

# TYPE SY-5 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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# YOSHITAKE

### General description

Strainer is used as dust exhaustion for various pipe lines. Strainer is necessary especially in front of pressure reducing valve, temperature regulator, steam trap, and various valves as the reason for maintenance and conservation.

### 1. Features

- (1) The most economical superior type due to compactness and lightweight.
- (2) The strainer is marine type to have maximum filtration area with due consideration of lowering flow rate caused by clogging.

### 2. Specifications

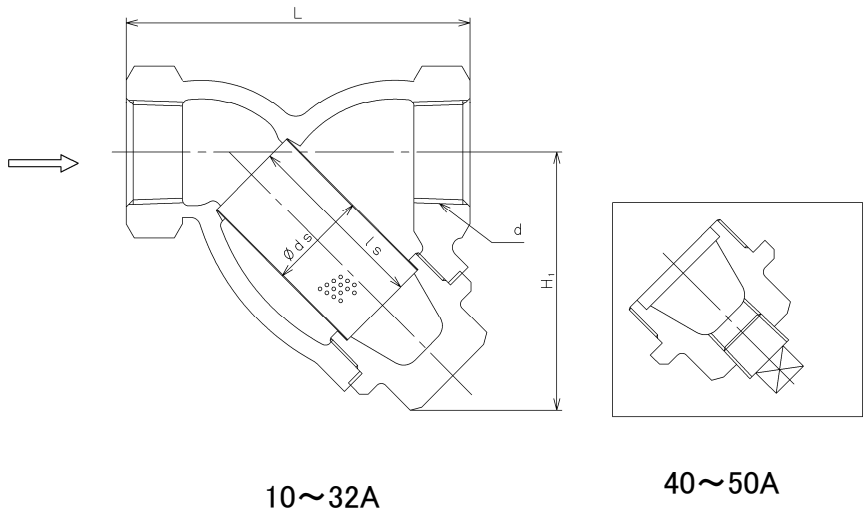
Application	Steam·Air·Cold and hot water·Oil·Other non-dangerous fluids	
Max.Press.	2.0MPa	
Max.Temp.	220°C	
Material	Body	Ductile Cast Iron
	Screen	Stainless Steel
Connection	JIS Rc	

※Standard Screen: Outside Screen  $\phi$  2.5—4P Inside Screen 80Mesh

•20~100Mesh Screen are also available

•Plug made of bronze or brass is also available an order. And, size 10 to 32A plug is also available.

### 3. Dimensions and Weights

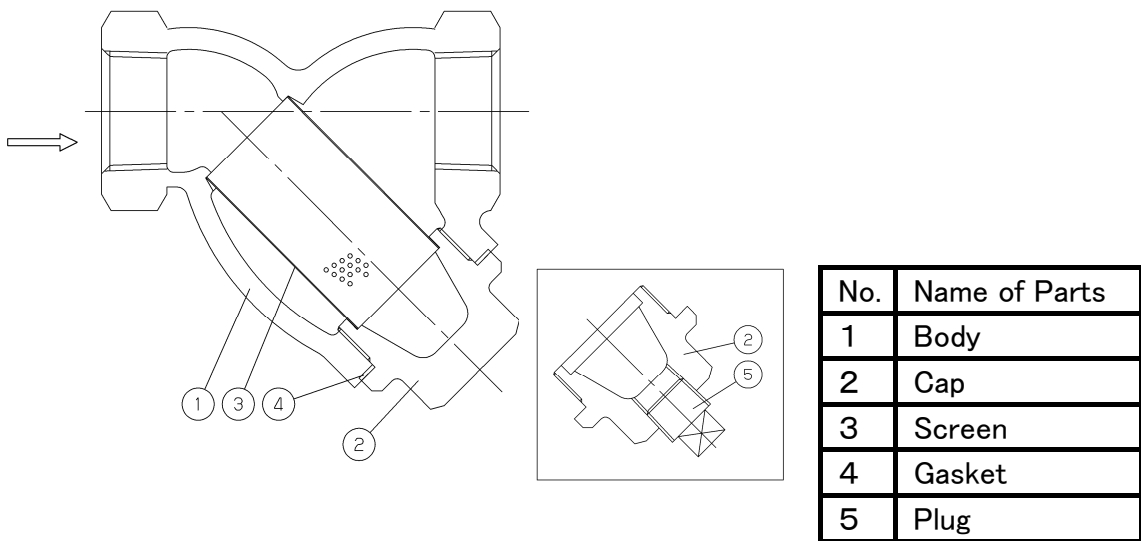


(mm)

Size	d	L	H1	ds	ls	Plug Size	Weight(kg)
10A	Rc 3/8	65	50	18	32	(Rc 1/4)	0.4
15A	Rc 1/2	75	55	20	35	(Rc 1/4)	0.6
20A	Rc 3/4	90	70	25	50	(Rc 3/8)	0.9
25A	Rc 1	110	85	32	60	(Rc 3/8)	1.4
32A	Rc 1 1/4	135	95	40	70	(Rc 3/8)	2.2
40A	Rc 1 1/2	145	105	45	75	Rc 3/8	3.4
50A	Rc 2	170	120	56	90	Rc 3/8	4.5

The plug size ( ) is for the case with a plug.

