

Hot Water-type LiBr Absorption Chiller Product Features



Working principle

The hot water-type LiBr absorption chiller is a hot water-powered refrigeration unit. It adopts the aqueous solution of lithium bromide (LiBr) as a cycling working medium. The LiBr solution works as an absorbent and water as a refrigerant.

The chiller comprises primarily the generator, condenser, evaporator, absorber, heat exchanger, automatic air extractor, burner, vacuum pump and canned pump.

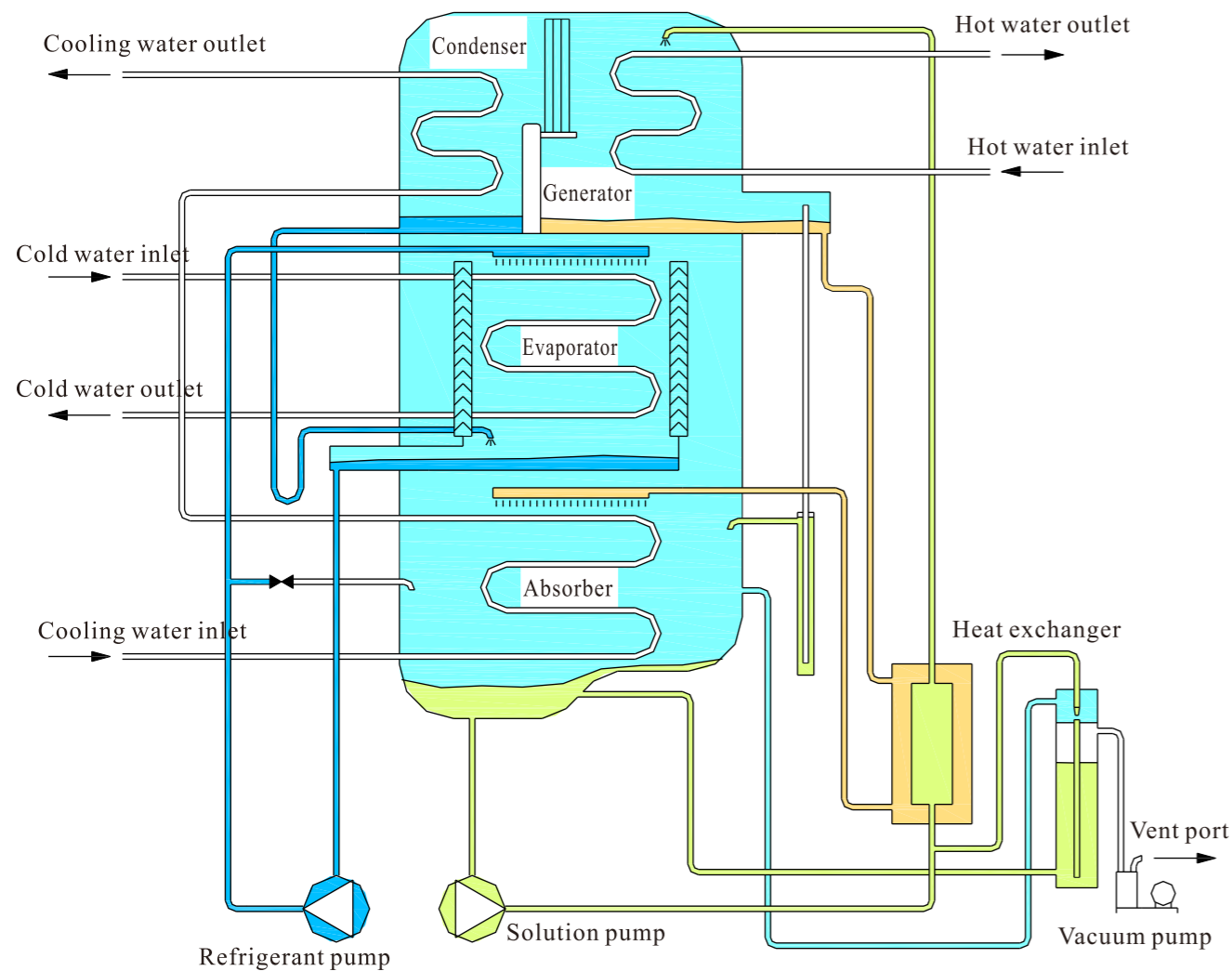
Working Principle: The refrigerant water in the evaporator evaporates away from the surface of the heat conducting tube. As heat in the cold water is taken away from the tube, the water temperature drops and quantities of cold are generated. The refrigerant steam evaporated from the evaporator is absorbed by the thick solution in the absorber and therefore the solution is diluted. The thin solution in the absorber is then delivered by the solution pump to the heat exchanger, where the solution is heated and the solution temperature rises. Then the thin solution is delivered to the generator, where it is heated by hot water to produce refrigerant steam. Then the solution becomes a thick solution. After releasing heat in the heat exchanger, the temperature of the thick solution drops. The thick solution then enters the absorber, where it absorbs the refrigerant steam from the evaporator, becomes a thin solution and enters the next cycle. The refrigerant steam generated by the generator is cooled in the condenser to form refrigerant water, which is further depressurized by a throttle valve and delivered to the evaporator. After the evaporation & refrigeration process, the refrigerant steam enters the next cycle.

