Constant flow valve

User's Manual

Thank you for choosing our product.
This User's manual contains important information for safe use of our product, so please be sure to read it before handling the product.
After reading this manual, please be sure to keep it in a place where the user can see it at any time.

ASAHI YUKIZAI CORPORATION

-SAFETY PRECAUTIONS-

This User's manual is written on the assumption that the person who Hand Wheels our products has a basic knowledge of our products, electrical equipment, machinery, control, etc., and it contains technical terms depending on the handling contents.
Please read this manual carefully and fully understand the contents and observe the safety precautions for proper use.

In this manual, the warning, caution, prohibition, and enforcement are categorized together with the symbol to inform the situation and scale of human injury or property damage.
Failure to observe this precaution may result in unexpected failure or damage. Be sure to observe this precaution.

<WARNING/CAUTION indications>

⚠ Warning	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ Caution	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.

<Prohibited/Forced display>

Prohibition	In the handling of the product, it is prohibited to do it in "Do not do it".
Forcing	In the handling of the product, it is forced by "contents to be carried out without fail".

Table of contents

1. Our product warranty coverage

Unless otherwise stated in the Contract or Specifications, etc., the warranty for the piping material products (hereinafter referred to as "applicable products") such as valves manufactured or sold by us is as follows.

Applicable to

This warranty applies only when the product is used in Japan. If you intend to use the product overseas, please contact us.

Warranty Period

The warranty period is one year after delivery.

Guaranteed range

In the event of failure or malfunction due to our responsibility during the above warranty period, we will replace or repair the product with a substitute free of charge.
Provided, however, that even within the warranty period, the warranty shall not apply to any of the following cases (charged service).

- ▶ When the storage, operating conditions, precautions, etc. described in the specifications, User's manual, etc. are not adhered to in the construction, installation, handling, maintenance, etc.
- ▶ Defects, such as the design of the customer's equipment or software, caused by other than the target product.
- ▶ The fault is due to modification or secondary processing of the product by something other than us.
- ▶ In the case of a failure which can be deemed to have been avoided if the periodic inspection described in the User's manual, etc. or the maintenance or replacement of consumable parts has been performed normally.
- ▶ The component is used for purposes other than the product's intended use.
- ▶ Failure or malfunction due to causes that could not be foreseen by our level of science and technology at the time of shipment.
- ▶ The fault is due to an external factor that is not our responsibility, such as natural disaster or disaster.

Disclaimer

- ▶ The warranty will not cover secondary damage (damage to equipment, loss of opportunity, loss of profit, etc.) or any other damage caused by the failure of our product.
- ▶ Although we strive to improve the quality and reliability of our products, we do not guarantee their integrity. Especially when using this product for equipment that may infringe human life, body or property, take appropriate safety design measures, etc., with full consideration of problems that may normally occur. We assume no responsibility for such use if we have not obtained our consent in advance in writing of specifications, etc.
- ▶ Please observe the product specifications and precautions when using our products. We shall not assume any responsibility for any damage to the customer caused by the customer's negligence. However, this does not apply to damage caused by a defect in our product.

2. Safety Instructions

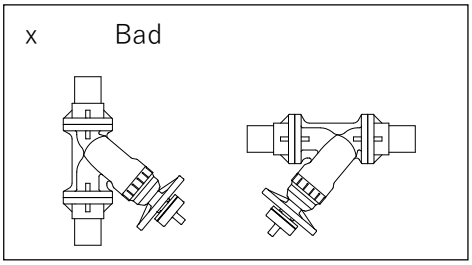
Unpacking, Transportation and Storage

⚠ Warning	
Forcing	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load.

⚠ Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not subject the product to impact by throwing, dropping or hitting. ▶ Do not scratch or pierce the product with a sharp object such as a knife or hand hook. ▶ Do not pile up cardboard boxes forcefully to prevent the load from collapsing. ▶ Avoid contact with coal tar, creosote (a wood preservative), white pesticides, insecticides, paints, etc.
Forcing	**The valve can be damaged, or leak.** ▶ Do not hang the Hand Wheel when transporting the valve. ▶ Keep in cardboard until just before piping, and store indoors (at room temperature) away from direct sunlight. Also, avoid storing the product in places of high temperature. (The strength of cardboard packaging decreases when it gets wet. Be very careful when storing and handling it.) ▶ After unpacking, make sure that the product is correct and that it meets the specifications.

