General Catalogue

Absorbtion chillers

ACHIEVE YOUR VISION

CHILLER
FAN COIL
ICE TERMAL STORAGE SYSTEM
CHU & AHU
BOILER

RAAF

RAAF

CONTENTS

By Continuing challenge
We will open the eco-friendly future

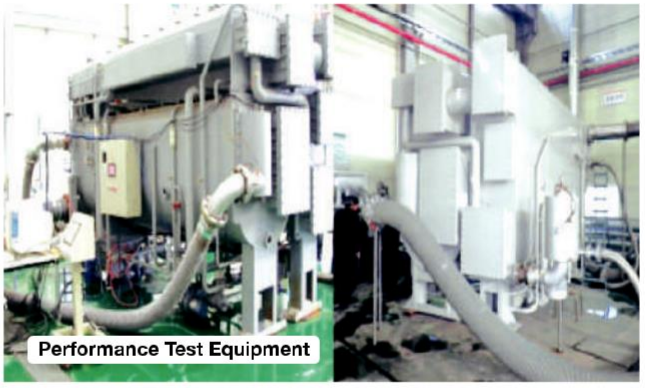
Brief History

2018	Development of High Efficiency of Water Cooled Screw Chiller
2017	Initiate national project of development of Heat Pump and transformer
	Initiate national project of development of Adsorption Chiller
2016	Certificate of Designation of Excellent Product by Public Procurement
	Service Registraion of Direct Fired Absorption Chiller&Heater in Korea Public Procurement Agency
	Certificate of green technology (Double Lift Hot water Driven Absorption Chiller)
	Certificate of high efficiency energy material (Double Lift Hot water Driven Absorption Chiller)
	New business for Screw chiller and Absorption heat pump
2015	Start to develop absorption heat pump for nation project
	Development of Air Handling Unit (AHU) for exhaust heat recovery
2014	Registration Air Handling Unit in Public Procurement Agency
	CE : Double-Effect Direct Fired Absorption Chiller&Heater Single-Effect Double Lift Hot water Driven Absorption Chiller (WDL 75~975 Series)
2013	Certificate ISO 14001
	Build a new factory for Air Handling Unit(AHU)
2011	Development of High-efficiency Direct Fired Absorption chiller&heater (COP 1.36, 1.51(LHV))
2010	Resigtration of Double Lift Hot water Driven Absorption Chiller as excellent product by Korea Public Procure Agency
2009	Development of exhaust gas absorption chiller-heater
2007	Registration of patent (Double Lift Hot water Driven Absorption Chiller)
2006	Development of Double Lift Hot water Absorption Chiller
	Development of Single Effect Hot water Driven Absorption Chiller
	Certificate INNO BIZ by SMBA
2005	Registration license of making specific facility, Certificate of venture company
	Establish research affiliated with World E&C (Korea industrial technology promotion association)
2001-2003	Certificate ISO 9001 / 9002
1999	Business for high temperature generator in Direct Fired Absorption Chiller&Heater
	Establish World EnC


Outside of Factory

Office Building and R&D Center

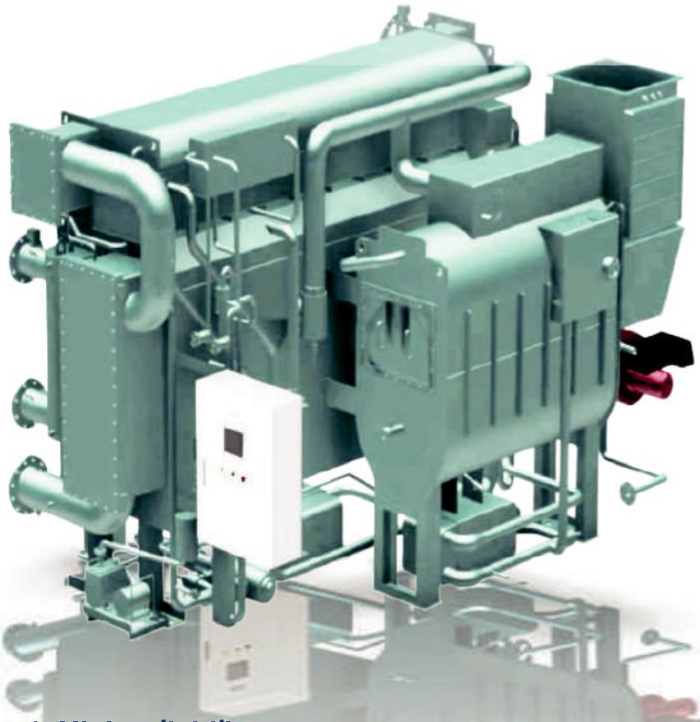

Inside of Factory

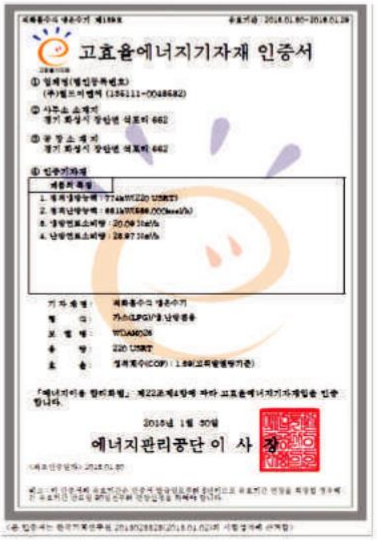

Performance Test Equipment

Double-Effect Direct Fired Absorption Chiller & Heater

RAAF

30RT ~ 1500RT 29 Model





Features of WDA Series

1. High reliability

- Designed to enhance the reliability and durability
- Robust structure through the perfect reliability test for long time and higher reliability by adopting high quality components

2. Efficient operation

- Energy saving and efficiency realized
- Optimal control for the solution cycling volume by inverter depending on the cooling load
- Optimal PID control by sensing the operating condition with the level sensor
- Minimized power consumption due to precise operation and partial load operation

[Option] Early reduction, Anti-freezing, Refrigerant generation, Solution refining, Tube ball clean, Crystal forming prevention from power failure

3. Convenient partition

- Repair and maintenance is easy. Multi-partition structure
- Mounting/detaching structure for easy repair and maintenance
- Partial incoming to make it possible for field work such as remodeling at narrow space. Assembling at field is possible.

4. Perfect vacuum

- High performance & purge system.
  Cost-efficiency for maintenance
- Leakage for one month at below 3cc.
  High vacuum condition
- Auto purge. Non-condensing gas storage
- Maintaining optimal operating condition.
  Operation with only minimum steam extraction.

5. Low noise and low vibration

- Below 75dB at 1m distance for noise level

6. Enough capacity

- Heating capacity increase system
- Designed to increase up to 3 stages from the standard.
- Designed to increase up to 3 stages from the standard.

7. Latest operation

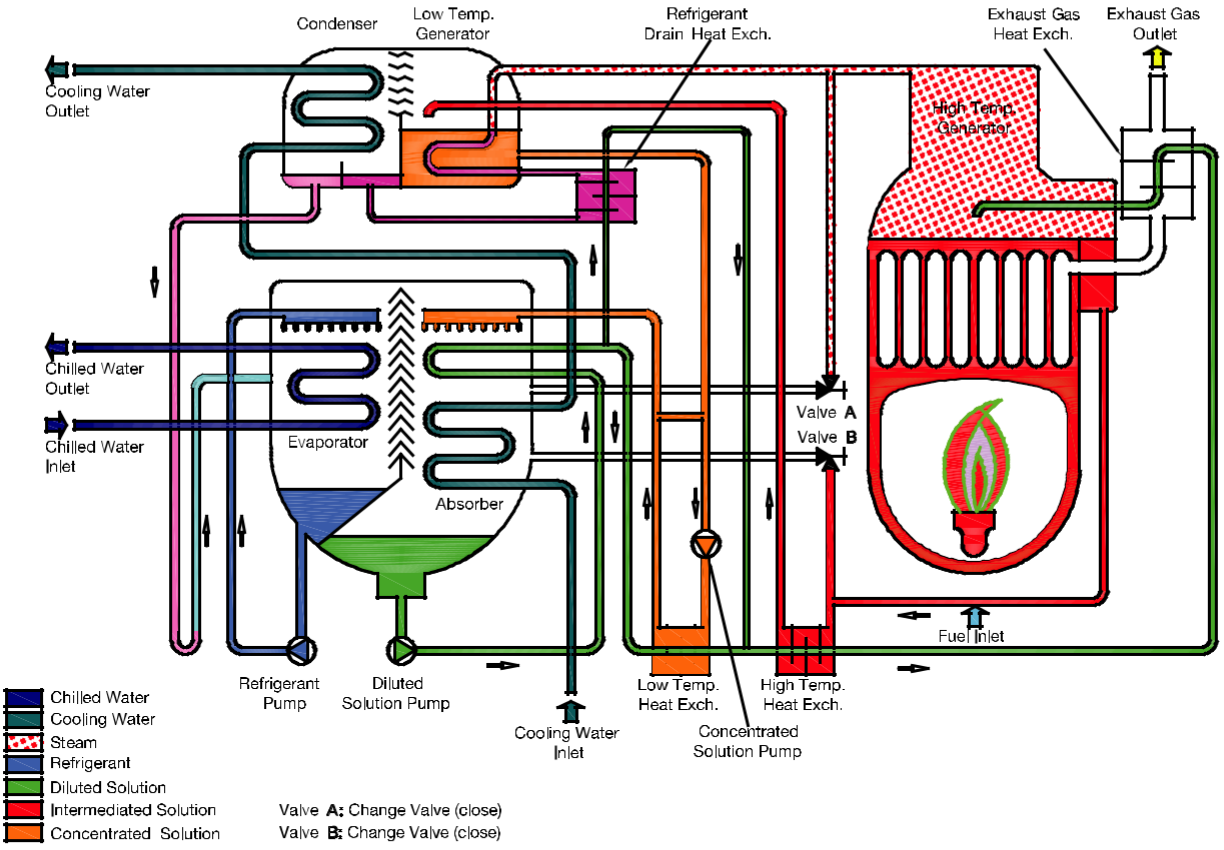
- Latest MICOM, remote control and BAS compatible.
- Self-diagnosis, 16-bit Micro Process to ensure precise and safe operation
- Simple operation. Easy MICOM setting designed with algorithm allowing automatic operation
- Customer's convenience for operation due to remote control function along with the
  operating condition record and schedule operation

[Option] Monitoring system

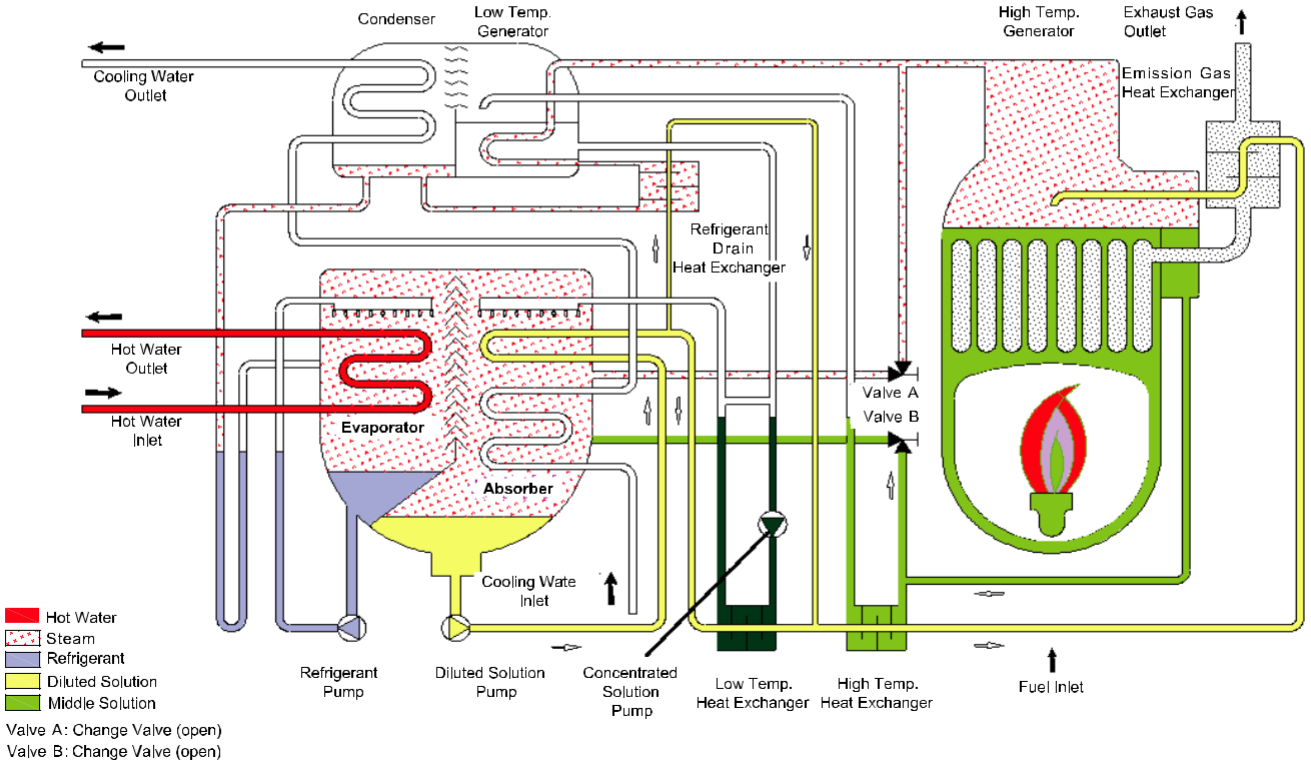
CYCLE DIAGRAM

Double-Effect Direct Fired Absorption Chiller & Heater

Cooling Cycle Diagram



Heating Cycle Diagram



SPECIFICATION [WDA Series]

Double-Effect Direct Fired Absorption Chiller & Heater

COP 1.1(LHV)

MODEL			UNIT	WDA 005	WDA 006	WDA 007	WDA 008	WDA 010	WDA 012	WDA 015	WDA 018	WDA 021	WDA 024	WDA 028	WDA 032	WDA 036	WDA 040
Cooling capacity			usRT	50	60	70	80	100	120	150	180	210	240	280	320	360	400
			kW	176	211	246	281	352	422	528	633	739	844	985	1,125	1,266	1,407
Heating Capacity			Mcal/h	151	181	212	242	302	363	454	544	635	726	847	968	1,089	1,210
			kW	176	211	246	281	352	422	528	633	739	844	985	1,125	1,266	1,407
Chilled & Hot Water	Temp.		℃	12/7℃ (Heating 55/60℃)													
	Flow rate		㎥/h	30.2	36.3	42.3	48.4	60.5	72.6	90.7	108.9	127.0	145.2	169.3	193.5	217.7	241.9
	P.Drop		mAq	7.6	7.7	5.8	5.4	5.9	6.0	8.0	8.1	7.5	7.4	5.3	5.2	5.7	5.9
	Connection		mm	80				100				125		150			
Cooling Water	Temp.		℃	32/37.5℃													
	Flow rate		㎥/h	50	60	70	80	100	120	150	180	210	240	280	320	360	400
	P.Drop		mAq	3.5	3.7	8.2	7.7	3.3	3.5	9.6	10.1	5.8	4.7	8.7	8.8	8.9	8.8
	Connection		mm	100				125				150		200			
Fuel	Gas	Cooling	Nm³/h	15.9	19.1	22.3	25.5	31.8	38.2	47.7	57.3	66.8	76.4	89.1	101.9	114.6	127.3
		Heating	Nm³/h	18.9	22.7	26.5	30.2	37.8	45.4	56.7	68.0	79.4	90.7	105.9	121.0	136.1	151.2
		Connection	mm	40(4,000mmAq)													
	Oil	Cooling	kg/h	16.4	19.7	23.0	26.3	32.9	39.4	49.3	59.2	69.0	78.9	92.0	105.2	118.3	131.5
		Heating	kg/h	19.5	23.4	27.3	31.2	39.0	46.8	58.6	70.3	82.0	93.7	109.3	124.9	140.5	156.1
		Connection	mm	10				15			20						
Electric	Power Source		–	3Ø 380V 50Hz													
	Abs. Pump No.1		kW(A)	1.2(4.0)				2.0(6.0)				2.4(7.5)		3.0(11.0)		3.4(10.2)	
	Abs. Pump No.2		kW(A)	0.3(1.6)				0.4(1.6)				1.2(4.5)				1.5(5.0)	
	Ref. Pump		kW(A)	0.2(1.1)				0.3(1.5)				0.4(1.5)					
	Purge Pump		kW(A)	0.4(1.4)													
	Burner Blower		kW(A)	0.37(1.0)		0.75(2.1)					1.5(4.0)			2.2(5.0)			3.0(6.5)
	Oil Pump		kW(A)	–				0.24(0.6)				0.55(2.1)					
	Control Panel		kW(A)	0.2(0.5)													
	Total Amp.	Gas	kW(A)	2.67(9.6)		3.05(10.7)		4.05(13.1)			4.8(15.0)	6.1(19.4)		7.4(23.9)		8.1(23.6)	8.9(25.1)
		Oil	kW(A)	2.67(9.6)		3.05(10.7)		4.29(13.7)			5.35(17.1)	19.95(21.5)		7.95(26.0)		8.65(25.7)	9.45(27.2)
Size	Length(L)		mm	2,630		2,700		2,853		3,644		3,696		4,782		4,867	
	Width(W)		mm	1,840		1,840		1,940		2,051		2,102		2,200		2,287	
	Height(H)		mm	1,910				2,020				2,390				2,585	
Weight	Rigging		Ton	2.7	2.9	3.1	3.5	3.8	4.0	4.9	5.3	6.1	7.2	7.7	8.3	10.3	10.5
	Operation		Ton	3.0	3.2	3.4	3.8	4.6	4.8	5.8	6.4	7.5	7.8	8.7	9.3	11.7	12.1
Space for Tube Replacement			mm	2,000		2,400				3,400				4,600			

Remark

1) 1usRT = 3,024 kcal/h
2) Working Pressure of each water side is based on 1.0MPa [151psig]
3) Nutural Gas LHV(Lower Heating Value) : 9,500kcal/Nm^3, Diesel Oil LHV(Lower Heating Value) : 9,200kcal/kg
4) Fouling factor 0.0001m^2h·℃/kcal for Absorber and Condenser, 0.0001m^2 ·h·℃/kcal for Evaporator.
5) Catalogue specifications are subject to change without prior notice.