The aforesaid cycle occurs repeatedly to form a continuous refrigeration process.

Pictures of City's Central Air-Conditioning System

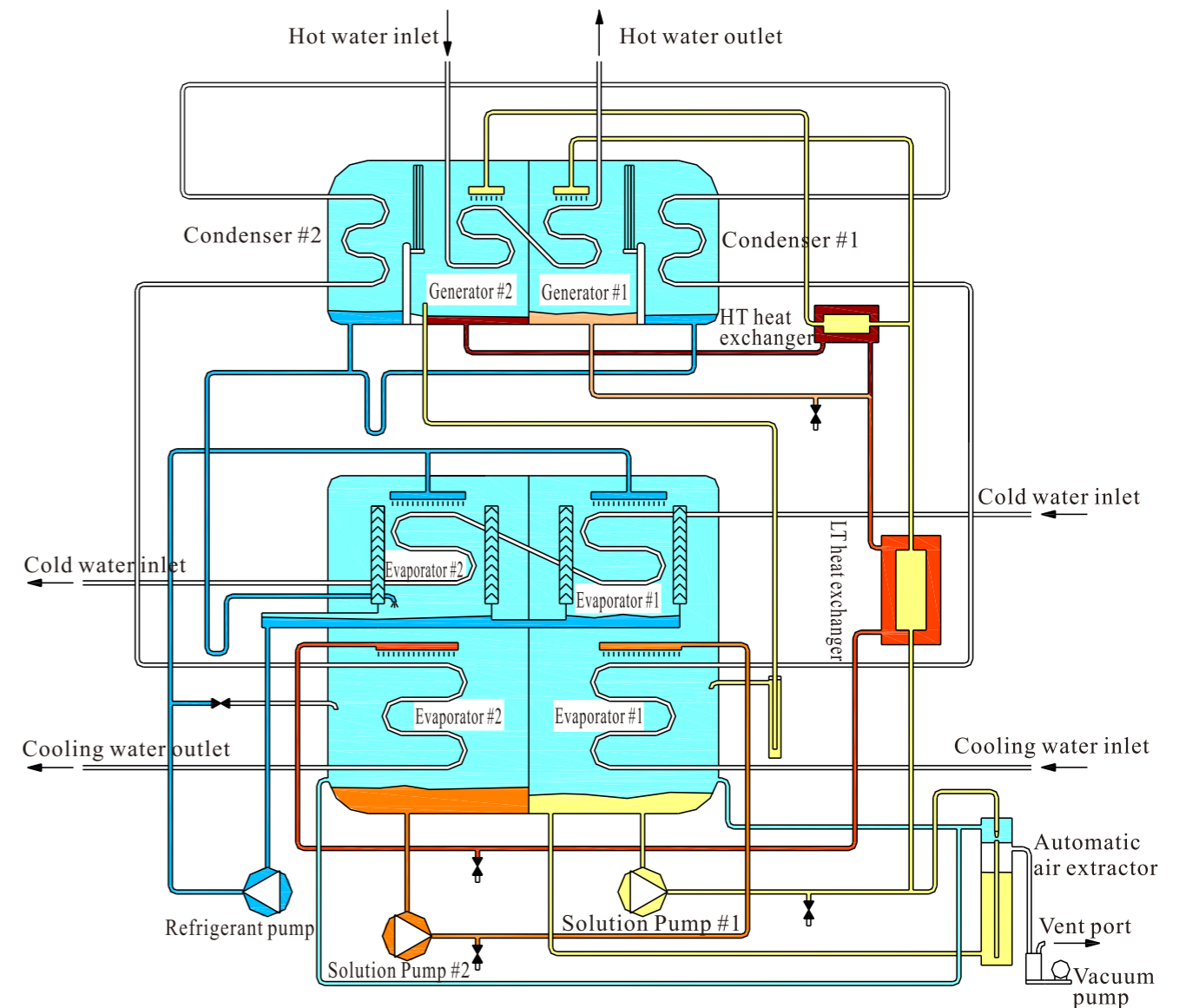


Refrigeration Flowsheet of a Standard Hot Water-Type Chiller



Thin solution	Thick solution	Refrigerant steam	Refrigerant water

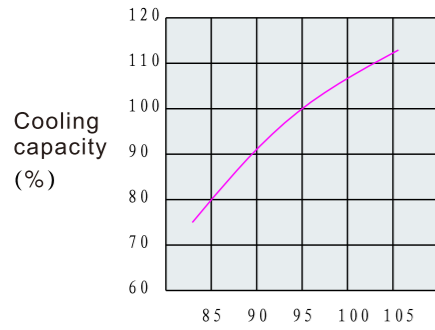
Refrigeration Flowsheet of a Hot Water-Type Two-Pass Chiller