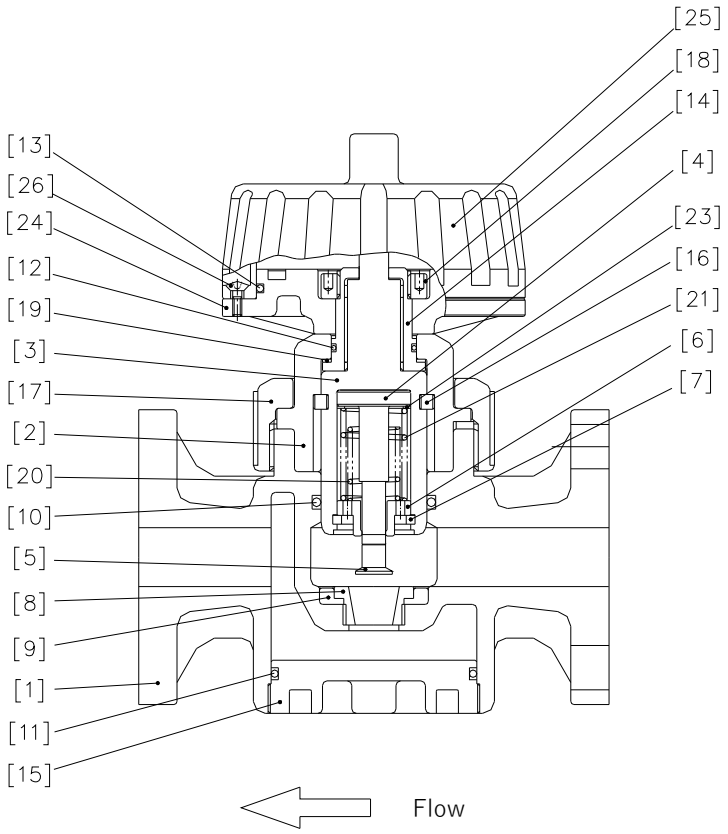
Product Handling

Warning	
Forcing	**Serious injury can result.** ▶ If positive pressure gas is used for our resin piping material, a dangerous condition may occur due to the repulsive force peculiar to compressible fluids even if the pressure is the same as the water pressure. Therefore, be sure to take safety measures for the surrounding area, such as covering the piping with protective materials. If you have any questions, please contact us separately. ▶ When conducting a pipe leak test after completion of piping construction, be sure to check with water pressure. Contact us in advance if you are unavoidable to test with a gas.

Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ The flow rate setting range, operating differential pressure range, etc. differ depending on the type of A to D types. Select one that matches the operating conditions. ▶ Do not step on the valve or place heavy objects on it. ▶ Keep away from fire and hot objects.
Forcing	**The valve can be damaged, or leak.** ▶ The valve travel indicator is factory-adjusted so that the flow rate scale and actual flow rate are within the specified accuracy (±6% of full scale). Never disassemble the valve travel indicator. ▶ Do not use for fluids with viscosities higher than 35cp. ▶ Keep the pressure and temperature of the fluid within the allowable range. (The maximum allowable pressure includes water hammer pressure.) ▶ Secure sufficient space for maintenance and inspection when piping. ▶ Use a valve of suitable material for the operating conditions. (Depending on the type of chemical liquid, the parts may be damaged. Contact us in advance for details.) ▶ Use fluids containing crystalline material under conditions that do not recrystallize. ▶ Avoid any place where the valve is constantly exposed to splashes of water and dust, or direct sunlight, or protect the valve with a cover or the like to cover the entire area. ▶ 「9. Perform maintenance on a regular basis referring to "Inspection items." Pay particular attention to temperature changes and aging during long-term storage or shutdown or use. ▶ Install a strainer (60 mesh) on the upstream side if there is a risk of dirt or foreign matter entering the product. Note that the mounting orientation shown in the figure on the right may cause operation failure. (This does not apply to the pure water line.)  ▶ Use a fluid specific gravity of 1.4 or less with a Size 80mm or less and a Size 100mm of 1.1 or less.

