

Model SW-10, 10S

Strainer

Installation & Operation Manual

We thank you very much for using the Yoshitake Products. In order to put in use our product correctly and safely, please make sure to read this manual thoroughly prior to the installation. Also we kindly request you to keep this manual with care at your hand.

————— The following safety symbols are used in this manual. —————

 **Warning**

Indicates that mishandling this product might cause fatal or serious bodily injury.

 **Caution**

Indicates that mishandling this product might cause bodily injury or material damage.

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Overview

Used in wide range of purpose as dust removing from water and oil. Mainly used for cooling water and water for industrial use.

1. Features

- (1) By switching the cock, the screen can be washed without stopping the flow of fluid.
- (2) Cock-lift mechanism (lift the cock and switch) makes cock operation smooth and holds securely the cock.
- (3) No need by-pass piping. Thus the piping space is small.
- (4) This marine type strainer has a large filtering area which allows sufficient amount of flow even when the screen is clogged.
- (5) Strainer cover is easily removable just by taking off a bolt (SW-10S). Means easy maintenance.

2. Specifications and Performance

2.1 Specification

Application		Water·Oil·non-corrosive fluid
Max. Press.		1.0MPa
Max. Temp.		80°C
Material	Body	Ductile Cast iron
	Cock	Stainless Steel
	Screen	Stainless Steel
Connection		JIS 10K FF flange

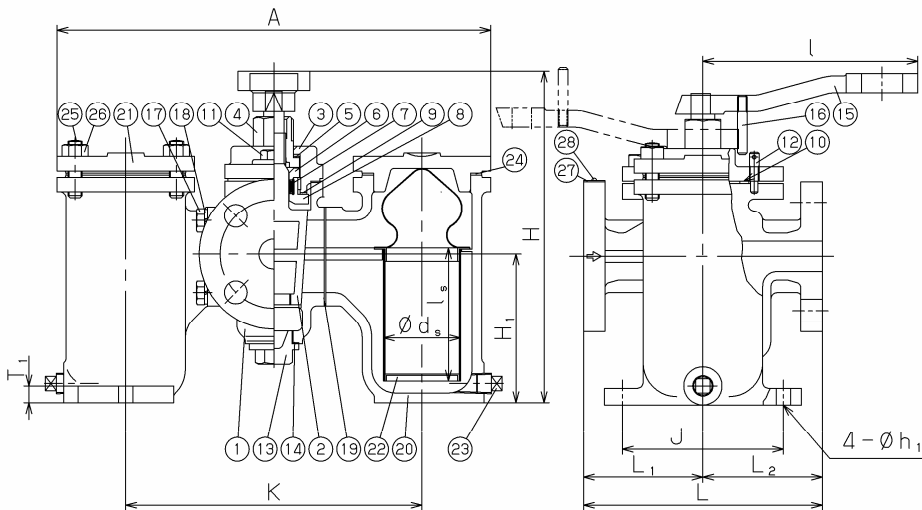
- Strainers are also available made of Stainless Steel (SCS13).
- Standard Strainer Screens are 60 mesh with stainless Steel ($\phi 6 - 1.42$ holes/cm²).
※ Screen from 20 to 250 mesh are also available.
- There may be some acceptable range of leakage since the cock is metal seal.

