

Sight Glass

Sight Glass Selection

Application			Max. Pressure (MPa)	Max. Temperature (°C)	Model	Type				Page
Condensate	Water	Oil				Plain	Flap	Ball	Spinner	
●	●	●	1.0	150	SF-1S		●			282
●	●	●			SF-1F		●			282
●	●	●			SL-1S	●				281
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	●		0.7	100	400				●	286
	●		1.0	85	SB-1S			●		283
	●				SB-1F			●		283

Types and Main Applications of Sight Glasses

Sight glasses are used as components for visually checking the flow of the fluid inside piping from outside.

Plain type



For checking whether a fluid is present or how two fluids are mixed.

Be able to check the color of the fluid or an intermittent flow.
The use of a mica plate makes this type of sight glass available for steam condensate.

Flap type



The rough flow rate can be identified from the position of the flap.
For large flow rates.

Ball type



For visually checking the variation in the flow rate of the fluid.

The variation in the flow rate can be identified from the movement of the ball. For small to medium flow rates.

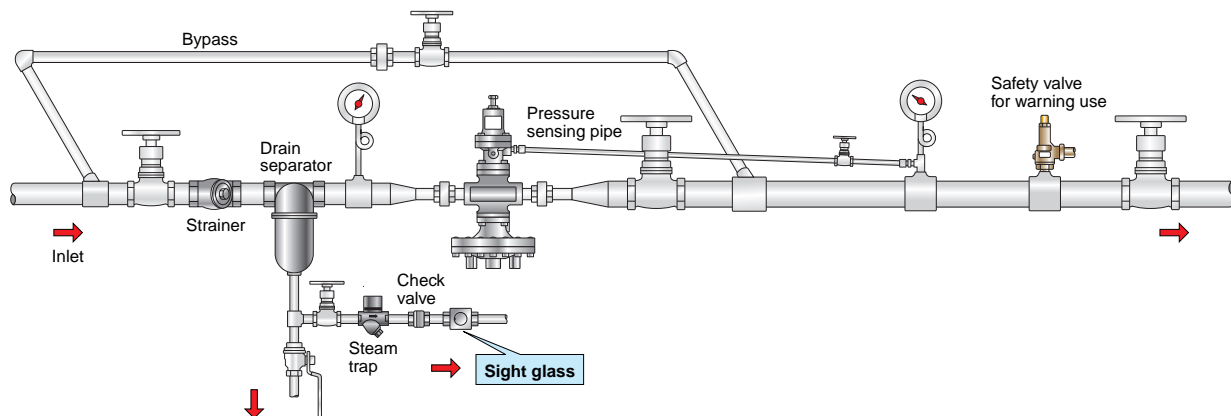
Spinner type



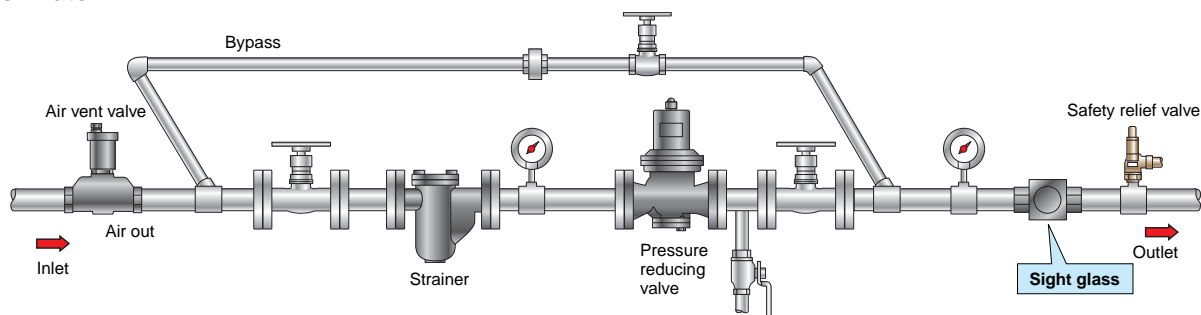
The variation in the flow rate can be identified from the rotation of the spinner. For very small flow rates.