### 4. Operation



The screen③ removes dust, scale and other foreign matter out of the fluid flow from inlet port of strainer.

## 5. Pressure loss

To use the strainer most effectively and to fulfill the required criteria thoroughly, please take the following points into consideration.

### 5.1 Selection of strainer diameter

The same one as the piping size is selected (piping size = strainer size) if a small size is used, pressure drop grows and pressure prescribed at the entrance of the equipment might not be able to be maintained.

### 5.2 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»

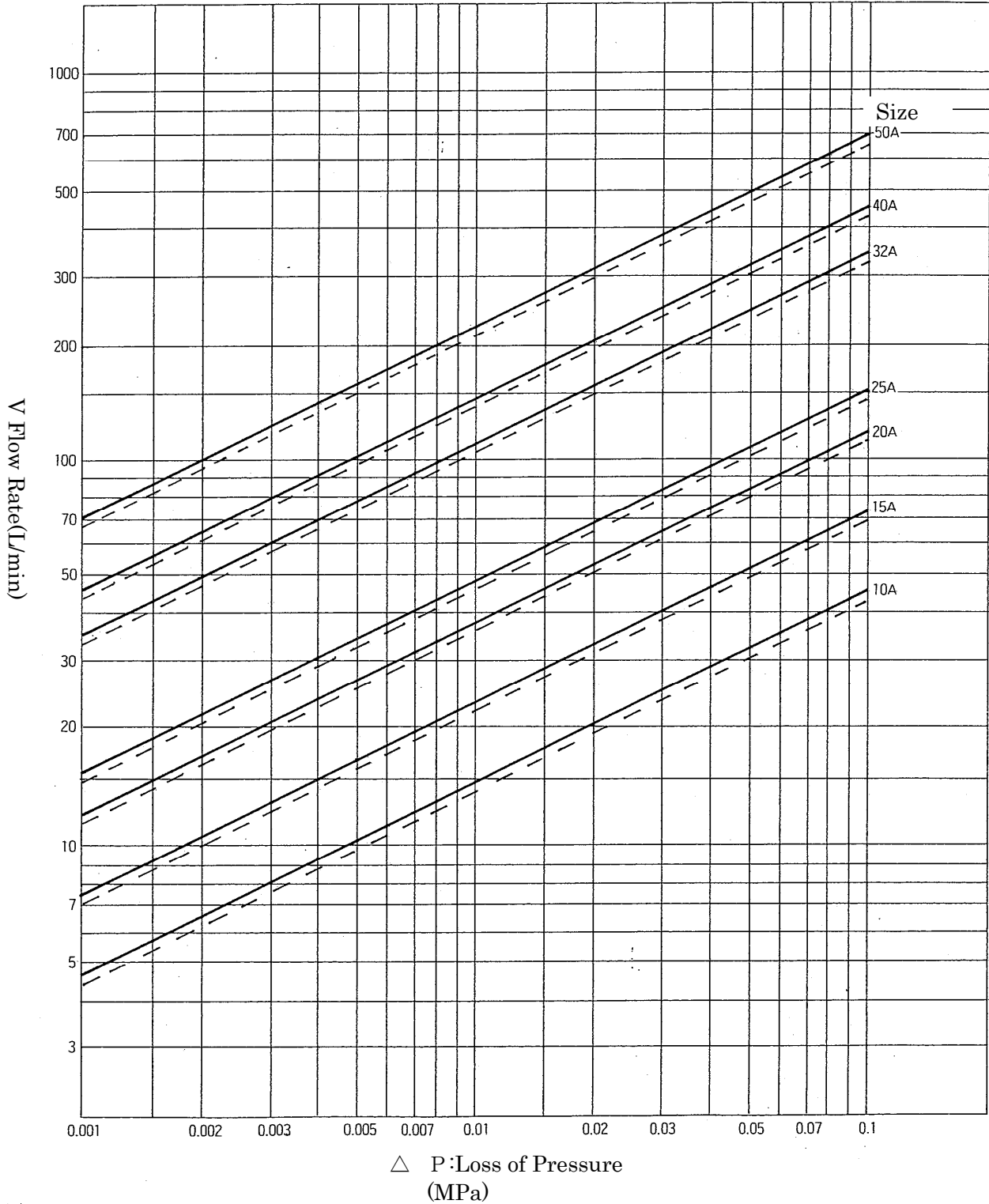
Fluid	Standard flow velocity
Water ,Oil	2 m/s(2~4)
Steam	30 m/s(20~40)

※ 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).