Caution

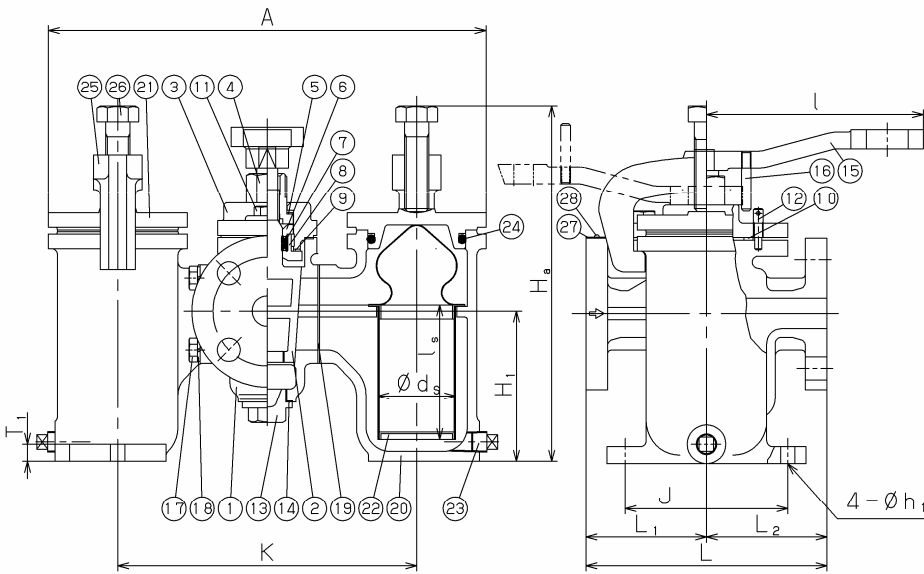
- (1) Please confirm that the indication on the product plate coincides with the specifications of the order model. Also confirm that the condition for usage coincides with these specifications. (In the chart above)
※ In case they do not coincide, do not use the product and contact us.

2. 2 Dimensions and Weights

●Model SW-10



●Model SW-10S



No.	Parts of Name
1	Body
2	Cock
3	Gland Cover
4	Adjusting Screw
5	Washer
6	Washer of Packing
7	U-Packing
8	Packing Case
9	Gasket
10	Gasket
11	Bolt
12	Pin
13	Cap
14	Gasket
15	Handle
16	Stopper
17	Bolt
18	Spring Lock Washer
19	Gasket
20	Screen Case
21	Cover
22	Screen
23	Plug
24	Gasket (SW-10) O-Ring (SW-10S)
25	Stud Bolt(SW-10) Arm (SW-10S)
26	Nut (SW-10) Bolt (SW-10S)
27	Plate
28	Driving Screw

(mm)

Size	L	L ₁	L ₂	H ₁	H	H _a	A	l	ds	ls	Anchor Base				Plug	Weight(kg)	
											J	K	h ₁	T ₁		SW-10	SW-10S
20A	200	100	100	126	280	294	363	180	64.5	108	135	248	12	14	R 3/4	23.9	26.7
25A	200	100	100	126	280	294	363	180	64.5	108	135	248	12	14	R 3/4	25.1	27.9
32A	205	102.5	102.5	126	280	294	363	180	64.5	108	135	248	12	14	R 3/4	26.1	28.9
40A	245	122.5	122.5	134	306	319	390	180	64.5	120	135	275	12	14	R 3/4	34.0	36.8
50A	245	122.5	122.5	134	306	319	390	180	64.5	120	135	275	12	14	R 3/4	35.9	38.7
65A	285	130	155	155	356	350	450	240	77	140	160	311	15	20	R 3/4	52.5	54.6
80A	285	130	155	155	356	350	450	240	77	140	160	311	15	20	R 3/4	53.0	55.1
100A	385	175	210	230	482	513	644	340	120	210	225	430	19	20	R 1	117.0	124.3

Plugs of R 3/4 are used for stainless steel strainers of all sizes.

3. Selection of pipe diameter

When selecting the nominal diameter of pipe, it is necessary to consider the kind of fluid, its maximum flow rate, allowable pressure loss and piping installation cost among others. Smaller diameter of pipe makes the lower piping cost, but the pressure loss will be increased and there are possibilities of abrasion of pipe, noise and vibration due to turbulent flow. If the pipe diameter is too large, not only the piping cost but also the heat loss will be increased.

