



# FREE FLOAT<sup>®</sup> STEAM TRAP

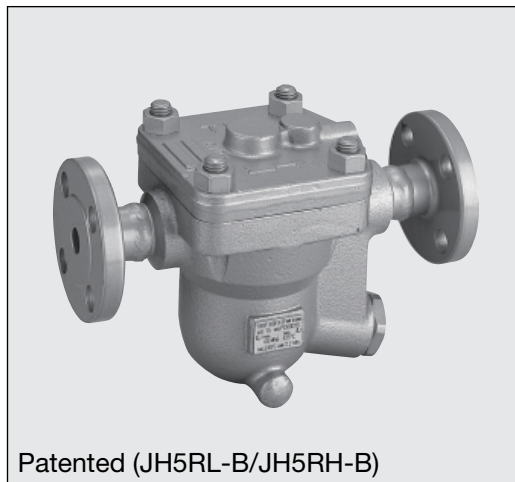
## MODEL JH5RL-X JH5RL-B/JH5RH-B

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

#### Features

A reliable and durable cast steel steam trap for use on small to medium-size process equipment. JH5RL-B/JH5RH-B are also suitable for both superheated and high-pressure process equipment.

1. Self-modulating free float provides continuous, smooth, low-velocity condensate discharge as process 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. **JH5RL-X**: Thermostatic capsule (X-element) with “fail open” feature vents air automatically at close-to-steam temperature.
4. **JH5RL-B/JH5RH-B**: Thermostatic bimetal air vent valve vents air automatically for rapid startup.
5. Built-in screen with large surface area ensures extended trouble-free operation.
6. Easy, inline access to internal parts simplifies cleaning and reduces maintenance costs.



Patented (JH5RL-B/JH5RH-B)

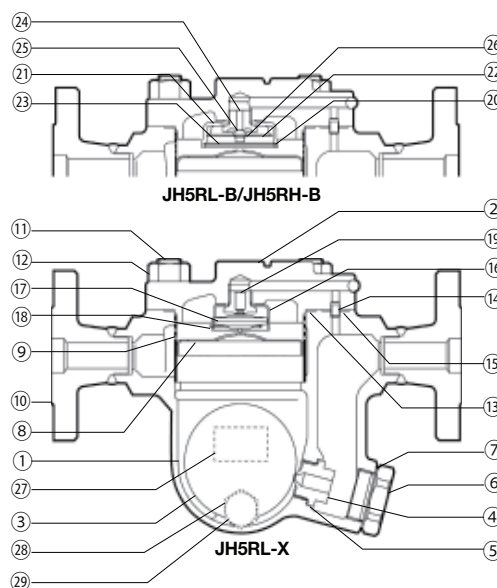
#### Specifications

| Model                                    | JH5RL-X                     |                    |         | JH5RL-B                                  |                    |         | JH5RH-B            |         |
|--|-----------------------------|--------------------|---------|--|--------------------|---------|--------------------|---------|
|  | Screwed                     | Socket Welded      | Flanged | Screwed                                  | Socket Welded      | Flanged | Socket Welded      | Flanged |
| Connection                               | Screwed                     | Socket Welded      | Flanged | Screwed                                  | Socket Welded      | Flanged | Socket Welded      | Flanged |
| Size (mm)                                | 15, 20, 25                  | 15, 20, 25, 40, 50 |         | 15, 20, 25                               | 15, 20, 25, 40, 50 |         | 15, 20, 25, 40, 50 |         |
| Orifice No.                              | 5, 10, 14, 22, 32           |                    |         | 2, 5, 10, 14, 22, 32, 40, 46             |                    |         | 80                 |         |
| Maximum Operating Pressure (MPaG) PMO    | 0.5, 1.0, 1.4, 2.2, 3.2     |                    |         | 0.2, 0.5, 1.0, 1.4, 2.2, 3.2, 4.0, 4.6   |                    |         | 8.0                |         |
| Maximum Differential Pressure (MPa) ΔPMX | 0.5, 1.0, 1.4, 2.2, 3.2     |                    |         | 0.2, 0.5, 1.0, 1.4, 2.2, 3.2, 4.0, 4.6   |                    |         | 8.0                |         |
| Minimum Operating Pressure (MPaG)        | 0.01                        |                    |         | 0.01                                     |                    |         | 0.01               |         |
| Maximum Operating Temperature (°C) TMO   | 240                         |                    |         | 425                                      |                    |         | 425                |         |
| Type of Air Vent                         | X-element (6 °C subcooling) |                    |         | Bimetal (vents air up to approx. 100 °C) |                    |         |                    |         |

PRESSURE SHELL DESIGN CONDITIONS (NOT OPERATING CONDITIONS): 1 MPa = 10.197 kg/cm<sup>2</sup>  
Maximum Allowable Pressure (MPaG) PMA: 4.0 (JH5RL-X), 4.6 (JH5RL-B), 8.0 (JH5RH-B) Maximum Allowable Temperature (°C) TMA: 425

