

MODEL SW-10 series

Duplex Strainer

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. Features

1. Cleanable without stopping the filtrated fluid by switching the left and right units.
2. Cock lifting mechanism (switching by lifting the cock) makes handle operation easy.
3. Since no need to install a by-pass, piping space can be minimized (SW-10 and SW-10S).
4. Disassembling and cleaning are easy due to a simply structured cover that can be fixed and remove simply by tightening or unfastening a single bolt (SW-10S).

2. Specifications

Nominal Size	20A-100A	
Application	Cold and hot water, oil, other non-dangerous fluids	
Maximum Pressure	1.0MPa	
Maximum Temperature	80°C	
Material	Body	Ductile Cast Iron
	Cock	Stainless steel
	Screen	Stainless Steel
Screen	Perforation	φ6 – 9P
	Mesh	Standard 60 mesh
Connection	JIS 10KFF flanged	

*Available with stainless steel (SCS13) made.

*Available with 20 to 150 mesh screen.

*There may be some acceptable range of leakage since the cock is metal seal.

*When switching the cock, the scale and foreign substance from the gap between the cock and body may flow to the outlet side.



Caution

Please confirm that the indications on the product correspond with the specifications of the ordered product model before use.

* If they are different, do not use the product and contact us.

3. Selection of nominal size

Select the nominal size same as the nominal size of the pipe. Strainer with smaller size may cause larger pressure loss, then equipment may receive pressure lower than requirement.

(See <Figure 1 pressure loss>)

As one method of selecting suitable pipe diameter, Japan Industrial Standard (JIS) set the standard flow velocity depend on the relative kind of fluid.

<Standard flow velocity of fluid>

Fluid	Standard flow velocity
Water, Oil	2 m/s(2~4)

*The above chart shows the standard flow velocity of relative fluid, which made in reference with the standard of JIS F7101(Ship's Machinery Standard Flow Velocity in pipes).