Guidelines for Sight Glass Installation

● For steam



● For water



Minimum Flow Rate of Sight Glasses

Water: (m³/h)

Nominal size	150F	SF-1S•1F	SB-1S•1F	400
	Flap type		Ball type	Spinner type
10A	—	—	—	0.048
15A	1	1	0.6	0.060
20A	1	1	0.7	0.090
25A	1	1	0.8	0.138
32A	1.3	1.3	1.6	—
40A	1.3	1.3	2.0	—
50A	2	2	2.5	—
65A	4.4	—	—	—
80A	4.4	—	—	—
100A	10	—	—	—
125A	10	—	—	—
150A	13	—	—	—

- Use flap type, ball type, and spinner type sight glasses at a flow rate equal to or higher than the minimum flow rate.
- The flow rate shown by the scale on the scale plate for a flap type sight glass is just for reference. It is not available as a flowmeter.
- Sight glasses can be installed in any posture.

SL-1S·1F

Features

1. Mixed state or color of two component fluid can be checked.
2. Intermittent fluid flow can be checked.
3. Can be connected to horizontal/vertical piping.
4. Mica plate is used for this type of sight glass for steam condensate.

Specifications

Model	SL-1S	SL-1F
Application	Cold and hot water, Oil, Other non-dangerous fluids	
Maximum working pressure	1.0 MPa	
Max. temperature	150°C	
Max. thermal shock	100°C	
Material	Body	Ductile cast iron
	Glass	Hardened glass
Connection	JIS Rc screwed	JIS 10K FF flanged



SL-1S

- Available with mica plate for steam condensate (SLM-1S·1F).
- Glass part is consumable supply.

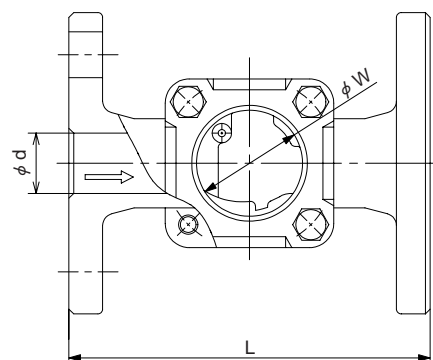
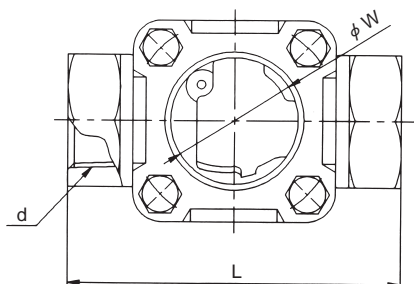
Dimensions (mm) and Weights (kg)

●SL-1S

Nominal size	d	L	W	Weight
15A	Rc 1/2	80	35	0.7
20A	Rc 3/4	90	35	0.8
25A	Rc 1	115	44	1.4
32A	Rc 1-1/4	127	57	2.1
40A	Rc 1-1/2	140	57	2.7
50A	Rc 2	162	73	5.2

●SL-1F

Nominal size	d	L	W	Weight
15A	15	130	35	2.2
20A	20	130	35	2.6
25A	25	150	44	4.1
32A	32	160	57	5.7
40A	40	170	57	6.0
50A	50	200	73	9.3



SF-1S•1F

Features

1. Variation in flow rate can be checked easily with flap and scale plates.
2. Can be connected to horizontal/vertical piping.
3. Mica plate is used for this type of sight glass for steam condensate.

Specifications

Model	SF-1S	SF-1F
Application	Cold and hot water, Oil, Other non-dangerous fluids	
Maximum working pressure	1.0 MPa	
Max. temperature	150°C	
Max. thermal shock	100°C	
Material	Body	Ductile cast iron
	Glass	Hardened glass
	Flap	Stainless steel
Connection	JIS Rc screwed	JIS 10K FF flanged

- Available with mica plate for steam condensate (SFM-1S•1F).
- Glass part is consumable supply.

