Assist Trap Radiator Trap Radiator Valve

Steam Trap/Assist Trap Selection

Installing	Direction					Ту	ре		
Horizontal	Vertical & Horizontal	Max. Pressure (MPa)	Max. Temperature (°C)	Model	Bucket	Float	Thermostatic	Disc	Page
		0.3	150	TF-1					231
		0.5	160	TFA-2000					232
		0.7	170	TF-2					231
		1.0	220	TB-5					233
				TSD-7					228
	•	1.0	100	TSD-7F				•	228
		1.0	183	TS-7					229
	•			TS-8					229
		2.0	220	TD-10NA					227
		2.0	220	TD-30NA					227
		4.2	425	TSD-42					226

Radiator Trap/Valve Selection

Application							Ту	ре				
Steam	Condensate	Hot Water	Max. Pressure (MPa)	Max. Temperature (°C)	Model	Bellows	Wax	Manual	Angle	Straight	Horizontal Angle	Page
			0.05	110	140 Carias							238
			1.0	120	TT8 Series							238
			0.2	150	FV-2A							237
			0.5	150	FV-2S							237
					TS-1A							234
			0.1	120	TS-1S							234
			0.0	405	TS-3A							235
			0.2	135	TS-3S							235
			0.25	150	TS-4A							236
	•		0.55	150	TS-4S							236
					HV-3A							238
		•	0.6	120	HV-3S							238
			1.0	120	109 Series							238



Selection of Steam Trap

If steam gives heat to an object and loses quantity of heat, it will condense and will return to warm water. This condensation water is called condensate. In steam transportation piping and the apparatus which uses steam, this condensate becomes obstructive existence and causes water hammer or decreases in thermal efficiency. In such steam systems, steam trap only discharges the unncessary condensate.

Applications	Steam transport pipe, Heat exchanger, Air-heater, Process heater	Heat exchanger, Air-heater, Process heater	Steam transport pipe, Radiator for heating
	Thermodynamics type	Mechanical type	Thermostatic type
Types	Actuates by the thermodynamic characteristics of steam and condensate.	Actuates by the specific gravity difference between steam and condensate.	Actuates by the temperature difference between steam and condensate.
Operations	Intermittent	Continuously	Intermittent
Air discharge	Excellent	Excellent	Excellent
Allowable back pressure	_	Excellent	Excellent
Tolerence of water hammer	Excellent	_	_
Installation	Free	Horizontal	Free
Weight and dimension	Small	Large	Small
Heat loss	Small	Large	Large
Action at failure	Valve open	Close valve	Close valve
Safety factor	4 or more	3 or more	3 or more











Note for Selecting Steam Trap

There are various kinds of steam trap classified by operation, discharge capacity, etc. In order to obtain the full benefit from the traps, selecting proper trap size and pressure is essential. The followings are considerations to select the proper traps.

1: Service point

Each service point has each requirements for steam traps. Please consider the following points to select the proper traps.

Steam piping / Header

• Not affected by outside temperature • Air discharge at the starting system • Small steam loss

At the end of piping

• Discharges mass volume at the starting • Continuous blow • Air discharge at the starting system **Equipment / process**

- Operates under fluctuation of condensate volume
 High back pressure operation
- Air discharge at the starting system No accumulation of condensate at the time of failure

2: Discharge capacity



3: Safety factor

The graph for discharge capacity is showing the capacity of discharging continuously. The trap requires the allowance to cover the amount of condensate fluctuation. Such allowance is the safety factor of steam trap.

For instance, safety factor 3 means that the steam trap discharging 900 kg/h is required to discharge condensation amount 300 kg/h.

Туре	Thermodynamics			Mechanical	Thermostatics
Model	TSD-42	TD-10NA	TSD-7•7F	TF-2	TS-7
Safety factor	4 or more			3 or more	3 or more

4: Differential pressure

Because of operation, allowable back pressure is less than 50% of inlet pressure for thermodynamics type. On thermostatic and float type, back pressure has no adverse effect on operation, but as back pressure approaches to inlet pressure, discharge becomes less since differential pressure will be low.



Features of Thermodynamics Type <TD-10NA>

1: Bi-metal ring

If the inlet pressure rise up too fast in the starting time, due to high-speed air, a trap will be closed by the same principle as steam, and an "air-binding" will occur. This is cancelled with the bi-metal ring which starts to expand only by the temperature. Such function enables prompt discharge of cold water and air off at starting, and also results in efficient start-up of steam apparatus.