MODEL			UNIT	WDA 045	WDA 050	WDA 056	WDA 063	WDA 070	WDA 080	WDA 090	WDA 100	WDA 110	WDA 120	WDA 130	WDA 140	WDA 150
Cooling capacity			usRT	450	500	560	630	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500
			kW	1,583	1,758	1,969	2,216	2,462	2,814	3,165	3,517	3,869	4,220	4,572	4,924	5,275
Heating Capacity			Mcal/h	1,361	1,512	1,693	1,905	2,117	2,032	2,286	2,540	2,794	3,048	3,302	3,556	3,810
			kW	1,583	1,758	1,969	2,216	2,462	2,363	2,659	2,954	3,250	3,545	3,840	4,136	4,431
Chilled & Hot Water	Temp.		℃	12 / 7℃ (Heating 55 / 60℃)												
	Flow rate		㎥/h	272.2	302.4	338.7	381.0	423.4	483.8	544.3	604.8	665.3	725.8	786.2	846.7	907.2
	P.Drop		mAq	5.1	5.3	4.2	5.7	7.6	5.5	7.4	9.7	7.4	9.4	11.7	9.4	11.5
	Connection		mm	200					250			300			350	
Cooling Water	Temp.		℃	32 / 37.5℃												
	Flow rate		㎥/h	450	500	560	630	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500
	P.Drop		mAq	8.6	8.7	6.4	8.8	11.7	9.1	12.3	16.2	12.3	15.7	7.2	12.8	15.7
	Connection		mm	250		300			350			400				
Fuel	Gas	Cooling	Nm³/h	143.2	159.2	178.3	200.5	222.8	254.7	286.5	318.3	350.1	382.0	413.8	445.6	477.5
		Heating	Nm³/h	170.1	189.0	211.7	238.2	264.6	254.0	285.8	317.6	349.3	381.1	412.8	444.6	476.3
		Connection	mm	50 (4.000mmAq)								65 (4.000mmAq)				
	Oil	Cooling	kg/h	147.9	164.3	184.1	207.1	230.1	263.0	295.8	328.7	361.6	394.4	427.3	460.2	493.0
		Heating	kg/h	175.7	195.2	218.6	245.9	273.3	262.3	295.1	327.9	360.7	393.5	426.3	459.1	491.9
		Connection	mm	20					25							
Electric	Power Source		–	3Ø 380V 50Hz												
	Abs. Pump No.1		kW(A)	3.4(10.2)		5.5(14.5)			6.6(16.2)			7.5(25.0)				
	Abs. Pump No.2		kW(A)	1.5 (5.0)		2.0(6.0)			2.2(7.0)			4.5(16.0)				
	Ref. Pump		kW(A)	0.4(1.5)					1.5(4.0)							
	Purge Pump		kW(A)	0.4(1.4)												
	Burner Blower		kW(A)	3.0(6.5)		5.5(13.0)			7.5(15.8)			11.0(22.7)				
	Oil Pump		kW(A)	0.55(2.1)					1.1(4.0)							
	Control Panel		kW(A)	0.2(0.5)												
	Total Amp.	Gas	kW(A)	8.9(25.1)		14(36.9)			18.4(44.9)			25.1(69.6)				
		Oil	kW(A)	9.45(27.2)		14.55(39.0)			19.5(48.9)			26.2(73.6)				
Size	Length(L)		mm	4,880	4,960	5,100	5,600	6,150	5,750	6,250	6,800	6,200	6,700	7,200	6,900	7,400
	Width(W)		mm	2,550		3,150			3,400			4,210			4,630	
	Height(H)		mm	2,800		3,300			3,600			3,600			3,800	
Weight	Rigging		Ton	12.6	12.8	18.1	19.6	21.0	27.9	30.2	32.6	37.8	40.7	43.2	47.5	50.0
	Operation		Ton	14.5	14.8	20.7	22.3	24.0	31.8	34.3	37.0	42.1	45.2	48.1	52.7	55.6
Space for Tube Replacement			mm	4,600			5,200	5,700	5,200	5,700	6,200	5,700	6,200	6,700	6,200	6,700

SPECIFICATION [WDA-E Series]

Double-Effect Direct Fired Absorption Chiller & Heater

COP 1.36(LHV) Middle-efficiency model

MODEL			Units	WDAE 005	WDAE 006	WDAE 007	WDAE 008	WDAE 010	WDAE 012	WDAE 015	WDAE 018	WDAE 021	WDAE 024
Cooling capacity			usRT	50	60	70	80	100	120	150	180	210	240
			kW	176	211	246	281	351	422	527	633	738	844
Heating Capacity			Mcal/h	133	160	186	213	266	319	399	479	559	639
			kW	155	186	217	247	309	371	464	557	650	742
Chilled & Hot Water	Temp.		℃	12 / 7℃ (Heating55.6 / 60℃)									
	Flow rate		㎥/h	30.2	36.3	42.3	48.4	60.5	72.6	90.7	108.9	127.0	145.2
	P.Drop		mAq	7.6	7.7	5.8	5.4	5.9	6.0	8.0	8.1	7.5	7.4
	Connection		mm	80				100				125	
Cooling Water	Temp.		℃	32 / 37.3℃									
	Flow rate		㎥/h	50	60	70	80	100	120	150	180	210	240
	P.Drop		mAq	3.5	3.7	8.2	7.7	3.3	3.5	9.6	10.1	5.8	4.7
	Connection		mm	100				125				150	
Fuel	Gas	Cooling	N㎥/h	12.1	14.5	17.0	19.4	24.2	29.1	36.3	43.6	50.9	58.2
		Heating	N㎥/h	15.2	18.2	21.3	24.3	30.4	36.5	45.6	54.7	63.8	72.9
		Connection	mm	40 (4,000mmAq)									
	Oil	Cooling	kg/h	16.4	19.7	23.0	26.3	32.9	39.4	49.3	59.2	69.0	78.9
		Heating	kg/h	19.5	23.4	27.3	31.2	39.0	46.8	58.6	70.3	82.0	93.7
		Connection	mm	10				15			20		
Electric	Power Source		–	3Ø 380V 50Hz									
	Abs. Pump No.1		kW(A)	1.2 (4.0)				2.0 (6.0)				2.4(7.5)	
	Abs. Pump No.2		kW(A)	0.3 (1.6)				0.4 (1.6)				1.2 (4.5)	
	Ref.Pump		kW(A)	0.2 (1.1)				0.3 (1.5)				0.4 (1.5)	
	Purge Pump		kW(A)	0.4 (1.4)									
	Burner Blower		kW(A)	0.37 (1.0)		0.75 (2.1)					1.5(4.0)		
	Oil Pump		kW(A)	–				0.24 (0.6)			0.55 (2.1)		
	Control Panel		kW(A)	0.2 (0.5)									
	Total Amp.	Gas	kW(A)	2.67(9.6)		3.05(10.7)		4.05(13.1)			4.8(15.0)	6.1(19.4)	
		Oil	kW(A)	2.67(9.6)		3.05(10.7)		4.29(13.7)			5.35(17.1)	19.95(21.5)	
Size	Length(L)		mm	2,630		2,700		2,853		3,644		3,696	
	Width(W)		mm	1,840		1,840		1,940		2,051		2,102	
	Height(H)		mm	1,910				2,020				2,390	
Weight	Rigging		Ton	2.8	3.0	3.3	3.7	4.0	4.2	5.1	5.6	6.4	7.6
	Operation		Ton	3.2	3.4	3.6	4.0	4.8	5.0	6.1	6.7	7.9	8.2
Space for Tube Replacement			mm	2,000		2,400				3,400			

Remark 1) 1usRT = 3,024 kcal/h

2) Working Pressure of each water side is based on 1.0MPa [151psig]

3) Nutural Gas LHV(Lower Heating Value) : 9,500kcal/Nm^3, Diesel Oil LHV(Lower Heating Value) : 9,200kcal/kg

4) Fouling factor 0.0001m^2·h·℃/kcal for Absorber and Condenser, 0.0001m^2·h·℃/kcal for Evaporator.

5) Catalogue specifications are subject to change without prior notice.

MODEL			Units	WDAE 028	WDAE 032	WDAE 036	WDAE 040	WDAE 045	WDAE 050	WDAE 056	WDAE 063	WDAE 070	WDAE 080	WDAE 090	WDAE 100
Cooling capacity			usRT	280	320	360	400	450	500	560	630	700	800	900	1000
			kW	984	1,125	1,265	1,406	1,582	1,757	1,968	2,214	2,460	2,814	3,165	3,517
Heating Capacity			Mcal/h	745	852	958	1064	1198	1331	1693	1905	2117	2032	2286	2540
			kW	866	990	1,113	1,237	1,392	1,546	1,968	2,214	2,460	2,363	2,658	2,954
Chilled & Hot Water	Temp.		℃	12/7℃ (Heating 55.6/60℃)											
	Flow rate		㎥/h	169.3	193.5	217.7	241.9	272.2	302.4	338.7	381.0	423.4	483.8	544.3	604.8
	P.Drop		mAq	5.3	5.2	5.7	5.9	5.1	5.3	4.2	5.7	7.6	5.5	7.4	9.7
	Connection		mm	150				200					250		
Cooling Water	Temp.		℃	32/37.3℃											
	Flow rate		㎥/h	280	320	360	400	450	500	560	630	700	800	900	1000
	P.Drop		mAq	8.7	8.8	8.9	8.8	8.6	8.7	6.4	8.8	11.7	9.1	12.3	16.2
	Connection		mm	200				250		300			350		
Fuel	Gas	Cooling	Nm³/h	67.8	77.5	87.2	96.9	109.0	121.2	135.7	152.7	169.6	232.6	261.7	290.8
		Heating	Nm³/h	85.1	97.2	109.4	121.6	136.8	151.9	193.4	217.6	241.7	232.1	261.1	290.1
		Connection	mm	40 (4,000mmAq)				50 (4,000mmAq)							
	Oil	Cooling	kg/h	92.0	105.2	118.3	131.5	147.9	164.3	184.1	207.1	230.1	263.0	295.8	328.7
		Heating	kg/h	109.3	124.9	140.5	156.1	175.7	195.2	218.6	245.9	273.3	262.3	295.1	327.9
		Connection	mm	20									25		
Electric	Power Source		–	3Ø 380V 50Hz											
	Abs. Pump No.1		kW(A)	3.0 (11.0)		3.4 (10.2)				5.5 (14.5)			6.6 (16.2)		
	Abs. Pump No.2		kW(A)	1.2 (4.5)		1.5 (5.0)				2.0 (6.0)			2.2 (7.0)		
	Ref.Pump		kW(A)	0.4 (1.5)									1.5 (4.0)		
	Purge Pump		kW(A)	0.4 (1.4)											
	Burner Blower		kW(A)	2.2 (5.0)			3.0 (6.5)			5.5 (13.0)			7.5 (15.8)		
	Oil Pump		kW(A)	0.55 (2.1)									1.1 (4.0)		
	Control Panel		kW(A)	0.2 (0.5)											
	Total Amp.	Gas	kW(A)	7.4 (23.9)		8.1 (23.6)	8.9 (25.1)			14 (36.9)			18.4 (44.9)		
		Oil	kW(A)	7.95 (26.0)		8.65 (25.7)	9.45 (27.2)			14.55 (39.0)			19.5 (48.9)		
Size	Length(L)		mm	4,782		4,867		4,880	4,960	5,100	5,600	6,150	5,750	6,250	6,800
	Width(W)		mm	2,200		2,287		2,550		3,150			3,400		
	Height(H)		mm	2,390		2,585		2,800		3,300			3,600		
Weight	Rigging		Ton	8.1	8.7	10.8	11.0	13.2	13.4	18.1	19.6	21.0	27.9	30.2	32.6
	Operation		Ton	9.1	9.8	12.3	12.7	15.2	15.5	20.7	22.3	24.0	31.8	34.3	37.0
Space for Tube Replacement			mm	4,500							5,200	5,700	5,200	5,700	6,200

SPECIFICATION [WDA-H Series]

Double-Effect Direct Fired Absorption Chiller & Heater

RAAF

COP 1.51(LHV) High-efficiency model

MODEL			Units	WDAH 004	WDAH 005	WDAH 006	WDAH 007	WDAH 008	WDAH 010	WDAH 012	WDAH 015	WDAH 018	WDAH 021	WDAH 024
Cooling capacity			usRT	40	50	60	70	80	100	120	150	180	210	240
			kW	141	176	211	246	281	352	422	528	633	739	844
Heating Capacity			Mcal/h	106	133	160	186	213	266	319	399	479	559	639
			kW	124	155	186	217	248	309	371	464	557	650	743
Chilled & Hot Water	Temp.		℃	12 / 7 ℃(Heating 55.6 / 60)										
	Flow rate		㎥/h	24.2	30.2	36.3	42.3	48.4	60.5	72.6	90.7	108.9	127.0	145.2
	P.Drop		mAq	4.8	5.5	4.1	4.3	4.0	4.3	5.4	5.8	5.7	5.8	4.0
	Connection		mm	80				100				125		150
Cooling Water	Temp.		℃	32 / 37 ℃										
	Flow rate		㎥/h	40	50	60	70	80	100	120	150	180	210	240
	P.Drop		mAq	5.4	6.0	5.9	6.0	4.3	4.8	6.4	7.3	7.3	7.8	6.6
	Connection		mm	100				125				150		200
Fuel	Gas	Cooling	Nm³/h	8.9	11.2	13.4	15.7	17.9	22.4	26.8	33.6	40.3	47.0	53.7
		Heating	Nm³/h	11.6	14.5	17.4	20.4	23.3	29.1	34.9	43.6	52.3	61.1	69.8
		Connection	mm	40 (4,000mmAq)										
Electric	Power Source		–	3Ø 380V 50Hz										
	Abs. Pump No.1		kW(A)	1.2 (4.0)				2.0 (6.0)				2.4 (7.5)		3.0 (11.0)
	Abs. Pump No.2		kW(A)	0.3 (1.6)				0.4 (1.6)				1.2 (4.5)		
	Ref.Pump		kW(A)	0.2 (1.1)				0.3 (1.5)				0.4 (1.5)		
	Purge Pump		kW(A)	0.4 (1.4)										
	Burner Blower		kW(A)	0.37 (1.0)		0.72 (2.1)					1.5 (4.0)			2.2 (5.0)
	Control Panel		kW(A)	0.2 (0.5)										
	Total Amp.		kW(A)	2.67 (9.6)		3.05 (10.7)		4.05 (13.1)			4.8 (15.0)	6.1 (19.4)		7.4 (23.9)
Size	Length(L)		mm	2,630		2,700		2,800		3,660		3,700		4,770
	Width(W)		mm	1,840		1,840		1,970			2,075	2,100		2,200
	Height(H)		mm	1,978				2,150				2,500		2,510
Weight	Rigging		Ton	2.8	3.0	3.3	3.7	4.0	4.2	5.1	5.6	6.4	7.6	8.1
	Operation		Ton	3.2	3.4	3.6	4.0	4.8	5.0	6.1	6.7	7.9	8.2	9.1
Space for Tube Replacement			mm	2,000		2,400				3,400				4,500

Remark

1) 1usRT = 3,024 kcal/h
2) Working Pressure of each water side is based on 1.0MPa [151psig]
3) Nutural Gas LHV(Lower Heating Value) : 9,500kcal/Nm^3, Diesel Oil LHV(Lower Heating Value) : 9,200kcal/kg
4) Fouling factor 0.0001m^2·h·℃/kcal for Absorber and Condenser, 0.0001m^2·h·℃/kcal for Evaporator.
5) Catalogue specifications are subject to change without prior notice.