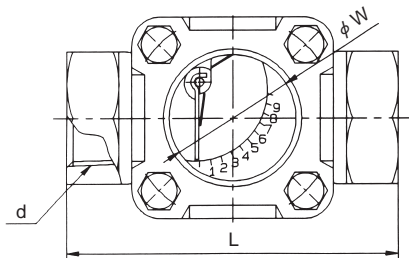


SF-1S

Dimensions (mm) and Weights (kg)

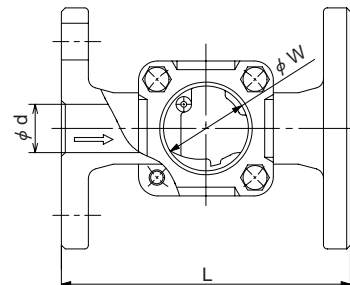
●SF-1S

Nominal size	d	L	W	Weight
15A	Rc 1/2	80	35	0.7
20A	Rc 3/4	90	35	0.8
25A	Rc 1	115	44	1.4
32A	Rc 1-1/4	127	57	2.5
40A	Rc 1-1/2	140	57	2.8
50A	Rc 2	162	73	5.4



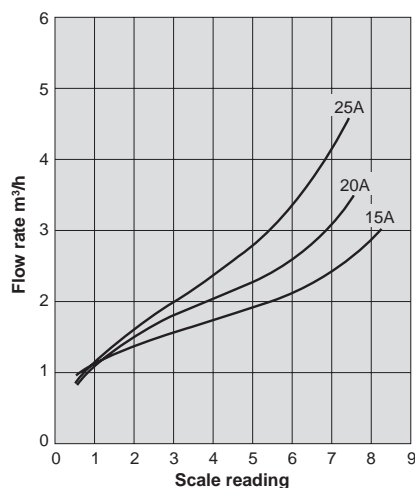
●SF-1F

Nominal size	d	L	W	Weight
15A	15	130	35	2.2
20A	20	130	35	2.6
25A	25	150	44	4.1
32A	32	160	57	5.9
40A	40	170	57	6.2
50A	50	200	73	9.5

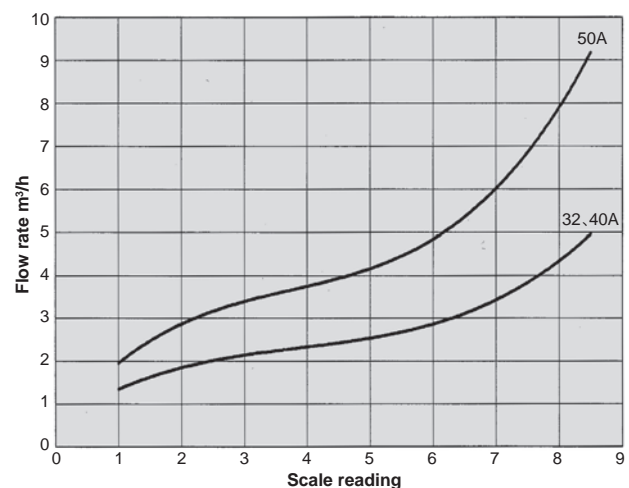


Flow Rate Characteristics Chart (For Water, Horizontal Piping)

●15A-25A



●32A-50A



• The flow characteristics shown in the charts above are just for reference and cannot be used for actual measurement.

SB-1S·1F

Features

1. Flowing state of fluid can be checked with the movement of the balls inside the sight glass.
2. Inside glass surface is less liable to water scale since the balls roll and contact the surface.
3. Compact, lightweight and space saving.
4. Can be connected to horizontal/vertical piping (but glass part should face sideways).

Specifications

Model		SB-1S	SB-1F
Application		Cold and hot water	
Maximum working pressure		1.0 MPa	
Max. temperature		85°C	
Material	Body	Ductile cast iron	
	Glass	Hardened glass	
	Ball	Synthetic resin	
Connection		JIS Rc screwed	JIS 10K FF flanged

• Glass part and balls are consumable supply.



