

Steam-fired LiBr Absorption Chiller



Working Principle

Steam-fired lithium bromide absorption chiller is a refrigeration equipment which uses the natural gas, coal gas and fuel oil as its fuel and the combustion heat as its driving power. The LiBr solution is the circulated working medium, with LiBr as the absorbent and water as the refrigerant.

Unit is mainly composed of the high-pressure generator, low-pressure generator, condenser, evaporator, absorber, high-temperature heat exchanger, low temperature heat exchanger, automatic purge system, combustor, vacuum pump and canned pump etc.

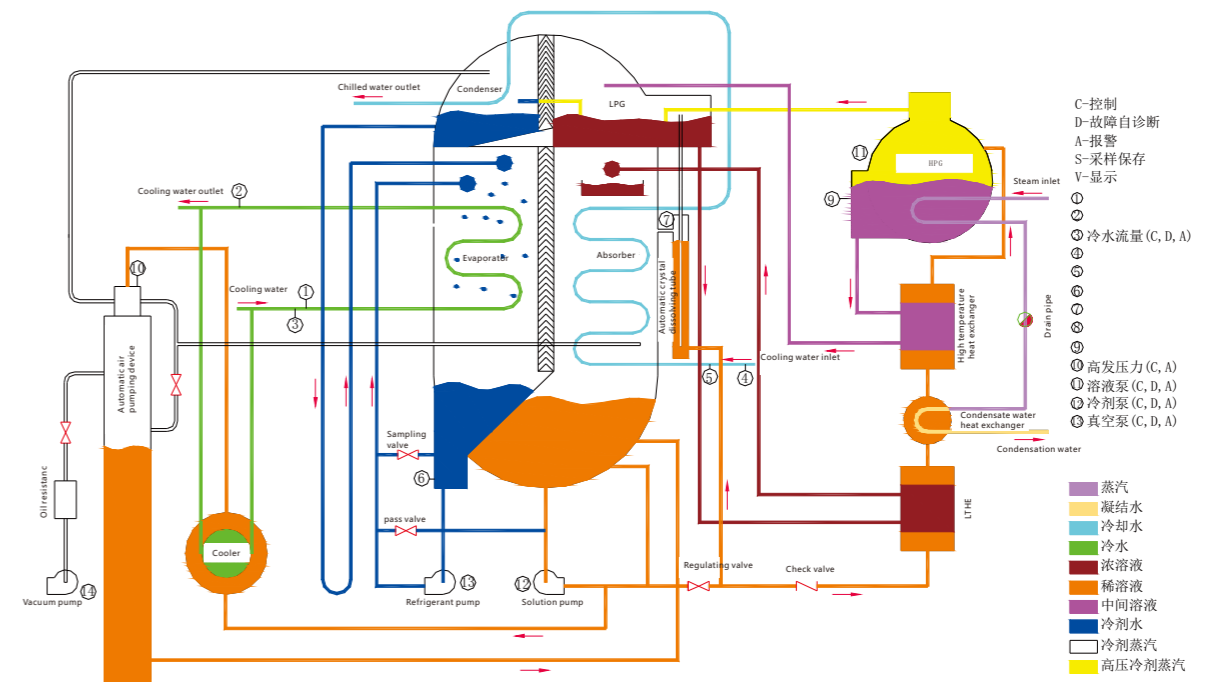
The diluted solution, transferred by the solution pump, through the low temperature heat exchanger, condensate water heat exchanger, high temperature heat exchanger heating after entering in the high-pressure generator. In the high-pressure generator, the dilute solution is heated by the flame there to generate high-temperature refrigerant vapor, and then condensed into intermediate solution. The intermediate solution entered into the low-pressure generator through the high-temperature heat exchanger and is heated by the high pressure, high-temperature refrigerant steam coming from the high pressure generator to generate the refrigerant vapor, and then further become concentrated solution.

The high-temperature refrigerant vapor (water) generated in the high-pressure generator is heated the intermediate solution of the low-pressure generator and then cooled into refrigerant water. The refrigerant water, after throttled, pressure reducing, with the refrigerant vapor generated in the low-pressure generator entered into the condenser to be cooled by the cooling water, and become refrigerant water which is correspond with condensing pressure.

The liquid coolant of the condenser through the throttle, then enters the evaporator. Due to the low pressure of the evaporator, so that the refrigerant water in low temperature can evaporation boiling, when the coolant water is used Pump for conveying, spraying in submerged tube evaporator is immediately, evaporation, absorption evaporator tube inner cooling water Heat, so that the inner tube water temperature decrease, achieve the purpose of refrigeration

By the low pressure generator out of the concentrated solution flows through the low temperature heat exchanger into the absorber, sprayed in the evaporator tube bank, is cooled by the cooling water within the pipe, temperature reducing, absorbed the refrigerant vapor from the evaporator become a dilute solution. So, the concentrated solution constantly absorbed the refrigerant vapor generated in the evaporator made the evaporator evaporation process constantly. Due to absorbed the refrigerant vapor from the evaporator to become diluted solution, and then is transferred into the high-pressure generator by the solution pump to boiling and concentrated. Thus completing a cooling cycle.

