



# AIR & DRAIN TRAPS

**JA3D / JA Series / G8  
TATSU2  
SS1VG / JAH Series**



# TLV® Free Float Technology

## AIR TRAPS For Air

In today's world of automation, compressed air is used in many different industries including high-precision machinery and instrumentation. After air is compressed it is cooled by an after-cooler or in a receiver tank, where condensate is formed from the air as water droplets. This condensate also occurs in compressed air distribution piping, leading to rust and fluctuation in high-precision machinery, as well as causing a reduction in product quality. Air traps protect your equipment and products by discharging condensate automatically.

### ■ Long Service Life

The hinge-less lever-less free float has one moving part allowing for simple operation. With infinite sealing surfaces, the free float does not suffer from concentrated wear, maintaining initial performance quality over a long time period.

**JA Series/G8**

### ■ Continuous Condensate Discharge

The float adjusts quickly to changes in condensate flow adjusting the valve seat opening, ensuring continuous rapid discharge without condensate backup.

**JA Series/G8**

### ■ Rubber Valve Seat for Tight Sealing

The standardized rubber valve seat allows for tight sealing with the precision ground float.

**JA Series/G8**

### ■ Valve Seat Cleaning Mechanism

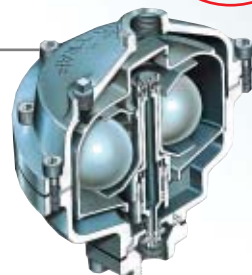
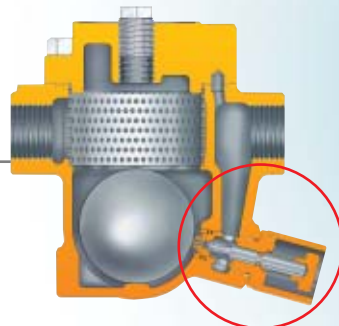
Equipped with an external plunger unit, blockage caused by oils and/or scale can be easily eliminated.

**JA Series**

### ■ Discharge High-Viscosity Condensate

With a large (16 mm) orifice, unique intermittent discharge and self-cleaning function, high-viscosity condensate as well as condensate containing dirt/scale can be discharged. Discharges large amounts of condensate (up to approx. 7.4 tons/hour).

**TATSU2**



# for the Highest Reliability

## DRAIN TRAPS

For Air and Inert Gases\*

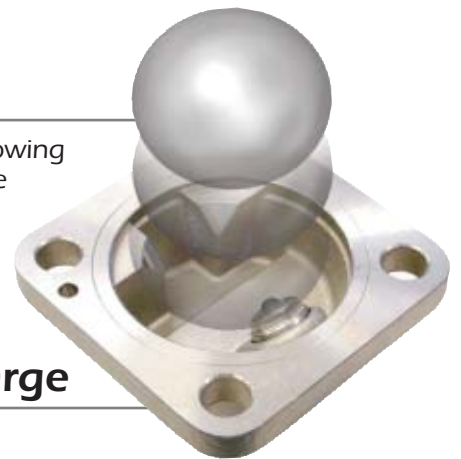
Like compressed air, after air or other inert gases are compressed they are cooled, and condensate is formed from air or the gas as water droplets. Condensate is the cause of many challenges resulting in rust and freezing in the pipes as well as a reduction in product quality. Drain traps for discharging condensate from both compressed air and inert gases protect your equipment and products by discharging condensate automatically as it forms while maintaining a tight seal. These traps are made with durable steel construction for a long service life.

\* Do not use with toxic, flammable or otherwise hazardous gases.

### Long Service Life

The hinge-less lever-less free float has one moving part allowing for simple operation. With infinite sealing surfaces, the free float does not suffer from concentrated wear, maintaining initial performance quality over a long time period.

SS1VG Series/JAH Series



### Continuous Condensate Discharge

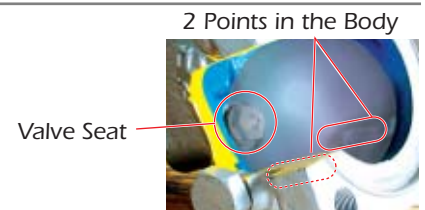
The float adjusts quickly to changes in condensate flow adjusting the valve seat opening, ensuring continuous rapid discharge without condensate backup.

SS1VG Series/JAH Series

### Three Point Seating for Tight Sealing

The high-precision ground float fits securely on the three-point seating creating a high-quality seal even for metal valve seats comparable to that of rubber.