SB-1S

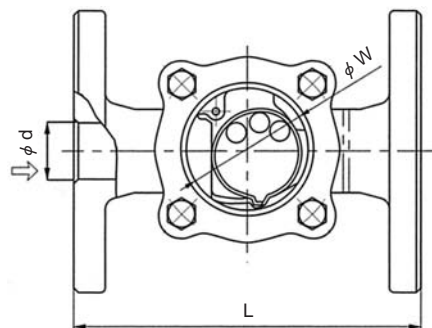
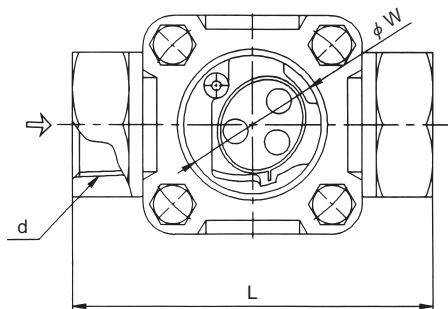
Dimensions (mm) and Weights (kg)

●SB-1S

Nominal size	d	L	W	Weight
15A	Rc 1/2	80	35	0.7
20A	Rc 3/4	90	35	0.8
25A	Rc 1	115	44	1.4
32A	Rc 1-1/4	127	57	2.5
40A	Rc 1-1/2	140	57	2.8
50A	Rc 2	162	73	8.4

●SB-1F

Nominal size	d	L	W	Weight
15A	15	130	35	2.2
20A	20	130	35	2.6
25A	25	150	44	4.1
32A	32	160	57	5.9
40A	40	170	57	6.2
50A	50	200	73	9.5



150L

Features

1. Mixed state or color of two component fluid can be checked.
2. Intermittent fluid flow can be checked.
3. Can be connected to horizontal/vertical piping.
4. Mica plate is used for this type of sight glass for steam condensate.
5. The 150L Series sight glass come in a variety of materials, including ductile cast iron and cast stainless steel, which are available to choose from.

Specifications

Model	150L-F	150L-13S	150L-13F
Application	Cold and hot water, Oil, Other non-dangerous fluids		
Nominal size	65A-150A	15A-50A	15A-100A
Maximum working pressure	1.0 MPa		
Max. temperature	150°C		
Max. thermal shock	100°C		
Material	Body	Ductile cast iron	Cast stainless steel
	Glass	Hardened glass	
Connection	JIS 10K FF flanged	JIS Rc screwed	JIS 10K FF flanged



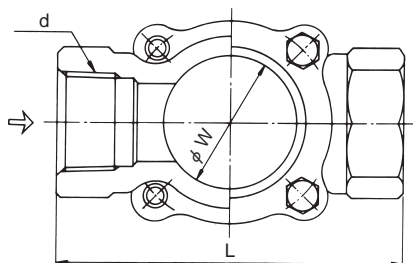
150L-F

- Available with mica plate for steam condensate (150LM-□□S•□□F).
- Available with protector (150LP-□□S•□□F).
- Glass part is consumable supply.

Dimensions (mm) and Weights (kg)

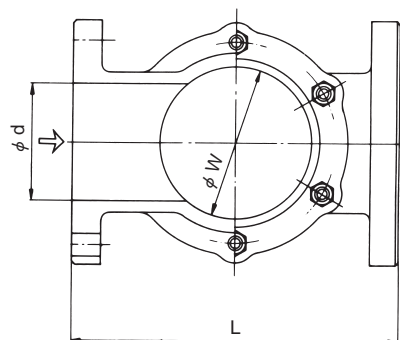
●150L-13S

Nominal size	d	L	W	Weight
15A	Rc 1/2	76	35	0.73
20A	Rc 3/4	89	35	0.82
25A	Rc 1	114	44	1.5
32A	Rc 1-1/4	127	53	2.3
40A	Rc 1-1/2	140	57	2.9
50A	Rc 2	162	73	5.8