Flow Chart (cooling cycle)



- C-Control
- D-Fault self-diagnosis maintenance
- A-Alarm
- S-Sample preservation
- V-View
- 1. Cooling water inlet temperature (C, D, S, V)
- 2. Cooling water outlet temperature (C, D, A, S, V)
- 3. Cold flow (C, D, A)
- 4. Cooling water inlet temperature (C, D, A, S, V)
- 5. Cooling Flow (C, D, A)
- 6. Evaporation temperature (C, D, A, S, V)
- 7. Soluble crystal tube temperature (C, D, A, V)
- 8. High level (C, D, A, V)
- 9. Automatic air pumping device of pressure (C)
- 10. High pressure (C, A)
- 11. Solution pump (C, D, A)
- 12. Refrigerant pump (C, D, A)
- 13. Vacuum pump (C, D, A)

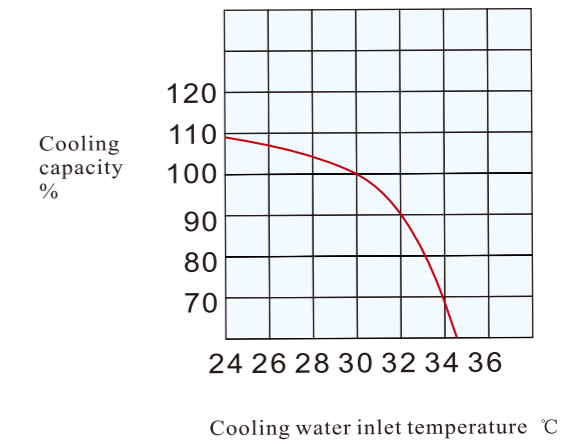
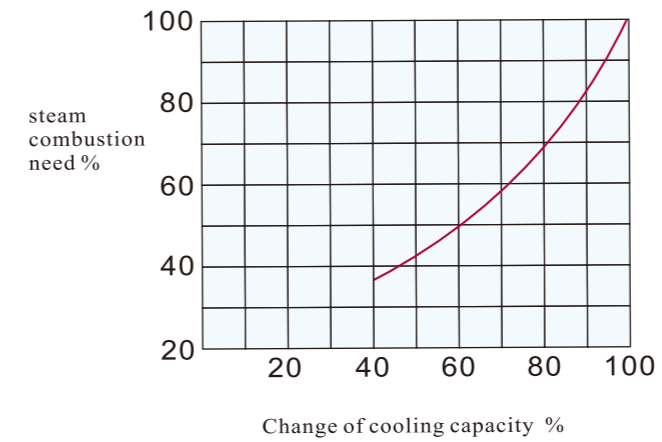
- Condensation water
- Cooling water
- Cold water
- Concentrated solution
- Dilute Solution
- Intermediate solution
- Refrigerant water
- Open steam
- High pressure refrigerant vapor



High-quality Product And Service

Technical Parameters

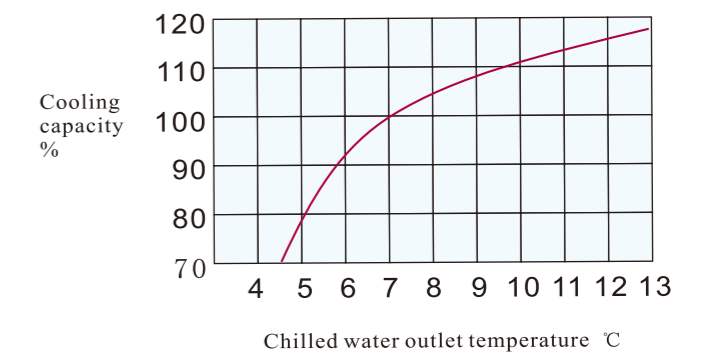
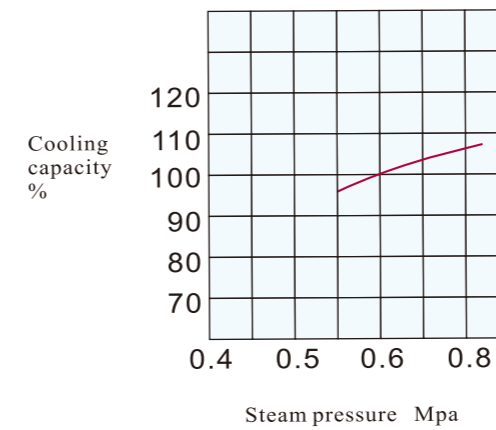
Performance curve



