

Steam Fired

Supply of Chilled Water by means of efficient use of steam heat energy

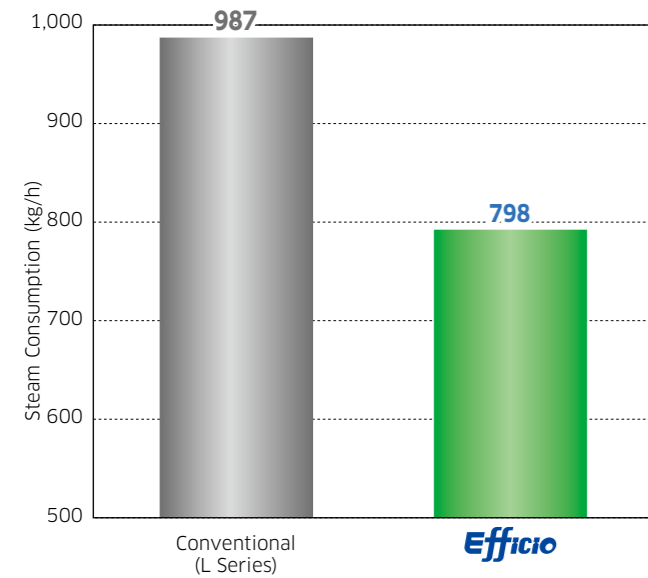


NES

Proven Technology of Direct Fired Chiller is applied.

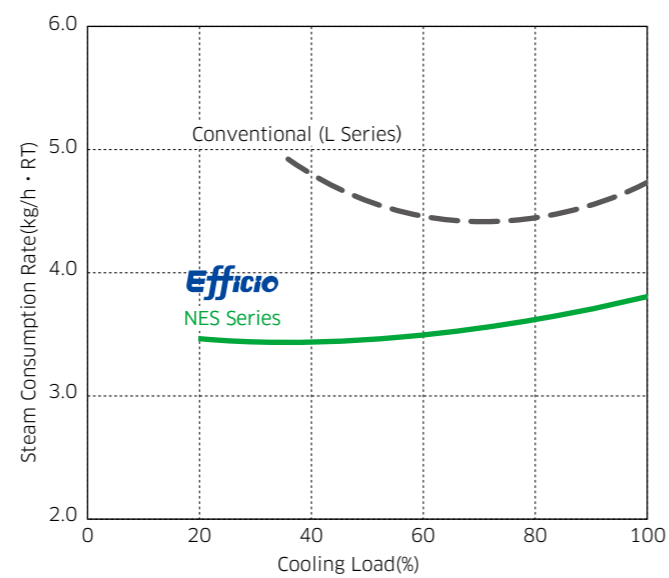
Reduction of Steam Consumption Rate

NES series can save 19% of steam consumption compared with the conventional model.



