

MODEL CF-90

Constant Flow Valve

PRODUCT MANUAL

Thank you very much for choosing the Yoshitake's product. To ensure the correct and safe use of the product, please read this manual before use. This manual shall be kept with care for future references.

The symbols used in this manual have the following meanings.

	Warning	This symbol indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.
	Caution	This symbol indicates a hazardous situation that, if not avoided, may result in minor or moderate injury or may result in only property damage.

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1. Specifications

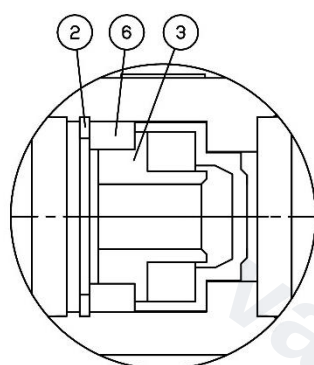
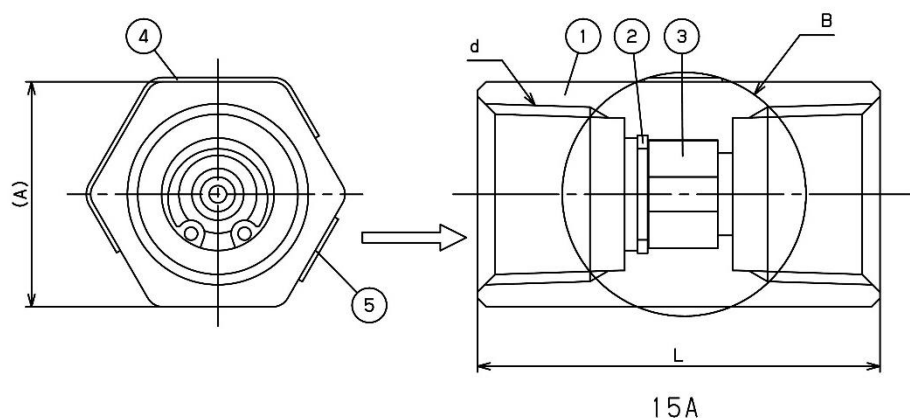
Model	CF-90
Nominal size	15~25A
Application	Cold and hot water
Max. pressure	1.0 MPa
Working differential pressure range	0.2~0.7MPa
Application temperature	5~90°C
Set flow rate	1L/min~40L/min
Tolerance of set flow rate	(15A、25A) Within $\pm 20\%$ of set flow rate (20A) Within $\pm 3\text{L/min}$ of set flow rate
Connection	JIS Rc screwed
Installation posture	Horizontal or vertical installation

- The product conforms to the standard of the Japanese Water Supply Act.
- NPb-treated

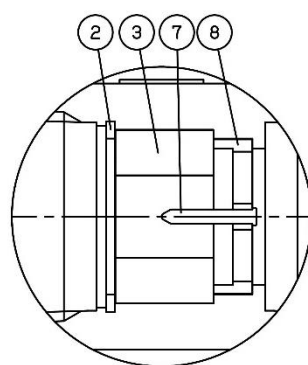
	Caution Please confirm that the indications on the product correspond with the specifications of the ordered model before use. * If they are different, do not use the product and contact us.
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Nominal size	Set flow rate list						
15A	1L/min	2L/min	3L/min	4L/min	5L/min	6L/min	7L/min
20A	8L/min	10L/min	12L/min	14L/min			
25A	20L/min	25L/min	30L/min	35L/min	40L/min		

2. Structure, Dimensions and Weight



Internal structure of B (20A)



Internal structure of B (25A)

No.	Parts name
1	Body
2	C type retaining rings (internal)
3	Cartridge
4	Label
5	JWWA label
*6	Spacer
*7	Needle
*8	Needle plate

Parts No.6 is only for 20A.

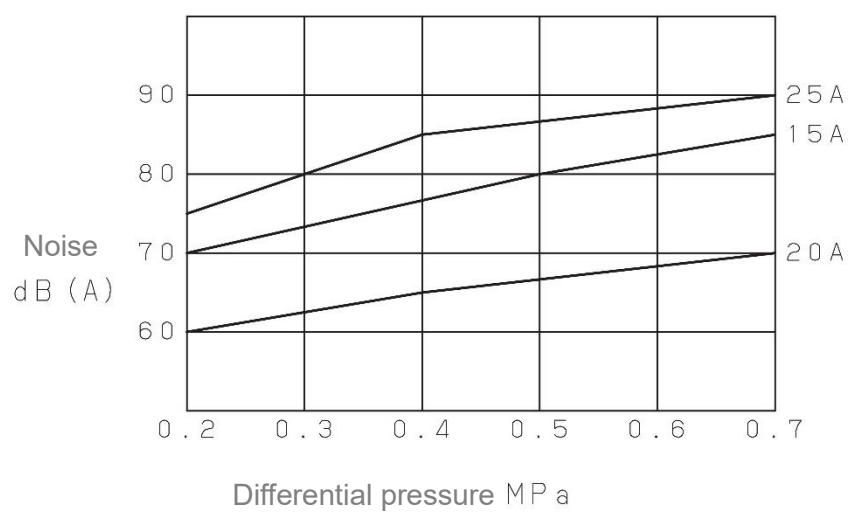
Parts No.7 and 8 is only for 25A.