Model number description

SXZ 6—116 D

- Chilled water temperature: D(7°C)(can be omitted), Z(10°C), H(13°C), T(16°C)
- Rated cooling capacity: (116×10kw)
- Steam pressure: (6×0.1MPa)
- Unit type: SXZ(double-effect steam-fired LiBr absorption chiller)



Rated parameters

(Steam pressure 0.4MPa)

Model		SXZ4-	23	35	47	58	70	81	93	105	116
Cooling capacity		KW	233	350	470	580	700	810	930	1050	1163
		×10 ⁴ Kcal/h	20	30	40	50	60	70	80	90	100
		USRt	66	99	132	165	198	231	265	299	331
Chilled water	Inlet/Outlet temperature	°C	Chilled water 12-7								
	Flowrate	m ³ /h	40	60	80	100	120	140	160	180	200
	Pressure drop	Kpa	33	33	33	33	36	36	52	52	52
	Pipe diameter	DN(mm)	80	100	125	125	125	150	150	150	200
Cooling water	Inlet/Outlet temperature	°C	30→36								
	Flowrate	m ³ /h	61	92	122	153	183	214	244	275	305
	Pressure drop	Kpa	82	82	82	62	62	62	91	91	91
	Pipe diameter	DN(mm)	125	125	150	150	150	200	200	200	250
Steam	consumption	Kg/h	292	438	584	730	876	1022	1168	1314	1460
	Steam inlet pipe diameter	DN(mm)	50	50	65	65	65	65	80	80	80
	Condensate outlet pipe diameter	DN(mm)	25	25	25	25	25	25	25	40	40
Electric	Total power	KW	2.8	2.8	2.8	3.8	3.8	3.8	4.2	4.2	4.4
	Power supply	3-phase\380\AC\50HZ									
Dimensions	Length (L)	mm	2980	2980	2980	4020	4020	4020	4640	4640	4658
	Width (W)	mm	1462	1656	1750	1656	1810	1915	1915	2010	2131
	Height (H)	mm	2000	2160	2185	2165	2185	2350	2350	2438	2652
Shipment		Assembled									
Total shipment weight		t	4.4	5.6	6.7	7.8	8.9	9.8	10.7	11.7	14.1
Operating weight		t	4.9	5.2	7.2	8.5	9.9	11.1	12	13.3	15.7

145	174	204	233	262	291	349	407	465	523	582
1450	1740	2040	2330	2620	2910	3490	4070	4650	5230	5820
125	150	175	200	225	250	300	350	400	450	500
413	496	4790	661	744	827	992	1157	1323	1488	1653
Chilled water 12-7										
250	300	350	400	450	450	600	700	800	900	1000
29	29	29	29	29	48	48	48	48	44	68
200	200	200	250	250	250	250	300	300	350	400
30→36										
381	458	534	610	686	763	915	1068	1220	1373	1525
91	58	58	58	58	51	51	51	63	63	76
250	250	300	300	350	350	350	400	400	400	500
1825	2190	2555	2920	3285	3650	4380	5110	5840	6570	7300
100	100	100	125	125	125	125	150	150	150	150
40	40	40	40	40	40	50	50	50	50	65
5.4	5.8	6.4	6.4	7.4	7.7	8.2	8.7	9.7	12.2	13.2
3-phase\380\AC\50HZ										
5740	5740	5770	5840	5920	6720	6720	6800	7800	7830	9160
2131	2240	2345	2560	2630	2630	2910	3180	3280	3450	3590
2652	2740	2890	3200	3315	3315	3585	3585	3585	3690	3690
Assembled										
16.6	19	21.3	23.5	25.9	29.9	34.1	38.4	45.8	52.4	59.8
18.6	21	23.8	26.3	28.8	33.7	38.4	4.3	52.3	59.4	68.8

Rated parameters

(Steam pressure 0.6MPa)

Model		SXZ6-	23	35	47	58	70	81	93	105	116	
Cooling capacity		KW	233	350	470	580	700	810	930	1050	1163	
		×10 ⁴ Kcal/h	20	30	40	50	60	70	80	90	100	
		USRt	66	99	132	165	198	231	265	299	331	
Chilled water	Inlet/Outlet temperature	°C	Chilled water 12-7									
	Flowrate	m ³ /h	40	60	80	100	120	140	160	180	200	
	Pressure drop	Kpa	33	33	33	33	36	36	52	52	52	
	Pipe diameter	DN(mm)	80	100	100	125	125	150	150	150	150	
Cooling water	Inlet/Outlet temperature	°C	30→36									
	Flowrate	m ³ /h	59	88	118	147	176	206	235	265	294	
	Pressure drop	Kpa	82	82	82	82	62	62	62	91	91	
	Pipe diameter	DN(mm)	100	125	125	150	150	200	200	200	200	
Steam	consumption	Kg/h	268	402	536	670	804	938	1072	1206	1340	
	Steam inlet pipe diameter	DN(mm)	40	50	50	65	65	65	65	80	80	
	Condensate outlet pipe diameter	DN(mm)	25	25	25	25	25	25	25	40	40	
Electric	Total power	KW	2.8	2.8	2.8	2.8	3.8	3.8	3.8	4.2	4.2	
	Power supply		3-phase\380\AC\50HZ									
Dimensions	Length (L)	mm	2900	2980	2980	2980	4020	4020	4020	4640	4640	
	Width (W)	mm	1352	1462	1656	1750	1656	1810	1915	1915	2010	
	Height (H)	mm	1960	2000	2160	2185	2165	2185	2350	2350	2438	
Shipment			Assembled									
Total shipment weight		t	3.2	4.4	5.5	6.7	7.8	8.9	9.8	10.7	11.7	
Operating weight		t	3.6	4.9	5.9	7.2	8.5	9.9	11.1	12	13.3	