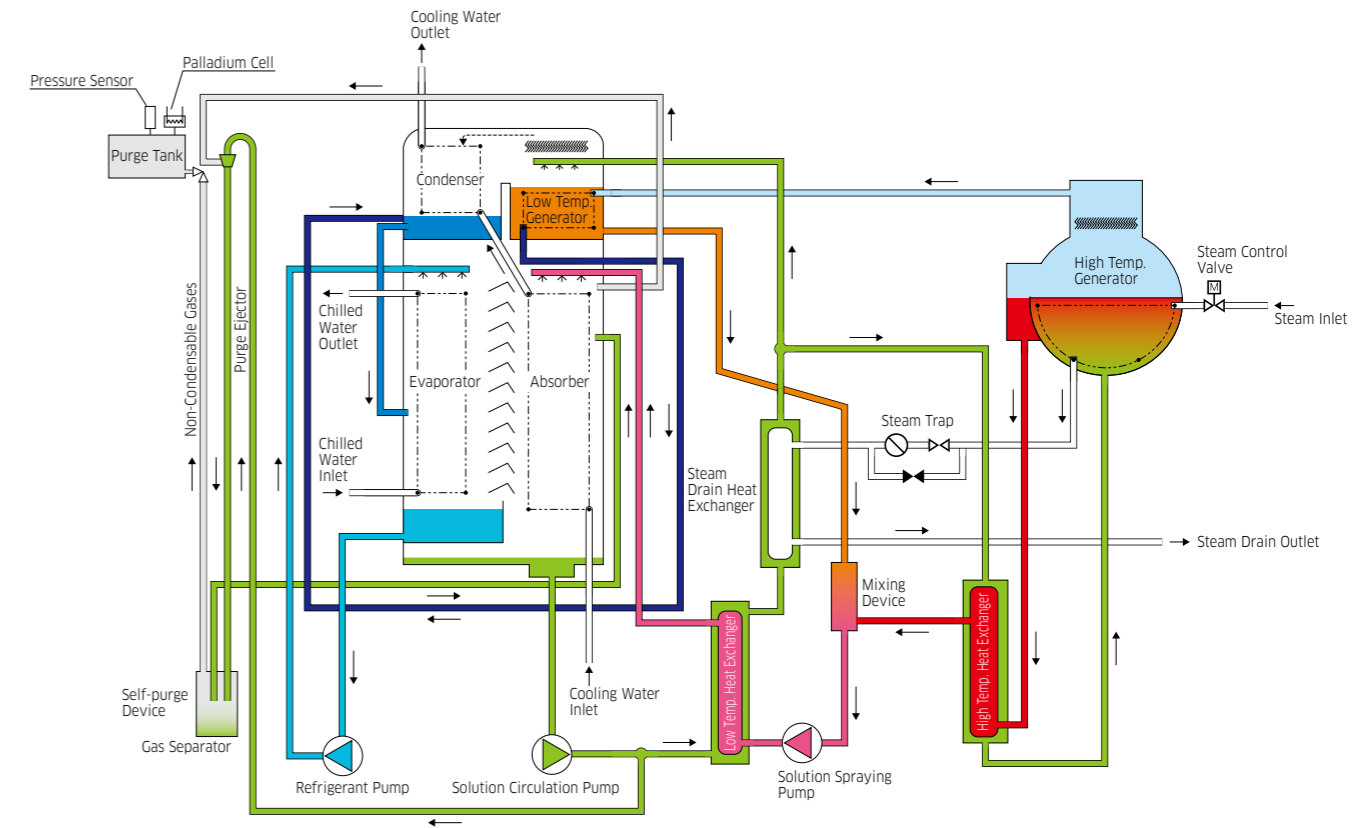
Steam Consumption Rate at Partial Load

You can save more steam consumption rate with the inverter control for the solution pump.