MODEL			Units	WDAH 028	WDAH 032	WDAH 036	WDAH 040	WDAH 045	WDAH 050	WDAH 056	WDAH 063	WDAH 070	WDAH 080	WDAH 090
Cooling capacity			usRT	280	320	360	400	450	500	560	630	700	800	900
			kW	985	1,125	1,266	1,407	1,583	1,758	1,969	2,216	2,462	2,814	3,165
Heating Capacity			Mcal/h	745	852	958	1064	1198	1331	1490	1677	2129	2395	2661
			kW	867	990	1,114	1,238	1,393	1,547	1,733	1,950	2,476	2,785	3,095
Chilled & Hot Water	Temp.		℃	12 / 7 ℃(Heating 55.6 / 60)										
	Flow rate		㎥/h	169.3	193.5	217.7	241.9	272.2	302.4	338.7	381.0	483.8	544.3	604.8
	P.Drop		mAq	4.1	4.6	4.9	3.8	4.2	3.4	4.6	6.3	4.3	6.0	8.1
	Connection		mm	150			200					250		
Cooling Water	Temp.		℃	32 / 37 ℃										
	Flow rate		㎥/h	280	320	360	400	450	500	560	630	700	800	900
	P.Drop		mAq	6.9	7.3	7.3	6.8	7.0	5.2	7.2	9.7	7.2	10.0	13.4
	Connection		mm	200			250		300			350		
Fuel	Gas	Cooling	N㎥/h	62.6	71.6	80.5	89.5	100.7	111.8	125.3	140.9	156.6	178.9	201.3
		Heating	N㎥/h	81.4	93.0	104.7	116.3	130.8	145.4	162.8	183.2	232.6	261.7	290.8
		Connection	mm	40 (4,000mmAq)						50 (4,000mmAq)				
Electric	Power Source		–	3Ø 380V 50Hz										
	Abs. Pump No.1		kW(A)	3.0 (11.0)	3.4 (10.2)				5.5 (14.5)			6.6 (16.2)		
	Abs. Pump No.2		kW(A)	1.2(4.5)	1.5 (5.0)				2.0 (6.0)			2.2 (7.0)		
	Ref.Pump		kW(A)	0.4 (1.5)								1.5 (4.0)		
	Purge Pump		kW(A)	0.4 (1.4)										
	Burner Blower		kW(A)	2.2 (5.0)		3.0 (6.5)			5.5 (13.0)			7.5 (15.8)		
	Control Panel		kW(A)	0.2 (0.5)										
	Total Amp.		kW(A)	7.4(23.9)	8.1(23.6)	8.9(25.1)			14(36.9)			18.4(44.9)		
Size	Length(L)		mm	4,770	4,870		4,900		5,100	5,600	6,150	5,750	6,250	6,800
	Width(W)		mm	2,200	2,300	2,430	2,650		3,150			3,400		
	Height(H)		mm	2,510	2,640		2,900		3,394			3,720		
Weight	Rigging		Ton	8.7	10.8	11.0	13.2	13.4	18.1	19.6	21.0	27.9	30.2	32.6
	Operation		Ton	9.8	12.3	12.7	15.2	15.5	20.7	22.3	24.0	31.8	34.3	37.0
Space for Tube Replacement			mm	4,500						5,200	5,700	5,200	5,700	6,200

Double Lift Hot Water Driven Absorption Chiller

75RT ~ 1500RT 27 Model

WDLE / Stable, Convenient, Efficient and Reliable

Non-carbon eco-friendly chiller

- Use of regional heating hot water (Energy use efficiency 84%. The ratio of incineration heat of the combined waste heat - 74%).
- Use of natural refrigerant water instead of Freon refrigerant destroying ozone layer.
- No CO2 and Nox which cause the global warming

Zero explosive danger by vacuum operation

- Internal pressure vacuum .
- No danger of gas explosion by use of hot water
- Safety from the danger of high-pressure damage.

The excellent partial load part-load value

- Auxiliary cycle auto stop if the cooling load is below 80%.
- Energy saving by 25% per chilled ton due to the increase in the efficiency by 25%.

Low noise & Low vibration

- Noise level: Below 75 dB at 1m distance

Economic air-conditioniong

- Conventional Chiller: Δ 15 ℃ (95℃ -> 80℃)
  – Insufficient heating hot water
- Sing-effect/ Double-lift Chiller: Δ 40 ℃ (95℃ -> 55℃)
  – Saving 60% of the existing hot water use capacity
  Wide range of the use

Micro processor control with only start-up signal for automatic operation

- Precise control of start-up, stop, capacity control, abnormal stop, etc.
- Easy to handle due to the touch screen.
- Control of auxiliary cycle, self-diagnostic function & other controls

Saving maintenance cost

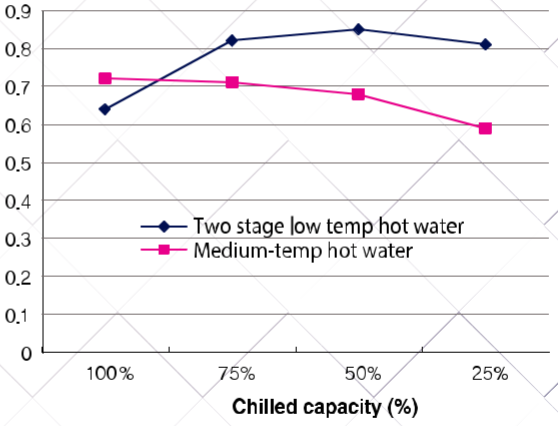
- Leakage per month: 3cc or below. High vacuum condition.
- Auto steam extraction. Non-condensing gas storage.
- Optimal condition of the operation.
- Operating with only minimum purging.

IPLV(Integrated Part-Load Value)

	Chilled water inlet ℃	Cooling capacity	COP	Part Load rate	IPLV
Single effect double lift type	31.0	100%	0.64	0.01	0.83
	29.8	75%	0.82	0.42	
	28.8	50%	0.85	0.45	
	28.0	25%	0.81	0.12	
	Chilled water inlet ℃	Cooling capacity	COP	Part Load rate	IPLV
Single effect type	31.0	100%	0.72	0.01	0.68
	29.9	75%	0.71	0.42	
	29.1	50%	0.68	0.45	
	28.1	25%	0.59	0.12	

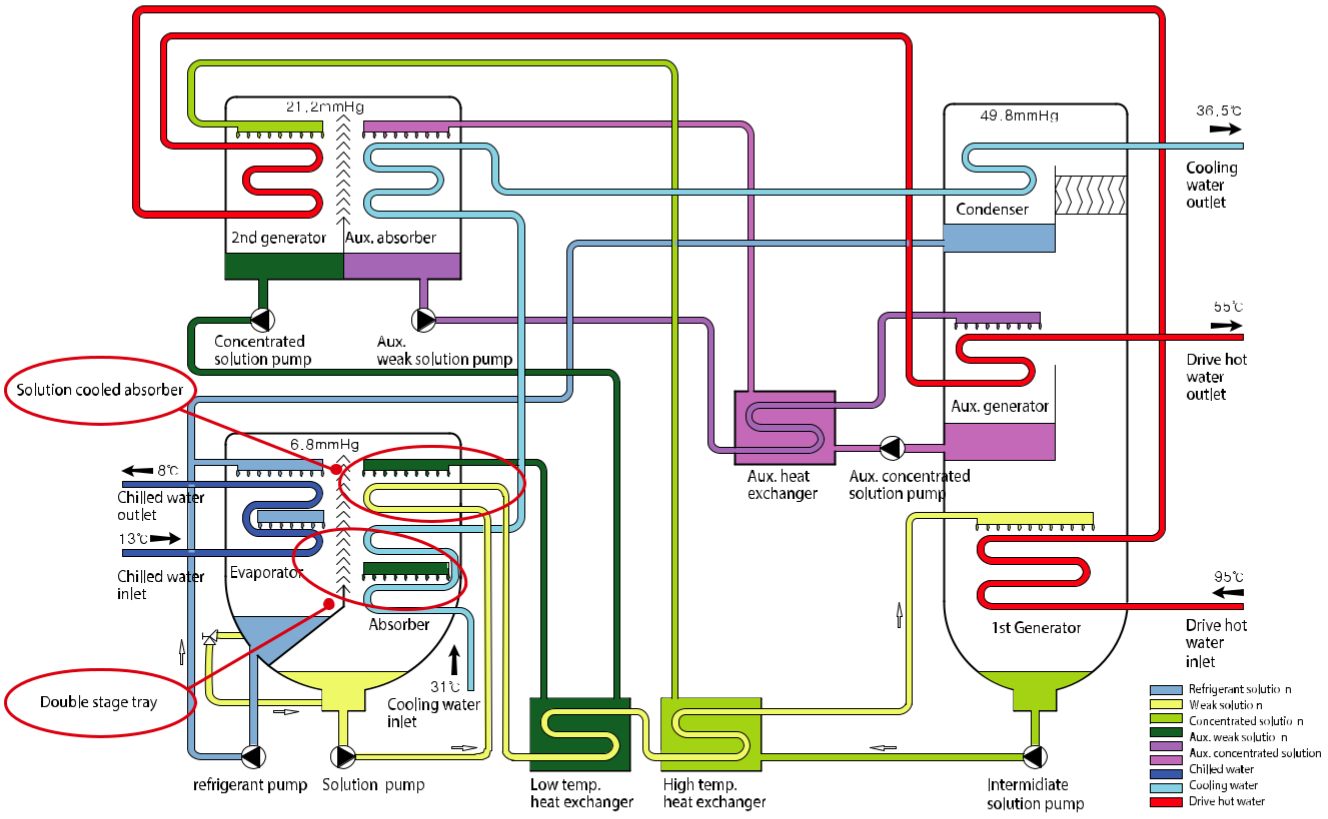
1) Chilled water outlet temp keeps at 8℃ and hot water inlet temp keeps at 95℃
2) Assuming that the ambient humid temp is 27℃ for the chilled water inlet temp, it was designed to be lower depending on the hot water flow rate.
3) Part load rate is subject to the paragraph 5.3.2.2 of AR1560-2000.

Comparison of partial load COP



CYCLE DIAGRAM

Double Lift Hot Water Driven Absorption C



As the refrigerant is evaporated from the evaporator, the chilled water flowing inside the heating tube of the evaporator is cooled down and the refrigerant evaporated is absorbed by the concentrated absorbing liquid from the 2nd generator. The concentrated absorbing liquid will become thick absorbing liquid and the heat generate will be absorbed by the chilled water. The thick absorbing liquid which absorbed the refrigerant steam from the absorbing unit will go to the 1st generator passing through the low-temp and high-temp heat exchangers. The hot water at 95° in the 1st generator will heat the thick absorbing liquid to generate the refrigerant steam and then it flows to the 2nd generator after passing through the high-temp heat exchanger. The medium concentrated thick absorbing liquid com from the 2nd generator will be heated by the hot water come from the 1st generator to generate the refrigerant steam.

The refrigerant steam generated from the 2nd generator will be absorbed by the absorbing liquid flowing outside the heat tube and the thick absorbing liquid which absorbed the refrigerant steam from the aux absorbing unit will flow to the aux generator after passing through aux heat exchanger, so that it is heated by the hot water flowing the heat tube of the aux generator to generate the refrigerant steam. Then, the concentrated absorbing liquid is returned back to the aux absorbing unit after passing through the aux heat exchanger.

The refrigerant steam generated from the 1st generator and the aux generator will condense the refrigerant with the leakage of the chilled water inside the heat tube and then it absorbs the heat generated.

That is, the hot water flows the 1st generator › 2nd generator › aux generator while the chilled water flows absorbing unit › aux absorbing unit › condenser in order to form a chilled cycle. In addition, the low-temp hot water two stage absorbing chiller has main cycle and aux cycle and the details of the solution (liquid) flow are as below.

Main cycle solution flow

Absorber → Diluted solution pump → Low-temp heat exchanger → High-temp heat exchanger → 1st generator

1st generator → Intermidiate solution pump → High-temp heat exchanger → 2nd generator → Concentrated solution pump → Low-temp heat exchanger → Absorber

Aux cycle solution flow

Aux diluted solution pump → Aux heat exchanger → Aux generator

Aux generator → Aux. absorber → Aux heat exchanger → Aux concentrated solution pump → Aux diluted solution pump

SPECIFICATION [WDLE Series]

Single Effect Double Lift Hot Water Absorption Chiller

RAAF

Hot Water inlet temp 95℃

Model			Unit	WDLE 75		WDLE 90		WDLE 110		WDLE 135		WDLE 155		WDLE 180		WDLE 210		WDLE 240		WDLE 270		WDLE 300		WDLE 340	
Chilled Water temp. in-outlet			℃	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8
Cooling Capacity			kW	257	264	309	316	376	387	464	474	531	545	619	633	721	738	823	844	928	949	1,030	1,054	1,167	1,195
			usRT	73	75	88	90	107	110	132	135	151	155	176	180	205	210	234	240	264	270	293	300	332	340
Chilled Water	Flow rate		m³/h	44.2	45.4	53.2	54.4	64.7	66.5	79.8	81.6	91.3	93.7	106	109	124	127	142	145	160	163	177	181	201	206
	Pressure drop		mAq	6.1	6.4	6.6	6.8	9.1	9.6	10.1	10.5	9.1	9.5	9.3	9.6	9.3	9.7	9.1	9.5	9.8	10.2	10.1	10.5	8.9	9.3
	Nozzle size		A	80				100				125								150				200	
Cooling Water	in-oulet temp.		℃	31 / 36.5																					
	Flow rate		m³/h	104	107	125	128	152	156	188	192	215	220	251	256	292	298	333	341	376	383	418	426	473	483
	Pressure drop		mAq	10.0	10.5	10.2	10.6	10.7	11.1	11.8	12.1	11.5	11.9	12.4	12.7	12.2	12.6	12.3	12.8	12.0	12.3	12	12.3	12.0	12.4
	Nozzle size		A	150												200				250					
Hot Water	in-outlet temp.		℃	95 / 55																					
	Flow rate		ton/h	8.8	8.9	10.6	10.7	12.9	13.1	15.9	16	18.2	18.4	21.2	21.4	24.7	24.9	28.1	28.5	31.8	32	35.2	35.6	39.9	40.4
	Pressure drop	Main body	mAq	3.5	3.6	3.5	3.6	5.4	5.5	5.9	6.0	5.7	5.8	6.0	6.1	5.5	5.6	5.7	5.9	5.2	5.3	5.4	5.5	5.5	5.8
		Control valve	mAq	2.3	2.4	3.3	3.4	1.8	1.9	2.8	2.9	1.5	1.5	2.0	2.1	2.7	2.8	1.4	1.4	1.8	1.8	2.2	2.3	2.8	2.9
	Nozzle size		A	65								80								100					
	Control valve nozzle size		A	40				50				65						80							
Electrical power	Power			3Φ, 380, 50Hz																					
	Solution pump		kW(A)	3.3(12.8)				3.9(14.8)				4.5(15.8)				5.1(16.8)								6.0(18.8)	
	Refrigerant pump		kW(A)	0.2(1.1)				0.3(1.5)								0.4(1.5)									
	Purge pump		kW(A)	0.4(1.4)																					
	Control panel		kW(A)	0.2(0.5)																					
	Max. ampere@380V		kW(A)	4.1(15.8)				4.8(18.2)				5.4(19.2)				6.1(20.2)								7(22.2)	
Dimension	Length(L)		mm	2,670				3,690				3,696				4,767				4,852				4,866	
	Width(W)		mm	1,736								1,989								2,240				2,350	
	Height(H)		mm	2,293								2,428								2,566				2,963	
Weight	Rigging weight		Ton	4.4		4.6		5.7		6		7.2		7.5		8.8		9.2		11.3		11.8		13.5	
	Operation weight		Ton	5.1		5.3		6.6		7		8.4		8.9		10.4		10.9		13.4		14.1		16.2	
Tube exchange space			mm	2,400				3,400								4,600									

Model			Unit	WDLE 75		WDLE 90		WDLE 110		WDLE 135		WDLE 155		WDLE 180		WDLE 210		WDLE 240		WDLE 270		WDLE 300		WDLE 340	
Chilled Water temp. in-outlet			℃	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8	12-7	13-8
Cooling Capacity			kW	274	285	331	341	404	418	496	513	570	591	661	686	770	798	879	914	988	1,027	1,101	1,143	1,245	1,294
			usRT	78	81	94	97	115	119	141	146	162	168	188	195	219	227	250	260	281	292	313	325	354	368
Chilled Water	Flow rate		m³/h	47.2	49	56.9	58.7	69.6	72	85.3	88.3	98	102	114	118	132	137	151	157	170	177	189	197	214	223
	Pressure drop		mAq	11.3	12.1	12	12.7	10.3	11	11.4	12.1	10.3	11	10.4	11.1	10.4	11.1	10.2	11	11	11.7	11.3	12.1	10	10.7
	Nozzle size		A	80				100				125								150				200	
Cooling Water	in-oulet temp.		℃	31 / 36.5																					
	Flow rate		m³/h	105	109	127	130	156	160	191	196	219	226	254	262	296	305	338	350	380	393	423	437	479	495
	Pressure drop		mAq	10.5	11.2	11	11.4	11.2	11.8	12.1	12.7	11.9	12.6	12.8	13.5	12.5	13.2	12.7	13.5	12.3	13	12.3	13	12.3	13.1
	Nozzle size		A	150												200						250			
Hot Water	in-outlet temp.		℃	115 / 55																					
	Flow rate		ton/h	5.7	5.9	6.9	7.1	8.5	8.7	10.4	10.6	11.9	12.2	13.8	14.2	16.1	16.5	18.4	18.9	20.7	21.3	23	23.7	26.1	26.8
	Pressure drop	Main body	mAq	3	3.1	3.3	3.4	5.3	5.5	5.9	6.2	4.9	5.1	5.4	5.7	4.2	4.4	4.5	4.7	3.7	3.9	3.9	4.1	4.1	4.3
		Control valve	mAq	1	1.1	1.5	1.6	2.2	2.3	1.2	1.3	1.6	1.7	2.2	2.3	3.1	3.2	4	4.2	2	2.1	2.5	2.6	3	3.2
	Nozzle size		A	65																80					
	Control valve nozzle size		A	40						50										65					
Electrical power	Power			3Φ, 380, 50Hz																					
	Solution pump		kW(A)	3.3(12.8)				3.9(14.8)				4.5(15.8)				5.1(16.8)								6.0(18.8)	
	Refrigerant pump		kW(A)	0.2(1.1)				0.3(1.5)								0.4(1.5)									
	Purge pump		kW(A)	0.4(1.4)																					
	Control panel		kW(A)	0.2(0.5)																					
	Max. ampere@380V		kW(A)	4.1(15.8)				4.8(18.2)				5.4(19.2)				6.1(20.2)								7(22.2)	
Dimension	Length(L)		mm	2,670				3,690				3,696				4,767				4,852				4,866	
	Width(W)		mm	1,736								1,989								2,240				2,350	
	Height(H)		mm	2,293								2,427								2,566				2,963	
Weight	Rigging weight		Ton	4.4		4.6		5.7		6		7.2		7.5		8.8		9.2		11.3		11.8		13.5	
	Operation weight		Ton	5.1		5.3		6.6		7		8.4		8.9		10.4		10.9		13.4		14.1		16.2	
Tube exchange space			mm	2,400				3,400								4,600									

Remark 1) Standard pressure : Chilled water and cooling water 1.0MPa(10kgf/c_G),Hot water 1.6MPa(16kgf/c_G)
2) Power standard : 380V, 3Phase, 60Hz(220V, 440V, 460V also available)
3) The specification could be changed without any notice.