145	174	204	233	262	291	349	407	465	523	582	698
1450	1740	2040	2330	2620	2910	3490	4070	4650	5230	5820	6980
125	150	175	200	225	250	300	350	400	450	500	600
413	496	579	661	744	827	992	1157	1323	1488	1653	1984
Chilled water 12-7											
250	300	350	400	450	500	600	700	800	900	1000	1200
52	29	29	29	29	29	48	48	48	44	44	65
200	200	200	250	250	250	250	300	300	350	350	400
30→36											
368	441	515	588	662	735	882	1029	1176	1323	1470	1764
91	58	58	58	58	58	51	51	51	63	63	76
250	250	250	300	300	350	350	350	400	400	400	500
1675	2010	2345	2680	3015	3350	4020	4690	5360	6030	6700	8040
80	100	100	100	125	125	125	125	150	150	150	150
40	40	40	40	40	40	50	50	50	50	65	65
4.4	5.4	5.8	6.4	6.4	7.4	7.7	8.2	8.7	9.7	12.2	13.2
3-phase\380\AC\50HZ											
4658	5740	5740	5770	5840	5920	6720	6720	6800	7800	7830	9160
2131	2131	2240	2345	2560	2630	2630	2910	3180	3280	3450	3590
2652	2652	2740	2890	3200	3315	3315	3585	3585	3585	3690	3690
Assembled											
14.1	16.6	19	21.3	23.5	25.9	29.9	34.1	38.4	45.8	52.4	59.8
15.7	18.6	21	23.8	26.3	28.8	33.7	38.4	43	52.3	59.4	68.8

Rated parameters

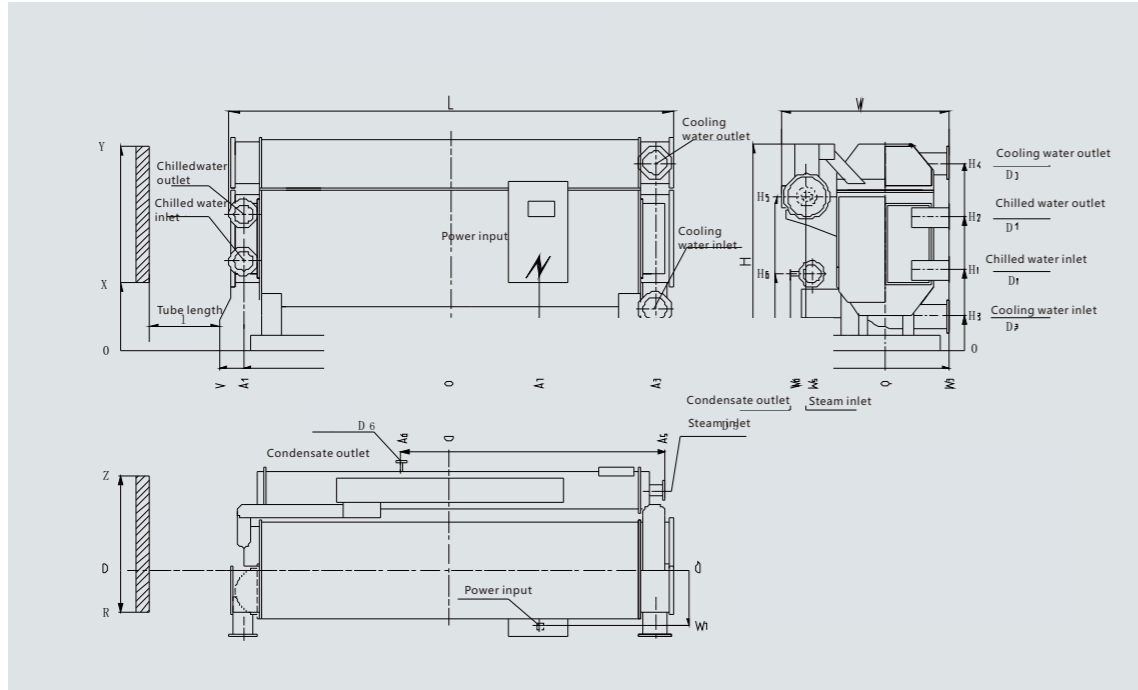
(Steam pressure 0.8MPa)

