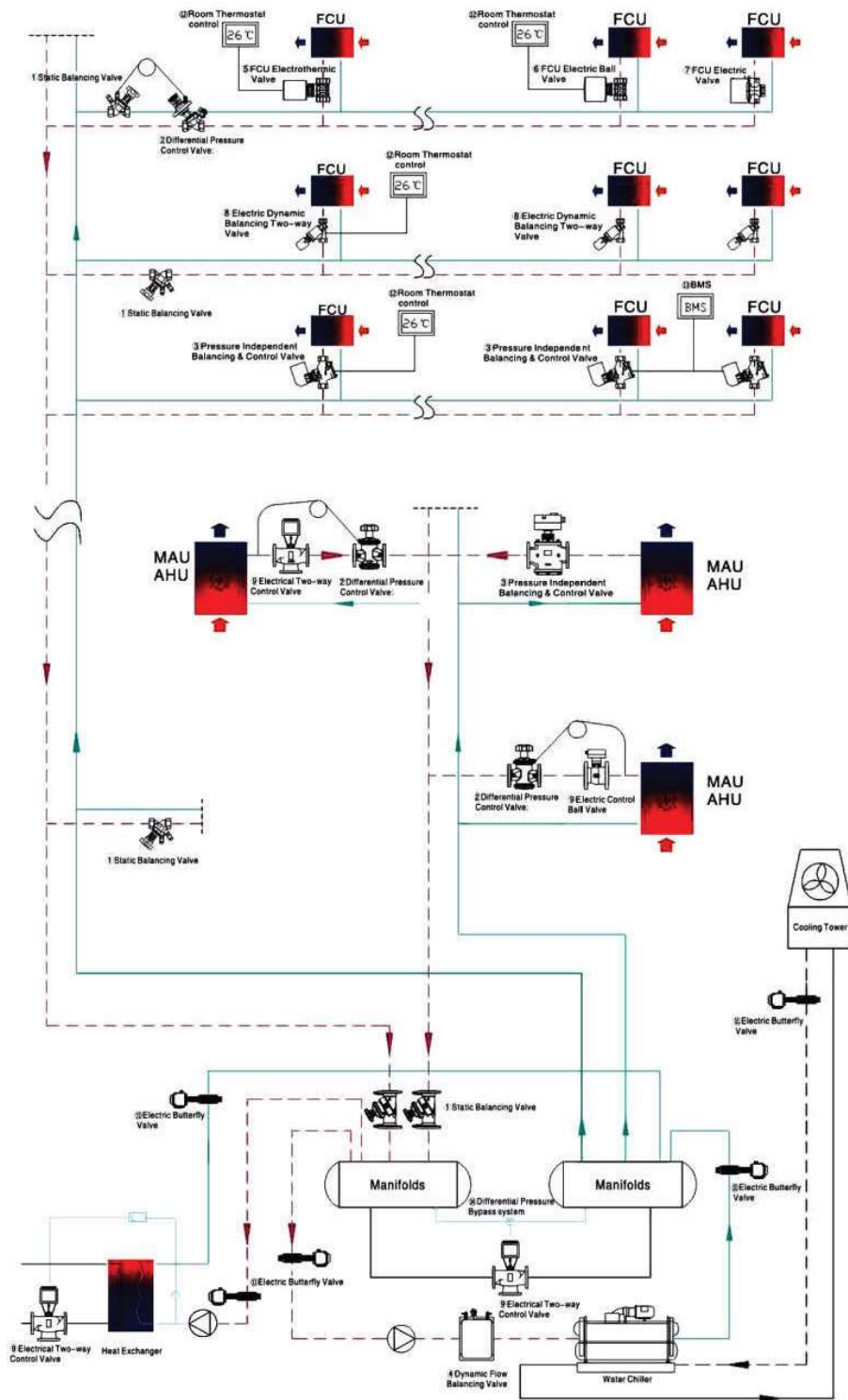
The thermostatic valve is an automatic control valve mounted on the radiator, which can automatically sense the environment temperature. Valve opening is further regulated without force at work, which can control the flow rate of the radiator to maintain the set temperature.

2. Under Floor Heating Independent Control

A wireless thermostat is installed in the room, through wireless signals and a wireless receiver independently. It is affected by the flow rate of PEAT to achieve the purpose of separate control temperature.

3. Under Floor Heating Total Control

Through the signal of a room thermostat to control on-off Electrothermic Thermostatic Valve and regulate the total capacity of the household, achieve the goal of controlling indoor temperature.



Valves And Controls For HVAC Applications

1. Static Balancing Valve: is installed in the manifolds pipe, the level of pipe from each floor and main branch pipe so as to achieve the static hydronic balance.
 2. Differential Pressure Control Valve: is installed in branch pipe of the air chilled water system, the main pipe, branch pipe and vertical pipe in heating system to keep constant pressure difference.
 3. Pressure Independent Balancing & Control Valve: is installed in return pipe of Air Handling Unit (AHU), Make-up Air Unit (MAU) and Fan Coil Unit*. (FCU) to control the flow off and on demand distribute flow uniformly, shield the pressure and flow. In other words. any opening position isn't affected by the influence of pressure fluctuations The flow is constant and unique. It isn't affected by the influence of pressure fluctuation.
 4. Dynamic Flow Balancing Valve: is installed in the Water Chiller and Variable Air Volume System conduit road, which can automatic constant water flow into the chiller within a certain range of differential pressure.
 5. FCU Electrothermic Valve: is installed in the return pipe of Fan Coil to control water on-off in the pipe
 6. FCU Electrothermic Valve: is installed in the return pipe of Fan Coil to control water on-off in the pipe
 7. FCU Electric Ball Valve: is installed in the return pipe of Fan Coil to control water on-off in the pipeline
 8. Electric Dynamic Balancing Two-way Valve: is installed in return pipe of Fan Coil Unit and control water on-off in the pipe. It can automatically constant water flow of fan COI units within a certain range of differential pressure, reach the balance at the end of pipe.
 9. Electrical Two-way Control Valve: applied in the Air Handling Unit (AHU), Make-Up Air Unit (MAU), it comminated with dynamic differential pressure balance valve, control the flow - off and on - demand distribute flow uniformly, shield the pressure and flow.
 10. Electric Control Ball Valve: applied in the Air Handling Unit (AHU), Make-up Air Unit (MAU), it comminated with dynamic differential pressure balance valve, control the flow - off and on - demand distribute flow uniformly, shield the pressure and flow.
 11. Electric Butterfly Valve: applied the air condition, heating and cooling in the automatic control system of the pipe to meet the demand of regulating the flow and shutoff the medium. Its 90-degree rotating open-close quickly adjust good performance, high precision actuator drive, opening and closing force as fluid resistance small, offer a variety of selection of control signals and feedback.
 12. Room Thermostat control: is installed in the room. It controls two-way valve and adjust the action of valves so as to control temperature.
 13. Building Management System (BMS), which controls two-way valve and adjust the action of valves so that regulate temperature of the room.
 14. Differential Pressure Bypass system consist of Differential Pressure Control Box, Electric Control Valve and Electric Butterfly Valve. It is installed in Sub-catchment among the by-passline. As the change of measurement point differential pressure, up and down electric by-pass valve to ensure constant pressure difference of the key points.
- The Total Hydronic Balancing of TOA.V; implement static hydronic balance and dynamic hydronic balance in the building system pipe network and to ensure that the whole system are more comfortable, energy-saving, stable and efficient operation.



Static Balancing Valve (DN15-DN50)

Application:

The series TSV Static Balancing Valve is designed for flow balancing in cooling, heating or process water system. Its shut-off feature can be instead the Globe valve, it also has the function of locking of maximum range. The function of locking will be opened after its system debugged. If the products need to be repaired, you can close the Static Balancing Valve, and then directly return to the maximum range. It can avoid the second text, save many time and cost. Its measuring joint enable convenient system troubleshooting. Static balancing valve be used in water supply or return water pipe.

Features:

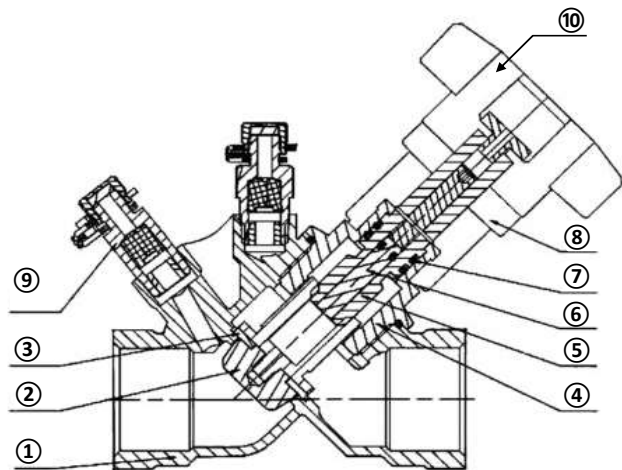
- Accurate flow control
- Numerical indicator of opening rate on the hand wheel
- Open lacking is easy
- Shut-off function achieved by handwheel
- Self-sealing measuring points to protect against leakage



Technical Specification:

Dimension: DN15-DN50
 Working Temperature: -10 ~ 70°C
 Working Pressure: PN25
 Fluid Medium: Cold and Hot Water / Ethylene Glycol
 Connection: Threaded Connection
 Connection Standard: EN10226 GB/T 7306,1-2000
 Materials:

1.Valve Body	Brass
2.Valve Core	Brass
3.Valve Base Sealing	PTFE/EPDM
4.Valve Bonnet	Brass
5.Valve Stem	Brass
6.Core Rod	DZR Brass CW602N
7.O-ring	EPDM
8.Sealing	Plastic ABS
9.Measuring Points	Brass
10. Handwheel	Nylon

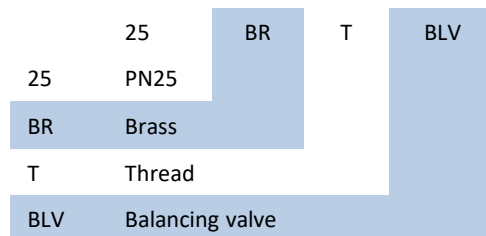


Technical parameters:

Product Type:

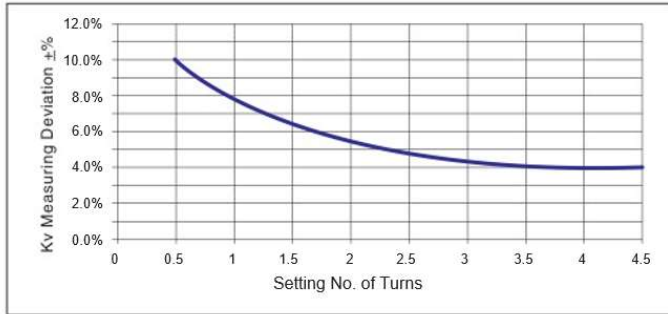
Type	DN	Kvs
25BRT-BLV	DN15	3.88
25BRT-BLV	DN20	5.71
25BRT-BLV	DN25	8.89
25BRT-BLV	DN32	19.45
25BRT-BLV	DN40	27.51
25BRT-BLV	DN50	38.78

Coding Rules:



Static Balancing Valve (DN15-DN50)

Measuring Accuracy:



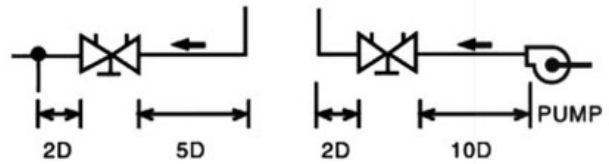
According to the GBT 28635-2012 standard, when the valve's operating rate is greater than 50%, the deviation is lower than +5%. Base on this, it is suggested to choose a valve with at least 50% opening rate when working under the design flow. Additionally, in order to ensure adequate on-site commissioning allowance, it is recommended to set the valve at around 75% opening rate.

Installation:

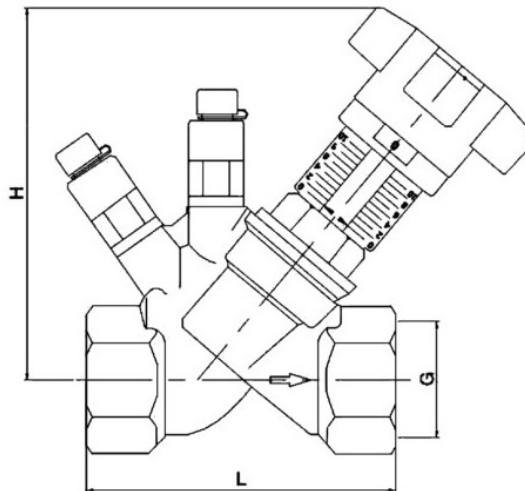
People should ensure that there is no debris in the system before installation, please note that static balancing valve with flowing arrow point in the direction of the flow. The Static Balancing Valve is usually installed on return pipe. When combined with Differential Pressure Balancing Valve, it can be used for supply pipe.

Generally, when connected to an elbow or a pump, the valve must keep a certain distance from the elbow or the pump. The rule is shown in the right figure.

When connecting to a bend or pump, it is necessary to maintain a certain length of straight pipe. When connecting with elbow, follow valve 5d, rear 2d principle. Follow the 10d principle when connecting with a pump.



Dimension:



DN	G	L(mm)	H(mm)	Kvs
DN15	G1/2	80	114	3.88
DN20	G3/4	84	116	5.71
DN25	G1	97.5	119	8.89
DN32	G1-1/4	110	136	19.45
DN40	G1-1/2	120	138	27.51
DN50	G2	150	148	38.78

Static Balancing Valve (DN40-DN500)

Application:

The series TSV Static Balancing Valve is designed for flow balancing in cooling, heating or process water system. Its shutoff feature can be instead the Globe valve, it else has the function of locking of maximum range. The function of locking will be opened after its system debugged. If the products need to be repaired, you can close the Static Balancing Valve, and then directly return to the maximum range. It can avoid the second text, save many time and cost. Its measuring joint enable convenient system troubleshooting. Static balancing valve be used in water supply or return water pipe.

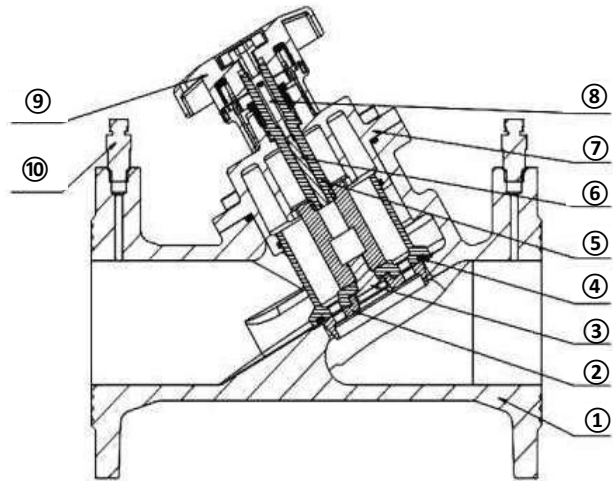
Features:

- I Accurate flow control
- I Numerical indicator of opening rate on the hand wheel
- I Open of the lock set position
- I Shut-off function achieved by handwheel
- I Self-sealing measuring points to protect against leakage

Technical Specification:

Dimension: DN40-DN500
 Working Temperature: -10 ~ 100°C
 Working Pressure: PN16
 Fluid Medium: Cold and Hot Water / Ethylene
 Connection: Flange Connection
 Connection Standard: EN1092-1/2 GB/T 17241.5-2008
 Materials:

1.Body	Ductile iron
2.Valve Core	Ductile iron/Stainless Steel Brass
3.Screw	Stainless steel
4.Sealing	PTFE/EPDM
5.Stem	Brass/Bronze/Stainless steel
6.Core Rod	Brass/Stainless steel
7.Bonnet	Ductile iron
8.Lock screw	Stainless steel
9.Handwheel	Nylon DN40-DN250 Die-Cast Aluminum DN300-DN500
10. Measuring Points	Brass



Coding Rules:

16	DJ	F	BLV
16	PN16		
DJ	Ductile Iron		
F	Flanged		
BLV	Balancing valve		

Technical Parameter:

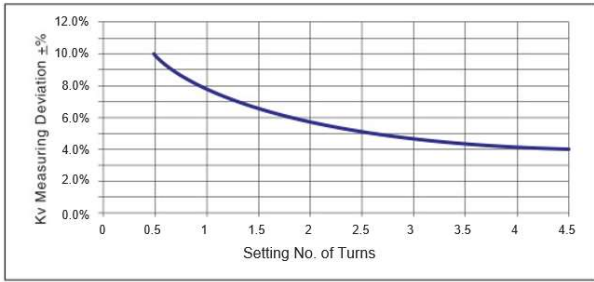
Product Type:

Type	DN	Kvs
16DJF-BLV	DN40	55.6
16DJF-BLV	DN50	55.6
16DJF-BLV	DN65	92.7
16DJF-BLV	DN80	114.5
16DJF-BLV	DN100	187.6
16DJF-BLV	DN126	286.6
16DJF-BLV	DN150	395

Type	DN	Kvs
16DJF-BLV	DN200	758
16DJF-BLV	DN250	1102.5
16DJF-BLV	DN300	1516.56
16DJF-BLV	DN350	2012.05
16DJF-BLV	DN400	2677.5
16DJF-BLV	DN450	2677.5
16DJF-BLV	DN500	4210

Static Balancing Valve (DN40-DN500)

Measuring Accuracy:

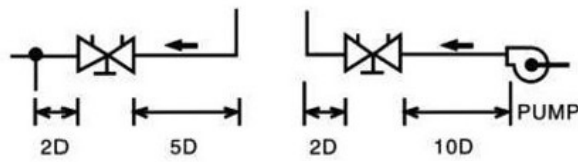


Installation:

People should ensure that there is no debris in the system before installation, please note that static balancing valve with flowing arrow point in the direction of the flow. The Static Balancing Valve is usually installed on return pipe. When combined with Differential Pressure Balancing Valve, it can be used for supply pipe.

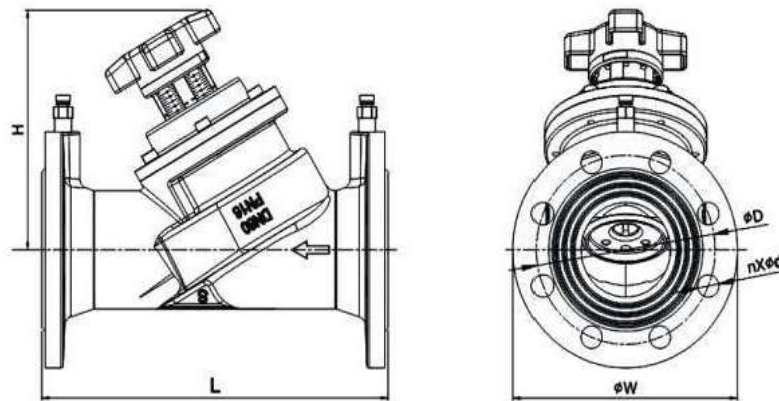
Generally, when connected to an elbow or a pump, the valve must keep a certain distance from the elbow or the pump. The rule is shown in the right figure.

When connecting to a bend or pump, it is necessary to maintain a certain length of straight pipe. When connecting with elbow, follow valve 5d, rear 2d principle. Follow the 10d principle when connecting with a pump.



According to the GBT 28635-2012 standard, when the valve's operating rate is greater than 50%, the deviation is lower than +5%. Base on this, it is suggested to choose a valve with at least 50% opening rate when working under the design flow. Additionally, in order to ensure adequate on-site commissioning allowance, it is recommended to set the valve at around 75% opening rate.

Dimension:



DN	L(mm)	H(mm)	ØW(mm)	ØD(mm)	nxØd(mm)
DN40	230	136	165	110	4x19
DN50	230	152	165	125	4x19
DN65	290	180	185	145	4x19
DN80	310	200	200	160	8x19
DN100	350	220	220	180	8x19
DN125	400	308	250	210	8x19
DN150	480	322	285	240	8x23
DN200	600	420	340	295	12x23
DN250	730	460	405	355	12x28
DN300	850	600	460	410	12x28
DN350	980	614	520	470	16x28
DN400	1100	642	580	525	16x31
DN450	1200	675	688	640	20x31
DN500	1250	713	745	715	20x34

Static Balancing Valve (DN15-DN50)

Application:

The Series TDP Differential Pressure Balancing Valve is designed to keep constant differential pressure across the supply pipes and return pipes, control valve or terminal unit in air-conditioning or heating system. It avoids hydronic disturbances resulting from variations in system differential pressure.

Features:

- I Self-acting differential pressure control, no external power needed.
- I On-site setting of differential pressure.
- I Wide controllable range of differential pressure.
- I Wide controllable range of differential pressure.
- I Self-sealing measuring points to protect against leakage.
- I Equipped with measuring points and air vent.
- I Equipped with three-way measuring connector.

Operating Principles:

When the network's differential pressure increases, the Differential Pressure Balancing Valve will diminish its opening automatically. This counteracts the increased value, ensuring constant differential pressure.

Technical Specification:

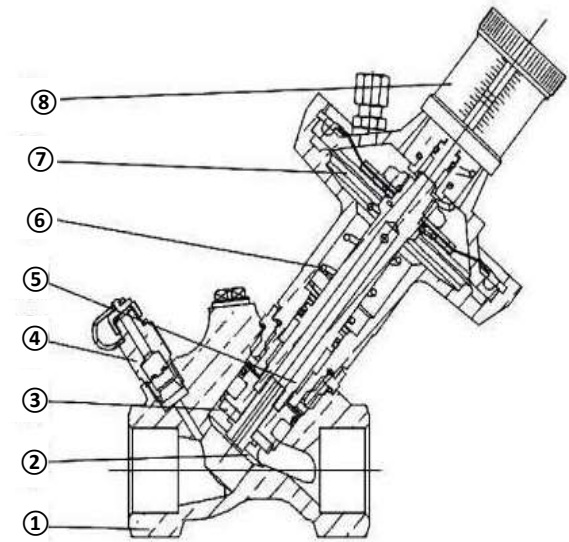
Dimension: DN15-DN50
 Working Temperature: -10 ~ 120oC
 Working Pressure: Pn16
 Fluid Medium: Cold and Hot Water / Ethylene Glycol
 Connection: Flange Connection
 Connection Standard: EN10226 GB/T 7306.1-2008
 Control Deviation: +8%
 Working Pressure: < 300KPa
 Materials:

1. Body	Ductile iron
2. Seat	Brass
3. Core	Brass
4. Test plug	Brass
5. Shaft	Brass
6. Spring	Stainless steel
7. Diaphragm	EPDM
8. Handwheel	Plastic ABS

Technical Parameter:

Product Type:

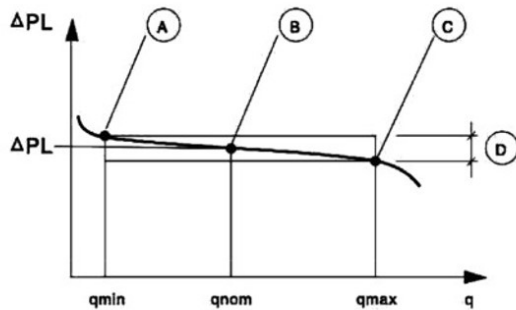
Type	DN	ΔP Control (KPa)	Kvs
TDP015-0SP01S	DN15	5-30	2.5
TDP020-0SP01S	DN20		5.0
TDP025-0SP01S	DN25		7.5
TDP032-0SP01S	DN32		10.0
TDP040-0SP01S	DN40		15.0
TDP050-0SP01S	DN50		34.0
TDPP015-0SP01L	DN15	25-70	2.5
TDPP020-0SP01L	DN20		5.0
TDPP025-0SP01L	DN25		7.5
TDPP032-0SP01L	DN32		10.0
TDPP040-0SP01L	DN40		15.0
TDPP050-0SP01L	DN50		34.0



Coding Rules:

T	TOA.V	DP	015	0S	P01	S
T	TOA.V	DP	015-DN015	0S	P01	S
DP	Differential Pressure Balancing					
DN						
015-DN015	020-DN20					
025-DN25	032-DN32					
040-DN40	050-DN50					
0S	Two-Way Threaded					
PN						
P01	PN16					
ΔP Range						
S:	Small Range					
L:	Large Range					

Working Range:



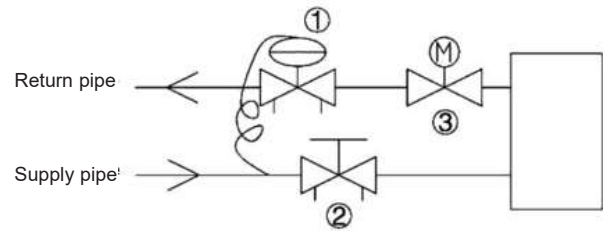
- A. K_{vmin}
- B. K_{vnom}
- C. K_{vmax}
- D. Range $\Delta PKL = 25\%$

Installation:

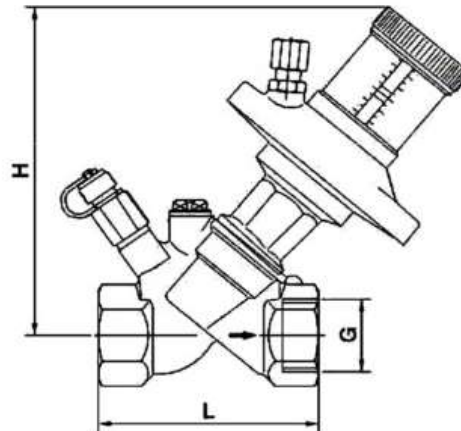
The Differential Pressure Balancing Valve can work with a Static Balancing valve or work alone. The static balancing valve with following arrow point in the direction of the flow. You must wash the pipes after installation and put it installed on the front of strainer. Cappollary type pipes should be connected to the water supply piping or above level, but not in below the pipe to prevent dust particle. You must install the capillary type signal tube and connect with rotating block valve before test. Otherwise, the pressure differential regulator will be damaged by the pressure.

When combined with a Static Balancing Valve, it should be installed on the return pipe, while the Static Balancing Valve should be installed on the supply pipe.

1. Differential Pressure Balancing Valve
2. Static Balancing Valve



Dimension:



DN	L(mm)	H(mm)	G	Kvs
DN15	80	158	G1/2	2.5
DN20	84	160	G3/4	5.0
DN25	97.5	163	G1	7.5
DN32	110	172	G1 - 1/4	10.0
DN40	120	178	G1 - 1/2	15.0
DN50	150	210	G2	34.0

Differential Pressure Balancing Valve (DN40-DN250)

Application:

The Series TDP Differential Pressure Balancing Valve is designed to keep constant differential pressure across the supply pipes and return pipes, control valve or terminal unit in air-conditioning or heating system. It avoids hydronic disturbances resulting from variations in system differential pressure.



Features:

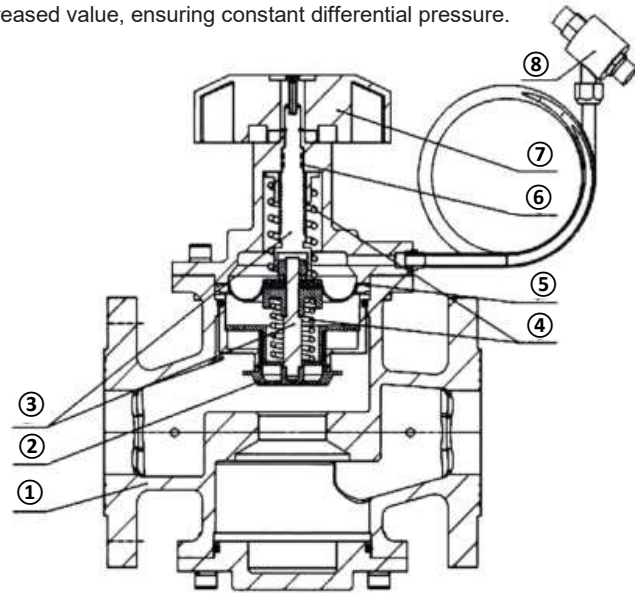
- I Self-acting differential pressure control, no external power needed.
- I On-site setting of differential pressure.
- I Wide controllable range of differential pressure.
- I Handwheel equipped with differential pressure indicator.
- I Equipped with measuring points and air vent.
- I Equipped with three-way measuring connector.

Operating Principles:

When the network's differential pressure increases, the Differential Pressure Balancing Valve will diminish its opening automatically. This counteracts the increased value, ensuring constant differential pressure.

Technical Specification:

Diameter: DN40-DN250
 Working Temperature: -10 ~ 120oC
 Working Pressure: PN25/PN16
 Fluid Medium: Cold and Hot Water / Ethylene Glycol
 Connection: Threaded Connection
 Connection Standard: EN10226 GB/T 7306.1-2008
 Control Deviation: +8%
 Working Pressure: < 400KPa
 Materials:



1.Valve Body	Ductile iron
2.Core	Stainless steel
3.Stem	Stainless steel
4.Spring	Stainless steel
5.Diaphragm	EPDM
6.Sealing	NBR
7.Handwheel	PA
8.Test plug	Brass

Coding Rules:

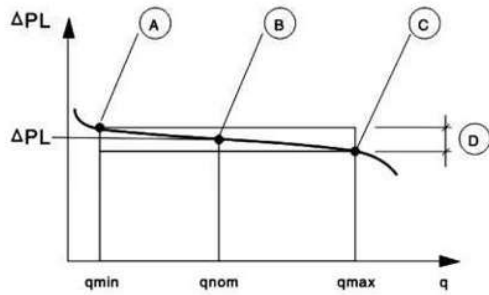
Technical Parameter:

Product Type:

Type	DN	ΔP Control (KPa)	Kvs
TDP040-0FP02	DN40	30-100	15
TDP050-0FP02	DN50		34
TDP065-0FP02	DN65	40-180	52
TDP080-0FP02	DN80		75
TDP100-0FP02	DN100		110
TDP125-0FP02	DN125		145
TDP150-0FP02	DN150	170	
TDP200-0FP01	DN200	320	
TDP250-0FP01	DN250	400	

T	DP	040	0F	P01
T	TOA.V			
DP	Differential Pressure Balancing			
DN				
040-DN40	050-DN50			
065-DN65	080-DN80			
100-DN100	125-DN125			
150-DN150	200-DN200			
250-DN250				
0F	Two-Way Threaded			
PN				
P01	PN16			
P02	PN25			

Differential Pressure Balancing Valve



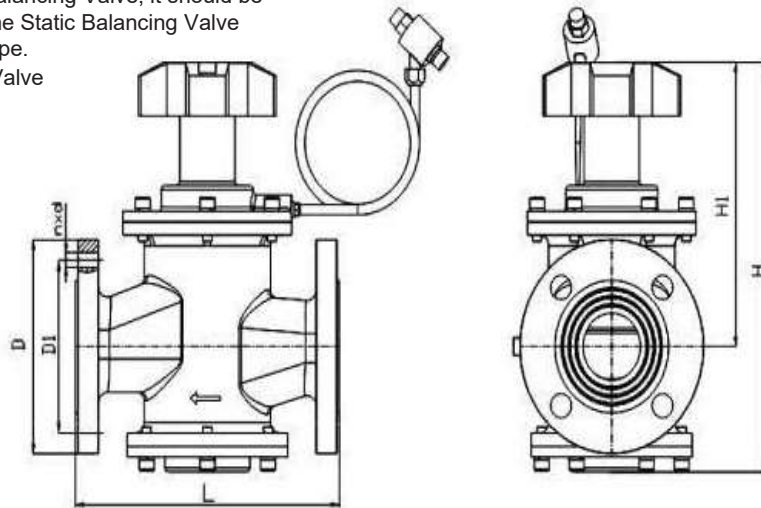
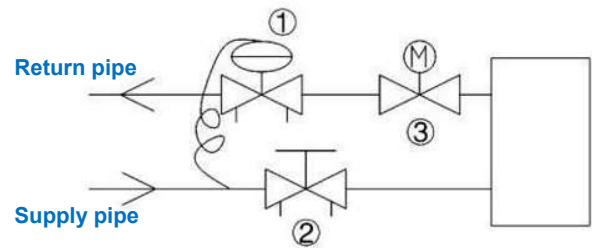
- A. KVmin
- B. Kvnom
- C. Kvmax
- D. Range $\Delta PKL = 25\%$

Installation:

The Differential Pressure Balancing Valve can work with a Static Balancing valve or work alone. The static balancing valve with following arrow point in the direction of the flow. You must wash the pipes after installation and put it installed on the front of strainer. Capillary type pipes should be connected to the water supply piping or above level, but not in below the pipe to prevent dust particle. You must install the capillary type signal tube and connect with rotating block valve before test. Otherwise, the pressure differential regulator will be damaged by the pressure.

When combined with a Static Balancing Valve, it should be installed on the return pipe, while the Static Balancing Valve should be installed on the supply pipe.

1. Differential Pressure Balancing Valve
2. Static Balancing Valve



DN	ØD(mm)	H(mm)	H1(mm)	L(mm)	n	Ød(mm)	ØD1(mm)
40	150	256	173	200	4	18	110
50	165	290	193	230	4	18	125
65	185	352	246	290	8	18	145
80	200	368	252	310	8	18	160
100	235	392	262	350	8	22	190
125	270	445	284	400	8	26	220
150	300	505	315	480	8	26	250
200	340	620	385	600	12	22	295
250	405	690	420	730	12	26	355

Dynamic Flow Balancing Valve (DN15-DN40)

Application:

The Series TFV Dynamic Flow Balancing valve is solved by the out of balance in hydronic systems about pipe network for fluid supply. When the system pressure is within the scope of work pressure difference fluctuation, it can balance the change dynamically and maintain constant flow in pipe.

Features:

- I Dynamic Balancing: constant flow is achieved through the valve cartridge auto-adjustment of the opening rate when ΔP of the system fluctuates.
- I Precision calibrated valve plug keeps the flow deviation no greater than +5%.
- I The flow rate is factory preset multiple ΔP ranges available for each size
- I No on-site commissioning is needed, saving time and labor costs.
- I No need of re-balancing after system changes.



Operating Principles:

- * Acting as a simple orifice plate, the valve plug will fully open when ΔP across the valve is below its control range. This allows rate increases with the growth of ΔP (Figure 1).
- * If ΔP is in the control range, the valve plug will adjust its opening in terms of the system's ΔP change. This ensures a constant flow rate with a deviation no greater than +5% (Figure 2).
- * If ΔP exceeds the control range, the valve plug will work as an orifice plate again to achieve the smallest opening rate. And the flow rate increases with the growth of ΔP (Figure 3).
- * ΔP Flow Curve shows that in the working ΔP range, the flow rate stay the same (Figure 4).

