

MODEL SY-10 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. Overview

The SY-10 series strainers are widely used for removal of foreign substances such as dust, pipe scale, chips, or slugs from various types of pipelines. Install this product at the inlet side of a pressure reducing valve, temperature regulating valve, pump, or steam trap. The product has a body made of cast carbon steel and a screen of stainless steel. Standard mesh size of the screen is 80 mesh.

2. Features

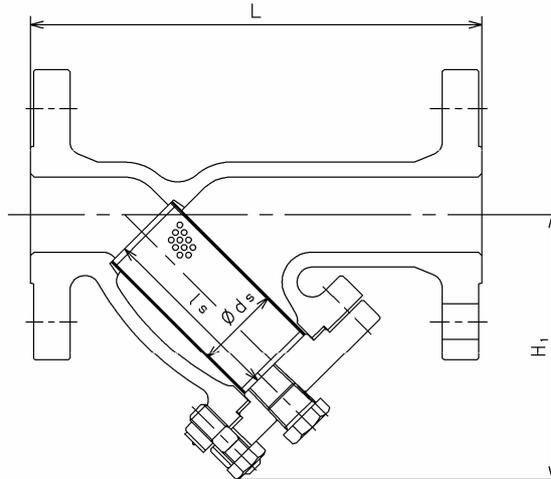
1. The product is made of cast carbon steel, with connections of JIS 10K/20K/30K RF flanged and ASME Class 150/300 flanged as standard specifications.
2. The standard product has a stainless steel screen of 80 mesh with perforation.

3. Specifications

Model		SY-10-10	SY-10-20	SY-10-30	SY-10-150	SY-10-300
Application		Steam, Air, Cold and hot water, Other non-dangerous fluids				
Nominal size		15A-250A				
Max. pressure		1.0 MPa	2.0 MPa	3.0 MPa	1.0 MPa	2.0 MPa
Max. temperature		260 °C				
Material	Body	Cast carbon steel (SCPH2)			Cast carbon steel (A216 Gr.WCB)	
	Screen	Stainless steel (SUS304)				
Screen	Perforations	$\phi 6-1.80$ holes/cm ²				
	Mesh	Standard 80 mesh				
Connection		JIS 10K RF flanged	JIS 20K RF flanged	JIS 30K RF flanged	ASME Class 150 flanged	ASME Class 300 flanged

- Available with 20 to 100 mesh filter upon request.
- If the temperature is more than 260 °C, please contact us.

4. Dimensions



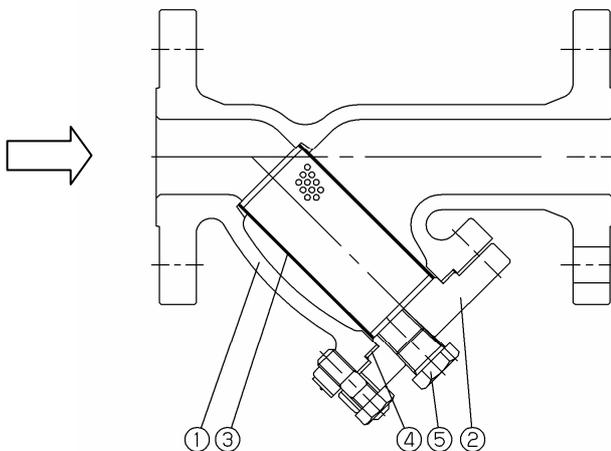
SY-10-10, SY-10-150 (mm)

Nominal size	L	H ₁	ds	ls	Plug
15A	180	100	24	70	R 1/2
20A	180	100	24	70	R 1/2
25A	200	113	33	80	R 1/2
32A	220	138	46	100	R 1/2
40A	220	138	46	100	R 1/2
50A	250	165	56	120	R 1/2
65A	300	185	73	125	R 1/2
80A	320	210	88	145	R 1/2
100A	380	270	108	200	R 1/2
125A	450	310	138	230	R 3/4
150A	500	375	158	280	R 3/4
200A	600	470	208	350	R 3/4
250A	745	580	270	450	R 1

SY-10-20, SY-10-30, SY-10-300 (mm)

Nominal size	L	H ₁	ds	ls	Plug
15A	180	100	24	70	R 1/2
20A	180	100	24	70	R 1/2
25A	200	113	33	80	R 1/2
32A	240	140	46	100	R 1/2
40A	240	140	46	100	R 1/2
50A	275	170	56	120	R 1/2
65A	310	188	73	125	R 1/2
80A	345	215	88	145	R 1/2
100A	395	275	108	200	R 1/2
125A	470	325	138	230	R 3/4
150A	520	380	158	280	R 3/4
200A	655	475	208	350	R 3/4
250A	780	580	270	450	R 1

5. Operation



No.	Parts Name
1	Body
2	Cover
3	Screen
4	Gasket
5	Plug

Dust, scale, and other foreign substances which flow into the inlet side of the strainer are removed by the screen [3].