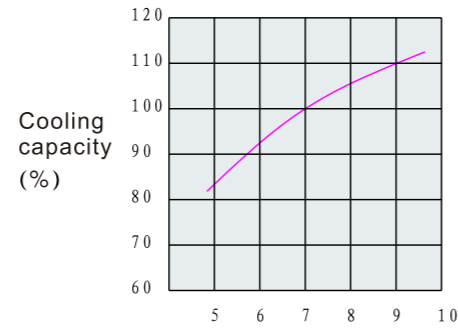
Thin solution	LT thick solution	HT thick solution	Mixed solution
Absorbent solution	Refrigerant steam	Refrigerant water	Valve

Performance curve

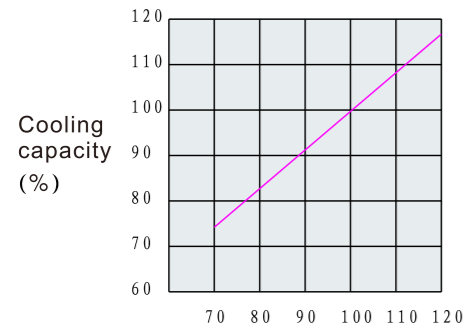
Relationship of cooling capacity and hot water inlet temperature



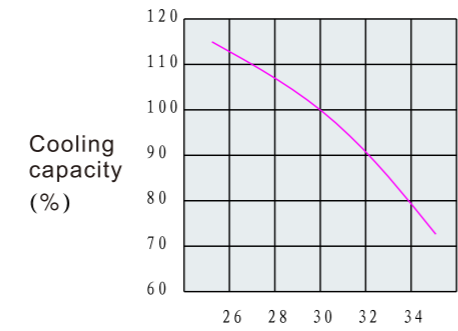
Relationship of cooling capacity and chilled water outlet temperature



Relationship of cooling capacity and cooling water flow rate



Relationship of cooling capacity and cooling water inlet temperature



Product Model No. Format

RXZ(95/85) — 58 D

Cold water outlet temperature: D (7°C; omissible), Z (10°C), H (13°C), T (16°C)

Rated refrigeration capacity: (58 × 10kW)

Heating water inlet/outlet temperature: (inlet/outlet) °C

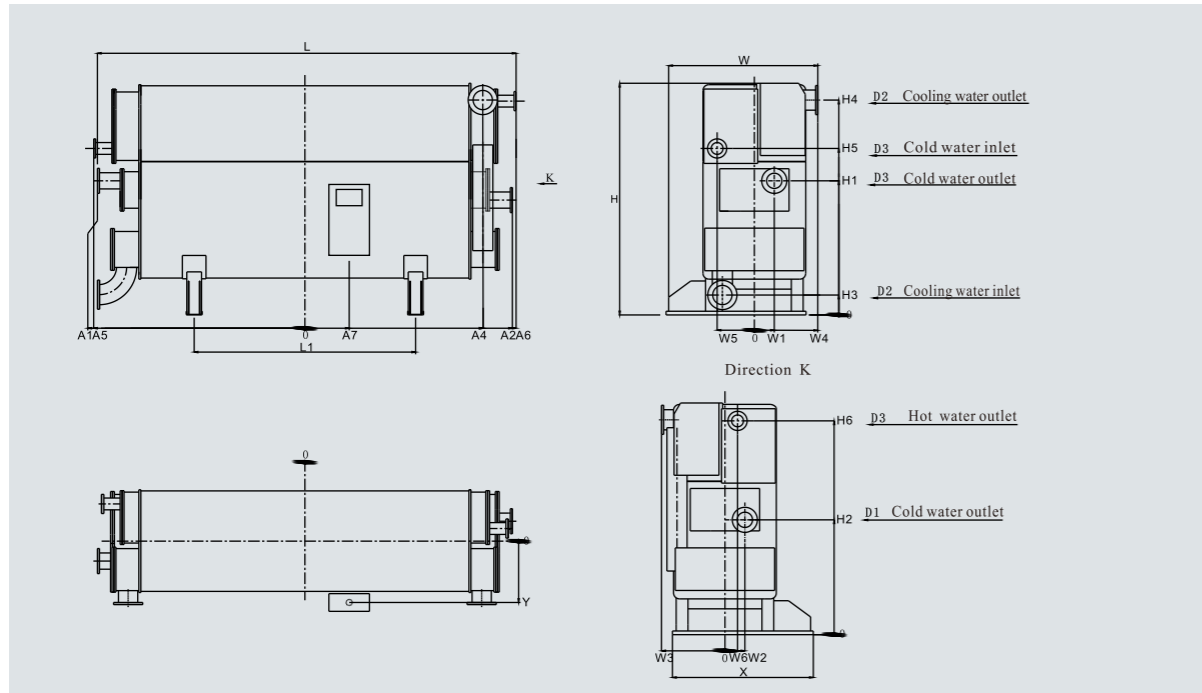
Product Type: RXZ (Hot water-powered LiBr absorption chiller)