SS1VG Series/JAH Series



### Materials for High-Temperature/Pressure

For higher temperature and pressure applications, TLV Drain Traps offer choices in body and valve seat material to meet specific needs. The SS1VG has all-stainless steel construction with a metal valve seat available for high-temperature applications. The JAH Series features cast steel bodies for high-pressure applications with tight-sealing provided by a rubber valve seat, or higher temperatures with a metal valve seat.

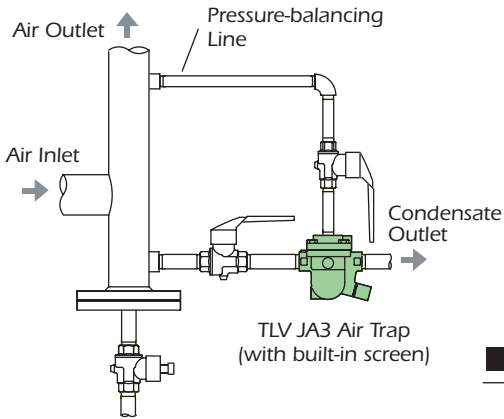
SS1VG Series/JAH Series



# JA Series / G8

## AIR TRAPS

### Sample Application: Air Main Drip



### Features:

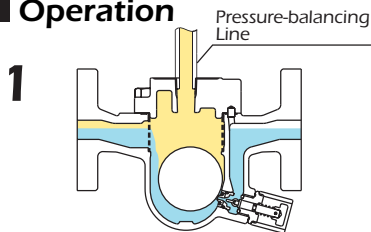
- Free float type for continuous condensate discharge.
- Only one moving part, the free float, simplifies operation and provides reliable service.
- Usable for installation in both horizontal and vertical piping (JA3D).
- External valve seat cleaning mechanism easily eliminates blockage (JA3D/JA Series).
- Large orifice to reduce valve seat blockage (JA7/G8).
- Small models allow installation even with limited space (JA3D/JA3/JA5).

### Applications:

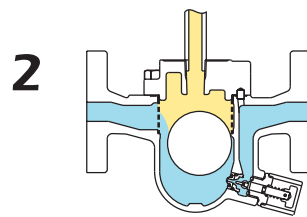
- Discharge of condensate in air lines (end of piping after receiver tanks, after coolers, etc.).
- Small compressed air lines (JA3D/JA3).
- Lubricated air compressor systems where small amounts of oil get into the condensate (JA7/G8).



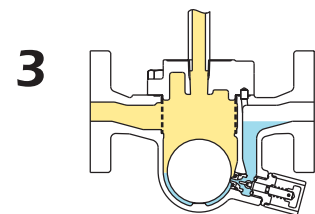
### Operation



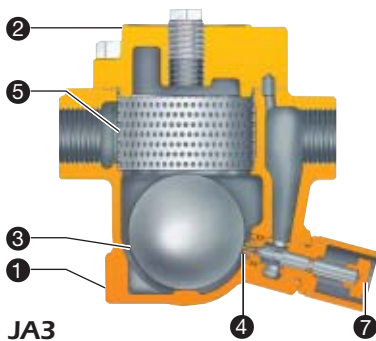
1 As condensate enters the trap, the float rises controlling the size of the valve seat opening. With the valve open, the condensate is continuously discharged.



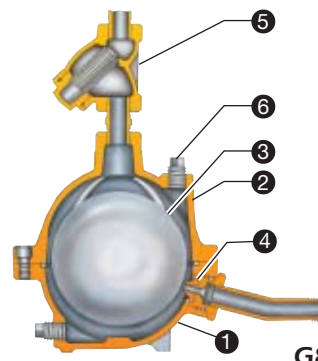
2 If a large condensate load enters the trap at once, the float rises to open the valve seat fully, increasing the condensate discharge capacity.



3 If no condensate enters the trap, the float is fully lowered to close the valve seat. The water level remains above the valve seat, promoting tight sealing.