6. Nominal Size Selection

To make the best use of the strainer and satisfy the operating requirements to the maximum, take notice of the following.

6.1 Selection of nominal size

Select a strainer of the same nominal size as that of the pipe (nominal size of piping = nominal size of strainer). Note that using a strainer of a smaller nominal size increases the pressure loss of the strainer and may result in the pressure fallen below the specified level at the inlet side of the equipment.

6.2 Selection of nominal pipe size

When selecting an appropriate nominal pipe size, it is necessary to consider fluid type, maximum flow rate, permissible pressure loss, costs of piping and equipment, etc.

If the nominal pipe size is smaller, the costs of piping and equipment decreases while the pressure loss through the pipe increases to generate disturbances, possibly resulting in pipe wear, noise and/or vibration. If the nominal pipe size is too large, not only the costs of piping and equipment but also the thermal loss increases.

As a reference, the standard flow velocity is specified in the Japanese Industrial Standards (JIS) as a guide to select an appropriate nominal pipe size. See the following table.

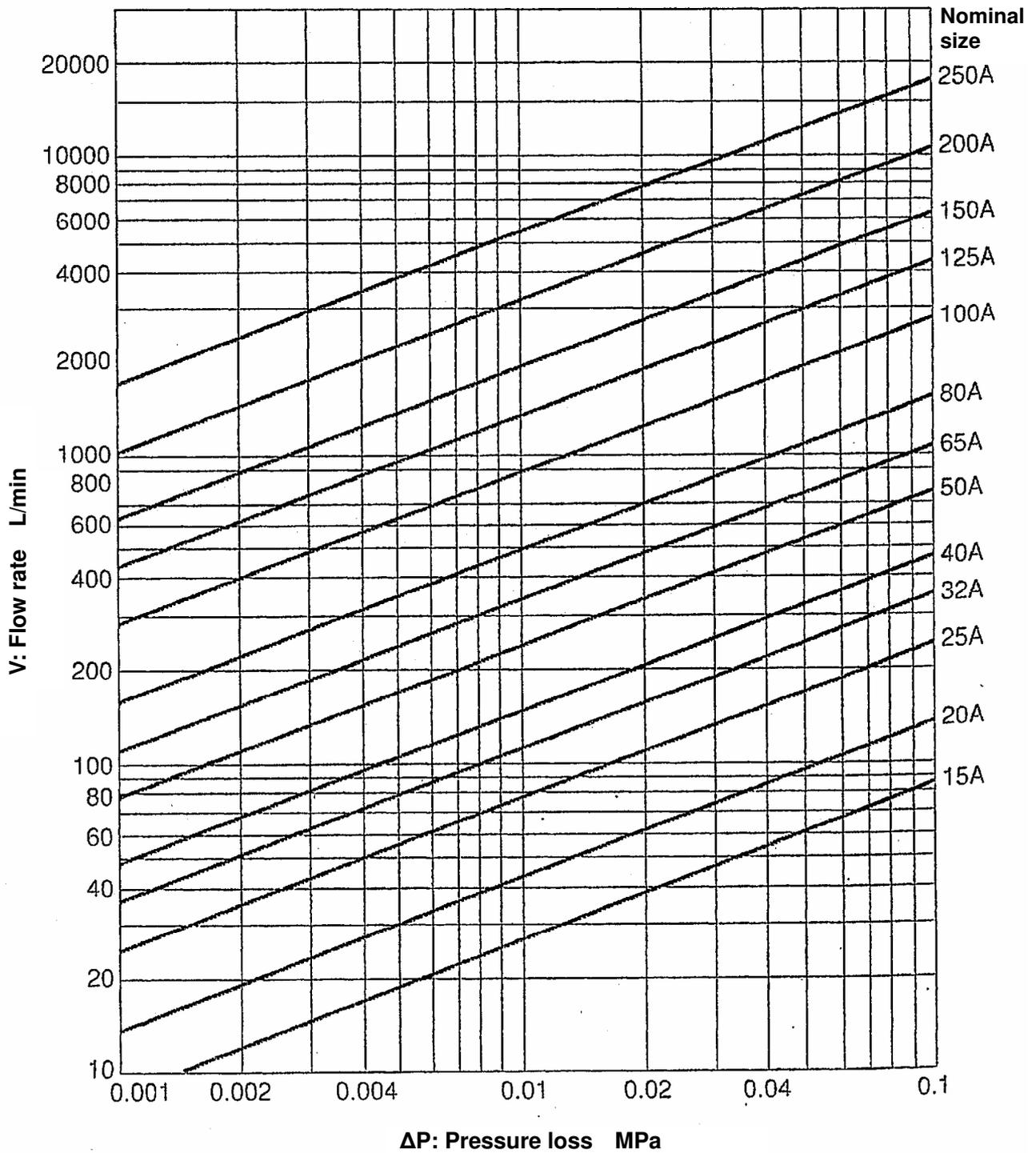
<<Standard flow velocity>>

Fluid	Remarks	Standard flow velocity
Saturated steam	Auxiliary piping for vacuum or small-diameter piping	15 m/s [10-20]
	Large-diameter piping	30 m/s [20-40]
Superheated steam	Piping diameter: approx. $\Phi 75 - \Phi 250$	40 m/s [30-50]
	Piping of high-grade material	70 m/s [65-80]
Inlet of steam coil	0.3-0.7 MPa	30 m/s [25-30]
Air	Higher pressure: 1.0 MPa or more	20 m/s [20-25]
	Lower pressure	15 m/s [5-15]
	Extremely low pressure: 0.1 MPa or less	10 m/s [3-10]
Water, Oil	—————	2 m/s [2- 4]

* The above table is based on the requirements in JIS F 7101 "Shipbuilding - Pipes of machinery - standard velocity of flow".

6.3 Pressure Loss Chart

Model: SY-10 Strainer
Screen: $\phi 6-1.80$ holes/cm² perforations with 80 mesh filter



7. Maintenance

7.1 Precaution for installation



Caution

1. When installing, check the direction of the product so that the fluid flowing and the arrow marked on the product are in the same direction.
 - * Setting the product in wrong directions prevents the product from performing as intended.
2. When installing, secure the space to remove the screen.
 - * Failure to follow this notice hampers cleaning of the screen.
3. Do not apply excessive load, torque or vibration to the product.
 - * Failure to follow this notice may result in fluid leakage.