Hot Water inlet temp 95℃

Model			Unit	WDLE 375		WDLE 420		WDLE 470		WDLE 525		WDLE 600		WDLE 675		WDLE 750		WDLE 825		WDLE 900		WDLE 975	
Chilled Water temp. in-outlet			℃	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8
Cooling Capacity			kW	1,287	1,318	1,442	1,476	1,614	1,652	1,804	1,845	2,061	2,110	2,317	2,373	2,574	2,637	2,834	2,901	3,091	3,165	3,347	3,428
			usRT	366	375	410	420	459	470	513	525	586	600	659	675	732	750	806	825	879	900	952	975
Chilled Water	Flow rate		m³/h	221	227	248	254	278	284	310	318	354	363	399	408	443	454	487.5	499	532	544	576	590
	Pressure drop		mAq	9.3	9.7	7.1	7.4	9.8	10.2	4.4	4.5	9.7	10.1	4.3	4.5	5.7	6.0	7.4	7.7	6.3	6.6	7.8	8.2
	Nozzle size		A	200								250								300			
Cooling Water	in-oulet temp.		℃	31 / 36.5																			
	Flow rate		m³/h	522	533	584	596	654	667	731	746	835	852	939	959	1,043	1,065	1,149	1,172	1,253	1,278	1,357	1,385
	Pressure drop		mAq	12.1	12.5	8.7	9.0	11.3	12.2	15.9	16.3	12.7	13.0	17.1	17.6	12.6	13.0	16.1	16.6	17.6	18.3	21.9	22.8
	Nozzle size		A	250		300						350								400			
Hot Water	in-outlet temp.		℃	95 / 55																			
	Flow rate		ton/h	44	44.5	49.3	49.9	55.2	55.8	61.7	62.3	70.5	71.2	79.3	80.1	88	89	96.9	97.9	106	107	114	116
	Pressure drop	Main body	mAq	5.5	5.6	4.9	5.0	5.1	5.2	3.9	4.0	4.4	4.5	3.2	3.3	4.2	4.3	5.4	5.5	4.3	4.5	5.2	5.5
		Control valve	mAq	1.4	1.4	1.7	1.7	2.1	2.2	2.7	2.7	3.5	3.6	1.7	1.7	2.1	2.1	2.5	2.6	2.9	3.1	3.4	3.6
	Nozzle size		A	100								125											
	Control valve nozzle size		A	100										125									
Electrical power	Power		-	3Φ, 380, 50Hz																			
	Solution pump		kW(A)	6.0(18.8)		6.7(22.2)						10.4(35.0)								14.1(48.0)			
	Refrigerant pump		kW(A)	0.4(1.5)								1.5(4.0)											
	Purge pump		kW(A)	0.4(1.4)																			
	Control panel		kW(A)	0.2(0.5)																			
	Max. ampere@380V		A	22.2		25.6						40.9								53.9			
Dimension	Length(L)		mm	4,866		5,005		5,544		6,045		5,638		6,136		6,661		7,189		6,791		7,291	
	Width(W)		mm	2,350		2,625						3,070								3,374			
	Height(H)		mm	2,963		3,262						3,600								3,931			
Weight	Rigging weight		Ton	14		19		20.7		22.2		26.7		28.7		30.7		36.4		38.4		40.8	
	Operation weight		Ton	16.9		23		25		26.9		31.6		34		36.3		43.1		45.5		48.3	
Tube exchange space			mm	4,600				5,200		5,700		5,200		5,700		6,200		6,700		6,200		6,700	

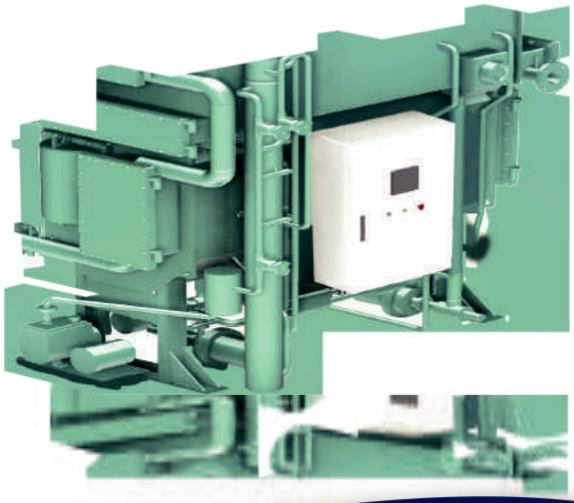
Model			Unit	WDLE 375		WDLE 420		WDLE 470		WDLE 525		WDLE 600		WDLE 675		WDLE 750		WDLE 825		WDLE 900		WDLE 975	
Chilled Water temp. in-outlet			℃	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8
Cooling Capacity			kW	1,375	1,428	1,540	1,600	1,723	1,790	1,923	2,001	2,198	2,286	2,475	2,570	2,750	2,855	3,024	3,144	3,298	3,428	3,573	3,713
			usRT	391	406	438	455	490	509	547	569	625	650	704	731	782	812	860	894	938	975	1,016	1,056
Chilled Water	Flow rate		m³/h	236	246	265	275	296	308	331	344	378	393	426	442	473	491	520	541	567	590	614	639
	Pressure drop		mAq	10.5	11.2	8	8.5	11	11.8	4.8	5.2	10.6	11.4	4.8	5.1	6.3	6.7	4.3	4.6	5.5	5.9	6.8	7.3
	Nozzle size		A	200								250						300					
Cooling Water	in-oulet temp.		℃	31 / 36.5																			
	Flow rate		m³/h	529	546	592	612	663	684	740	765	845	874	952	983	1,058	1,092	1,163	1,202	1,269	1,311	1,374	1,420
	Pressure drop		mAq	12.4	13.2	9.8	10.4	13.4	14.2	17.7	18.9	13.9	14.8	18.8	19.9	13.5	14.3	9.1	9.7	11.6	12.3	14.4	15.3
	Nozzle size		A	250		300						350						400					
Hot Water	in-outlet temp.		℃	115 / 55																			
	Flow rate		ton/h	28.8	29.6	32.2	33.1	36.1	37.1	40.3	41.4	46	47.3	51.8	53.2	57.6	59.1	63.3	65.1	69	71	74.8	76.9
	Pressure drop	Main body	mAq	4.4	4.6	3	3.1	3.9	4.1	5.1	5.4	3.3	3.5	4.4	4.6	5.7	6	4.7	4.9	5.8	6.1	4.9	5.2
		Control valve	mAq	3.9	4.1	1.9	2	2.4	2.5	2.9	3.1	1.5	1.6	2	2.1	2.4	2.5	2.9	3.1	1.3	1.4	1.5	1.6
	Nozzle size		A	80		100												125					
	Control valve nozzle size		A	65		80						100								125			
Electrical power	Power			3Φ, 380, 50Hz																			
	Solution pump		kW(A)	6.0(18.8)		6.7(22.2)						10.4(35.0)								14.1(48.0)			
	Refrigerant pump		kW(A)	0.4(1.5)								1.5(4.0)											
	Purge pump		kW(A)	0.4(1.4)																			
	Control panel		kW(A)	0.2(0.5)																			
	Max. ampere@380V		A	22.2		25.6						40.9								53.9			
Dimension	Length(L)		mm	4,866		5,005		5,544		6,045		5,638		6,136		6,661		7,189		6,791		7,291	
	Width(W)		mm	2,350		2,625						3,070						3,374					
	Height(H)		mm	2,963		3,262						3,600						3,931					
Weight	Rigging weight		Ton	14		19		20.7		22.2		26.7		28.7		30.7		36.4		38.4		40.8	
	Operation weight		Ton	16.9		23		25		26.9		31.6		34		36.3		43.1		45.5		48.3	
Tube exchange space			mm	4,600				5,200		5,700		5,200		5,700		6,200		6,700		6,200		6,700	

Option In different heat source and operation, the conditions can be selected as an option.

1) When the water pressure different from the standard.
2) When heat tube material is not copper nor with different tickness.
3) When Hot/cooling/chilled water temp. are different from standard.

Single Effect Double Stage Generation Hot Water Absorption Chiller

30RT ~ 300RT 13 Model

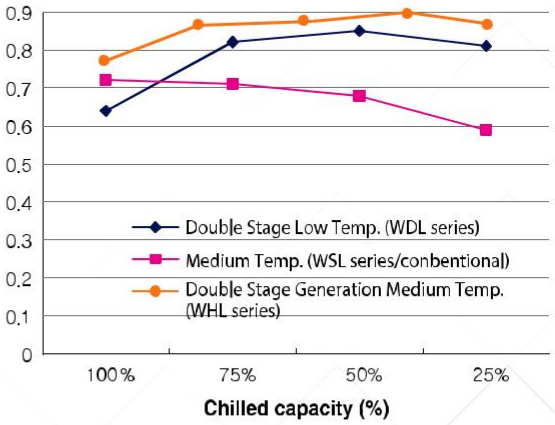


Hot Water temp. 95℃ → 75℃

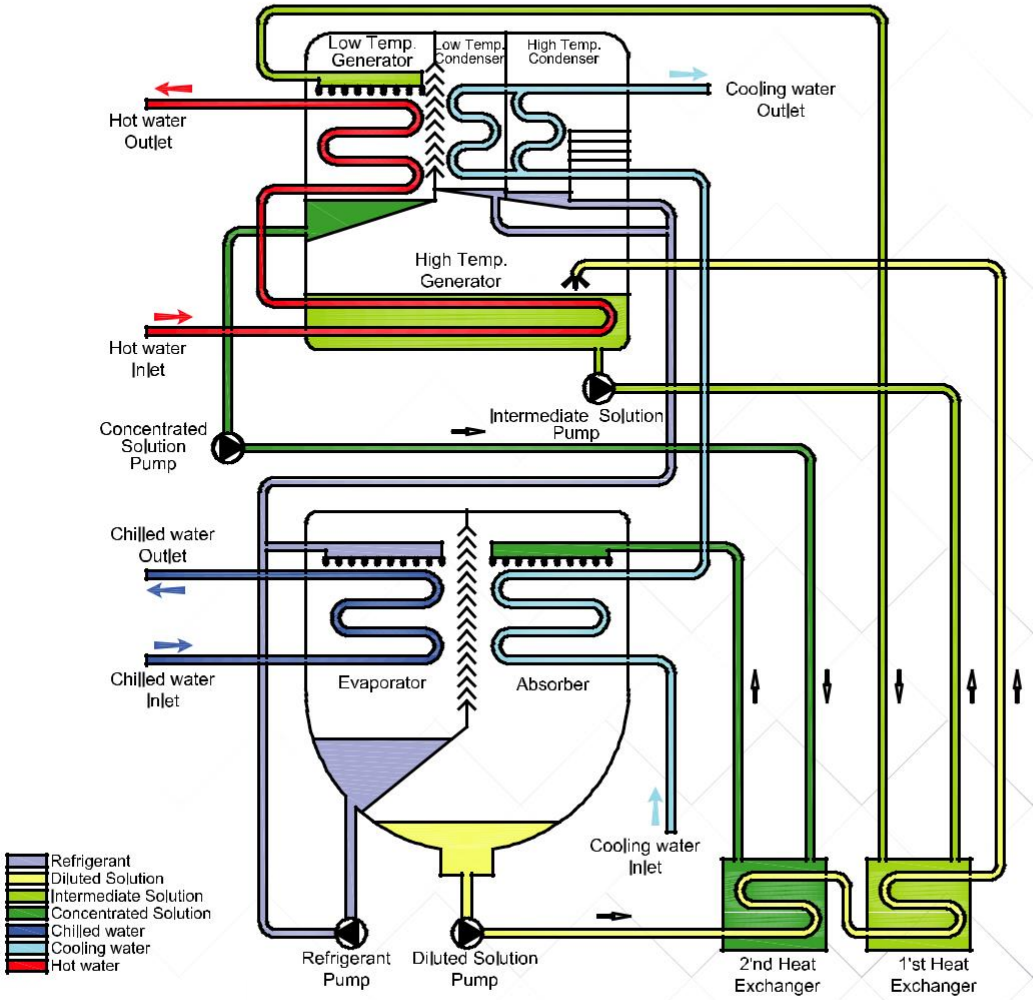
Economic Air-Condition

Chiller Type	Hot Water Temp. Inlet → Outlet	Temp. Gap
Conventional (General Chiller)	95 ℃ → 80 ℃	Δ15℃
WORLD EnC (New Developed Chiller)	95 ℃ → 75 ℃	Δ20℃

IPLV Graph



Cycle Diagram



MODEL			UNIT	WHL 30	WHL 40	WHL 50	WHL 75	WHL 90	WHL 110	WHL 135	WHL 155	WHL 180	WHL 210	WHL 240	WHL 270	WHL 300
Cooling Capacity			kW	105	141	176	264	316	387	474	545	633	738	844	949	1,054
			usRT	30	40	50	75	90	110	135	155	180	210	240	270	300
Chilled Water	Temp.		℃	13 - 8												
	Flow Rate		m^3/h	18.1	24.2	30.2	45.4	54.4	66.5	81.6	93.7	109.0	127.0	145.0	163.0	181.4
	Pressure Drop		mH_2O	7.3	8.3	7.0	6.4	6.8	9.6	10.5	9.5	9.6	9.7	9.5	10.2	10.5
	Connection Size		mm	65		80			100		125				150	
Cooling Water	Temp.		℃	31 - 36.5												
	Flow Rate		m^3/h	37.1	49.5	61.9	92.8	111.3	136.1	167.0	240.2	222.7	259.8	296.9	334.0	371.1
	Pressure Drop		mH_2O	8.9	9.8	12.0	8.4	8.8	8.0	8.7	12.0	8.5	7.5	7.6	7.5	7.3
	Connection Size		mm	80		100			125		150		200		250	
Hot Water	Temp.		℃	95 - 75												
	Flow Rate		ton/h	4.5	6.0	7.6	11.3	13.6	16.6	20.4	23.4	27.2	31.8	36.3	40.8	45.4
	Pressure Drop	Shell	mH_2O	1.6	2.0	3.4	3.1	3.2	4.3	4.8	4.3	4.3	5.1	4.9	4.9	4.7
		Control Valve	mH_2O	2.2	1.5	1.0	2.2	2.1	3.1	1.9	2.5	3.3	1.8	2.3	3.0	1.4
	Connection Size		mm	65						80					100	
	Control Valve Size		mm	25	40			50		65			80			100
Electic	Power Source		-	3Ø 380V50Hz												
	Abs. Pump		kW (A)	1.6(6.6)			1.8(7.2)		2.1(8.2)		2.8(9.2)		3.2(10.2)			
	Ref. Pump		kW (A)	0.2(1.1)					0.3(1.5)				0.4(1.5)			
	Purge Pump		kW (A)	0.4(1.4)												
	Control Panel		kW (A)	0.2(0.5)												
	Total Ampere		kW (A)	2.4(9.6)			2.6(10.2)		3(11.6)		3.7(12.6)		4.2(13.6)			
Size	Length[L]		mm	2,052		2,552	2,605		3,680		3,710		4,740		4,780	
	Width[W]		mm	1,351			1,370				1,520				1,810	
	Height[H]		mm	2,133			2,370				2,430				2,670	
Weight	Rigging		ton	2.2	2.3	2.8	4.0	4.2	5.1	5.3	6.1	6.4	7.5	7.8	9.7	10.1
	Operating		ton	2.6	2.7	3.3	4.7	4.9	5.7	5.9	6.8	7.1	8.3	8.7	10.8	11.2

Remark 1) 1usRT = 3,024 kcal/h

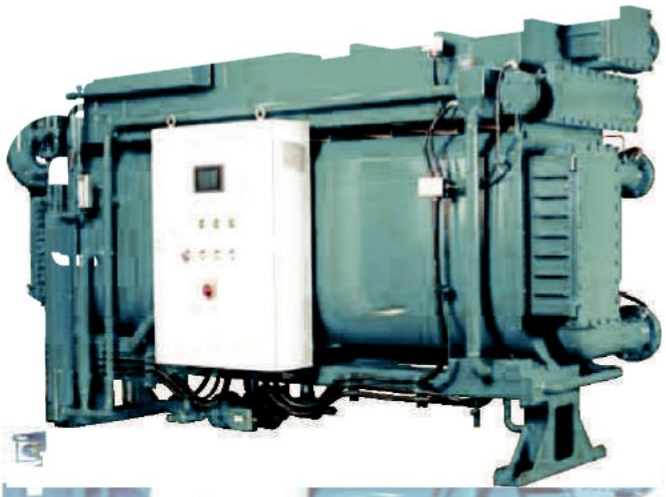
2) Available max. working pressure of chilled water /cooling water/hot water : 1.0MPa

3) Fouling factor 0.0001 $m^2h℃/kcal$ for Absorber and Condenser, 0.0001 $m^2h℃/kcal$ for Evaporator and Generator.

4) Catalogue specifications are subject to change without prior notice.

Single Lift Hot Water Driven Absorption Chiller

75RT ~ 1125RT 27 Model



WSL / Single Lift Hot Water Driven Absorption

1. Compact and Energy saving Design

With using high efficiency heat tube, smaller and lighter design to conventional things. Installation space also gets decreased.