●150L-F•13F

Nominal size	d	L	W	Weight	
				150L-F	150L-13F
15A	15	130	35	—	2.12
20A	20	130	35	—	2.47
25A	25	150	44	—	4.1
32A	32	160	53	—	5.4
40A	40	170	57	—	5.6
50A	50	200	73	—	9.7
65A	65	235	97	14.7	16.0
80A	73	235	97	15.1	16.5
100A	100	277	130	26.5	29.2
125A	125	336	155	36.8	—
150A	140	380	165	60.5	—



150F

Features

1. Variation in flow rate can be checked easily with flap and scale plates.
2. Pressure loss caused by the fluid flow is as low as 0.01 MPa even when the flap shows the maximum flow rate, and does not affect the pressure of the fluid.
3. Can be connected to horizontal/vertical piping.
4. Mica plate is used for this type of sight glass for steam condensate.
5. The 150F Series sight glass come in a variety of materials, including ductile cast iron and cast stainless steel, which are available to choose from.

Specifications

Model	150F-F	150F-13S	150F-13F
Application	Cold and hot water, Oil, Other non-dangerous fluids		
Nominal size	65A-150A	15A-50A	15A-100A
Maximum working pressure	1.0 MPa		
Max. temperature	150°C		
Max. thermal shock	100°C		
Material	Body	Ductile cast iron	Cast stainless steel
	Glass	Hardened glass	
	Flap	Stainless steel	
Connection	JIS 10K FF flanged	JIS Rc screwed	JIS 10K FF flanged



150F-F

- Available with mica plate for steam condensate (150FM-□□S•□□F).
- Available with protector (150FP-□□S•□□F).
- Glass part is consumable supply.

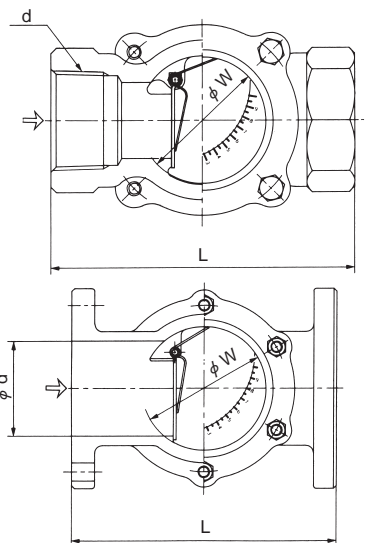
Dimensions (mm) and Weights (kg)

●150F-13S

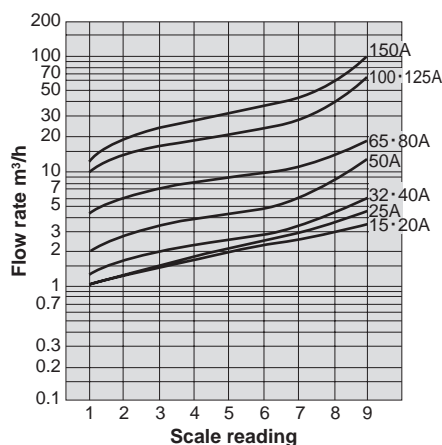
Nominal size	d	L	W	Weight
15A	Rc 1/2	76	35	0.75
20A	Rc 3/4	89	35	0.84
25A	Rc 1	114	44	1.6
32A	Rc 1-1/4	127	53	2.4
40A	Rc 1-1/2	140	57	3.0
50A	Rc 2	162	73	5.9

●150F-F • 13F

Nominal size	d	L	W	Weight	
				150F-F	150F-13F
15A	15	130	35	—	2.14
20A	20	130	35	—	2.49
25A	25	150	44	—	4.2
32A	32	160	53	—	5.5
40A	40	170	57	—	5.7
50A	50	200	73	—	9.8
65A	65	235	97	15.1	16.4
80A	73	235	97	15.5	16.9
100A	100	277	130	27.0	29.7
125A	125	336	155	37.3	—
150A	140	380	165	62.0	—

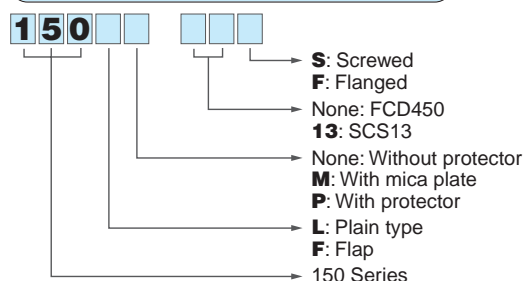


Flow Rate Characteristics Chart (For Water, Horizontal Piping)



- The flow characteristics shown in the chart on the left are just for reference and cannot be used for actual measurement.

