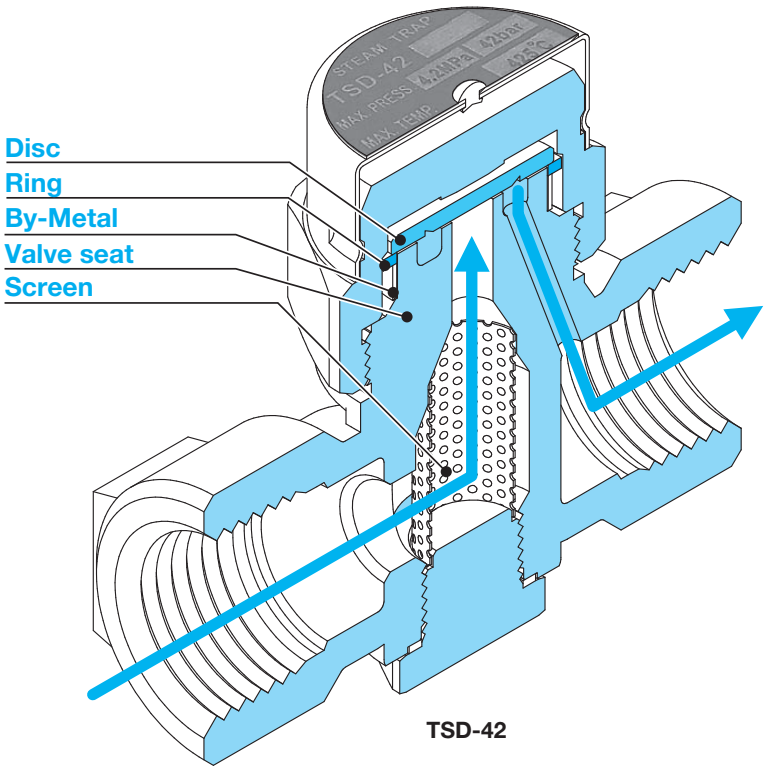
Disc Type Steam Trap TSD-42

Step 0

TSD-42 is disc type steam trap for high pressure (maximum pressure: 4.2 MPa).
It is compact and lightweight, and can be installed horizontally or vertically.



TSD-42

Stable operation by air insulation

· It prevents no-load operation or steam leakage caused by influence of outside temperature.

Excellent durability

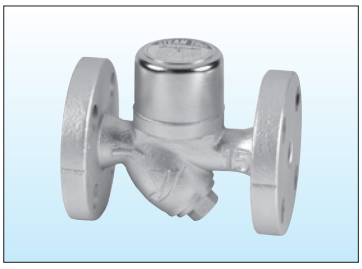
· Disc and valve seat has superior durability thanks to stainless steel material processed by special heat treatment.

Shortened warming up time

· By-Metal helps shortening warming up of steam equipment by solving air-binding and efficiently discharging cold water and air at startup.

TSD-42

TD-10NA



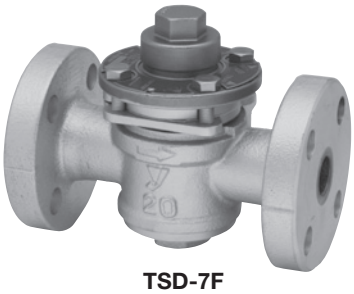
TD-30NA

TSD-7,7F

ULTRA STEAM TRAP TRAP STAR™

Bucket	Float	Disc	Bellows
Bimetal	Wafer	By-pass	Stainless steel
Connector	Right to Left	Down to Up	Up to Down

TSD-7



TSD-7F

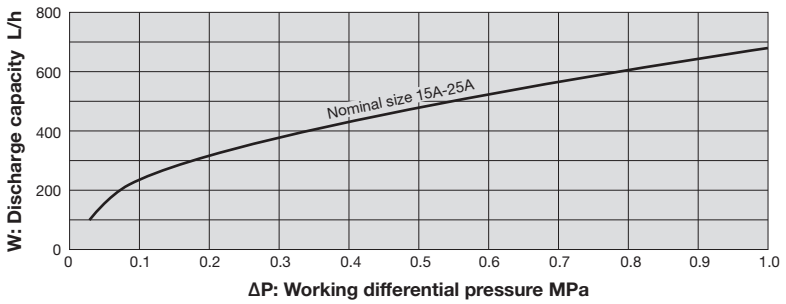
■Features

1. Four functions (STOP / BY-PASS / TRAP / TEST) can be switched easily with a spanner or monkey wrench.
2. The integrated bypass function helps reduce piping and construction work costs significantly.
3. Bimetal solves air-binding problem and ensures a smooth discharge of cold condensate or air at the start of operation, enabling steam equipment to efficiently start to run.
4. Can be checked without being affected by back pressure.
5. The stainless steel valve disc and valve seat are subjected to special heat treatment and very durable.
6. Equipped with a built-in strainer.
7. Can be installed vertically or horizontally as desired.
8. Rain cover is available as options for outdoor use.