Technical Specification:

Diameter: DN15-DN40
 Working Temperature: 0 ~ 110oC
 Working Pressure: PN25
 Fluid Medium: Water / Ethylene Glycol
 Connection: Threaded Connection
 Connection Standard: GB/T 7306.1-2000
 Control Deviation: +8%
 Working Pressure: < 400KPa
 Materials:

1.Body	Brass
2.Core	Brass/Stainless steel
3.Spring	Stainless steel 304
4.Bonnet	Brass
5.O-ring	EPDM
6.Rubber Gasket	EPDM

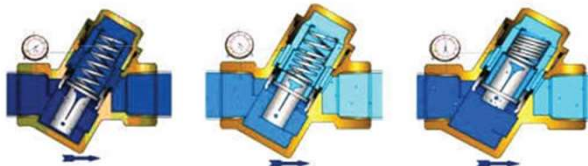


Figure 1

Figure 2

Figure 3

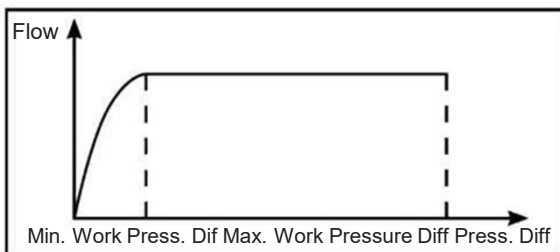
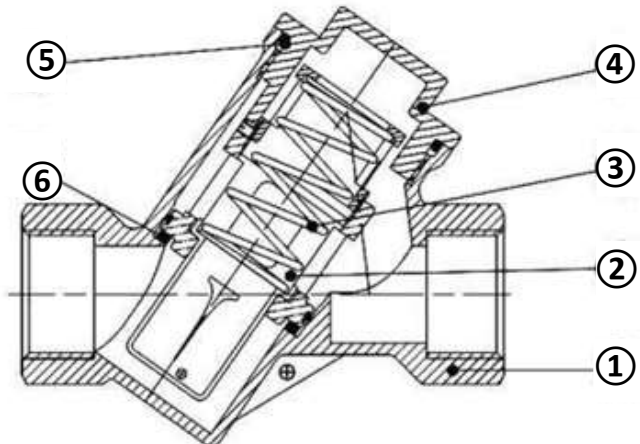


Figure 4



Dynamic Flow Balancing Valve (DN15-DN40)

Technical Parameter:

Product Type:

Type	DN	ΔP Code	ΔP Range (Kpa)	Flow Range (m ³ /h)
TFV015-OSP02 TFV020-OSP02 TFV025-OSP02	DN15 DN20 DN25	A	15-150	0.432-1.51
		B	20 - 200	0.54-1.98
		C	30 - 300	0.68-2.77
		D	80 - 800	1.00-4.18
		E	10-100	0.216-0.54
TFV032-OSP02 TFV040-OSP02	DN32 DN40	A	15-150	0.54-3.13
		B	20 - 200	0.68-3.67
		C	30 - 300	0.78 - 4.82
		D	80 - 800	1.44-7.52

Coding Rules:

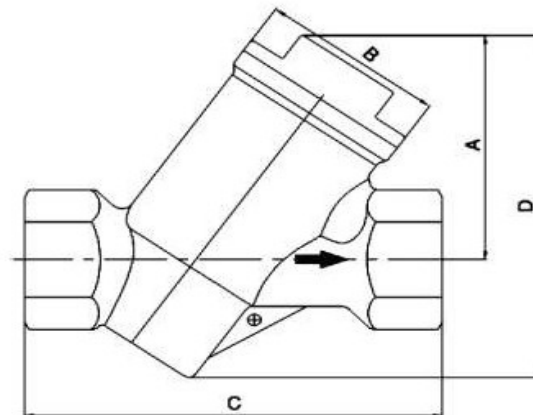
T	TOA.V	T	FV	015	0S	P02	A
Dynamic Flow Balancing Valve							
DN							
015-DN15		020-DN20					
025-DN25		032-DN32					
040-DN40							
0S Two-Way Threaded							
PN							
P02		PN25					
Range (Kpa)							
A = 15 ~ 150		B = 20 ~ 200					
C = 30 ~ 300		D = 80 ~ 800					
E = 10 ~ 100							

* According to design requirements, select a valve with suitable ΔP range. Design flow should be in the valve's flow range. More flow range and ΔP range, please contact us.

Installation:

- According to valve type, select suitable valve and prevent error flow or different pressure.
- Attention to system pipe exhaust, system storage, it caused the media to jam, adjust the function failure, or too much noise.
- The valve can be installed horizontally or vertically. The direction of the arrow head on the valve body must accord with the direction of the flow. Wrong installation will lead to clog in the system.

Dimension:



DN	Threaded	A(mm)	B(mm)	C(mm)	D(mm)
DN15	Rp1/2	60	Ø45	100	90
DN20	Rp3/4	60	Ø45	100	90
DN25	Rp1	65	Ø45	110	95
DN32	Rp1 1/4	80	Ø55	140	110
DN40	Rp1 1/2	84	Ø55	145	115

Dynamic Flow Balancing Valve (DN15-DN40)

Application:

The Series TFV Dynamic Flow Balancing valve is solved by the out of balance in hydronic systems about pipe network for fluid supply. When the system pressure is within the scope of work pressure difference fluctuation, it can balance the change dynamically and maintain constant flow in pipe.

Features:

- Dynamic Balancing: constant flow is achieved through the valve plug's auto-adjustment of the opening rate when ΔP fluctuates in the system.
- Precision calibrated valve plug keeps the flow deviation no greater than +5%.
- The flow rate is factory preset multiple ΔP ranges available for each size.
- No on-site commissioning is needed, saving time and labor costs.
- No need of re-balancing after system changes.

Operating Principles:

Acting as a simple orifice plate, the valve plug will fully open when ΔP across the valve is below its control range. This allows rate increases with the growth of ΔP (Figure 1).

If ΔP is in the control range, the valve plug will adjust its opening in terms of the system's ΔP change. This ensures a constant flow rate with a deviation no greater than +5% (Figure 2).

If ΔP exceeds the control range, the valve plug will work as an orifice plate again to achieve the smallest opening rate. And the flow rate increases with the growth of ΔP (Figure 3).

ΔP Flow Curve shows that in the working ΔP range, the flow rate stay the same (Figure 4).

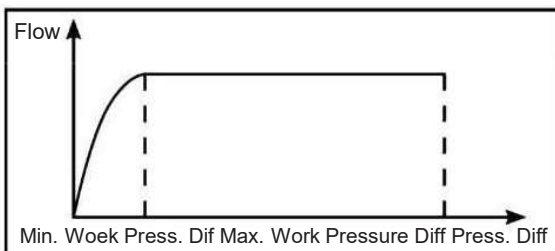
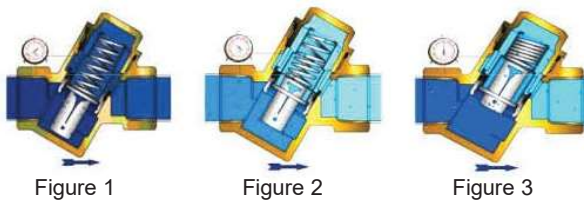


Figure 4

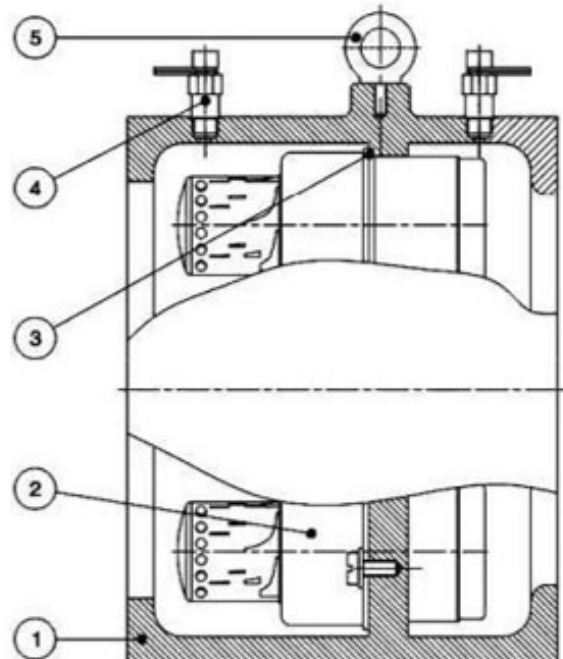


Technical Specification:

Diameter: DN50-DN500
 Working Temperature: 0 ~ 110°C
 Working Pressure: PN16/PN25
 Fluid Medium: Water / Ethylene Glycol
 Connection: Water Connection
 Connection Standard: EN1092-1/2
 GB/T 17241.6-2008

Materials:

1. Body	Ductile Iron
2. Valve Plug	Valve core: Stainless steel Spring: Stainless steel
3. O-Ring	EPDM
4. Test Plug	Brass
5. Ring Bolt	Stainless steel 304



Dynamic Flow Balancing Valve (DN50-DN500)

Technical Parameter:

Product Type:

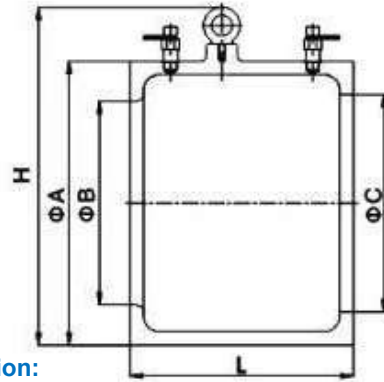
Type	DN	ΔP Code	AP Range (Kpa)	Flow Control (nWh)
AUFW-BLV	DN50 DN65 DN80	A	15-150	3-15
		F	20-220	4-19
		G	33-330	5-23
		K	35-250	5-45
		H	90-900	8-38
AUFW-BLV	DN100	A	15-150	3-52
		F	20-220	4-66
		G	33-330	5-46
		K	35-250	5-90
		H	90-900	8-140
AUFW-BLV	DN125	A	15-150	3-78
		F	20-220	4-99
		G	33-330	5-69
		K	35-250	5-135
		H	90-900	8-210
AUFW-BLV	DN150	A	15-150	3-104
		F	20-220	4-132
		G	33-330	5-92
		K	35-250	5-180
		H	90-900	8-280
AUFW-BLV	DN200	A	15-150	3-182
		F	20-220	4-231
		G	33-330	5-161
		K	35-250	5-315
		H	90-900	8-490
AUFW-BLV	DN250	A	15-150	3-286
		F	20-220	4-363
		G	33-330	5-253
		K	35-250	5-495
		H	90-900	8-770
AUFW-BLV	DN300	A	15-150	3-390
		F	20-220	4-495
		G	33-330	5-345
		K	35-250	5-675
		H	90-900	8-1050
AUFW-BLV	DN350	A	15-150	3-520
		F	20-220	4-660
		G	33-330	5-460
		K	35-250	5-900
		H	90-900	8-1400
AUFW-BLV	DN400	A	15-150	3-650
		F	20-220	4-825
		G	33-330	5-575
		K	35-250	5-1125
		H	90-900	8-1750
AUFW-BLV	DN450	A	15-150	3-806
		F	20-220	4-1023
		G	33-330	5-713
		K	35-250	5-1395
		H	90-900	8-2170
AUFW-BLV	DN500	A	15-150	3-962
		F	20-220	4-1221
		G	33-330	5-851
		K	35-250	5-1665
		H	90-900	8-2590

Coding Rules:

AUFW	Auto flow wafer	AUFW	BLV
BLV	Balancing valve		

Installation:

- According to valve type, select suitable valve and prevent error flow or different pressure.
- Attention to system pipe exhaust, system storage, it caused the media to jam, adjust the function failure, or too much noise.
- The valve can be installed horizontally or vertically. The direction of the arrow head on the valve body must accord with the direction of the flow. Wrong installation will lead to clog in the system.
- Inlet of valve should install strainer or wash pipe to ensure the components of valve cannot be damaged by large particle.



Dimension:

DN	L(mm)	H(mm)	A(mm)	B(mm)	C(mm)
DN50	180	106	106	50	83
DN65	180	120	120	65	83
DN80	180	132	132	80	83
DN100	220	177	177	100	133
DN125	220	193	193	125	140
DN150	220	273	220	150	162
DN200	220	333	280	200	214
DN250	220	394	341	250	280
DN300	223	469	400	300	328
DN350	223	517	448	350	382
DN400	242	579	510	400	440
DN450	242	629	560	450	487
DN500	242	687	618	500	545

* According to design requirements, select a valve with suitable ΔP range.

Design flow should be in the valve's flow range. More flow range and ΔP range, please contact us.

Electric Dynamic Balancing Two-Way Valve (DN15-DN25)

Application:

The Series TTV electric dynamic balancing two-way valve is designed for FCU or heating system. Through opening or closing the valve, the room temperature is regulated. Moreover, the valve can effectively help the system to avoid dynamic hydraulic disturbances and keep the flow rate stable, so as to achieve more accurate temperature control.

Features:

- On/Off control according to control signals.
- Dynamic flow balancing to eliminate mutual disturbance of terminal equipment.
- Higher system control precision than that of a traditional variable flow system.
- Factory presetting of flow rate.
- No on-site commissioning needed.

Operating Principles:

In traditional cooling and heating systems, FCUs are usually controlled by electric two-way valves. When some FCUs are closed, the flows through the running FCUs increase, leading to room temperature fluctuation. To solve this problem the Series TTV electric dynamic balancing two-way valve, controlled by an electro-thermic actuator, is designed. It is a two-in-one valve that plays the roles of both an electric two-way valve and a dynamic flow balancing valve. When the room temperature reaches the set value, the room thermostat will send a signal to the electro-thermic actuator to close the valve. When the room temperature is greater (cooling system) or lower (heating system) than the set value, the valve will be opened in a similar way. In the whole process, a built-in cartridge automatically adjust the flow to remain unchanged, so as to ensure higher control precision.

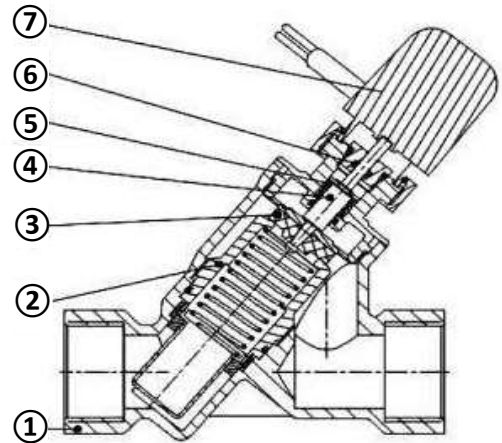
Technical Specification:

DN	DN15-DN25
Working Temperature	0~110oC
Working Pressure	PN16/PN25
Fluid Medium	Water/Ethylene Glycol/Propylene Glycol
Connection	Threaded Connection
Connection Standard	EN 10226 GB/T 7306.1-2000
Control Deviation	<5%
Working AP	20~100KPa/30~300KPa
IP Grade	Ip44
Working Voltage	220VAC 50Hz
Start-up Time	3 mins
Control Characteristic	On/Off control
Shutoff Pressure	200KPa

Technical Parameter:

Product type:

Type	DN	EDP Code	Working ΔP (Kpa)	Rated Flow (m3/h)
TTV015-0SP02_	DN15	A	20-200	0.36-1.51
TFV020-0SP02_	DN20			
TFV025-0SP02-	DN25			
TTV020-0SP02-	DN20	B	30-300	0.47-2
TFV020-0SP02-				
TFV025-0SP02-				
TTV025-0SP02-	DN25	A	20-200	0.6~1.51
TFV020-0SP02-		B	30-300	0.6~2.09
TFV025-0SP02-				



1. Valve Body	: Brass
2. Valve Plug	: Brass
3. Membrane	: EPDM
4. Valve stem	: Stainless steel
5. Spring	: Stainless steel
6. Sealing	: NBR
7. Actuator	: Shell: Flame Retardant PC Internals: Reinforced POM

Coding Rules:

T	TOA.V	T	TV	015	0S	P02	A
TV	Electric dynamic balancing valve						
DN							
015-DN15	020-DN20						
025-DN25							
0S	Two-Way threaded connection						
PN							
P01	PN16						
P02	PN25						
Pressure Range (Kpa)							
A = 20 ~ 200	B = 30 ~ 300						

Electric Dynamic Balancing Two-Way Valve (DN15-DN25)

Installation:

The valve's rated parameters should match the equipment's. Make sure that the valve's rated flow satisfies the application requirements.

The installer must be trained or experienced so as to operate the installation correctly.

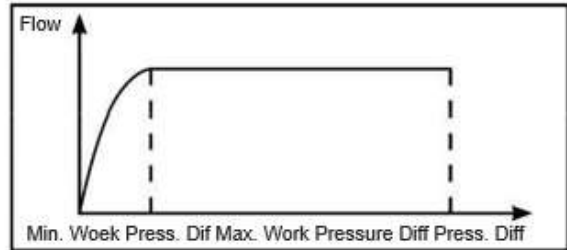
A thorough check after installation is needed to ensure no errors.

A thorough cleaning before installation is needed (chemical reagent can be applied if it is necessary) to ensure that there is not any rusting or dirt in the pipe. All the filters must be removed before washing to keep the pipe smoothly open.

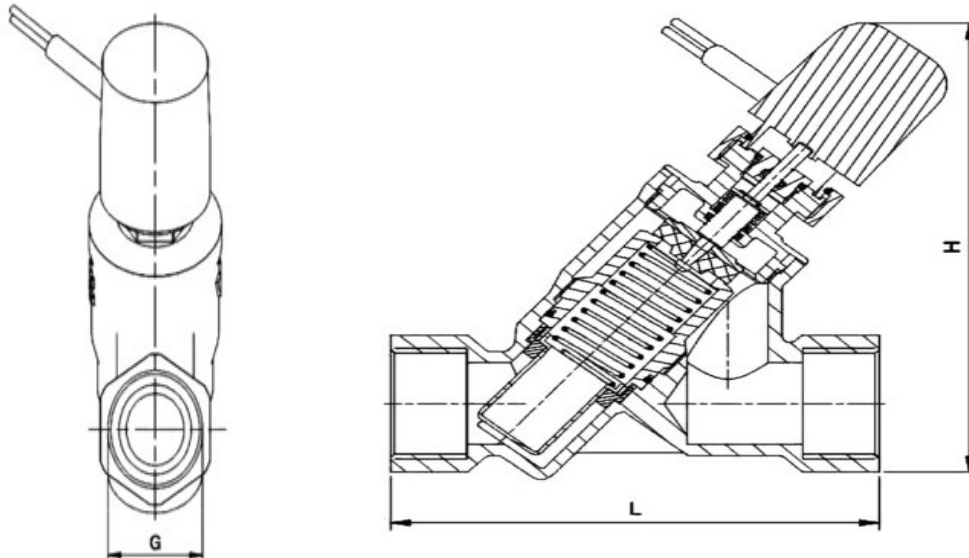
This product should not be used when the fluid medium has high viscosity (contains much grease or mineral oil), or under corrosive circumstances.

The direction of the fluid must be in line with the direction of the arrow head on the valve's body. Wrong installation will lead to clog or breakdown.

Flow characteristics:



Dimension:



DN	L(mm)	H(mm)	G
DN15	104	148	G 1/2
DN20	104	148	G3/4
DN25	112	152	G 1

Pressure Independent Balancing & Control Valve (DN15-DN32)

Application:

The Series TDV (DN40-DN250) Pressure Independent Balancing & Control Valve and the series of TACDV actuator are designed in air-condition system and heating system, such as PAU, AHU, MAU and end-equipment. According to temperature requirement of air condition area and signals of control system to regulate terminal flow and maintain constant in pipe network. In order to ensure that terminal is not effected by other devices in the network, keep the system high efficiency, saving energy and stable.

Features:

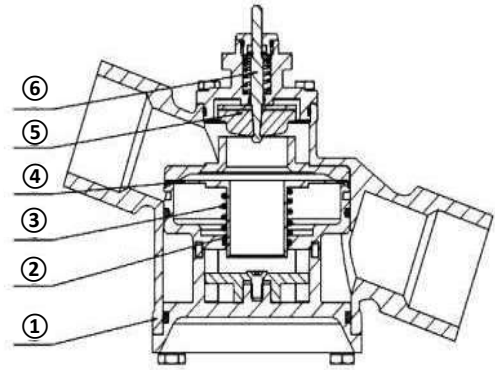
- Equal percentage flow characteristic.
- Constant differential pressure is achieved.
- Electronic preset of maximum flow facilitates on-site commissioning.
- Fault auto-detection and alarm function.
- The range with auto-detect function.
- The regulator valve core is designed straight travel and provided.
- Three actuator, such as Modulating, Floating point and ON/OFF type.

Operating Principles:

Pressure independent Balancing valve consists of flowing adjustment and dynamic balancing.

The structure of flowing adjustment can achieve to set and regulate. It equipped with actuator which can realize to electronic regulate and shutoff function.

The structure of dynamic balancing can realize to flow constant. Its core part including diaphragm and spring. Diaphragm can induct differential pressure among of entrance and chamber of balancing valve core, and then keep constant differential pressure.



Technical Specification:

Size	DN15-DN32
Working Temperature	-10*120oC
Working Pressure	PN25
Fluid Medium	Water/Ethylene Glycol/Propylene Glycol
Connection	Flange Connection
Connection Standard	EN 10226 GB/T 7306.1-2000
Control Deviation	<5%
Working voltage	24VAC
Control signal	:0-10VDC«'4-20mA
Working AP	30~400KPa
IP Grade	Ip43
Control Characteristic	Equal percentage

Materials:

1. Valve Body	Brass
2. Valve Core	Brass
3. Valve Stem	Stainless Steel
4. Membrane	EPDM
5. Spring	Stainless Steel
6. Sealing	EPDM
7. Actuator	Shell: Flame Retardant PC
	Internals: Reinforced POM

Technical Parameter:

Product Type:

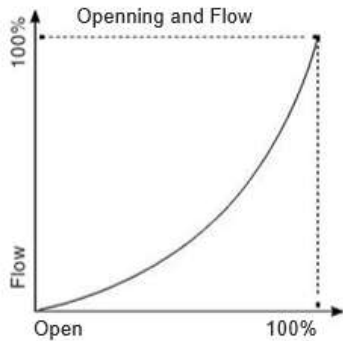
Type	DN	Working AP(Kpa)	Rated Flow (m3/h)	Actuator Force (N)	Actuating Time (S)
25PICV-BLT	DN15	30-400	0.15-1.4	120	50
	DN20 DN25				
25PICV-BLT	DN20	30-400	0.15-1.4	120	50
25PICV-BLT	DN25	30-400	0.2-2.4	200	60
25PICV-BLT	DN32	30-400	0.5-4.0	200	60

Coding Rules:

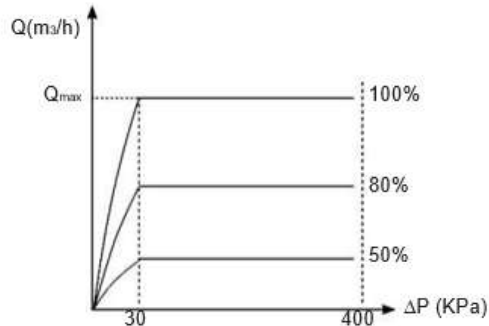
25	PN25	PICV	BLT
PICV	Pressure independent control valve		
BLT	Balancing Threaded		

Pressure Independent Balancing & Control Valve (DN15-DN32)

Flow characteristics:

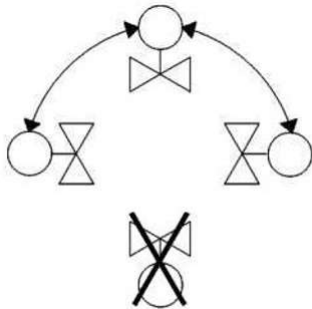


Equal Percentage Control Characteristics



Different Pressure - Flow Characteristics

Installation:

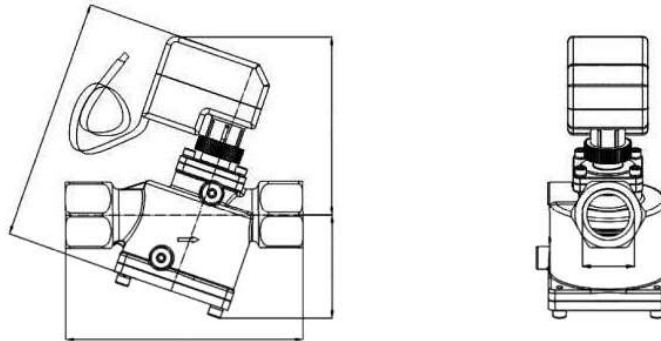


Downward Installation Prohibited

Attention:

1. Please read the instructions carefully before installation, check product type and parameter. According to requirements, set working voltage and input signals.
2. Ensure vertical installation as much as possible, and make room for maintenance.
3. The direction of the arrow head on the valve body must accord with the direction of the flow. Wrong installation will lead to clog in the system.
4. It is suggested that the design system should be connected by the bypass, and the filling should be done by the by-pass to flush the impurities in the line, otherwise the valve will be blocked.
5. Before and after installation shall ensure that the valve set aside a certain length of straight pipe, general reserved diameter of 10 times the length of the straight pipe at the inlet pipe, diameter 5 times the length of straight pipe at the export pipe.

Dimension:



DN	L(mm)	H(mm)	H1(mm)	H2(mm)	G
15	120	123	122.5	55.5	G 1/2
20	120	123	122.5	55.5	G3/4
25	140	127	127	64.5	G 1
32	178	134	134	75.5	G 1 - 1/4

Pressure Independent Balancing & Control Valve (DN40-DN250)

Application:

The Series TDV (DN40-DN250) Pressure Independent Balancing & Control Valve and the series of TACDV actuator are designed in air-condition system and heating system, such as PAU, AHU, MAU and end-equipment. According to temperature requirement of air condition area and signals of control system to regulate terminal flow and maintain constant in pipe network. In order to ensure that terminal is not effected by other devices in the network, keep the system high efficiency, saving energy and stable.

Features:

- Equal percentage flow characteristic.
- Constant differential pressure is achieved
- Electronic preset of maximum flow facilitates on-site commissioning.
- Fault auto-detection and alarm function.
- The range with auto-detect function.
- The regulator valve core is designed straight travel and provided.
- Three actuator, such as Modulating, Floating point and ON/OFF type.

Operating Principles:

Pressure independent Balancing valve consists of flowing adjustment and dynamic balancing.

The structure of flowing adjustment can achieve to set and regulate. It equipped with actuator which can realize to electronic regulate and shutoff function.

The structure of dynamic balancing can realize to flow constant. Its core part including diaphragm and spring. Diaphragm can induct differential pressure among of entrance and chamber of balancing valve core, and then keep constant differential pressure.

Technical Specification:

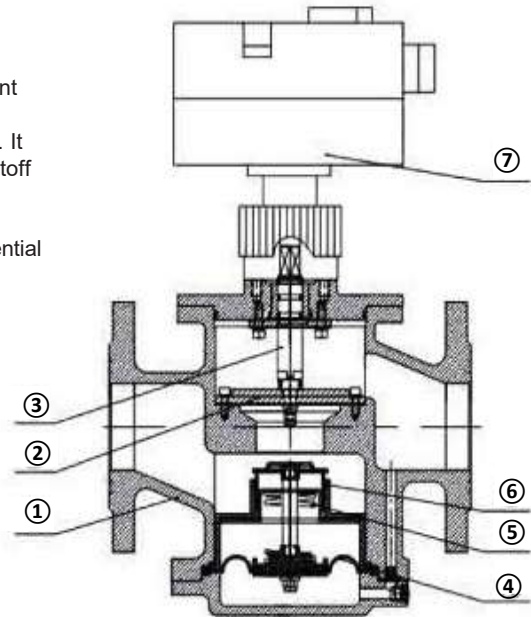
1.Valve Body	Ductile Iron
2.Valve Core	Stainless Steel
3.Valve Stem	Stainless Steel
4.Membrane	EPDM
5.Spring	Stainless Steel
6.Sealing	EPDM
7.Actuator	Shell: Flame Retardant PC

Technical Parameter:

Product Type:

Size	DN40-DN250
Working Teperature	-10*120oC
Working Pressure	PN16
Fluid Medium	Water/Ethyten /Propytene Glycol
Connection	Flange Connection
Connection Standard	EN 1092-1/2 GB/T 17241.6-2008
Control Deviation	<5%
Working voltage	24VAC
Control signal	0-10VDC«'4-20mA
Working AP	30~420KPa
IP Grade	Ip54/65
Control Characteristic	Equal percentage

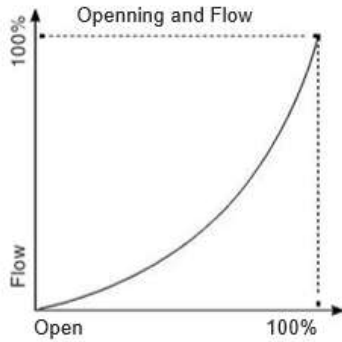
If you need DN200 and above size please contact us.



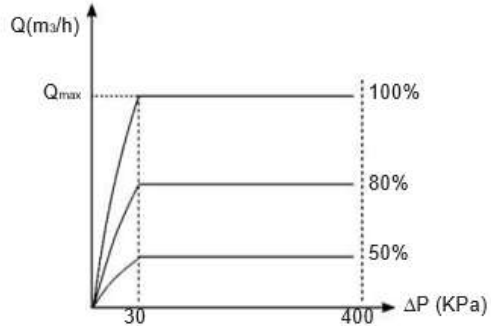
Coding Rules:

16	PN16	16	PICV	BLV
PICV	Pressure independent control valve			
BLV	Balancing valve			

Flow characteristics:

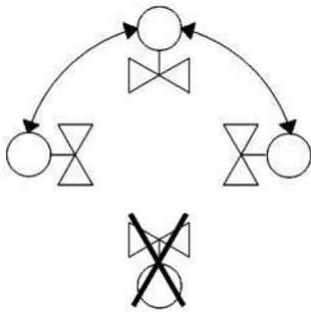


Equal Percentage Control Characteristics



Different Pressure - Flow Characteristics

Installation:

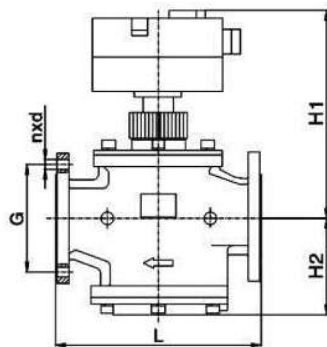


Downward Installation Prohibited

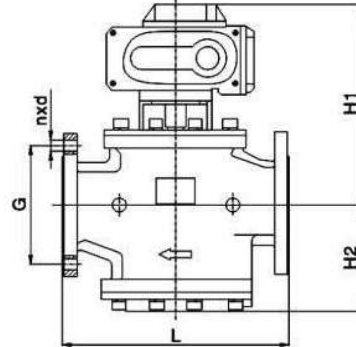
Attention:

1. Please read the instructions carefully before installation, check product type and parameter. According to requirements, set working voltage and input signals.
2. Ensure vertical installation as much as possible, and make room for maintenance.
3. The direction of the arrow head on the valve body must accord with the direction of the flow. Wrong installation will lead to clog in the system.
4. It is suggested that the design system should be connected by the bypass, and the filling should be done by the by-pass to flush the impurities in the line, otherwise the valve will be blocked.
5. Before and after installation shall ensure that the valve set aside a certain length of straight pipe, general reserved diameter of 10 times the length of the straight pipe at the inlet pipe, diameter 5 times the length of straight pipe at the export pipe.

Dimension:



DN40-DN100



DN125-DN150

DN	G(mm)	nxd(mm)	L(mm)	H1(mm)	H2(mm)
40	110	4x018	200	240	92
50	125	4x018	230	255	110
65	145	4x018	290	265	136
80	160	8x018	310	280	142.5
100	180	8x018	350	300	148.5
125	210	8x018	400	335	188
150	240	8x 022	480	370	205

FCU Electric Valve (DN15-DN25)

Application:

The Series TFS Electric Two-way or Three-way Valve is designed for FCU cooling or heating pipes. Through opening and closing the pipe, the valve can effectively regulate the room temperature. The valve's actuator has spring auto-reset function. If the actuator suddenly loses power, the spring will help the actuator to reset and shutdown automatically.



Features:

- On/off control both normally closed two-way structure and diverting three-way structure are available.
- Fully enclosed one-way hysteresis synchronous motor drive with waterproof function.
- Spring auto-reset function enables automatic shutoff when an emergent power loss happens.
- Removable actuator for convenient repair and maintenance.
- Rotary motion valve disc.
- The regulator valve core is designed straight travel and provided.
- High shutoff pressure.

Operating Principles:

The valve is normally closed when receiving no signals. If the room thermostat emits an opening signal to open the valve, cold / hot water will go through the FCUs to provide the room with cooling / heating capacity. When the room temperature reaches the set temperature, the room thermostat will send a closing signal to the actuator to close the valve, so that the cold / hot water in the pipe will not influence the room temperature any more. By opening and closing the valve, the room temperature is kept within the setting range

Technical Specification:

Size	: DN15-DN25
Working Temperature	: 0~90°C
Working Pressure	: PN16
Fluid Medium	: Water/Ethylene Glycol/Propylene Glycol
Connection	: Threaded Connection
Connection Standard	: EN 10226 GB/T 7306.1-2000
IP Grade	: Ip20
Working voltage	: 220VAC 50/60Hz
Power	: 6W
Speed	: 4r/min
Actuating Time	: open: <18s close: <8s
Control Characteristic	: ON/OFF Control

Materials

Valve Body	Brass
Valve Stem	Brass with Nickel Plated
Disc	NBR
Sealing	NBR
Actuator Base	Stainless Steel

Technical Parameter:

Product Type:

Type	Structure	Size	Kv	Shutoff Pressure
TFS015-OSP01	Two-way Valve	DN15	2.2	180KPa
TFS015-OSP01		DN20	3.0	160KPa
TFS015-OSP01		DN25	6.9	140KPa
TFS015-OSP01	Diverting Three-way Valve	DN15	2.6	180KPa
TFS015-OSP01		DN20	3.4	160KPa
TFS015-OSP01		DN25	6.5	140KPa

Coding Rules:

T	TOA.V	T	FS	015	OS	P01
FS	FCU Electric Valve					
DN						
015-DN15	020-DN20					
025-DN25						
OS	Two way threaded					
3S	Three way threaded					
Pressure						
P01	PN16					

Installation:

When the valve is installed in a horizontal pipe, the included angle between the installation plane and the vertical plane should not be greater than 85°, as shown in Figure 1. When the valve is installed in vertical pipe, the enclosure should prevent dripping water from penetrating into the motor.

The flow direction of normally closed two-way valve should be from B to A, as illustrated in Figure 2. When installing the normally closed actuator, the manual lever should be moved to “open” status.

Series SFS FUC electric valve is designed for fully closed systems. It is not suggested to apply this kind of valve to open systems. Excessive oxygen and chlorine in the open system will corrode the valve body.