Screen: $\phi 6 - 9P$ Element: 60 mesh Fluid: Water

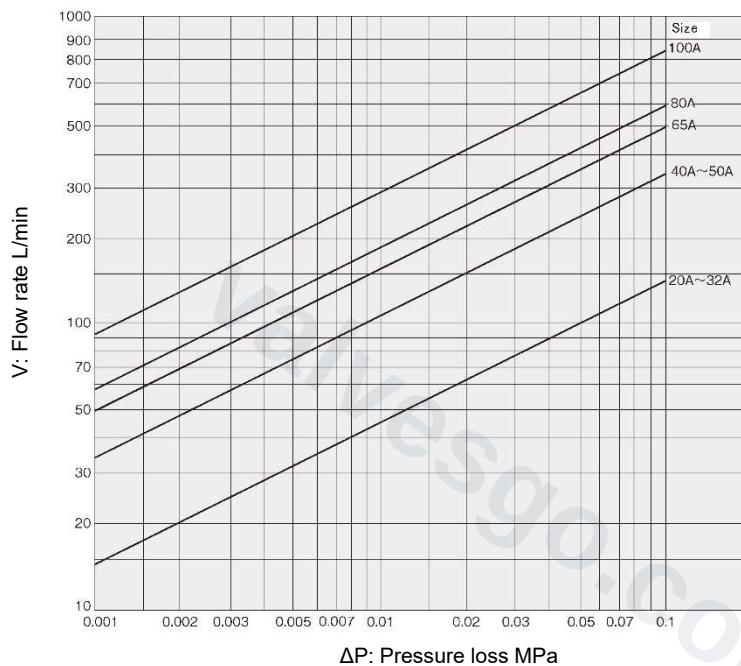


Fig. 1 Pressure loss chart

4. Piping

4.1 Piping example

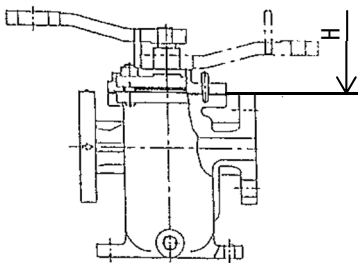


Fig. 2

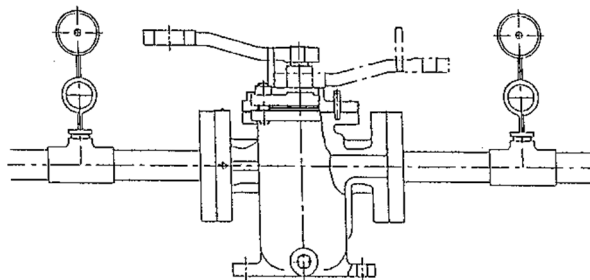


Fig. 3

(mm)				
Size	20-32A	40-50A	65-80A	100A
H	More than 200	More than 250		More than 300

4.2 Precaution during installation and inspection

Caution

1. To install the product, check the direction of the product so that the fluid flowing and the arrow marked on the product are in the same direction.
* Wrong direction prevents fluid from flowing.
2. Please support the piping and fix on the products securely.
* The product may be deformed by too much stress from the piping.
3. During installation, please secure enough space as shown in <4.1 Example of piping <Figure 2>>for maintenance and inspection (including cleaning of the screen).
* Unable to do the maintenance (including cleaning of the screen) or inspection of the products without sufficient space.
4. Upon installing the product, please make sure that unnatural force, bending, or vibration will not be transmitted to the products.
* Inadequate piping may result in leakage
5. Make sure to install the products firmly to the piping.
*Insufficient piping may cause physical damage by fluid outflow due to vibration.
6. If component having negative effect on inner part is included in fluid and environment, deterioration of rubber parts is accelerated and lead to leakage and malfunction.
7. Impact by rapid pressure change, such as water hammer may cause damage to the products or parts.
8. If fluid cannot flow due to closed piping situation of the products, fluid temperature rise expands volume of fluid in the piping and damages the products.
9. If the fluids are retained inside the products for long period of time, the sliding parts will stick and cause malfunction.
10. Fluid with viscosity stick the parts and lead to malfunction of the products.
11. Before connecting the product in the piping, be sure to remove foreign substances and scale from the piping such as scale and seal tape, etc.
* Failure to follow this notice causes leakage due to the ingress of foreign substances and scale into the product.
12. Consider usage condition (Usage frequency or durability) when selection.
13. Installing pressure gauges at inlet and outlet side may help to detect the clogging condition of the screen (4.1 example of piping<Figure 3>).

5. Operation

5.1 Warning and caution upon operation



Warning

1. Please make sure that there is no danger at the pipe end before use.
*You may get scalded in case hot fluid spouts out.
*Physical damage may occur from fluid outflow.



Caution

1. Use the strainer in condition of maximum pressure loss of below 0.1MPa. Also keep cleaning the screen periodically.
*The scree may be damaged.
2. Always follow the sequence when switching the cock.
*The product may not work property. <5.2 Refer to operation method reference>
3. There are some allowable leakages from the cock, so when cleaning the screen, please take off the plug under the screen case, and install the blow valve to release the fluid to the safe place.
4. When cock and adjusting screw are stuck and they turn at the same time, please fix the cock with wrench and turn the adjusting screw.
*If they turn together, the strainer may not obtain the proper pressure drop or filtration ability.
5. Do not tighten the adjusting screw with excessive torque.
*It may cause the breakage on cock and adjusting screw.

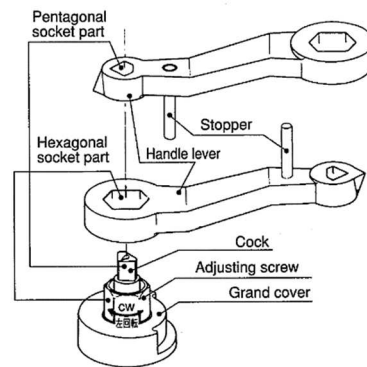
5.2 Operation Method



Caution

1. While switching the cock, make sure to operate as following order.
*Switching without pulling up the cock may cause damage.
2. When switching the cock, foreign substances and scales may flow from the gap between the cock and the main body to the outlet side.