■Specifications

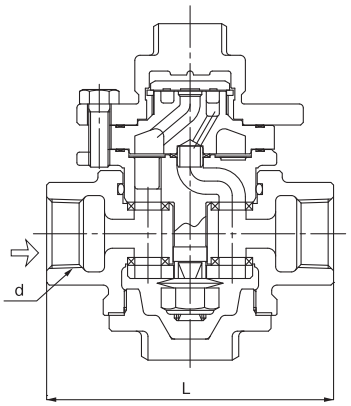
Model		TSD-7	TSD-7F
Application		Steam condensate	
Working pressure		0.035-1.0 MPa	
Allowable back pressure		50% of inlet pressure	
Maximum temperature		183℃	
Installation posture		At any angle between vertical and horizotal (Do not put the cover under the horizontal level.)	
Material	Body	Ductile cast iron	
	Disc, seat	Stainless steel (special heat treatment)	
Connection		JIS Rc screwed	JIS 10K FF flanged

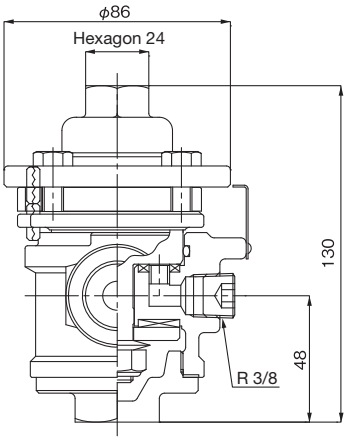
■Maximum Continuous Discharge Capacity Chart



· The discharge capacity shown on the above chart is the maximum value.
In designing a system, select a steam trap with a sufficient safety factor (four to five times the regular level). That is, for example, if a discharge capacity of 100 kg/h is required, select a steam trap capable of dischargeing 400 to 500 kg/h.

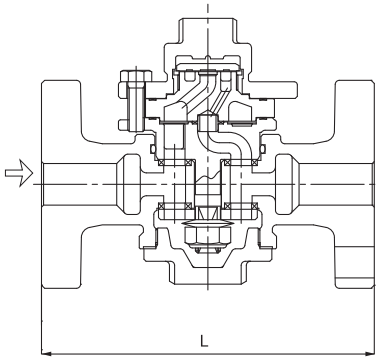
■Dimensions (mm) and Weights (kg)