2: Insulation cover

When installed under cold ambient conditions, steam in chamber condensates faster than usual. This could make life of disc and valve seat shortened, due to too much wear by frequent on-off. To avoid this, the insulation cover prolongs condensation time of steam in chamber, and the frequent on-off operation of a disc is suppressed, and long durability is maintained. In addition, stable operation is obtained despite a drop in outside temperature.

3: Advantages

- · Small, lightweight
- Installable in any direction
- · Applicable on super heated steam



Features of Thermostatic Type <TS-7>

1: All-in-one

One valve can operate in four functions ——— "STOP," "BY-PASS," "TRAP," and "TEST." Installing TS-trap can save both space and installation cost!



2: Easy maintenance and installation

At "BY-PASS" position, the built-in strainer can be easily cleaned up and the bellows can be inspected without disturbance of flowing fluids. And, valve can be installed in any direction requiring only limited space.



3: Advantages

- · Large discharge capacity
- Noiseless operation
- · Small, lightweight





Guidelines for Installing Steam Trap

Be sure to install a steam trap at a place where maintenance and inspections can be implemented.

Fig. 1 Standard Piping Example of Steam Trap



Fig. 2 Trapping of Main Steam Piping



Steam Trap

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TSD-42

Features

- 1. Stainless steel used for main parts, making a contribution to improved corrosion resistance.
- 2. Since it can operate under 425°C 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.



Steam

Specifications

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

Dimensions (mm) and Weights (kg)

Nominal size	d	L	Н	Weight
15A	Rc 1/2	78	76	0.6
20A	Rc 3/4	85	79	0.7
25A	Rc 1	95	89	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.



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TD-10NA·30NA

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.

Specifications

Model		TD-10NA	TD-30NA			
Nor	ninal size		15-25A			
Ap	plication		Steam condensate			
Working pressure		0.035-2.0 MPa	0.035-1.0 MPa	0.035-2.0 MPa		
Allowable	e back pressure	50% or less of inlet pressure				
Max. 1	temperature	220°C				
Connection		JIS Rc screwed	JIS 10K FF flanged	JIS 20K FF flanged		
Matorial	Body		Ductile cast iron			
material	Disc, seat	Stainles	Stainless steel (special heat treatment)			

Dimensions (mm) and Weights (kg)

TD-10NA

Nominal size	d	L	H1	H2	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	H1	H2	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.

Maximum Continuous Discharge Capacity Chart



 The discharge capacity shown in the chart on the left 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.



TD-10NA









Installation Posture

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





TSD-7·7F

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.



TSD-7

Specifications

	Model	TSD-7	TSD-7F	
A	Application	Steam condensate		
Wor	king pressure	0.035-1	.0 MPa	
Allowable back pressure		50% of inle	et pressure	
Maximum temperature		183°C		
Incto	llation posturo	At any angle between vertical and horizotal		
IIISta	liation posture	(Do not put the cover under the horizontal level.)		
Material	Body	Ductile cast iron		
Disc, seat		Stainless steel (special heat treatment)		
C	Connection	JIS Rc screwed	JIS 10K FF flanged	



TSD-7F

Dimensions (mm) and Weights (kg)

TSD-7

Nominal size	d	Н	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





Maximum Continuous Discharge Capacity Chart



• The discharge capacity shown in the chart on the left 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.



Bellows

p

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TS-7·8

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. Applicable in wide working pressure range due to welded bellows.
- Works at a 12°C lower temperature than the saturating temperature and discharges no live steam.
- 5. Trap check can be performed without being affected by back pressure.
- 6. The cock and valve, both made of stainless steel, are integrated into one unit.
- 7. Equipped with built-in strainer.
- 8. Installable in any direction.

Specifications

	Model	TS-7	TS-8	
A	pplication	Steam condensate		
Maxir	num pressure	1.0 N	/IPa *	
Minimum worki	ing differential pressure	0.03	MPa	
Max.	temperature	183°C		
Material Body Cock (Valve seat) Bellows (Valve)		Ductile cast iron		
		Stainless steel		
		Stainless steel		
Strainer		Stainless steel		
С	onnection	JIS Rc screwed	JIS 10K FF flanged	





TS-8

* When performing an airtightness test using water or air, keep the pressure at 0.5 MPa or less.