No.	Part Name
①	Body
②	Cover
③	Float
④	Valve Seat
⑤	Screen
⑥	Balancing Plug
⑦	Plunger



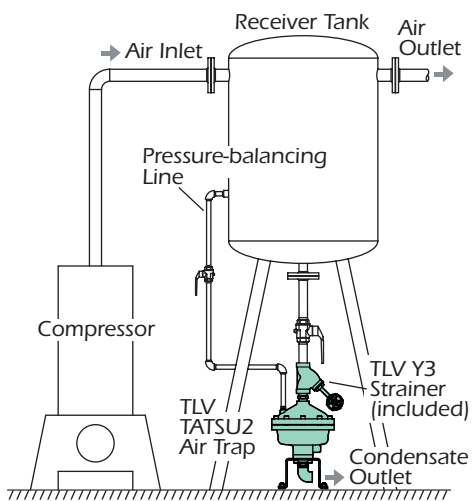
No.	Part Name
①	Body
②	Cover
③	Float
④	Valve Seat
⑤	Strainer
⑥	Balancing Plug

Model	JA3D	JA3	JAF3	JA5	JAF5	JA7	G8
Body Material	Zinc Alloy	Ductile Cast Iron	Cast Iron	Ductile Cast Iron	Ductile Cast Iron	Cast Iron	Cast Iron
Valve Seat Material	Nitrile Rubber	Nitrile Rubber	Nitrile Rubber	Nitrile Rubber	Nitrile Rubber	Nitrile Rubber	Nitrile Rubber
Connection	Screwed	Screwed	Flanged	Screwed	Flanged	Screwed	Screwed
Max. Operating Pressure (MPaG)	1.6	1.6	1.57	1.6	1.6	1.57	1.0
Max. Operating Temperature (°C)	100	100	100	100	100	100	100

# TATSU2

## AIR TRAPS

### Sample Application: Receiver Tank



### Features:

- Large (16 mm diameter) valve seat for easy discharge of oil, rust and scale.
- Large condensate discharge capacity (approx. 7.4 tons/hour).
- Automatic self-cleaning function during operation keeps the valve seat free of any blockage.



TATSU2

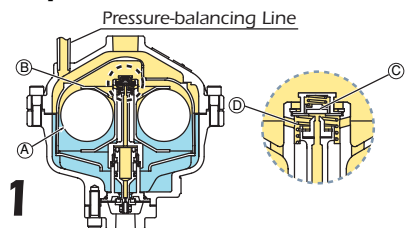
Large Capacity

For High-viscosities

### Applications:

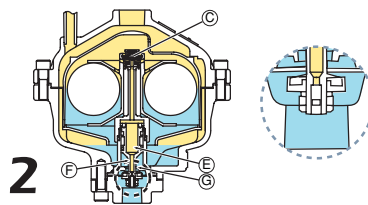
- Air piping containing oil, rust or scale.
- Air-using receiver tanks or other equipment with higher viscosity condensate.

### Operation



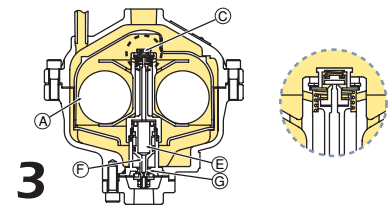
1

Condensate and oil flow into the trap and accumulate. When the level in the trap body rises to a point where the floats (A) rise and lift the float holder (B), the pilot valve (C) opens with the help of the coil spring (D).



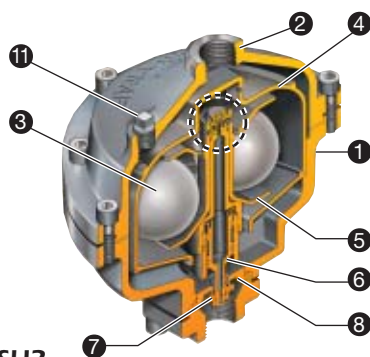
2

When pilot valve (C) opens, secondary pressure air enters the pressure chamber (E) lowering the piston (F) and opening the main valve (G) to discharge condensate.

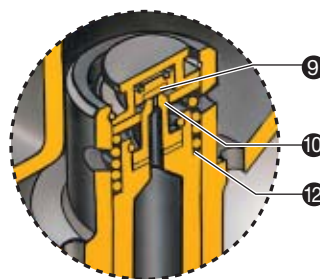


3

While the condensate inside the float cover discharges, the floats (A) fall and cause the pilot valve (C) to close. The pressure in the pressure chamber (E) is released to the outlet and the piston (F) rises to close the main valve (G) after a slight delay to allow the main valve to self-clean during discharge.