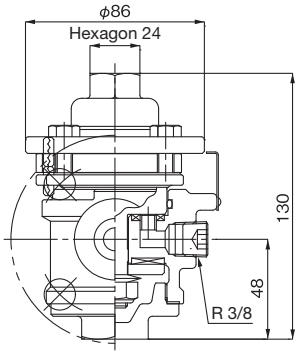




· TSD-7

Nominal size	d	H	Weight
15A	Rc 1/2	107	2.5
20A	Rc 3/4	109	2.6
25A	Rc 1	115	2.7

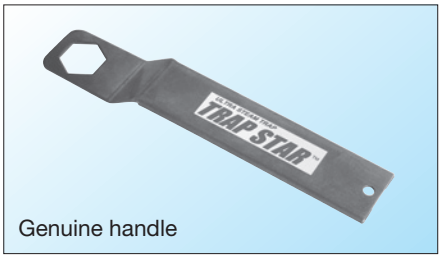




· TSD-7F

Nominal size	L	Weight
15A	156	4.1
20A	160	4.6
25A	160	5.7

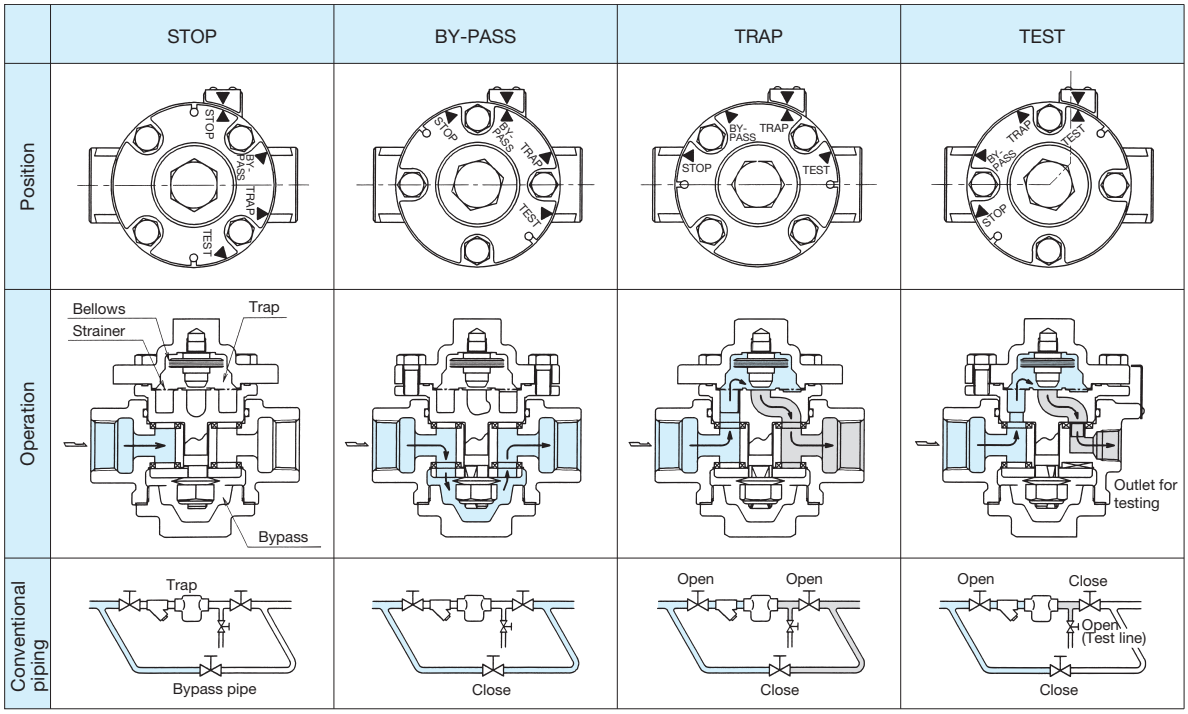
■Option



It can operate safely and easily switching.

It can effect on prevention of working blank shot from wet rain.

■Switching Mechanism and Operation



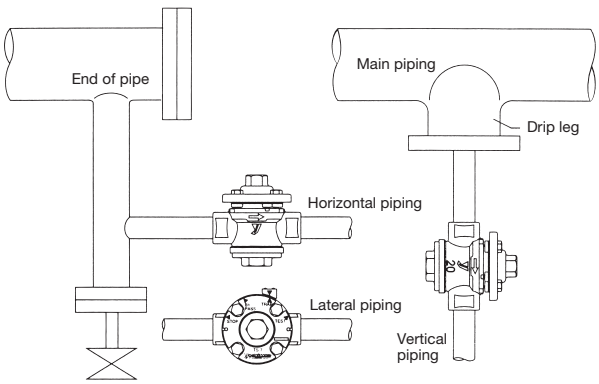
· All steam traps are set at the "STOP" position when delivered.

1. STOP: Fluid does not flow into the trap and out of the bypass because the inlet, the outlet, and the bypass are closed, and the strainer can be cleaned and the bellows can be inspected.
2. BY-PASS: Fluid flows through the bypass directly to the outlet. Select this position when blowing the piping during plumbing or discharging a large quantity of condensate before starting operation. Since fluid does not flow to the trap, the strainer can be cleaned and the bellows can be inspected.
3. TRAP: In this position, the steam trap performs regular trap operation, and condensate flows from the inlet to the outlet through the trap. It does not flow out of the bypass.
4. TEST: In this position, condensate is discharged from the inlet to the outlet for testing through the trap, and the operation of the trap can be checked. This check can be carried out with the outlet closed and without being affected by back pressure. Fluid does not flow out of the bypass.