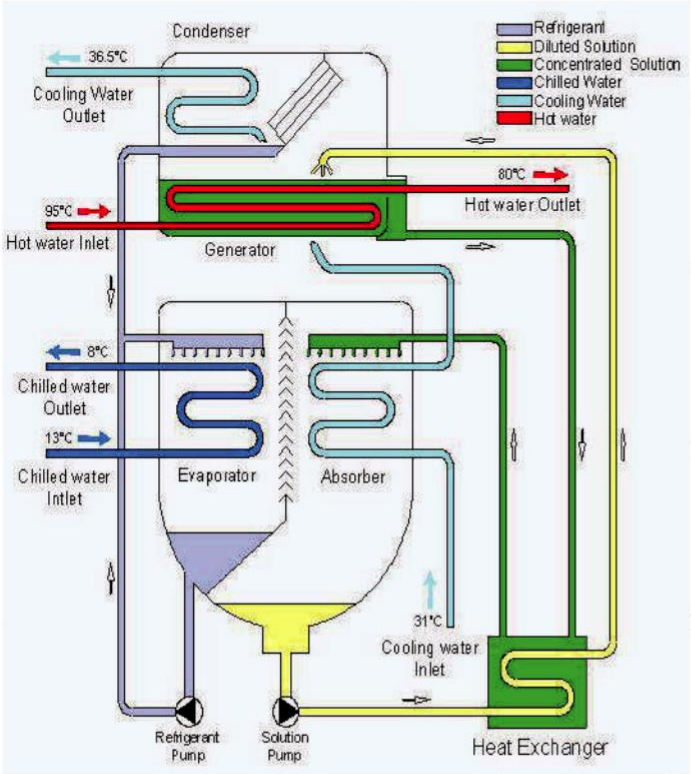
2. Easy operation and convenience

Full automatic system with up-to -date control technology such as operation, setting, monitoring, and control flow chart.

3. Safe and efficient chiller

Being operated in vacuum condition, it keeps internal pressure in vacuum status even in stop mode. With 2 pumps for solution and refrigerant, it is totally quiet. No noise and No vibration.

Hot water Absorption chiller operation flow chart



4. Maintenance cost reduction and only one purging during a season

Optimized operation condition and trouble-free system under strict manufacturing standard: 1 x 10 -6 atm.cc/sec leakage for a month.

5. High performance Automatic Purge system

An automatic purge unit to collect into a purge tank remaining Non-condensable gases in system and purge tank for storing Non-condensable gases make long time operation without manual purging

Hot water inlet temp. 95℃

Model		Unit	WSL75		WSL90		WSL110		WSL135		WSL155		WSL180		WSL210		WSL240		WSL270		WSL300	
Chilled water temp. at in-outlet		℃	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8
Cooling capacity		usRT	70	75	85	90	103	110	122	135	141	155	169	180	198	210	226	240	254	270	282	300
Chilled water	Flow rate	㎥/h	42.3	45.4	51.4	54.4	62.3	66.5	73.8	81.6	85.3	93.7	102.2	108.9	119.8	127.0	136.7	145.2	153.6	163.3	170.6	181.4
	Pressure drop	mAq	7.8	9.0	8.5	9.5	7.5	8.6	7.4	9.1	7.0	8.4	7.9	9.0	7.5	8.4	7.9	8.9	7.8	8.8	8.0	9.1
	Pipe size	A	80				100				125								150			
Cooling water	Flow rate	㎥/h	92.5	99.1	112.3	118.9	136.1	145.3	161.1	178.3	186.2	204.7	223.2	237.8	261.5	277.4	298.5	317.0	335.5	356.6	372.5	396.3
	Pressure drop	mAq	10.1	11.6	9.8	11.0	4.7	5.4	4.2	5.2	4.6	5.5	4.8	5.5	9.7	10.8	9.5	10.7	9.3	10.5	9.0	10.2
	Pipe size	A	125				150								200							
Hot water	Flow rate	㎥/h	19.6	21.0	23.8	25.2	28.8	30.8	34.2	37.8	39.5	43.4	47.3	50.4	55.4	58.8	63.3	67.2	71.1	75.6	79.0	84.0
	Pressure drop	mmAq	0.9	1.0	0.9	1.0	0.4	0.5	0.5	0.6	0.5	0.6	0.5	0.6	1.1	1.2	1.1	1.2	1.0	1.1	1.0	1.1
	Pipe size	A	65				80								100							
	Valve size	A	50		65				80						100							
Electricity	Power	-	3Ø 380V50Hz																			
	Solution Pump	kW(A)	1.5(4.7A)								2.0(6.1A)				2.4(7.3A)							
	Refrigerant Pump	kW(A)	0.3(1.7A)												0.4(1.7A)							
	Purge Pump	-	0.4(1.5A)																			
	Total Ampere	kW(A)	2.2(7.9)								2.7(9.3)				3.2(10.5)							
Dimension	Length	㎜	2,640				3,680				3,686				4,744				4,776			
	Width	㎜	1,244				1,244				1,369				1,365				1,495			
	Height	㎜	2,255				2,255				2,389				2,389				2,575			
Weigh	Equipment weight	Ton	3.6		3.7		4.6		4.8		5.8		6.0		7.0		7.3		9.0		9.4	
	Operation weight	Ton	4.1		4.3		5.3		5.6		6.7		7.1		8.2		8.7		10.6		11.1	
	Conveyance	-	One body																			

Remark

1) Standard pressure:
   Cooling and Chilled water:0.8Mpagf(8kgf/cm2G),
   Hot water standard pressure:1.6Mpa(16kgf/cm2G)
2) Chilled water standard TEMP:Inlet: 13℃, Outlet :8℃
   Cooling water standard TEMP: Inlet: 31℃, Outlet :36.5℃
3) Hot water standard TEMP: Inlet: 95℃, Outlet :80℃.
4) Power standard : 380V, 3Phase,60Hz,(220,440,460V also available)
5) The specification could be changed without any notice.

Hot water inlet temp. 95℃

Model		Unit	WSL340		WSL375		WSL420		WSL470		WSL525		WSL600		WSL675		WSL750		WSL825	
Chilled water temp. at in-outlet		℃	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8	12–7	13–8
Cooling capacity		usRT	320	340	360	375	399	420	446	470	494	525	569	600	641	675	712	750	783	825
Chilled water	Flow rate	㎥/h	193.5	204.4	217.7	226.8	241.3	254.0	269.7	286.1	298.8	317.5	344.4	362.9	387.4	408.2	430.5	453.6	473.5	499.0
	Pressure drop	mAq	7.1	7.9	7.6	8.3	6.0	6.6	8.1	9.1	3.5	4.0	2.5	2.8	3.5	3.9	4.6	5.1	3.5	3.9
	Pipe size	A	200										250						300	
Cooling water	Flow rate	㎥/h	422.7	446.5	475.5	495.3	527.0	554.8	589.1	624.8	652.5	693.5	752.1	792.5	846.1	891.6	940.2	990.7	1034.2	1089.7
	Pressure drop	mAq	9.4	10.5	9.8	10.6	6.8	7.5	9.2	10.4	12.1	13.7	8.9	9.9	12.0	13.3	15.9	17.6	16.2	18.0
	Pipe size	A	250				300						350						400	
Hot water	Flow rate	㎥/h	89.6	94.6	100.8	105.0	111.7	117.6	124.98	132.4	138.3	147.0	159.4	168.0	179.4	189.0	199.3	210.1	219.2	231.0
	Pressure drop	mAq	1.0	1.1	1.0	1.1	1.0	1.1	1.4	1.6	1.9	2.1	1.2	1.3	1.5	1.7	2.1	2.3	2.3	2.5
	Pipe size	A	125										150						200	
	Valve size	A	125										150						200	
Electricity	Power	-	3Ø 380V50Hz																	
	Solution Pump	kW(A)	2.4(7.3A)				3.0(10A)												4.5(16.2A)	
	Refrigerant Pump	kW(A)	0.4(1.7A)																1.5(4.0A)	
	Purge Pump	-	0.4(1.5A)																	
	Total Ampere	kW(A)	3.2(10.5)				3.8(13.2)												5.3(21.7)	
Dimension	Length	mm	4,780				4,870		5,410		5,910		5,618		6,116		6,641		7,141	
	Width	mm	1,595				1,955						2,200							
	Height	mm	2,850				3,150						3,840							
Weigh	Equipment weight	Ton	10.7		11.7		14.9		16.2		17.4		20.8		22.5		24.0		28.3	
	Operation weight	Ton	12.7		13.2		18.0		19.6		21.0		25.0		27.0		28.8		34.0	
	Conveyance	-	One Body																	

Option In different heat source and operation, the conditions can be selected as an option.
1) When the water pressure different from the standard.
2) When heat tube material is not copper nor with different tickness.
3) When Hot/cooling/chilled water temp. are different from standard.

Double Effect Steam Fired Absorption Chiller

RAAF

100RT ~ 1500RT

Eco friendly and energy-saving design

WSA uses steam as the energy resource, LiBr as absorbent and water as refrigerant. With use of eco friendly materials, WSA does not raise the carbon dioxide which causes the global warming. The cost for electricity and operation can be saved in the area where steam is enough to use.

Reliable and efficient operation

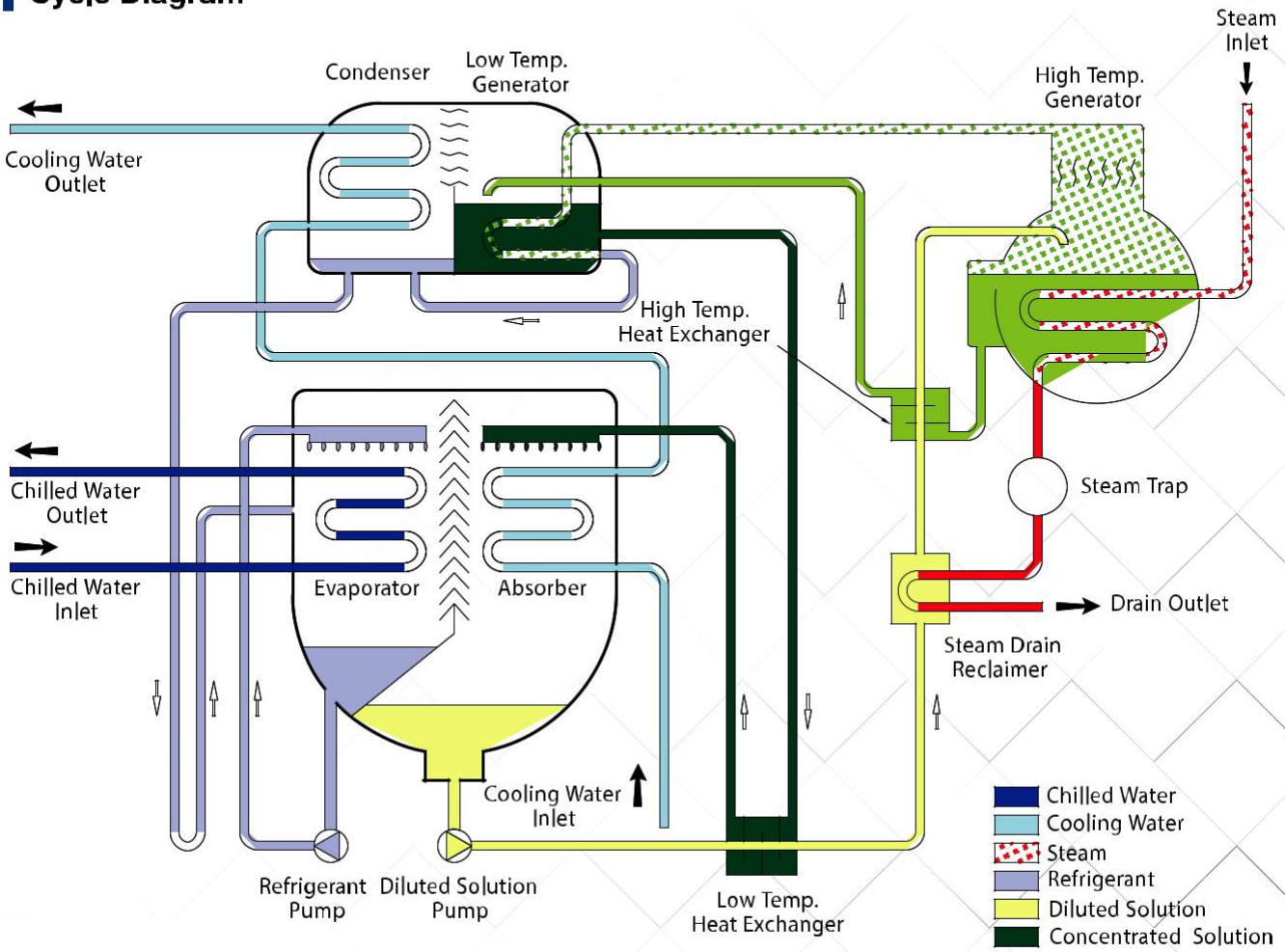
WSA is designed to enhance the reliability and durability. Inver control of absorbent depending on cooling load makes efficient operation.

Intelligent operation system

Micro process control realizes precise contro and efficient operation of the unit. And the user can operate the unit easily on the touch screen.

Steam Consumption: 3.5kg/h·RT ~ 4.4kg/h·RT

Cycle Diagram



SPECIFICATION

Double Effect Steam Fired Absorption Chiller

RAAF

Model		Unit	WSA 010	WSA 012	WSA 015	WSA 018	WSA 021	WSA 024	WSA 028	WSA 032	WSA 036	WSA 040	WSA 045
Cooling capacity		usRT	100	120	150	180	210	240	280	320	360	400	450
		kW	352	422	528	633	739	844	985	1,125	1,266	1,407	1,583
Chilled Water	Temp.	℃	12/7℃										
	Flow rate	ton/h	60.5	72.6	90.7	108.9	127.0	145.2	169.3	193.5	217.7	241.9	272.2
	P. Drop	mAq	6.5	6.4	8.0	8.3	7.5	7.9	5.1	5.5	5.8	6.1	5.2
	Connection	A	100				125		150				
Cooling Water	Temp.	℃	32/37.5℃										
	Flow rate	m³/h	100	120	150	180	210	240	280	320	360	400	450
	P. Drop	mAq	3.9	4.4	6.5	7.7	5.6	6.2	10.9	12.1	8.7	9.4	10.3
	Connection	A	125				150		200				
Steam	Flow rate	kg/h	440	530	660	790	920	1060	1230	1410	1580	1760	1980
	Steam Inlet onnect.	A	50				65				80		
	Drain Outlet onnect.	A	25								40		
	Control Valve Size	A	25	40					50				
Electric	Power Source		3 ø 400V 50Hz										
	Abs. Pump #1	kW(A)	2.0 (6.0)				2.4 (7.5)		3.0 (11.0)		3.4 (10.2)		3.4
	Abs. Pump #2	kW(A)	0.4 (1.6)				1.2 (4.5)				1.5 (5.0)		1.5
	Ref. Pump	kW(A)	0.3 (1.5)				0.4 (1.5)						
	Purge Pump	kW(A)	0.4 (1.4)										
	Control Panel	kW(A)	0.2 (0.5)										
	Total Ampere	kW(A)	3.3 (11.0)				4.6 (15.4)		5.2 (18.9)		5.9 (18.6)		
Size	Length (L)	mm	2,632	2,832	3,644		3,670		4,720		4,860		4,910
	Width (W)	mm	1,775				1,880				2,110		2,250
	Height (H)	mm	2,030				2,300				2,550		2,780
Widght	Rigging	Ton	3.9	4.1	5.1	5.2	6.2	6.4	7.7	8.0	9.8	10.1	11.8
	Operation	Ton	4.3	4.5	5.6	5.8	6.9	7.2	8.6	9.0	11.0	11.4	13.5
Space for Tube Replacement		mm	2,400		3,400				4,500				

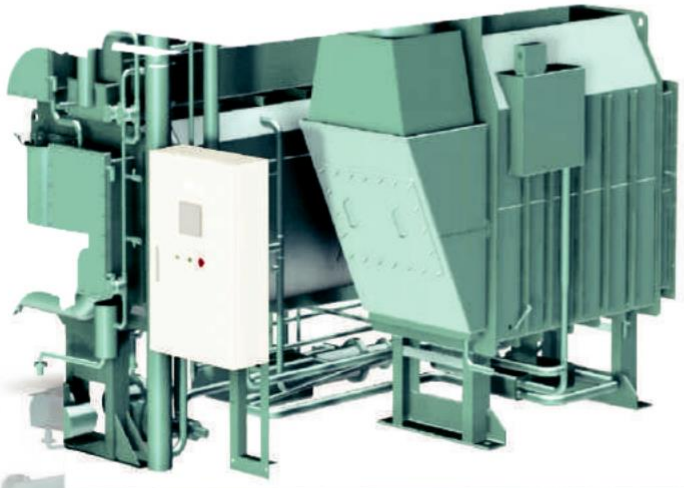
Remark

1) 1usRT = 3,024 kcal/h
2) Standard Steam Pressure is 0.8M
3) Working Pressure of chilled water and cooling water side is based on 1.0MPaPa
4) Fouling factor 0.0001m2·h·℃/kcal for Absorber and Condenser, 0.0001m2·h·℃/kcal for Evaporator.
5) Catalogue specifications are subject to change without prior notice.