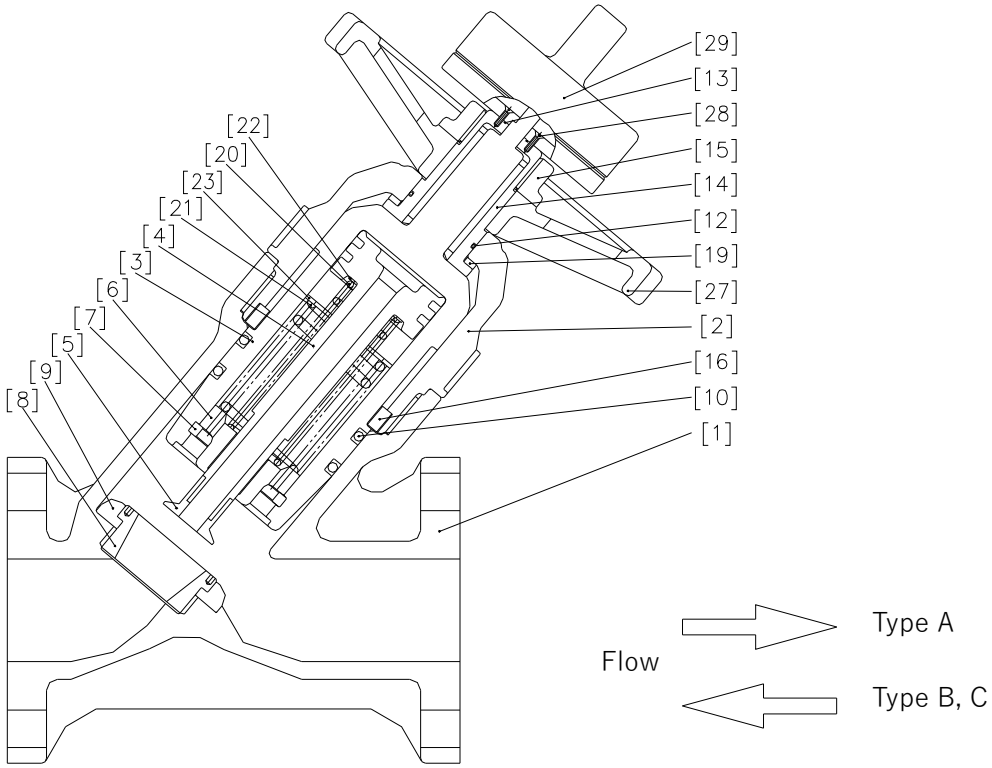
3. Name of each part

Size: 15, 20mm



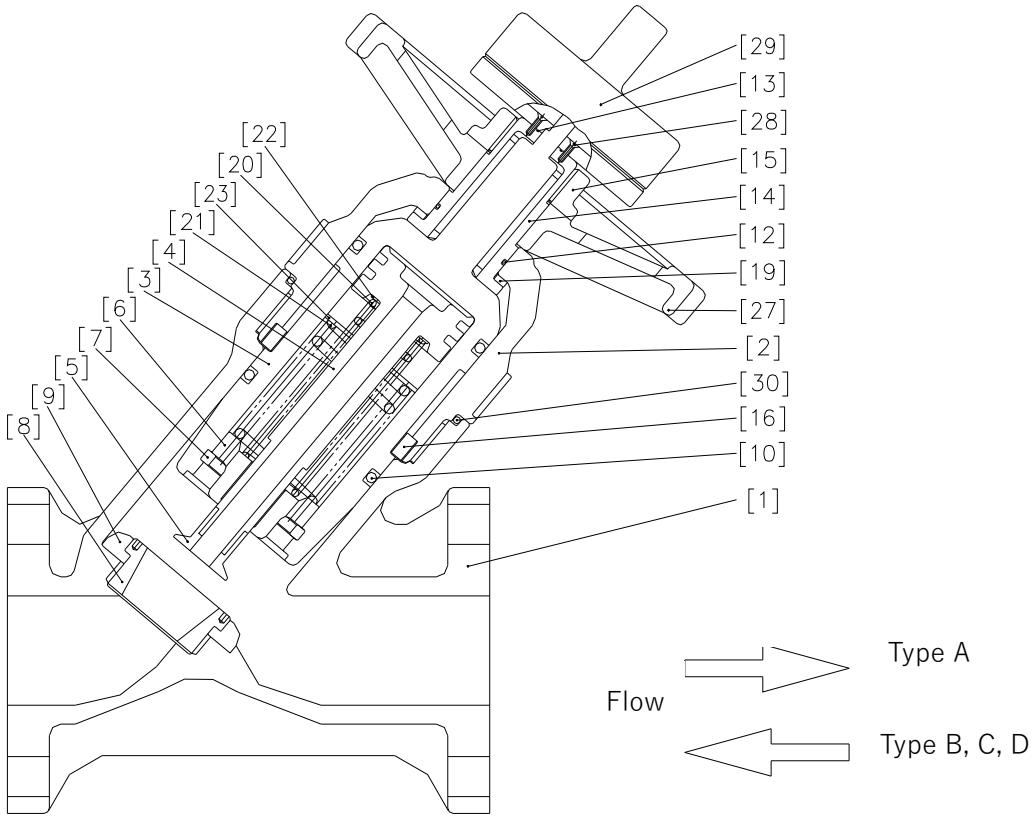
[1]	Body	[14]	Sleeve
[2]	Bonnet	[15]	Cap
[3]	Cylinder	[16]	Key
[4]	Piston	[17]	Cap nut
[5]	Plug	[18]	Nut
[6]	Spring base	[19]	Thrust ring
[7]	Stop ring	[20]	Spring (A)
[8]	Orifice	[21]	Spring (B)
[9]	Seat	[23]	Washer (B)
[10]	O-ring (A)	[24]	Hand Wheel base
[11]	O-ring (B)	[25]	Hand Wheel cover
[12]	O-ring (C)	[26]	Screw
[13]	O-ring (D)		

Size: 25mm



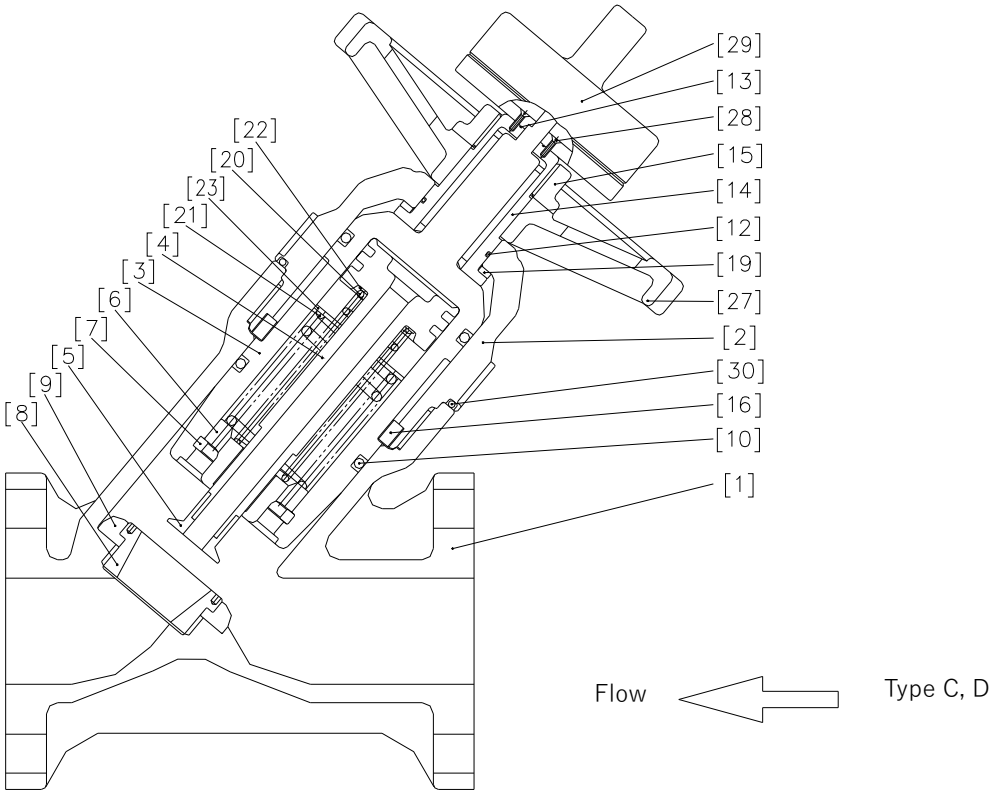
[1]	Body	[14]	Sleeve
[2]	Bonnet	[15]	Cap
[3]	Cylinder	[16]	Key
[4]	Piston	[19]	Thrust ring
[5]	Plug	[20]	Spring (A)
[6]	Spring base	[21]	Spring (B)
[7]	Stop ring	[22]	Washer (A)
[8]	Orifice	[23]	Washer (B)
[9]	Seat	[27]	Hand Wheel
[10]	O-ring (A)	[28]	Screw
[12]	O-ring (C)	[29]	Indicator
[13]	O-ring (D)		