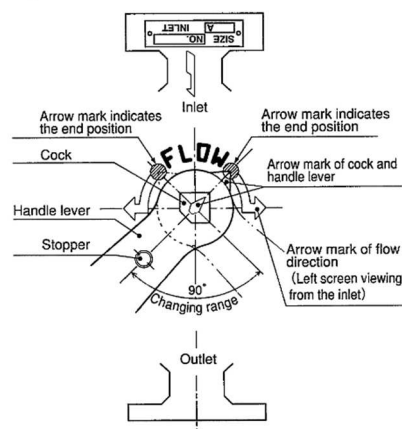
1. Fit the handle to hexagonal adjusting screw and turn clockwise to unlock. It may be hard to do so because the cock and adjusting screw are tightened together. In this case, hit the handle with plastic hammer. (Do not use iron hammer). Turn the adjusting screw clockwise one or two times.



2. Fit the pentagon hole of the handle to the cock. (Stopper is facing downward) and switch the cock right or left. Match the arrows on the cock and handle with the arrow end on the screen side to be used. Turn until the handle stops by the stopper



3. After switching, fit the adjusting screw to the hexagon hole on the handle and turn counterclockwise. When cock and adjusting screw turn at the same time, please fix the one side with the wrench. Please tighten the adjusting screw with provided handle.



6. Maintenance

6.1 Troubleshooting

Trouble	Cause	Remedy
Fluid does not flow.	1. Screen [22] is clogged. 2. Stop valve at inlet and outlet are shut-off.	1. Disassemble and clean the screen [22]. 2. Open the stop valve.
	3. Installation direction is wrong.	3. Confirm the arrow on the product and install it correctly.
Pressure loss is excessive	1. Screen [22] is clogged. 2. Pressure gauge is damaged. 3. The nominal size is too small for the actual flow rate.	1. Disassemble and clean the screen [22]. 2. Replace pressure gauge. 3. Use strainer with larger nominal size. [Figure 1] [Pressure Loss chart]
Foreign substance is not removed	1. Screen [22] is damaged.	1. Disassemble the strainer and change the screen [22]. In case on-off valve are installed at either end of the strainer, do not open the valve immediately since this may result in damage of the water hammer.
Cover [21] cannot be removed upon changing screen.	1. The inside of the product is vacuum.	1. Break the vacuum inside the pipe and remove cover [21].
Leakage at outside	1. Gasket, O-ring [24] is damaged. 2. U-packing [7] is damaged.	1. Replace the gasket and O-ring to new one. 2. The product need to be disassembled and its part need to be replaced. Please contact us.

6.2 Warning and caution upon inspection

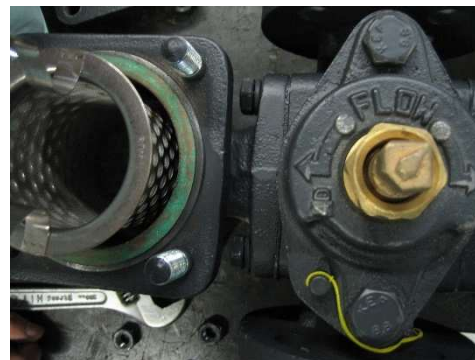
If the strainer is clogged with foreign substances or scale, the fluid passage area will decrease and the fluid will not flow smoothly. Then it causes damage to the screen and affects the piping system.

Warning

1. Prior to carrying out the maintenance and inspection, make sure that the pressure inside of the strainer or piping system decrease to the atmospheric pressure. Also, in case the high temperature of fluid is applied, leave the system cooled down until you can handle them.

*Remaining internal pressure will cause injury or scald.

1. When cleaning the screen, check the direction and make sure that fluid is not passing. Open the cap which the fluid is not passing through, remove the screen, and clean with compressed air and cleaning detergent.
*Do not remove the screen by force when screen is stuck on screen case due to scale and rust. (Screen handle might be damaged).



