STEAM CONDENSING HEAT EXCHANGER

MODEL SR-3/SR-8

HIGH-PERFORMANCE ATMOSPHERIC HEAT EXCHANGER FOR WASTE HEAT RECOVERY

Benefits

Atmospheric indirect heat exchanger for recovering heat energy from waste or flash steam from applications where the steam cannot otherwise be utilized.

1. Open to atmosphere system adds very little back pressure to steam using equipment (maximum 2″ water head).
2. Achieves a more effective heat exchange than closed system heat exchangers.
3. Open to atmosphere system is free from the restrictions and regulations governing pressure vessels.
4. Compact, space-saving design.
5. Requires no electronic power, providing very high economic efficiency.
6. Improves work environment by eliminating “clouds of steam” generated around the plant.

Specifications

Model		SR-3	SR-8
Connection & Size (in)	Steam Inlet	3″ Flanged	6″ Flanged
	Condensate Outlet	2″ Flanged	
	Condensate Blow Valve	½″ Screwed	1″ Screwed
	Cold Water Inlet	¾″ Screwed	1½″ Screwed
	Hot Water Outlet	¾″ Screwed	1½″ Screwed
	Exhaust	6″ Pipe End (Duct nipple installable)	
	Overflow Outlet for Exhaust Pipe	⅜″ Screwed	
Maximum Operating Pressure (psig) PMO		Body (shell side): 0	Coil (tube side): 150
Maximum Operating Temperature (°F) TMO		Up to 212	
Maximum Allowable Pressure (psig) PMA		Body (shell side): 75	Coil (tube side): 285
Maximum Allowable Temperature (°F) TMA		Body (shell side): up to 316	Coil (tube side): up to 356
Maximum Steam Flow Rate (lb/h)		660	1,760
Maximum Heat Recovery Capacity (BTU/h)		630,000	1,700,000
Heat Transfer Surface Area (ft^2)		22.6	64.5

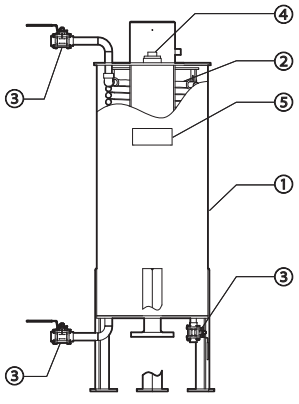
Contact TLV for non-standard design specifications

SR-3 and SR-8 are non-standard products, consult TLV for delivery time required.

⚠ 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.

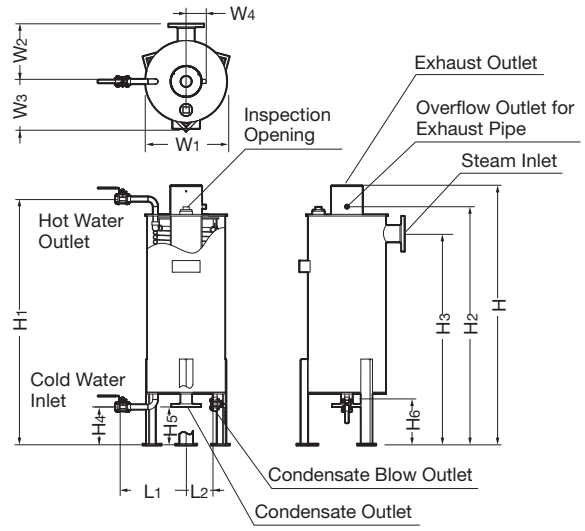
No.	Description	Material	ASTM/AISI*	JIS
①	Body	Stainless Steel	AISI304	SUS304
②	Heat Transfer Coil	Stainless Steel	AISI304	SUS304
③	Full-bore Ball Valve BV1	Cast Stainless Steel	A351 Gr. CF8	—
④	Plug	Stainless Steel	AISI304	SUS304
⑤	Nameplate	Stainless Steel	AISI304	SUS304

* Equivalent



Dimensions

● SR-3 / SR-8



SR-3 / SR-8 (in)

Model	L_1*	L_2	H	H_1	H_2	H_3	H_4
SR-3	14 9/16	5 15/16	53 1/8	50 3/8	48 13/16	43 5/16	7 7/8
SR-8	16 9/16	6 1/16	72 13/16	70 1/2	68 1/2	61	12 5/8