Size: 50, 80mm



[1]	Body	[14]	Sleeve
[2]	Bonnet	[15]	Cap
[3]	Cylinder	[16]	Key
[4]	Piston	[19]	Thrust ring
[5]	Plug	[20]	Spring (A)
[6]	Spring base	[21]	Spring (B)
[7]	Stop ring	[22]	Washer (A)
[8]	Orifice	[23]	Washer (B)
[9]	Seat	[27]	Hand Wheel
[10]	O-ring (A)	[28]	Screw
[12]	O-ring (C)	[29]	Indicator
[13]	O-ring (D)	[30]	O-ring (E)

Size: 100mm



[1]	Body	[14]	Sleeve
[2]	Bonnet	[15]	Cap
[3]	Cylinder	[16]	Key
[4]	Piston	[19]	Thrust ring
[5]	Plug	[20]	Spring (A)
[6]	Spring base	[21]	Spring (B)
[7]	Stop ring	[22]	Washer (A)
[8]	Orifice	[23]	Washer (B)
[9]	Seat	[27]	Hand Wheel
[10]	O-ring (A)	[28]	Screw
[12]	O-ring (C)	[29]	Indicator
[13]	O-ring (D)	[30]	O-ring (E)

4. Product Specifications

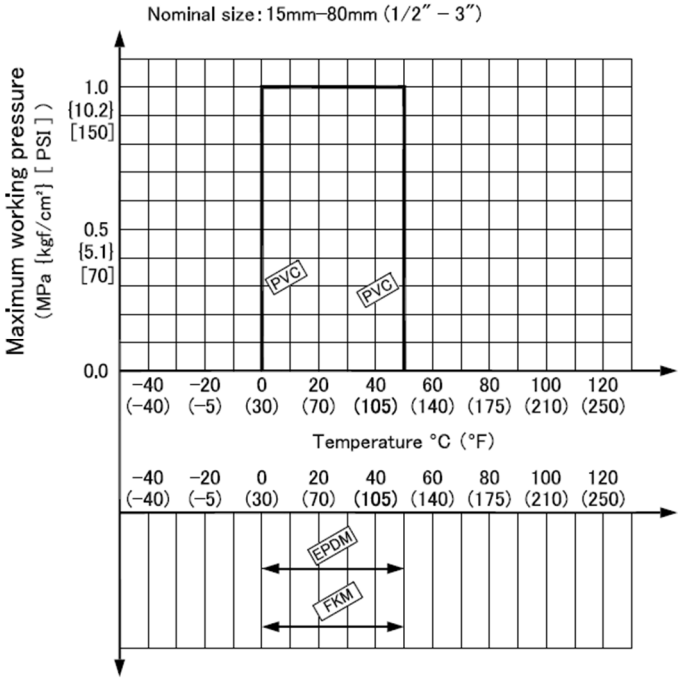
Model number table

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	HIGH PURITY SERIES
V	C F	* *	U	*	F	*	* * *	*

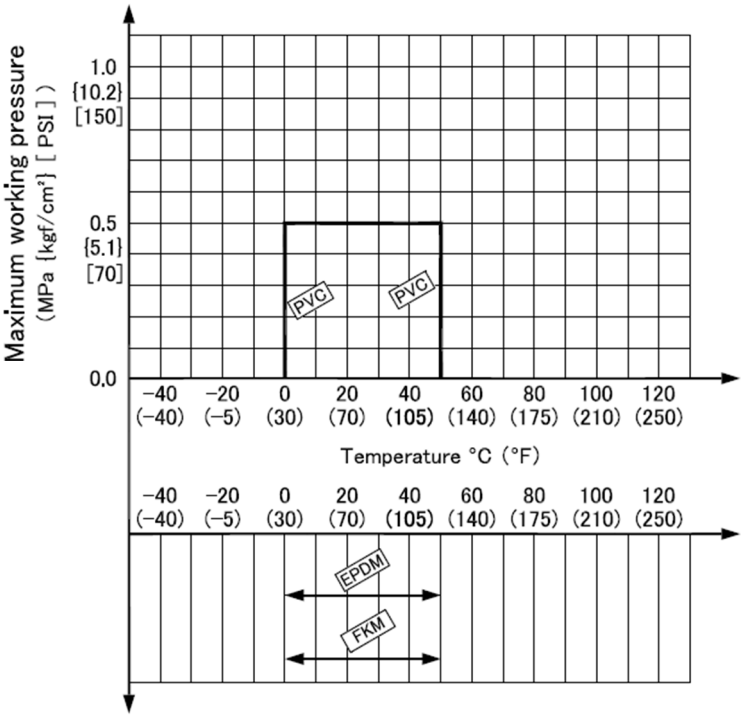
V MANUAL	CF CONSTANT FLOW VALVE	AT TYPE A BT TYPE B CT TYPE C DT TYPE D	U PVC	E EPDM V FKM	F FLANGED	1 JIS 10K 5 JIS 5K D DIN A ANSI	015 15mm 020 20mm 025 25mm 050 50mm 080 80mm 100 100mm	1 LIBRICANT FREE

Relationship between maximum allowable pressure and temperature

Size: 15mm ～ 80mm



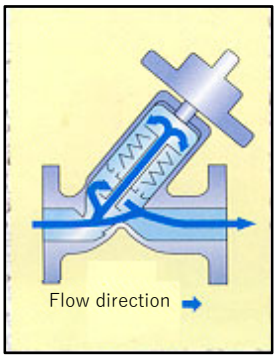
Size: 100mm



Type

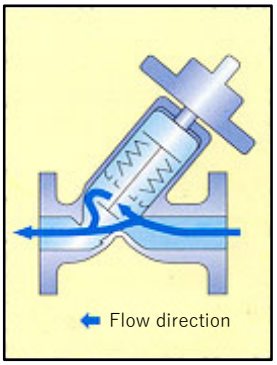
▶ Type-A (25mm～80mm)

There is a pressure inlet on the valve body, and there is no retention of fluid.
Because the fluid is constantly moving inside, it is ideal for ultrapure water lines in semiconductor plants where there is no dead space and fluid retention is extremely disliked.
A strainer can be attached to the valve element.



