



# SEPARATOR FILTER

## MODEL SF1

### FILTER WITH BUILT IN CYCLONE SEPARATOR

#### Benefits

All stainless steel separator filter efficiently removes condensate and impurities from the flow medium. Suitable for applications requiring high-quality dry steam and air mains.

1. Built-in cyclone separator eliminates condensate, dirt and scale before filtering, extending filter maintenance cycle.
2. Separator achieves condensate separation efficiency as high as 98%.
3. Easy-to-clean five-layer sintered wire mesh filter maintains extremely low pressure drop for extended periods.
4. Compact and lightweight.
5. Ferrule joint clamp facilitates cleaning and disassembling, reducing maintenance costs.
6. Conforms to the recommendations for production of culinary steam to 3-A Accepted Practice No. 609-03. (0.5 µm filter element only)



#### Specifications

Model		SF1		
Connection		Screwed	Socket Weld	Flanged
Size (in)		<b>½, ¾, 1, 1½, 2</b>		½, ¾, 1, 1½, 2
Washing/Pressure Detection Port Connection			½" Screwed	
Condensate Outlet Connection			½" Screwed	
Maximum Operating Pressure (psig)	PMO		150	
Maximum Operating Temperature (°F)	TMO		365	
Maximum Allowable Pressure (psig)	PMA		150	
Maximum Allowable Temperature (°F)	TMA		365	
Nominal Filter Rating* (µm)			0.5, 2, 5	
Filter Construction			Five-layer Sintered Wire Mesh	
Internal & External Finishing**			Acid Cleaning (lost-wax cast)	
Applicable Fluids***			Steam, Air	

\* Consult TLV for other available filter ratings \*\* Optional electro-polishing (lost-wax cast) available on request  
\*\*\* Do not use for toxic, flammable or otherwise hazardous fluids

Connections and sizes in bold are standard



To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

No.	Description	Material	ASTM/AISI <sup>1)</sup>	JIS
①	Body	Cast Stainless Steel	A351 Gr.CF8	—
②	Separator	Cast Stainless Steel	A351 Gr.CF8	—
③	Separator	Cast Stainless Steel	A351 Gr.CF8	—
	Body	Cast Stainl. Steel/Stainl. Steel	A351 Gr.CF8/AISI304	—/SUS304
④	Separator Bottom	Cast Stainless Steel	A351 Gr.CF8	—
⑤	Baffle	Stainless Steel	AISI304	SUS304
⑥	Filter	Stainless Steel <sup>2)</sup>	AISI304/316(L)	SUS304/316(L)
⑦	Filter Gasket <sup>3)</sup>	High-performance Fluorine Resin	—	—
⑧	Body Clamp <sup>4)</sup>	Cast Stainless Steel	A351 Gr.CF8	—
⑨	Body Gasket <sup>3)</sup>	High-performance Fluorine Resin	—	—
⑩	Nameplate	Stainless Steel	AISI304	SUS304
⑪	Plug	Stainless Steel	AISI304	SUS304
⑫	Clamp Bolt <sup>5)</sup>	Stainless Steel	AISI304	SUS304
⑬	Clamp Nut <sup>5)</sup>	Stainless Steel	AISI304	SUS304
⑭	Spring Washer <sup>5)</sup>	Stainless Steel	AISI304	SUS304
⑮	Flange <sup>6)</sup>	Cast Stainl. Steel/Stainl. Steel	A351 Gr.CF8/AISI304	—/SUS304

<sup>1)</sup> Equivalent <sup>2)</sup> Material depends on filter rating or flange specifications

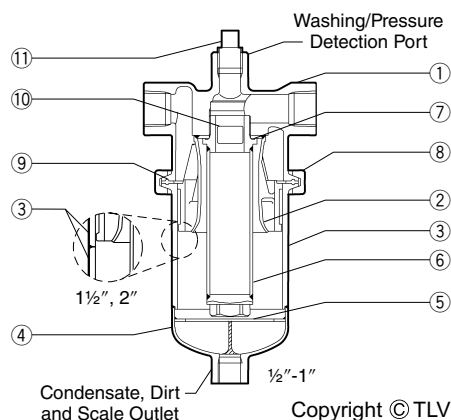
<sup>3)</sup> Gaskets are GYLON BIO-PRO; complies with FDA/USP/EN standards. See table above-right for details.

GYLON BIO-PRO is a registered trademark of Garlock GmbH.