Model		Unit	WSA 050	WSA 056	WSA 063	WSA 070	WSA 080	WSA 090	WSA 100	WSA 110	WSA 120	WSA 130	WSA 140	WSA 150
Cooling capacity		usRT	500	560	630	700	800	900	1000	1100	1200	1300	1400	1500
		kW	1,758	1,969	2,216	2,462	2,814	3,165	3,517	3,869	4,220	4,572	4,924	5,275
Chilled Water	Temp.	℃	12/7℃											
	Flow rate	ton/h	302.4	338.7	381.0	423.4	483.8	544.3	604.8	665.3	725.8	786.2	846.7	907.2
	P. Drop	mAq	5.5	4.6	6.2	8.1	4.7	6.4	8.4	6.2	7.9	9.8	8.0	9.8
	Connection	A	200				250			300			350	
Cooling Water	Temp.	℃	32/37.5℃											
	Flow rate	㎥/h	500	560	630	700	800	900	1000	1100	1200	1300	1400	1500
	P. Drop	mAq	11.2	7.1	9.4	12.1	8.4	11.1	14.3	8.8	10.9	13.4	12.3	14.6
	Connection	A	250	300			350			400				
Steam	Flow rate	kg/h	2200	2460	2770	3080	3520	3960	4400	4840	5280	5720	6160	6600
	Steam Inlet onnect.	A	80	100			125			150				
	Drain Outlet onnect.	A	40	50			65			80				
	Control Valve Size	A	65			80				100				
Electric	Power Source		3ø400\50Hz											
	Abs. Pump #1	kW(A)	3.4(10.2)	5.5 (20.0)			6.6 (16.2)			7.5 (25.0)				
	Abs. Pump #2	kW(A)	1.5 (5.0)	2.0 (6.0)			2.2 (7.0)			4.5 (16.0)				
	Ref. Pump	kW(A)	0.4 (1.5)				1.5 (4.0)							
	Purge Pump	kW(A)	0.4 (1.4)											
	Control Panel	kW(A)	0.2 (0.5)											
	Total Ampere	kW(A)	5.9 (18.6)	8.5 (29.4)			10.9 (29.1)			14.1 (46.9)				
Size	Length (L)	mm	4,910	5,040	5,580	6,080	5,720	6,220	6,740	6,150	6,670	7,170	6,830	7,330
	Width (W)	mm	2,250	2,480			2,825			3,000			3,250	
	Height (H)	mm	2,780	3,255			3,400			3,600			3,650	
Widght	Rigging	Ton	12.1	16.6	18.1	19.4	24.6	26.3	28.3	31.8	33.9	35.8	39.6	41.8
	Operation	Ton	13.9	19.2	20.8	22.3	28.7	30.7	32.8	36.4	38.8	40.9	45.3	47.7
Space for Tube Replacement		mm	4,500		5,200	5,700	5,200	5,700	6,200	5,700	6,200	6,700	6,200	6,700

Double Effect Exhaust Gas Driven Absorption Chiller &Heater

100RT ~ 1500RT 23 Model



WEG / Chilled water 12 → 7℃

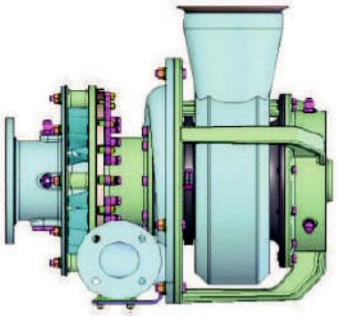
1. Waste exhaust gas can be used for drive heat source.
2. Convertible use of cooling and heating
3. Energy saving product
4. Increase in the efficiency of total energy
5. No power overload in summer season
6. Environment-friendly to use water as refrigerant

Development of diverter valve

- Working at high temp 500℃. Endurability
- Maximum flow for exhaust gas: 90kg/min

Development of diverter valve

- Working at high temp 500℃. Endurability
- Maximum flow for exhaust gas: 90kg/min



Exhaust gas 576℃

Exhaust gas 526℃

Chilled water :12→7℃

150℃
Exhaust Gas Outlet

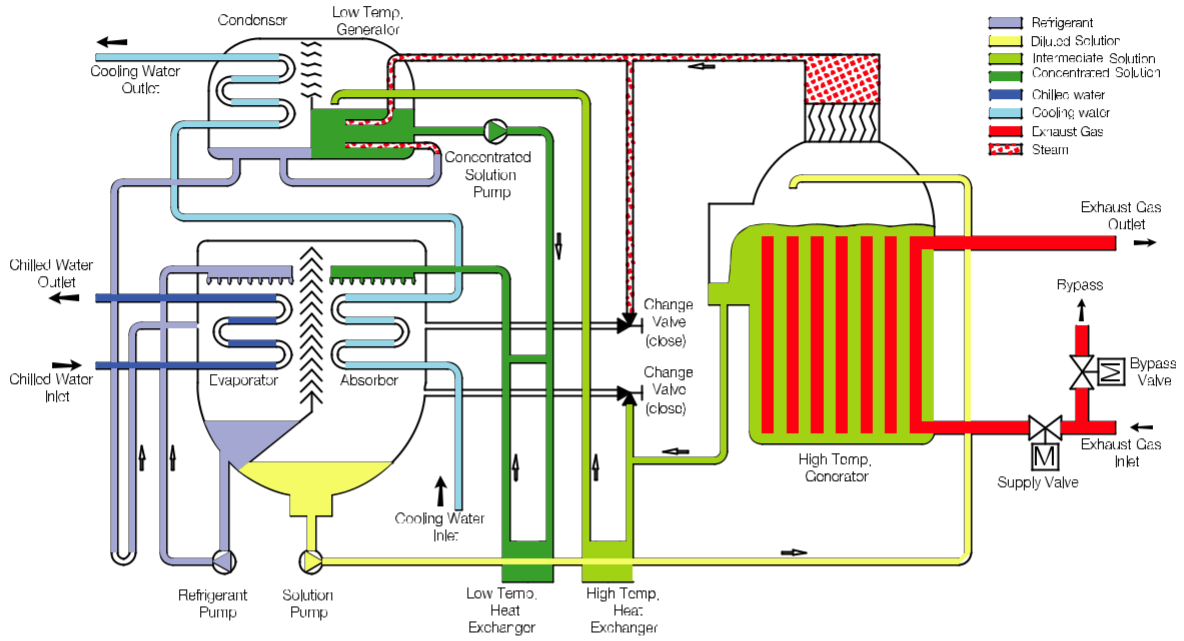
High temp. generator

- Vertical water tube - Fin tube, 1 Pass
- UA
- Loss of pressure calculation
- Endurable from high temp corrosion

CYCLE DIAGRAM

Double Effect Exhaust Gas Driven Absorption Chiller & Heater

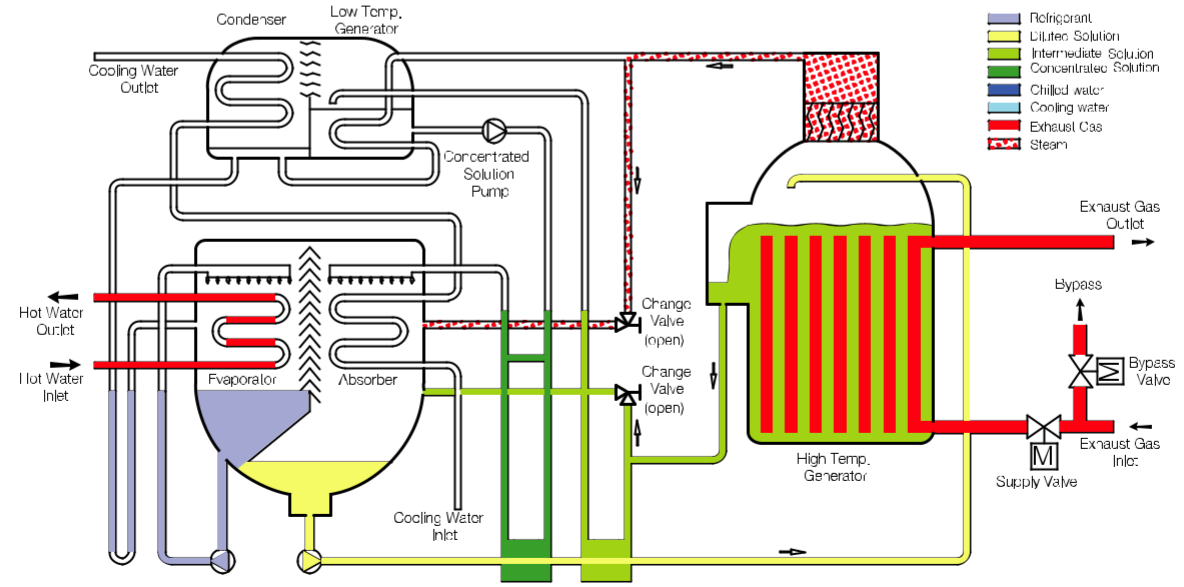
Cooling Cycle Diagram



Cooling Cycle

High Temp. Generator	Refrigerant Steam →	Low Temp Generator	Condenser	Low Temp Generator	Absorber	Low Temp Heat Exchanger	High Temp Heat Exchanger	High Temp Generator
	Solution →	High Temp Generator	Low Temp Generator	High Temp Generator				

Heating Cycle Diagram



Heating Cycle

High Temp. Generator	Refrigerant Steam →	Evaporator	Soulution Pump	Low Temp Heat Exchanger	High Temp Heat Exchanger	High Temp Generator
	Solution →	Absorber				

SPECIFICATION

Double Effect Exhaust Gas Driven Absorption Chiller & Heater

RAAF

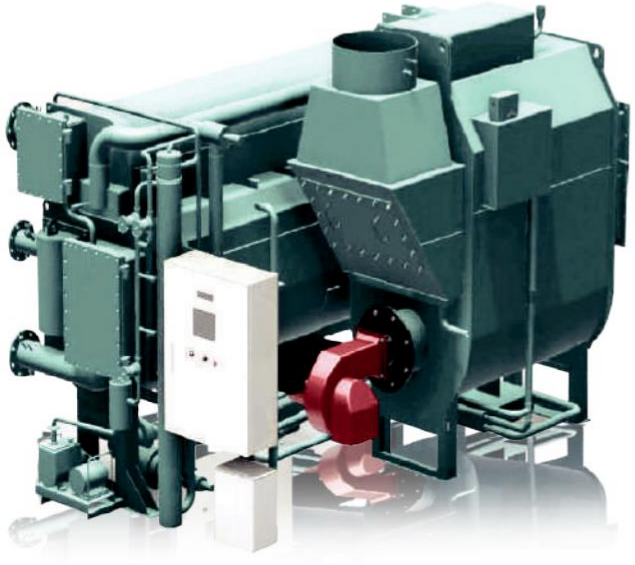
Model			Unit	WEG 010	WEG 012	WEG 012	WEG 018	WEG 021	WEG 024	WEG 028	WEG 032	WEG 036	WEG 040	WEG 045
Cooling capacity			usRT	100	120	150	180	210	240	280	320	360	400	450
			kW	351	422	527	633	738	844	984	1,125	1,265	1,406	1,582
Heating capacity			Mcal/h	283	340	425	510	595	680	793	906	1019	1133	1274
			kW	329	395	494	592	691	790	922	1053	1185	1317	1481
Chilled Water	Temp.		℃	12 / 7										
	Flow rate		m³/h	60.5	72.6	90.7	109	127	145	169	194	218	242	272
	P. Drop		mAq	4.8	5.1	6.6	7.0	6.4	6.3	4.6	4.5	5.0	5.1	4.4
	Connection		A	100				125		150				
Cooling Water	Temp.		℃	32/37.5										
	Flow rate		m³/h	100	120	150	180	210	240	280	320	360	400	450
	P. Drop		mAq	11.1	11.3	11.5	11.8	11.8	12.1	11.2	10.7	11.1	10.8	10.7
	Connection		A	125		150				200				250
Exhaust Gas	Temp.		kg/sec	0.88	1.05	1.32	1.58	1.84	2.11	2.46	2.81	3.16	3.51	3.95
	Temp.	Cooling	℃	450/165										
		Heating	℃	450/125										
	P. Drop		mmAq	77	82	79	92	97	113	129	131	123	131	133
	Outlet Conn		A	400				500				600		
	Diverter Valve		A	400				500				600		
Electric	Power source			3Ø 380V(50Hz)										
	Abs. Pump		kW(A)	2.0(5.7)				2.4(6.1)				3.4(9.0)		
	Ref. Pump		kW(A)	0.3(1.5)				0.4(1.6)						
	Purge Pump		kW(A)	0.4(1.4)										
	Control Pump		KVA	0.2(0.5)										
	Amp. (400 Vac)		kW(A)	2.9(9.10)				3.4(9.6)				4.4(12.5)		
Size	Length (L)		mm	2,597		3,680		3,686		4,744		4,776		4,954
	Width (W)		mm	1,662	1,740	1,857	1,935	2,150	2,189	2,267	2,375	2,270	2,309	2,491
	Height (H)		mm	1,979				2,303				2,470		2,744
Weight	Rigging		mm	5.0	5.3	6.4	6.8	7.9	8.5	9.8	10.3	12.8	13.2	15.7
	Operation		Ton	5.4	5.8	7.0	7.4	8.6	9.3	10.7	11.3	14.0	14.6	17.2
Tube exchange space			Ton	2,400		3,400				4,500				

Remark Working Pressure of each water side is based on 1.0Mpu(150psig.)

Model			Unit	WEG 050	WEG 056	WEG 063	WEG 070	WEG 080	WEG 090	WEG 100	WEG 110	WEG 120	WEG 130	WEG 140	WEG 150
Cooling capacity			usRT	500	560	630	700	800	900	1000	1100	1200	1300	1400	1500
			kW	1,757	1,968	2,214	2,460	2,812	3,163	3,515	3,866	4,218	4,569	4,921	5,272
Heating capacity			Mcal/h	1416	1586	1784	1982	2266	2549	2832	3115	3398	3682	3965	4248
			kW	1646	1843	2074	2304	2633	2962	3291	3621	3950	4279	4608	4937
Chilled Water	Temp.		℃	12 / 7											
	Flow rate		m³/h	302	339	381	423	484	544	605	665	726	786	847	907
	P. Drop		mAq	3.9	3.6	5.0	6.6	4.7	6.4	8.5	7.2	9.2	11.5	8.3	10.2
	Connection		A	200				250			300			350	
Cooling Water	Temp.		℃	32/37.5											
	Flow rate		m³/h	500	560	630	700	800	900	1000	1100	1200	1300	1400	1500
	P. Drop		mAq	10.8	7.7	10.6	14.0	8.7	11.8	15.6	3.0	3.8	4.8	4.0	4.9
	Connection		A	250	300			350			400				
Exhaust Gas	Temp.		kg/sec	4.39	4.92	5.53	6.15	7.03	7.91	8.78	9.66	10.54	11.42	12.30	13.18
	Temp.	Cooling	℃	450/165											
		Heating	℃	450/125											
	P. Drop		mmAq	134	143	133	146	155	153	176	213	221	212	206	184
	Outlet Conn		A	600	750						1000				
	Diverter Valve		A	600	750						1000				
Electric	Power source			3Ø380V(50Hz)											
	Abs. Pump		kW(A)	3.4(9.0)	5.5(14.3)						7.5(21.9)				
	Ref. Pump		kW(A)	0.4(1.6)				1.5(3.8)							
	Purge Pump		kW(A)	0.4(1.4)							0.75(2.2)				
	Control Pump		KVA	0.2(0.5)											
	Amp. (400 Vac)		kW(A)	4.4(12.5)	6.5(17.8)			7.6(20.0)			9.95(28.4)				
Size	Length (L)		mm	4,954	4,998	5,540	6,038	5,460	5,958	6,483	6,293	6,818	7,318	6,974	7,475
	Width (W)		mm	2,569	2,934	3,069	3,459	3,330	3,480	3,530	4,348	4,448	4,598	4,932	5,182
	Height (H)		mm	2,744	3,057			3,390			3,678			3,700	
Weight	Rigging		mm	16.5	21.2	23.1	24.6	31.0	33.6	35.6	41.1	43.4	46.4	50.2	54.1
	Operation		Ton	18.1	23.7	25.8	27.5	34.8	37.6	39.9	46.2	48.8	52.1	56.5	60.8
Tube exchange space			Ton	4,500		5,200	5,700	5,200	5,700	6,200	5,700	6,200	6,700	6,200	6,700

Multi-Fuel Absorption Chiller & Heater

100RT ~ 1000RT

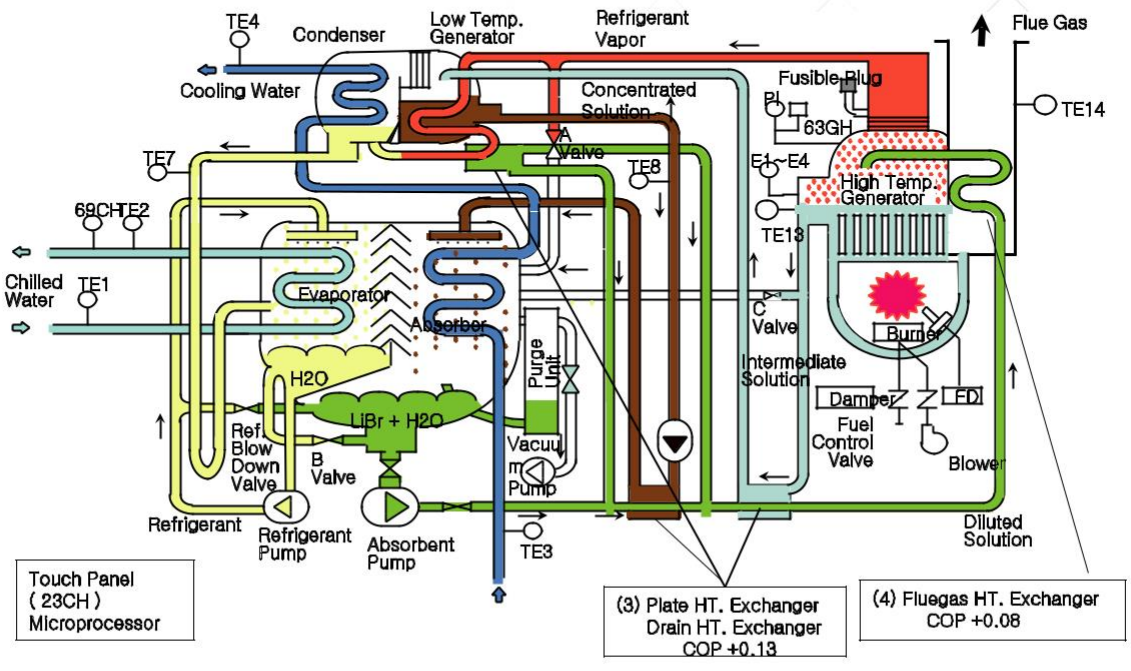


This model is designed to use different energy resource for cooling and heating.
Exhaust gas, steam and hot water can be used with gas or oil.