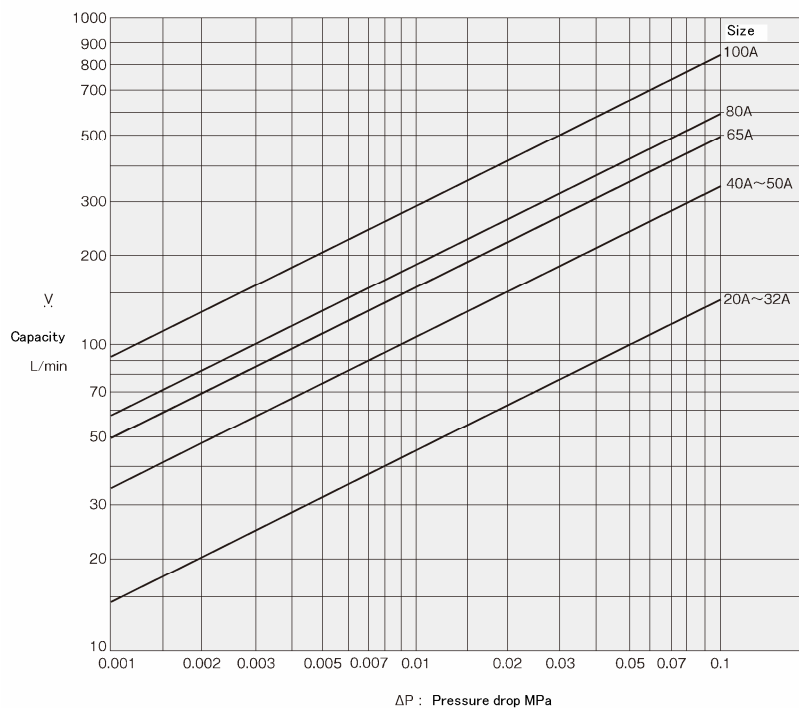
As one method of selection of suitable pipe diameter, Japan Industrial Standard (JIS) sets the standard flow velocity depends on the relative kind of fluid, its characteristic and pipe diameter, to which please refer.

《Standard flow velocity of fluid》

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

※This list 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).

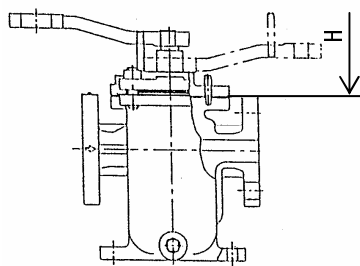
Screen: $\phi 6 - 1.42$ holes/cm² Element 60mesh Fluid : Water



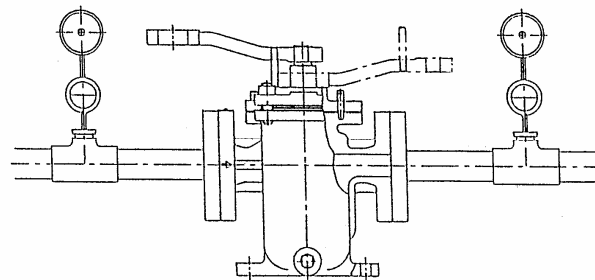
【Figure1】Pressure loss

4. Installation

4. 1 Example of piping



【Figure2】



【Figure3】

	(mm)			
Size	20~32A	40·50A	65·80A	100A
H	200以上	250以上		300以上

4. 2 Precautions during installation and inspection

Caution

- (1) Please confirm that the direction of the fluid flow and the arrow on the product coincide before installing the product.
 - ※The product will not function if it is installed in the wrong direction.
- (2) Please support the piping and fix on the product securely.
 - ※The product may deform by too much stress from the piping.
- (3) Upon installation, please secure sufficient space as shown in [4. 1 Example of piping【Figure2】] for maintenance and inspection (including cleaning of the screen).
 - ※You will be unable to maintain (including cleaning of the screen) and inspect the product if there is not enough space.
- (4) Upon piping, please make sure that Unnatural force, bending, or vibration will not be transmitted to the products.
 - ※Inadequate piping can result in leakage.
- (5) Please make sure that the connections with the piping are secure.
 - ※Inadequate connections can result in physical damages due to fluid outflow caused by vibrations and other reasons.
 - ※Inadequate connections can result in fluid outflow.

(1) Installing pressure gauges at inlet and outlet side may help to detect the clogging up of the screen. [4. 1 Example of piping【Figure3】]

(2) When using at outside, painting is needed to avoid from the rust.