TATSU2

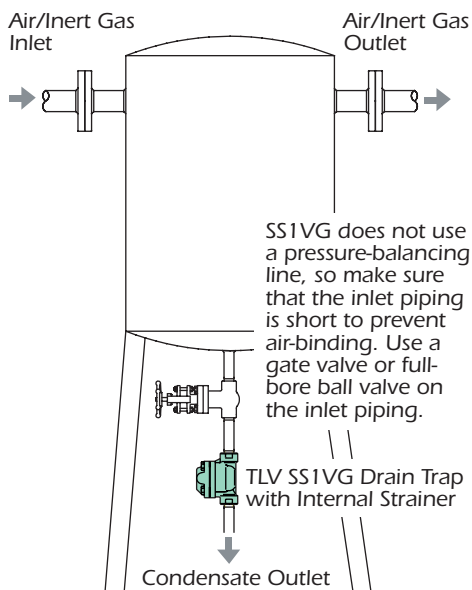


No.	Part Name
①	Body
②	Cover
③	Float
④	Float Cover
⑤	Float Holder
⑥	Piston
⑦	Main Valve
⑧	Main Valve Seat
⑨	Pilot Valve
⑩	Pilot Valve Seat
⑪	Balancing Plug
⑫	Opening Spring

Note: Y Strainer with Blowdown Valve Included

Model	TATSU2
Body Material	Cast Iron
Connection	Screwed
Max. Operating Pressure (MPaG)	1.0
Min. Operating Pressure (MPaG)	0.2
Max. Operating Temperature (°C)	80

### Sample Application: Receiver Tank



### Features:

- High-precision ground free float with three-point seating technology for tight sealing even during low-load conditions.
- Only one moving part, the free float, simplifies operation and provides reliable service.
- All-stainless steel body with long life for vertical installation.
- Small models allow installation even with limited space.

### Applications\*:

- Discharge of condensate from compressed air or inert gas-using equipment (compressors, etc.)
- Discharge of condensate in compressed air or inert gas lines (end of piping after receiver tanks, aftercoolers, etc.).
- Small capacity compressed air or inert gas lines.

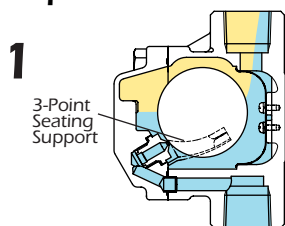
\* Do not use for toxic, flammable or otherwise hazardous gases.



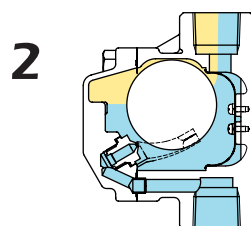
**SS1VG**



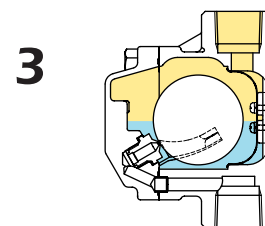
### Operation



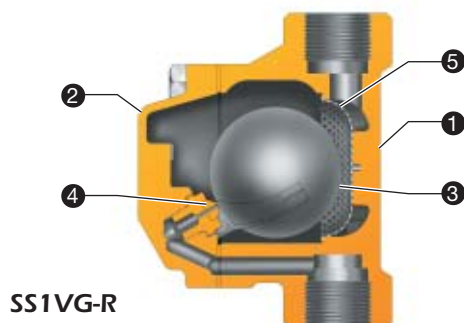
As condensate enters the trap, the float rises controlling the size of the valve seat opening. With the valve open, the condensate is continuously discharged.



If a large condensate load enters the trap at once, the float rises to open the valve seat fully, increasing the condensate discharge capacity.



If no condensate enters the trap, the float is fully lowered to close the valve seat. The water level remains above the valve seat, promoting tight sealing.

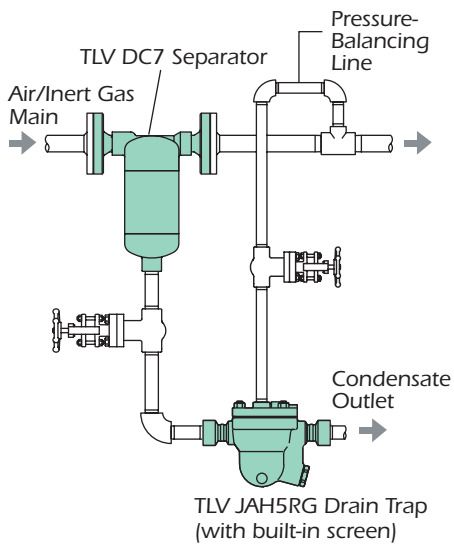


**SS1VG-R**

Part Name	
①	Body
②	Cover
③	Float
④	Orifice (Valve Seat)
⑤	Screen

Model	SS1VG-R	SS1VG-M
Body Material	Stainless Steel	Stainless Steel
Valve Seat Material	Fluorine Rubber	Metal
Connection	Screwed	Screwed
Max. Operating Pressure (MPaG)	1.0	2.1
Max. Operating Temperature (°C)	150	220
Min. Condensate Load for Tight Sealing (kg/h)	0	0.5

### Sample Application: Main Line with Separator



### Features:

- High-precision ground free float with three-point seating technology for tight sealing even during low-load conditions.
- Only one moving part, the free float, simplifies operation and provides reliable service.
- Durable pressure-resistant design.
- Small model allows installation even with limited space (JAH5RG).