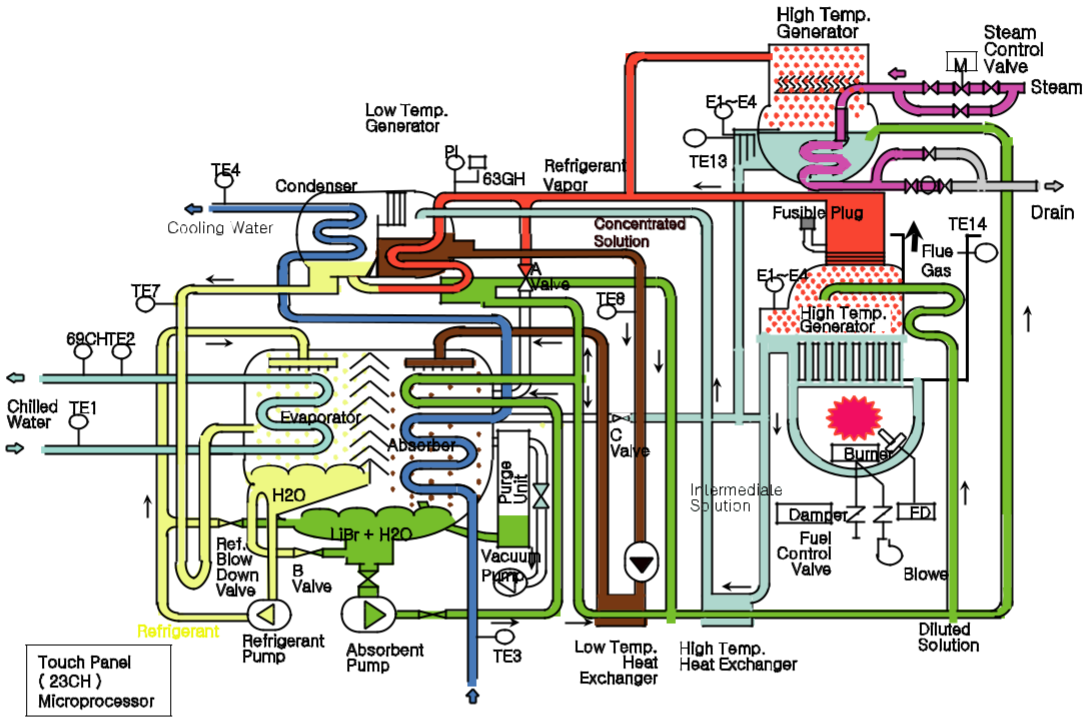
Heat resource: Natural Gas, Oil, Steam, Hot Water

CYCLE DIAGRAM

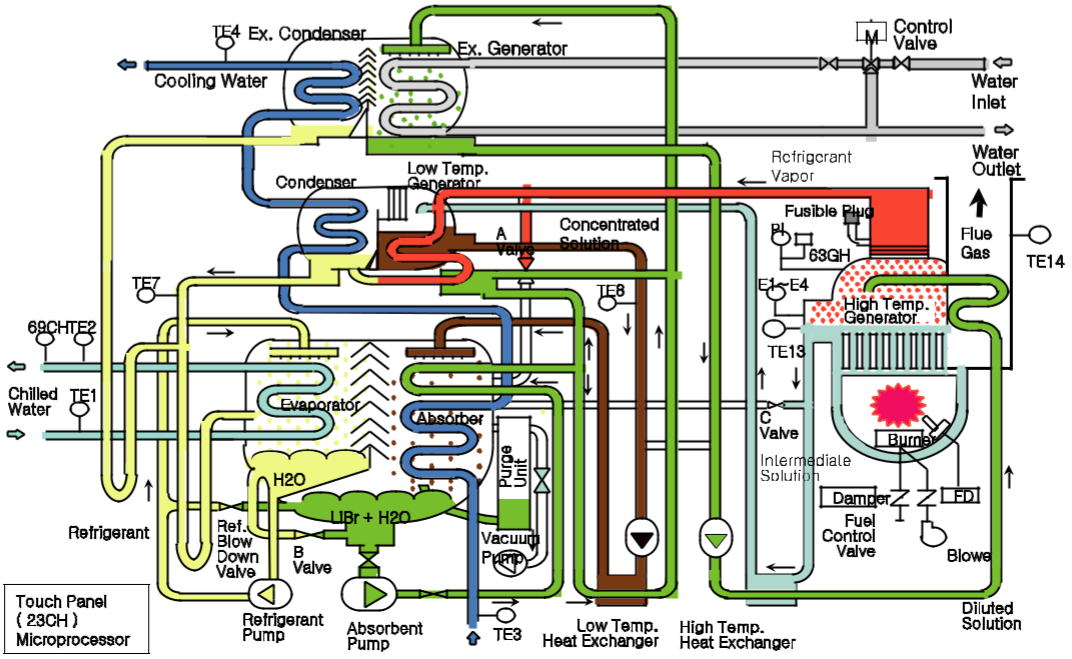
Multi-Fuel Absorption Chiller & Heater



Gas & Steam Fired(Dual Fuel)

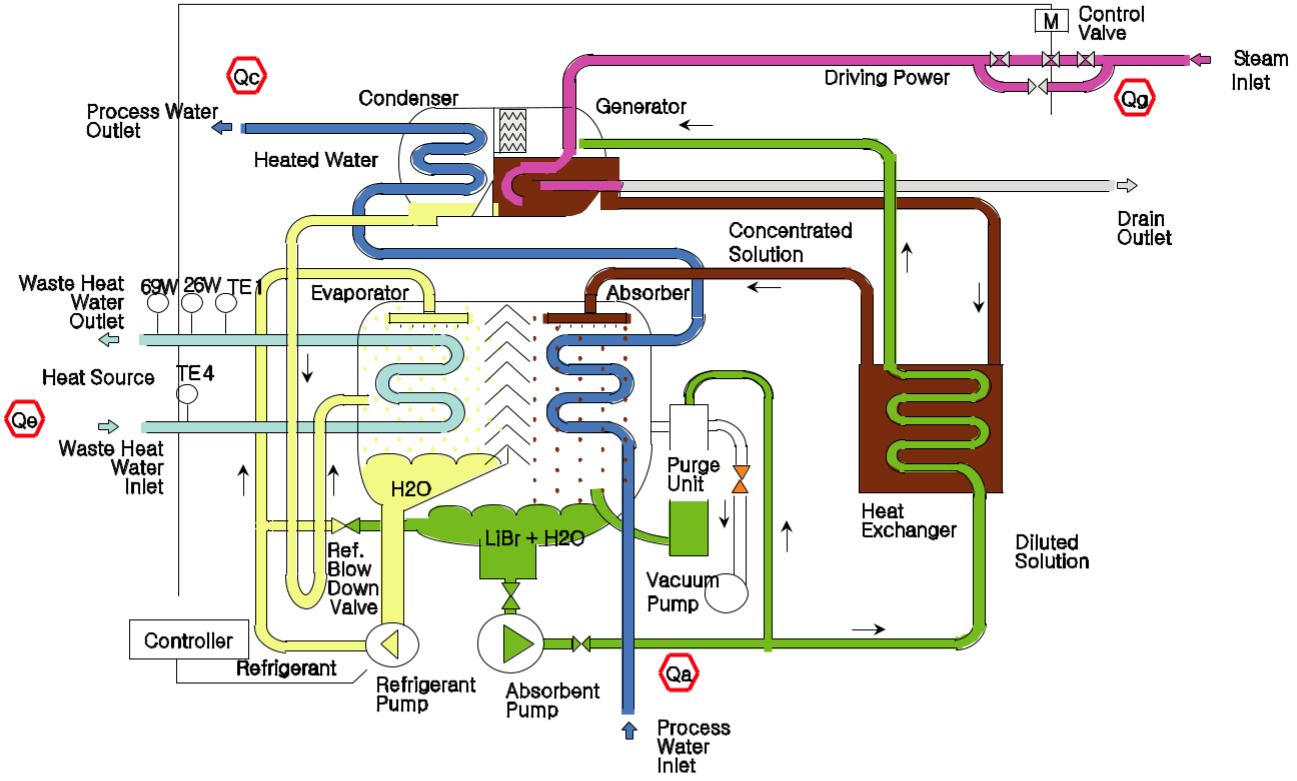


Gas& Water Fired(Dual Fuel)



Absorption Heat Pump developed to produce medium temperature energy by using high temperature energy resource such as steam, hot water and exhaust gas and low temperature waste heat energy.
This Absorption Heat Pump can be used to supply hot water for heating in a building or to supply hot water in the process of factory by using waste heat resource.

Cycle Diagram(Heated Water)



Generator Vapor is generated from heat supplied by driven hot water. the generated vapor is moved into Condenser.

Condenser The vapor is condensed on the tubes. And the heat is transferred to hot water inside the tubes.

Evaporator The evaporator takes evaporating heat from the waste hot water and the evaporated vapor moves into Absorber.

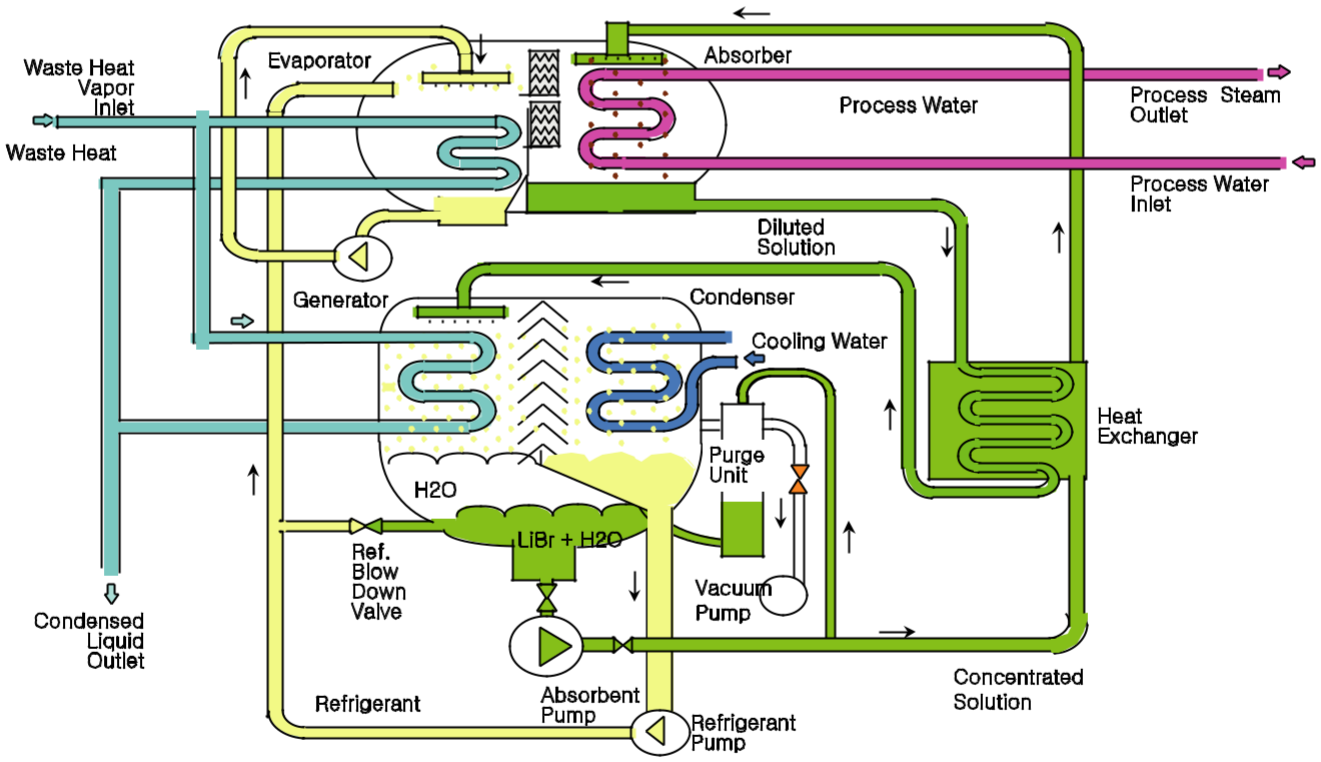
Absorber The evaporated vapor is absorbed into concentrated solution coming from a generator. And the heat is transferred to process hot water.

Absorption Heat Transformer

ABSORPTION HEAT PUMP

Absorption Heat Transformer developed to produce high temperature energy by using medium temperature energy resource in the process of factory.
This Absorption Heat Transformer can be used in the plants that have high temperature waste heat resource to recycle it.

Cycle Diagram(Steam Gene.)



Generator Vapor is generated from heat supplied by driven hot water. the generated vapor is moved into Condenser.

Condenser The vapor is condensed on the tubes. And the heat is transferred to hot water inside the tubes.

Evaporator The evaporator takes evaporating heat from the waste hot water and the evaporated vapor moves into Absorber.

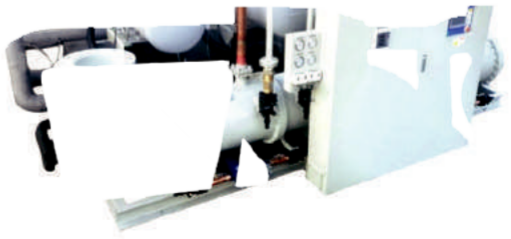
Absorber The evaporated vapor is absorbed into concentrated solution coming from a generator. And the heat is transferred to process hot water.

WATER COOLED SCREW CHILLER B-SERIES

Refrigerant R-134a

SB – SINGLE UNIT (SB40T1)

SB – MULTI UNIT (SB560T4)



1. Environ
2. High efficie
3. Stable operation under high temperature with improved performance of the condenser
4. The condenser and evaporator were designed according to a strict design program to achieve optimal thermal equilibrium.
5. The product is used for various purposes in production, air conditioning and industrial facilities.

Function

- Used four–seasons : With Liquid injection system
- Chilled Water (Brine) Tem Range : –20 ℃ ~ 15 ℃
- Cooling Water Temp c
  : With Cooling Towe an con sy
- Maximum 'a
- With safety devices
- This product can Power input control (Option)
- Running Embient Temp Range : –15℃~50℃

R–134a Single Series (50Hz)

MODEL		UNIT	SB 30T1	SB 40T1	SB 50T1	SB 60T1	SB 80T1	SB 90T1	SB 100T1	SB 120T1	SB 130T1	SB 140T1	SB 170T1	SB 190T1	SB 210T1	SB 240T1	SB 270T1
Capacity		USRT	18.4	20.9	26.7	30.8	34.1	42.6	50.2	54.3	64.8	71.9	77.5	94.4	105.0	120.8	148.8
		kW	64.8	73.6	93.7	108.2	119.9	149.7	176.4	191.1	228.0	252.9	272.5	331.8	369.1	424.6	523.1
Power Input		kW	16.0	18.1	23.0	26.2	29.0	35.2	41.1	44.5	53.0	58.7	62.8	75.4	83.5	95.9	117.3
COP		–	4.0	4.1	4.1	4.1	4.1	4.2	4.3	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.5
Current (RLA)		380V (A)	29.0	32.8	41.6	47.4	52.5	63.7	74.3	80.5	95.8	106.2	113.6	136.4	151.1	173.4	212.2
		400V (A)	27.6	31.1	39.6	45.0	49.9	60.5	70.6	76.5	91.0	100.9	107.9	129.6	143.6	164.7	201.6
		415V (A)	26.6	30.0	38.1	43.4	48.1	58.3	68.1	73.7	87.7	97.2	104.0	124.9	138.4	158.8	194.3
Compressor Qty		Cycle	1 Cycle														
Capacity Control		%	25% ~ 100% (STEP & STEPLESS)														
Cooling Water Flow Rate		㎥/hr	15.5	17.5	22.3	25.7	28.5	35.3	41.6	45.0	53.7	59.6	64.1	77.8	86.5	99.5	122.4
Cooling Water Press. Drop		mAq	3.0	3.0	3.0	3.0	3.8	3.8	4.4	4.4	4.7	4.9	4.9	5.1	5.3	5.4	7.7
Chilled Water Flow Rate		㎥/hr	11.2	12.7	16.1	18.6	20.6	25.7	30.3	32.9	39.2	43.5	46.9	57.1	63.5	73.0	90.0
Chilled Water Press. Drop		mAq	3.0	3.2	3.4	3.8	3.8	4.2	4.1	4.3	4.7	4.4	4.9	4.9	5.0	5.0	6.6
Cooling Water Pipe		inch	2 1/2	3	3	4	4	4	4	4	5	5	6	6	6	6	8
Chiller Water Pipe		inch	3	3	4	4	4	4	4	4	4	4	5	5	5	6	6
Safety Line		inch	–	–	–	–	1	1	1	1	1	1	1	1	1	1	1
Size	Length	mm	2,201	2,201	2,201	2,276	2,550	2,555	2,791	2,794	2,794	3,010	3,274	3,274	3,679	3,679	3,679
	Width	mm	1,135	1,135	1,155	1,205	1,270	1,312	1,395	1,455	1,455	1,455	1,525	1,585	1,655	1,655	1,725
	Height	mm	1,347	1,347	1,347	1,347	1,537	1,567	1,652	1,692	1,692	1,692	1,795	1,795	1,990	1,990	1,990
Weight		kg	1,140	1,200	1,340	1,600	1,870	1,990	2,270	2,460	2,580	2,740	3,000	3,390	3,940	4,170	4,330
Running Weight		kg	1,285	1,330	1,515	1,780	2,130	2,245	2,570	2,820	2,935	3,160	3,415	3,915	4,515	4,810	4,955