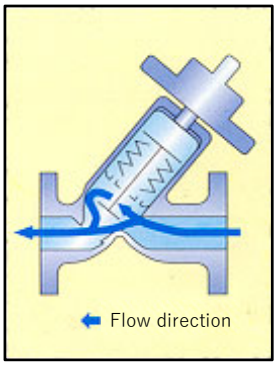
▶ Type-B (15mm～80mm)

There is no pressure inlet on the valving element.
The flow rate setting range is too large.
A wide range of flow rate settings from minute flow rates to large flow rates is possible, making it ideal for seawater lines in cultivation fisheries facilities that require significant changes in set values.



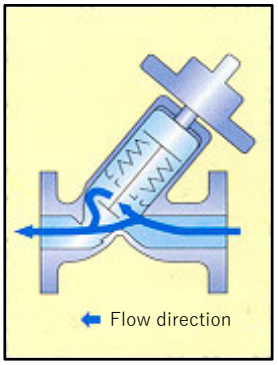
▶ Type-C (15mm～80mm)

Ideal for various factory chemical lines where the pressure difference between the primary and secondary pressures is large.



▶ Type-D (80mm～100mm)

As with type B, there is no pressure inlet on the valving element.
Large flow rate setting is possible.
Use only when as large a flow rate as possible is required.
※For Size 100mm, the max. set flow rate is the same as that of C-type.



Flow direction

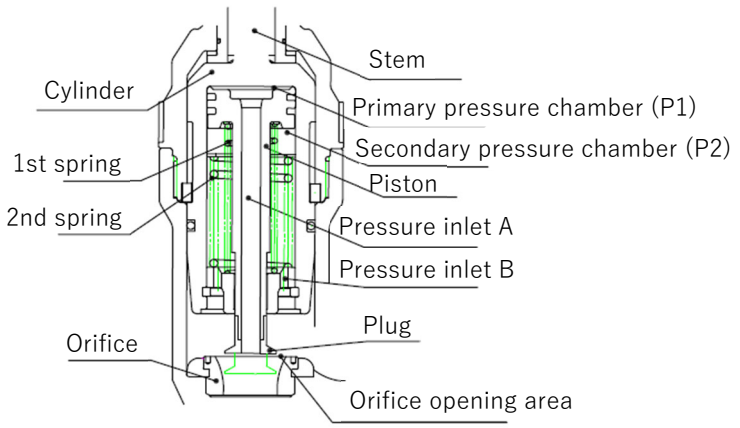
Principle and structure

When the fluids flow as shown by the arrows in Fig. 1, a pressure differential △P (P_1-P_2) occurs before and after the orifice formed by the conical plug and the R part of the orifice tube.

When the differential pressure △P increases, the piston moves downward while pressing only the first spring, and stops at the position where it was balanced with the repulsive force from the spring.

If the differential pressure △P increases further, the piston moves downward while also pushing the second spring. If △P decreases, the operation is reversed.

Fig. 4-1 (Type-A structure diagram)



A plug is attached to the lower end of the piston. The plug moves as the piston moves up and down, expanding and reducing the area of the orifice to maintain a constant flow rate. The position of the plug is determined by the relationship between the pressure difference △P and the repulsive force from the spring. The R part of the orifice tube is designed and manufactured so that a constant flow rate is always obtained regardless of the position of the plug. (Refer to the following equation.)

In the Type-A case, the upstream pressure P_1 is introduced into the primary pressure chamber through pressure inlet A, and the downstream P_2 is introduced into the secondary pressure chamber through pressure inlet B. Therefore, the piston receives the same pressure differential △P as described above. (For Type-B, C, D, the plug is directly subject to the primary pressure P_1, so there is no pressure introduction port.)

When the cylinder is moved by the Hand Wheel operation, the plug moves up and down accordingly, changing the area of the orifice opening. This operation allows the flow rate set value to be adjusted as desired.

$$Q = \alpha \cdot Ao \sqrt{\frac{2g\triangle P}{\gamma}}$$

Q = flow rate
α = flow coefficient (constant)
Ao = opening area of the orifice
g=Gravitational acceleration
△P = pressure difference before and after the plug
γ = specific weight of fluid (constant)

Since g, α, and γ in the above equation are constants, in order to make Q=constant, the R part is designed so that $Ao \times \sqrt{\triangle P}$=constant.

