# FREE FLOAT® STEAM TRAP

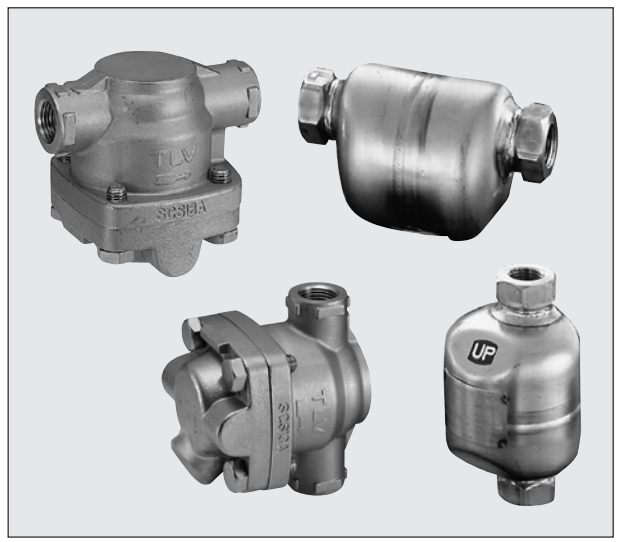
## MODELS SS1/SS3

**STAINLESS STEEL FREE FLOAT AND THERMOSTATIC STEAM TRAPS WITH THREE-POINT SEATING**

## Benefits

**Stainless steel traps with tight shut-off for drainage of superheated steam mains.**

1. Free Float's unique rotational seating design eliminates concentrated wear to ensure long life.
2. Precision-ground float, three-point seating and constant water seal ensure steam-tight seal, even under no-load conditions.
3. Model SS1 allows easy, inline access to internal parts to simplify cleaning and lower maintenance costs. Model SS3 is maintenance-free: only one moving part in an all-welded steel case.
4. Float with up to 1740 psig hydraulic shock rating ensures excellent resistance to water hammer.
5. Durable thermostatic air vent automatically vents air for exceptional start-up and performance.
6. Extremely soft near-to-steam temperature discharge for safety and environmental considerations.
7. Built-in screen for extended trouble-free service.



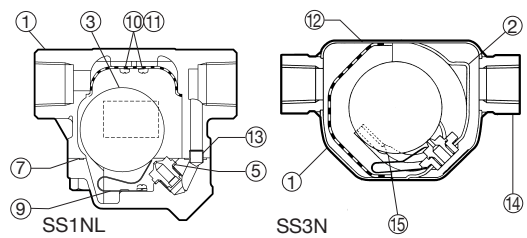
## Specifications

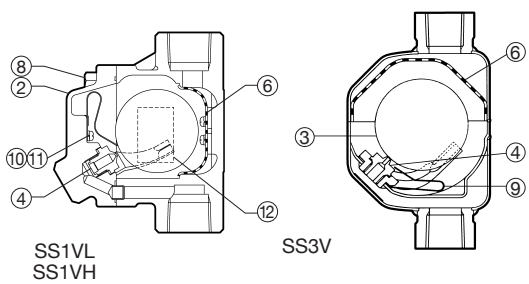
| Model | | SS1VL | SS1NL | SS1VH | SS1NH | SS3V | SS3N | |
|---|---|---|---|---|---|---|---|---|
| Installation | | Vertical | Horizontal | Vertical | Horizontal | Vertical | Horizontal | |
| Connection | | **Screwed** / Socket Weld | | | **S, SW** | **Screwed** | **Screwed** | **Flanged** |
| Size (in) | | **½, ¾, 1** / ½, ¾, 1 | | | **½, ¾, 1** | **½, ¾, 1** | **½, ¾, 1** | ½, ¾, **1** |
| Orifice No. | | 10, 18, 21 | | | | 10, 18, 21 | | |
| Maximum Operating Pressure (psig) | PMO | 150, 250, 300 | | | | 150, 250, 300 | | |
| Maximum Differential Pressure (psi) | ΔPMX | 150, 250, 300 | | | | 150, 250, 300 | | |
| Minimum Operating Pressure (psig) | | 1.5 | | | | 1.5 | | |
| Maximum Operating Temperature (°F) | TMO | 428 | | 662 | | 752 | | |
| Maximum Allowable Pressure (psig) | PMA | 300 | | | | 345 | | |
| Maximum Allowable Temperature (°F) | TMA | 428 | | 662 | | 752 | | |