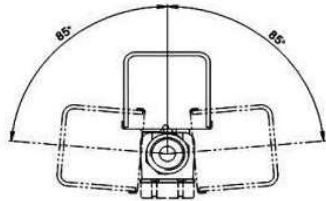


Figure 1: Installation Position

Pipe Connection Illustration:

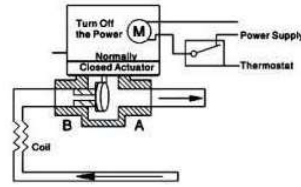


Figure 2: Normally Closed Two-way Valve

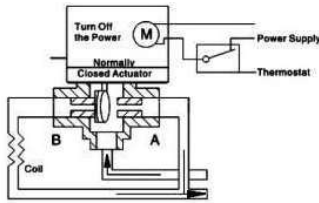


Figure 3: Diverting Three-way Valve (Normally Closed)

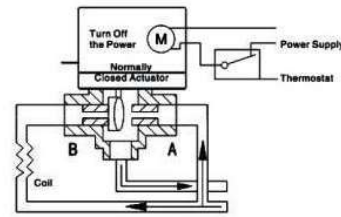
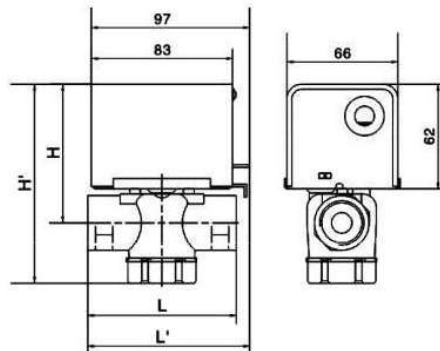


Figure 4: Mixing Three-way valve (Normally Closed)

Dimension:



DN	L(mm)	L'(mm)	H(mm)	H'(mm)
DN15 Two-way	70	82	86	105
DN15 Three-way	70	82	86	119
DN20 Two-way	87	82	93	105
DN20 Three-way	87	82	93	119
DN25 Two-way	94	82	95	107
DN25 Three-way	94	82	95	124

FCU Electric Ball Valve (DN15-DN32)

Application:

The Series TFD Electric ball valves are widely used in central air-conditioning cool/heat water system. It can accurately control the flow of cool/heat medium depending upon the requirements of the given application, and can not result in sudden change of temperature and to control the room temperature accurately.

Features:

- | Good waterproof and anti-dist function (IP65).
- | High pressure difference of valve and flow leakage.
- | Flexible opening to avoid water hammer effectively.
- | The fluid road of valve is advanced design, reduce the congestion phenomenon.
- | Actuator can be both sides to assemblies, easy to wiring and maintain.
- | Don't take anymore pressure after valve run in place, and owning longer life.
- | Easy to install without special tools.
- | The valve body can be used by manual manipulation.
- | Actuator can suitable for all ball valve (DN15-DN32)
- | According to the eccentric construction of actuator, valve is installed stick to wall. | Dismounting simple, it can reloaded after install equipment and pipeline to improve work efficiency.
- | The temperature of the medium is not easy to transfer to the actuator.



Operating Principles:

FCU Electric Ball Valve is on-off control valve used in the heating or cooling systems. It can accurately control the flow of cool/heat medium depending upon the requirements of the given application, and can not result in sudden change of temperature and to control the room temperature accurately, when it need to work, the thermostat provide a signal to the valve, actuator slowly open, so that let chilled water of hot water into the fan coil unit, to provide cooling capacity of heat capacity for the room, when the room temperature reaches the thermostat set value. Automatic two-way Ball Valve received the signal and closes slowly, cutting water into the fan coil unit, reduce capacity or heat capacity for the room.

Technical Specification:

Size	DN15-DN32
Working Temperature	0~95oC
Working Pressure	PN16
Fluid Medium	Water/Ethylene Glycol
Connection	Threaded Connection
Connection Standard	EN 10226 GB/T 7306.1-2000
IP Grade	Ip65
Working voltage	220VAC 50/60HZ, 24VAC 50/60HZ
Power	5W
Actuating Time	12-18S
Control Characteristic	ON/OFF Control

Materials

Body	Casting Brass
Ball	Stainless Steel
Shaft	Brass
Sealing	EPDM O-Double Ring
Seat	PTFE
Actuator Shell	ABS

Technical Parameter:

Product Type:

Type	Structure	Size	Kvs	Shutoff Pressure
TFD015-OSP01	Two-way Valve	DN15	4.62	200KPa
TFD020-OSP01		DN20	7.50	1000KPa
TFD025-OSP01		DN25	13.02	1000KPa
TFD032-OSP01		DN32	25.97	1000KPa
TFD015-OSP01	Three-way Valve	DN15	4.62	200KPa
TFD020-OSP01		DN20	7.50	1000KPa
TFD025-OSP01		DN25	13.02	1000KPa
TFD032-OSP01		DN32	25.97	1000KPa

Coding Rules:

T	TOA.V	T	FD	015	0S	P01
FD	FCU Electric Valve					
DN						
015-DN15	020-DN20					
025-DN25	032-DN32					
0S	Two way threaded					
3S	Three way threaded					
Pressure						
P01	PN16					

FCU Electric Ball Valve (DN15-DN32)

Installation:

Please note that the arrow on the valve body should be consistent with the medium flow.

When using, please check whether the supply voltage is the same as the power supply voltage required by the electric to avoid damage to the product.

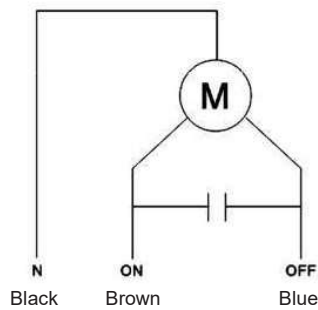
The installer must be trained or experienced to ensure that the installation is completed successfully.

After the installation is complete, a thorough check must be made to ensure that the installation is correct.

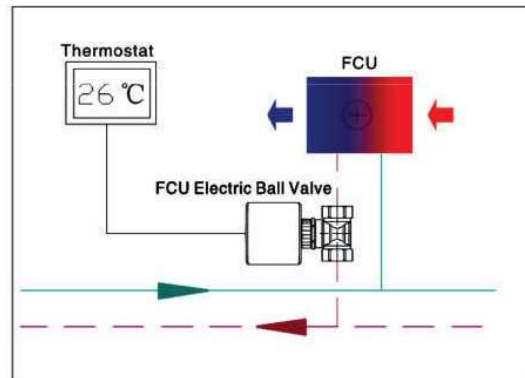
In order to ensure that there is no accident in the installation work, the piping system must be thoroughly cleaned (if necessary, chemical reagents) to ensure that the piping system is clean, free of rust and dirt. All filters must be removed before flushing to ensure smooth piping.

Note that the equipment should not be used in the media containing more oil, mineral oil and other high viscosity or corrosive place.

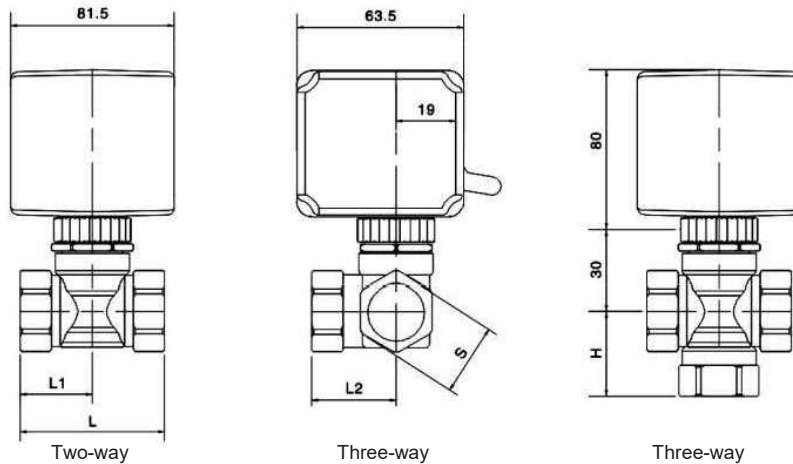
Wiring diagram:



Installation diagram:



Dimension:



DN	L(mm)	L1(mm)	L2(mm)	H(mm)	S(mm)
1/2"(DN15)	67	33.5	34	34	27
3/4"(DN20)	66	33	36	36	32.5
1"(DN25)	88	44	38	40	40
1-1/4"(DN32)	100	50	60	-	48

FCU Electrothermic Valve (DN20-DN32)

Application:

The Series TFO Electrothermic Valve is designed for FCU cooling or heating pipes. Through opening and closing the pipe, the valve can effectively regulate the room temperature. The series valve is adopted electrothermic actuator to ensure safe and reliable.

Features:

- Good waterproof and anti-dust function (IP44).
- High pressure difference of valve and flow leakage.
- Flexible opening to avoid water hammer effectively.
- The fluid road of valve is advanced design, reduce the congestion phenomenon.
- Actuator opening and closing slowly, room temperature average change.
- Actuator has longer life without gear parts.
- Low carbon without running noisy.
- Actuator can suitable for all ball valve (DN20-DN32)
- Dismounting simple, it can reloaded after install equipment and pipeline to improve work efficiency.
- The temperature of the medium is not easy to transfer to the actuator.



Operating Principles:

The series TFO Electrothermic Valve consists of Two-Way Control valve and the series TEA Electrothermic actuator, which is used on/off control, such as central air-condition, heating system. The valve is divided into power on (normally closed type) and power off (normally open type) two types. For power on type, the valves are normally closed, when it need to work, the thermostat provide a signal to the valve, electrothermic actuator slowly open, so that let chilled water or hot water into the fan coil unit, to provide cooling capacity or heat capacity for the room, when the room temperature reaches the thermostat set value. Electrothermic two-way valve received the signal and closes slowly, cutting water into the fan coil unit, reduce cooling capacity or heat capacity for the room. Power-off (normally open type), the working principle is opposite.

The valve electricthermic actuator is different from the ordinary electric actuator, its inner without any gears and other mechanical original, no motor and other power devices, will not produce mechanical failure, it has the characteristics of slow opening and closing, making room temperature stable. Improving the body's comfort, and can effectively reduce noise and prevent water hammer phenomenon.

Technical Specification:

Size	DN20-DN32
Working Temperature	10~120oC
Working Pressure	PN25
Fluid Medium	Water/Ethylene Glycol
Connection	Threaded Connection
Connection Standard	EN 10226 GB/T 7306.1-2000
IP Grade	Ip44
Working voltage	220VAC 50/60HZ or 24VAC 50/60HZ
Power	3W
Speed	4 min
Control Characteristic	ON/OFF Control

Material

Body	Casting Brass
Ball	Stainless Steel
Stem	Stainless Steel
Sealing	EPDM
Actuator Shell	ABS

Technical Parameter:

Product Type:

Type	Structure	Size	Kvs	Shutoff Pressure
TFD015-0SP01	Two-way Valve	DN15	4.62	200KPa
TFD020-0SP01		DN20	7.50	1000KPa
TFD025-0SP01		DN25	13.02	1000KPa
TFD032-0SP01		DN32	25.97	1000KPa
TFD015-0SP01	Three-way Valve	DN15	4.62	200KPa
TFD020-0SP01		DN20	7.50	1000KPa
TFD025-0SP01		DN25	13.02	1000KPa
TFD032-0SP01		DN32	25.97	1000KPa

FCU Electrothermic Valve (DN20-DN32)

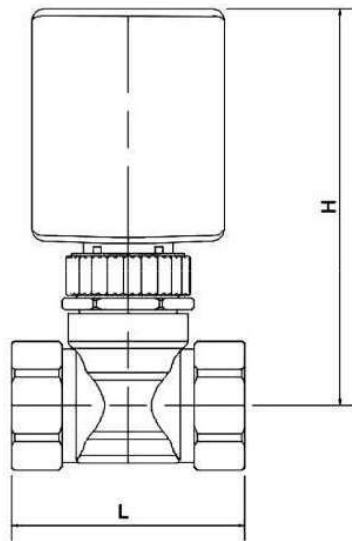
Coding Rules:

T	TOA.V	T	FO	020	0S	P02	A
FO	FCU Electrothermic Valve						
DN							
020-DN20	025-DN25						
032-DN32							
0S	Two way threaded						
IP Grade							
P02	PN25						
A	closed						
B	opened						

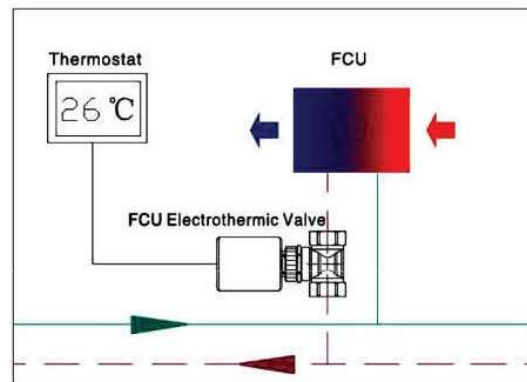
Installation:

- Please note that the arrow on the valve body should be consistent with the medium flow.
- When using, Please check whether the supply voltage is the same as the power supply voltage required by the electric actuator to avoid damage to the product.
- the installer must be trained or experienced to ensure that the installation is completed successfully.
- At the end of the installation, a thorough check must be made to ensure that the installation is correct.
- to ensure that there is no accident in the installation work, the piping system must be thoroughly cleaned (if necessary, chemical reagents) to ensure that the piping system is clean, free of rust and dirt, and that all filtration must be removed before flushing device to ensure smooth piping.
- Note that the equipment should not be used in the media containing more oil, mineral oil and other high viscosity or corrosive place.

Dimension:



Installation diagram:



DN	Kvs	Kpa	Work Temperature (uC)	PN (MPa)	L(mm)	H(mm)
3/4'(DN20)	2.8	300	-10-120	2.5	64	94
1*(DN25)	4	250	-10-120	2.5	70	100
1 1/4*(DN32)	5.6	250	-10-120	2.5	76	100

Electrical Two/Three-Way Control Valve (DN15-500)

Application:

The Series TRV Electric Two/Three-way Control Valves are used with Series TACR actuators. They are extensively applied to HVAC water systems, boiler systems, heat exchange systems or AHU steam systems to regulate the flow rates of fluids in these systems.

Features:

- Equal percentage control characteristic achieves high control precision.
- Electronic presetting function facilitates on-site commissioning.
- Automatic fault detection and alarm functions.
- With V-shaped sealing ring and stainless steel spring compensation function, higher abrasion resistance and longer life.

Operating Principles:

The series TRV Electrical Two-Way Control valve applied in HVAC system, it is important for hydronic balancing to transport energy and maintain water recycle system. After the valve's actuator receives a control signal from the BA system, the actuator moves the valve stem to regulate the valve's opening rate, and thus changes the system's flow rate.

Technical Parameter:

Two way	Three way	DN	Kvs	Stroke (mm)	Actuator Force (N)	Two-way ΔP (Kpa)	Three-way ΔP (Kpa)
TRV015-0FP01W	TRV3153FP01W	DN15	4.00	20.00	500.00	≤1600	≤800
TRV020-0FP01W	TRV0203FP01W	DN20	5.00	20.00	500.00	≤1100	≤800
TRV025-0FP01W	TRV0253FP01W	DN25	7.50	20.00	500.00	≤700	≤800
TRV032-0FP01W	TRV0323FP01W	DN32	13.00	20.00	500.00	≤400	≤800
TRV040-0FP01W	TRV0403FP01W	DN40	21.00	20.00	1000.00	≤450	≤800
TRV050-0FP01W	TRV0503FP01W	DN50	31.00	20.00	1000.00	≤300	≤300
TRV065-0FP01W	TRV0653FP01W	DN65	50.00	20.00	1800.00	≤450	≤450
TRV080-0FP01W	TRV0803FP01W	DN80	80.00	20.00	1800.00	≤300	≤270
TRV100-0FP01W	TRV1003FP01W	DN100	125.00	40.00	3000.00	≤280	≤200
TRV125-0FP01W	TRV1253FP01W	DN125	200.00	40.00	3000.00	≤1600	≤150
TRV150-0FP01W	TRV1503FP01W	DN150	300.00	40.00	3000.00	≤1600	≤100
TRV200-0FP01W	TRV2003FP01W	DN200	520.00	40.00	5000.00	≤1600	≤130
TRV250-0FP01W	TRV2503FP01W	DN250	750.00	40.00	5000.00	≤1600	≤80
TRV300-0FP01W	TRV3003FP01W	DN300	1200.00	00.001	6000.00	≤1600	≤250
TRV350-0FP01W	TRV3503FP01W	DN350	1800.00	00.001	6000.00	≤1600	≤150
TRV400-0FP01W	TRV4003FP01W	DN400	2200.00	00.001	6000.00	≤1600	≤100

Two way	DN	Kvs	Stroke (mm)	Actuator Force (N)	Two-way ΔP (Kpa)
TRV015-0FP01S-	DN15	4.00	20.00	500.00	≤1000
TRV020-0FP01S-	DN20	5.00	20.00	500.00	≤1000
TRV025-0FP01S-	DN25	7.50	20.00	1000.00	≤1000
TRV032-0FP01S-	DN32	13.00	20.00	1000.00	≤600
TRV040-0FP01S-	DN40	21.00	20.00	1800.00	≤1600
TRV050-0FP01S-	DN50	31.00	20.00	1800.00	≤1600
TRV065-0FP01S-	DN65	50.00	20.00	3000.00	≤1600
TRV080-0FP01S-	DN80	80.00	20.00	3000.00	≤1600
TRV100-0FP01S-	DN100	125.00	40.00	3000.00	≤1600
TRV125-0FP01S-	DN125	200.00	40.00	3000.00	≤1600
TRV150-0FP01S-	DN150	300.00	40.00	3000.00	≤1600
TRV200-0FP01S-	DN200	520.00	40.00	5000.00	≤1600
TRV250-0FP01S-	DN250	750.00	40.00	5000.00	≤1600
TRV300-0FP01S-	DN300	1200.00	100.00	16000.00	≤1600
TRV350-0FP01S-	DN350	1800.00	100.00	16000.00	≤1600
TRV400-0FP01S-	DN400	2200.00	100.00	16000.00	≤1600



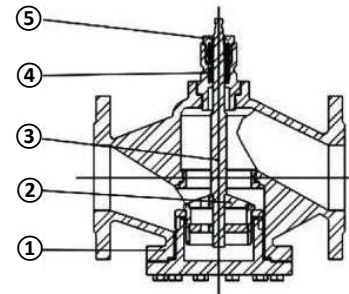
DN40-125



DN150-200

Materials:

1. Body	DI
2. Core	ss
3. Stem	ss
4. Spring	ss
5. Sealing	PTFE/Viton



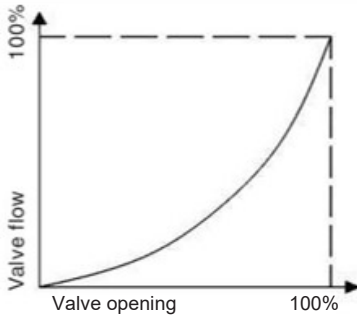
Technical Specification:

Dimensions	DN15-DN500
Working Temperature	-25~150oC (water) 2~180oC (steam)
Working Pressure	PN16-PN25
Fluid Medium	Water/Ethylene Glycol/steam
Connection	Flange Connection
Connection standard	EN 1092-1/2 GB/T 17241.6-2008
Flow Deviation	+5%
Function	Two/Three way control
Control	Equal Percentage
Leak Rate	<0.02%Kvs

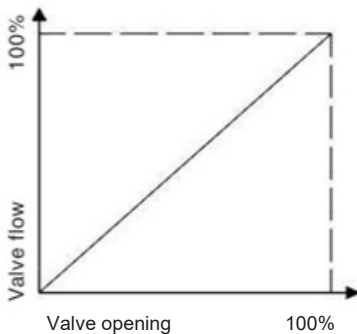
2~220vC Body

Two way	DN	Kvs	Stroke (mm)	Actuator Force (N)	Two-way ΔP (Kpa)
TRV015-0FP01T-	DN15	4.00	20.00	1800.00	≤1600
TRV020-0FP01T-	DN20	5.00	20.00	1800.00	≤1600
TRV025-0FP01T-	DN25	7.50	20.00	1800.00	≤1600
TRV032-0FP01T-	DN32	13.00	20.00	1800.00	≤1600
TRV040-0FP01T-	DN40	21.00	20.00	1800.00	≤1600
TRV050-0FP01T-	DN50	31.00	20.00	1800.00	≤1600
TRV065-0FP01T-	DN65	50.00	20.00	3000.00	≤1600
TRV080-0FP01T-	DN80	80.00	20.00	3000.00	≤1600
TRV100-0FP01T-	DN100	125.00	40.00	3000.00	≤1600
TRV125-0FP01T-	DN125	200.00	40.00	3000.00	≤1600
TRV150-0FP01T-	DN150	300.00	40.00	3000.00	≤1600
TRV200-0FP01T-	DN200	520.00	40.00	5000.00	≤1600
TRV250-0FP01T-	DN250	750.00	40.00	5000.00	≤1600
TRV300-0FP01T-	DN300	1200.00	100.00	16000.00	≤1600
TRV350-0FP01T-	DN350	1800.00	100.00	16000.00	≤1600
TRV400-0FP01T-	DN400	2200.00	100.00	16000.00	≤1600

Flow characteristic:



A-B / A-AB Equal-percentage Flow Characteristic

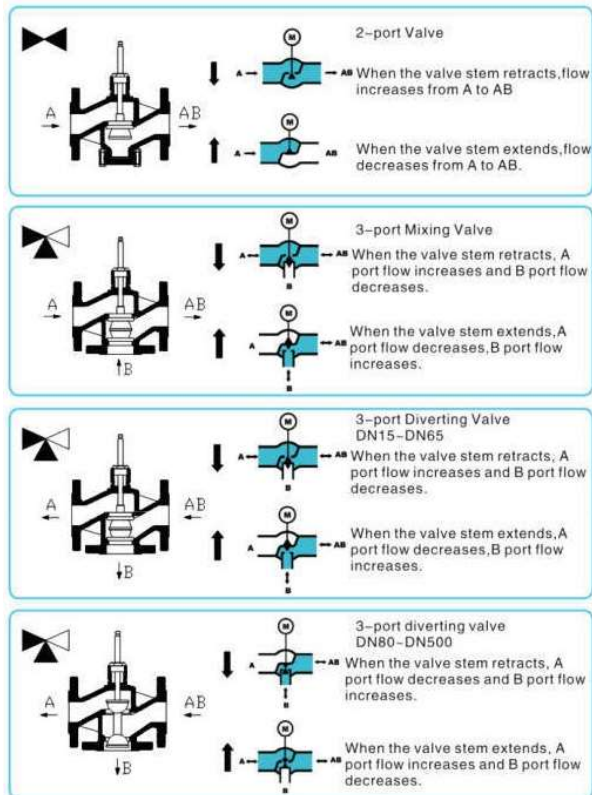


B-AB Equal-linear Flow Characteristic

Coding Rules:

Code	Description
T	TOA.V
RV	Two/Three way control valve
DN	
015-DN15	020-DN20
025-DN25	032-DN32
040-DN40	050-DN50
065-DN65	080-DN80
100-DN100	125-DN125
150-DN150	200-DN200
250-DN250	300-DN300
350-DN350	400-DN400
0F	Two way flanged
3F	Three way flanged
Pressure	
P01	PN16
P02	PN25
Fluid Medium	
W	water
S	steam
T	High temperature steam
Actuator (N)	
500	

Structural characteristics:

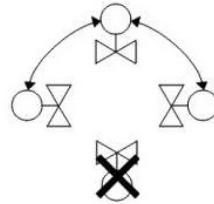


Electrical Two/Three-Way Control Valve (DN15-500)

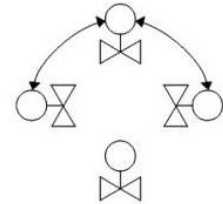
Installation Notes:

- Note that the flow of the valve medium should be consistent with the flow of the pipe medium.
- The valve can be installed on the water supply or return line, generally recommended to install in the return pipe installed in the return pipe can make the flow control more stable, while the hot water return part of the temperature is low (can extend the service life of the valve), also recommended in the valve before the installation of filters and check valves. When the medium is steam, the pipeline installed on the drain value, you can remove the condensate, otherwise it will affect the valve life.
- Note the direction of valve installation.

Installation direction:

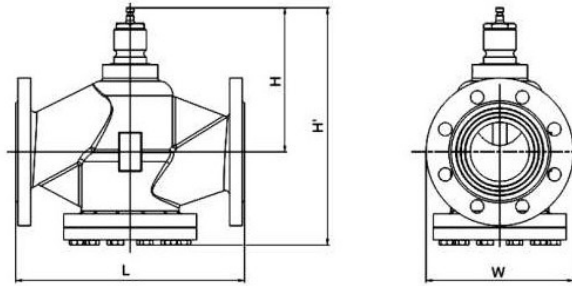


Downward Installation Prohibited
(Fluid Medium: Cold/Hot Water)



Installed in Random Angle
(Fluid Medium: Steam)

Dimension:



DN	L(mm)	H(mm)	H'(mm) Two way	H'(mm) Three way	W(mm)	H-1(mm)	H-2(mm)	H-3(mm)	H-4(mm)
DN15	130	107	177	213	95	269	378	407	/
DN20	150	107	177	213	105	269	378	407	/
DN25	160	112	187	223	115	274	383	412	/
DN32	180	121	201	242	140	283	392	421	/
DN40	200	126	208	248	150	288	397	426	/
DN50	230	136	234	272	165	298	407	436	/
DN65	290	166	278	322	185	328	437	466	/
DN80	310	196	326	381	200	358	467	496	/
DN100	350	212	362	440	220	/	483	512	/
DN125	400	233	408	473	250	/	504	533	/
DN150	480	247	447	517	285	/	518	547	/
DN200	500	339	575	659	340	/	610	639	/
DN250	600	391	681	791	405	/	662	691	/
DN300	700	485	807	932	460	/	694	723	1084
DN350	788	565	965	1085	520	/	/	/	1164
DN400	912	615	1037	1210	580	/	/	/	1214

*H-1: when connected to a 500N/1000N actuator

H-2: when connected to an 1800N/3000N/5000N actuator without manual lever

H-3: when connected to an 1800N/3000N/5000N actuator with manual lever

H-4: when connected to a 16000N actuator

DN400 above the caliber please contact us.

Electric Control Ball Valve (DN15-DN50)

Application:

The Series TRB Electric Control Ball Valve is widely used to regulate the flow in center air-conditioning, heating, water treatment and industry processing systems. It is driven by the TACRB rotary actuator. After receiving a standard regulation signal or a floating point signal, the actuator rotates the ball in the valve to the designed opening position.

Features:

- | Unique conical inlet design, to achieve accurate equal percentage flow control characteristics.
- | Simple flow channel design, not easy to plug, the use of more secure reliable.
- | High circulation capacity, low resistance loss.
- | Double seated design, no leakage double insurance.
- | Ultra-quiet flow channel design, to ensure a quiet environment.
- | High turn pressure, high pressure level.
- | Equipped with manual switch and opening instructions.



Operating Principles:

Series TRB Electric Control Ball Valve is driven by the Series ACRB rotary actuator. After receiving a standard regulation signal (0-10V or 4-20mA) or three floating point signal, the actuator rotates the ball in the valve body to the designated opening position. Because the flow area between the valve ball.

Technical Specification:

Dimensions	DN15-DN50
Operating Temperature	2~94°C
Pressure level	PN25
Working Medium	Water/Ethylene Glycol
Connection	Threaded Connection
Connection Standard	EN 10226 GB/T 7306.1-2000
Close off pressure	600KPa
Flow characteristics	Equal percentage characteristic curve
Leakage rate	Control path < 0.01 % Kvs, Three pass by < 0.5%Kvs
Adjustment method	Angle travel 90°

Materials:

Body	ss 304
Seat	PTFE
Ball	ss 304
Shaft	ss 304
Sealing	NBR

Coding Rules:

T	TOA.V	T	RB	015	OS	P02
RB	Electric control ball valve					
DN						
015-DN15	020-DN20					
025-DN25	032-DN32					
040-DN40	050-DN50					
OS	Two way threaded					
3S	Three way threaded					
Pressure						
P02	PN25					

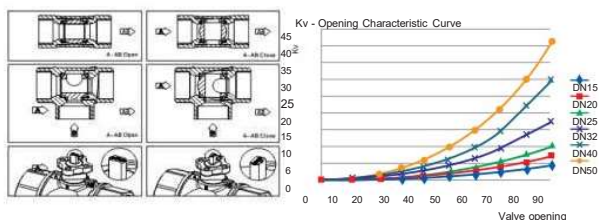
Technical Parameter:

Product Type:

Type	Function	DN	Kvs	Actuator
TRB015-0SP02	Two-way Valve	DN15	4	Series of TACRB4
TRB020-0SP02	Two-way Valve	DN20	6.3	
TRB025-0SP02	Two-way Valve	DN25	10	
TRB032-0SP02	Two-way Valve	DN32	16	Series of TACRB5
TRB040-0SP02	Two-way Valve	DN40	25	
TRB050-0SP02	Two-way Valve	DN50	40	

Type	Function	DN	Kvs	Actuator
TRB015-3SP02	Three-way Valve	DN15	4	Series of TACRB4
TRB020-3SP02	Three-way Valve	DN20	6.3	
TRB025-3SP02	Three-way Valve	DN25	10	
TRB032-3SP02	Three-way Valve	DN32	16	Series of TACRB5
TRB040-3SP02	Three-way Valve	DN40	25	
TRB050-3SP02	Three-way Valve	DN50	40	

* The above Kvs values of different sized three-way valves indicate the valve's Kvs when the flow goes through the valve from A to AB. If the flow goes through the three-way valve from B to AB, the valve's Kvs is 70% of the Kvs value in the above table.



Electrical Control Ball Valve (DN15-DN50)

Installation:

Two-way regulating ball valve is installed in the system of the return pipe, to reduce the thermal stress on the valve. Three control ball valve can be used to bypass or mixed flow system respectively, when installation, please make sure that the T slot mark at the top of the stem and the T in the inner hole is constant. If valve can be installed, please note the flow direction of the valve; the blending model drives on the packing box in the instruction or installation method is described in detail. Ball valve can be installed horizontal (Figure 1), and vertical (Figure 2), but cannot put back the clock down installation.

T-shaped Groove	
Flow direction	
Status	A-AB off A-AB on

System Condition	Mixing		Diverting	
T-shaped Groove				
Flow Direction				
Status	B-AB Open	A-AB Open	AB-B Open	AB-A Open

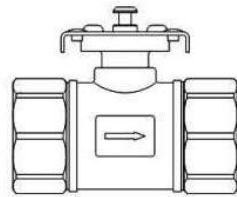


Figure 1

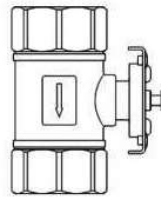


Figure 2

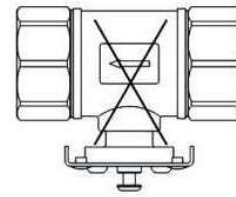
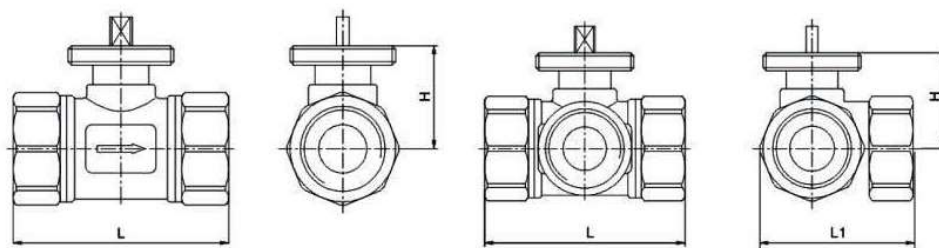


Figure 3

Dimension:



DN	Threaded (G)	Size I		mm)	
		L		L1	H
		Two-way	Three-way		
DN15	1/2"	68	68	46	32
DN20	3/4"	68	68	46	32
DN25	1"	82	84	57	37
DN32	1 1/4"	98	104	50	48
DN40	1 1/2"	105	111	55	48
DN50	2"	122	143	62	52

Electric Control Ball Valve (DN65-DN150)

Application:

The Series TRB Electric Control Ball Valve is widely used to regulate the flow in center air-conditioning, heating, water treatment and industry processing systems. It is driven by the TACRB rotary actuator. After receiving a standard regulation signal or a floating point signal, the actuator rotates the ball in the valve to the designed opening position.

Features:

- Unique conical inlet design, to achieve accurate equal percentage flow control characteristics.
- Simple flow channel design, not easy to plug, the use of more secure and reliable.
- High circulation capacity, low resistance loss.
- Double seated design, no leakage double insurance.
- Ultra-quiet flow channel design, to ensure a quiet environment.
- High turn pressure, high pressure level.
- Equipped with manual switch and opening instructions.

Operating Principles:

Series TRB Electric Control Ball Valve is driven by the Series ACRB rotary actuator. After receiving a standard regulation signal (0-10V or 4-20mA) or three floating point signal, the actuator rotates the ball in the valve body to the designated opening position. Because the flow area between the valve ball.