7. Assembly after disassembly

Model SW-10



Caution

1. Clean up the seating surface of gasket on the body and cover.
*Insufficient cleaning can result in outer leakage and injuries or burns.
2. Replace to new gasket upon assembly.
*Using old gasket may cause leakage.

1. Clean the gasket contacting surface of the screen case and cover. Attach the new gasket to the cover.
2. Install cleaned screen to screen case and attach cover, then tighten the hexagon nut.

Model SW-10S



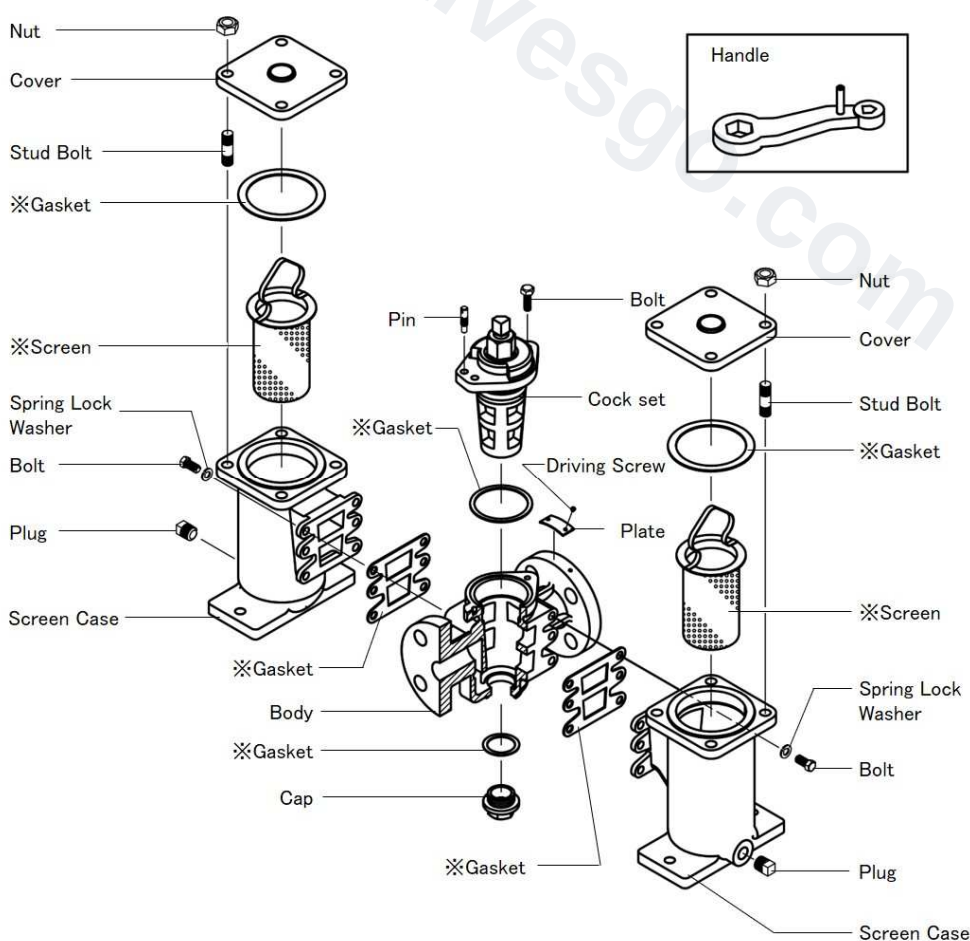
Caution

1. Clean the contacting surface of the screen case and cover. Make sure that O-ring is attached properly.
*If the O-ring is not installed properly, O-ring may be damaged and can be result in outer leakage.
2. In case O-ring is damaged or deteriorated, replace to new O-ring and apply grease on it.
*There is a possibility of leakage in case O-ring is damaged or deteriorated.

1. Clean the O-ring contact surface of the screen case and cover, and install the O-ring to the groove of the cover. At this time, attach the O-ring so that it does not protrude from the O-ring groove.
2. Install cleaned screen into the screen case and attach to the cover. Tighten the hexagon bolt.

8. Exploded view

Model SW-10 (The structure of SW-10S is different)



※ are consumable parts

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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