<sup>4)</sup> Two-piece two-bolt clamp <sup>5)</sup> Not shown <sup>6)</sup> Shown on reverse

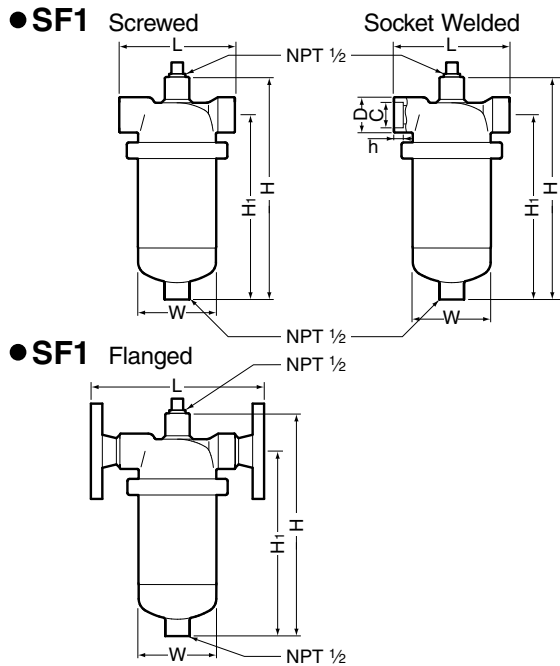
	Parts with USP/FDA/EN Compliant Materials	Standard			
		USP	FDA*	EN	
⑦	Filter Gasket	High-performance Fluorine Resin	Class VI	A	1935
⑨	Body Gasket	Fluorine Resin	—	B	—
⑪	Seal Tape for Plug	Fluorine Resin	—	B	—

\* FDA: A: 21 CFR 177.1550, B: 21 CFR 177.1615



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**Dimensions**



**SF1 Screwed\*/Socket Weld\*\*** (in)

Size	L	H	H <sub>1</sub>	φW	φD	φC	h	Weight (lb)
1/2	5 1/8	10	8 1/4	3 1/2	1 7/16	0.855	1/2	10
3/4						1.065		
1	5 7/8	11 3/8	9 7/16	4	1 3/4	1.330		13
1 1/2	6 11/16	18 1/8	16	4 1/2	2 5/16	1.915		24
2	8 11/16	22 1/4	20	6 1/2	2 13/16	2.406	5/8	49

\* NPT, other standards available  
 \*\* ASME B16.11-2005, other standards available

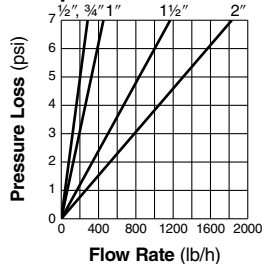
**SF1 Flanged** (in)

Size	L		H	H <sub>1</sub>	φW	Weight (lb)
	Connects to ASME Class	150RF				
1/2	7 1/2	10	8 1/4	3 1/2	12	
3/4					13	
1	8 15/16	11 3/8	9 7/16	4	18	
1 1/2	9 7/8	18 1/8	16	4 1/2	33	
2	13	22 1/4	20	6 1/2	62	

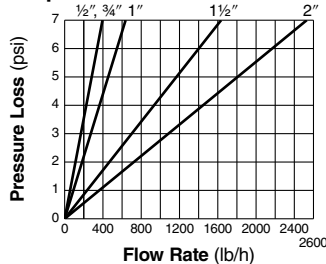
Other standards available, but length and weight may vary

**Steam Pressure Loss**

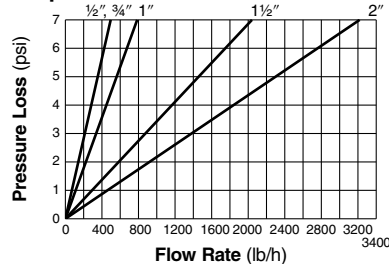
● 0.5 μm Filter



● 2 μm Filter



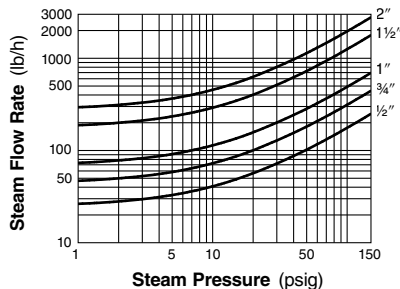
● 5 μm Filter



These pressure loss charts are based on a steam pressure of 15 psig. For other pressures, multiply the steam flow rate by the correction factor given in the table right. Use the result on the pressure loss chart.

Pressure (psig)	10	15	20	40	60	80	100	120	140	150
Flow Rate Correction Factor	1.14	1.0	0.91	0.73	0.64	0.58	0.52	0.49	0.46	0.45

**Steam Flow Rate**



The chart to the left is used to determine the steam flow rate through the SF1 separator-filter. It is based on a steam velocity in the piping of 100 ft/s. For other cases, use the equation below and replace "v" with your steam velocity:

$$\text{Effective flow rate} = \text{Flow Rate}_{100 \text{ ft/s}} \times \frac{v}{100}$$

It is recommended that steam velocities not exceed 100 ft/s.

Note: For pressure loss and flow rate of air and non-hazardous gases, contact TLV.



**DO NOT DISASSEMBLE OR REMOVE THIS PRODUCT WHILE IT IS UNDER PRESSURE.**  
 Allow internal pressure of this product to equal atmospheric pressure and its surface to cool to room temperature before disassembling or removing. Failure to do so could cause burns or other injury. READ INSTRUCTION MANUAL CAREFULLY.

**TLV CORPORATION**

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Manufacturer  
**TLV CO., LTD.**  
 Kakogawa, Japan  
 is approved by LRQA Ltd. to ISO 9001/14001