Dimensions (mm) and Weights (kg)

TS-7

Nominal size	d	L	Weight
15A	Rc 1/2	107	2.3
20A	Rc 3/4	109	2.4
25A	Rc 1	115	2.5

TS-8

Nominal size	L	Weight
15A	156	3.9
20A	160	4.4
25A	160	5.5

Maximum Continuous Discharge Capacity Chart



Maximum Continuous Discharge Capacity Table

												(L/h)
Differential pressure MPa	0.03	0.05	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Hot water with minus 20 °C of saturated steam temperature	560	730	1020	1450	1780	2050	2300	2500	2700	2900	3100	3250

• The discharge capacities shown in the chart and table above are the maximum values. In designing a system, select a steam trap with a sufficient safety factor (at least three times the regular level).











Switching Mechanism and Operation



- 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.
- 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.
- 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



Steam Trap



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TF-1·2

Features

- 1. The stainless steel valve disc and valve seat offer excellent durability (TF-2).
- 2. Built-in air vent prevents air-binding problem, offering higher durability.
- 3. Compact, lightweight and large discharge capacity due to unique pressure balance mechanism.
- 4. Reliable performance and large discharge capacity ensured by lever float system.
- 5. Easy maintenance and inspection.



Model		TF-1	TF-2			
A	pplication	Steam condensate				
Working pressure		0.01-0.3 MPa	0.01-0.7 MPa			
Max. temperature		150°C	170°C			
Body		Ductile cast iron				
Material Valve, valve seat		Cast bronze	Stainless steel			
Float		Brass	Stainless steel			
Connection		JIS 10K RF flanged	JIS Rc screwed			

Dimensions (mm) and Weights (kg)

TF-1

Nominal size	L	Н	H1	H2	Weight	
65A	680	530	260	100	84	
80A	680	530	260	100	84	

H1 and H are reference values.

TF-2

Nominal size	d	L	Н	H ₁	H2	Weight
15A	Rc 1/2	257	252	122	42	13.3
20A	Rc 3/4	257	252	122	42	13.3
25A	Rc 1	290	266	122	42	15.5
32A	Rc 1-1/4	290	266	122	42	15.5
40A	Rc 1-1/2	335	310	159	45	19.2
50A	Rc 2	335	310	159	45	19.2

 \cdot H1, H2, and H are reference values.

Maximum Continuous Discharge Capacity

●TF-1 Working differential pressure MPa Nominal size 0.25 0.05 0.10 0.15 0.20 65A 10,000 11,000 13,000 6,500 8,700 13,000 80A 6,500 8,700 10,000 11,000

• The discharge capacities shown in the table and chart are the maximum values. In designing a system, select a steam trap with a sufficient safety factor (three times to five times the regular level).













0.30

13,000

13,000

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TFA-2000

Features

1. Function as a float trap with a built-in pump trap ensures reliable operation in all pressure ranges from positive to negative values.

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- 2. Specially designed for condensate pumping at low pressure of small heat exchange systems such as heat exchangers and air handling units.
- 3. Easy maintenance without dismounting the trap from the piping. All main parts are set on the cover part.

Specifications

ominal size	25A	
pplication	Steam condensate	
riving fluid	Steam	
x. pressure	0.5 MPa	
ing pressure	0.03-0.5 MPa	
ifferential pressure	(Back pressure + 0.03 MPa) to 0.5 MPa	
. temperature	160°C	
Body	Ductile cast iron	
Trim parts	Stainless steel	
Float	Stainless steel	
onnection	JIS Rc screwed	
alve at inlet side	Built in (Swing type)	
alve at outlet side	Available (Use SCV-2, 25A)	
	pminal size pplication riving fluid x. pressure ing pressure ifferential pressure temperature Body Trim parts Float onnection alve at inlet side alve at outlet side	

Dimensions (mm) and Weights (kg)

Condensate	Condensate	Driving pressure	Exhaust port	
inlet	outlet	inlet		
Rc 1	Rc 1	Rc 1/2	Rc 1	

Weight: 17 kg







Assist Capacity (Pump Capacity)

The assist capacity depends on the inflow height of condensate. Multiply the inflow height by the appropriate corrected coefficient shown in the table below.



· Corrected Coefficient for Assist

Inflow height (mm)	Corrected coefficient
250	0.65
300	1.0
400	1.1
500	1.75

Steam Trap Capacity





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Bucket

m

TB-5

Features

- 1. Excellent durability ensured by unique internal structure (free floating lever system, spherical valve, etc).
- 2. Reliable performance due to all stainless steel made internal parts and the unique internal structure.
- 3. Superior energy saving since intermittent operation removes air adiabatic wall in the head exchanger and increases heat efficiency considerably.
- 4. Distinguished scale resistance provided by built-in strainer and dual separation system.
- 5. Wide variety of options, including large vent and built-in type check valve.