Model	H_5	H_6	ϕW_1	W_2	W_3*	W_4*	Weight* (lb)	
							Empty	Full
SR-3	7 7/8	7 1/16	16 3/4	11 13/16	10 1/4	4 1/8	310	350
SR-8	13 3/4	11 13/16	20 13/16	13 3/4	12 3/16		550	620

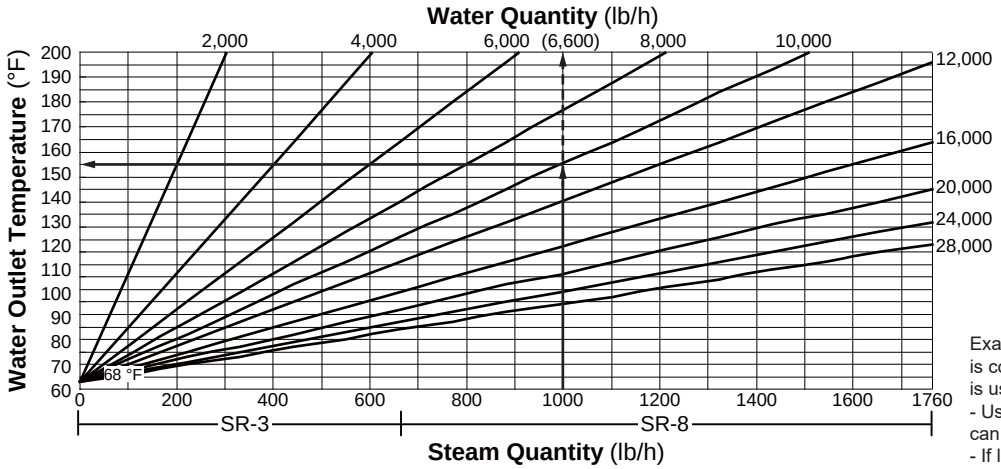
* Approximate
Flanged connections are ASME Class 150 RF.
Screwed connections are NPT except on inspection opening Rc(PT)2
Other standards available

⚠ CAUTION

In case of unexpected steam flow, connect piping from the exhaust outlet to a safe area. Unexpectedly high steam volumes may cause high-temperature condensate to be discharged through the exhaust outlet, which may in turn cause burns or other injury.

Waste Heat Recovery

Cold Water Inlet temperature is 68 °F



1. The graph to the left shows the relationship between the amount of steam passing through the heat exchanger and the outlet water temperature. Consult TLV if the feed water temperature is not around 68 °F.
2. When the outlet water temperature exceeds 200 °F, steam cannot be condensed and will be discharged from the exhaust outlet.

Example: 1,000 lb/h of waste steam is collected and 10,000 lb/h of water is used for heat recovery.
- Using the SR-8 hot water at 156 °F can be recovered.
- If less than 6,600 lb/h of cold feed water is used, some waste steam will remain uncondensed.

● Required Water Differential Pressure

Because the SR-3/SR-8 is an atmospheric indirect heat exchanger using stainless steel tubing, make sure the cold water pressure is high enough to maintain a differential pressure at least equal to the differential pressures indicated in the table below. However, the water pressure must not exceed 150 psig.

Water Quantity (lb/h)		2,000	4,000	6,000	8,000	10,000	12,000	16,000	20,000	24,000	28,000
Min. Differential Pressure (psi)	SR-3	3.6	12.9	27.8	48.2	74.0	—	—	—	—	—
	SR-8	—	—	3.4	5.8	8.7	12.3	21.2	32.4	45.9	61.8

Example: If 10,000 lb/h water is used for heat recovery with an SR-8, differential pressure between the cold water inlet and the hot water outlet should be at least 8.7 psi.

⚠ CAUTION

DO NOT DISASSEMBLE OR REMOVE THIS PRODUCT WHILE IT IS UNDER PRESSURE.
Allow internal pressure of this product to equal atmospheric pressure and its surface to cool to room temperature before disassembling or removing. Failure to do so could cause burns or other injury. READ INSTRUCTION MANUAL CAREFULLY.

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Member of FCI Fluid Controls Institute, Inc.

Manufacturer
TLV CO., LTD.
Kakogawa, Japan
is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001
ISO14001