Setting flow rate range and operating differential pressure range

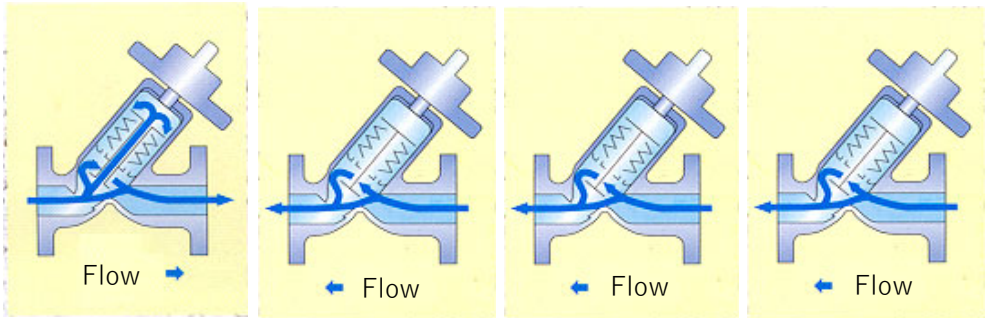
Size	Classification	Flow rate(m^3/hr)	Range ability	Operating differential pressure MPa{kgf/cm^2}
15mm (½")	Type-B	0.04～ 0.8	20 : 1	0.02 ～0.1 {0.2～1.0}
	Type-C	0.08～ 0.8	10 : 1	0.03 ～0.2 {0.3～2.0}
20mm (¾")	Type-B	0.06～ 1.2	20 : 1	0.02 ～0.1 {0.2～1.0}
	Type-C	0.12～ 1.2	10 : 1	0.03 ～0.2 {0.3～2.0}
25mm (1")	Type-A	0.5 ～ 2.0	4 : 1	0.02 ～0.1 {0.2～1.0}
	Type-B	0.1 ～ 2.0	20 : 1	0.02 ～0.1 {0.2～1.0}
	Type-C	0.2 ～ 2.0	10 : 1	0.03 ～0.2 {0.3～2.0}
50mm (2")	Type-A	2.0 ～ 8.0	4 : 1	0.02 ～0.1 {0.2～1.0}
	Type-B	0.4 ～ 8.0	20 : 1	0.02 ～0.1 {0.2～1.0}
	Type-C	0.8 ～ 8.0	10 : 1	0.03 ～0.2 {0.3～2.0}
80mm (3")	Type-A	5.0 ～ 20.0	4 : 1	0.02 ～0.1 {0.2～1.0}
	Type-B	1.0 ～ 20.0	20 : 1	0.02 ～0.1 {0.2～1.0}
	Type-C	2.0 ～ 20.0	10 : 1	0.03 ～0.2 {0.3～2.0}
	Type-D	15.0 ～ 30.0	2 : 1	0.03 ～0.15 {0.3～1.5}
100mm (4")	Type-C	10.0 ～ 60.0	6 : 1	0.03 ～0.2 {0.3～2.0}
	Type-D	30.0 ～ 60.0	2 : 1	0.02 ～0.2 {0.2～2.0}

NOTE)The operating differential pressure range slightly differs depending on the set flow rate. Contact us for details.

5. Piping method

⚠Warning	
Forcing	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load. ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand. ▶ When installing piping, be sure to wear the appropriate protective equipment according to the operation details.

⚠Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Be careful not to overtighten the pipe support when you remove it with a U band or the like. ▶ Use a connection flange with a full-face seat.
Forcing	**The valve can be damaged, or leak.** ▶ Check that the flange standards of each other are correct. ▶ Be sure to use the sealing gaskets (AV packing), bolts/nuts, and washers to tighten them with the specified tightening torque. (The tightening torque will change if the gasket is not a AV gasket.) ▶ The piping direction differs depending on the type. Align the piping with the arrow indicating the flow direction of the valve body.



Type-A Type-B Type-C Type-D

Preparations ▶ Spanner ▶ screw/nut/washer ▶ torque wrench ▶ AV packing

[Procedure]

1) Set AV packing between the flanges.

2) Insert the washer and bolt from the connecting flange side. Insert the washer and nut from the valve side and tighten temporarily by hand.

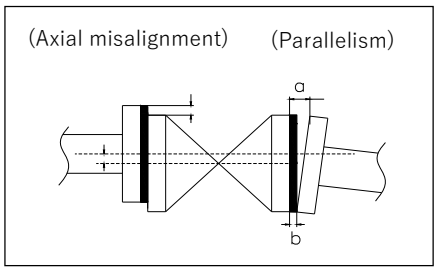
⚠Caution

Forcing

The valve can be damaged or leak.

▶ Flange surface parallelism and shaft misalignment should be less than the values shown in the table below.

Size (mm)	Shaft misalignment	Parallelism (a-b)
15～25	1.0mm	0.5mm
40～80	1.0mm	0.8mm
100	1.0mm	1.0mm



3) Gradually tighten the screws diagonally to the specified torque value (see Fig. 1) with a torque wrench.

⚠Caution

Forcing

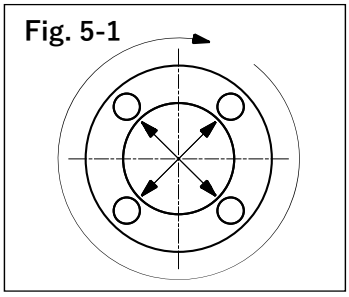
The valve can be damaged or leak.

▶ Tighten the bolts and nuts of the connection flange diagonally to the specified torque.

Flange tightening torque. Unit: N-m

Size	15, 20 mm	25 mm	50 mm	80, 100 mm
PTFE coating PVDF coating	17.5	20.0	22.5	30.0
Rubber	8.0	20.0	22.5	30.0

Fig. 5-1



6. Operation method

⚠Caution	
Prohibition	**The valve can be damaged or leak.** ▶ Do not turn the Hand Wheel more than necessary with excessive force when fully closing and opening the valve. **Valve accuracy may be reduced.** ▶ Never operate the pump outside the range of the flow rate scale. Especially, never operate the pump below the minimum scale.
Forcing	**The valve can be damaged or leak.** ▶ Do not open or close the valve with dust or other foreign matter in the fluid. ▶ Since foreign matter such as sand may remain in the pipeline even after the valve is installed, open and close the valve after cleaning the inside of the pipe. ▶ Hand Wheel operation must be done by hand. ▶ Be sure to follow the flow rate setting method when setting the flow rate. **Valve accuracy may be reduced.** ▶ To set the flow rate, turn the Hand Wheel counterclockwise until the indicator hand of the opening indicator shows a value greater than the set value, and then turn the Hand Wheel clockwise so that the flow rate is close to the set flow rate. (Accuracy will be reduced when the flow rate is approached from a value smaller than the set value.)