■Precaution for Installation

1. Carefully blow the piping before connecting the steam trap.
2. Connect the steam trap to the piping according to its arrow indicating the direction of flow.
3. Slope the piping and place the product at as a low position as possible in order to make condensate flow into the product by its own weight.
4. Do not insulate the piping inlet and the steam trap.
5. To install the product in a main steam pipe, provide a drip leg at the inlet side of the product.
6. Secure enough space for switching operation of the cock and maintenance (such as cleaning the strainer and inspection of the bellows).
7. If discharge capacity is not enough, install more than one trap. In this case, connect the traps to the piping so that their inlets are in the same level.
8. Do not install the steam trap in a place where ambient temperature is higher than the condensate to be discharged.

■Piping Example



TD-10NA,30NA

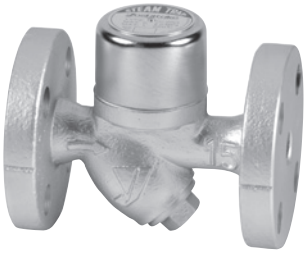
ULTRA STEAM TRAP TRAP STAR™ RoHS

Bucket	Float	**Disc**	Bellows
Bimetal	Wafer	By-pass	Stainless steel
Connector	**Right to Left**	**Down to Up**	**Up to Down**

■Features

1. Bimetal solves air-binding problem and ensures a smooth discharge of cold condensate or air at the start of operation, enabling steam equipment to efficiently start to run.
2. The stainless steel valve disc and valve seat, which are subjected to special heat treatment, offers excellent durability.
3. The valve disc, valve seat and bimetal can be replaced on site without disconnecting the steam trap from the piping.
4. Easy maintenance and inspection due to simple structure: the valve disc is only movable part.
5. Compact, lightweight and inexpensive. Applicable in wide working pressure range and adjustment-free.
6. Installable in any direction and easy to plumb.
7. Free of improper operation and steam leakage due to air insulation type.
8. Built-in strainer eliminates requirement for strainer before the product.
9. Large discharge capacity.

TD-10NA



TD-30NA

■Specifications

Model		TD-10NA	TD-30NA	
Nominal size		15-25A		
Application		Steam condensate		
Working pressure		0.035-2.0 MPa	0.035-1.0 MPa	0.035-2.0 MPa
Allowable back pressure		50% or less of inlet pressure		
Max. temperature		220˚C		
Connection		JIS Rc screwed	JIS 10K FF flanged	JIS 20K FF flanged
Material	Body	Ductile cast iron		
	Disc, seat	Stainless steel (special heat treatment)		

■Dimensions (mm) and Weights (kg)

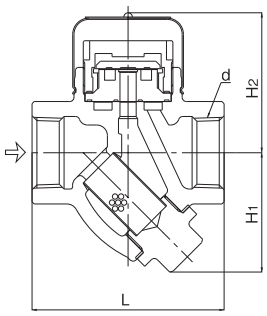
· TD-10NA

Nominal size	d	L	H_1	H_2	Weight
15A	Rc 1/2	90	49	55.5	0.9
20A	Rc 3/4	90	53	60.5	1.2
25A	Rc 1	90	56	62.5	1.4

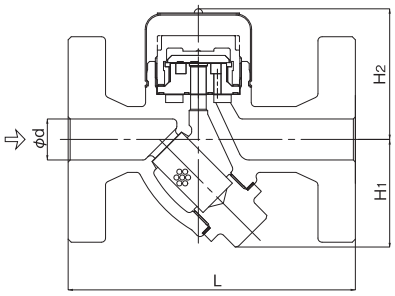
· TD-30NA

Nominal size	L	H_1	H_2	Weight
15A	125	51	59	2.3
20A	140	54	63	3.4
25A	150	65	63	4.1

· The dimensions of the product with JIS 10K FF flanged and the product with JIS 20K FF flanged are identical.
· The thickness of JIS 10K FF flanges conforms to that of JIS 20K FF flanges.

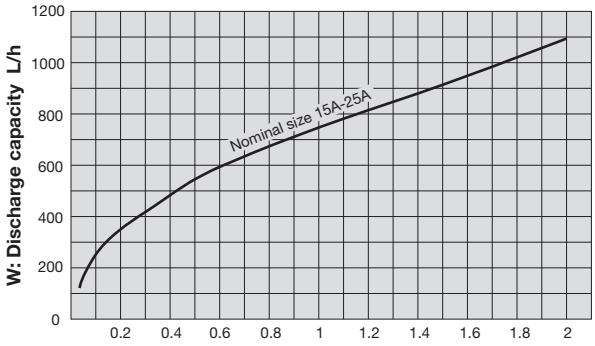


TD-10NA



TD-30NA

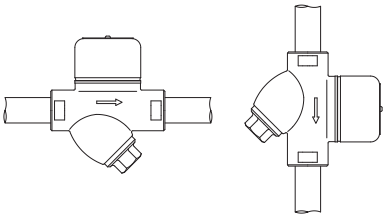
■Maximum Continuous Discharge Capacity Chart



* The discharge capacity shown on the above chart is the maximum value. In designing a system, select a steam trap with a sufficient safety factor (four to five times the regular level). That is, for example, if a discharge capacity of 100 kg/h is required, select a steam trap capable of discharging 400 to 500 kg/h.