Model		SXZ8-	23	35	47	58	70	81	93	105	116
Cooling capacity		KW	233	350	470	580	700	810	930	1050	1163
		×10 ⁴ Kcal/h	20	30	40	50	60	70	80	90	100
		USRt	66	99	132	165	198	231	265	299	331
Chilled water	Inlet/Outlet temperature	°C	Chilled water 12-7								
	Flowrate	m ³ /h	40	60	80	100	120	140	160	180	200
	Pressure drop	Kpa	33	33	33	33	36	36	52	52	52
	Pipe diameter	DN(mm)	80	100	100	125	125	150	150	150	150
Cooling water	Inlet/Outlet temperature	°C	30→36								
	Flowrate	m ³ /h	58	87	116	146	175	204	233	262	291
	Pressure drop	Kpa	82	82	82	82	62	62	62	91	91
	Pipe diameter	DN(mm)	100	125	125	150	150	200	200	200	200
Steam	consumption	Kg/h	260	391	521	651	781	911	1042	1172	1302
	Steam inlet pipe diameter	DN(mm)	40	50	50	65	65	65	65	80	80
	Condensate outlet pipe diameter	DN(mm)	25	25	25	25	25	25	25	40	40
Electric	Total power	KW	2.8	2.8	2.8	2.8	3.8	3.8	3.8	4.2	4.2
	Power supply	3-phase\380\AC\50HZ									
Dimensions	Length (L)	mm	2900	2980	2980	2980	4020	4020	4020	4640	4640
	Width (W)	mm	1352	1462	1656	1750	1656	1810	1915	1915	2010
	Height (H)	mm	1960	2000	2160	2185	2165	2185	2350	2350	2438
Shipment		Assembled									
Total shipment weight		t	3.1	4.4	5.5	6.6	7.7	8.7	9.7	10.5	11.5
Operating weight		t	3.5	4.8	5.9	7.1	8.3	9.7	10.7	11.8	13

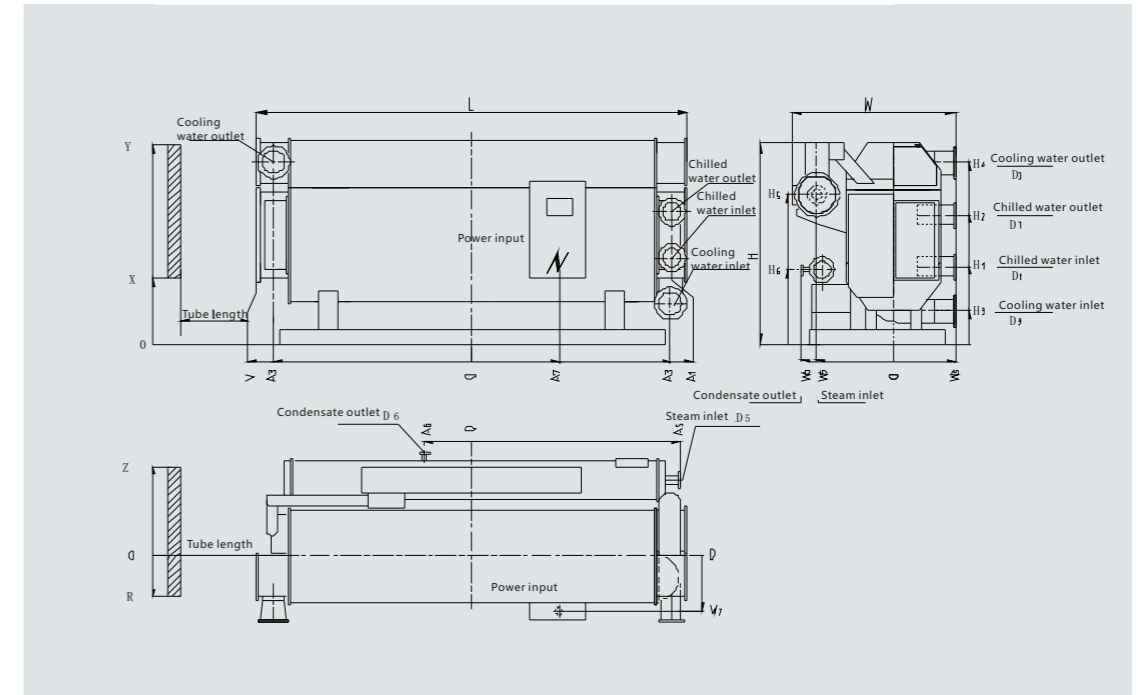
145	174	204	233	262	291	349	407	465	523	582	698
1450	1740	2040	2330	2620	2910	3490	4070	4650	5230	5820	6980
125	150	175	200	225	250	300	350	400	450	500	600
413	496	579	661	744	827	992	1157	1323	1488	1653	1984
Chilled water 12-7											
250	300	350	400	450	500	600	700	800	900	1000	1200
52	29	29	29	29	29	48	48	48	44	44	65
200	200	200	250	250	250	250	300	300	350	350	400
30→36											
364	437	509	582	655	728	873	1019	1164	1310	1455	1746
91	58	58	58	58	58	51	51	51	63	63	76
250	250	250	300	300	350	350	350	400	400	400	500
1628	1953	2279	2604	2930	3255	3906	4557	5208	5859	6510	7812
80	100	100	100	125	125	125	125	150	150	150	150
40	40	40	40	40	40	50	50	50	50	65	65
4.4	5.4	5.8	6.4	6.4	7.4	7.7	8.2	8.7	9.7	12.2	13.2
3-phase\380\AC\50HZ											
4658	5740	5740	5770	5840	5920	6720	6720	6800	7800	7830	9160
2131	2131	2240	2345	2560	2630	2630	2910	3180	3280	3450	3590
2652	2652	2740	2890	3200	3315	3315	3585	3585	3585	3690	3690
Assembled											
13.9	16.4	18.8	21.1	23.2	25.6	29.6	33.7	38.1	45.6	52.2	59.5
15.4	18.3	20.7	23.5	26	28.6	33.3	380	42.7	51.9	59	68.4