Technical Specification:

Dimensions	DN65-DN150
Operating Temperature	2~94oC
Pressure level	PN16
Working Medium	Water/Ethylene Glycol
Connection	Flanged Connection
Connection standard	EN 1092-1/2 GB/T 17241.6-2008
Close off pressure	600KPa
Flow characteristics	Equal percentage characteristic curve
Leakage rate	Control path <0.01 %Kvs
Adjustment method	Angle travel 90o

Materials:

Body	CI/DI
Seat	PTFE
Ball	SS304
Shaft	SS304
Sealing	NBR

Technical Parameter:

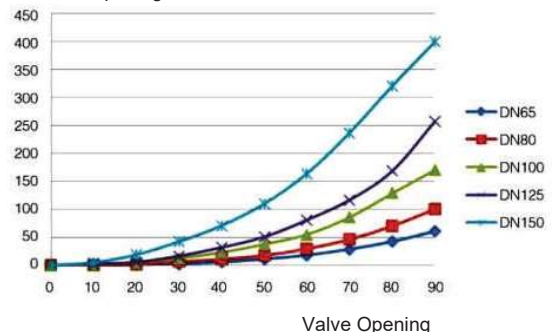
Product Type:

Type	Function	DN	Kvs	Actuator
TRB065-0FP01	Two-way Valve	DN65	64	Series of TACRB25
TRB080-0FP01	Two-way Valve	DN80	102	
TRB100-0FP01	Two-way Valve	DN100	163	
TRB125-0FP01	Two-way Valve	DN125	260	Series of TACRB65
TRB150-0FP01	Two-way Valve	DN150	416	

Coding Rules:

T	TOA.V	T	RB	065	0F	P01
RB	Electric control ball valve					
DN						
065-DN65	080-DN80					
100-DN100	125-DN125					
150-DN150						
0F	Two way flange connection					
PN						
P01	PN16					

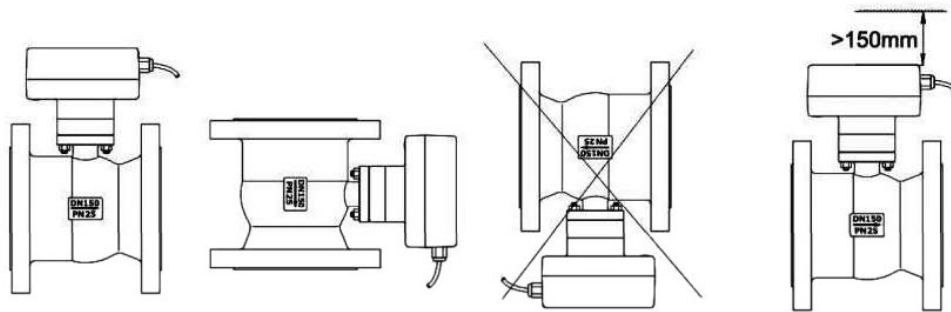
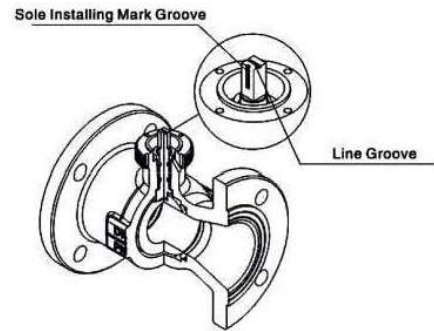
Kv - Opening Characteristic Curve:



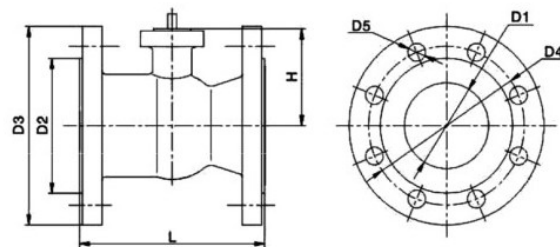
Electrical Control Ball Valve (DN65-DN150)

Installation:

The actuator can be installed after the valve has been installed in the pipe. The line groove on the top of the valve stem stands for the direction of the valve ball's through hole. It allows users to know the opening degree of the inside valve ball convenient. Moreover, when installing the actuator, the direction of the shaft pin in the actuator's square hole should be in the line with the direction of the sole installing mark groove.



Dimension:



DN	Dimension	L(mm)	H(mm)	D1(mm)	D2(mm)	D3(mm)	D4(mm)	D5(mm)	No. of D5
DN65		190	98	82	120	185	145	18	4/8
DN80		190	98	82	136	200	160	19	8
DN100		230	108	102	156	220	180	18	8
DN125		254	115	125	188	250	210	18	8
DN150		267	133	154	210	285	240	22	8

Electric Control Valve Actuator

Application:

The Series TACRV actuator is widely used in auto-control system to regulate the opening rate of electronic valves. Along with series TRV valve body, the actuator is able to control the system's temperature, pressure and flow through receiving different kinds of signals.

Features:

- | Electronic presetting facilitates on-site commissioning.
- | With valve position indicator.
- | Manual operation facilitates on-site trouble-shooting.
- | Automatic fault detection and alarm functions.
- | Precise positioning achieved by self-calibration function (automatically run when first starts up).

Operating Principles:

Intelligent Proportional Control Actuator

Intelligent Proportional Control Actuator can realize linear flow control. Through inputting 0(2)-10VDC or 0(4)-20mA control signal, automatic control of the valve and consequently of the fluid is allowed. Intelligent proportional control actuator automatically runs self-calibration function without manual adjustment then first starts up. Meanwhile, its operation indicating light (RUN) begins to blink at 1 Hz. The actuator's shaft moves outwards to its lower limit position and then retracts to its upper position (at this moment the actuator is not in the control of any control signal). After around 150s, the indicating light stops blinking, and the whole self-calibration process is completed. At this point, the actuator starts to be controlled by control signals. Additionally, it self-calibration is needed in the running of the actuator, press the red button on the actuator's circuit board for more than 3s, and then the actuator will begin self-calibrating. This is namely manual self calibration function, the process of which is the same as that of the automatic self-calibration.

Floating Point Control Actuator

Through the wiring modes of three-point control or on/off control, the floating point control enables the actuator to realize the states of on, off or pause.

Intelligent Proportional Control Actuator:

Power Voltage	1:24VAC	1:24VAC	1:24VAC 220VAC	1:24VAC 2:220VAC	1:24VAC 2:220VAC	2:220VAC
Power Frequency (Hz)	50+1%	50+1%	50+1%	50+1%	50+1%	50+1%
Energy Consumption	7.5VA	7.5VA	15VA	15VA	15VA	100VA
Rated Actuator Force (N)	500	1000	1800	3000	5000	16000
Rated Actuator Force (N)	500-700	1000-2000	1800-2000	3000-3500	4500-5500	16000-16500
Action Time (s/mm)	3.85	3.85	3.2	3.2	3.2	1.36
Stroke (mm)	22	22	44	44	44	110
IP Grade	IP54	IP54	IP54	IP54	IP54	IP54
Input Signal	0(2)-10VDC	0(2)-10VDC	0(2)-10VDC	0(2)-10VDC	0(2)-10VDC	0(2)-10VDC
	0(4)-20mA	0(4)-20mA	0(4)-20mA	0(4)-20mA	0(4)-20mA	0(4)-20mA
Output Signal	0(2)-10VDC	0(2)-10VDC	0(2)-10VDC	0(2)-10VDC	0(2)-10VDC	0(2)-10VDC
	0(4)-20mA	0(4)-20mA	0(4)-20mA	0(4)-20mA	0(4)-20mA	0(4)-20mA
Wiring Diagram	24VAC:Fig.1	24VAC:Fig.1	24VAC:Fig.1 220VAC:Fig.2	24VAC:Fig.1 220VAC:Fig.2	24VAC:Fig.1 220VAC:Fig.2	Fig 3



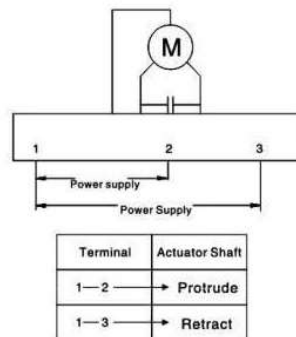
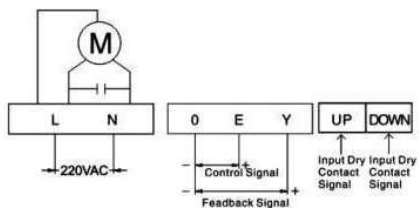
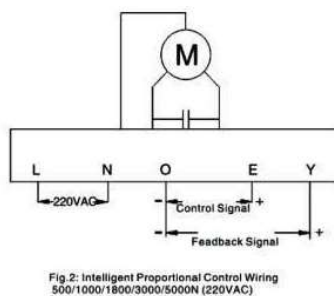
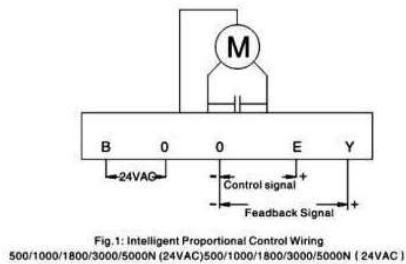
Technical Specification:

Material:
 Actuator Support: Die Casting Aluminum
 Shell: 500/1000N:PC
 1800/3000/5000/16000N: Die Casting Aluminum

Floating Control Actuator:

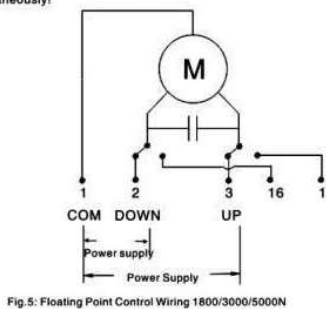
Type	TACRV500-11	TACRV1000-11	TACRV1800-1 (2)1	TACRV3000-1(2)1	TACRV5000-1(2)1
Power Voltage	1:24VAC	1:24VAC	1:24VAC 2:220VAC	1:24VAC 2:220VAC	1:24VAC 2:220VAC
Power Frequency (Hz)	50+1%	50+1%	50+1%	50+1%	50+1%
Energy Consumption	5.5VA	5.5VA	13VA	13VA	13VA
Rated Actuator Force (N)	500	1000	1800	3000	5000
Rated Actuator Force (N)	500-700	1000-1200	1800-2000	3000-3500	4500-5500
Action Time (s/mm)	3.85	3.85	3.2	3.2	3.2
Stroke (mm)	22	22	44	44	44
IP Grade	IP54	IP54	IP54	IP54	IP54
Input Signal	3-Point	3-Point	3-Point	3-Point	3-Point
Wiring Diagram	Fig.4	Fig.4	Fig.5	Fig.5	Fig.5

Wiring and Panel Diagrams of Electric Actuator:



Remark:

- A. When a voltage is applied between End 1 and End 2, the actuator's shaft moves outwards.
 - B. When a voltage is applied between End 1 and End 3, the actuator's shaft moves inwards.
 - C. When there is no voltage, the actuator's shaft stays at the current position.
- *It is forbidden to apply voltages between End 1 and End 2, and between End 1 and End 3 simultaneously!



■ **Technical Parameter:**

Product Type:

No	Type	Name
1	TACRV500-10	550N Intelligent Proportional Control Actuator (24VAC)
2	TACRV500-11	500N Floating Point Control Actuator (24VAC)
3	TACRV1000-10	1000N Intelligent Proportional Control Actuator (24VAC)
4	TACRV1000-11	1000N Floating Point Control Actuator (24VAC)
5	TACRV1800-10	1800N Intelligent Proportional Control Actuator (24VAC)
6	TACRV1800-20	1800N Intelligent Proportional Control Actuator (24VAC)
7	TACRV1800-11	1800N Floating Point Control Actuator (24VAC)
8	TACRV1800-21	1800N Floating Point Control Actuator (24VAC)
9	TACRV3000-10	3000N Intelligent Proportional Control Actuator (24VAC)
10	TACRV3000-20	3000N Intelligent Proportional Control Actuator (24VAC)
11	TACRV3000-11	3000N Floating Point Control Actuator (24VAC)
12	TACRV3000-21	3000N Floating Point Control Actuator (24VAC)
13	TACRV5000-10	5000N Intelligent Proportional Control Actuator (24VAC)
14	TACRV5000-20	5000N Intelligent Proportional Control Actuator (24VAC)
15	TACRV5000-11	5000N Floating Point Control Actuator (24VAC)
16	TACRV5000-21	5000N Floating Point Control Actuator (24VAC)
17	TACRV16000-20	16000N Intelligent Proportional Control Actuator (24VAC)

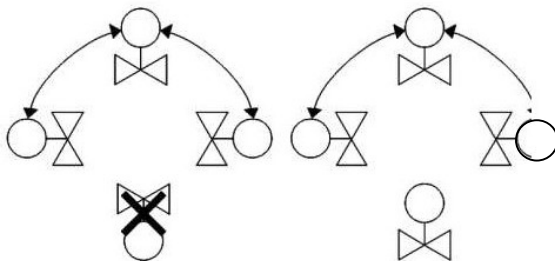
Coding Rules:

T	TOA.V	T	AC	RV	500	1	0
AC	Applied the series TRV actuator						
RV	Output Force (N)						
	500:500N	1000:1000N					
	1800:1800N	3000:3000N					
	5000:5000N	16000:16000N					
	Power Supply						
	1:24VAC	2:220VAC					
	Regulating Type						
	0: Intelligent Proportional Control Actuator						
	1: Three-Point Floating Control Valve						

Installation:

1. Easily accessible.
2. Leave room to move protection cover.
3. Actuator can not upside down.
4. Attention the working temperature (-5~55oC)
5. If you install valve in the outdoor, the actuator must be installed protection cover and ventilation. Please note that don's wetting the inside of valve and keep dry.

Installation:



Fluid: Water, Avoid Downward Installation

Fluid: Steam, Any Direction is Feasible

Remark:

- A. When a voltage is applied between End 1 and End 2, the actuators shaft moves outwards.
- B. When a voltage is applied between End 1 and End 3, the actuators shaft moves inwards.
- c. When a voltage is applied between End 1 and End 16: the actuator's shaft moves outwards to its lower limit position, providing active feedback (DF3 function).
- D. When a voltage is applied between End 1 and End 17, the actuator's shaft moves inwards to its upper limit position, providing active feedback (DF3 function).

Electric Control Ball Valve Actuator

Application:

Series TACRB Ball valve actuator adopts bilateral control along with series TRB Electric Control Ball Valve and series TDV Dynamic Balancing, the actuator can regulate the flow rate of cold or hot water. It is widely used in air conditioning, heating, water treatment and industrial processing systems to control the fluids.

Features:

- AC two-way synchronous motor.
- Built-in switch has power-off function when in place, achieving longer service life.
- Built-in switch allows limited adjustment.
- Manual lever provides flexible switch operation.
- Proportional control actuator can provide DC 0-1 or feedback signal.
- The control signals of proportional, floating-point and on/off are optional.

Operating Principles:

Used along with Series TRB Electric Control Ball Valve or Series TDV Electric Control Valve, through receiving BA system regulation signal (0-10V of 4-20mA) or a floating point signal to actuate valve to change flow area of the valve core and seat, control flow area of valve and achieve automatically adjustment.

Technical Parameter:

Product Type:

Type	Torque	Voltage	Regulating Type
TACRB4-11	4Nm	24VAC	Three point/feedback
TACRB4-21	4Nm	220VAC	Three point/feedback
TACRB4-10	4Nm	24VAC	Intelligent Proportional Control Actuator
TACRB4-11	5Nm	24VAC	Three point/feedback
TACRB4-21	5Nm	220VAC	Three point/feedback
TACRB4-10	5Nm	24VAC	Intelligent Proportional Control Actuator
TACRB4-11	25Nm	24VAC	Three point/feedback
TACRB4-21	25Nm	220VAC	Three point/feedback
FACRB4-10	25Nm	24VAC	Intelligent Proportional Control Actuator
TACRB4-11	65Nm	24VAC	Three point/feedback
TACRB4-21	65Nm	220VAC	Three point/feedback
TACRB4-10	65Nm	24VAC	Intelligent Proportional Control Actuator

Proportional Control Actuator:

Type	TACRB4-1(2)1	TACRB5-1(2)1	TACRB25-1(2)1	TACRB65-1(2)1
Voltage	24VAC 220VAC	24VAC 220VAC	24VAC 220VAC	24VAC 220VAC
Operating	3-point/Feedback	3-point/Feedback	3-point/Feedback	3-point/Feedback
Frequent	50/60HZ	50/60Hz	50/60HZ	50/60HZ
Power	3VA	5VA	10VA	10VA
Torque (Nm)	≥4	≥5	≥25	≥65
Operating time (0-90o)	45s	50s	121s	121s
IP Grade	IP54	IP54	IP54	IP54
Control Signal	3-point	3-point	3-point	3-point
Upper Shell	Flame-retardan ABS Plastic	Flame-retardan ABS Plastic	Flame-retardan ABS Plastic	Flame-retardan ABS Plastic
Lower Shell	Flame-retardan Nylon PA6-110 Plastic	Flame-retardan Nylon PA6-110 Plastic	Die-casting Aluminum alloy	Die-casting Aluminum alloy

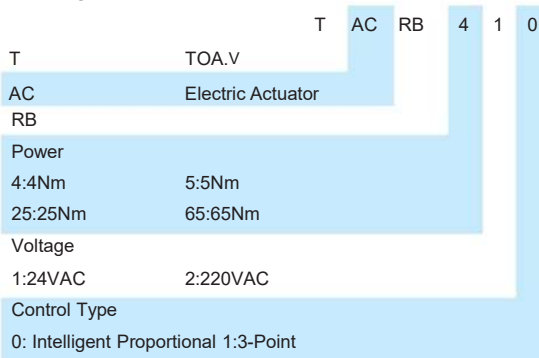


Technical Specification:

Proportional Control Actuator:

Type	TACRB4-10	TACRB5-10	TACRB25-10	TACRB65-10
Voltage	24VAC	24VAC	24VAC	24VAC
Frequency	50/60HZ	50/60Hz	50/60Hz	50/60Hz
Power	4VA	4VA	5.5VA	11VA
Torque (Nm)	≥4	≥5	≥25	≥65
Operating time (0-90o)	45s	50s	121s	121s
IP Grade	IP54	IP54	IP54	IP54
Control Signal	0(2)-10VDC 0(4)-20mA	0(2)-10VDC 0(4)>20mA	0(2)-10VDC 0(4)>20mA	0(2)-10VDC 0(4)>20mA
Feedback	0-10VDC	0-10VDC	0-10VDC	0-10VDC
Upper Shell	Flame-retardan ABS Plastic	Flame-retardan ABS Plastic	Flame-retardan ABS Plastic	Flame-retardan ABS Plastic
Lower Shell	Flame-retardan Nylon PA6-110 Plastic	Flame-retardan Nylon PA6-110 Plastic	Die-casting Aluminum alloy	Die-casting Aluminum alloy

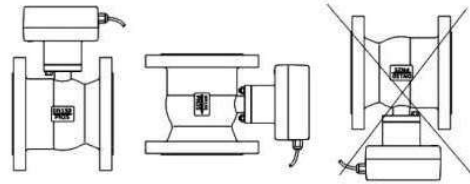
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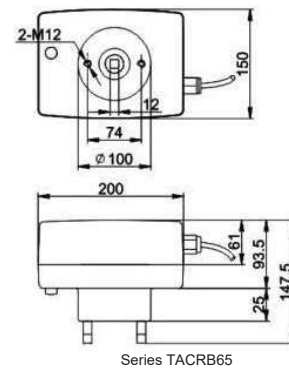
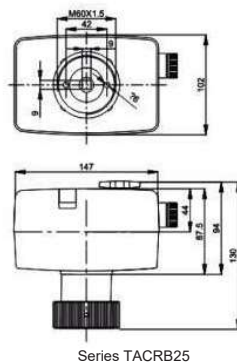
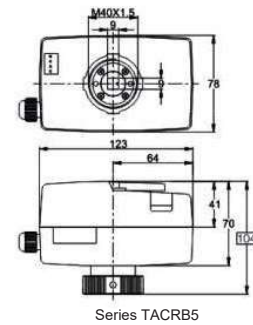
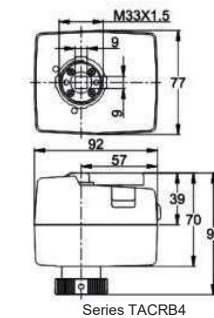
Electric Control Ball Valve Actuator

Installation:

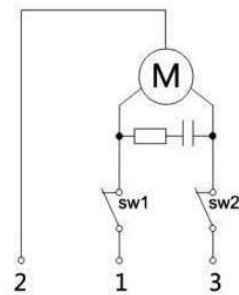
Please install the valve in the direction indicated by the arrow on the valve body. The valve can be installed horizontally and vertically, but it should not be installed downwards. The connection of the valve body and valve's actuator is clearly illustrated in the instruction manual of the valve's actuator.



Installation Dimensions (mm)

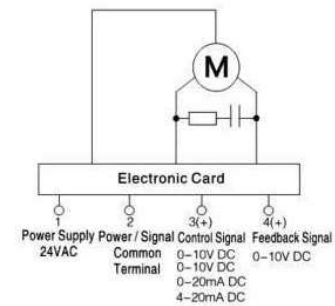


Wiring Diagram:



Power Supply Terminals	Direction of Rotation
1-2	
2-3	

Floating-point Control



Input Control Signal		Direction of Rotation
DA	RA	
Increase	Decrease	
Decrease	Increase	

Proportional Control

Proportional Integral Control Actuator

Application:

Series TACDV valve actuator adopts bilateral control along with series TDV (DN15-DN32) Electric Control Valve, the actuator can regulate the flow rate of cold or hot water. It is widely used in air conditioning, heating, water treatment and industrial processing systems to control the fluids.

Features:

- Low voltage AC bilateral keep pace with electrical machine.
- Magnetic clutches.
- Action utilize the group of plastic gears to transfer.
- Flame retardant ABS engineering plastic cover.
- Overtime protect function and troubleshoot protect function of control signal.
- Install actuator after valve installation, on-site fabrication facilities, its connection flexible and convenient.
- Graphic design of actuator can be closed to the wall, take up little space occupation.



Operating Principles:

Used along with Series TDV (DN15-32) Electric Control Valve, through receiving BA system regulation signal (0-10V of 4-20mA) or a floating point signal to actuate valve to change flow area of the valve core and seat, control flow area of valve and achieve automatically adjustment.

Adjustment with magnetic clutch is drove by bilateral electric machine. When the electric machine pause, it can be produced stable torsion after magnetic effect. Hence electric machine can stable pause any point without electricity. Actuator produced incremental signal to make electric run clockwise or anti-clockwise.

Technical Specification:

Type	TACDV 120-10	TACDV120-20	TACDV200-10	TACDV200-20
Voltage	24VAC	220VAC	24VAC	220VAC
Frequent	50/60HZ	50/60HZ	50/60 Hz	50/60 Hz
Power	3VA	3VA	3VA	3VA
Torque (N)	120-140N	120-140N	200-250N	200-250N
Operating time	50Hz: 10s/mm; 60Hz: 8.3s/mm			
IP Grade	IP43			
Control Signal	0(2)-10VDC. 0(4)-20mA			
Feedback	0-10VDC			
Shell	Flame-retardan ABS Plastic			

Technical Parameter:

Product Type:

Type	Torque	Voltage	Regulating
TACDV 120-10	120N	24VAC	Proportional Control Actuator
TACDV 120-20	120N	220VAC	Proportional Control Actuator
TACDV 200-10	200N	24VAC	Proportional Control Actuator
TACDV 200-20	200N	220VAC	Proportional Control Actuator

Coding Rules:

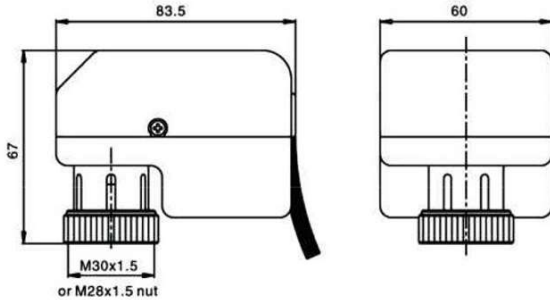
T	AC	DV	120	1	0
T	TOA.V				
AC	Electric Actuator				
DV	Applied the series TDV (DN15-DN32)				
Actuator	120:120N 200:200N				
Voltage	1:24VAC 2:220VAC				
Control Signal	0: Proportional Control; 1: Floating-point Control				

Proportional Integral Control Actuator

Attention:

- | Protect the actuator, avoid leakage to damage parts and power.
- | Actuator can not be covered by thermal insulation material.
- | When repairing drives. the power should be turned off in case of damage to the machine or caused by leakage.
- | Do not attempt to connect or remove the wires when the power supply is connected.

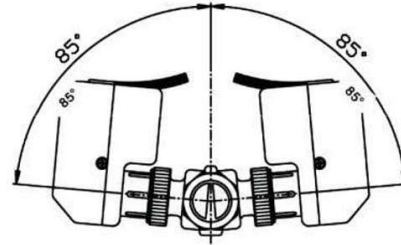
Dimension (mm):



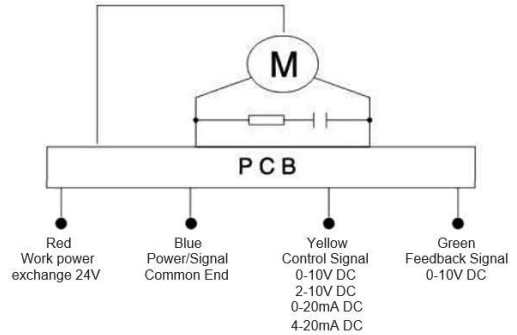
Wiring Specification:

1. Study status: After power is on, set JP1 switch as request (refer to the following list). First, switch "4" of JP1 to position ON, then press SW1 STUDY/REPOSITION button, buzzer will sound every 5 seconds, and the actuator stem is going down (opening valve) until gears are blocked (has reached the maximum stroke). Then the stem will go upward until gears are blocked again (has been in the initial position). Buzzer will make a long sound to indicate the study status is over. MCU will keep the dat in memory even power is off. Then switch "4" of JP1 back to position OFF to transform to running status. If this step is missed, the actuator will operate as usual, but it will sound every 5 seconds and go through the study status every time when power is on.
2. Running status: The actuator will reposition (search the initial position) every time when power is on. It will close the valve at first, and then the buzzer will make a long sound to indicate the actuator is ready for control signal.
3. Study/running status shift: If user needs to switch study/ running status, make sure the JP1 has been set correctly, then press SW1 STUDY/REPOSITION button. Don't need to cut off power.

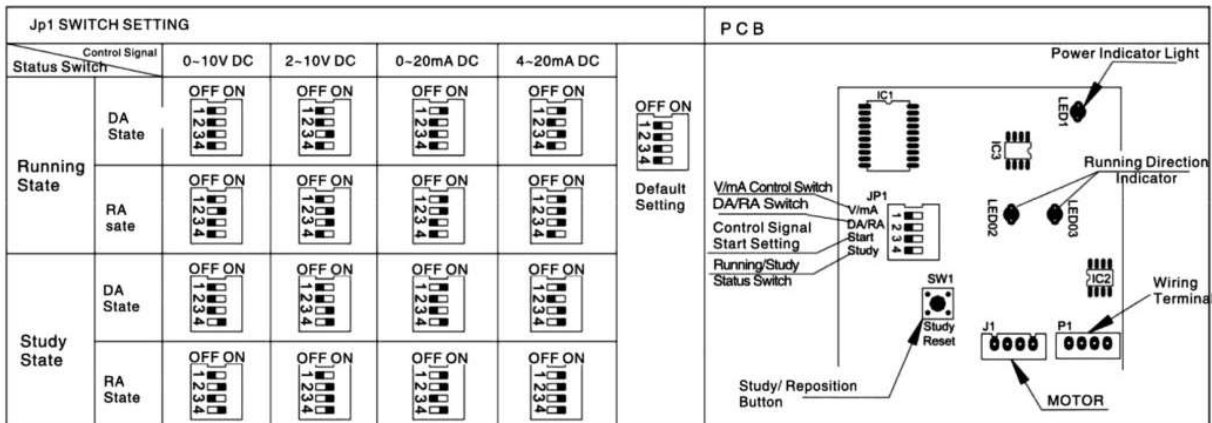
Installation:



Actuator Wiring Diagrams:



Input Control Signal		Screw
DA	RA	Down
Increase	Reduce	Upwards
Reduce	Increase	





Function:

- | Applied for water heating, electric heating, center air condition and so on.
- | Electric two-way control (on/off).
- | Lower temperature protection.
- | The response of closing human body.
- | 17 days 4 periods program.
- | FCU intelligent control.
- | Fan coil three speed control.
- | Pause power memory.
- | Capacity touch screen operating.
- | ECO saving setting.
- | Self-learning function.

Technical Parameter:

Temperature - measuring element: NTC
 Controlling temperature precision: +1eC
 Indication Range: 5~3S,C
 Environment Requirement
 Tempress: 0~4S,C
 Humidity: 5~59%RH
 Self-consumption power <2W
 Supply voltage: AC85-25V, 50/60HZ
 Connector:
 Water heating; Air condition: connection
 2x1 5mm./ 1x2.5 mm; wire
 Electric heating: 1x4 mm wire
 Load current (water heating/ air condition):
 < 2 A resistive load
 inductive load < 1 A
 (Electric heating): < 16 A resistive load
 < 6 A inductive load
 Shell material: PC+ABS retardant,arcltic
 surface Color: Black
 Diameter: 86x86x15.8mm (L'H*W)
 Hole Pitch: 60mm (standard)
 IP Grade: IP30

Application:

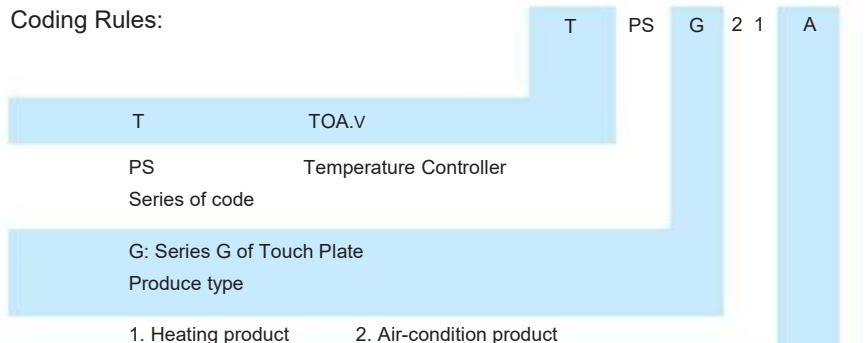
The series TOA.V TPS G thermostat includes local control, wire control, wireless control. It can automatically adjust the indoor temperature and apply the HVAS system, FCU of center air condition and so on. Micro arc surface design reveals the integration of soft and

Heating product type:

Feature	Heating water valve	Electric heating equipment	Tv.'o control wind plate	The wind plate water valve	RS4351	WIFI
TPSG11	2/3 wire motorized valve					
TPSG12						
TPSG17	2 wire motorized valve			2 wire motorized valve		
TPSG13	2/3 wire motorized valve					
TPSG14						
TPSG15	2/3 wire motorized valve					
TPSG16						

Feature	Two control wind plate	Four control wind plate	The wind plate water valve	Heating water valve	Rs485	WIFI
TPSG21A				2/3 wire motorized valve		
TPSG21B				2/3 wire motorized valve		
TPSG21C				2 wire motorized valve		
TPSG22A				2/3 wire motorized valve		
TPSG22B				2/3 wire motorized valve		
TPSG22C				2 wire motorized valve		
TPSG23A				2/3 wire motorized valve		
TPSG23B				2/3 wire motorized valve		
TPSG23C				2 wire motorized valve		
TPSG17				2 wire motorized valve		

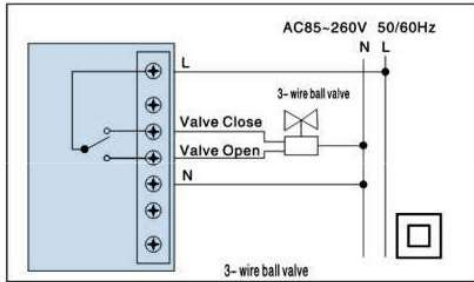
Coding Rules:



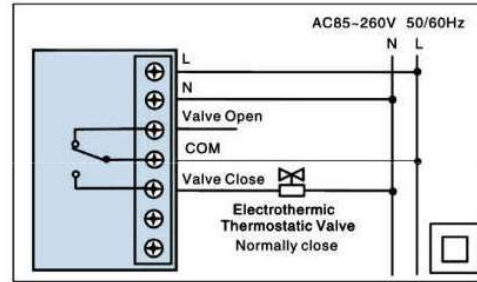
Specific function division (for air conditioning products)

- A: Control the electric valve and three-speed fan, the temperature reaches, turn off the electric valve, the fan continues to run.
- B: Control the electric valve and three-speed fan, the temperature reaches, turn off the electric valve and fan.
- C: Suitable for 4-Pipe Fan Coil control systems, control of cold/hot electric valve and three-speed fan, the temperature reaches, turn off the electric valve, the fan continues to run.

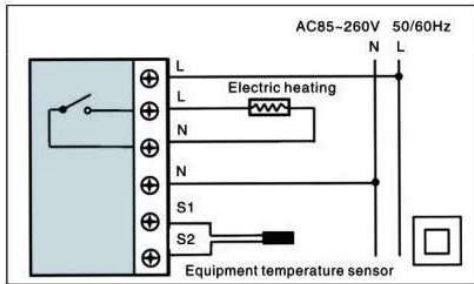
■ Installation connection diagram:



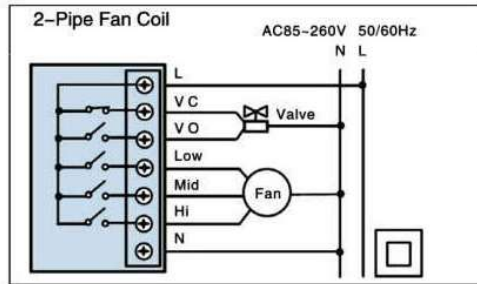
TPSG11/TPSG15



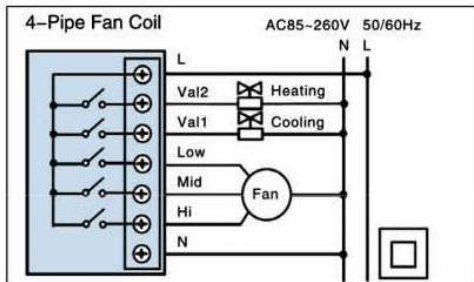
TPSG11/TPSG15



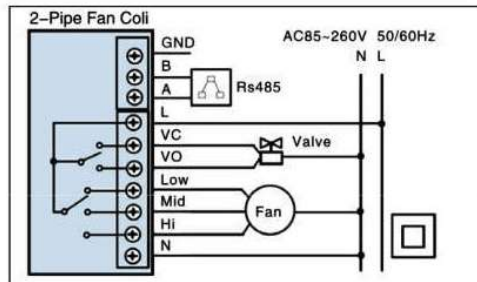
TPSG12/TPSG16



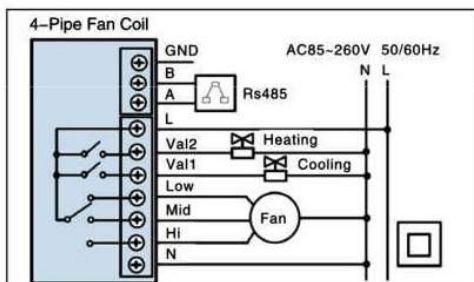
TPSG21A/B/TPSG23A/B



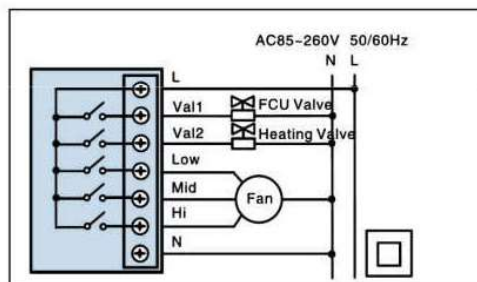
TPSG21C/TPSG23C



TPSG22A/B



TPSG22C



TPSG17

Wireless Thermostat

Application:

The series of TOA.V wireless thermostat consists of a maximum of four TPSW series thermostat and a TOA.V heating controller. Through the two-way wireless data among of the thermostat and controller communicate, delivery, receive and execute the instruction and signal to regulate temperature. The wireless thermostat is designed for Water Heating system, which suit for controlling temperature of industry, commercial and domestic bedroom and regulating of electrothermic thermostatic valve and so on equipment.



