# FREE FLOAT® STEAM TRAP

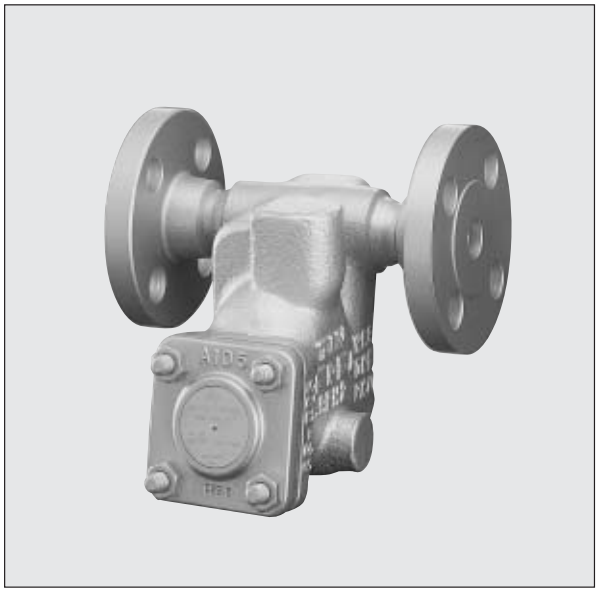
## MODEL SH5NL CAST STEEL

**FREE FLOAT STEAM TRAP WITH THREE-POINT SEATING AND THERMOSTATIC AIR VENTING**

## Features

**Inline repairable trap with tight shut-off for drainage of superheated or high-pressure steam mains and turbines.**

1. Self-modulating free float provides continuous, smooth, low velocity condensate discharge as loads vary.
2. Precision-ground float, constant water seal and three-point seating design ensure a steam tight seal, even under no-load conditions.
3. Only one moving part, the free float, prevents concentrated wear and provides long maintenance-free service life.
4. Thermostatic air venting with bimetal strip allows fast start-up.
5. High rating against hydraulic shock offers excellent resistance of the float to water hammer.
6. Built-in screen with large surface area ensures extended trouble-free operation.
7. Easy, inline access to internal parts simplifies cleaning and reduces maintenance costs.



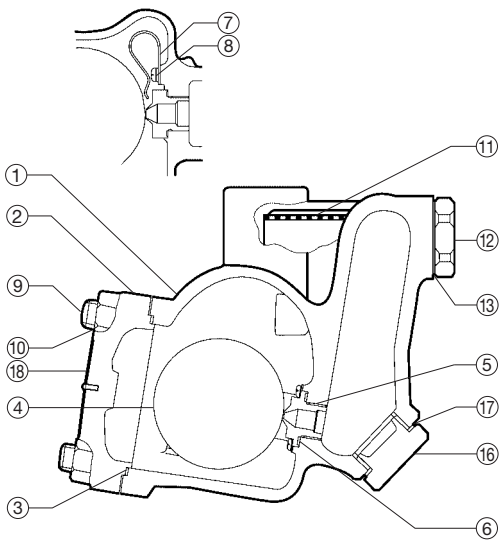
## Specifications

| Model | SH5NL | |
|---|---|---|
| Connection | Socket Welded | Flanged |
| Size | DN 15, 20, 25 | |
| Orifice No. | 14, 32, 46, 65 | |
| Maximum Operating Pressure (barg) PMO | 14, 32, 46, 65 | |
| Maximum Differential Pressure (bar) ΔPMX | 14, 32, 46, 65 | |
| Maximum Operating Temperature (°C) TMO | 425 | |

PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 65
Maximum Allowable Temperature (°C) TMA: 425
1 bar = 0.1 MPa

**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.

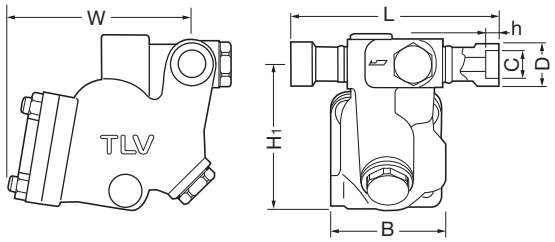
| No. | Description | Material | DIN* | ASTM/AISI* |
|---|---|---|---|---|
| ① | Body | Cast Steel A216 Gr.WCB | 1.0619 | — |
| ② | Cover | Carbon Steel A105 | 1.0460 | — |
| ③ MR | Cover Gasket | Graphite/Stainless Steel AISI316L | - /1.4404 | — |
| ④ F | Float | Stainless Steel SUS316L | 1.4404 | AISI316L |
| ⑤ R | Orifice | — | — | — |
| ⑥ MR | Orifice Gasket | Graphite/Stainless Steel SUS316L | - /1.4404 | - /AISI316L |
| ⑦ R | Air Vent Strip | Bimetal | — | — |
| ⑧ R | Screw & Spring Washer | Stainless Steel SUS304 | 1.4301 | AISI304 |
| ⑨ | Cover Bolt | Alloy Steel SNB7 | 1.7225 | A193 Gr.B7 |
| ⑩ | Cover Nut | Carbon Steel S45C | 1.0503 | AISI1045 |
| ⑪ R | Screen | Stainless Steel SUS430 | 1.4016 | AISI430 |
| ⑫ | Screen Holder | Cast Stainless Steel A743 Gr.CA40 | 1.4027 | — |
| ⑬ MR | Screen Holder Gasket | Soft Iron SUYP | 1.1121 | AISI1010 |
| ⑭ | Socket** | Carbon Steel S25C | 1.1158 | AISI1025 |
| ⑮ | Flange*** | Carbon Steel A105/ Cast Steel A216 Gr.WCB | 1.0460/ 1.0619 | — |
| ⑯ | Orifice Plug | Cast Stainless Steel A743 Gr.CA40 | 1.4027 | — |
| ⑰ MR | Orifice Plug Gasket | Soft Iron SUYP | 1.1121 | AISI1010 |
| ⑱ | Nameplate | Stainless Steel SUS304 | 1.4301 | AISI304 |