Pipe connection diagram

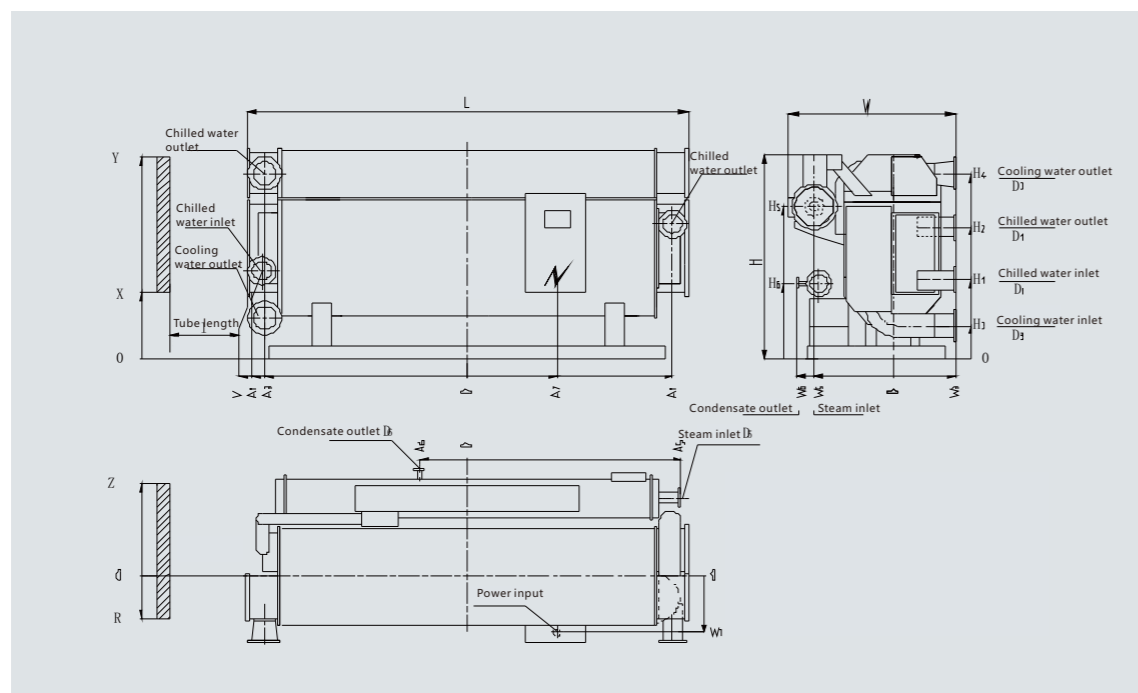
Model : SXZ6(8)-23~58 SXZ4-47



Model : SXZ6(8)-174~281 SXZ4-145~262



Model : SXZ6(8)-70~145 SXZ4-58~116