[**Procedure**]

1) Turn gently to open/close operation.
(Turning the Hand Wheel clockwise decreases the flow rate. Turning the Hand Wheel counterclockwise increases the flow rate.)

2) When closing the valve, turn the Hand Wheel clockwise to set the indicator hand to the 0 position on the flow scale. Rubber seats are used for the valve seats, so water can be completely cut off simply by closing them lightly by hand.

7. Disassembly/assembly method for internal cleaning

⚠ Warning	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not disassemble the product except for the parts listed.

⚠ Caution	
Forcing	**The valve can be damaged, or leak.** ▶ If it is difficult to disassemble (parts stuck), do not forcibly. Contact us. ▶ The valve travel indicator is factory-adjusted so that the flow rate scale and actual flow rate are within the specified accuracy (±6% of full scale). Never disassemble the valve travel indicator. ▶ When removing the bonnet, be sure to fully open the Hand Wheel and remove the bonnet. ▶ If it is difficult to disassemble (parts stuck), do not forcibly. Contact us. ▶ Do not rub (scratch) the external and internal parts with sharp or hard objects. ▶ Do not disassemble under pressure with water flowing.

Preparations

Tool name	Size						Usage
	15mm	20mm	25mm	50mm	80mm	100mm	
Belt Wrench (Applicable pipe diameter)	80mm			120mm	150mm	200mm	Detaching and attaching the hood
Snap ring pliers for holes (Applicable ring diameter)	25mm			60mm		100mm	Stop ring installation and removal
Nylon brush							Cleaning of parts
Silicone grease	HIVAG-G (Shin-Etsu Silicone)						Apply to O-ring
Magic							Marking

Disassembly

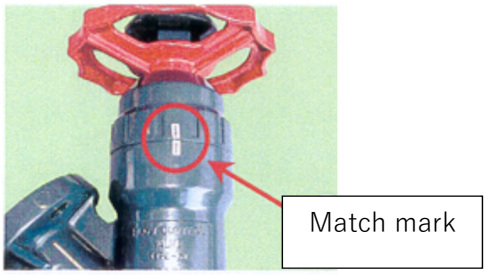
[Procedure]

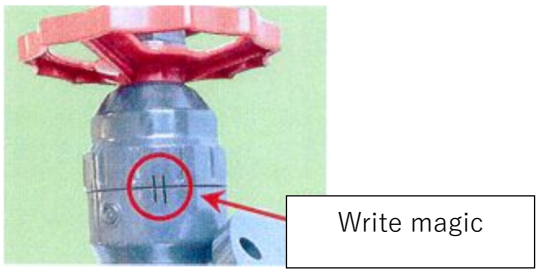
1) Stop supplying water to the line where the "constant flow valve" to be cleaned is connected, and drain all the fluid remaining in the pipe.

2) Fully open the valve.

3) Check if there is an alignment mark on the main unit and bonnet. If not, fill in the match mark using a magic, etc.

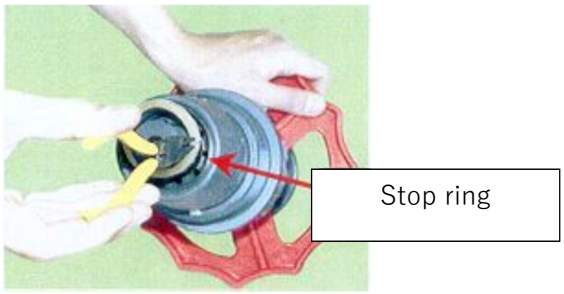
※Not required for Size 15mm, 20mm.



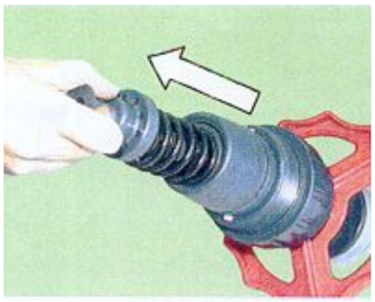


4) Use a belt wrench to loosen the bonnet and remove the body.

5) Remove the Stop ring with the Stop ring pliers.



6) Pull out the piston from the cylinder.

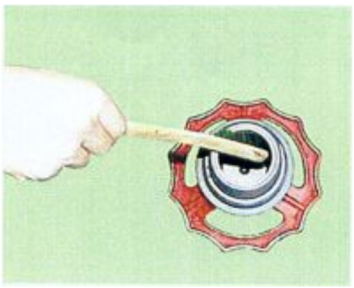


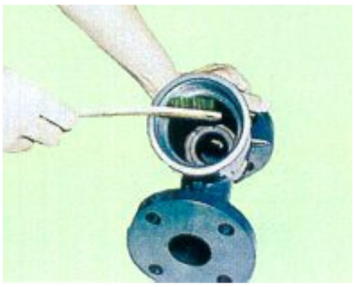
Cleaning

[Procedure]

1) Check each part for scratches, damage, etc.

2) Clean each part with a nylon brush (the material that scratches the part cannot be used).