**CAUTION** 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.

**Connections and sizes in bold are standard**
S = Screwed, SW = Socket Weld

| No. | Description | Material | ASTM/AISI* | JIS |
|---|---|---|---|---|
| ① | Body (SS1) | Cast Stainless Steel | A351 Gr.CF8 | — |
| | Body (SS3) | Stainless Steel | A240 Type 316L | — |
| ② | Cover (SS1) | Cast Stainless Steel | A351 Gr.CF8 | — |
| | Inner Cover (SS3) | Stainless Steel | A240 Type 316L | — |
| ③F | Float | Stainless Steel | AISI316L | SUS316L |
| ④R | Orifice | — | — | — |
| ⑤MR | Orifice Gasket (SS1) | Stainless Steel | AISI316L | SUS316L |
| ⑥R | Screen | Stainless Steel | AISI304 | SUS304 |
| ⑦MR | Cover Gasket (SS1NL) | Fluorine Resin | PTFE | PTFE |
| | Cover Gasket (SS1NH) | Graphite/Stainl. Steel | -/AISI316L | -/SUS316L |
| ⑧ | Cover Bolt (SS1) | Stainless Steel | AISI304 | SUS304 |
| ⑨R | Air Vent Strip | Bimetal | — | — |
| ⑩R | Screw (SS1) | Stainless Steel | AISI304 | SUS304 |
| ⑪R | Spring Washer (SS1) | Stainless Steel | AISI304 | SUS304 |
| ⑫ | Nameplate | Stainless Steel | AISI304 | SUS304 |
| ⑬ | Connector (SS1) | Stainless Steel | AISI304 | SUS304 |
| ⑭ | Socket (SS3) | Stainless Steel | A351 Gr.CF8 | — |
| ⑮ | Float Guide (SS3) | Cast Stainless Steel | A351 Gr.CF3M | — |
| ⑯ | Flange** (SS3) | Cast Stainless Steel | A351 Gr.CF8 | — |

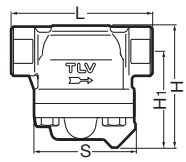


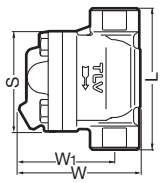

* Equivalent ** Shown on reverse
Replacement kits available for SS1: (M) maintenance parts, (R) repair parts, (F) float

## Dimensions

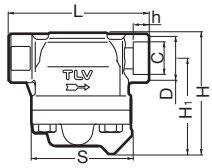
● **SS1NL/SS1NH**
Screwed



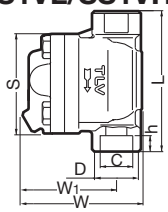

● **SS1VL/SS1VH**



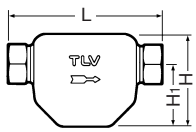

● **SS1NL/SS1NH**
Socket Weld



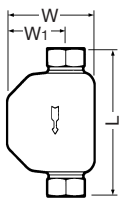

● **SS1VL/SS1VH**



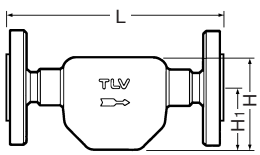

● **SS3N**
Screwed




● **SS3V**




● **SS3N**
Flanged




**SS1NL/SS1NH/SS1VL/SS1VH** Screwed* (in)

| Size | L | H/W | H1/W1 | S | Weight (lb) |
|---|---|---|---|---|---|
| 1/2 | 4 5/16 | 4 / 4 1/16 | 3 3/16 | 3 3/8 | 3.5 |
| 3/4 | 4 3/4 | | | | 3.7 |
| 1 | 5 1/8 | | | | 4.0 |