Model : SXZ6(8)-349~465 SXZ4-291~407

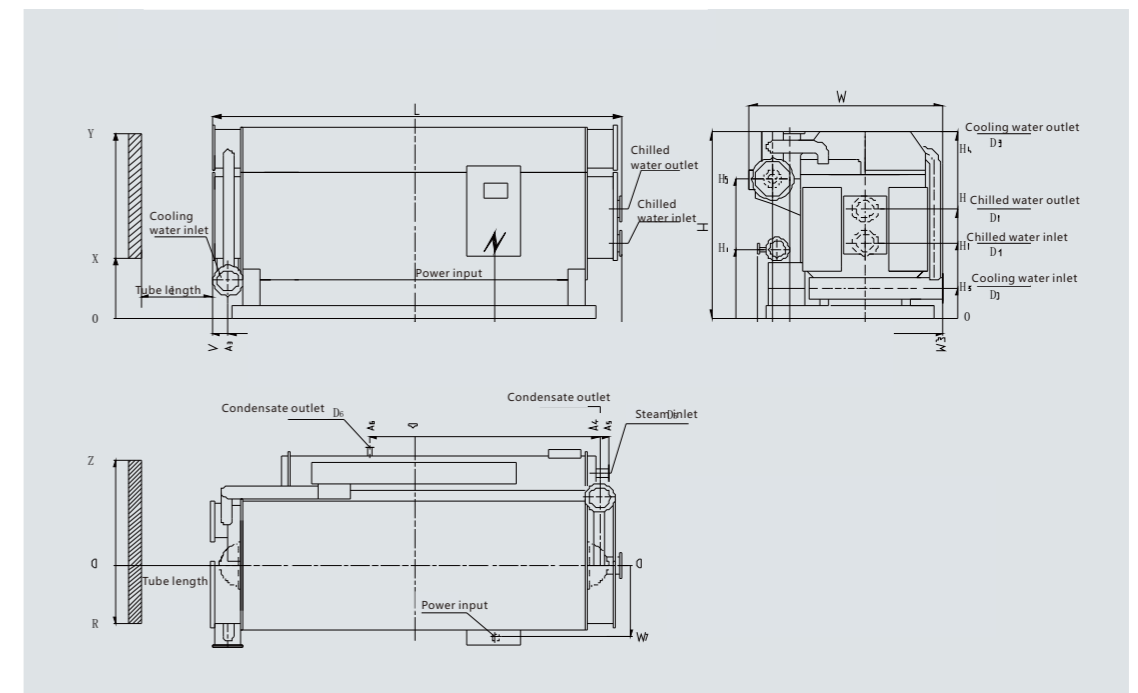
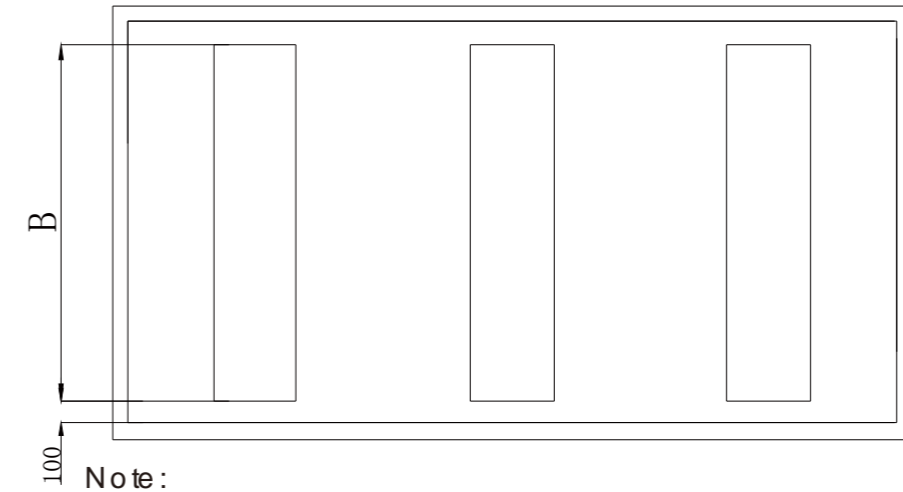
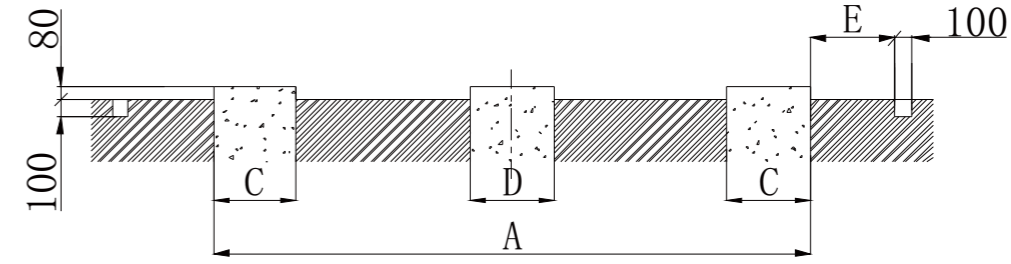


Table of pipe connection size (SXZ6-/SXZ8-)