Function:

Large LCD screen d-splay.

- Ultra thin design.
- Mobile operating.
- Simple to install.
- Set time.
- Period default programming.
- Manual per-od programming.
- Keyboard lock.
- Error alarm-ng function.
- Low battery alarm indicator.
- Warm white back light.
- Indoor temperature indicator.
- 17 days 4 periods program/ 5+2 programming.
- USB charge model.
- Lithium battery.

Operator Principle:

Thermostat adopts advanced actuator, and thermostat adopts advance processor. Through the precise NTC temperature sensor real-time detect temperature, and then regulate wind and on/off electric valve to get the goal of constant indoor temperature.

Application:

Temperature Range:

Thermostat Setting Temperature Range: Lower Limit Setting Temperature to Upper Limit Setting Temperature Range Adjustable.

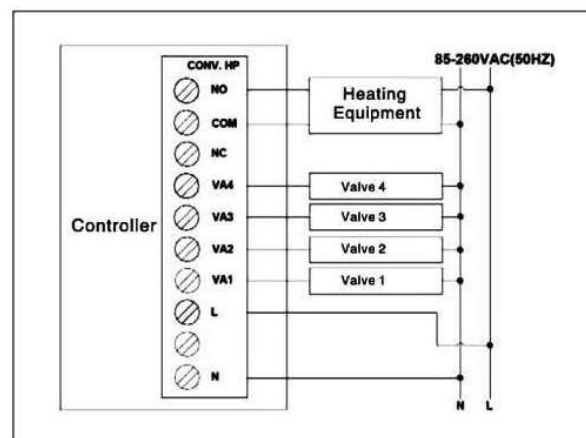
Thermostat indoor temperature display range: 0oC ~ 50oC.

Power supply:

This thermostat is powered by a single-cell lithium battery, you can use the PS's USB interface to charge or use a dedicated USB charger to charge, charging the charging process will prompt the user charging is in progress, the lithium battery is fill of charge. The logo disappears and the user can disconnect the USB cable.

Note: The thermostat must be filled for 8 hours for the first three times. In the case of long-term use, please turn off the power of the equipment, since the date of no use every 5-6 months (no more than 6 months) charge once, each charging time of 3 hours.

Installation Connection Diagram:



Application:

The series TOA.V TPS K thermostat is designed to control indoor temperature of heating device. Modern design suitable for every room. Dial thermostat adopts inflatable bos as temperature-measuring elements to check indoor temperature. Compared with user-set temperature automatic, it can automatic control action of two-way control to realize constant temperature. The dial thermostat trim appearance, highly sensitive and realible.

Feature:

Beautiful appearance.
 Temperature can be set by user,
 good applicability.
 Adopts thermal expansion type
 temperature-measuring element,
 accurate and reliable.
 On the wall, setting-in. embedded
 plate or concealed installation.

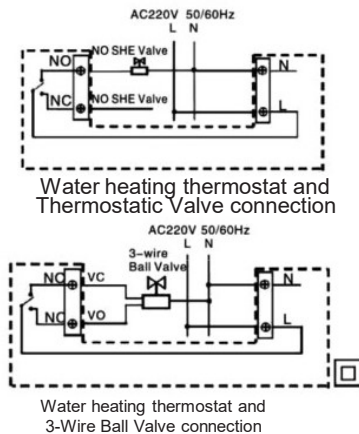


Product Type:

Type	Application	Description
TPSKW11	Water heating	Water heating, have light and switch
TPSKE11	Electric heating	Electric heating, have light and switch

If no special instructions, the products are provided with lights, power switch type products.

Installation Connection Diagram:



Coding Rules:

T	TOA.V	T	PS	K	W	1	1
PS	Thermostat						
Series of code							
K: The series K panel knob							
Product type							
W: Water heating E: Electric heating							
Indication of light:							
1: Have 0: Not							
Power switch							
1: Have 0: Not							

Application:

The series TOA.V TPS D is designed in FCU system of center air condition. It has independent on/off, three files manually wind speed conversion and automatically control electric valve and fan. Thermostat suits regulate fan and owns cold/warm switch. The dial thermostat trim appearance, highly sensitive and reliable.

Function:

- | Control FCU and electric (ball) valve, air valve and so on equipment.
- | Control two or three-wire electric (ball) valve.
- | On/off adopts click type, comfortable and long service life.
- | Set temperature via button, conveniently and intuitively.
- | Indirectly on the junction box of wall.
- | Switch control.
- | Fan regulation.
- | Cold/Heating model.
- | Indoor temperature setting.



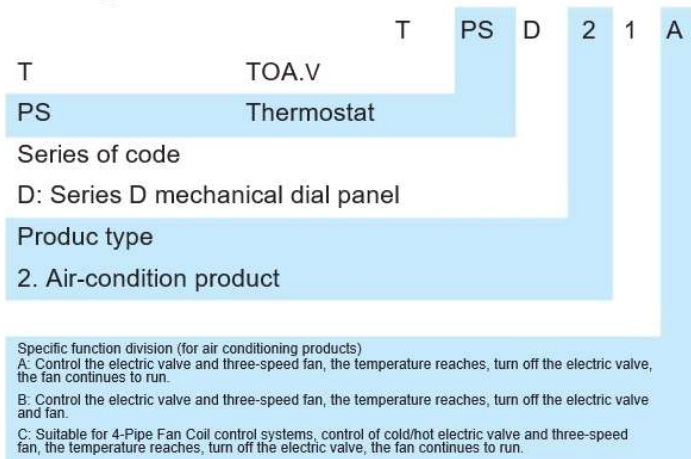
Operation Principles:

Dial thermostat adopts inflatable box as temperature-measuring elements to check indoor temperature. Compared with user-set temperature automatic, it can automatic control action of Two-way control to realize constant temperature.

Product Type:

Type	Apply	Description
TPSD21A	Air-condition	Control the electric valve and three-speed fan, the temperature reaches, turn off the electric valve, the fan continues to run.
TPSD21B	Air-condition	Control the electric valve and three-speed fan, the temperature reaches, turn off the electric valve and fan.
TPSD21C	Air-condition	Suitable for 4-Pipe Fan Coil control system, control of cold/hot electric valve and three-speed fan, the temperature reaches, turn off the electric valve, the fan continues to run.

Technical specification
 Operating principle
 Elements: Inflatable box
 Temperature range: 5~30oC
 Humidity range: 5'95% RH
 Electric parameter: 230 VAC
 Error: < 1oC
 Shell: ABS
 Diameter: 80*80*37 mm
 Load current: 1A resistive load
 0.5A inductive load
 IP Grade: IP30

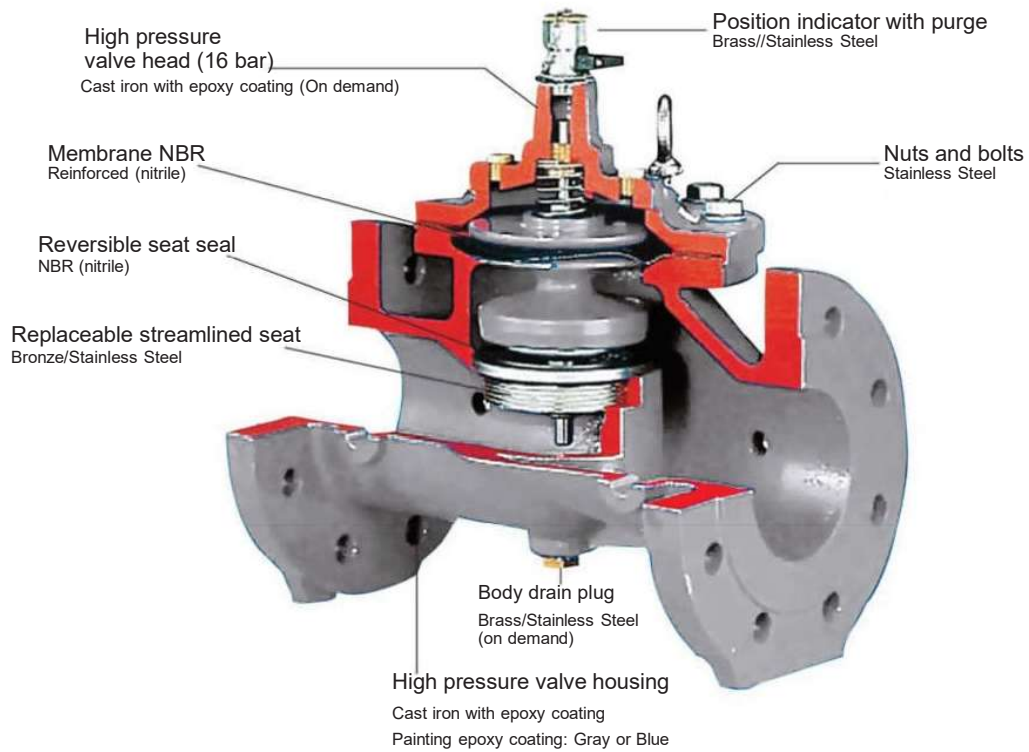


Control Valve

MAIN VALVE



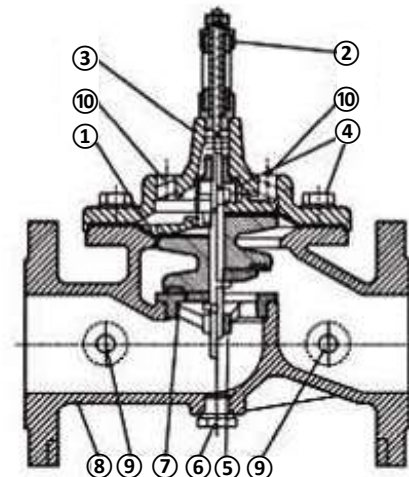
DN 40 to DN1000



The same main valve structure is used for all types of control valve. We suggest extending the exhaust tube to places where the relief water will not damage other devices, especially electrical apparatus.

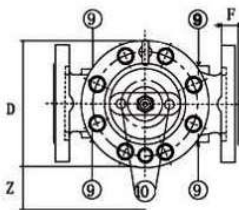
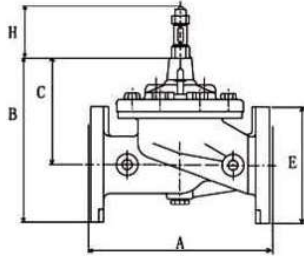
▪ MATERIALS:

No	Item	Material
1	Membrane	Reinforced NBR
2	Drain cock on top cap	Brass/Stainless steel
3	High pressure top cap (PN16)	Cast Iron
4	Nuts, bolts screws	Stainless steel
5	Replaceable Streamlined seat	Bronze/ Stainless Steel
6	Body drain plug	Brass/Stainless steel
7	Reversible seat seal	NBR
8	High pressure body (PN16)	Cast Iron
9	Holes for pressure gauges	
10	Holes for pressure gauges	



■ DIMENSION:

TEMPERATURE MAXI: 90°C
Flange: 16 bar
(if no indicated pressure)



9 -10 HOLES FOR PRESSURE GAUGES

DN	A mm	B mm	C mm	D mm	E mm	F mm	H mm	Z mm	kg
40	230	190.5	118	170	165	12.19	42	254	10.8
50	230	190.5	118	170	165	12.19	42	254	14.6
65	278	262	118	170	200	19.05	42	254	18.2
80	278	262	118	170	200	19.05	42	254	18.2
100	305	309.5	161	205	235	23.8	42	254	33.3
125	420	328.6	198	284	270	25.4	42	254	58.5
150	420	331.8	215	284	305	28.6	42	254	61.7
200	530	430	265	366	366	31.85	42	254	97.4
250	760	554	362	479.5	570	30.16	42	254	322.5
300	760	735	392	693	570	36.5	42	254	302.5

CONNECTION PN 10 - PN 16 - PN 20 flange drilling to be indicated when ordering. Threaded connection on request ANSI-ASI drilling on request.

Contact us for the vertical installation of control valves above DN200.
Contact us for DN350~DN1000.

HOW TO SELECT THE RIGHT SIZE

To select the correct size and avoid undesirable operating characteristics (noise, excessive wear, poor regulation), which result from oversizing (or undersizing), use the sizing guide and choose the smallest valve size compatible with the indicated flow rates.

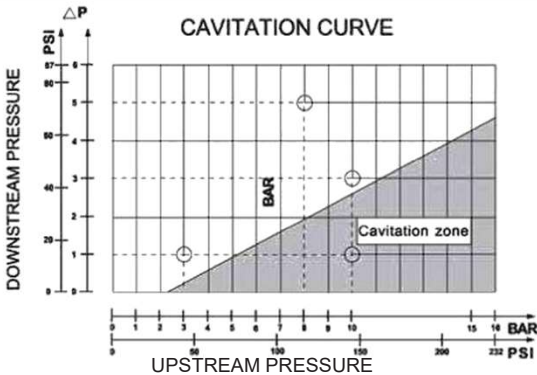
SIZING THE CONTROL VALVE

DN	Mini m3/h	Maxi m3/h
40	0.5	20
50	0.5	36
65	1.15	45
80	1.15	45
100	3.45	92
125	9.15	165
150	9.15	165
200	13.7	365
250	24.7	715
300	50.6	1001.2

Note:

- For throttling valve application requiring a wide range of flows, a dual valve installation should be used.
- The maximum flow rates listed above were calculated by using a velocity of 4, 5 m/second. The throttling valve is capable of handling larger flows for short periods of time; however the increase in maximum flow should be limited to 25% of the above values.

CAVITATION



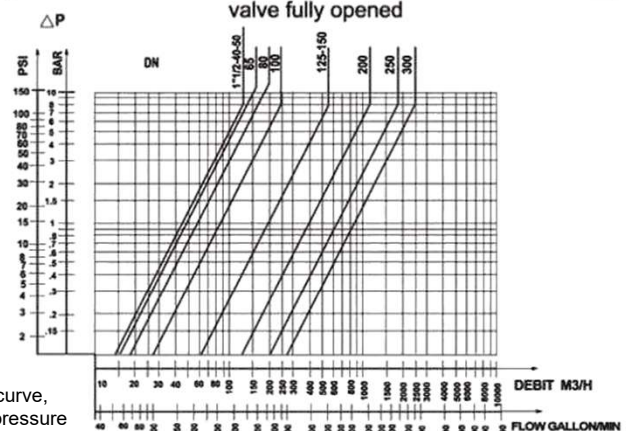
Too large a differential pressure and a low downstream pressure may result in damage to the valve by cavitation.

To avoid it, refer to the cavitation curve, if necessary, take the differential pressure in two or more stages by installing and connecting directly two or more control valves in tandem.

EXAMPLE:

- To maintain a reduced downstream pressure of 5 bars with an upstream pressure of 8 bars:
Draw a vertical straight line from 8 bars on the horizontal axis to intersect with a horizontal line from 5 bars on the vertical axis. The intersection takes place out of the "cavitation zone" indicating that this reduction in pressure through a single pressure reducing valve will not result in cavitation: only one valve is necessary.
- Maintain a reduced downstream pressure of 1 bar with an upstream pressure of 10 bars.
Draw a vertical straight line from 10 bars on the horizontal axis to intersect with a horizontal line from 1 bar on the vertical axis. The intersection takes place within the shaded area (zone of cavitation) indicating that this reduction in pressure through a single valve, will result in cavitation. To avoid cavitation two control valves should be installed in tandem and the pressure reduction taken in two steps. The first valve should reduce the pressure from 10 bars to 3 bars and the second valve from 3 bars to 1 bar (intersection of lines produced from these valves takes place in the unshaded portion of the chart which is out of the cavitation zone).

HEADLOSS CHART



KV FACTOR

KV: Quantity of flow (in m³/h) of water at 15°C passing through a device creating a headloss of 1 bar.

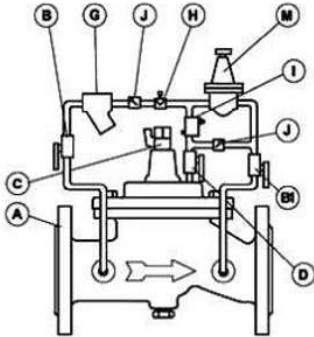
Valve size	Maxi m3/h	Maxi l/s
40-50	45.60	12.60
65	48.33	13.43
80	55.40	15.39
100	86.60	24.05
125	194.66	54.07
150	194.66	54.07
200	397.50	110.41
250	900.00	249.90
300	919.40	255.40

Note:

According to the Cavitation Curve, the design reduction ratio is **3:1** in theory. But due to different working conditions and for safety consideration, it is recommended the reduction ratio be **2:1**, with a 50% safety factor reserved.

Pressure Reducing Valve

▪ Pilot Circuit



Part No.	DESCRIPTION	MATERIAL
A	MAIN VALVE	DUCTILE IRON
B	UPSTREAM ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
B1	DOWNSTREAM ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
C	DRAIN COCK	BRASS, STAINLESS STEEL
D	ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
G	STRAINER	NICKEL PLATED BRASS/ STAINLESS STEEL
H	ORIFICE	STAINLESS STEEL
I	FLOW CONTROL	NICKEL PLATED BRASS/ STAINLESS STEEL
J	CHECKVALVES (CL101C TYPE)	NICKEL PLATED BRASS/ STAINLESS STEEL
M	PILOT VALVE	STAINLESS STEEL

**20/25 bar; please consult us
 Range of Inlet pressure :
4 to 16 bar
 Valve Setting ranges:
2.5 to 12 bar

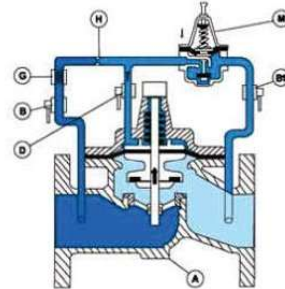
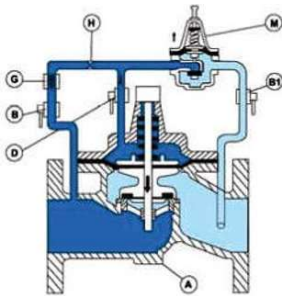
Minimum differential pressure
0.075Mpa

Please indicate setting pressure in the order
 Painting epoxy Coating: Gray or Blue



▪ Working principle

The principle is to have the main valve reproduce the movements of a small sized pilot valve through the action of pressures.



When downstream pressure is lower than setting pressure, Pilot M opens automatically, the pressure contained in the by-pass circuit doesn't apply any force on the membrane of main valve A. Thus the closing system is released and lifted.

The valve throttles to open position to increase downstream pressure to desired level.

When downstream pressure is higher than setting pressure, Pilot M closes automatically, the pressure contained in the by-pass circuit exerts a force on the membrane of main valve A. Thus the closing system drops down and the valve throttles to closed position to reduce downstream pressure to the desired level.

This valve controls and maintains a preset reduced downstream pressure to a constant value regardless of variations in upstream pressure and demand. Provided with check valves its closes automatically in case of backflow.

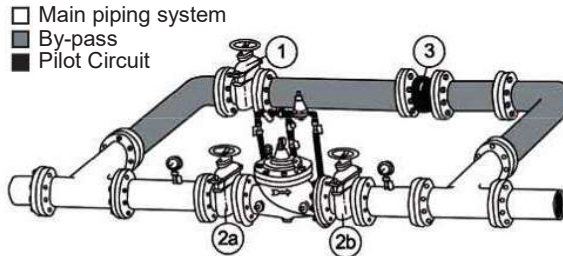
This control valve reduces:

- Delivery pressure when supplying by gravity from a source with a high elevation.
- Pressure to a desirable operating value within a given area.
- Working pressure when the pump discharge is too high.
- Pressure to an irrigation system.

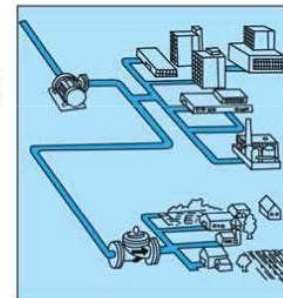
▪ Other types

- *A: Check valves
- *B: Check valves + solenoid valves
- *C: Two way solenoid valve
- *D: Pressure reducing and surge protection
- *E: Dual pressure reducing pilot system
- * Small size thread direct acting PRV (DN15-DN65)

▪ Installation Scheme

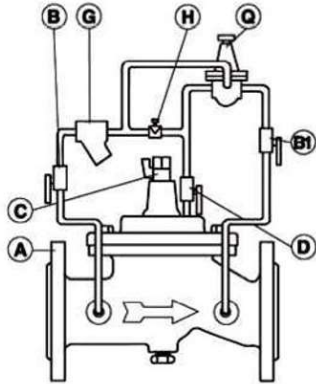


- 1. Isolation valve of the by-pass
- 2a-2b. Isolation valves of the main water pipe
- 3. Rubber expansion joints



Pressure Relief Valve

■ Pilot Circuit



Part No.	DESCRIPTION	MATERIAL
A	MAIN VALVE	DUCTILE IRON
B	UPSTREAM ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
B1	DOWNSTREAM ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
C	DRAIN COCK	BRASS/ STAINLESS STEEL
D	ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
G	STRAINER	BRASS/ STAINLESS STEEL
H	ORIFICE	STAINLESS STEEL
Q	PILOT VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL

**20/25 bar: please consult us
Range of Inlet pressure :

4 to 16 bar

Valve Setting ranges:

1.72 to 8.62 bar

Minimum differential pressure
0.075Mpa

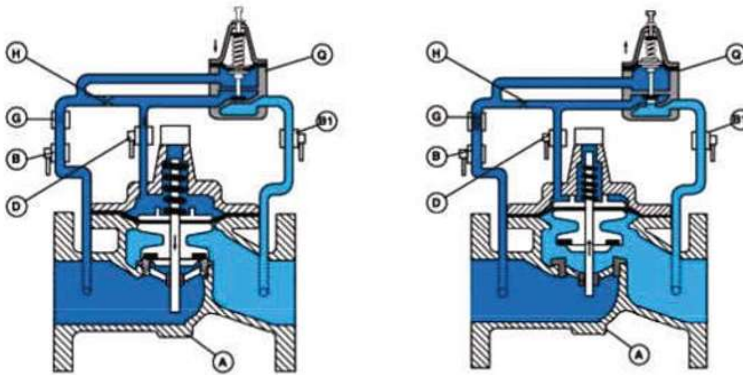
Please indicate setting pressure in the order

Painting epoxy coating:
Gray or Blue



■ Working principle

The principle is to have the main valve reproduce the movements of a small sized pilot valve through the action of pressures.



As long as upstream pressure is below the setting pressure, the pilot valve is closed, upstream pressure pushes on the membrane of the main valve which remains closed.

As soon as upstream pressure increases over the setting pressure, the pilot valve opens, releasing pressure from above the membrane of the main valve which opens widely to drain the overpressure.

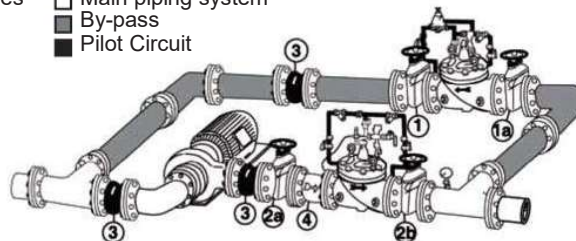
Installed on a by-pass on the system to be protected, this valve will open as soon as pressure of this system reaches the setting pressure. It will be open as long as this overpressure exist and drain the resulting excess of water to a sewage system or a tank or a low pressure zone. Provided with a check valve it closes automatically in case of backflow.

■ Other types

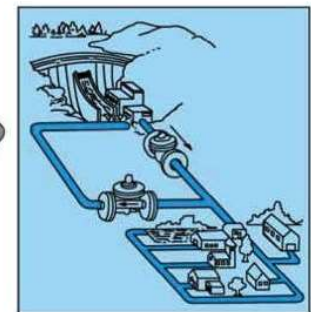
- *A: Check valves + solenoid valves
- *B: Check valves
- *C: Two way solenoid valve

■ Installation Scheme

- Main piping system
- By-pass
- Pilot Circuit

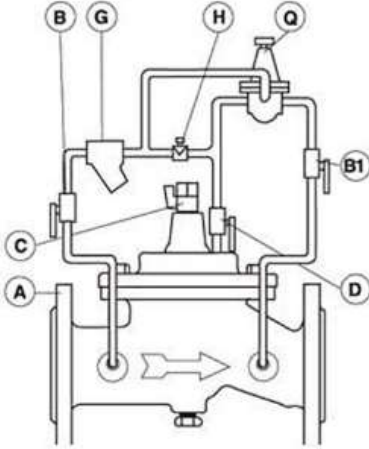


- 1-1a. Isolation valve of the by-pass
- 2a-2b. Isolation valves of the main water pipe
- 3. Rubber expansion joints
- 4. Check valve



Back Pressure Valve

■ Pilot Circuit



Part No.	DESCRIPTION	MATERIAL
A	MAIN VALVE	DUCTILE IRON
B	UPSTREAM ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
B1	DOWNSTREAM ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
C	DRAIN COCK	NICKEL PLATED BRASS/ STAINLESS STEEL
D	ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
G	STRAINER	NICKEL PLATED BRASS/ STAINLESS STEEL
H	ORIFICE	STAINLESS STEEL
Q	PILOT VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL

**20/25 bar: please consult us
Valve Setting ranges:

1.72 to 8.62 bar

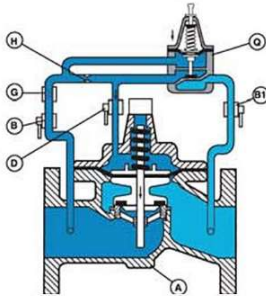
Minimum differential pressure
0.075Mpa

Please indicate setting pressure in the order
Painting epoxy coating : Gray

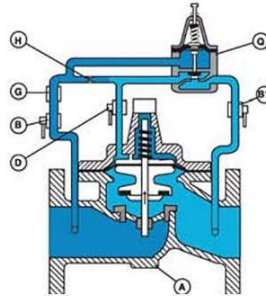


■ Working principle

The principle is to have the main valve reproduce the movements of a small sized pilot valve through the action of pressures.



If upstream pressure becomes lower than the pilot valve setting pressure, it throttles to the close position limiting the flow circulation. Upstream pressure pushes on the main valve membrane and the valve begins to close to maintain pressure.



If upstream pressure goes up, the pilot valve throttles to the open position, releasing the pressure from the membrane of the main valve. The valve opens to release pressure.

This valve controls and maintains a preset upstream pressure, regardless of variations in downstream demand and pressure. Provided with check valve feature it closes automatically in case of backflow.

This valve prevents over drafting of high pressure zone when supplying water to a low pressure zone. It also can prevent a pump from lowering its suction pressure below a desired safe operating minimum or prevent over pumping of a pump if the system demand exceeds the pumping capacity.

■ Other types

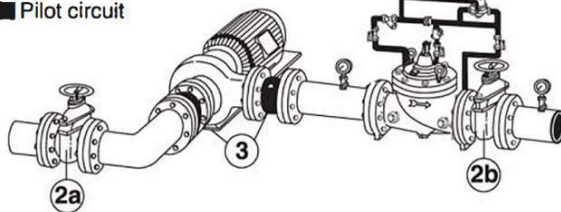
*A: Check valves + solenoid valves

*B: Check valves

*C: Two way solenoid valve

□ Main piping

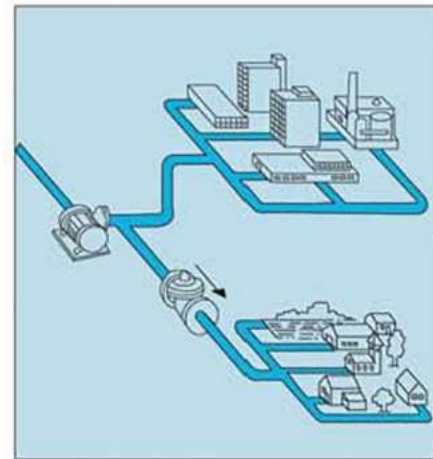
■ Pilot circuit



2a-2b. Isolation valves of the main water pipe
3. Rubber expansion joints

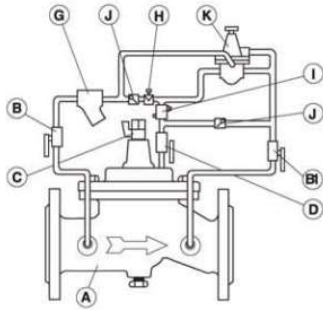
■ Installation Scheme

Main piping
Pilot Circuit



Constant Differential Pressure

■ Pilot Circuit



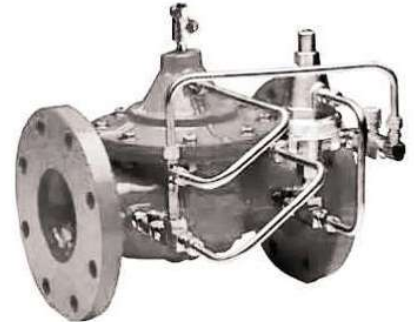
Part No.	DESCRIPTION	MATERIAL
A	MAIN VALVE	DUCTILE IRON
B	UPSTREAM ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
B1	DOWNSTREAM ISOLATION VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
c	DRAIN COCK	BRASS/ STAINLESS STEEL
D	ISOLATION VALVE	NICKEL PLATED BRASS
G	STRAINER	BRASS/ STAINLESS STEEL
H	ORIFICE	STAINLESS STEEL
I	FLOW CONTROL	BRASS/ STAINLESS STEEL
J	CHECK VALVE	NICKEL PLATED BRASS/ STAINLESS STEEL
R	PILOT VALVE	BRASS/ STAINLESS STEEL

**20/25 bar: please consult us

Valve Setting ranges:
1.72 to 8.62 bar

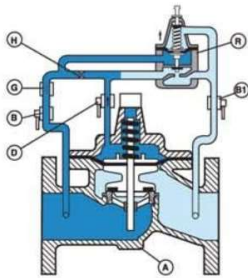
Minimum differential pressure
0.075Mpa

Please indicate setting pressure
in the order
Painting epoxy coating : Gray

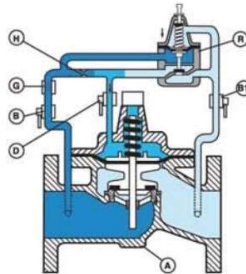


■ Working principle

The principle is to have the main valve reproduce the movements of a small sized pilot valve through the action of pressures.



As long as upstream pressure is below the setting pressure, the pilot valve is closed, upstream pressure pushes on the membrane of the main valve which remains closed.



As soon as upstream pressure increases over the setting pressure, the pilot valve opens, releasing pressure from above the membrane of the main valve which opens widely to drain the overpressure.

This valve maintains a constant preset differential pressure across the valve (or a pump...). Provided with a check valve feature, it closes automatically in case of backflow.

This valve allows:

- To maintain a constant differential pressure between two systems regardless of variations in upstream pressure.
- To maintain a constant differential pressure between the upstream and downstream side of a pressure group.

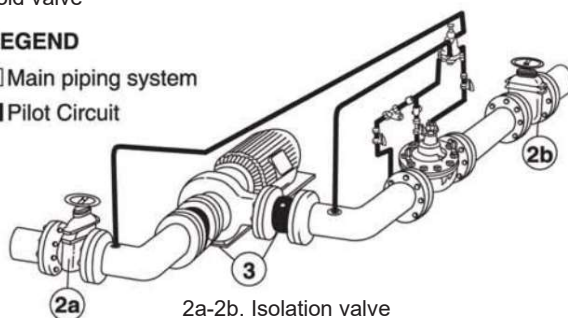
■ Other types

- *A: Check valves + solenoid valves
- *B: Check valves
- *C: Two way solenoid valve

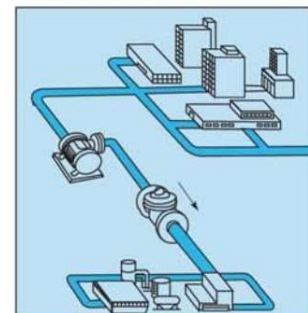
■ Installation Scheme

Main piping system
Pilot Circuit

LEGEND
□ Main piping system
■ Pilot Circuit

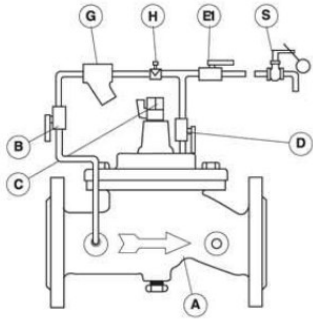


2a-2b. Isolation valve
3. Rubber expansion joints



Float Valve

▪ Pilot Circuit



Part NO.	DESCRIPTION	MATERIAL
A	MAIN VALVE	DUCTILE IRON
B	UPSTREAM ISOLATION VALVE	SS304
C	DRAIN COCK	BRASS
D	ISOLATION VALVE	SS304
E1	DOWNSTREAM ISOLATION VALVE	SS304
G	STRAINER	BRASS
H	ORIFICE	STAINLESS STEEL
S	FLOAT PILOT VALVE	STAINLESS STEEL BALL

With gradual opening and closing
 **20/25 bar: please consult us

Please indicate setting pressure in the order

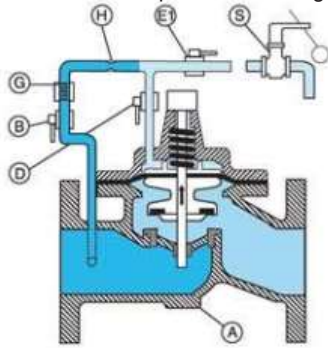
The minimum differential pressure across the disc **0,1Mpa**

Painting epoxy coating :Gray

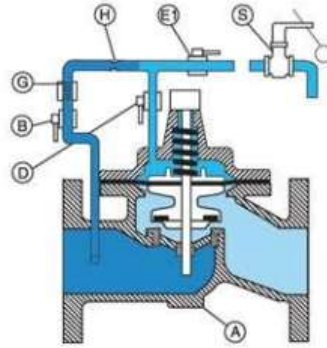


▪ Working principle

The principle is to have the main valve reproduce the movements of a small sized pilot valve through the action of pressures.



When the water level is low in the tank, the float pilot valve is completely open, the valve is open to fill the tank.



When the float is half way, the pilot valve is half closed; the pressure above the membrane pushes the valve to the close position. The valve will be completely closed when the float pilot valve will be in the upper position.

This valve maintains a constant level in a tank and prevents overflow by means of float regulation. Opening as well as closing will be very gradual over the last few centimeters close to the wanted water level.

This valve will be preferably installed at the bottom of the tank or near the basin.