* NPT, other standards available

**SS1NL/SS1NH/SS1VL/SS1VH** Socket Weld* (in)

| Size | L | H/W | H1/W1 | S | ϕD | ϕC | h | Weight (lb) |
|---|---|---|---|---|---|---|---|---|
| 1/2 | 4 5/16 | 4 / 4 1/16 | 3 3/16 | 3 3/8 | 1 3/16 | 0.855 | 1/2 | 3.5 |
| 3/4 | 4 3/4 | | | | 1 7/16 | 1.065 | | 3.7 |
| 1 | 5 1/8 | | | | 1 3/4 | 1.330 | | 4.0 |

* ASME B16.11-2005, other standards available

**SS3N/SS3V** Screwed* (in)

| Size | L | ϕH/W | H1/W1 | Weight (lb) |
|---|---|---|---|---|
| 1/2 | 5 | 3 | 2 1/16 | 1.8 |
| 3/4 | 6 1/16 | | | 2.2 |
| 1 | 6 1/2 | | | 2.6 |

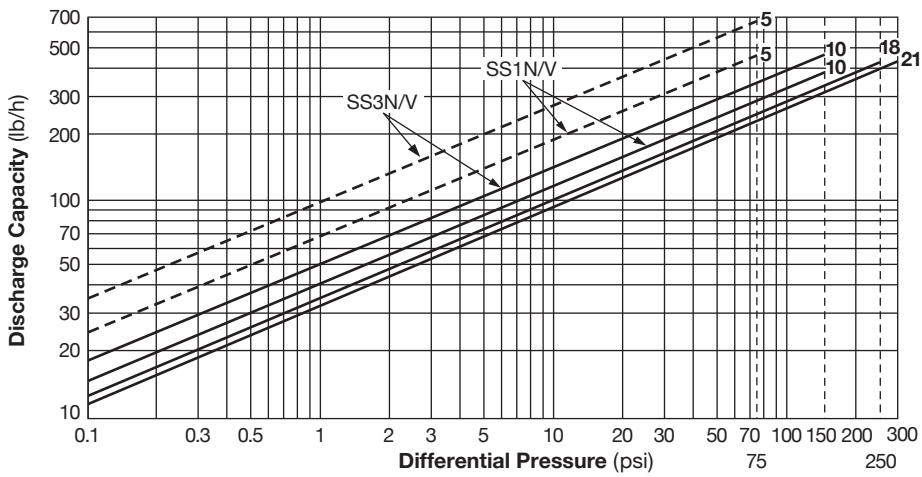
* NPT, other standards available

**SS3N** Flanged (in)

| Size | L | | ϕH | H1 | Weight* (lb) |
|---|---|---|---|---|---|
| | Connects to ASME Class | | | | |
| | 150RF | **300RF** | | | |
| 1/2 | 6 7/8 | 6 7/8 | 3 | 2 1/16 | 5.3 |
| 3/4 | 7 1/16 | 7 1/16 | | | 7.7 |
| 1 | 8 7/16 | 8 7/16 | | | 9.3 |

Other standards available, but length and weight may vary
* Weight is for Class 300 RF **Flange classes in bold are standard**

## Discharge Capacity




—— Standard
– – · Available on special request

1. Line numbers within the graph refer to orifice numbers.
2. Differential pressure is the difference between the inlet and outlet pressure of the trap.
3. Capacities are based on continuous discharge of condensate 11˚F below saturated steam temperature.
4. Recommended safety factor: at least 1.5.

**⚠ CAUTION**

DO NOT use traps under conditions that exceed maximum differential pressure, ascondensate backup will occur!

**⚠ CAUTION**

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.

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Member of FCI Fluid Controls Institute, Inc. Technical Resource for Instrumentation and Fluid Control

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

ISO 9001/ISO 14001