* Equivalent materials ** Shown on reverse *** Shown on reverse, material depends on flange specifications
Replacement kits available: (M) maintenance parts, (R) repair parts, (F) float

## Dimensions

●**SH5NL** Socket Welded



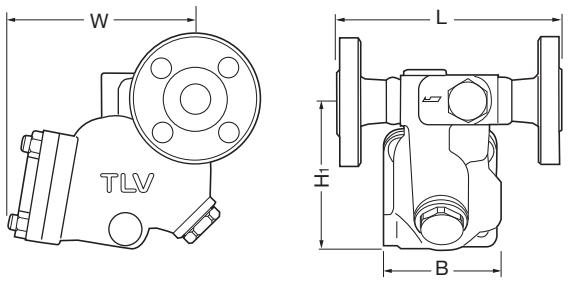

**SH5NL** Socket Welded*

(mm)

| DN | L | $H_1$ | W | B | ϕD | ϕC | h | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| 15 | 200 | 138 | 175 | 105 | 34 | 21.8 | 12 | 9.9 |
| 20 | | | | | 40 | 27.2 | 14 | |
| 25 | | | | | 49 | 33.9 | | 10 |

* ASME B16.11-2005, other standards available

●**SH5NL** Flanged



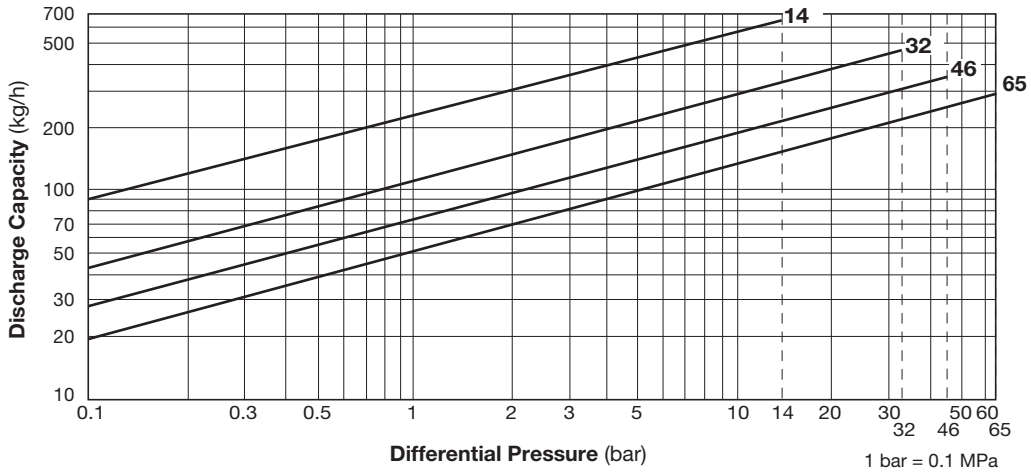

**SH5NL** Flanged

(mm)

| DN | L | | | $H_1$ | W | B | Weight* (kg) |
|---|---|---|---|---|---|---|---|
| | ASME Class | | | | | | |
| | 300RF | 600RF | 900RF | | | | |
| 15 | 202 | 202 | 212 | 138 | 175 | 105 | 13 |
| 20 | | | | | | | |
| 25 | | | 230 | | | | 16 |

DIN and other standards available, but TMO/TMA, length and weight may vary
* Weight is for Class 900RF

## Discharge Capacity




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 6˚C below saturated steam temperature.
4. Recommended safety factor: at least 1.5.

**CAUTION** DO NOT use traps under conditions that exceed maximum differential pressure, as condensate back up will occur!

**Manufacturer**

TLV CO.,LTD.

Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001/ISO 14001