▪ Other types

*A: electrical float valve with total opening and closing

*B: electrical float valve with total opening and closing +check valves

▪ Installation Scheme

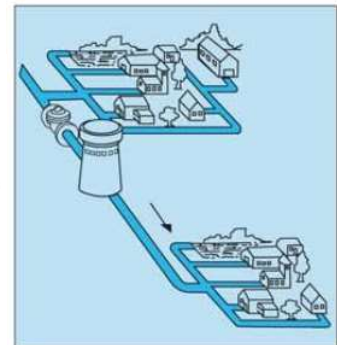
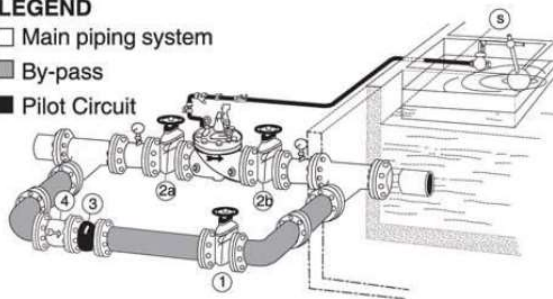
Main piping system
 Pilot Circuit

LEGEND

□ Main piping system

■ By-pass

■ Pilot Circuit



1- Isolation valve of the by-pass
 2a-2b. Isolation valve of the main water pipe

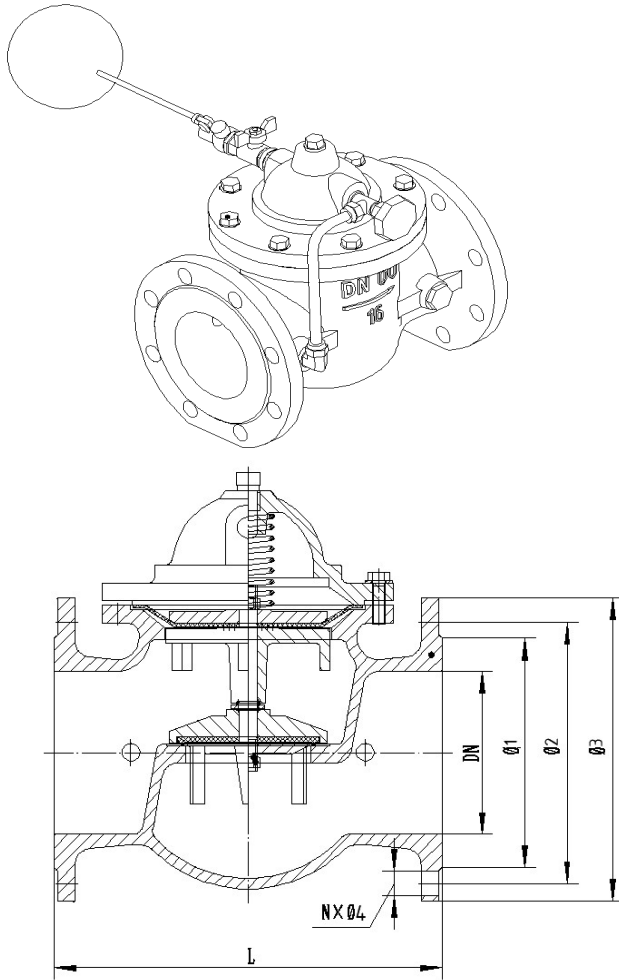
3. Rubber expansion joints
 4- Check valve

▪ **Specification**

- Hydraulic test pressure
- Epoxy: Gray
- Flanged ends EN1092-2
- Working Pressure: 16 bar
- Working Temperature: 0~80°C

HOW TO SELECT THE RIGHT SIZE

To select the correct size and avoid undesirable operating characteristics (noise, excessive wear, poor regulation), which result from oversizing (or undersizing), use the sizing guide and choose the smallest valve size compatible with the indicated flow rates.



SIZING THE CONTROL VALVE

DN	Mini m3/h	Maxi m3/h
50	0.5	36
65	1.15	45
80	1.15	45
100	3.45	92
125	9.15	165
150	9.15	165
200	13.7	365
250	24.7	715

Note:

For throttling valve application requiring a wide range of flows, a dual valve installation should be used.
 2. The maximum flow rates listed above were calculated by using a velocity of 4, 5 m/second. The throttling valve is capable of handling larger flows for short periods of time; however the increase in maximum flow should be limited to 25% of the above values.

▪ **Dimension**

DN	L	Ø1	Ø2	Ø3	NxØ4
DN50	203	Ø99	Ø125	Ø165	4xØ19
DN65	216	Ø118	Ø145	Ø185	4xØ19
DN80	241	Ø132	Ø160	Ø2ØØ	8xØ19
DN100	292	Ø156	Ø180	Ø22Ø	8xØ19
DN125	330	Ø184	Ø210	Ø25Ø	8xØ19
DN150	356	Ø211	Ø240	Ø285	8xØ23
DN200	458	Ø266	Ø295	Ø34Ø	12xØ23
DN250	530	Ø319	Ø355	Ø4Ø5	12xØ23

Foot Valve with Screen

Basic standard

Flange end: EN1092-2/ BS4504 PN16

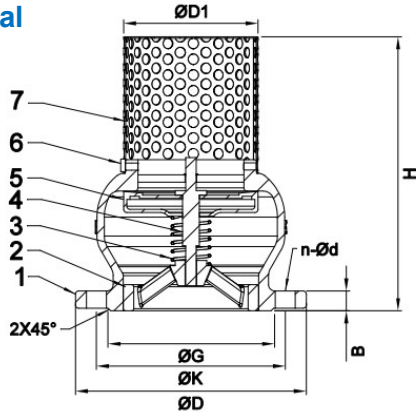
Feature

Nominal Pressure (Mpa): 1.6

Suitable temperature: 0~80oC

Painting Epoxy coating : Gray

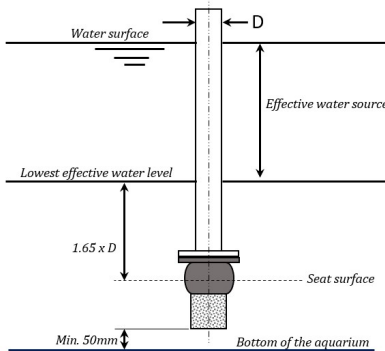
Material



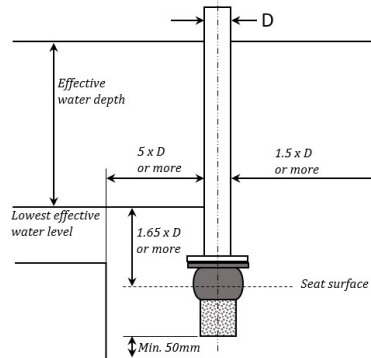
No.	Part Name	Material
1	Body	GGG50
2	Base	GGG50
3	Spring	SS304
4	Stem	2Cr13
5	Disc	GGG50+EPDM
6	Bolt	201
7	Screen	SS304

Installation

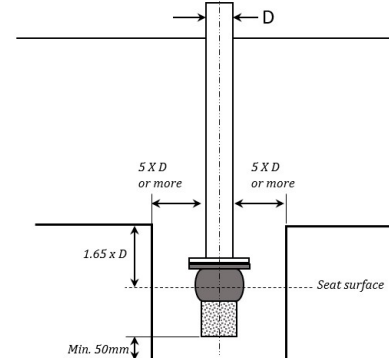
If there is a no water cellar (Suction pit)



If there is a water cellar (By the wall)



If there is a water cellar (Central part of the aquarium)

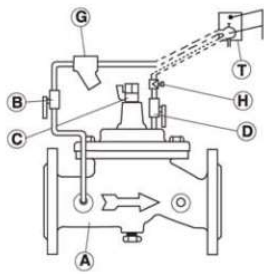


Dimension

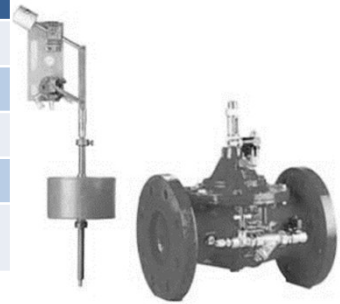
DN	ØD	ØD1	ØK	ØG	H	B	n-Ød
50	165	75	125	99	190	19	4-Ø19
65	185	90	145	118	210	19	4-Ø19
80	200	105	160	132	240	19	8-Ø19
100	220	125	180	156	250	19	8-Ø19
125	250	153	210	184	310	19	8-Ø19
150	285	177	240	211	370	19	8-Ø23
200	340	226	295	266	450	20	12-Ø23
250	405	277	355	319	470	22	12-Ø23
300	460	329	410	370	500	25	12-Ø28
350	520	394	470	429	600	30	16-Ø28
400	580	484	525	480	780	40	16-Ø31

Altitude Valve Float Operated

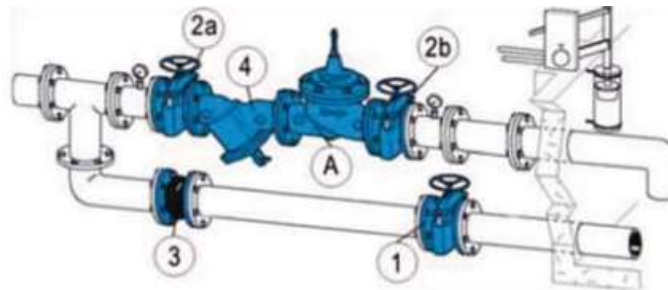
■ Pilot Circuit



NO	DESCRIPTION	MATERIAL
1	MAIN VALVE	CAST IRON/ DUCTILE IRON
2	DRAIN COCK	BRASS/ STAINLESS STEEL
3	STRAINER	BRASS/ STAINLESS STEEL
4	NEEDLE VALVE	BRASS/ STAINLESS STEEL
5	MECHANICAL FLOAT	BRASS/ STAINLESS STEEL



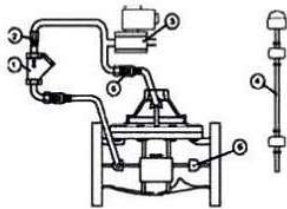
■ Installation Scheme



1. Isolation valve of the by-pass 2a. Main pipe isolation valve 2b. Main pipe isolation valve
 3. Rubber expansion joints 4. Strainer

This control valve is equipped with a 3 way valve operated by a mechanical 2 positions float. The valve closes at a high level and opens at a low level: fully opened of fully closed.

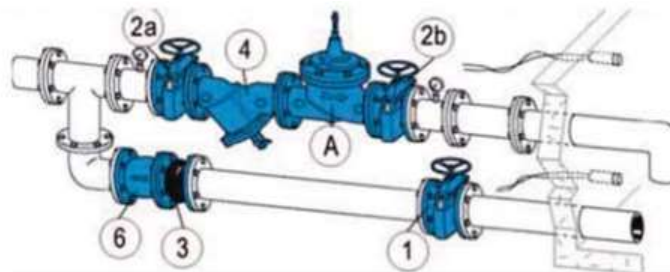
■ Pilot Circuit



NO	DESCRIPTION	MATERIAL
1	MAIN VALVE	CAST IRON/ DUCTILE IRON
2	DRAIN COCK	BRASS/ STAINLESS STEEL
3	STRAINER	BRASS/ STAINLESS STEEL
4	NEEDLE VALVE	BRASS/ STAINLESS STEEL
5	MECHANICAL FLOAT	SUS/PVC PLASTIC



■ Installation Scheme

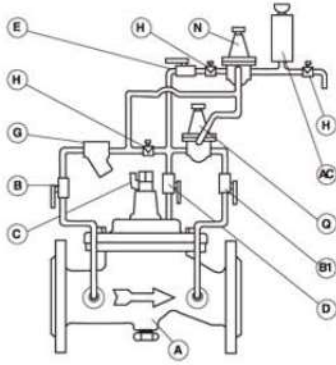


1. Isolation valve of the by-pass 2a. Main pipe isolation valve 2b. Main pipe isolation valve
 3. Rubber expansion joints 4. Strainer 6. Check valve

This control valve is equipped with a 3 way valve operated by a mechanical 2 positions float. The valve closes at a high level and opens at a low level: fully opened of fully closed.

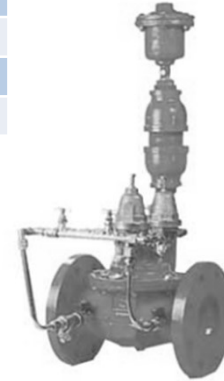
Surge Arrestor

■ Pilot Circuit



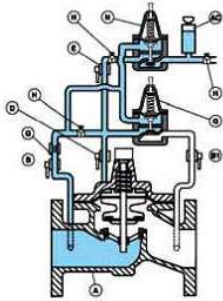
Part NO.	DESCRIPTION	MATERIAL
A	MAIN VALVE	CAST IRON
AC	ACCUMULATOR	STEEL RUBBER
B	UPSTREAM ISOLATION VALVE	NICKEL PLATED BRASS
B1	DOWNSTREAM ISOLATION VALVE	NICKEL PLATED BRASS
c	DRAIN COCK	BRASS
D	ISOLATION VALVE	NICKEL PLATED BRASS
E	ISOLATION VALVE	NICKEL PLATED BRASS
G	STRAINER	BRASS
H	NEEDLE VALVE	BRASS
N	PILOT VALVE	BRASS BRONZE
Q	PILOT VALVE	BRASS BRONZE

20/25 bar: please consult US Valve setting ranges:
 17.23-27.58bar/6 89-17.23bar
 17.23-27.58bar/1.72-8.62bar
 17.25-27.58bar/0-2.76bar
 6.89-17.23bar/1.72-8.62bar
 6.89-17.23bar/0-2.76bar
 1.72-8.62bar/0-2.76bar
 Please indicate setting pressure in the order.
 Painting epoxy coating:
 Gray or Blue

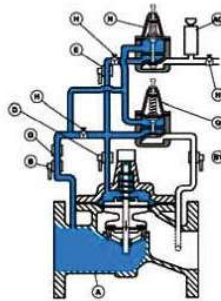


■ Working principle

The principle is to have the main valve reproduce the movements of a small sized pilot valve through the action of pressures.



A drop in pressure occurs before the surge wave returns. Pilot valve N opens, water from above the main valve membrane is exhausted to the accumulator. The valve opens and drains a certain quantity of water.



The accumulator quickly drains in the chamber over the membrane of main valve, pilot valve N and the valve close. If the quantity of water which has been drawn off is not sufficient to avoid the surge wave shock, pilot valve Q will open to allow the valve to open and eliminate this over pressure.

This valve eliminates all pressure fluctuations which occur when pump starts during electric power failure or pump failure.

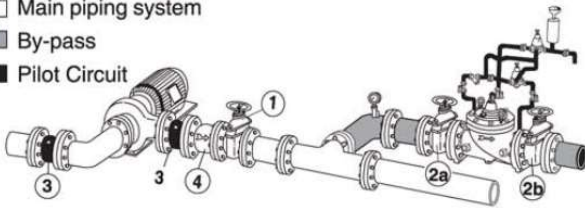
This valve is always installed on a by-pass and drains a certain quantity of water to the sewage system or to the pump suction, a tank or a well.

There are two different steps: this valve opens first as result of under pressure occurring in anticipation of the "returning surge wave". Then, a high pressure relief control opens the valve for an over pressure or returning surge wave if first step is not sufficient.

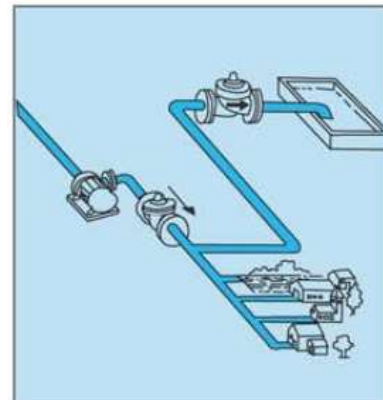
■ Installation Scheme

LEGEND

- Main piping system
- By-pass
- Pilot Circuit

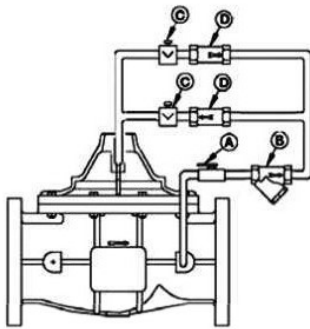


- 1. Isolation valve of the main water pipe
- 2a-2b. Isolation valves of the by-pass
- 3. Rubber expansion joints
- 4. Check valve



Hydraulic Check Valve

▪ Pilot Circuit



No	Description	Material
A	ISOLATION VALVE	BRASS
B	STRAINER	BRASS
C	FLOW CONTROL	BRASS
D	CHECK VALVE	BRASS

**20/25 bar: please consult us



▪ Working principle

The principle is to have the main valve function as hydraulic operated non-return valve through the action of pressures.

When pump stops or in case of backflow, the downstream pressure goes up resulting in a pressure increase on the upper side of the main valve membrane. The closing system drops down gradually and the valve closes slowly. The speed of the closure can be adjusted by a needle valve C on the pilot system (located on below branch of pilot system on scheme above).

When pump starts, the upstream pressure goes up resulting in a pressure increase on the lower side of the main valve membrane. The closing system rises gradually and valve opens slowly.

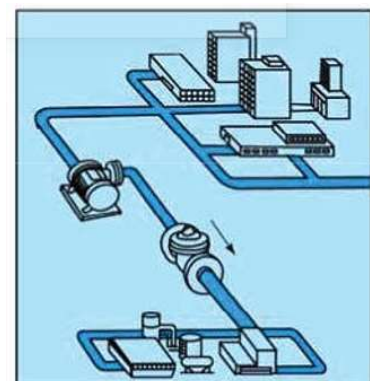
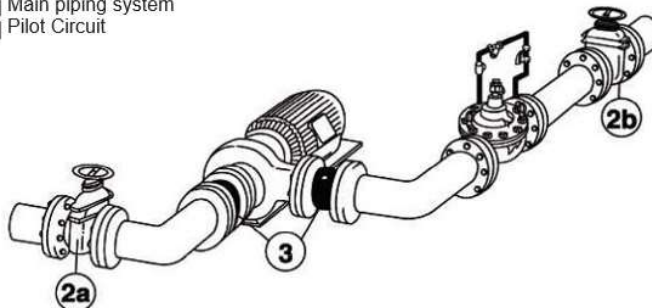
The speed of opening can be adjusted by a needle valve C on the pilot system (located on upper branch of pilot system on scheme above).

The Control Valve is functioned as hydraulic check valve, which opens and closes at a controllable and regulated speed of needle valve, reducing sudden jumps in pressure.

When downstream pressure is equal or higher than upstream pressure, the valve will be closed by the function of the spring or pressure. The speed of closure can be regulated independently from the speed of opening of needle valve.

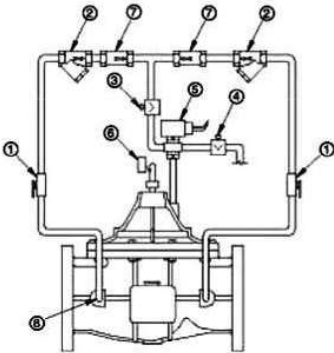
▪ Installation Scheme

□ Main piping system
■ Pilot Circuit

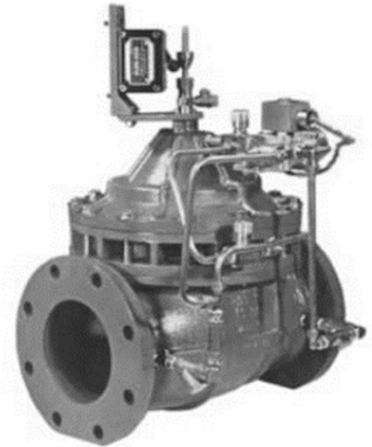


2a-2b. Isolation valves in the main pipe system 3. Rubber expansion joints

▪ Pilot Circuit



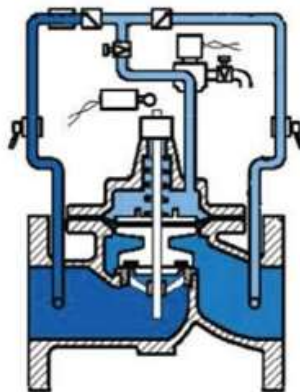
No	Description	Material
1	ISOLATION VALVE	BRASS
2	STRAINER	BRASS
3	FLOW CONTROL	BRASS
4	FLOW CONTROL	BRASS
5	SOLENOID	BRASS
6	LIMITSWITCH	ASSEMBLED
7	CHECK VALVE	BRASS
8	MAIN VALVE	CI/DI



▪ Working principle



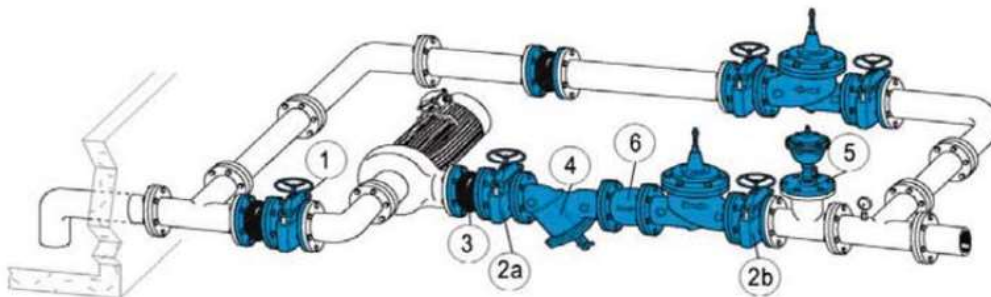
When the pump starts, a three-way solenoid valve is energized to open the Pump Control Valve at a slow, controlled rate by discharging control water from above the diaphragm to waste through an adjustable needle valve.



To shut down the pump, the three-way solenoid valve is de-energized to introduce control water above the diaphragm (through an adjustable needle valve) causing it to close slowly against the running pump. Just prior to full closure of the valve piston, the indicator rod opens a limit switch to stop the pump.

Eliminates all pressure fluctuations which occur when pump starts or stops. The actuation of the valve is positioned in the electric circuit of the pump; the valve opens and closes at a low and controlled velocity at opening and closing stage of the pump.

▪ Installation Scheme



1. Isolation valve
4. Strainer

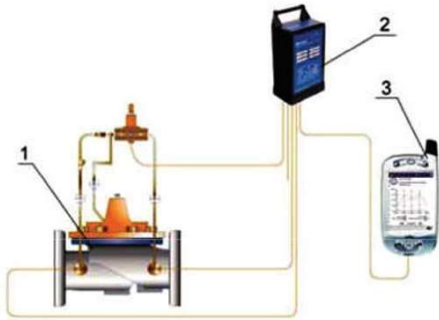
2a-2b. Isolation valves of the main water pipe
5. Air valve

3. Rubber expansion joints
6. Check valve

Smart Pressure Reducing Valve

1. Via electronic pressure controller and data logger, analyze pressure and flow, and provide time-pressure or pressure-flow control mode.
2. Instant watch working condition, to prevent accident occur.
3. Data logging of inlet pressure (option) and outlet flow and pressure.
4. Remote communicating modules unit is optional.

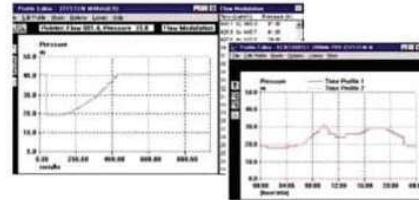
Working principle



1. Pressure reducer
2. Smart control unit
3. PDA

Time-Based Profile Modulation

Prior to starting control, historical flow and pressure data is recorded on the distribution system and a typical daily cycle of pressure is established. A pressure profile is derived and loaded via user-friendly software.



Flow Modulation

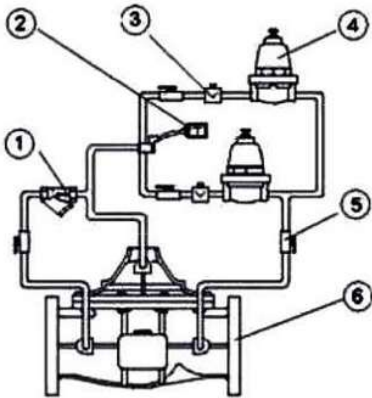
A simple profile of flow vs pressure for the distribution system is calculated from the headloss curve. When controlling the flowrate is measured and dynamically averaged. The corresponding target pressure is read from the profile and the PRV outlet pressure is adjusted to this value.

The pressure is maintained by the pilot until the next flow measurement is taken. As the flowrate changes, the PRV outlet pressure is adjusted according to the profile.

TIME CONTROL PRESSURE REDUCER

1. Time-pressure control mode by control unit.
2. Manually preset time and pressure, automatically change pressure in 24 hrs cycle.
3. Easy maintenance and high reliability.

Working principle

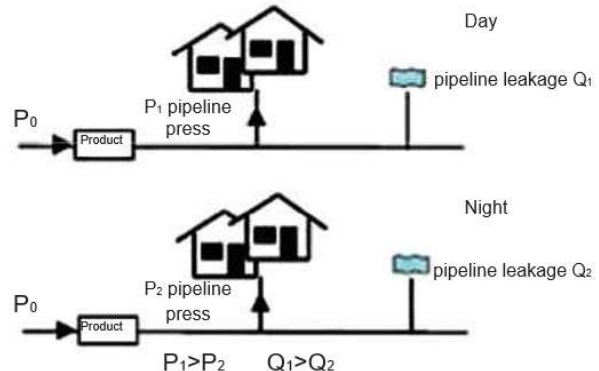


No.	DESCRIPTION	MATERIAL
1	STRAINER	BRASS/ STAINLESS STEEL
2	TIME CONTROL UNIT	BRASS/ STAINLESS STEEL
3	NEEDLE VALVE	BRASS/ STAINLESS STEEL
4	PILOT	BRASS/ STAINLESS STEEL
5	BALL VALVE	BRASS/ STAINLESS STEEL
6	MAIN VALVE	CAST IRON, DUCTILE IRON

Installation Scheme

Pressure-time control mode

To adjust the pressure of distribution systems according to the different demand of water in night and daytime.



Application Examples

1.Reduces pressure to a distribution system when gravity fed from a source with a relatively high elevation.

2.Reduces pressure to the nozzles of an irrigating system when the source is a high pressure booster pump.

3.Maintains a preset upstream pressure an a preset downstream pressure reduction.

4.Reduces pressure to a low pressure zone when the pump discharge is too high.

5.Prevents over pumping of both deep well and booster pumps if the system demand exceeds the pumping capacity.

6.Prevents over drafting of high pressure zone when supplying water to a low pressure zone.

7.Prevents a pump from lowering its suction pressure below a desired safe operating minimum.

8.Maintains a constant differential pressure across a pump to maintain a constant flow rate.

9.Protects the system or transmission main against accidental overpressure (caused by a failure of the control valve, a quick closing valve...).

10.Altitude valve allowing flow from the supply to the tank for filling it and flow from the tank back to supply when needed (when supply system pressure becomes less than tank pressure).

11.Controls the level of the tank by means of float regulation and allows distribution to village.

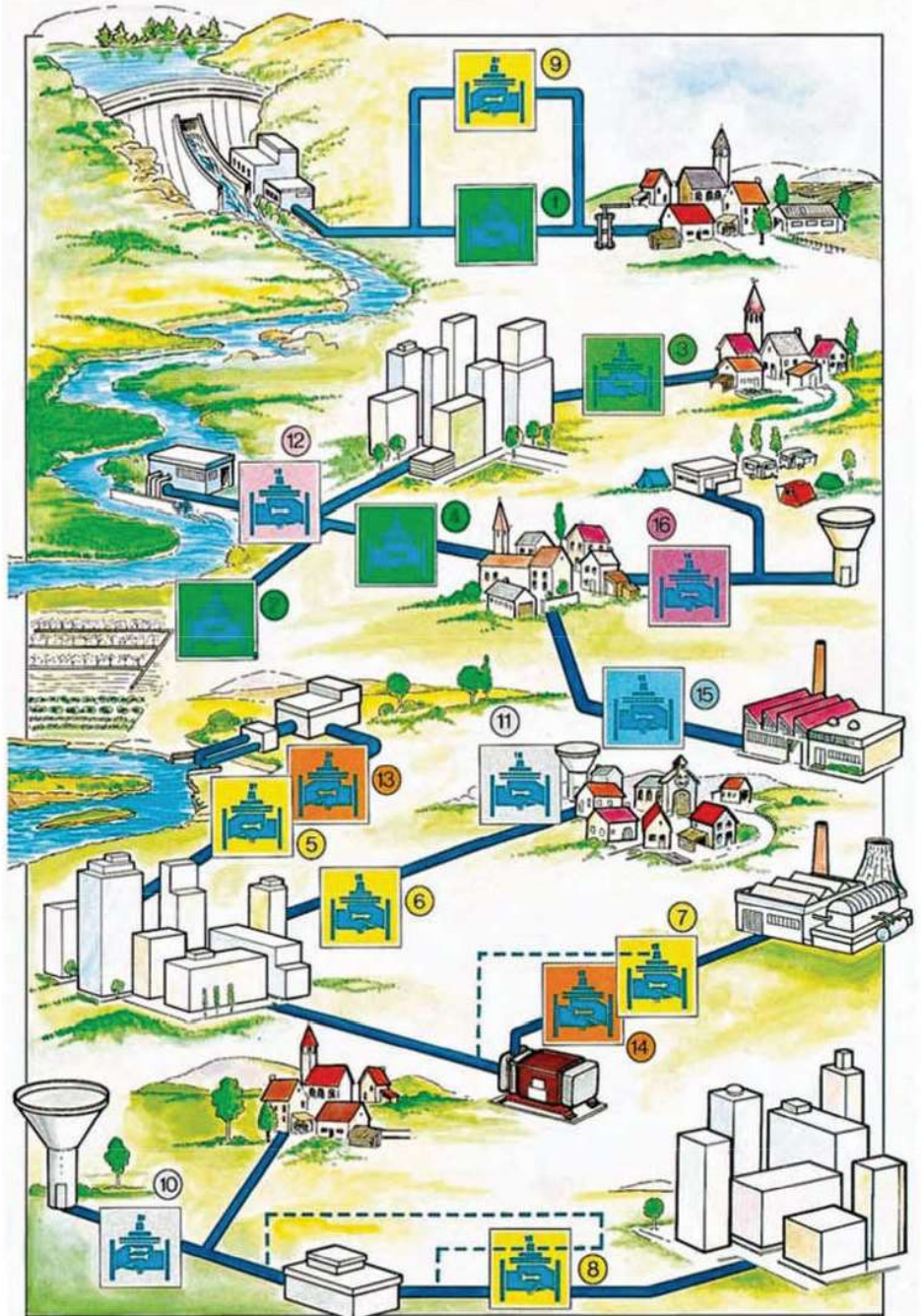
12.Protects against surges in a pump station which occur during start up, shut down and power failure.

13.Eliminates pressure fluctuations when pumps start and shut down.

14.Eliminates pressure fluctuations when pumps start and shut down.

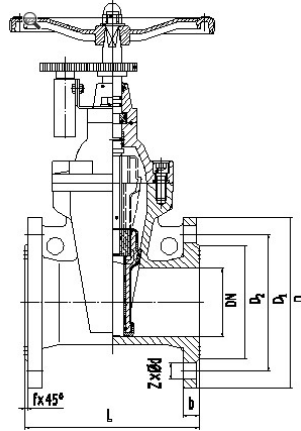
15.Controls flow rate to the factory.

16.Allows flow between two distribution systems (example: feeding a water storage tank for peak consumption time).



Fire Fighting Valve

Signal Gate Valve



Specifications

Basic standard
<ul style="list-style-type: none"> Design and manufacture: BS 5163 Flange end: EN 1092 PN10/16 Face to face: BS 5163
Feature
<ul style="list-style-type: none"> Nominal Pressure (mpa): 1.6 Suitable temperature: -10-80C Suitable medium water Power: 24V DC

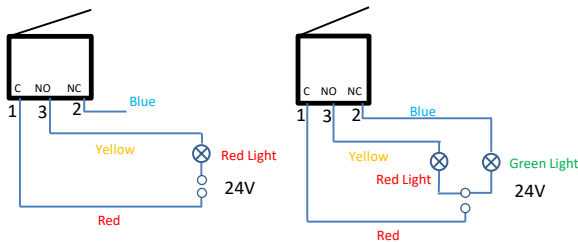
Main parts and materials

Part	Material
Body	Ductile Iron
Bonnet	Ductile Iron
Stem	2Cr13
Disc	Ductile Iron-NBR/EPDM

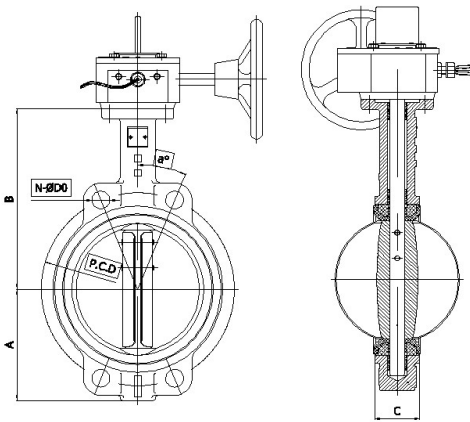
Dimensions

DN	L	D	D ₁	D ₂	b	f	Z-Ød
50	178±1.5	165	125	99	19	3	4-Ø19
65	190 ±2	185	145	118	19	3	4-Ø19
80	203±2	200	160	132	19	3	8-Ø19
100	229±2	220	180	156	21	3	8-Ø19
125	254±2	250	210	184	22	3	8-Ø19
150	267±2	285	240	211	22	3	8-Ø23
200	292±2	340	295	266	23	3	12-Ø23

Wiring Diagram



PN10/16 Fire Control Signal Butterfly Valve



Specifications

Basic standard
<ul style="list-style-type: none"> Wafer Connection: EN-1092-2
Feature
<ul style="list-style-type: none"> Nominal Pressure (mpa): 1.0/1.6 Suitable temperature: ≤80C Suitable medium: water Power: 24V DC

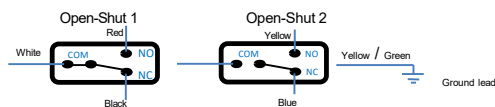
MODEL:16DJW-BFS

Main parts and materials

Part	Material
Body	Cast Iron/ Ductile Iron
Bonnet	Ductile Iron/ Stainless steel
Stem	Stainless steel
Disc	EPDM/NBR/PT FE/VITON

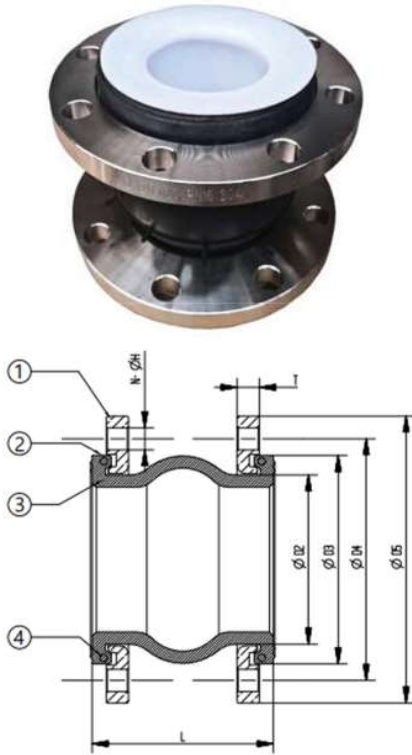
Dimensions

DN	A	B	C	P.C.D	N-ØD0
DN50	80	156	42.04	Ø120	4-Ø24
DN65	89	162	44.68	Ø136.13	4-Ø28
DN80	95	170	45.21	Ø149.70 Ø154.50	4-Ø22 8-Ø24.5
DN 100	114	185	52.07	Ø182.50	8-Ø27
DN 125	127	207	54.36	Ø212.50	8-Ø26
DN 150	139	216	55.75	Ø238.12	8-Ø26
DN200	175	256	60.58	Ø293.00 Ø296.07	12-Ø26 8-Ø25
DN250	203	248	65.63	Ø357.00	12-Ø30.5
DN300	242	280	76.9	Ø400.00 Ø416.70	16-Ø25 12-Ø40.5
DN350	267	368	75	Ø476.2 Ø470 Ø445	4-Ø32.5 4-Ø28 Ø25
DN400	297	400	85.7	Ø539.7 Ø515 Ø525 Ø510	4-Ø28.4 4-Ø28 4-Ø31 4-Ø27



Rubber Joint and Flexible Hose

(10K/PN16/PN25, Flanged: SS400/SUS304) PTFE Rubber Expansion Joint



▪ Specifications

Type	2"-12"	14"-24"
Working Pressure (kg.f/cm ²)	16	10
Explosion Pressure (kg.f/cm ²)	30	48
Vacuum Rating	650mmHg	
Applicable Temperature (°C)	-15°C – 115°C	
Connection	BS4504/ EN1092	

▪ Materials

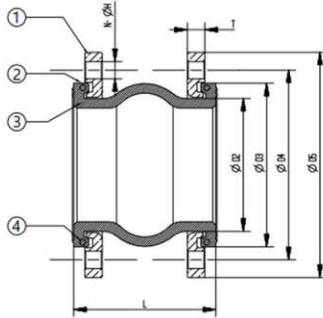
NO.	PART	MATERIAL
1	Flange	Carbon steel/SS400/SUS304
2	Outer/inner rubber	EPDM/NBR/NR
3	Reinforcing fabric	Nylon cord fabric
4	Pressurized ring	Carbon steel wires strand

▪ Dimensions

Nominal core diameter		Length	Dia of both cycle		Bolt hole	Axial displacement (mm)		Deflection	
mm	inch	L	D4	D5	NxH	Compression	Extension	Lateral (mm)	Angular (°)
50	2"	105	125	165	4x18	5	3	5	12.5
65	2 ½"	115	145	185	8x18	7.5	4	6	12.5
80	3"	135	160	200	8x18	7.5	4	6	12.5
100	4"	135	180	220	8x18	10	6	8	7.5
125	5"	165	210	250	8x18	10	6	8	7.5
150	6"	180	240	285	8x22	10	6	8	7.5
200	8"	210	295	340	12x22	10	6	8	7.5
250	10"	230	355	405	12x26	15	7	12.5	4
300	12"	245	410	460	12x26	15	7	12.5	4
350	14"	255	470	520	16x27	15	7	12.5	4
400	16"	255	525	580	16x30	15	7	12.5	4
450	18"	255	585	640	20x30	15	7	12.5	4
500	20"	255	650	715	20x34	15	7	12.5	4
600	24"	260	750	840	20x37	15	7	12.5	4

1. For special order, please write and provide drawing sample;
2. This product is available for high-floor water supply. The pipe must be equipped with fixed support of fixed bracket, if not, the product shall be installed with escapement, the force of fixed support or bracket must be greater than axial force, if not the escapement shall also be installed.