Specifications

Model		TB-5	
Maximum pressure		1.0 MPa	
Maximum working differential pressure		Refer to "Discharge Capacity Chart"	
Max. temperature		220°C	
	Body	Ductile cast iron	
Material	Valve, valve seat	Stainless steel	
Bucket		Stainless steel	
Connection		JIS 10K FF flanged	
N	ominal size	15A-50A	

Discharge Capacity Chart

(The charts below show the discharge capacity of saturated condensate in actual operation.)

●15A-25A



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- The discharge capacity shown here is a continuous discharge capacity at the indicated differential pressure.
- In general, select a steam trap with a safety factor twice or threefold the regular level.
- The circled values are maximum working differential pressures (kgf/cm²). (The values in white circles represent a standard product, and those in a green circle denote a custom-made product.)



Dimensions (mm) and Weights (kg)

Nominal size	L	Н	H ₁	Plug	Weight
15A	175	177	98	NPT 3/8	4.5
20A	195	177	98	NPT 3/8	4.9
25A	215	177	98	NPT 3/8	6.2
32A	280	336	190	NPT 1/2	18.3
40A	280	336	190	NPT 1/2	18.7
50A	290	336	190	NPT 1/2	19.6



Options

(The options listed below are made-to-order items. For further information, please contact us.)

- Large vent (LV)
- Thermic vent bucket (T)
- Scrub wire (VW)
- Built-in type check valve (V)
- Only either a built-in type check valve or a thermic vent bucket can be installed on 15A to 25A steam traps.

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TS-1

P

The TS-1 radiator trap is used for a wide variety of radiators for heating.

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Features

- 1. Reduced noise.
- 2. Bellows type of air trouble free.
- 3. The bellows is manufactured from selected material under strict quality control. Quick discharge of condensate from the system, and no steam leakage with long service life.
- 4. Never freezing.



TS-1A <Angle type>



TS-1S <Straight type>

Specifications

Application		Steam condensate			
Maximum pressure		100 kPa *			
Maxi	Maximum temperature 120°C				
	Body	Cast bronze			
Motorial	Valve, valve seat	Brass			
material	Bellows	Phosphor bronze			
	Union	Brass			
Connection		Inlet: JIS R screwed (union joint)			
		Outlet: JIS Rc screwed			

* Available with 200 kPa (TS-1HA or TS-1HS, only 25A).

Dimensions (mm) and Weights (kg)

TS-1A						
Nominal size	d	L1	H1	H2	D	Weight
15A	1/2	80	35	39	52	0.6
20A	3/4	87	41	51.5	52	0.9
25A	1	105	52	49	52	1.6

●TS-1S

Nominal size	d	L1	L2	H1	H2	D	Weight
15A	1/2	80	43	28	39	52	0.7
20A	3/4	87	48	34	51.5	52	1.0
25A	1	105	60	40	49	52	1.7



TS-1A <Angle type>



M: Discharge capacity Lh

35 50 70 Δ **P: Working differential pressure kPa**

• This chart shows the maximum discharge. In designing a system, set a sufficient safety factor (two or three times).

Maximum Continuous Discharge Capacity Chart



TS-3

The TS-3 radiator trap, like the TS-1, is bellows thermostatic type and supports a working pressure of up to 0.2 MPa. It is used for a wide variety of radiators for heating.

Bellows

Features

- 1. Compact, lightweight and reduced noise.
- 2. Prevents freezing damage since designed not to allow condensate to remain inside.
- 3. Quickly discharges cold condensate and air at the start of operation.
- 4. The valve and valve seat are made of stainless steel. Fluororesin is used for the cover gasket, making disassembly and assembly easy.



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Bronze

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TS-3A <Angle type>



TS-3S <Straight type>

Specifications

	Application	Steam condensate			
W	orking pressure	0.01-0.2 MPa			
Maximum temperature		135°C			
	Body	Cast bronze			
	Valve	Brass			
Material	Valve seat	Stainless steel			
	Thermoelement	Phosphor bronze			
	Union	Brass			
O and a time		Inlet: JIS R screwed (union joint)			
	Connection	Outlet: JIS Rc screwed			

* Available with 25A (TS-1HA•1HS).

Dimensions (mm) and Weights (kg)

●TS-3A					
Nominal size	d	L	H1	H2	Weight
15A	1/2	80	35	74.5	0.5
20A	3/4	87	41	76.5	0.6

TS-3S							
Nominal size	d	L1	L2	Lз	H1	H ₂	Weight
15A	1/2	85	38	123	28	67.5	0.5
20A	3/4	94	41	135	34	69.5	0.7



Maximum Continuous Discharge Capacity Chart



• This chart shows the maximum discharge. In designing a system, set a sufficient safety factor (two or three times).