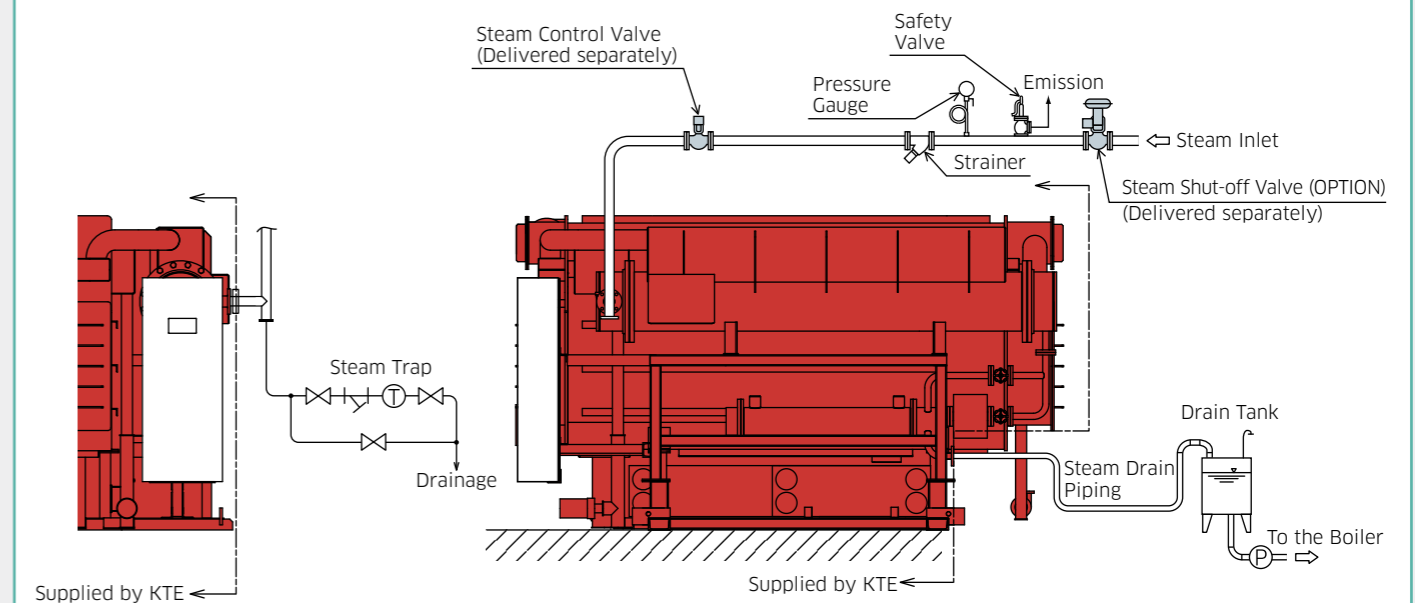


- Note
1. The width of the curve in the graph shows the range of variation of steam consumption.
 2. Cooling water inlet temperature conditions are as specified by the JIS standards (32°C at 100% load, 27°C at 0% load, with the temperature varying proportionally at loads between 0% and 100%).
 3. The capacity of the chiller in the above simulation is 210USRT.

NES Series Cooling Cycle



Steam Supply System



Steam Consumption 3.8kg/h·RT (Chilled Water Inlet/Outlet Δ t=8°C)

			NES-080	NES-100	NES-120	NES-150	NES-180	NES-210
Capacity	Cooling	kW (USRT)	281 (80)	352 (100)	422 (120)	528 (150)	633 (180)	739 (210)
	Inlet-Outlet Temp.	°C	15.0 → 7.0					
Chilled Water	Flow Rate	m ³ /h	30.2	37.8	45.4	56.7	68.0	79.4
	Pressure Loss	kPa	55.1	55.5	49.4	49.9	49.5	49.7
	Retained Water Volume	m ³	0.12	0.14	0.16	0.19	0.23	0.26
Cooling Water	Inlet-Outlet Temp.	°C	32.0 → 37.2					
	Flow Rate	m ³ /h	80	100	120	150	180	210
	Pressure Loss	kPa	42.3	44.3	47.1	53.6	44.1	48.7
	Retained Water Volume	m ³	0.31	0.35	0.39	0.45	0.62	0.68
Steam	Steam Consumption	kg/h	304	380	456	570	684	798
	Steam Inlet Pressure	MPa(G)	0.785					
	Drain Outlet Temperature	°C	90 or less					
Electricity	Power Source		50Hz 400V 3 φ					
	Capacity	KVA	4.4	4.4	4.4	6.6	6.7	6.7
	Current	A	7.7	7.7	7.7	10.8	11.0	11.0
	Total Motor Power	kW	1.6	1.6	1.6	2.7	3.7	3.7
Connection	Chilled Water Inlet/Outlet	A	80	80	100	100	100	100
	Cooling Water Inlet/Outlet	A	125	125	125	125	150	150
	Steam Inlet	A	50	50	50	50	65	65
External Dimensions	Drain Outlet	mm	25	25	25	25	32	32
	Length	mm	2,699	2,699	3,699	3,699	3,762	3,762
	Width	mm	1,771	1,771	1,771	1,771	2,036	2,036
Weight	Height	mm	1,976	1,976	1,976	1,976	2,188	2,188
	Operating Weight	ton	4.4	4.6	5.6	5.9	7.6	7.8
Delivery Form	Total Shipping Weight	ton	4.0	4.1	5.0	5.3	6.7	6.9

