



# PNEUMATIC BYPASS BLOWDOWN STEAM TRAP

## MODEL J3S-X-PB

FREE FLOAT STEAM TRAP WITH PNEUMATICALLY ACTUATED BYPASS BLOWDOWN FUNCTION

### Features

A reliable and durable stainless steel steam trap that includes a built-in bypass valve with a pneumatic actuator to facilitate discharge of the large quantities of condensate produced at start-up by process equipment, heaters, air conditioners, tank heating, etc.

1. A tight-sealing pneumatically operated ball valve incorporated into the cover enables remote execution of bypass blowdown to reduce start-up times.
2. Self-modulating free float provides continuous, smooth, low velocity condensate discharge as process loads vary.
3. Precision-ground float, constant water seal and three-point seating design ensure a steam tight seal, even under no-load conditions.
4. Thermostatic capsule (X-element) with "fail open" feature vents air automatically until close-to-steam temperature.

### Specifications

Model	J3S-X-PB	
Connection	Screwed	Flanged
Size (mm)	15, 20, 25	15, 20, 25
Orifice No.	2, 5, 10	
Maximum Operating Pressure (MPaG) PMO	0.2, 0.5, 1.0	
Maximum Differential Pressure (MPa) ΔPMX	0.2, 0.5, 1.0	
Maximum Operating Temperature (°C) TMO	185	
Subcooling of X-element Fill (°C)	Up to 6	
Type of X-element	B	

1 MPa = 10.197 kg/cm<sup>2</sup>

PRESSURE SHELL DESIGN CONDITIONS (NOT OPERATING CONDITIONS): Maximum Allowable Pressure (MPaG) PMA: 1.0  
Maximum Allowable Temperature (°C) TMA: 185

#### Actuator

Actuator Type	Vane rotary actuator
Air Supply Pressure (MPaG)	0.3 to 1.0
Air Supply Port Size	Rc(PT)1/8
Control System	ON-OFF (fully open/fully closed) reciprocating
Open/Close Time (90° rotation)	0.09 - 0.8 seconds
Actuator Capacity (cm <sup>3</sup> )	42
Ambient Temp. Range	60 °C or lower
Water Resistance	Rainproof
Manual Override	Possible in absence of motive air pressure
Air Consumption for 1 cycle (NL)	0.3 MPaG: 0.33, 0.7 MPaG: 0.65, 1.0 MPaG: 0.90