Nominal Parameters

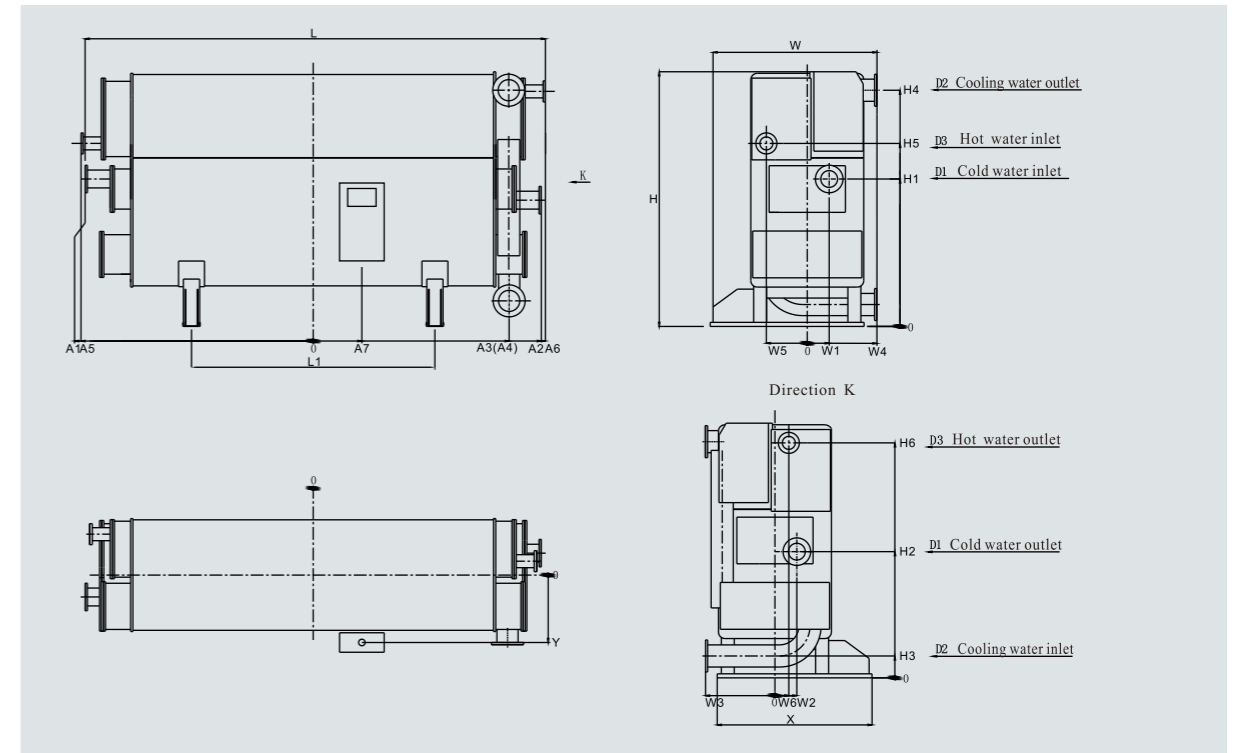
Model	RZX(95/85)		23		35		47		58		70		81		93		105		116		145		174		204		233		262		291		349		407		465		523		582		698	
	Refrigeration capacity × 10 ³ Kcal/h	USRt	233	20	66	99	132	165	198	231	265	299	331	413	496	579	661	744	827	992	1157	1323	1488	1653	1984	2040	175	200	225	250	300	350	400	450	500	600	700	800	900	1000	1200			
Cold water	Inlet/Outlet temperature	°C	Cold water 12→7																																									
	Flow rate	m ³ /h	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	600	700	800	900	1000	1200																					
	Pressure drop	mmHg	7.93	7.93	7.93	7.93	6.24	6.26	9.10	9.09	9.08	9.11	9.10	5.35	5.36	7.22	7.23	7.22	12.20	12.20	12.20	12.20	6.90																					
Cooling water	Pipe diameter	DN(mm)	80	100	100	125	125	150	150	150	150	200	200	200	200	250	250	250	250	300	300	300	350	400																				
	Inlet/Outlet temperature	°C	Cooling water 30→36																																									
	Flowrate	m ³ /h	75	112.5	150	187.5	225	262.5	300	337.5	375	468.8	562.5	656.3	750	843.8	937.5	1125	1313	1500	1688	1875	2250																					
Hot water	Pressure drop	mmHg	7.0	7.0	7.0	5.5	5.5	8.0	8.0	8.0	8.0	8.0	8.0	11.1	11.2	6.3	6.3	6.4	10.7	10.7	10.7	10.7	6.0																					
	Pipe diameter	DN(mm)	100	125	150	150	200	200	200	200	200	250	250	300	300	350	350	350	400	400	400	450	500																					
	Inlet/Outlet temperature	°C	Cooling water 95 → 85																																									
Electrical properties	Flow rate	m ³ /h	25	37.5	50	62.5	75	87.5	100	112.5	125	156.3	187.5	218.8	250	281.3	312.5	375	437.5	500	562.5	625	750																					
	Pressure drop	mmHg	8.5	8.5	8.5	8.2	8.2	12.0	12.0	12.0	12.0	12.0	12.0	9.7	9.7	13.1	13.1	13.1	11.3	11.3	11.3	9.1	9.1																					
	Pipe diameter	DN(mm)	65	80	80	100	100	100	125	125	125	150	150	200	200	200	200	200	250	250	250	300	300																					
Dimension	Total power	KW	2.8	2.8	2.8	2.8	3.2	3.2	3.2	3.2	3.5	3.5	3.8	4.2	4.6	5.2	6.2	7.1	7.6	8.4	9.4	14.9	16.9																					
	Power supply		3-phase/380V/50Hz																																									
	Length (L)	mm	3420	3460	3480	4000	4030	4737	4800	4850	4880	4920	5440	5460	6020	6060	6060	6060	7100	7120	7150	8830	8830																					
Transportation	Width (W)	mm	1360	1480	1655	1685	1780	1620	1790	1980	2105	2210	2420	2430	2630	3300	3300	3300	2720	2970	3120	3230	3450																					
	Height (H)	mm	2210	2290	2380	2540	2620	2700	2790	2865	2910	3050	3180	3320	3420	3540	3600	3600	3790	3905	4010	4065	4180																					
	Total shipment weight	t	3.5	4.1	4.9	5.6	6.5	7.5	8.4	9.2	10.1	12.4	14.6	16.8	19	21.3	23.6	28	32.2	36.4	41	45.5	54.6																					
Operating weight	t	4.2	4.9	5.9	6.8	8.1	9.3	10.5	11.2	12.3	15	17.7	20.4	23.1	26.2	29.2	35	40	45.1	50.6	56	67																						