Nominal size	(mm)				Weight (kg)
	d	L	A		
15A	Rc 1/2	46.5	26		0.2
20A	Rc 3/4	60	32		0.3
25A	Rc 1	70	41		0.5

Fig.2 Structure, Dimensions and Weight

3. Performance characteristic chart

3.1 Noise characteristic chart



(The chart shows the noise level at the max. flow rate of each nominal size.)

Fig.3.1 Noise characteristic chart

3.2 Flow rate characteristic chart

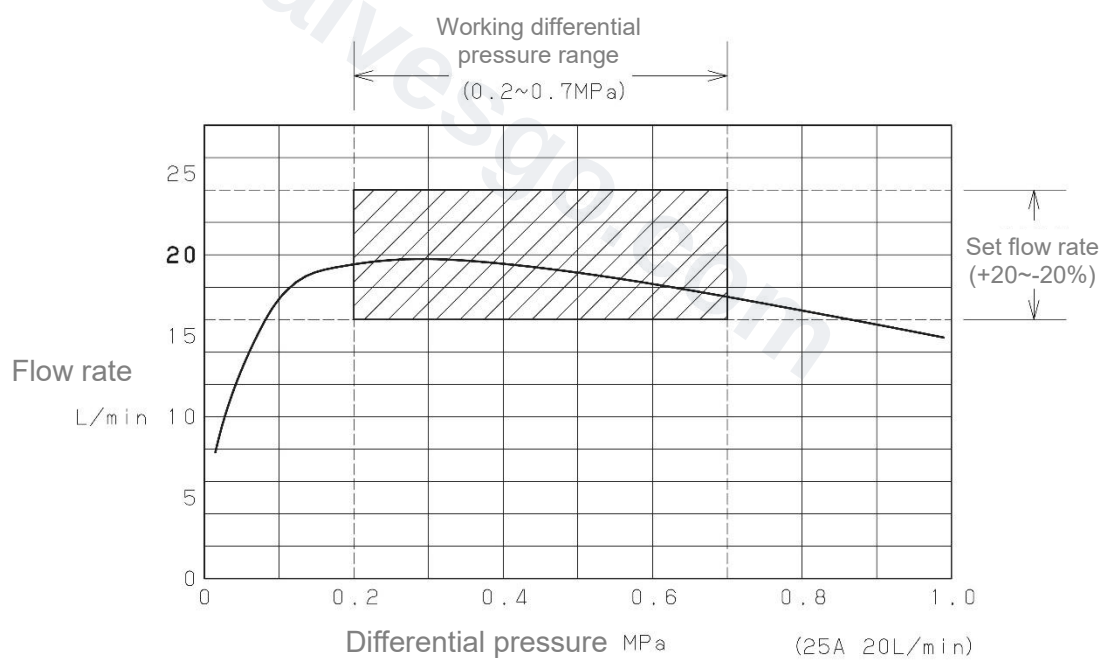


Fig.3.2 Flow rate characteristic chart

4. Precautions for installation

⚠ Caution

- (1) Before installing the product, remove foreign substances and scale from the piping, and note that seal materials must not flow into the inside of the product or piping. Commingling of foreign substances such as scale or seal material leads to malfunction of the product.
- (2) The product can be installed either horizontally or vertically.
To install the product, check the direction on the label of the product so that the fluid flowing and the mark on the product are in the same direction.
* Wrong direction leads to malfunction of the product.
- (3) Install pipes so that excessive load, torque or vibration is not applied to the product.
- (4) If component having negative effect on inner parts is included in fluid and environment, deterioration of rubber parts is accelerated and causes outside leakage and functional disorder.
- (5) Impact by rapid pressure change, such as water hammer, breaks the product or parts.
- (6) If fluid cannot flow due to closed piping situation of the product, fluid temperature rise expands volume of fluid in the piping and damages the product.
- (7) Secure enough space needed for maintenance and inspection of the product.
- (8) Do not make dissimilar metal piping which causes difference of electrical potential.
If doing so, the product and parts are corroded.
- (9) Consider usage condition (usage frequency or durability) when selection.
- (10) Install a strainer (mesh size of 60 or 80) at the inlet side of the product.
* Commingling of foreign substances such as scale material leads to prevent the product from functioning properly.
- (11) The majority of product failures are happened due to scales such as sands and dust in the pipeline. Please pay attention to the dust inside the pipeline.
- (12) Be sure to install bypass piping.
*The noise level is greatly affected by the condition of the piping system and indoor environment. To balance the total flow rate, use a bypass pipe to reduce the flow velocity or make other adjustments.
- (13) The products cannot be used with pipe end core.