Single Arch With Flange



Specifications

SIZE	1"-12"	14'-24"
Working Pressure	16bar	10bar
Burst Pressure	48bar	30bar
Vacuum Rating	650mmHg	
Temperature	-15°C~115°C	
Connection	BS4504/ EN1092	

Materials

NO.	PART	MATERIAL
1	Flange	Carbon steel/Stainless steel
2	Outer/inner rubber	EPDM/NBR/NR
3	Reinforcing fabric	Nylon cord fabric
4	Pressurized ring	Carbon steel wires strand

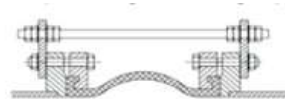
Dimensions

Nominal core diameter DN		Length L	Dia of both cycle		Bolt hole N-H	Axial displacement (mm)		Deflection	
mm	inch		D4	D5		Compression	Extension	Lateral (mm)	Angular (°)
50	2"	105	125	165	4x18	10	6	10	25
65	2 1/2"	115	145	185	8x18	15	8	12	25
80	3"	135	160	200	8x18	15	8	12	25
100	4"	135	180	220	8x18	20	12	16	15
125	5"	165	210	250	8x18	20	12	16	15
150	6"	180	240	285	8x22	20	12	16	15
200	8"	210	295	340	12x22	20	12	16	15
250	10"	230	355	405	12x26	30	14	25	8
300	12"	245	410	460	12x26	30	14	25	8
350	14"	255	470	520	16x27	30	14	25	8
400	16"	255	525	580	16x30	30	14	25	8
450	18"	255	585	640	20x30	30	14	25	8
500	20"	255	650	715	20x34	30	14	25	8
600	24"	260	770	840	20x37	30	14	25	8

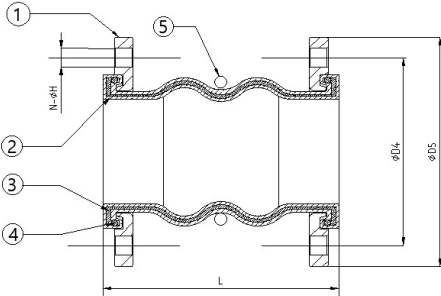
NOTE:

- Standard material is EPDM . The products are not applicable to oil. Other kinds of rubber material are optional. (Neoprene . Butyl, Nitrile , EPDM , SBR, Natural rubber)
- Applicable fluids : Suction and delivery for pump, system . cooling tower, chilling unit etc
- EN1092-2PN16
- Control unit cable and reinforcing ring must be installed when pressure (test surge . operating , starting a pump , etc.) exceeds the rating.

Size	1"-4"	5"-10"	12"-14"	16"-24"
Rating	150 psi	135 psi	90 psi	45 pst



Double Arch With Flange



Specifications

SIZE	1"-12"	14"-24"
Working Pressure	16bar	10bar
Burst Pressure	48bar	30bar
Vacuum Rating	660mmHg	
Temperature	-15°C~115°C	
Connection	BS4504/ EN1092	

Materials

NO.	PART	MATERIAL
1	Flange	Carbon Steel/PN 16/25
2	Outer/Inner Rubber	EPDM/NBR/NR
3	Reinforcement fabric	Nylon cord fabric
4	Enhange ring	Carbon steel
5	Reinforcement Ring	Stainless steel

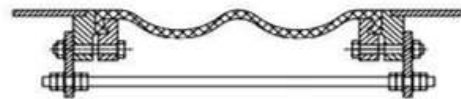
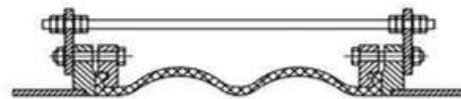
Dimensions

Nominal core diameter DN		Length L	Dia of both cycle		Bolt hole N-H	Axial displacement (mm)		Deflection	
mm	inch		D4	05		Compression	Extension	Lateral (mm)	Angular (°)
50	2"	175	125	165	4x18	45	30	35	45
65	2 1/2"	175	145	185	8x18	45	30	35	45
80	3"	175	160	200	8x18	45	30	35	45
100	4"	225	180	220	8x18	50	35	40	30
125	5"	225	210	250	8x18	50	35	40	30
150	6"	225	240	285	8x22	50	35	40	30
200	8"	325	295	340	12x22	60	35	45	15
250	10"	325	355	405	12x26	60	35	45	15
300	12"	325	410	460	12x26	60	35	45	15
350	14"	350	470	520	16x26	60	35	45	15
400	16"	400	525	580	16x30	60	35	45	15
450	18"	400	585	640	20x30	70	65	50	10
500	20"	400	650	715	20x33	70	65	50	10
600	24"	400	770	840	20x36	70	65	50	10

Notes:

- Other size or lengths can be contacted for consultation.
- Standard material is EPDM. The products are not applicable to oil. Other kinds of rubber material are optional (Neoprene, Butyl, Nitrile, EPDM, SBR, Natural rubber).
- Applicable fluids: Air, Compressed air, water, sea water, hot water, weak acid, alkalis, etc...
- Flange drilling: JIS, DIN, ANSI, BS and other standard drilling for your specification.
- Tolerances for installation should not over 30% of allowable movements.
- Control rods must be installed when pressure (test surge, operating, starting a pump, etc...) exceeds the rating below.

Size	1"-4"	5"-10"	12'-14"	16"-24"
Rating	150 psi	135 psi	90 psi	45 psi



Double Arch With Union Threads

Future

Rubber joint series is designed for supply and distribution pipeline service or to connect piping to specific equipment application such as : Pumps , Chillers . Cooling Towers . Compressors . Blowers . Fans. Absorption Machines . etc . Installed next to mechanical equipment or between the anchor points of piping system . specify to :

- (1) Absorb Pipe / Movement / Stress
- (2) Decrease Systems Noise
- (3) Isolate Vibration
- (4) Compensate alignment /offset
- (5) Eliminate Electrolysis
- (6) Protect Against Start up/Surge Forces

Rubber joint Series is engineered for tough, demanding industrial commercial application. as found in : Air conditioning . Heating and ventilating systems . Chemical . Petrochemical and industrial process piping systems .Power generating plants . Steel mills .Marine service . Pulp & paper system , Water sewage and pollution control systems .

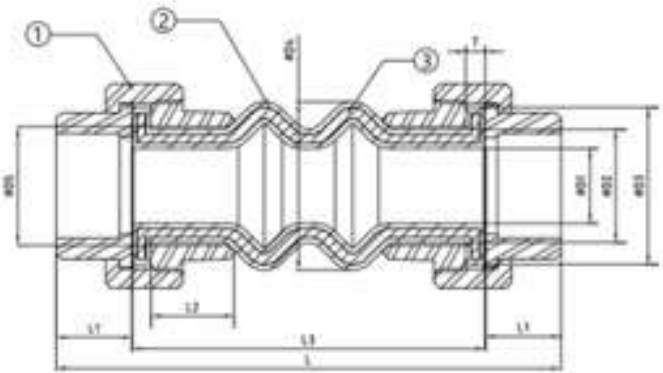


NO.	PART	MATERIAL
1	UNION THREADS	Mailcable iron
2	Outer/inner rubber	EPDM/NBR/NR
3	Reinforcing fabric	Nylon cord fabric

Optional Material :UNION -Stainless Steel

Specifications

SIZE	1/2"-3"
Working Pressure	10bar
Burst Pressure	30bar
Vacuum Rating	400mm/HG
Temperature	-15oC-100oC



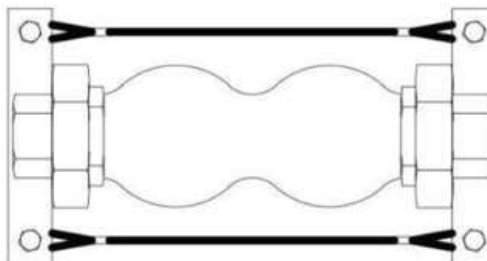
Dimensions

Nominal core diameter DN		Length	Dia of both cycle		Axial displacement (mm)		Deflection	
mm	inch		L	D4	D5	Compression	Extension	Lateral (mm)
15	1/2"	200	36	25	22	6	22	30
20	3/4"	200	40	28	22	6	22	30
25	1"	200	50	35	22	6	22	25
32	1 1/4"	200	56	43	22	6	22	25
40	1 1/2"	200	60	49	22	6	22	20
50	2"	200	68	58	22	6	22	15

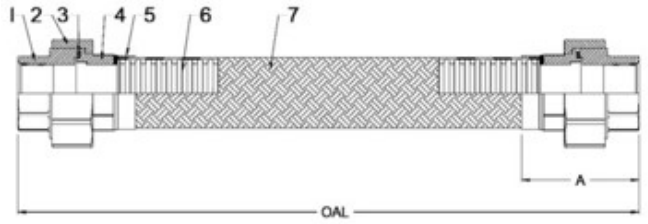
NOTE:

- 1.Standard material is EPDM . The products are not applicable to oil. Other kinds of rubber material are optional. (Neoprene .Butyl , Nitrile . EPDM , SBR, Natural rubber)
- 2.Applicable fluids :Suction and delivery for pump, cistern , cooling tower, chilling unit etc
- 3.Union :Standard item employs BSPT Union .
- 4.Control unit cable and reinforcing ring must be installed when pressure (test surge , operating , starting a pump . etc.) exceeds the rating.

Size	1/2"-2"
Rating	90 psi



Union Type Flexible Hose



▪ Specifications

Type	1/2"-2"
Working Pressure (kg.f/cm ²)	16 bar with water 10 bar with air
Applicable Temperature (°C)	200°C
Connection	Thread

▪ Materials

No.	Parts	Materials
1	Union End	SUS304/FCMB
2	Union Nut	SUS304/FCMB
3	Union Gasket	PTFE
4	Union Head	SUS304
5	Lap Ring	SUS304
6	Flexible Tube	SUS304
7	Wire Braid	SUS304

▪ Dimensions

Nominal Diameter A (inch)	Min bending radius (mm)	Max static Lateral Movement		Ineffective Length A*2(mm)	Working Pressure (Mpa)
		300mm OAL	500mm OAL		
15A(1/2')	200	28	113	114	1.6
20A (3/4")	200	21	101	138	1.6
25A(1")	200	17	91	158	1.6
32A(1 1/4")	250	9	64	184	1.6
40A(1 1/2")	250	6	56	206	1.6
50A(2")	350	3	37	220	1.6

Applicable Fluid	: Water, Hot Water, Air
Limited Working Pressure	: Limited of Flange and Hose Rating
Standard Test Pressure	: 1.5 times of Flange and Hose Rating.
Bursting Pressure	: 4 times of Working Pressure.

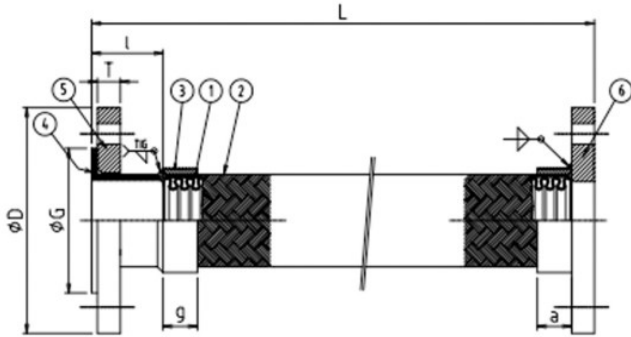
Flange Type Flexible Hose (Wire Braid Type) (1 Fixed + 1 Loose Flange)

■ Specifications

Type	5"-10"	12"
Working Pressure (kg.f/cm ²)	16	10
Applicable Temperature (°C)	200oC	
Connection	BS4504/ EN1092 JIS 10K/ 20K	

■ Materials

No.	Part	Material
1	Bellows	SUS304
2	Braid	SUS304
3	Braid cover	SUS304
4	Slip on flanged	SUS304
5	Loosen flanged	Carbon steel / SUS304
6	Fixed flanged	Carbon steel / SUS304



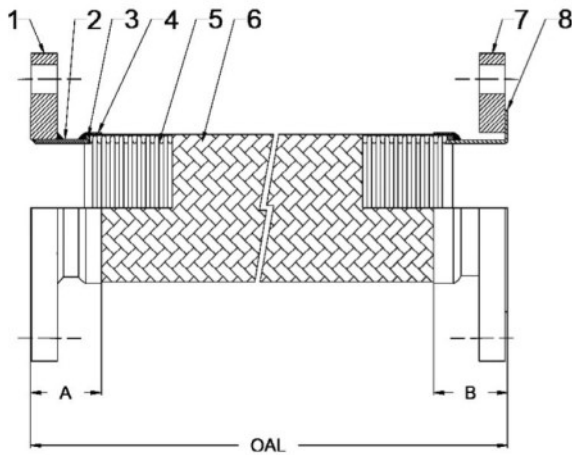
Option 1: Fixed flanged (Default):
Option 2: 2 Loose flange (Please contact us)

■ Dimensions

Nominal Diameter		Min bending radius (mm)	Max static lateral Movement		Working Pressure (Mpa)
A	B		300mm OAL	500mm OAL	
125	5"	660	3	23	1.6
150	6"	815	2	18	1.6
200	8"	1015	1	13	1.6
250	10"	1220	...	11	1.6
300	12"	1420	...	9	1.0

Applicable Fluid	: Water, Hot Water, Air
Limited Working Pressure	: Limited of Flange and Hose Rating
Standard Test Pressure	: 1.5 times of Flange and Hose Rating.
Bursting Pressure	: 4 times of Working Pressure.

Flange Type Flexible Hose (Ribbon Braid Type) (1 Fixed + 1 Loose Flange)



Option 1: Fixed flanged (Default):
Option 2: 2 Loose flange (Please contact us)

▪ Specifications

Type	14"-24"
Working Pressure (kg.f/cm ²)	10
Applicable Temperature (°C)	200oC
Connection	BS4504/ EN1092

▪ Materials

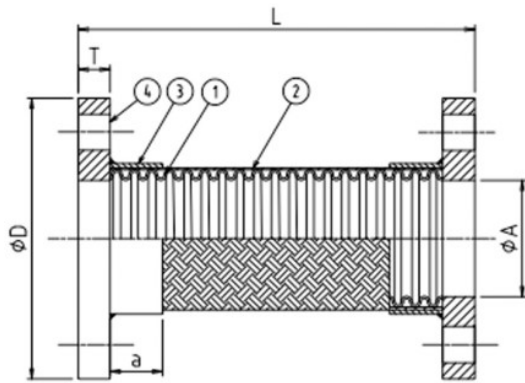
No.	Parts	Materials
1	Fixed Flange	SS400, SUS304
2	Short pipe	SS400, SUS304
3	Band	SS400, SUS304
4	Collar	SUS304
5	Flexible Tube	SUS304
6	Ribbon Braid	SUS304
7	Loose Flange	SS400, SUS304
8	Lap Joint/Stub End	SUS304

▪ Dimensions

Nominal Diameter		Min bending radius (mm)	Max static Lateral Movement		Working Pressure (Mpa)
A	B		800mm OAL	1000mm OAL	
350	14"	1680	17	32	1.0
400	16"	1900	14	26	1.0
450	18"	2000	13	30	1.0
500	20"	2200	12	27	1.0
600	24"	2400	11	25	1.0

Applicable Fluid	: Water, Hot Water, Air
Limited Working Pressure	: Limited of Flange and Hose Rating
Standard Test Pressure	: 1.5 times of Flange and Hose Rating.
Bursting Pressure	: 4 times of Working Pressure.

Fixed Flange Type Flexible Hose (2 Fixed flange)



▪ Specifications

Type	1''-10''	12''-16''
Working Pressure (kg.f/cm ²)	16	10
Applicable Temperature (°C)	200oC	
Connection	BS4504/ EN1092 JIS 10K/20K	

▪ Materials

No.	Part	Material
1	Bellows	SUS304
2	Braid	SUS304
3	Braid cover	SUS304
4	Fixed flanged	Carbon steel / SUS304

▪ Dimensions

MODEL	SIZE		L(mm)	a(mm)	ØA(mm)	Min. Bending Radius(mm)	Max Lateral Movement (mm)	Working Pressure (Mpa)	
	A	B							
16SSF-S-300FJ	25A	1	300	25	25	60	22	1.6	
	32A	1¼	300	25	32	80	19	1.6	
	40A	1½	300	25	40	100	17	1.6	
	50A	2	300	25	50	120	15	1.6	
	65A	2½	300	25	65	170	13	1.6	
	80A	3	300	25	80	220	11	1.6	
	100A	4	300	25	100	280	9	1.6	
	16SSOF-S-300FJ	125A	5	300	25	125	300	7	1.6
		150A	6	300	25	150	350	5	1.6
		200A	8	300	30	200	500	4	1.6
250A		10	300	30	250	690		1.6	
300A		12	300	30	300	720		1.0	
350A		14	300	30	350	750		1.0	
400A		16	300	30	400	880		1.0	
16SSF-S-500FJ	25A	1	500	30	25	60	92	1.6	
	32A	1¼	500	30	32	80	74	1.6	
	40A	1½	500	30	40	100	70	1.6	
	50A	2	500	30	50	120	59	1.6	
	65A	2½	500	30	65	170	53	1.6	
	80A	3	500	30	80	220	46	1.6	
	100A	4	500	30	100	280	36	1.6	
	16SSOF-S-500FJ	125A	5	500	30	125	300	28	1.6
		150A	6	500	30	150	350	25	1.6
		200A	8	500	30	200	500	18	1.6
250A		10	500	30	250	690	15	1.6	
300A		12	500	40	300	720	9	1.0	
350A		14	500	40	350	760	7	1.0	
400A		16	500	40	400	800	5	1.0	

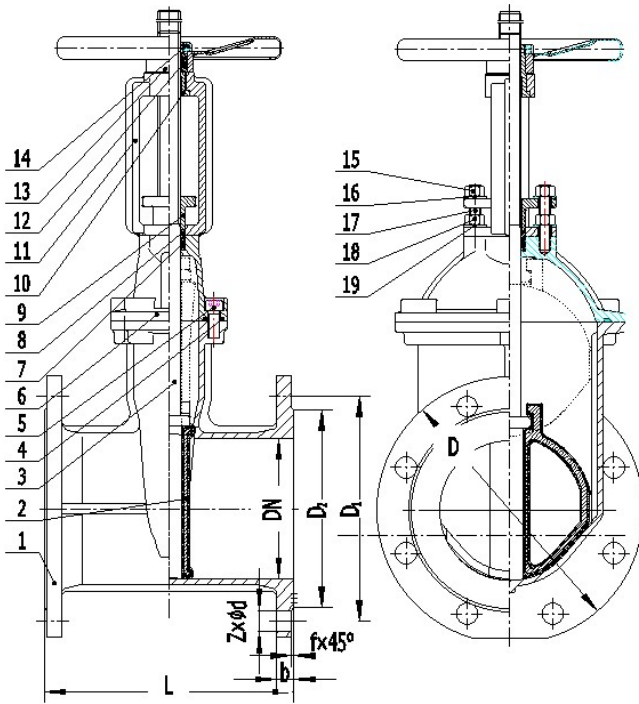
Applicable Fluid : Water, Hot Water, Air
 Limited Working Pressure : Limited of Flange and Hose Rating
 Standard Test Pressure : 1.5 times of Flange and Hose Rating.
 Bursting Pressure : 4 times of Working Pressure.
 *Applies to both horizontal and vertical

RESILIENT SEAT OS&Y GATE VALVE



▪ Specifications

- Design: DIN 3352
- Face to Face: DIN3202 F4
- Flanged: EN 1092-2 PN16
- Hydraulic test to ISO 5208
- Product color
Epoxy: Gray (Blue is optional)
- Working pressure: PN16
(Optional PN25 - Contact us)
- Maximum Temperature:0~80°C



▪ Materials

19	GASKER	CARBON STEEL
18	NUT	STEEL #25
17	SCREW	304
16	FLAT GASKER	STEEL Q235
15	NUT	STEEL #25
14	HAND WHEEL LOCK MOTHER(D)	STEEL Q235
13	HANDWHEEL(D)	STEEL Q235
12	PLAT KEY	STEEL #45
11	STENTS(D)	DUCTILE IRON
10	STEM NUTCD)	COPPER
9	PACKING GLANDCD)	DUCTILE IRON
8	PRESSURE RINGCD)	POWER METALURRGY
7	O-RING(D)	EPDM
6	BONNET(D)	DUCTILE IRON
5	BOLT	STEEL #35
4	BONNET RUBBER RING<D>	EPDM
3	STEM(D)	SS 2Cr3
2	DISC(D)	DUCTILE IRDN+EPDM
1	BODY(D)	DUCTILE IRON
NO.	NAME	MATERIAL

▪ Dimensions

DN	L	D	D1	D2	b	f	Z-ød
50	178±1.5	165	125	99	19	3	4-Ø19
65	190±2	185	145	118	19	3	4-Ø19
80	203±2	200	160	132	19	3	8-Ø19
100	229±2	220	180	156	21	3	8-Ø19
125	254±2	250	210	184	22	3	8-Ø19
150	267±2	285	240	211	22	3	8-Ø23
200	292±2	340	295	266	23	3	12-Ø23
250	330±3	405	355	319	26	3	12-Ø28
300	356±3	460	410	370	28.5	4	12-Ø28
350	381±3	520	470	429	26.5	4	16-Ø28
400	406±3	580	525	480	28	4	16-Ø31
450	432±3	640	585	548	30	4	20-Ø31
500	457±4	715	650	609	31.5	4	20-Ø34
600	508±4	840	770	720	36	5	20-Ø37

TYPE C RESILIENT SEAT GATE VALVE



▪ Specifications

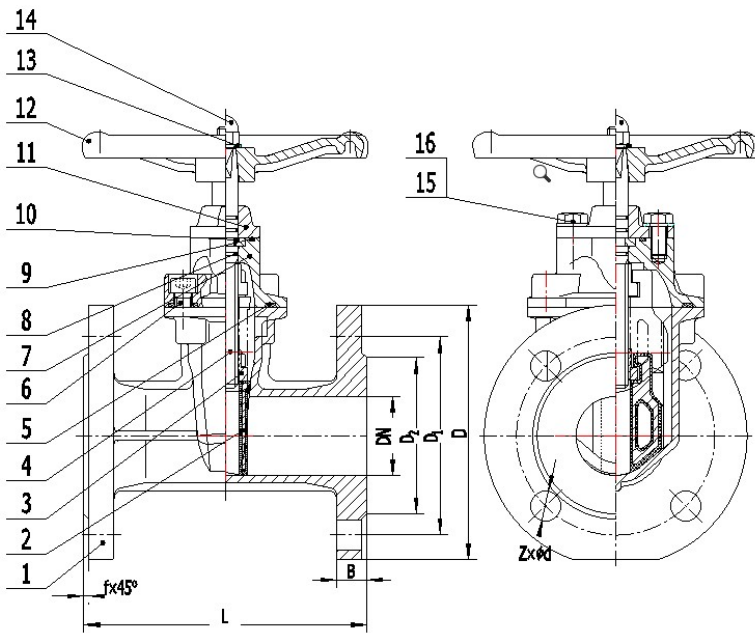
- Face to Face: EN558-1 14 series
- Flanged drilling: EN 1092-2 PN16
- Working pressure: PN16
- Maximum Temperature:0~80°C
- Painting: FBE EPOXY
- Test: EN12266-1
- Working pressure: PN16 (Optional PN25 - Contact us)

▪ Option Extras

- Stem Cap
- Position Indicator
- ISO Top Flanged
- Extension spindle /T Key

▪ Materials

16	WASHER	STEEL Q235
15	BOLT	SS304
14	WASHER	STEEL Q235
13	NUT	STEEL #25
12	HANDWHEEL	CAST IRON
11	STENTS	HMn58-2-2
10	RING	COPPER
9	O RING	EFDM
8	O RING	EPDM
7	BONNET	DUCTILE IRON
6	NAIL	STEEL #35
5	GASKET	EPDM
4	STEM	SS420
3	STEM NUT	BRONZE
2	DISC	DI+NBR+EPDM
1	BODY	DUCTILE IRON
NO.	NAME	MATERIAL



▪ Dimensions

DN	L	D	D1	D2	b	f	z-Ød
50	178±1.5	165	125	99	19	3	4-Ø19
65	190±2	185	145	118	19	3	4-Ø19
80	203±2	200	160	132	19	3	8-Ø19
100	229±2	220	180	156	21	3	8-Ø19
125	254*2	250	210	184	22	3	8-Ø19
150	267±2	285	240	211	22	3	8-Ø23
200	292±2	340	295	266	23	3	12-Ø23
250	330±3	405	355	319	26	3	12-Ø28
300	356±3	460	410	370	28.5	4	12-Ø28
350	381±3	520	470	429	26.5	4	16-Ø28
400	406±3	580	525	480	28	4	16-Ø31
450	432±3	640	585	548	30	4	20-Ø31
500	457±4	715	650	609	31.5	4	20-Ø34
600	508±4	840	770	720	36	5	20-Ø37

BUTTERFLY VALVE

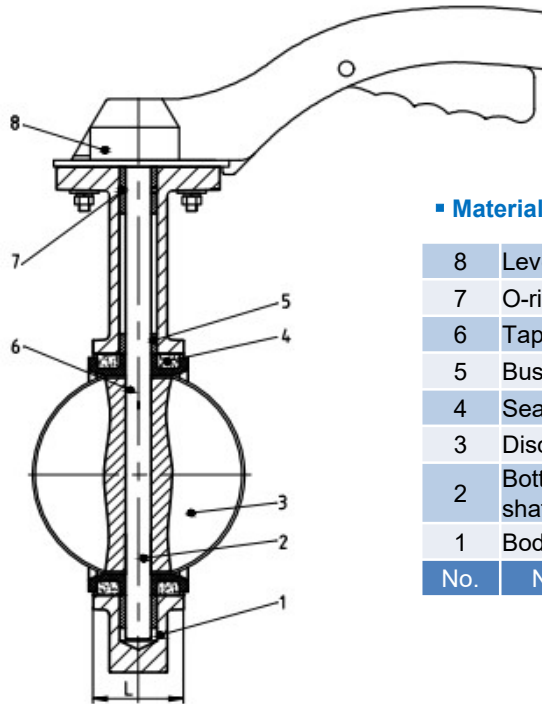
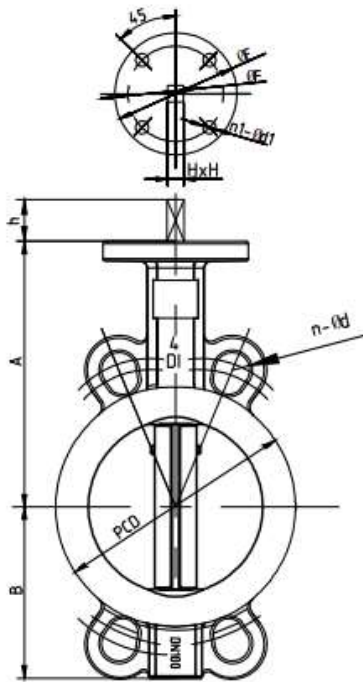


Specifications

- Body Type: Wafer Type
- General: EN558-20 series
- Face to face: ISO 5752
- Top Flanged: ISO 5211
- Flanged drilling: EN1092-2 PN16
- Working pressure: PN16
- Hydraulic test Pressure
- Working Temperature :0~80°C
- EPDM Seat and NBR Seat (Optional)

Futures

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color Epoxy: Gray



Materials

8	Lever	Aluminum
7	O-ring	EPDM
6	Tapper pin	45#/SS304
5	Bushing	Polymer
4	Seat	EPDM
3	Disc	DI+NI/SS304
2	Bottom shaft	SS401
1	Body	DI
No.	Name	Material

Dimensions

Size		L	A	B	ISO5211				PN10		PN16	
mm	in				Top flange	ØE	ØF	n1-Ød1	PCD	n-Ød	PCD	n-Ød
50	2	42	131.5	71.6	FOB	65	50	4-8	125	4-19	125	4-19
65	2.5	44.7	138	82	F05	65	50	4-8	145	4-19	145	4-19
80	3	45.2	152.8	94.5	F05	65	50	4-8	160	8-19	160	8-19
100	4	52.1	167.5	107	F07	90	70	4-10	180	8-19	180	8-19
125	5	54.4	182.5	124.5	F07	90	70	4-10	210	8-19	210	8-19
150	6	55.8	195	136.5	F07	90	70	4-10	240	8-23	240	8-23
200	8	60.6	235	169	F10	125	102	4-12	295	8-23	295	12-23
250	10	65.6	267	207	F10	125	102	4-12	350	12-23	355	12-28
300	12	76.5	305	236	F10	125	102	4-12	400	12-23	410	12-28
350	14	76.5	340	260	F10	125	102	4-12	460	16-23	470	12-28

BUTTERFLY VALVE

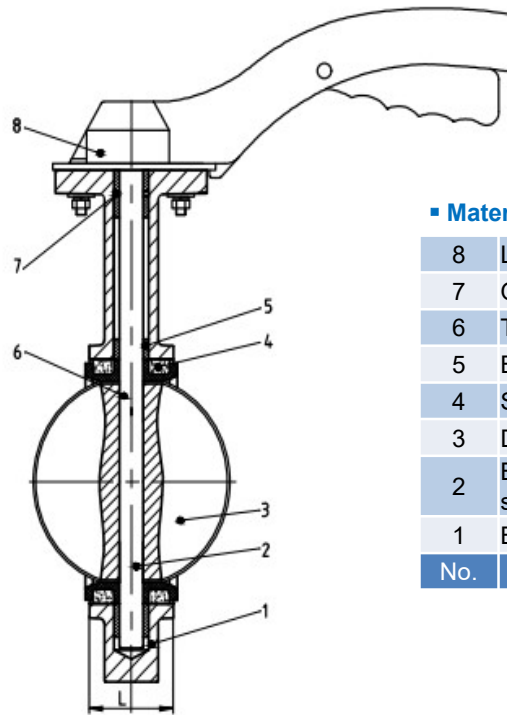
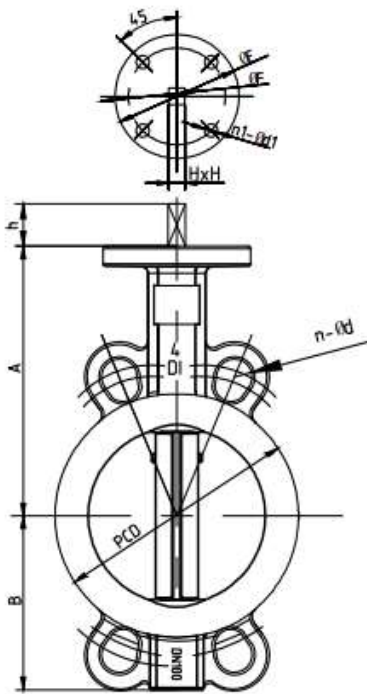


▪ Specifications

- Body Type: Wafer Type
- General: EN558-20 series
- Face to face: ISO 5752
- Top Flanged: ISO 5211
- Flanged drilling: EN1092-2 PN16
- Working pressure: PN16
- Hydraulic test Pressure
- Working Temperature :0~80°C
- EPDM Seat and NBR Seat (Optional)