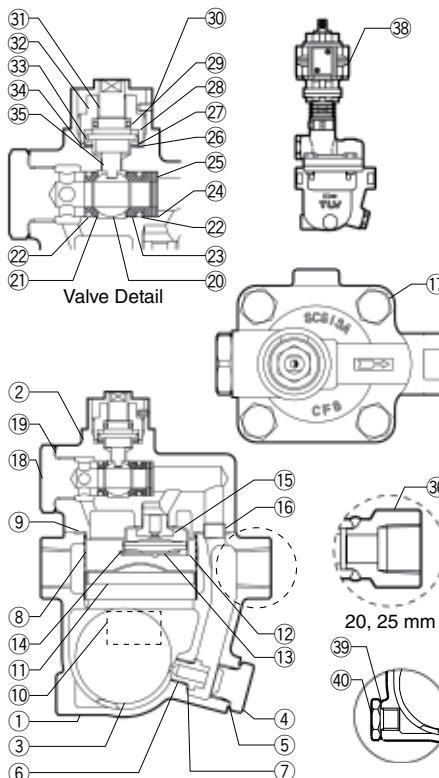
No.	Description	Material	JIS	ASTM/AISI*
①	Body	Cast Stainless Steel	—	A351 Gr.CF8
② <sup>C</sup>	Cover	Cast Stainless Steel	—	A351 Gr.CF8
③ <sup>F</sup>	Float	Stainless Steel	SUS316L	AISI316L
④	Orifice Plug	Cast Stainless Steel	—	A351 Gr.CF8
⑤ <sup>MR</sup>	Orifice Plug Gasket	Stainless Steel	SUS316L	AISI316L
⑥ <sup>A</sup>	Orifice	—	—	—
⑦ <sup>MR</sup>	Orifice Gasket	Stainless Steel	SUS316L	AISI316L
⑧ <sup>A</sup>	Screen inside/outside	Stainless Steel	SUS430/304	AISI430/304
⑨ <sup>MRC</sup>	Cover Gasket	Fluorine Resin	PTFE	PTFE
⑩	Nameplate	Stainless Steel	SUS304	AISI304
⑪ <sup>A</sup>	Float Cover	Stainless Steel	SUS304	AISI304
⑫ <sup>RC</sup>	X-element Guide	Stainless Steel	SUS304	AISI304
⑬ <sup>RC</sup>	X-element	Stainless Steel	—	—
⑭ <sup>RC</sup>	Spring Clip	Stainless Steel	SUS304	AISI304
⑮ <sup>RC</sup>	Air Vent Valve Seat	Stainless Steel	SUS420F	AISI420F
⑯	Connector	Stainless Steel	SUS304	AISI304
⑰	Cover Bolt	Stainless Steel	SUS304	AISI304
⑱	Valve Holder	Stainless Steel	SUS304	AISI304
⑲ <sup>MRC</sup>	Valve Holder Gasket	Fluorine Resin	PTFE	PTFE
⑳ <sup>C</sup>	Ball	Stainless Steel	SUS304	AISI304
㉑ <sup>C</sup>	Inlet Valve Seat	Fluorine Resin w/ Graphite	PTFE	PTFE
㉒ <sup>C</sup>	O-Ring (Inlet/Outlet Valve Seat)	Fluorine Rubber	FPM	D2000HK
㉓ <sup>C</sup>	Outlet Valve Seat	Fluorine Resin w/ Graphite	PTFE	PTFE
㉔ <sup>C</sup>	Washer	Stainless Steel	SUS304	AISI304
㉕ <sup>C</sup>	Disc Spring	Stainless Steel	SUS301	AISI301
㉖ <sup>C</sup>	Disc Spring	Stainless Steel	SUS301	AISI301
㉗ <sup>C</sup>	Washer	Stainless Steel	SUS304	AISI304
㉘ <sup>C</sup>	Gland Packing	Fluorine Resin w/ Carbon	PTFE	PTFE
㉙ <sup>C</sup>	Seal	Fluorine Rubber	FPM/FEP	FPM/FEP
㉚ <sup>C</sup>	Holder Screw (Gland Holder)	Stainless Steel	SUS304	AISI304
㉛ <sup>C</sup>	Guide Bushing	Fluorine Resin w/ Carbon	PTFE	PTFE
㉜ <sup>C</sup>	Gland Holder	Stainless Steel	SUS303	AISI303
㉝ <sup>C</sup>	Gland Seat	Fluorine Resin w/ Carbon	PTFE	PTFE
㉞ <sup>MRC</sup>	Gland Holder Gasket	Fluorine Resin w/ Graphite	PTFE	PTFE
㉟ <sup>C</sup>	Spindle	Stainless Steel	SUS303	AISI303
㊱	Socket	Cast Stainless Steel	—	A351 Gr.CF8
㊲	Flange**	Cast Stainless Steel	—	A351 Gr.CF8
㊳	Actuator Unit	—	—	—
㊴	Drain Plug Gasket***	Stainless Steel	SUS303	AISI303
㊵	Drain Plug***	Stainless Steel	SUS316L	AISI316L

\* Equivalent \*\* Shown on reverse \*\*\* Option



Patent Pending

**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.

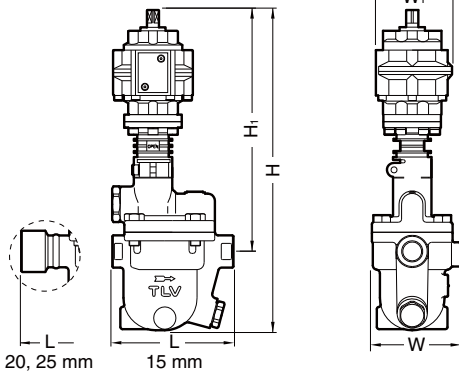


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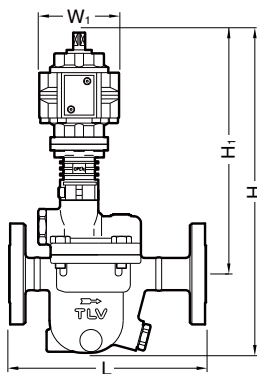
Replacement kits available:  
(M) maintenance parts,  
(R) repair parts, (F) float,  
(C) cover unit