5. Operation

5. 1 Warning and caution upon operation

Warning

- (1) Please make sure that there is no danger at the pipe end before pouring the fluid.
 - ※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 0.1 MPa. Also keep cleaning the screen periodically.
 - ※The Screen may be damaged.
- (2) Always follow the sequence when switching the cock.
 - ※The product may not work properly. [5. 2 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 safety place.

(1) When cock and adjusting screw turn at the same time, please fix the cock with wrench and turn the adjusting screw.

※May not obtain the proper pressure drop or filtration ability.

(2) Do not tighten the adjusting screw with excessive torque.

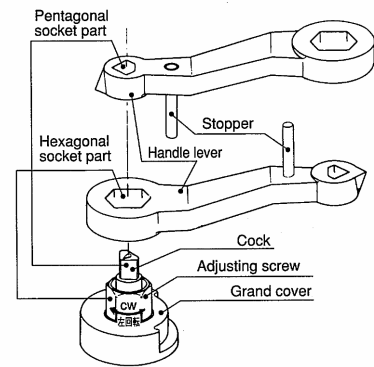
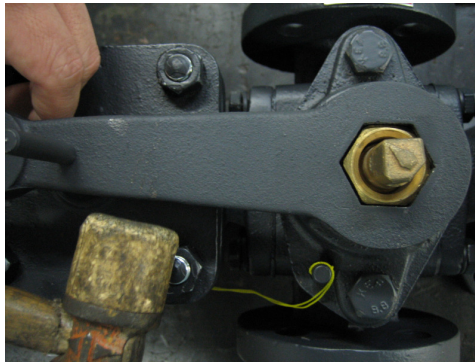
※It may cause the breakage on cock and adjusting screw.

5. 2 Operation method

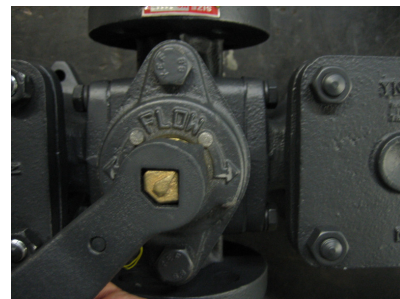
Caution

(1) While switching the cock, be sure to operate in the following order.
 ※ Pull up the cock in order not to break if while switching.

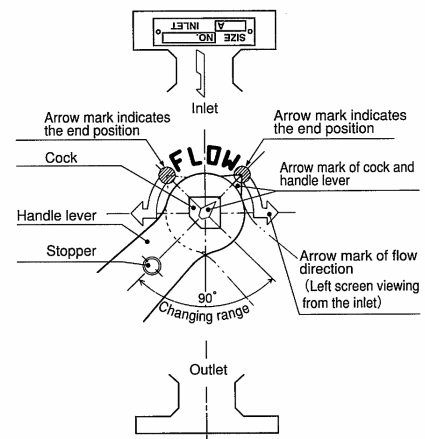
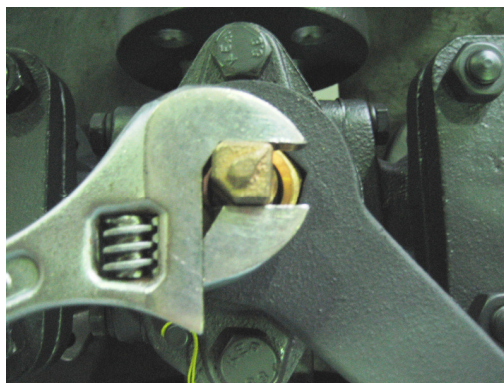
(1) Fit the handle to hexagonal adjusting screw and turn clockwise to unlock. It may be hard to do so because the cock and adjusting screw are tightened together. In this case, hammer the handle with plastic hammer. (Do not use iron hammer) Turn the adjusting screw clockwise one or two times to haul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



(2) Fit the square 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, install the adjusting screw to the hexagon hole on the handle and turn clockwise. 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 Procedure