▪ Future

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color
- Epoxy: Gray



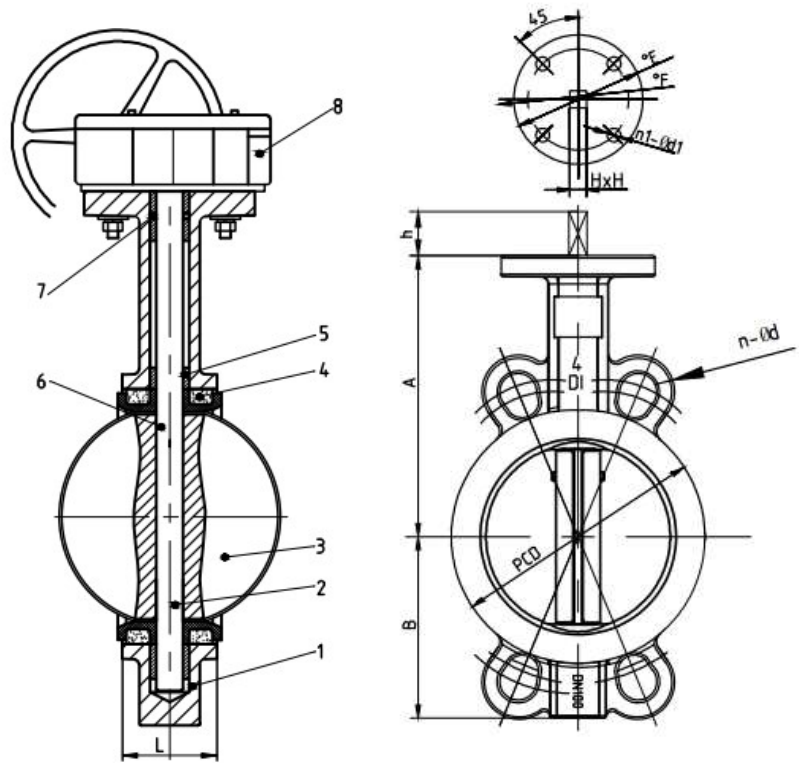
▪ Materials

8	Lever	Aluminum
7	O-ring	EPDM
6	Tapper pin	45#/SS304
5	Bushing	Polymer
4	Seat	EPDM
3	Disc	CF8
2	Bottom shaft	SS401
1	Body	DI
No.	Name	Material

▪ Dimensions

Size		L	A	B	ISO5211				PN10		PN16	
mm	in				Top flange	ØE	ØF	n1-Ød1	PCD	n-Ød	PCD	n-Ød
50	2	42	131.5	71.6	FOB	65	50	4-8	125	4-19	125	4-19
65	2.5	44.7	138	82	F05	65	50	4-8	145	4-19	145	4-19
80	3	45.2	152.8	94.5	F05	65	50	4-8	160	8-19	160	8-19
100	4	52.1	167.5	107	F07	90	70	4-10	180	8-19	180	8-19
125	5	54.4	182.5	124.5	F07	90	70	4-10	210	8-19	210	8-19
150	6	55.8	195	136.5	F07	90	70	4-10	240	8-23	240	8-23
200	8	60.6	235	169	F10	125	102	4-12	295	8-23	295	12-23
250	10	65.6	267	207	F10	125	102	4-12	350	12-23	355	12-28
300	12	76.5	305	236	F10	125	102	4-12	400	12-23	410	12-28
350	14	76.5	340	260	F10	125	102	4-12	460	16-23	470	12-28

BUTTERFLY VALVE



Specifications

- Body Type: Wafer Type
- General: EN558-20 series
- Face to face: ISO 5752
- Top Flanged: ISO 5211
- Flanged drilling: EN1092-2 PN16
- Working pressure: PN16
- Hydraulic test Pressure
- Working Temperature :0~80°C
- EPDM Seat and NBR Seat (Optional)

Futures

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color: Gray
- Coat: Epoxy

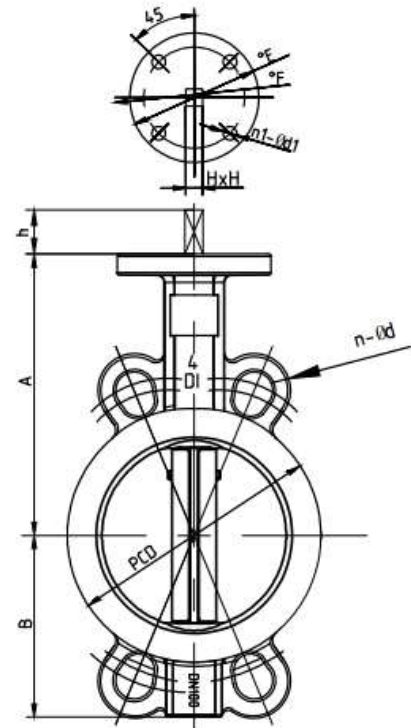
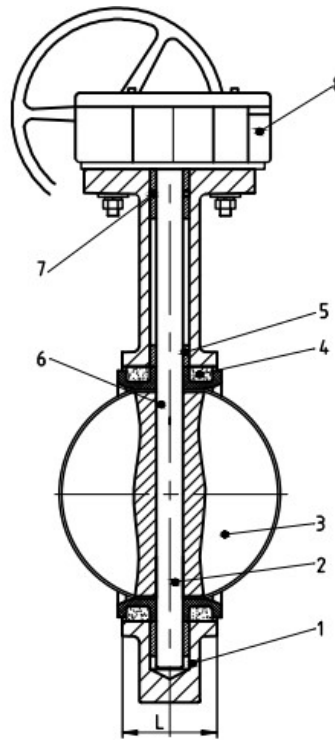
Materials

8	Worm gear	DI
7	O-ring	EPDM
6	Tapper pin	45#/SS304
5	Bushing	Polymer
4	Seat	EPDM
3	Disc	DI+NI/SS304
2	Bottom shaft	SS401
1	Body	DI
No.	Name	Material

Dimensions

Size		L	A	B	ISO5211				PN10		PN16	
mm	in				Top flange	ØE	ØF	n1-Ød1	PCD	n-Ød	PCD	n-Ød
50	2	42	131.5	71.6	FOB	65	50	4-8	125	4-19	125	4-19
65	2.5	44.7	138	82	F05	65	50	4-8	145	4-19	145	4-19
80	3	45.2	152.8	94.5	F05	65	50	4-8	160	8-19	160	8-19
100	4	52.1	167.5	107	F07	90	70	4-10	180	8-19	180	8-19
125	5	54.4	182.5	124.5	F07	90	70	4-10	210	8-19	210	8-19
150	6	55.8	195	136.5	F07	90	70	4-10	240	8-23	240	8-23
200	8	60.6	235	169	F10	125	102	4-12	295	8-23	295	12-23
250	10	65.6	267	207	F10	125	102	4-12	350	12-23	355	12-28
300	12	76.5	305	236	F10	125	102	4-12	400	12-23	410	12-28
350	14	76.5	340	260	F10	125	102	4-12	460	16-23	470	12-28

BUTTERFLY VALVE



Specifications

- Body Type: Wafer Type
- General: EN558-20 series
- Face to face: ISO 5752
- Top Flanged: ISO 5211
- Flanged drilling: EN1092-2 PN16
- Working pressure: PN16
- Hydraulic test Pressure
- Working Temperature :0~80°C
- EPDM Seat and NBR Seat (Optional)

Futures

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color: Gray
- Coat: Epoxy

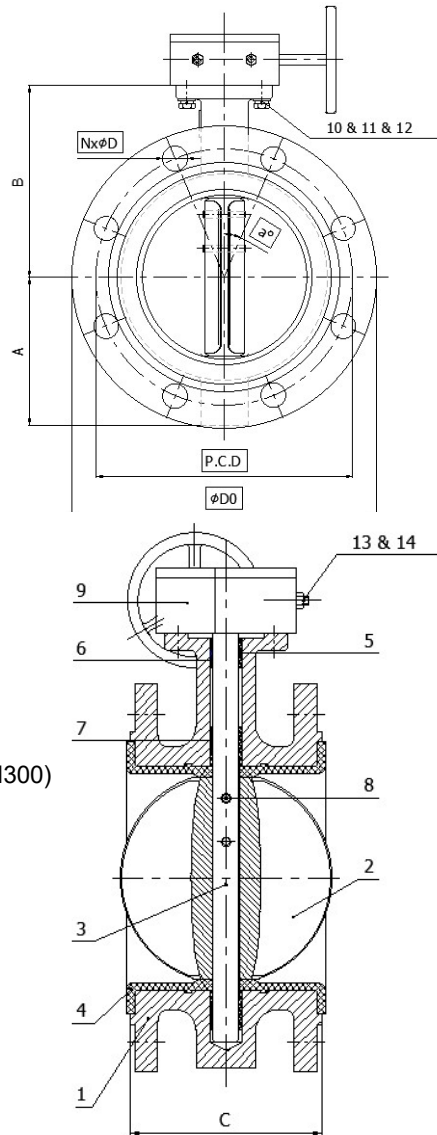
Materials

8	Worm gear	DI
7	O-ring	EPDM
6	Tapper pin	45#/SS304
5	Bushing	Polymer
4	Seat	EPDM
3	Disc	CF8
2	Bottom shaft	SS401
1	Body	DI
No.	Name	Material

Dimensions

Size		L	A	B	ISO5211				PN10		PN16	
mm	in				Top flange	ØE	ØF	n1-Ød1	PCD	n-Ød	PCD	n-Ød
50	2	42	131.5	71.6	FOB	65	50	4-8	125	4-19	125	4-19
65	2.5	44.7	138	82	F05	65	50	4-8	145	4-19	145	4-19
80	3	45.2	152.8	94.5	F05	65	50	4-8	160	8-19	160	8-19
100	4	52.1	167.5	107	F07	90	70	4-10	180	8-19	180	8-19
125	5	54.4	182.5	124.5	F07	90	70	4-10	210	8-19	210	8-19
150	6	55.8	195	136.5	F07	90	70	4-10	240	8-23	240	8-23
200	8	60.6	235	169	F10	125	102	4-12	295	8-23	295	12-23
250	10	65.6	267	207	F10	125	102	4-12	350	12-23	355	12-28
300	12	76.5	305	236	F10	125	102	4-12	400	12-23	410	12-28
350	14	76.5	340	260	F10	125	102	4-12	460	16-23	470	12-28

FLANGED BUTTERFLY VALVE (DN50-DN350)



■ Specifications

- Top flanged : ISO5211
- End connection: EN 1092 PN16
- Working pressure: 1.6 Mpa (DN50-DN300)
1 Mpa (DN350)
- Working temp: 0~80°C

■ Futures

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color
Epoxy: Gray

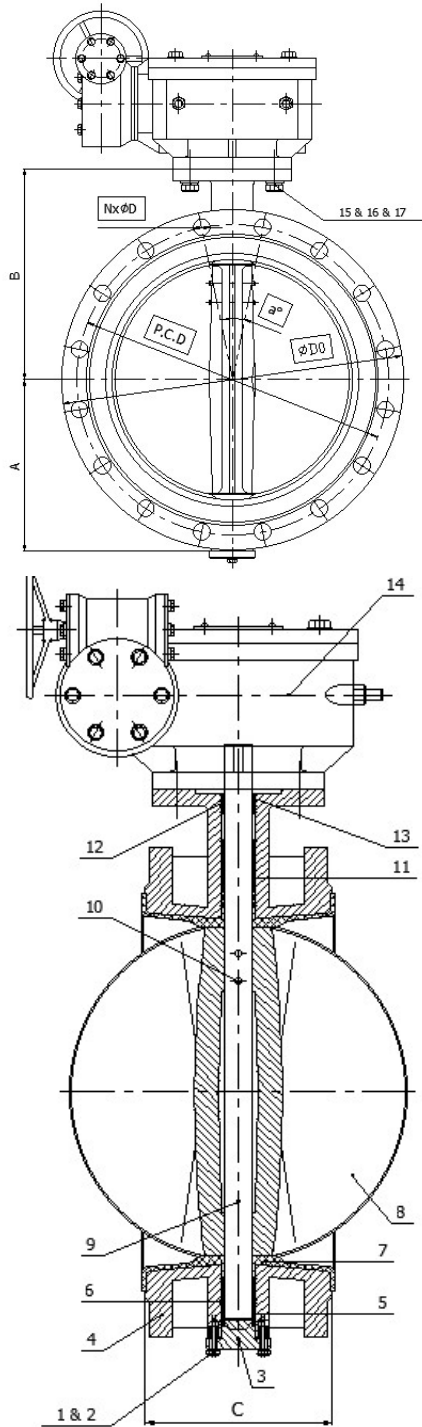
■ Materials

14	Hexagon Nut	SS304
13	Bolt	SS304
12	Flat Washer	SS304
11	Spring Washer	SS304
10	Hexagon Bolt	SS304
9	Gear Box	Aluminum
8	Taper Pin	SS304
7	Long Bushing	AL-8
6	Short Bushing	AL-B
5	O-Ring	EPDM
4	Seat	EPDM
3	Stem	SS416
2	Disc	DI/CF8
1	Body	CI/DI
No.	Parts	Material

■ Dimensions

DN	A	B	C	ØD0	P.C.D	NxØD	a°
DN50(2")	80	120	108	165	Ø125	4xØ19	45°
DN65(2.5")	75	145	112	185	Ø145	4xØ19	45°
DN80(3")	90	130	114	200	Ø160	8xØ19	22.5°
DN100(4")	114	154	127	220	Ø180	8xØ19	22.5°
DN125(5")	139	180	140	250	Ø210	8xØ19	22.5°
DN150(6")	145	190	140	285	Ø240	8xØ23	22.5°
DN200(8")	180	210	152	340	Ø295	12xØ23	15°
DN250(10")	206	246	165	405	Ø355	12xØ28	15°
DN300(12")	243	283	178	460	Ø410	12xØ28	15°
DN350(14")	245	330	190	505	Ø460	16xØ23	11.25°

FLANGED BUTTERFLY VALVE (DN400-DN600)



Specifications

- Top flanged : ISO5211
- End connection: EN 1092 PN16
- Working pressure: 1 MPa
- Working temp: 0~80°C

Dimensions

DN	A	B	C	ØD0	P.C.D	NxØD	a°
DN400(16")	285	350	216	565	Ø515	16xØ28	11.25°
DN450(18")	335	393	222	615	Ø565	2ØxØ28	9°
DN500(20")	390	440	229	670	Ø620	2ØxØ28	9°
DN600(24")	435	535	267	780	Ø725	2ØxØ31	9°

Future

- Easy installation
 - Economy & high performance
 - Concentric design
 - Standardized top flanged for actuators
 - Product color
- Epoxy: Gray

Materials

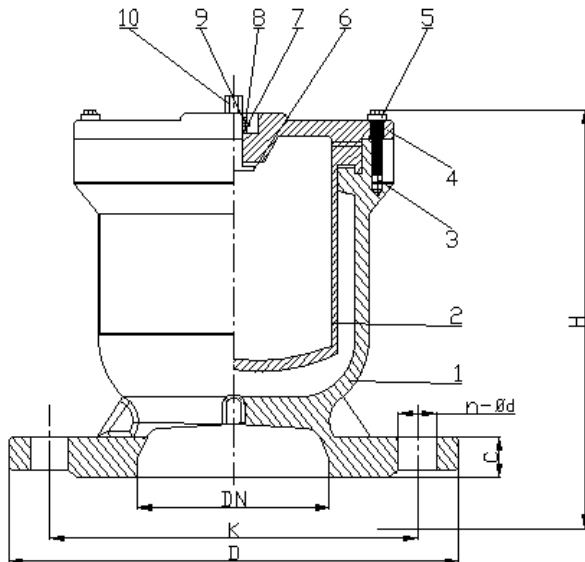
17	Fat Washer	SS304
16	Spring Washer	SS304
15	Hexagon Bolt	SS304
14	Gear Box	Assembly
13	Bushing (Short)	AL-B
12	"O"-Ring	EPDM
11	Bushing (Long)	AL-B
10	Taper Pin	SS304
9	Stem	SS416
8	Disc	DI/CF8
7	Seat	EPDM
6	"O"-Ring	EPDM
5	Bushing (Middle)	AL-B
4	Body	CI/DI
3	Cover	CI/DI
2	Spring Washer	SS304
1	Hexagon Bolt	SS304
No.	Parts	Material

WATER HAMMER VALVE

■ Specifications



Connection type	FLANGED END BS 4504/ EN1092 PN16	
Working pressure	PN16	
Paint	Type	EPOXY
	Color	Gray (Option: Blue)
Working Temp	0~80 °C	
Flow Media	Water	



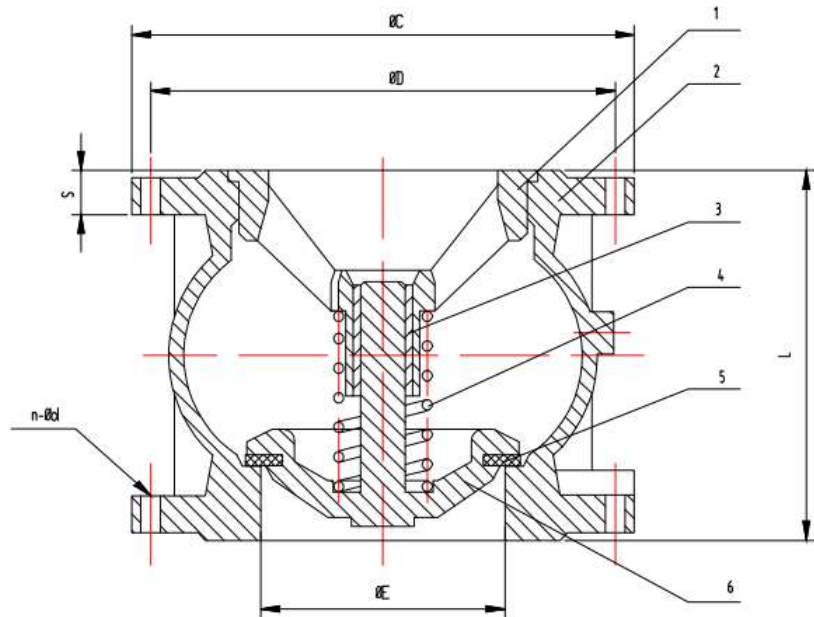
■ Materials

No	Part Name	Material
1	Body	Ductile Iron
2	Gasket	NBR
3	Bolt	SUS304
4	Bonnet	Ductile Iron
5	Washer	SUS304
6	Silent check	SUS304
7	Washer	NBR
8	Washer	NBR
9	Nut	SUS304
10	Cover	SUS304

■ Dimensions

DN	D	K	H	n-Ød	C
80	200	160	175	8-Ø19	19
100	220	180	180	8-Ø19	19
125	250	210	225	8-Ø19	19
150	285	240	226	8-Ø23	19
200	340	295	270	12-Ø23	20

CHECK VALVE



▪ Specifications

- Silent closing
 - Globe style
 - PN16 pressure
 - Flange type
 - Minimizes water hammer
 - Long service life
 - Suitable for horizontal or vertical
- Connection: flange BS EN1092-2, PN16
 Valve inspection and testing according to EN12516, EN12266
 WORKING TEMP: 0~80°C
 Paint: Epoxy Gray

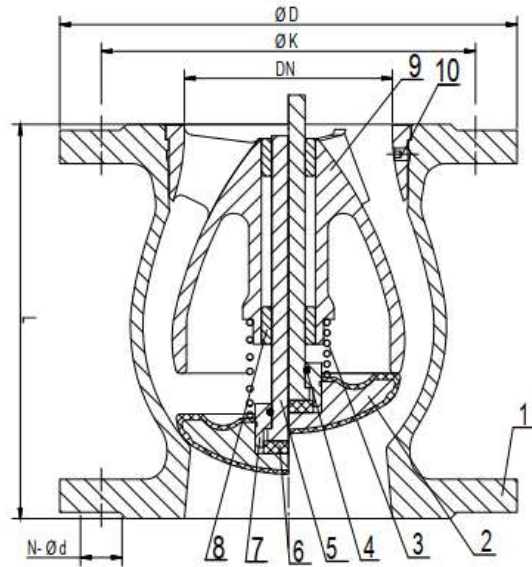
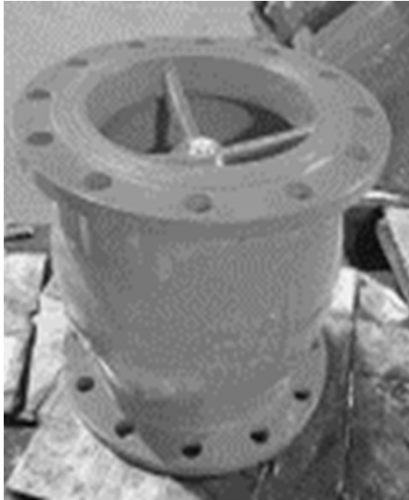
▪ Materials

NO.	DESCRIPTION	MATERIALS
1	Guide	GGG40
2	Body	GG25 GGG40
3	Guiding stem	F4
4	Spring	SS316
5	Seal	NBR EPDM
6	Disc	SS304

▪ Dimensions

DN	L	ØE	ØC	ØD	N-Ød	S
2"	100	50	165	125	4-19	17
2.5"	120	65	185	145	4-19	17
3"	140	80	200	160	8-19	19
4"	170	101	220	180	8-19	21
5"	200	127	250	210	8-19	23
6"	230	145	285	240	12-23	23
8"	301	194	340	295	12-23	27
10"	370	245	405	355	12-28	29
12"	410	300	460	410	12-28	29
14"	473	344	520	470	16-28	30

CHECK VALVE



▪ Specifications

- Silent closing
- Globe style
- PN16 pressure
- Flange type
- Minimizes water hammer
- Long service life
- Suitable for horizontal or vertical
- Working temperature: 0~80°C
- Connection: flange BS EN1092-2

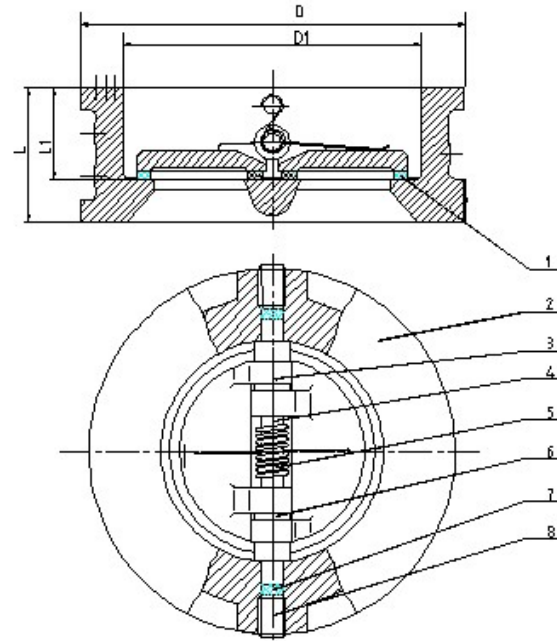
▪ Materials

NO.	DESCRIPTION	MATERIALS
1	Body	GJS 500-7
2	Disc	GJS 500-7+EPDM
3	Spring	AISI 304
4	O-Ring	NBR
5	Stem	AISI 304
6	Washer	EPDM
7	Nut	AISI 304
8	Bushing	BRASS
9	Diffuser	GJS 500-7
10	Set screw	AISI 304

▪ Dimensions

DN	L	ØD				ØK				N-Ød			
		PN10	PN16	PN25	PN40	PN10	PN16	PN25	PN40	PN10	PN16	PN25	PN40
50	150	165				125				4-Ø19			
65	150	185				145				4-Ø19	8-Ø19		
80	180	200				160				8-Ø19			
100	190	220	235		180	190		8-Ø19	8-Ø23				
125	200	250	270		210	220		8-Ø19	8-Ø28				
150	210	285	300		240	250		8-Ø23	8-Ø28				
200	230	340	360	375	295	310	320	8-Ø23	12-Ø23	12-Ø28	12-Ø31	12-Ø31	
250	250	405	425	/	350	355	370	/	12-Ø23	12-Ø28	12-Ø31	/	
300	270	460	485		400	410	430		12-Ø23	12-Ø28	16-Ø31		
350	290	520	555		460	470	490		16-Ø23	16-Ø28	16-Ø34		

CHECK VALVE



▪ Specifications

- Medium: Water
- Working pressure: PN10-PN16
- Working temperature: 0~80°C
- Design standard: BS 1092-2
- Test standard: BS EN12266
- Valve Pressure Rating: PN10 / PN16

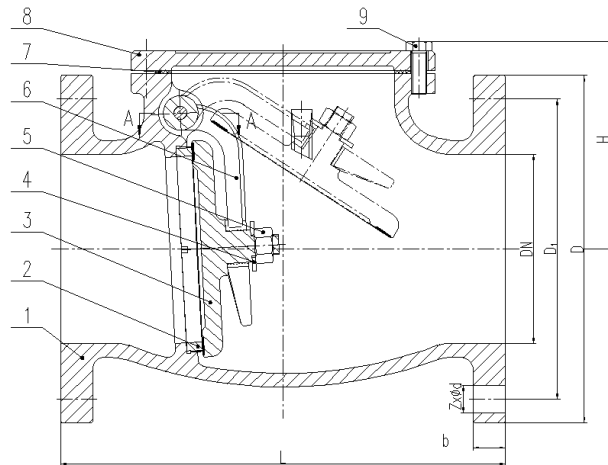
▪ Materials

NO.	DESCRIPTION	MATERIALS
1	Seat	EPDM
2	Body	CI
3	Disc	CF8
4	Stem	SS304
5	Spring	SS304
6	Shim	PTFE
7	Seal	EPDM
8	Plug	SS304

▪ Dimensions

DN	D	D1	L	L1
50	107	65	43	33
65	127	80	46	34
80	142	94	64	44
100	162	117	64	48
125	192	145	70	50
150	218	170	76	52
200	273	224	89	58
250	328	265	114	78
300	378	310	114	74
350	438	360	127	79
400	489	410	140	88
450	535	450	152	98
500	594	505	152	100
600	720	624	178	124

CHECK VALVE



▪ Specifications

- Design Standard: DIN3352
- Face to face: DIN3202-F6
- End connection: EN 1092-2 PN16
- Test standard: IS05208
- Hydraulic test Pressure
- Epoxy: Gray
- Flanged ends EN1092-2
- W/P: PN16
- Working Temperature: 0~80°C

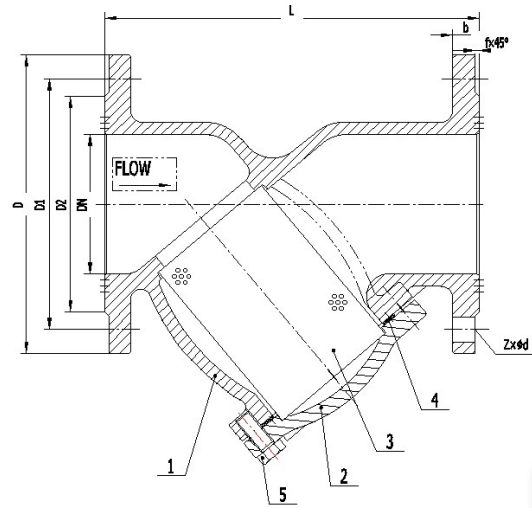
▪ Materials

NO.	DESCRIPTION	MATERIALS
1	BODY	CAST IRON
2	SEAT	BRASS
3	DISC	CAST IRON+BRASS
4	PLATE	STEEL Q235
5	NUT	STEEL #25
6	YOKE	CAST IRON
7	GASKET	08+GRAPHITE
8	COVER	CAST IRON
9	BOLT	STEEL #35

▪ Dimensions

Size	Item	DN	Q	D	L	b±1	ZxØd	H
2"		Ø50	Ø125	Ø165	203.2±2	16	4xØ19	102
2.5"		Ø65	Ø145	Ø185	215.9±2	17.53	4xØ19	113
3"		Ø80	Ø160	Ø200	241.3±2	19.05	8xØ19	118
4"		Ø100	Ø180	Ø220	292.1±2	23.9	8xØ19	138
5"		Ø125	Ø210	Ø250	330.2±2	24	8xØ19	155
6"		Ø150	Ø240	Ø285	355.6±2	25.5	8xØ23	167
8"		Ø200	Ø295	Ø340	495.3±2	28.5	12xØ23	200.3
10"		Ø250	Ø355	Ø405	622.3±2	30.16	12xØ28	252.5
12"		Ø300	Ø410	Ø460	698.5±3	31.75	12xØ28	297.5

Y-Strainer



▪ Future

- Y-Pattern
- Stainless Steel Screen
- Bolted Cover
- Flanged Ends
- Product color
- Epoxy: Gray

▪ Specifications

- Face to face: DIN 3202-F1
- Flanged Drilling: EN1092-2 PN16
- Pressure test: ISO5208
- Working Temperature: 0~80°C

▪ Dimensions

DN	L	D	D1	D2	ZxØd	b	f
40	170±1.5	Ø145	Ø110	Ø85	4xØ18	19	3
50	170±1.5	Ø160	Ø125	Ø100	4xØ18	19	3
65	195±1.5	Ø180	Ø145	Ø120	4XØ18	19	3
80	240±1.5	Ø195	Ø160	Ø135	8xØ18	19	3
100	270±1.5	Ø215	Ø180	Ø155	8xØ18	19	3
125	290±1.5	Ø245	Ø210	Ø185	8xØ18	21	3
150	345±2	Ø280	Ø240	Ø210	8xØ23	21	3
200	460±2	Ø335	Ø295	Ø265	12xØ23	22	3
250	605±2	Ø405	Ø355	Ø320	12xØ23	22	3
300	635±2	Ø460	Ø410	Ø375	12xØ25	33	3
350	696±2	Ø520	Ø470	Ø435	16xØ25	37	3

▪ Materials

5	Bolt	35# Steel
4	Bonnet gasket	PTFE
3	Screen	SS304
2	Bonnet	DI
1	Body	DI
No.	Parts	Material

Y-Strainer mesh standard

Y STRAINER SCREEN TYPE & SELECTION

TOAv strainer has a built-in screen to eliminate foreign matter and dust in the fluid, but it is necessary to select the mesh of screen considering the kind of fluid, the flow rate, the flow velocity, etc... On the screen of Y-strainer, there is a 2-piece reinforced structure screen on which a perforated plate screen mesh with holes drilled in stainless steel plate at a prescribed pitch is attached.

TOAv STRAINER SCREEN STANDARD SPECIFICATION

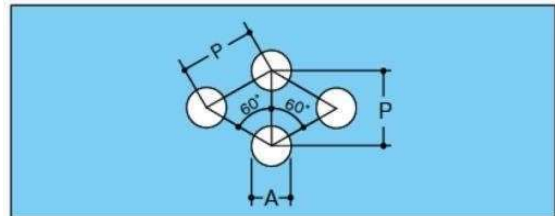
TOAv Strainer's Screen Standard follow below sheet

Type	Standard Specification
Brass	With 60° Zig-Zag Pattern Rolled Stainless Steel Sheet
Cast Iron. Ductile	With 60° Zig-Zag Pattern Rolled Stainless Steel Sheet

60° Zig Zag Pattern Rolled Stainless Steel Screen hole and pitch as below:

• **Y Strainer**

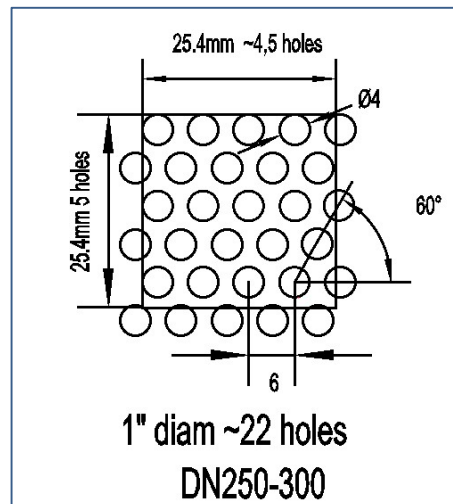
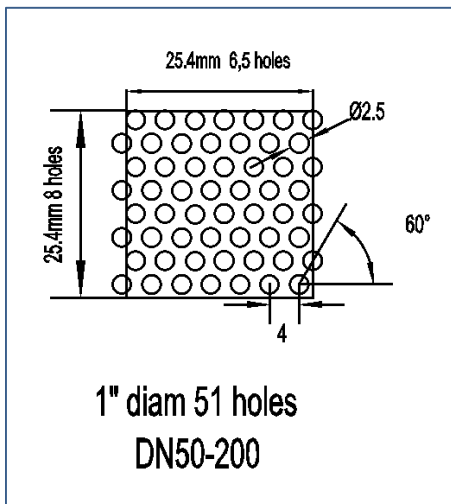
Size DN (mm)	A (Ø) (mm)	P (mm)	Hole Area Opening Ratio
8~25	0.5	0.8	35.5
32~50*	0.8	1.3	34.42
50~200	2.5	4	35.5
250~300	4	6	40.4



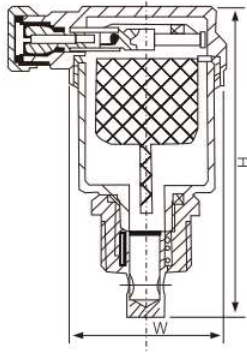
(*): Size 50 is Brass Y Strainer. From DN50 up is Ductile Iron or Cast Iron
 Effective filtration area = (external net area x Hole Area Opening ratio of external net) x Hole Area Opening ratio of internal net

• **Stainless steel wire mesh type**

Stainless steel wire mesh type is displayed with mesh. Mesh is an unit representing the number of eyes of a wire mesh, and refers to the number of different meshes between plain weave at 25.4mm (1 inch). With a large number of meshes type, the mesh's eyes become finer. However, please note that the opening area differs depending on wire diameter even in the same mesh.



Automatic air valve



Specification
<ul style="list-style-type: none"> Nominal Pressure: 1.6 Mpa Suitable temperature: -20 - 150oC Connection: Thread

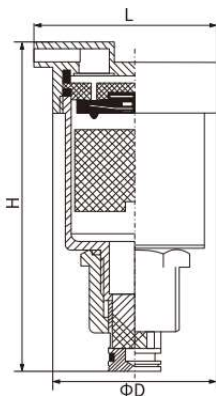
Part	Material
Body	Brass
Bonnet	Brass
Spool	Brass
Spring	SS304

Usage: This series of valves is suitable for working medium for waters non - corrosive liquids airs saturated vapor etc...

DN	Size	H	W
20	3/4"	73	36
25	1"	75	36

Automatic air valve

Fig.B24AX-16T



Specification
<ul style="list-style-type: none"> Nominal Pressure: 1.6 Mpa Suitable temperature: 0-90oC Connection: Thread

Part	Material
Body	Brass
Bonnet	Brass
Spool	Brass
Spring	SS304

Usage: This series of valves is suitable for working medium for waters non - corrosive liquids airs saturated vapor etc.

DN	Size	L	H	B	D
20	3/4"	87	73	15	89
25	1"	89	75	21	94