External Tubing Diagram

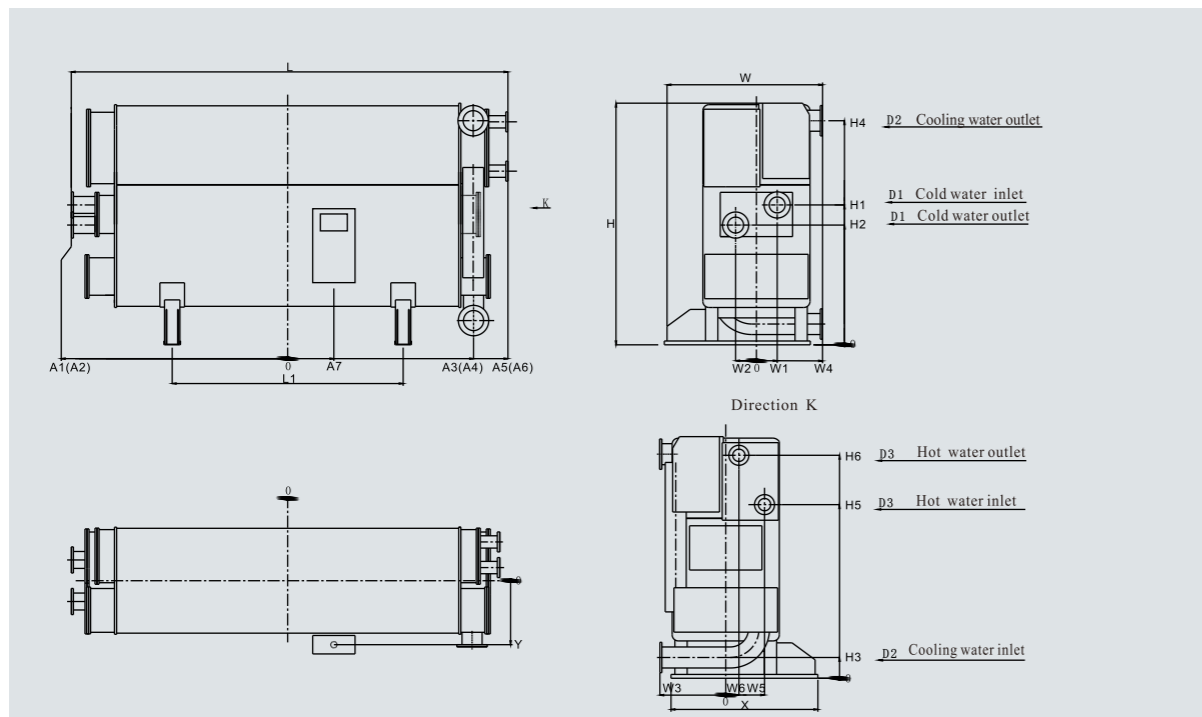
Model :RXZ(95/85)23~RXZ(95/85)47



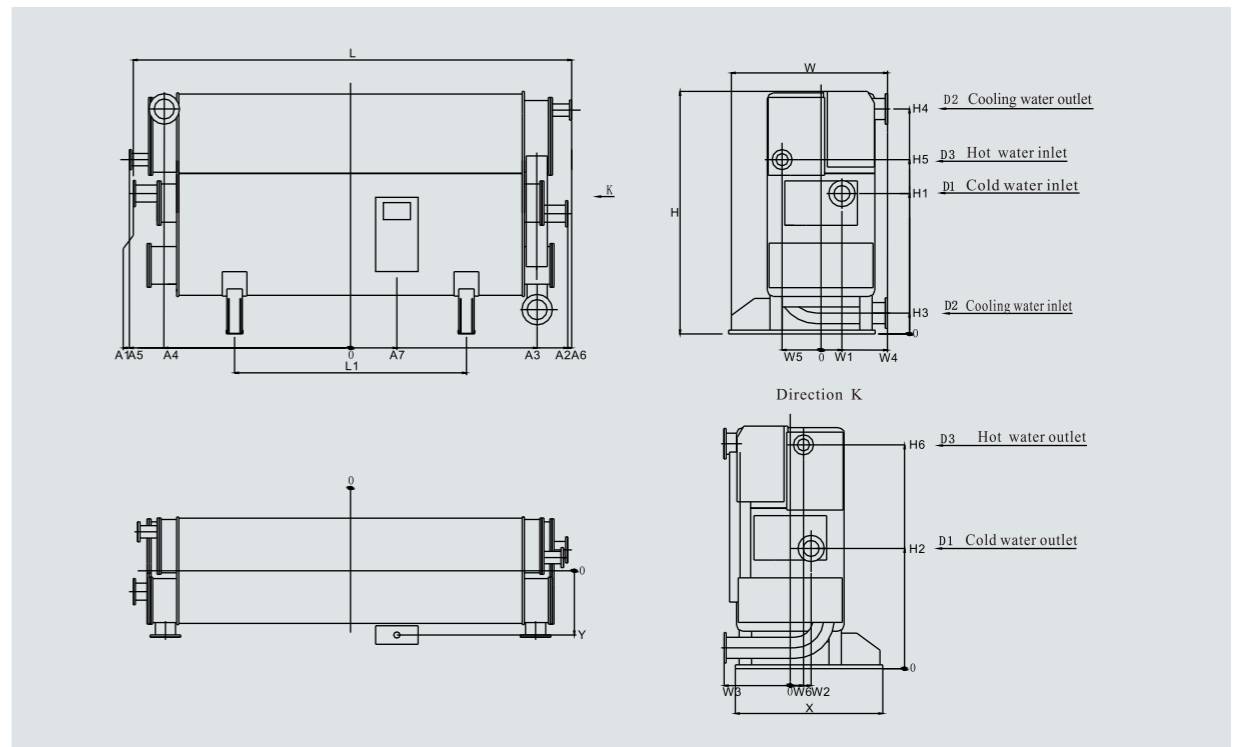
Model :RXZ(95/85)174~RXZ(95/85)204



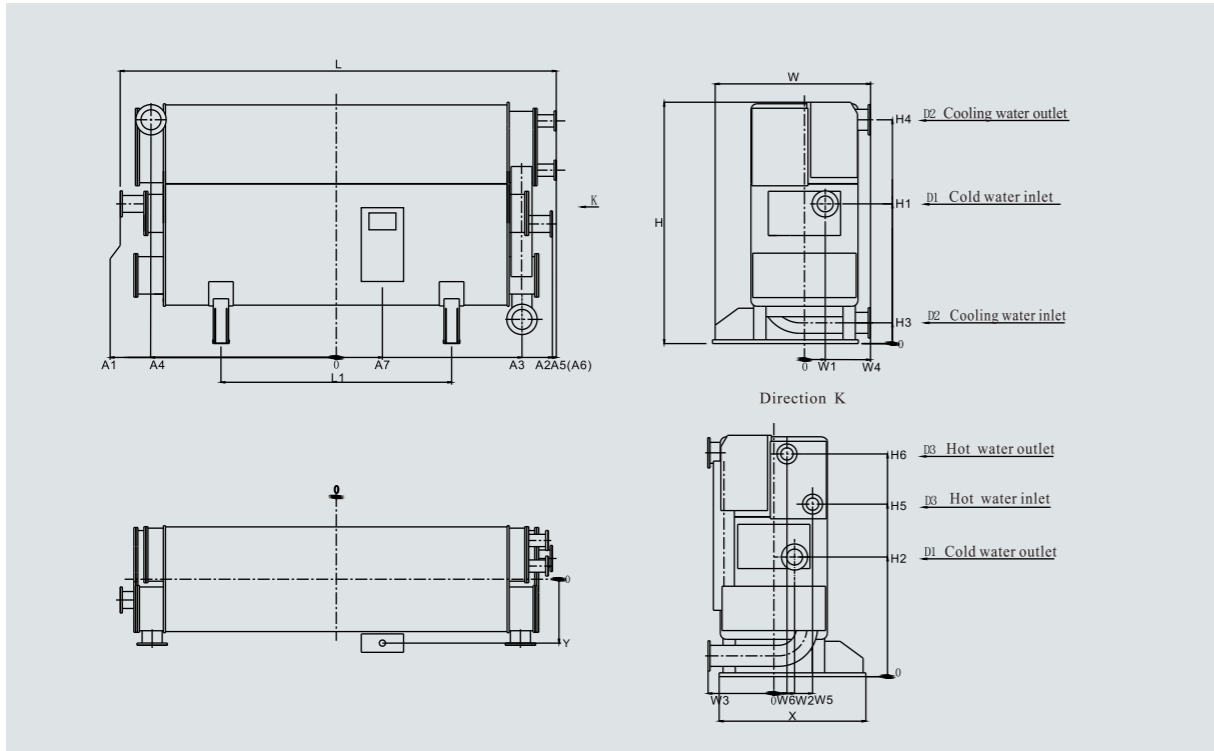
Model :RXZ(95/85)58~RXZ(95/85)145



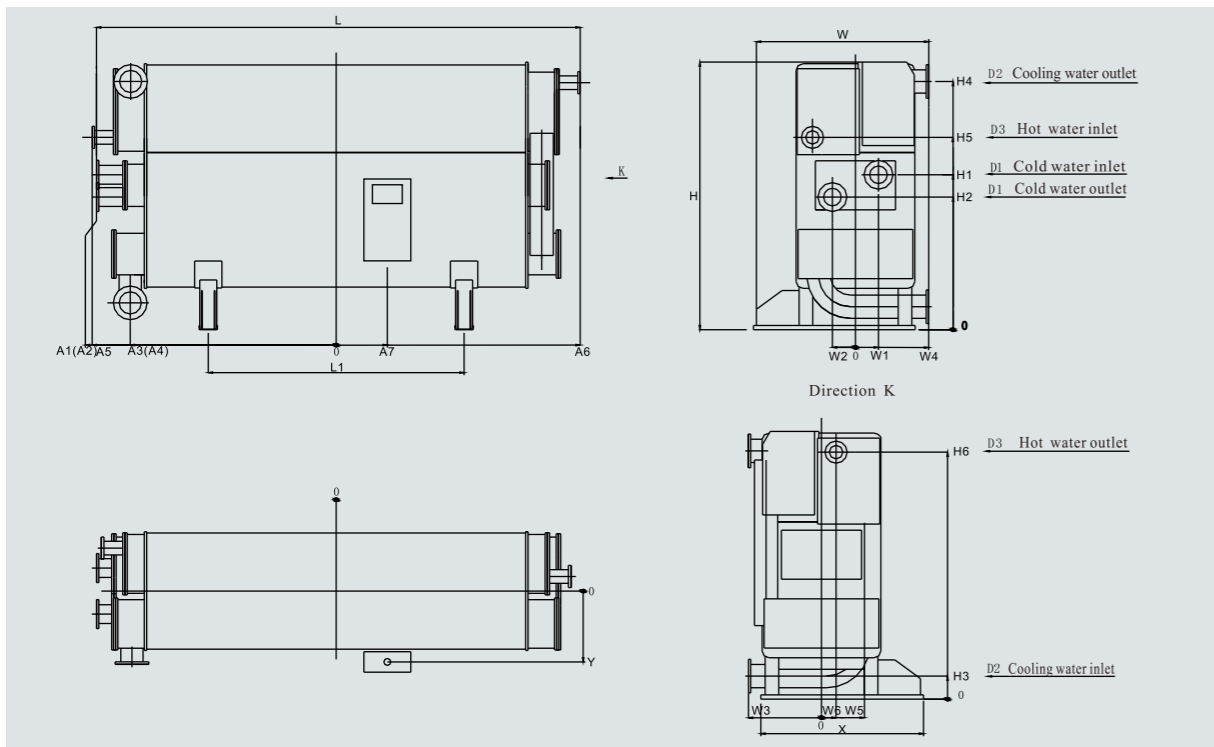
Model :RXZ(95/85)233~RXZ(95/85)291



Model :RXZ(95/85)349~RXZ(95/85)465



Model :RXZ(95/85)523~RXZ(95/85)698



External Tubing Dimension Table

Model: RXZ(95/85)-	23	35	47	58	70	81	93	105	116	145	174	204	233	262	291	349	407	465	523	582	698
L	3420	3460	3480	4000	4030	4737	4800	4850	4880	4920	5440	5460	6020	6020	6060	7100	7120	7150	8830	8830	8830
W	1360	1480	1655	1685	1780	1620	1790	1980	2105	2210	2210	2420	2430	2510	2630	2720	2970	3120	3230	3300	3450
H	1920	2030	2100	2100	2160	2460	2580	2720	2800	2930	3100	3220	3350	3410	3560	3690	3720	3810	3740	3880	3920