**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.

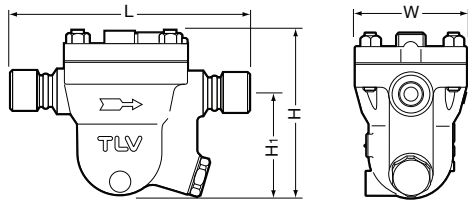
| No.             | Description                         | Material                 | JIS        | ASTM/AISI <sup>1)</sup> |
|-----------------|-------------------------------------|--------------------------|------------|-------------------------|
| ①               | Body                                | Cast Steel               | —          | A216 Gr.WCB             |
| ②               | Cover                               | JH5RL-X/B                | —          | A105                    |
|                 |                                     | JH5RH-B                  | —          | A216 Gr.WCB             |
| ③ <sup>F</sup>  | Float                               | Stainless Steel          | SUS316L    | AISI316L                |
| ④ <sup>R</sup>  | Orifice                             | —                        | —          | —                       |
| ⑤ <sup>MR</sup> | Orifice Gasket                      | Soft Iron                | SUYP       | AISI1010                |
| ⑥               | Orifice Plug                        | Cast Stainless Steel     | —          | A743 Gr.CA40            |
| ⑦ <sup>MR</sup> | Orifice Plug Gasket                 | Soft Iron                | SUYP       | AISI1010                |
| ⑧ <sup>R</sup>  | Float Cover                         | Stainless Steel          | SUS304     | AISI304                 |
| ⑨ <sup>R</sup>  | Screen inside/outside <sup>2)</sup> | Stainless Steel          | SUS430/304 | AISI430/304             |
| ⑩               | Flange/Socket <sup>3)</sup>         | Carbon Steel             | —          | A105                    |
| ⑪               | Cover Bolt                          | JH5RL-X/B                | SNB7       | A193 Gr.B7              |
|                 |                                     | JH5RH-B                  | SNB16      | A193 Gr.B16             |
| ⑫               | Cover Nut                           | Carbon Steel             | S45C       | AISI1045                |
| ⑬ <sup>MR</sup> | Cover Gasket                        | Graphite/Stainless Steel | —/SUS316L  | —/AISI316L              |
| ⑭               | Connector                           | Stainless Steel          | SUS416     | AISI416                 |
| ⑮ <sup>MR</sup> | Connector Gasket                    | Graphite/Stainless Steel | —/SUS316L  | —/AISI316L              |
| ⑯ <sup>R</sup>  | X-element Guide                     | Stainless Steel          | SUS304     | AISI304                 |
| ⑰ <sup>R</sup>  | X-element                           | Stainless Steel          | —          | —                       |
| ⑱ <sup>R</sup>  | Spring Clip                         | Stainless Steel          | SUS304     | AISI304                 |
| ⑲ <sup>R</sup>  | Air Vent Valve Seat                 | Stainless Steel          | SUS420F    | AISI420F                |
| ⑳ <sup>R</sup>  | Snap Ring                           | Stainless Steel          | SUS304     | AISI304                 |
| ㉑ <sup>R</sup>  | Air Vent Case                       | Cast Stainless Steel     | —          | A351 Gr.CF8             |
| ㉒ <sup>R</sup>  | Bimetal Plate                       | Bimetal                  | —          | —                       |
| ㉓ <sup>R</sup>  | Air Vent Screen                     | Stainless Steel          | SUS304     | AISI304                 |
| ㉔ <sup>R</sup>  | Air Vent Valve Seat                 | —                        | —          | —                       |
| ㉕ <sup>R</sup>  | Air Vent Valve Plug                 | —                        | —          | —                       |
| ㉖ <sup>R</sup>  | Snap Ring                           | Stainless Steel          | SUS304     | AISI304                 |
| ㉗               | Nameplate                           | Stainless Steel          | SUS304     | AISI304                 |
| ㉘               | Drain Plug Gasket <sup>4)</sup>     | Soft Iron                | SUYP       | AISI1010                |
| ㉙               | Drain Plug <sup>4)</sup>            | Carbon Steel             | S25C       | AISI1025                |



<sup>1)</sup> Equivalent <sup>2)</sup> JH5RL-B, JH5RH-B: inside only <sup>3)</sup> Shown on reverse <sup>4)</sup> Option  
Replacement kits available: (M) maintenance parts, (R) repair parts, (F) float

**Dimensions**

● **JH5RL-X/JH5RL-B** Screwed

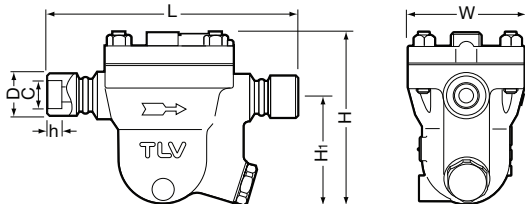


**JH5RL-X/JH5RL-B** Screwed\* (mm)

| Size | L   | H   | H <sub>1</sub> | W   | Weight (kg) |
|------|-----|-----|----------------|-----|-------------|
| 15   | 234 | 162 | 105            | 115 | 6.5         |
| 20   | 246 |     |                |     | 6.6         |
| 25   | 258 |     |                |     | 6.7         |