Model	SXZ -	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	698
	SXZ -	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	698
	L	2900	2980	2980	2980	4020	4020	4640	4640	4658	5740	5740	5740	5770	5840	5920	6720	6720	6800	7800	7830	9610
	W	1352	1462	1656	1750	1656	1810	1915	1915	2010	2131	2131	2240	2345	2560	2630	2630	2910	3180	3280	3450	3590
	H	1960	2000	2160	2185	2350	2350	2438	2652	2652	2740	2890	2890	2890	3200	3315	3315	3585	3585	3855	3690	3690
	V	1458	1483	1510	1510	2020	2020	2020	2270	2330	2330	2900	2900	2900	2900	2940	3420	3480	3480	3885	4050	4660
	R	358	358	390	420	390	420	450	450	469	520	520	560	600	620	650	50	745	900	900	960	1060
	Z	655	715	960	970	1030	1030	1100	1100	1100	1260	1260	1280	1410	1410	1560	1560	1775	1950	2010	2085	2150
	X	628	628	628	628	628	728	728	728	720	650	650	810	800	780	910	910	910	910	910	910	910
	Y	1760	1810	1955	1945	1955	1980	2135	2135	2160	2440	2440	2500	2700	2830	3070	3070	3070	3250	3250	3250	3250
	I	2440	2440	2440	2440	3440	3440	3440	3940	3940	3940	4930	4930	4930	4930	4930	5930	5930	5930	6930	6930	7930
	A1	1340	1350	1360	1373	1868	1880	1880	2160	2160	2160	2660	2660	2660	2660	2690	3192	3218	3510	3945	3880	4500
	W1	628	628	667	690	657	690	719	719	739	790	790	829	870	890	920	0	0	0	0	0	0
	H1	956	956	915	968	915	968	1092	1092	1058	1140	1140	1170	1218	1310	1365	1330	1350	1395	1395	1410	1460
	H2	1365	1365	1410	1420	1400	1420	1542	1542	1535	1717	1717	1775	1911	2060	2120	2080	2132	2100	2100	2270	2330
	D1	80	100	100	125	125	125	150	150	150	200	200	200	200	250	250	250	300	350	350	350	80
	A3	1338	1338	1345	1361	1845	1845	1845	2125	2125	2125	2625	2625	2625	2625	2680	3150	3180	3305	3680	3805	4280
	A4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	W3	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	W4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	H3	488	488	560	488	505	465	529	529	529	530	530	537	565	542	553	553	560	560	560	560	560
	H4	1853	1853	1980	1980	1940	1980	2160	2160	2160	2436	2436	2490	2710	2905	3060	3200	3200	3400	3400	3400	3400
	D3	100	125	125	150	150	150	200	200	200	250	250	250	300	300	350	350	400	400	400	400	400
	A5	1400	1400	1400	1400	1980	1980	1980	2230	2230	2165	2740	2740	2740	2740	2740	3165	3165	3300	3665	3790	4290
	W5	575	575	660	687	660	687	745	745	744	850	850	889	982	1043	1043	1043	1065	1250	1250	1266	1366
	H5	1495	1495	1495	1495	1770	1770	1770	1770	1770	2154	2154	2154	2154	2150	2215	2215	2215	2360	2360	2360	2340
	D5	40	50	50	65	65	65	80	80	80	100	100	100	100	125	125	125	150	150	150	150	
	A6	400	400	400	400	400	400	300	300	300	300	300	250	250	250	250	250	255	255	255	255	255
	W6	588	588	665	711	665	711	760	760	792	890	900	924	866	972	955	955	975	1590	1590	1630	1770
	H6	532	532	630	530	560	530	630	650	650	800	800	764	775	890	795	8500	1000	1020	1020	1020	1020
	D6	25	25	25	25	25	25	40	40	40	40	40	40	40	40	880	50	50	50	50	65	65
	A7	550	920	920	920	950	1000	1000	1000	1000	1500	1500	1500	1500	1500	1600	1600	1800	1800	1800	1800	2000
	W7	600	600	600	650	650	660	670	670	680	750	760	820	820	820	880	880	880	1025	1025	1085	1085

Diagram of base size



- Note:
1. The levelness of the base shall be within 2/1000.
 2. The drainage trenches around the Unit shall be connected to the gutter.

Table of base size

Model	SXZ8-	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	698
	SXZ6-	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	698
	SXZ4-	/	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582
A		2600	2600	2600	2600	3700	3700	3700	4200	4200	4200	4600	4600	4600	4600	4600	5100	5100	6200	7200	7200	8200
B		1150	1300	1400	1450	1400	1500	1650	1650	1800	1850	1850	1950	2000	2350	2400	2400	2500	2600	2800	3000	
C		250	250	250	250	300	300	300	400	400	400	500	500	500	600	600	600	700	700	600	600	700
D		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	600	600	700
E		200	200	200	200	200	200	200	200	200	400	400	400	400	400	400	400	200	200	200	200	