### Applications\*:

- Discharge of condensate from compressed air or inert gas-using equipment (compressors, etc.)
- Discharge of condensate in compressed air or inert gas lines (end of piping after receiver tanks, aftercoolers, etc.).
- Large capacity compressed air or inert gas lines.

\* Do not use for toxic, flammable or otherwise hazardous gases.

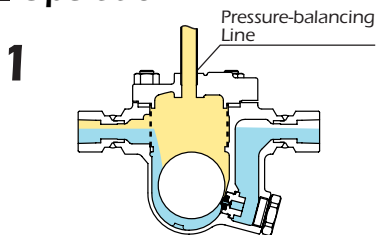


**JAH5RG**

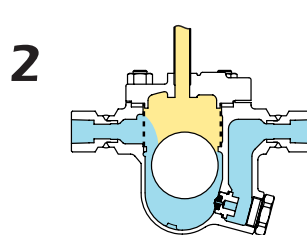
Three-Point Seating

For High-pressures

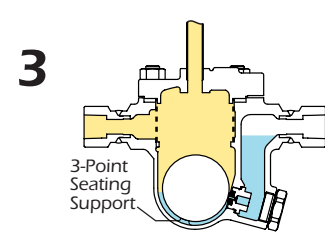
### Operation



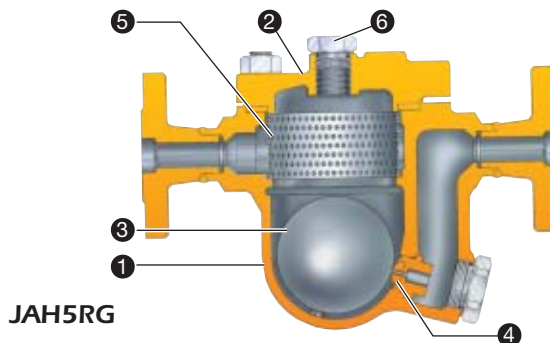
1 As condensate enters the trap, the float rises controlling the size of the valve seat opening. With the valve open, the condensate is continuously discharged.



2 If a large condensate load enters the trap at once, the float rises to open the valve seat fully, increasing the condensate discharge capacity.



3 If no condensate enters the trap, the float is fully lowered to close the valve seat. The water level remains above the valve seat, promoting tight sealing.



**JAH5RG**

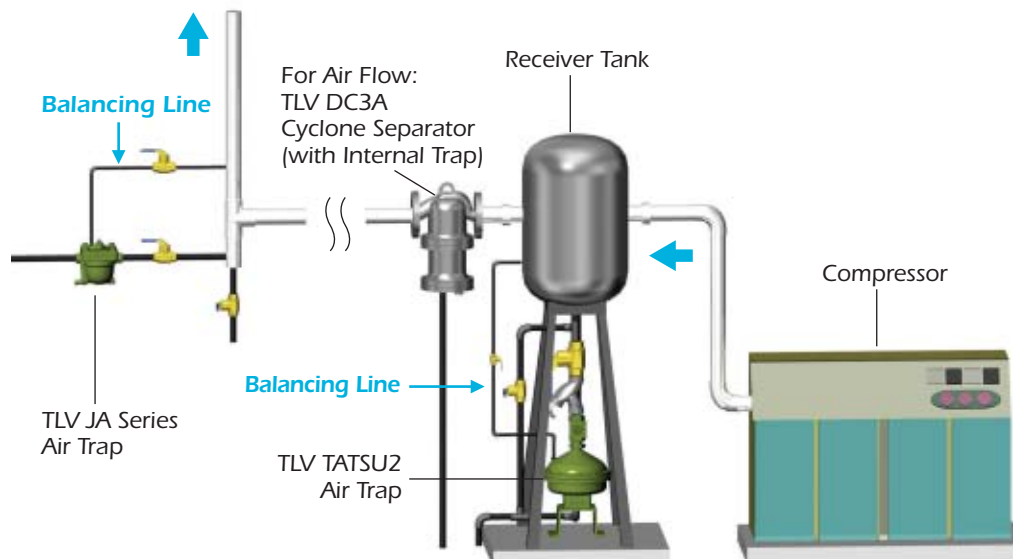
No.	Part Name
①	Body
②	Cover
③	Float
④	Orifice (Valve Seat)
⑤	Screen
⑥	Balancing Plug