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TS-4

R

The TS-4 radiator trap uses a wax type thermoelement for the heat sensing unit and supports a working pressure of up to 0.35 MPa. It is used for a wide variety of radiators for heating.

Features

1. Compact, lightweight and reduced noise.

d

- 2. Freezing damage can be prevented since designed not to allow condensate to remain inside it.
- 3. Quickly discharges cold condensate and air at the start of operation.
- 4. Stainless steel made valve and valve seat. Fluororesin is used for the cover gasket, making disassembly and assembly easy.



TS-4A <Angle type>



TS-4S <Straight type>

Specifications

Application	Steam condensate			
orking pressure	0.02-0.35 MPa			
imum temperature	150°C			
Body	Cast bronze			
Valve	Stainless steel			
Valve seat	Stainless steel			
Thermoelement	Brass, others			
Union	Brass			
Connection	Inlet: JIS R screwed (union joint)			
Connection	Outlet: JIS Rc screwed			
	Application orking pressure imum temperature Body Valve Valve seat Thermoelement Union Connection			

Dimensions (mm) and Weights (kg)

●TS-4A					
Nominal size	d	L	H ₁	H ₂	Weight
15A	1/2	80	35	77.5	0.5
20A	3/4	87	41	79.5	0.7

TS-4S

Nominal size	d	L1	L2	Lз	H1	H2	Weight
15A	1/2	85	38	123	28	70.5	0.6
20A	3/4	94	41	135	34	72.5	0.7





TS-4A <Angle type>

TS-4S <Straight type>



• This chart shows the maximum discharge. In designing a system, set a sufficient safety factor (two or three times).

Maximum Continuous Discharge Capacity Chart



FV-2

The FV-2 radiator valve is designed to use with radiators for heating using steam.

Features

- 1. Totally free of leakage due to bellows pack less type.
- 2. Complete close with a fluororesin disc.
- 3. Usable for not only steam but cold and hot water.



FV-2A <Angle type>

Specifications

Application		Steam (Cold and hot water)
Maximum pressure		0.3 MPa
Maxi	mum temperature	150°C
Body	Body	Cast bronze
Material	Union	Brass
	Valve disc	PTFE
October 110 m		Inlet: JIS Rc screwed
	Connection	Outlet: JIS R screwed (union joint)



FV-2S <Straight type>

Dimensions (mm) and Weights (kg)

Naminalaiza	d			11.		11.		D	We	ight
Nominal size	a	L1	L2	H 1	H2	H3	H4		Angle type	Straight type
15A	1/2	65	35	28	101	17	95	15	0.5	0.6
20A	3/4	75	38	33	108	21	101	20	0.66	0.78
25A	1	86	42	38	117	25	109	25	0.96	1.02
32A	1-1/4	102	52	44	130	28	117	25	1.39	1.54





FV-2S <Straight type>

Maximum Flow Rate Chart (For Steam)

						(kg/h)				
Nominal size	Differential pressure MPa									
	0.05	0.1	0.15	0.2	0.25	0.3				
15A	16	21	25	30	35	40				
20A	28	36	44	52	60	71				
25A	44	57	70	83	98	111				
32A	64	84	103	122	142	161				

· Since this table shows the maximum discharge, set a sufficient safety factor.



Features		Radiator valve / Return valve	Thermo-radiator valve	Return valve
Model		HV-3	118 Series	109 Series
Picture		HV-3A HV-3S	oventrop	oventrop
Application		Cold and hot water	Hot water, Steam	Cold and hot water
Max. pressure		0.6 MPa	Hot water: 1.0 MPa Steam: 0.05 MPa	1.0 MPa
Max. temperature		90°C	Hot water: 120°C Steam: 110°C	120°C
Connection		Inlet: JIS Rc screwed	Inlet: JIS Rp screwed	Inlet: JIS R screwed (union joint)
		Outlet: JIS R screwed (union joint)	Outlet: JIS R screwed (union joint)	Outlet: JIS Rp screwed
Material	Body	Cast bronze	Bronze or Brass	Bronze or Brass
	Valve	PTFE	EPDM	Brass
	Valve seat	Bronze	Bronze or Brass	Bronze or Brass
Size		15A-25A	15A-25A (angle, straight) 15A-20A (reversed angle)	15A-20A
Others		HV-3A: Angle type HV-3S: Straight type	Thermostats: Bellows, wax, remote mount	Valve: Angle, straight
			Valve: Angle, straight, reversed angle	