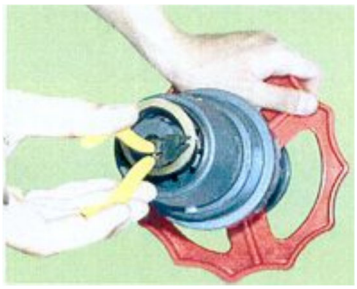




Assembly

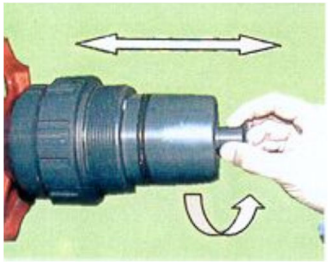
[Procedure]

1) Assemble in the reverse order of disassembly. Insert the piston smoothly into the cylinder and fit the Stop ring securely.

2) If the silicone grease on the O-ring of the cylinder runs out, apply an appropriate amount to the surface.


3) Check that the piston operates smoothly. Hold the plug part and rotate it up and down.
If it does not move or if it is tight, wash it again.



4) Insert the bonnet into the body.
(The Size 15mm, 20mm has irregularities for alignment on the body and bonnet.)

5) Tighten by hand and with a belt wrench until the alignment mark of the bonnet and the body is aligned. Perform full tightening.



⚠Caution	
Forcing	**The valve can be damaged or leak.** ▶ The Size 15mm, 20mm does not have a match mark. Do not tighten unnecessarily.

6) After assembling the valve, adjust the flow rate scale to the set flow rate.

7) Check that the valve operates normally by passing water. Operate the valve slowly.

8. Inspection item

⚠Caution	
Forcing	**The valve can be damaged, or leak.** ▶ Maintenance should be performed every 3 to 6 months as a guide in order to keep the watch in normal condition and use it for a long time. Pay particular attention to temperature changes and aging during long-term storage or shutdown or use. ▶ When removing the valve from the piping when replacing the valve or parts, completely remove the fluid from the piping before starting work. ▶ If any trouble is found, take the appropriate action referring to "10. Cause of malfunction and remedy".

Daily inspection

Inspection items and inspection methods	Guideline of judgment	Check point	Treatment method
External leakage (Visual inspection)	No leakage	[Flange d end] Pipe flange connection	① Retighten the pipe bolts to the specified torque. ② Remove the valve from the pipe and re-tighten the pipe bolts. (Ref: 5. Piping method)
		Surface of the entire valve	Remove the valve from the pipe and replace the valve. (Ref: 5. Piping method)
Internal leakage (visual and measurement)	No leakage	Leakage to secondary side when valve is fully closed	Remove the valve from the pipe and replace the valve. (Ref: 5. Piping method)
		Measured values of flowmeters, pressure gauges, etc.	Remove the valve from the pipe and replace the valve. (Ref: 5. Piping method)
Abnormal noise (hearing)	No abnormal noise	Valve	Remove the valve from the pipe and replace the valve. (Ref: 5. Piping method)
		Piping around the valve	Reconfirm the conditions of use (Ref: 2. Safety Instructions)

Periodic inspection

●Guideline for the inspection cycle: 3 months

Inspection items and inspection methods	Guideline of judgment	Check point	Remedy for malfunctions
Vibration (palpation)	No difference from other parts	Valve	Recheck the operating conditions and remove the source of vibration. (Ref: 2. Safety Instructions)
			Remove the valve from the pipe and replace the valve. (Ref: 5. Piping method)
		Piping around the valve	Recheck the operating conditions and remove the source of vibration. (Ref: 2. Safety Instructions)

●Guideline of the inspection cycle: 6 months

Inspection items and inspection methods	Guideline of judgment	Check point	Remedy for malfunctions
Operability of manual handle (touch)	Rotates smoothly	Manual operation unit	Remove the valve from the pipe and replace the valve. (Ref: 5. Piping method)
Looseness of bolts (visual and palpation)	No Loose	For flange piping	Retighten the piping bolts (Ref: 5. Piping method)
Corrosion Or rust ※1) (Visual inspection)	No corrosion or rust	Appearance of the product	Remove the valve from the pipe and replace the valve. (Ref: 5. Piping method)
Product damage	No scratches, cracks, or deformation	Appearance of the product	Remove the valve from the pipe and replace the valve. (Ref: 5. Piping method)

9. Cause of malfunction and remedy

⚠Caution	
Forcing	**There is a danger of injury.** ▶ If any malfunction is found, immediately stop using the product and take appropriate action. ▶ When removing the valve from the piping when replacing the valve or parts, completely remove the fluid from the piping before starting work.

Failure phenomenon	Possible cause	Measures and measures
Abnormally low flow rate	Insufficient operating differential pressure	Adjust the working differential pressure.
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 7. Disassembly/assembly method for internal cleaning)
Flow rate is greater than the set value.	The plug or orifice is damaged.	Remove the valve from the pipe and replace the valve. (Ref: 5. Piping method)
	The operating differential pressure range is exceeded.	Adjust the working differential pressure.
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 7. Disassembly/assembly method for internal cleaning)
Fluid leaks even when fully closed (internal leak)	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 7. Disassembly/assembly method for internal cleaning)
Fluid leaks from valve (external leak)	Valve is cracked or broken	Stop using the product immediately, remove the valve from the piping, and replace the valve. (Ref: 5. Piping method)
Valve is corroded or deformed	The watch is exposed to water, chemical liquids, or other liquids.	Stop using the product immediately, remove the valve from the piping, and replace the valve. (Ref: 5. Piping method)

10. Disposal method of residual materials and waste materials

Warning	
Forcing	**When burnt, toxic gas is generated.** ▶ When disposing of the product or parts, please dispose of them according to the guidelines of each local authority by a professional disposal company.

Inquiries

Contact the nearest dealer, our sales office, or our web website for inquiries about this product.

[User's manual]

Constant flow valve

https://www.asahi-yukizai.co.jp/en

Please note that the content of this manual is subject to change without notice. **April 2024**