4. Clogging inside the product can be known from the differential pressure measured, when pressure gauges are installed in upstream and downstream of the product.
[See Fig. 1 in "9. Piping Example."]
5. The product shall be installed with its cover faced downward.
 - * If drainage or similar problem occurs in a steam line, incline the product to the position at which the cover is kept horizontally.
6. If the product can only be installed to run the fluid from the bottom to the top, make sure to install a blow valve in order to remove the scale accumulated at the bottom of the riser pipe.
[See Fig. 2 in "9. Piping Example."]

7.2 Precaution for operation



Warning

1. When the product is used for hot fluid, do not touch the product with bare hands.
 - * Failure to follow this notice may result in scalds or injury.
2. Do not retighten the cover after leading fluid into the product.
 - * Failure to follow this notice may damage the gasket and cause outside leakage.
 - * Failure to follow this notice may result in scalds or injury.



Caution

Use the product under a maximum pressure loss below 0.1 MPa. Periodically clean the screen.
* Failure to follow this notice may damage the screen.

8. Disassembly, Cleaning and Reassembly

Excessive amount of foreign substances inside the product reduces filtration area and hampers fluid flow. If the product is kept for such condition, the screen is damaged and results in adverse effect on the piping system due to excessive pressure difference.

8.1 Precaution for disassembly and inspection

 **Warning**

1. Completely discharge the pressure inside of the product, piping and equipment prior to disassembly and inspection. When fluid is hot, cool down the product.
* Failure to follow this notice may result in scalds or injury due to the residual pressure.
2. After checking the pressure gauge to make certain there is no pressure inside the body [1], remove the cover [2] and screen [3]. Clean up the screen [3] by compressed air or water.

8.2 Precaution for reassembly

 **Caution**

1. Clean the gasket contact surfaces of both the body and the cover.
* Improper cleaning may cause fluid leakage at the gasket resulting in scalds or injury.
2. When reassembling, replace the gasket with a new one.
* Failure to follow this notice may result in fluid leakage.
3. After cleaning the gasket contact surfaces of both the body [1] and the cover [2], attach a new gasket [4] to the cover [2], and then attach the cleaned screen [3] into the groove on the cover [2]. Install the assembly (cover [2], gasket [4], and screen [3]) to the body [1].

9. Piping Example

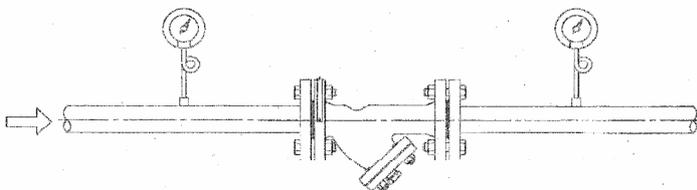


Fig. 1

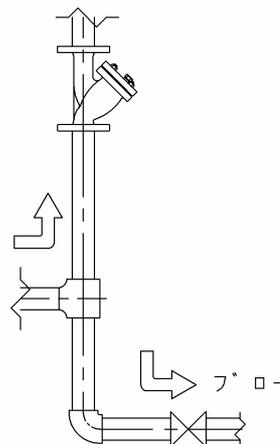


Fig. 2