■Installation Posture

* The steam trap can be installed horizontally, sidlingly, or vertically.



TSD-42

ULTRA STEAM TRAP TRAP STAR™ RoHS

Bucket	Float	Disc	Bellows
Bimetal	Wafer	By-pass	Stainless steel
Connector	Right to Left	Down to Up	Up to Down

■Features

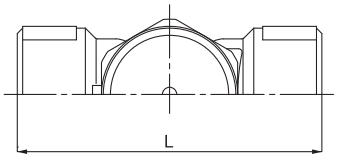
1. Stainless steel used for main parts, making a contribution to improve corrosion resistance.
2. Since it can operate under 425℃ temperature and 4.2 MPa pressure conditions, it can be applied in various types of industries, such as heavy, light, and general industries.
3. Bimetal solves air-binding problem and ensures a smooth discharge of cold condensate or air at the start of operation, enabling steam equipment to efficiently start to run.
4. ''Insulation cover'' avoids frequent on-off operation.
5. Plumbing is easy to perform because it can be installed vertically or horizontally as desired.
6. Built-in strainer eliminates requirement for strainer before the trap.

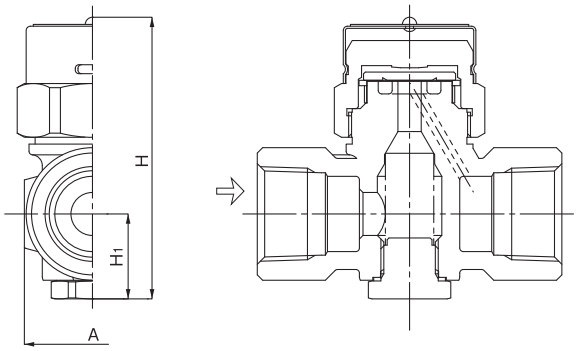
■Specifications

Model		TSD-42
Application		Steam condensate
Working pressure		0.035-4.2 MPa
Allowable back pressure		50% or less of inlet pressure
Maximum temperature		425℃
Material	Body	Stainless steel (SCS2A)
	Disc, seat	Stainless steel (special heat treatment)
Connection		JIS Rc, NPT, BSPT screwed

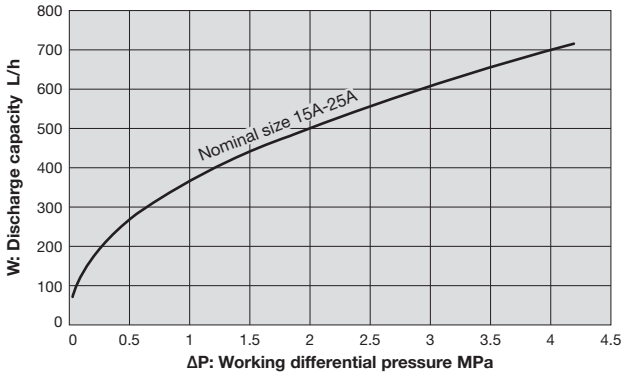
■Dimensions (mm) and Weights (kg)

Nominal size	L	H	H_1	A	Weight
10A	78	76	23	32	0.65
15A	78	76	23	32	0.6
20A	85	79	24	38	0.7
25A	95	86	27.5	45	0.9





■Maximum Continuous Discharge Capacity



· To select the product size, secure the safety factor of 4 to 5. For example, if you need a steam trap with a capacity of 100 kg/h, the trap with a capacity of 400 to 500 kg/h should be selected for maximum efficiency.
· The back pressure (outlet pressure) should be considered in selecting discharge capacity. This is because discharge capacity of a trap depends on the operating differential pressure (the difference between the inlet and the outlet pressures). For example, to find the discharge capacity obtained by the inlet pressure is 1.0 MPa and the outlet pressure is 0.2 MPa, trace up from the point of the operating differential pressure of 0.8 MPa in the above chart.

■Installation Posture