6. 1 Troubleshooting

Trouble Condition	Cause of trouble	Countermeasure and remedy
No fluid flows.	<ol style="list-style-type: none"> 1. Screen ⑳ is clogged up. 2. Stop valves at inlet and/or outlet side are shut. 	<ol style="list-style-type: none"> 1. Disassemble and clean the Screen ⑳. 2. Open the stop valve.
Pressure loss is excessive.	<ol style="list-style-type: none"> 1. Screen ⑳ is clogged up. 2. Pressure gauge is damaged. 3. The nominal size is too small for the actual flow volume. 	<ol style="list-style-type: none"> 1. Disassemble and clean the screen ⑳. 2. Renew the Pressure gauge. 3. Use a strainer with larger nominal size. <p>[【Figure 1】Loss of Pressure]</p>
Alien matter is not removed.	<ol style="list-style-type: none"> 1. Screen ⑳ is damaged. 	<ol style="list-style-type: none"> 1. Disassemble the strainer and exchange screen ⑳. In case quick valves are installed at either at end of the strainer, do not open them immediately since this may result in damage of the water hammer.
Cover ㉑ can not be removed upon exchange of screen.	<ol style="list-style-type: none"> 1. The inside of the product is vacuum. 	<ol style="list-style-type: none"> 1. Break the vacuum inside the pipe and remove cover ㉑.
Outer leakage occurs.	<ol style="list-style-type: none"> 1. Gasket・O-ring ㉒ is damaged. 	<ol style="list-style-type: none"> 1. Install a new Gasket・O-Ring ㉒

6. 2 Warning and caution upon inspection

Warning

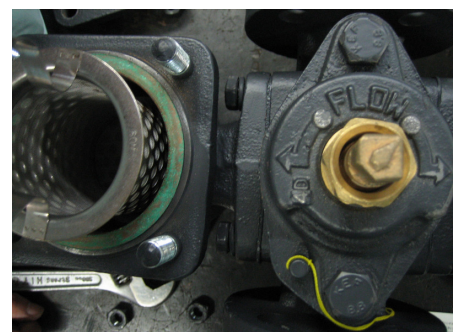
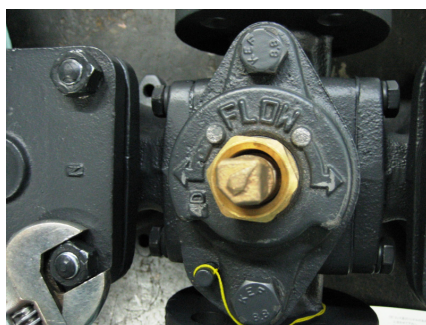
(1) Prior to carrying out the maintenance and inspection, make sure the pressure inside of the strainer or piping system go down to the atmosphere pressure, also in case the high temperature of fluid is applied, leave the system cooled down until you can handle them with bare hands.

※ The remaining pressure inside the strainer or piping system may cause the personnel injured or being scaled.

(1) When cleaning the screen, check the arrow and make sure that fluid is not passing.

Open the cap which the fluid is not passing through, take out the screen, and clean with compressed air and cleaning agent.

※ Do not take out the screen by force when screen is stuck. (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, or sealing portion of O-ring.
 - ※Insufficient cleaning can result in outer leakage and injuries or scalding.
- (2) Use a new gasket at assembly.
 - ※Used gasket may result in outer leakage.

- (1) Clean the gasket contacting surface of the Screen case and cover. Attach a new gasket to the cover.
- (2) Put a cleaned screen into the screen case and attach the cover. Tighten the hex nut.