### 5. 3 Pressure loss diagram

- Screen: Outside Screen  $\phi$  1.2—2.2P
- - - - Screen: Outside Screen  $\phi$  2.5—4P Inside Screen 80Mesh

Fluid: Water



## 6. Maintenance procedure

### 6. 1 Precautions during installation

#### ⚠Caution

- (1) When installing, confirm if the direction of fluid flow matches with inlet and outlet port of the product respectively.  
※If installed in opposite direction, it will not function as designed.
- (2) When installing, reserve the space shown for the maintenance and checking (cleaning of the screen).  
※It will be impossible to carry out the maintenance and inspection (cleaning of the screen).
- (3) When installing, do not transmit unreasonable load, bending, vibration to the products.  
※The leakage problem may occur.
- (4) Carry out the connection with pipes properly.  
※Improper piping connection may cause the leakage of fluid due to vibration or other cause. With some kind of fluid, there will be a danger of personnel being scalded.  
The fluid flowed out of pipe end may cause some material damages.

- (1) In case installing pressure gauge at backward and forward of strainer, clogging can be checked by differential pressure. [Ref. 8. Piping example figure 1]
- (2) Install strainer with the cap parts facing downward. [Ref. 8. Piping example figure 1]  
However, install strainer with cap parts facing sideways in case of steam piping so that condensate accumulation is minimized. [Ref. 8. Piping example figure 2]
- (3) If fluid flows from bottom to top, install a blow valve in order to remove scale accumulated at the bottom of riser pipe. [Ref. 8. Piping example figure 3]

### 6. 2 Warning and Caution at the point of use

#### ⚠Warning

- (1) In case the high temperature of fluid is applied, keep the bare hand off the strainer.  
※It may cause the personnel being scalded.
- (2) Do not tighten the cap after flowing the fluids to the valve.  
※The gasket will be broken and leads to have a leakage.

#### ⚠Caution

- (1) Use the strainer in condition of maximum pressure loss of below 0.1MPa. Also keep cleaning the screen periodically.  
※The screen may be damaged.

## 7. Disassembly, cleaning and assembly

(1) Since the screen is heavy in weight, when extracting the screen from the body, make sure to secure it properly with lifting devices.

※The screen fallen down may cause the injury.

### 7. 1 Precautions during disassembly and inspection

#### ⚠Warning

(1) Completely discharge internal pressure from the valves, lines, and equipment before disassembly and inspection. And, cool the valve down to a level where you can touch it with bare hands before disassembly and inspection.

※Failure to do so may result in injury or burns due to residual pressure or spillage around the valve.

(1) After checking no internal pressure existed in the strainer by pressure gauge and etc, dismount Cap②, and take out Screen ③ which shall be washed by compressed air or water.

### 7. 2 Caution during assembly

#### ⚠Caution

(1) Clean the Body and gasket contact surface at the Cap.

※Incorrect cleaning may cause the leakage from the gasket and results in burns.

(2) Certainly replace into the new gasket whenever assembly.

※In case using old gasket without change, the fluids may leak to the outside of the valve.

(1) Clean the gasket contact surface at Body① and Cap②, and mount the new gasket at Cap②. At the last, assemble cleaned screen③ at the groove on the Cap② and screw to the body①.

## 8. Example of piping

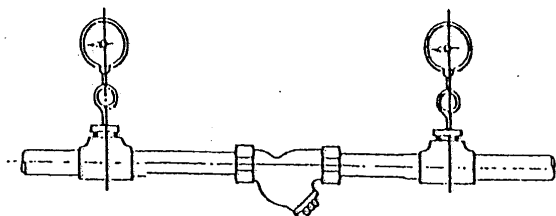


Figure-1

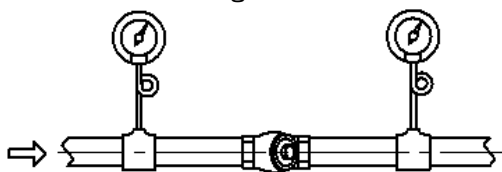


Figure-2

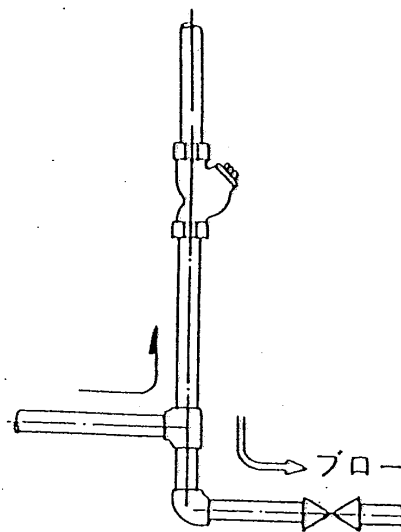


Figure-3