One Piece / Solution Charge

NES-250	NES-300	NES-360	NES-400	NES-450	NES-500	NES-560	NES-630	NES-700	NES-800	NES-900	NES-1000
879 (250)	1,055 (300)	1,266 (360)	1,407 (400)	1,583 (450)	1,759 (500)	1,970 (560)	2,216 (630)	2,462 (700)	2,813 (800)	3,165 (900)	3,517 (1,000)
15.0 → 7.0											
94.5	113.4	136.1	151.2	170.1	189.0	211.7	238.1	264.6	302.4	340.2	378.0
56.1	59.3	60.2	61.6	83.9	48.2	48.9	88.9	88.9	88.2	89.1	118.9
0.31	0.35	0.43	0.47	0.51	0.71	0.78	0.86	0.95	1.11	1.23	1.36
32.0 → 37.2											
250	300	360	400	450	500	560	630	700	800	900	1,000
43.0	48.2	37.8	40.0	53.6	46.5	49.8	72.4	73.8	59.5	63.4	82.7
0.80	0.88	1.18	1.26	1.35	1.84	1.98	2.23	2.41	2.88	3.12	3.38
950	1,140	1,368	1,520	1,710	1,900	2,128	2,394	2,660	3,040	3,420	3,800
0.785											
90 or less											
50Hz 400V 3 φ											
8.1	8.1	9.4	9.4	9.4	15.2	15.2	15.3	15.3	19.2	19.2	19.2
13.0	13.0	14.9	14.9	14.9	23.3	23.3	23.4	23.4	29.0	29.0	29.0
3.7	3.7	5.1	5.1	5.1	7.5	7.5	7.6	7.6	11.4	11.4	11.4
125	125	150	150	150	200	200	200	200	200	200	250
200	200	250	250	250	250	250	300	300	350	350	350
65	65	80	80	80	100	100	100	100	125	125	125
32	32	40	40	50	50	50	50	50	65	65	65
5,189	5,189	5,279	5,279	5,779	5,779	5,779	7,059	7,059	7,165	7,165	7,877
2,214	2,214	2,547	2,547	2,627	2,922	2,922	3,026	3,026	3,171	3,171	3,171
2,188	2,188	2,402	2,402	2,403	2,745	2,745	2,745	2,745	3,407	3,407	3,407
9.9	10.4	13.4	13.8	15.2	18.8	19.4	22.4	23.2	27.9	30.2	32.4
8.8	9.1	11.8	12.2	13.3	16.2	16.7	19.3	19.9	23.9	25.9	27.6

One Piece / Solution Charge

One Piece / Solution Discharge

Steam Consumption 3.85kg/h·RT (Chilled Water Inlet/Outlet Δ t=5°C)

			12.0 → 7.0					
Chilled Water	Inlet-Outlet Temp.	°C	12.0 → 7.0					
	Flow Rate	m ³ /h	48.4	60.5	72.6	90.7	108.9	127.0
	Pressure Loss	kPa	38.8	39.9	51.6	52.7	51.7	52.2
Cooling Water	Retained Water Volume	m ³	0.12	0.14	0.16	0.19	0.23	0.26
	Inlet-Outlet Temp.	°C	32.0 → 37.3					
	Flow Rate	m ³ /h	80	100	120	150	180	210
Steam	Pressure Loss	kPa	42.3	44.3	47.1	53.6	44.1	48.7
	Retained Water Volume	m ³	0.31	0.35	0.39	0.45	0.62	0.68
	Steam Consumption	kg/h	308	385	462	578	693	809
Connection	Steam Inlet Pressure	MPa(G)	0.785					
	Drain Outlet Temperature	°C	90 or less					
Chilled Water Inlet/Outlet	A	100	100	100	100	125	125	
	Cooling Water Inlet/Outlet	A	125	125	125	125	150	150

12.0 → 7.0											
151.2	181.4	217.7	241.9	272.2	302.4	338.7	381.0	423.4	483.8	544.3	604.8
42.8	45.6	46.9	48.6	65.6	38.9	39.5	70.1	71.1	69.3	71.0	94.2
0.31	0.35	0.43	0.47	0.51	0.71	0.78	0.86	0.95	1.11	1.23	1.36
32.0 → 37.3											
250	300	360	400	450	500	560	630	700	800	900	1,000
43.0	48.2	37.8	40.0	53.6	46.5	49.8	72.4	73.8	59.5	63.4	82.7
0.80	0.88	1.18	1.26	1.35	1.84	1.98	2.23	2.41	2.88	3.12	3.38
963	1,155	1,386	1,540	1,733	1,925	2,156	2,426	2,695	3,080	3,465	3,850
0.785											
90 or less											
150	150	200	200	200	200	200	250	250	250	250	300
200	200	250	250	250	250	250	300	300	350	350	350

NOTE

- The tolerance of the performance is in compliance with JIS B8622-2009.
- Operation load range is from 10% to 100%.
- The maximum operating pressure is 784kPa (gauge) for both Chilled/Hot Water and Cooling Water.
- The maximum operating pressure is 980kPa (gauge) for Steam.
- The fouling factor of both Chilled/Hot Water and Cooling Water is $8.6 \times 10^{-5} \text{ m}^2 \cdot \text{K/W}$.
- The Cooling Water Inlet temperature shall not be lower than 18°C.
- The total motor power is the total value of the constant operation all the motors, excluding the purging pump motor which operates intermittently.
- The parameters described in this table list of specification can be changed by the manufacturer for the purpose of technical improvement without notice.