●Model SW-10S

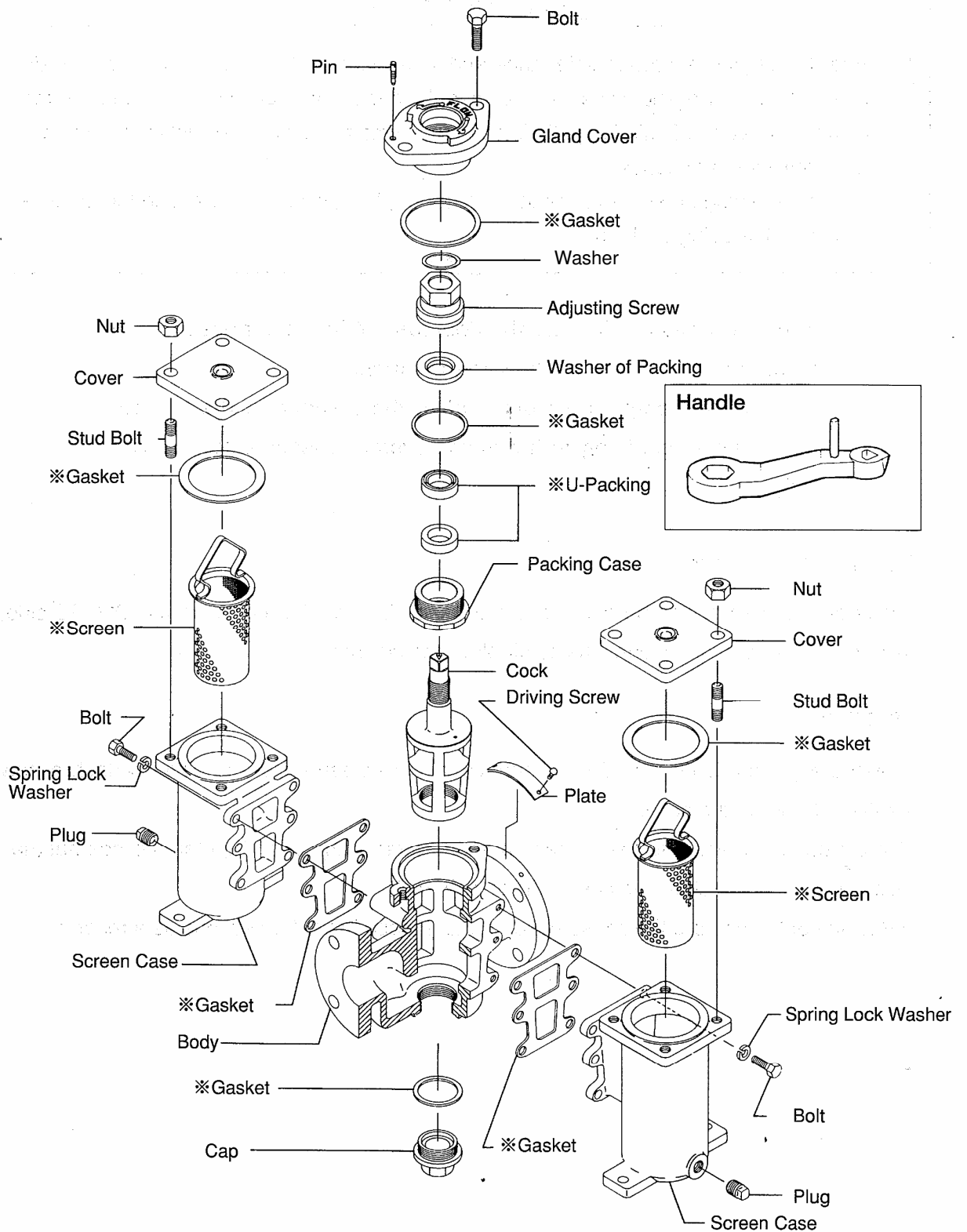
Caution

- (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, change to new o-ring and apply the grease on it.
 - ※There is a possibility of leakage in case o-ring is damaged or deteriorated.

- (1) Clean the gasket contacting surface of the Screen case and cover. Attach a new gasket to the cover.
- (2) Put a cleaned screen into the screen case and attach the cover. Tighten the hex bolt.

8. Exploded drawing

●ModelSW-10 (The structure for ModelSW-10S is a different.)



※:Consumable parts

Name of Parts	Exchange time
Gasket	At resolution