Model	JAH5RG-R	JAH5RG-M	JAH7RG-R	JAH7RG-M
Body Material	Cast Steel	Cast Steel	Cast Steel	Cast Steel
Valve Seat Material	Fluorine Rubber	Metal	Fluorine Rubber	Metal
Connection*	S, W, F	S, W, F	W, F	W, F
Max. Operating Pressure (MPaG)	2.2	4.6	4.0	4.6
Max. Operating Temperature (°C)	150	425	150	425
Min. Condensate Load for Tight Sealing (kg/h)	0	1	0	5

\* S = Screwed, W = Socket Weld, F = Flanged

# Pressure-balancing Line

Without a pressure-balancing line connected between the trap cover and a dry portion of the piping/receiver tank, air or gas binding can occur. Air or gas binding occurs when vapor in the trap cavity cannot be displaced by the incoming condensate, which prevents condensate from being discharged.



Note: Since the SS1VG is installed vertically, a balancing line is not generally required. However, to prevent air binding, use as short as possible straight and vertical inlet piping with a minimum nominal diameter of 15 mm.

## Selection Guide

Model	Piping Direction	Valve Seat Material	Operating Press. Range (MPaG)	Max. Operating Temperature (°C)	Max. Discharge Capacity (kg/h)	Min. Specific Gravity*	Body Material	Applicable Fluids	
<b>Air Traps</b>	<b>JA3D</b>	Horiz./Vert.	Nitrile Rubber	0.01 - 1.6	100	230	1.0	Zinc Alloy	Air
	<b>JA3</b>	Horizontal	Nitrile Rubber	0.01 - 1.6	100	275	1.0	Ductile Cast Iron	
	<b>JAF3</b>	Horizontal	Nitrile Rubber	0.01 - 1.57	100	275	1.0	Cast Iron	
	<b>JA5</b>	Horizontal	Nitrile Rubber	0.01 - 1.6	100	455	1.0	Ductile Cast Iron	
	<b>JAF5</b>	Horizontal	Nitrile Rubber	0.01 - 1.6	100	455	1.0	Ductile Cast Iron	
	<b>JA7</b>	Horizontal	Nitrile Rubber	0.01 - 1.57	100	1620	1.0	Cast Iron	
	<b>G8</b>	Horizontal	Nitrile Rubber	0.01 - 1.0	100	1340	1.0	Cast Iron	
	<b>TATSU2</b>	Vertical	Nitrile Rubber	0.2 - 1.0	80	7400	1.0	Cast Iron	
<b>Drain Traps</b>	<b>SS1VG-R</b>	Vertical	Fluorine Rubber	0.01 - 1.0	150	130	0.50	Cast Stainless Steel	Air and Inert Gases***
	<b>SS1VG-M</b>	Vertical	Metal**	0.01 - 2.1	220	385	0.50	Cast Stainless Steel	
	<b>JAH5RG-R</b>	Horizontal	Fluorine Rubber	0.01 - 2.2	150	270	0.50	Cast Steel	
	<b>JAH5RG-M</b>	Horizontal	Metal**	0.01 - 4.6	425	560	0.50	Cast Steel	
	<b>JAH7RG-R</b>	Horizontal	Fluorine Rubber	0.01 - 4.0	150	1380	0.50	Cast Steel	
	<b>JAH7RG-M</b>	Horizontal	Metal**	0.01 - 4.6	425	2000	0.50	Cast Steel	

\* Maximum operating pressure, maximum differential pressure and condensate discharge capacity are affected by the specific gravity of the condensate

\*\* Metal valve seats require a minimum condensate load for tight sealing. See individual product pages for details.

\*\*\* Do not use with toxic, flammable or otherwise hazardous gases.

Full product details (sizes, pressures, capacities and materials) are included in the individual specification data sheets (SDS).



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.

## TLV® INTERNATIONAL, INC.

881 Nagasuna, Noguchi, Kakogawa, Hyogo 675-8511, JAPAN

Phone: [81]-(0)79-427-1818

Fax: [81]-(0)79-425-1167

E-mail: tlv-japan@tlv.co.jp

Manufacturer

ISO 9001/ISO 14001

**TLV® CO., LTD.**

Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001