**Dimensions**

● **J3S-X-PB Screwed**



● **J3S-X-PB Flanged**



**J3S-X-PB Screwed\*** (mm)

Size	L	H	H <sub>1</sub>	W	φW <sub>1</sub>	Weight (kg)
15	120	318	240	89.5	79	4.0
20	190					4.5
25	200					4.7

\* Rc(PT), other standards available

**J3S-X-PB Flanged** (mm)

Size	L		H	H <sub>1</sub>	φW <sub>1</sub>	Weight* (kg)
	ASME Class					
	150RF	300RF				
15	175	175	318	240	79	4.9
20	195	195				6.1
25	215	219				6.8

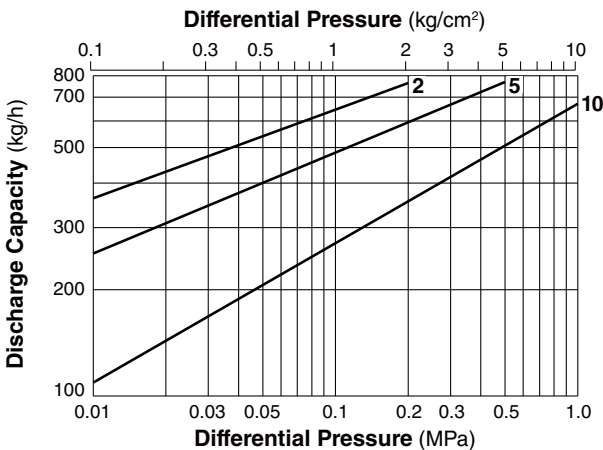
Other standards available, but length and weight may vary  
\* Weight is for Class 300 RF

Note: The built-in bypass valve can not be used as a stop valve for the inlet and outlet of the product. Accordingly, it is recommended that a separate stop valve be installed at the inlet and outlet for maintenance purposes.

**Bypass Valve (Ball Valve) Cv Value**

Size (mm)	15	20	25
Ball Valve Bore Size	φ 10 mm		
Cv (US)	1.4		
Cv (UK)	1.2		
Kvs (DIN)	1.2		

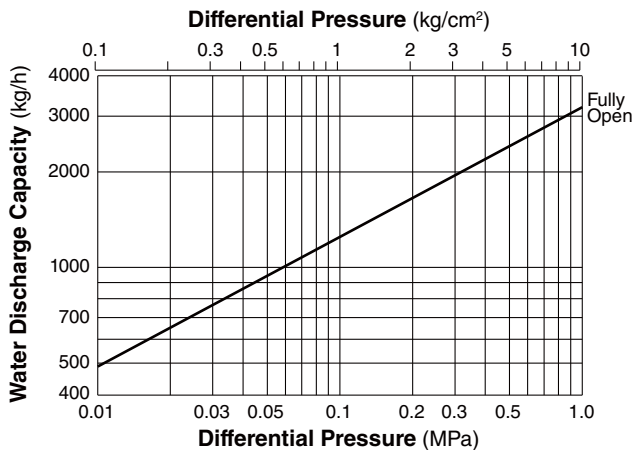
**Discharge Capacity (Steam Trap)**



- Line numbers within the graph are orifice numbers.
- Differential pressure is the difference between the inlet and outlet pressure of the trap.
- Capacities are based on continuous discharge of condensate 6°C below saturated steam temperature.
- Recommended safety factor: at least 1.5.

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

**Bypass Capacity (Ball Valve)**



- Capacities are based on continuous discharge of water at room temperature (Aperture: fully open) and are applicable for temperatures below 100°C.
- Differential pressure is the difference between the inlet and outlet pressure of the trap.
- Capacities are the values for the bypass valve (ball valve). X-element values are not included.

Manufacturer

ISO 9001/ISO 14001

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

is approved by LRQA Ltd. to ISO 9001/14001