\* Rc(PT), other standards available

● **JH5RL-X/JH5RL-B/JH5RH-B** Socket Welded

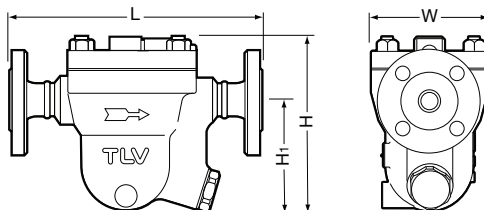


**JH5RL-X/JH5RL-B/JH5RH-B** Socket Welded (mm)

| Size | L   | H     | H <sub>1</sub> | W     | φ D  | φ C  | h  | Weight (kg) |
|------|-----|-------|----------------|-------|------|------|----|-------------|
| 15   | 234 | 162   | 105            | 115   | 33   | 22.2 | 12 | 6.5 [10]    |
| 20   | 246 |       |                |       | 39.5 | 27.7 | 14 | 6.6 [10]    |
| 25   | 258 |       |                |       | 48   | 34.5 |    | 6.7 [10]    |
| 40   | 246 | [172] | [107]          | [125] | 64   | 49.1 | 17 | 9.1 [13]    |
| 50   |     |       |                |       | 77.5 | 61.1 |    | 10 [14]     |

[ ] JH5RH-B

● **JH5RL-X/JH5RL-B/JH5RH-B** Flanged



**JH5RL-X/JH5RL-B/JH5RH-B** Flanged (mm)

| Size | L          |       |       |        | H   | H <sub>1</sub> | W   | Weight** (kg) |
|------|------------|-------|-------|--------|-----|----------------|-----|---------------|
|      | ASME Class |       |       |        |     |                |     |               |
|      | 150RF      | 300RF | 600RF | 900RF* |     |                |     |               |
| 15   | 239        | 239   | 239   | 269    | 162 | 105            | 115 | 8.4 [14]      |
| 20   | 264        | 264   | 264   | 294    |     |                |     | 9.8 [16]      |
| 25   | 309        | 309   | 309   | 319    |     |                |     | 11 [20]       |
| 40   | 290        | 290   | 290   | 306    |     |                |     | 15 [24]       |
| 50   | 300        | 300   | 300   | 316    |     |                |     | 19 [36]       |

Other standards available, but length and weight may vary

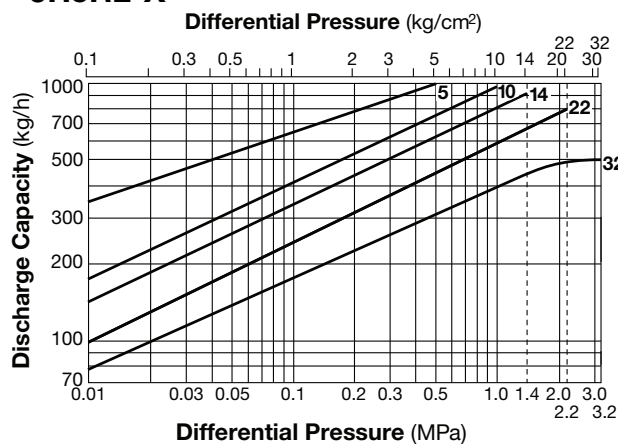
\* Not standard for JH5RL-X/JH5RL-B

\*\* Weight is for Class 600 RF (JH5RL-X/JH5RL-B), 900 RF (JH5RH-B)

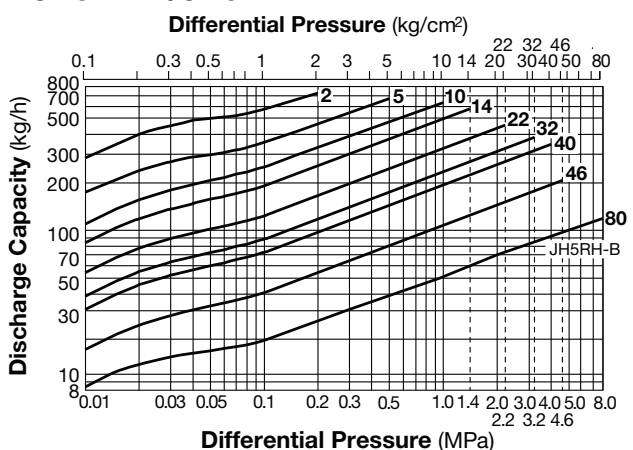
[ ] JH5RH-B

**Discharge Capacity**

● **JH5RL-X**



● **JH5RL-B/JH5RH-B**



1. Line numbers within the graph are 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.



DO NOT use this product under conditions that exceed maximum differential pressure, as condensate backup will occur!

Manufacturer

**TLV** CO., LTD.  
Kakogawa, Japan

is approved by LRQA Ltd, to ISO 9001/14001

ISO 9001  
ISO 14001