Sight glass model (type 150) code



400

Features

1. No need for cleaning of the dome since rotating spinner keeps the inside of the dome clean.
2. Fluid flow can be detected from the rotation of the spinner, and flow rate change is identified by its rotating speed.
3. Easy to assemble and disassemble due to simple design. Can be connected to horizontal/vertical piping.

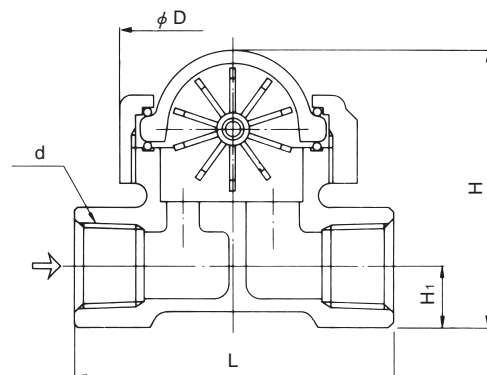
Specifications

Application		Cold and hot water
Maximum working pressure		0.7 MPa
Max. temperature		100°C
Max. thermal shock		40°C
Material	Body	Cast bronze
	Glass	Heat-resistant glass
	Spinner	Special heat-resistant resin
Connection		JIS Rc screwed

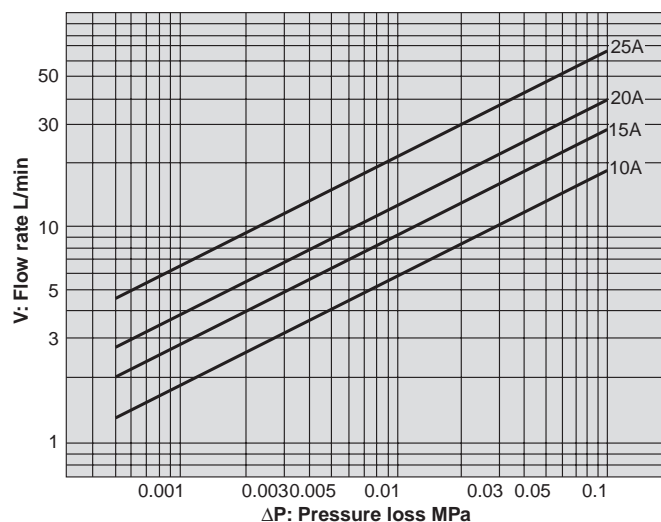
- When using this sight glass at a temperature difference of 40°C or more, note that the glass may get damaged if the temperature rapidly rises or the glass is cooled from outside.
- Glass part and spinner are consumable supply.

Dimensions (mm) and Weights (kg)

Nominal size	d	L	H ₁	H	D	Weight
10A	Rc 3/8	76	12	67	54	0.45
15A	Rc 1/2	76	14.5	69.5	54	0.50
20A	Rc 3/4	83	17	76	54	0.60
25A	Rc 1	89	21.5	93.5	66.5	0.95



Pressure Loss Chart (For Water)



Min. & Max. Flow Rate (Water)

Nominal size	Min. flow rate L/min	Max. flow rate L/min
10A	0.8	8.3
15A	1.0	13
20A	1.5	18
25A	2.3	30

- The minimum flow rate is the value required for the spinner to continuously rotate.
 - The maximum flow rate is the value when pressure loss is approximately 0.02 MPa.
- For further information, see the pressure loss chart on the left.