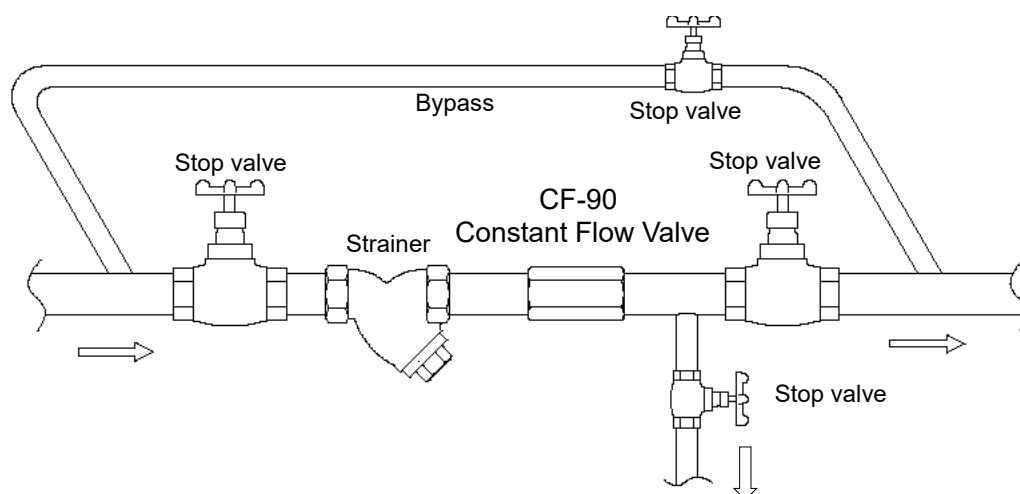


Fig.4 Piping example

5. Precautions for operation

⚠ Warning

- (1) Before leading fluid, make sure that there is no danger when the fluid flows to the end of piping.
 - * If tightening is not secured, hot fluid may spout out and result in burns.
 - * Fluid outflow may cause property damage.
- (2) Close the stop valves before and after the valve, and remove all foreign matter and scales via the by-pass line before operation.
 - * Commingling of foreign substances such as scale material leads to prevent the product from functioning properly.
- (3) If case of a possible frozen line, take proper measures to remove water inside the piping or equip the product with insulating materials.
- (4) Do not touch the product with bare hands when the product is used for hot fluid.
 - * Failure to follow this notice may result in burns.

⚠ Caution

- (1) Completely discharge the fluid inside of the product and line before leaving the product not operated for a long time.
 - * Failure to follow this notice may cause malfunction of the product due to rust inside of the product and lines.

6. Maintenance

6.1. Troubleshooting

Trouble	Cause	Remedy
No flow or Poor flow	The cartridge is clogged.	Clean the cartridge.
	The cartridge is broken.	Replace the product.
	The set flow rate is wrong.	Confirm the flow rate with the indications on the product.
	Stop valves before and after the product are not completely opened.	Open completely the stop valves.
	It is frozen.	Check the piping.
	The differential pressure is out of the specified range.	Review usage conditions.
Flow rate more than specified	The cartridge is broken. The rubber part of the cartridge is hardened.	Replace the product.
	The set flow rate is wrong.	Confirm the flow rate with the indications on the product.
	The differential pressure is out of the specified range.	Review usage conditions.
Steam leakage	Parts or body is damaged or deformed.	Replace the product.
	Installation on piping is loose.	Please retighten.

* Please contact us for the troubles other than above.

6.2. Precautions for maintenance and inspection

⚠ Warning

- (1) Do not disassemble the product.
 - * It will cause product malfunction.
- (2) Ask professional or experienced company to do the inspection.
- (3) Completely discharge the pressure inside of the product, line and equipment before maintenance. In the case of high-temperature fluid, cool down the product till it can be touched with bare hands.
 - * Failure to follow this notice may result in injury or burns.

Warranty Information

1. Limited warranty

This product has been manufactured using highly-advanced techniques and subjected to strict quality control. Please be sure to use the product in accordance with instructions on the manual and the label attached to it.

Yoshitake warrants the product to be free from any defects in material and workmanship under normal usage for a period of one year from the date of receipt by the original user, but no longer than 24 months from the date of shipment from Yoshitake's factory.

2. Parts supply after product discontinuation

This product may be subject to discontinuation or change for improvement without any prior notice. After the discontinuation of the product, Yoshitake supplies the repair parts for 5 years otherwise individually agreed.

3. This warranty does not cover the damage due to any of below:

- (1) Valve seat leakage or malfunction caused by foreign substances inside piping.
- (2) Improper handling or misuse.
- (3) Improper supply conditions such as abnormal water pressure/quality.
- (4) Water scale or freezing.
- (5) Trouble with power/air supply.
- (6) Any alteration made by other than Yoshitake.
- (7) Use under severe conditions deviating from the design specifications (e.g. in case of corrosion due to outdoor use).
- (8) Fire, flood, earthquake, thunder and other natural disasters.
- (9) Consumable parts such as O-ring, gasket, diaphragm and etc.

Yoshitake is not liable for any damage or loss caused by malfunction or defect of the product.

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