L1	2450	2450	2450	2750	2800	3000	3000	2900	3100	3100	3500	3500	4000	3500	4000	4300	4300	4300	4600	4600	4700
X	1200	1250	1300	1300	1360	1300	1360	1400	1450	1450	1565	1740	1740	1740	2100	3100	2300	2500	2500	2550	2600
A1	1710	1730	1740	2000	2015	2368	2400	2425	2440	2460	2700	2710	2990	2990	3010	3530	3540	3550	4395	4395	4395
A2	1710	1730	1740	2000	2015	2368	2400	2425	2440	2460	2700	2710	2990	2990	3010	3530	3540	3550	4395	4395	4395
W1	50	55	75	80	85	100	140	200	215	245	255	265	280	285	405	415	445	450	495	500	535
W2	50	55	75	80	85	100	140	200	215	245	255	265	280	285	405	415	445	450	495	500	535
H1	1530	1590	1605	1605	1620	1765	1790	1850	1940	1970	2110	2160	2160	2170	2275	2290	2350	2390	2350	2410	2420
H2	1470	1475	1475	1475	1480	1520	1540	1570	1575	1575	1650	1660	1660	1660	1770	1770	1810	1825	1810	1825	1830
D1	80	100	100	125	125	150	150	150	150	200	200	200	250	250	250	250	300	300	350	350	350
A3	1575	1600	1600	1835	1835	2137	2150	2150	2140	2140	2400	2410	2690	2690	2710	3200	3200	3200	4035	4035	4035
A4	1575	1600	1600	1835	1835	2137	2150	2150	2140	2140	2400	2410	2690	2690	2710	3200	3200	3200	4035	4035	4035
W3	580	640	725	740	790	710	795	890	950	1005	1005	1120	1115	1125	1215	1210	1385	1460	1615	1650	1725
W4	580	640	725	740	790	710	795	890	950	1005	1005	1120	1115	1125	1215	1210	1385	1460	1615	1650	1725
H3	150	185	190	190	250	260	270	280	330	340	350	380	390	440	450	460	500	510	550	560	570
H4	1820	1905	1950	1950	1960	2260	2380	2520	2550	2680	2850	2930	3050	3060	3210	3340	3410	3410	3290	3430	3470
D2	100	125	150	150	200	200	200	200	250	250	250	300	300	350	350	350	400	400	450	450	450
A5	1710	1730	1740	2000	2015	2368	2400	2425	2440	2460	2720	2730	3010	3010	3030	3550	3560	3575	4415	4415	4415
A6	1710	1730	1740	2000	2015	2368	2400	2425	2440	2460	2720	2730	3010	3010	3030	3550	3560	3575	4415	4415	4415
W5	260	320	330	390	400	410	500	510	520	600	610	750	760	765	770	790	930	940	950	1110	1120
W6	50	60	65	70	75	80	85	90	95	100	105	120	125	125	130	130	150	155	160	180	185
H5	1650	1750	1750	1800	1800	1950	2000	2050	2150	2200	2350	2450	2450	2480	2600	2600	2700	2750	2750	2820	2850
H6	1800	1880	1920	1920	1930	2220	2340	2470	2500	2630	2800	2880	2990	3000	3150	3280	3260	3350	3230	3370	3370
D3	65	80	80	100	100	100	125	125	125	150	150	200	200	200	200	200	250	250	250	300	300
A7	370	370	370	500	500	500	500	500	500	500	600	600	600	600	600	600	600	600	700	700	700
Y	530	590	675	690	740	660	735	830	890	935	935	1050	1045	1055	1135	1130	1295	1360	1405	1405	1505