- Evaporator Temp 2℃ (Chilled Water In/Out Temp 12/7℃)
- Condenser Temp 42℃ (Cooling Water In/Out Temp 32/37℃)

R-134a Multi Series (50Hz)

MODEL		UNIT	SB 80T2	SB 100T2	SB 120T2	SB 160T2	SB 180T2	SB 200T2	SB 240T2	SB 260T2	SB 280T2	SB 340T2	SB 380T2	SB 420T2	SB 480T2	SB 540T2	SB 600T2
Capacity		USRT	41.8	53.3	61.5	68.2	85.1	100.3	108.7	129.7	143.9	155.0	188.7	209.9	241.5	297.6	328.3
		kW	147.1	187.4	216.4	239.9	299.4	352.7	382.1	456.0	505.9	544.9	664	738	849	1046	1155
Power Input		kW	36.2	46.0	52.4	58.1	70.4	82.2	89.0	106.0	117.4	125.6	150.8	167.1	191.7	234.6	257.2
COP		–	4.1	4.1	4.1	4.1	4.2	4.3	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.5	4.5
Current (RLA)		380V (A)	65.6	83.3	94.8	105.0	127.4	148.6	161.1	191.7	212.3	227.1	272.8	302.2	346.7	424.3	465.2
		400V (A)	62.3	79.1	90.0	99.8	121.0	141.2	153.0	182.1	201.7	215.8	259.2	287.1	329.4	403.1	441.9
		415V (A)	60.0	76.3	86.8	96.2	116.7	136.1	147.5	175.5	194.4	208.0	249.8	276.7	317.5	388.6	425.9
Compressor Qty		Cycle	2 Cycles														
Capacity Control		%	13% ~ 100% (STEP & STEPLESS)														
Cooling Water Flow Rate		m³/hr	35.0	44.6	51.4	56.9	70.7	83.1	90.0	107.4	119.1	128.1	155.6	173.0	198.9	244.8	269.8
Cooling Water Press. Drop		mAq	4.3	4.3	4.7	4.7	4.8	4.8	4.9	5.0	4.9	5.0	5.1	5.4	5.5	5.8	7.7
Chilled Water Flow Rate		m³/hr	25.3	32.2	37.2	41.3	51.5	60.7	65.7	78.4	87.0	93.7	114.1	127.0	146.1	180.0	198.6
Chilled Water Press. Drop		mAq	4.2	4.5	4.9	4.0	4.4	4.4	4.6	4.6	5.1	5.3	5.4	5.4	5.7	5.9	6.6
Cooling Water Pipe		inch	4	4	5	5	6	6	6	6	8	8	8	8	10	10	10
Chiller Water Pipe		inch	4	4	4	4	5	5	5	6	6	6	8	8	8	8	10
Safety Line		inch	–	–	–	–	–	1x2	1x2	1x2	1x2	1x2	1x2	1x2	1x2	1x2	1x2
Size	Length	mm	3,182	3,202	3,658	3,600	3,600	4,246	4,246	7,263	4,315	4,700	4,700	5,130	5,130	5,215	6,015
	Width	mm	1,258	1,333	1,383	1,460	1,510	1,490	1,618	2,113	1,668	1,727	1,800	1,805	1,805	1,855	1,925
	Height	mm	1,427	1,487	1,512	1,622	1,622	1,685	1,770	1,770	1,770	1,820	1,860	2,070	2,070	2,070	2,070
Weight		kg	2,450	2,650	3,100	3,470	3,670	4,080	4,700	4,980	5,190	5,710	6,340	7,410	7,660	8,220	8,580
Running Weight		kg	2,740	3,010	3,490	3,970	4,170	4,640	5,370	5,640	5,890	6,480	7,290	8,590	8,820	9,480	10,020

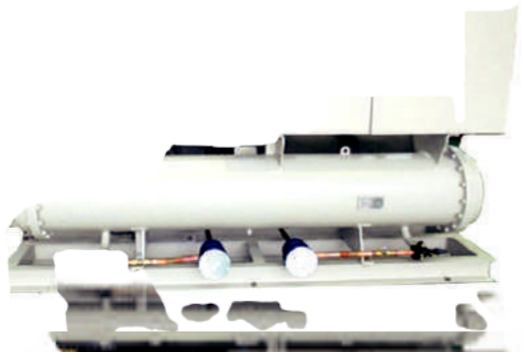
MODEL		UNIT	SB 150T3	SB 180T3	SB 300T3	SB 360T3	SB 200T4	SB 240T4	SB 400T4	SB 480T4	SB 520T4	SB 560T4	SB 680T4	SB 760T4	SB 840T4	SB 960T4	SB 1080T4
Capacity		USRT	80.0	92.3	150.5	163.0	106.6	123.1	200.6	217.4	259.4	287.7	310.0	377.4	419.8	483.0	595.1
		kW	281.1	324.6	529.1	573.2	374.8	432.8	705	764	912	1012	1090	1327	1476	1698	2093
Power Input		kW	69.1	78.6	123.3	133.6	92.1	104.8	164.4	178.1	211.9	234.8	251.1	301.6	334.2	383.4	469.2
COP		–	4.1	4.1	4.3	4.3	4.1	4.1	4.3	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.5
Current (RLA)		380V (A)	124.9	142.2	223.0	241.6	166.6	189.6	297.3	322.1	383.3	424.6	454.2	545.6	604	693.5	849
		400V (A)	118.7	135.1	211.8	229.5	158.2	180.1	282.4	306.0	364.2	403.4	431.5	518.3	574	658.8	806
		415V (A)	114.4	130.2	204.2	221.2	152.5	173.6	272.2	294.9	351.0	388.8	415.9	499.6	553	635.0	777
Compressor Qty		Cycle	3 Cycles				4 Cycles										
Capacity Control		%	9%~100% (STEP & STEPLESS)				7% ~ 100% (STEP & STEPLESS)										
Cooling Water Flow Rate		m³/hr	66.9	77.1	124.7	135.1	89.2	102.7	166.2	180.1	214.8	238.2	256.3	311.3	346.0	397.9	489.6
Cooling Water Press. Drop		mAq	4.0	4.6	4.9	4.9	4.6	4.7	6.1	6.0	6.1	6.1	7.6	7.6	7.7	7.6	7.7
Chilled Water Flow Rate		m³/hr	48.4	55.8	91.0	98.6	64.5	74.4	121.3	131.5	156.9	174.0	187.5	228.3	253.9	292.1	359.9
Chilled Water Press. Drop		mAq	4.8	5.3	5.6	5.6	4.6	4.8	5.1	5.9	5.8	5.8	5.9	6.3	6.6	6.3	6.6
Cooling Water Pipe		inch	5	6	8	8	6	6	8	8	10	10	10	12	12	12	14
Chiller Water Pipe		inch	5	5	6	6	6	6	8	8	8	8	10	10	10	12	12
Safety Line		inch	–	–	1x3	1x3	–	–	1x4	1x4	1x4	1x4	1x4	1x4	1x4	1x4	1x4
Size	Length	mm	3,820	4,314	5,048	5,065	4,377	4,227	5,622	5,644	5,644	6,244	6,644	6,844	8,737	7,473	9,094
	Width	mm	1,396	1,546	1,811	1,841	1,720	1,924	2,250	2,270	2,222	2,222	2,272	2,322	2,350	2,272	2,350
	Height	mm	1,750	1,750	1,917	1,947	1,915	1,915	1,770	1,770	1,788	1,788	1,870	1,870	1,950	1,870	1,950
Weight		kg	3,860	4,490	6,260	6,950	5,110	5,870	8,080	9,300	9,470	9,800	10,860	11,660	13,240	11,860	13,480
Running Weight		kg	4,295	4,990	7,160	7,940	5,750	6,570	9,240	10,670	11,010	11,320	12,700	13,480	15,620	13,580	15,740

- Evaporator Temp 2℃ (Chilled Water In/Out Temp 12/7℃)
- Condenser Temp 42℃ (Cooling Water In/Out Temp 32/37℃)

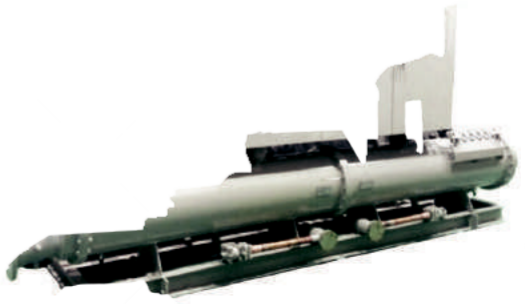
WATER COOLED SCREW CHILLER J-SERIES

Refrigerant R-407c

SJ – SINGLE UNIT (SJ150T1)



SJ – MULTI UNIT (SJ540T2)



1. Environment-friendly refrigerant
2. High efficiency cooling device
3. Stable operation under high temperature with improved performance of the condenser
4. The condenser and evaporator were designed according to a strict design program to achieve optimal thermal equilibrium.
5. The product is used for various purposes in production, air conditioning and industrial facilities.

Function

- Used four–seasons : With Liq With liquid injection
- Chilled Water (Brine) : 20 °C ~ 15 °C
- Cooling Water Temp check
  : With Cooling Tower Fan control system
- Maximum operation Water pressure : 0.8 MPa
- With safety devices
- This product can Power input control (Option)

R–407c Single Series (50Hz)

MODEL		UNIT	SJ 30T1	SJ 40T1	SJ 50T1	SJ 60T1	SJ 80T1	SJ 90T1	SJ 100T1	SJ 120T1	SJ 130T1	SJ 140T1	SJ 170T1	SJ 190T1	SJ 210T1	SJ 240T1	SJ 270T1
Capacity		USRT	27.1	30.7	39.3	45.0	49.8	62.6	73.3	78.6	93.8	104.0	112.0	136.6	151.9	174.9	215.5
		kW	95	108	138	158	175	220	258	276	330	366	394	480	534	615	758
Power Input		kW	25.7	29.1	36.8	41.1	45.6	56.2	65.3	69.5	82.8	91.4	98.1	117.4	130.0	148.9	180.7
COP		–	3.7	3.7	3.8	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.2
Current (RLA)		380V (A)	46.6	52.7	66.5	74.4	82.4	101.7	118.1	125.6	149.7	165.4	177.4	212.3	235.2	269.2	326.8
		400V (A)	44.2	50.1	63.2	70.7	78.3	96.6	112.2	119.3	142.2	157.1	168.5	201.7	223.4	255.8	310.5
		415V (A)	42.6	48.3	60.9	68.1	75.5	93.1	108.1	115.0	137.1	151.4	162.4	194.4	215.3	246.5	299.3
Compressor Qty		Cycle	1 Cycle														
Capacity Control		%	25% ~ 100% (STEP & STEPLESS)														
Cooling Water Flow Rate		m³/hr	23.1	26.2	33.4	38.1	42.2	52.8	61.7	66.1	78.8	87.4	94.0	114.2	126.9	146.0	179.4
Cooling Water Press. Drop		mAq	3.1	3.1	3.1	3.1	3.9	3.9	4.5	4.5	4.8	5.0	5.0	5.2	5.4	5.5	7.8
Chilled Water Flow Rate		m³/hr	16.4	18.6	23.7	27.2	30.1	37.8	44.3	47.5	56.7	62.9	67.8	82.6	91.9	105.8	130.4
Chilled Water Press. Drop		mAq	2.9	3.1	3.3	3.7	3.7	4.1	4.0	4.2	4.6	4.3	4.8	4.8	4.9	4.9	6.5
Cooling Water Pipe		inch	2 1/2	3	3	4	4	4	5	5	5	5	6	6	6	6	8
Chiller Water Pipe		inch	3	3	4	4	4	4	5	5	5	5	5	6	6	6	6
Safety Line		inch	–	–	–	–	1	1	1	1	1	1	1	1	1	1	1
Size	Length	mm	2,089	2,089	2,089	2,276	2,302	2,307	2,553	2,556	2,556	3,010	3,010	3,010	3,345	3,679	3,679
	Width	mm	1,135	1,135	1,155	1,205	1,270	1,312	1,395	1,455	1,455	1,455	1,525	1,585	1,655	1,655	1,655
	Height	mm	1,347	1,347	1,347	1,347	1,537	1,567	1,652	1,692	1,692	1,692	1,795	1,795	1,990	1,990	1,990
Weight		kg	1,110	1,160	1,290	1,540	1,790	1,900	2,170	2,340	2,450	2,600	2,830	3,200	3,730	3,930	4,060
Running Weight		kg	1,270	1,310	1,490	1,750	2,090	2,200	2,520	2,760	2,870	3,090	3,330	3,820	4,410	4,690	4,820

- Evaporator Temp 2℃ (Chilled Water In/Out Temp 12/7℃)
- Condenser Temp 42℃ (Cooling Water In/Out Temp 32/37℃)

R-407c Multi Series (50Hz)

MODEL		UNIT	SJ 80T2	SJ 100T2	SJ 120T2	SJ 160T2	SJ 180T2	SJ 200T2	SJ 240T2	SJ 240T2	SJ 280T2	SJ 340T2	SJ 380T2	SJ 420T2	SJ 480T2	SJ 540T2	SJ 600T2
Capacity		USRT	61.5	78.5	90.0	99.7	125.2	146.6	157.1	187.5	208.0	224.1	273.2	303.9	349.8	431.1	475.7
		kW	216.2	276.1	316.3	350.6	440.1	515.5	552.5	659.4	731.4	787.9	960	1068	1230	1516	1673
Power Input		kW	58.3	73.5	82.2	91.1	112.4	130.5	138.9	165.5	182.8	196.1	234.7	260.0	297.7	361.4	397.7
COP		–	3.7	3.8	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.2	4.2
Current (RLA)		380V (A)	105.4	133.0	148.8	164.9	203.3	236.1	251.2	299.4	330.7	354.7	424.6	470.3	538.5	653.6	719.3
		400V (A)	100.1	126.4	141.3	156.6	193.2	224.3	238.7	284.4	314.2	337.0	403.3	446.8	511.6	620.9	683.3
		415V (A)	96.5	121.8	136.2	151.0	186.2	216.2	230.1	274.1	302.8	324.8	388.8	430.7	493.1	598.5	658.6
Compressor Qty		Cycle	2 Cycles														
Capacity Control		%	13% ~ 100% (STEP & STEPLESS)														
Cooling Water Flow Rate		m³/hr	52.5	66.8	76.2	84.4	105.6	123.5	132.1	157.6	174.7	188.1	228.4	253.9	292.0	358.8	395.7
Cooling Water Press. Drop		mAq	4.4	4.4	4.8	4.8	4.9	4.9	5.0	5.1	5.0	5.1	5.2	5.5	5.6	5.9	7.8
Chilled Water Flow Rate		m³/hr	37.2	47.5	54.4	60.3	75.7	88.7	95.0	113.4	125.8	135.5	165.2	183.8	211.6	260.7	287.7
Chilled Water Press. Drop		mAq	4.1	4.4	4.8	3.9	4.3	4.3	4.5	4.5	5.0	5.2	5.3	5.3	5.6	5.8	6.5
Cooling Water Pipe		inch	4	5	5	5	6	6	6	6	8	8	8	10	10	10	10
Chiller Water Pipe		inch	4	5	5	5	5	6	6	6	6	8	8	8	10	10	10
Safety Line		inch	–	–	–	–	–	1x2	1x2	1x2	1x2	1x2	1x2	1x2	1x2	1x2	1x2
Size	Length	mm	2,982	3,002	3,394	3,600	3,600	4,044	4,044	4,044	4,315	4,700	4,700	5,130	5,130	5,615	6,015
	Width	mm	1,233	1,308	1,308	1,435	1,435	1,465	1,593	1,593	1,593	1,602	1,725	1,780	1,780	1,780	1,850
	Height	mm	1,427	1,487	1,512	1,622	1,622	1,685	1,770	1,770	1,770	1,820	1,860	2,070	2,070	2,070	2,070
Weight		kg	2,370	2,550	2,980	3,310	3,490	3,880	4,460	4,700	4,910	5,370	5,960	6,990	7,180	7,680	7,980
Running Weight		kg	2,700	2,960	3,430	3,890	4,080	4,540	5,250	5,500	5,750	6,310	7,100	8,380	8,580	9,210	9,720

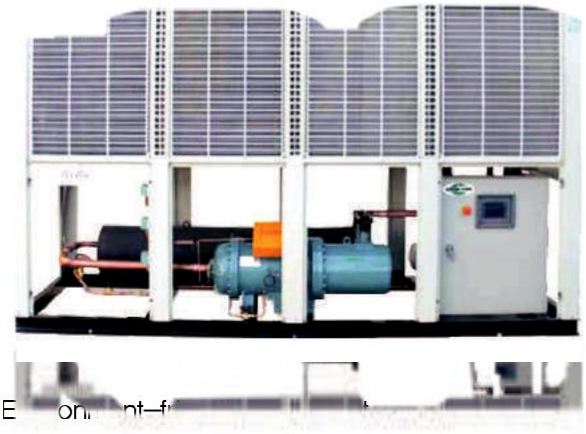
MODEL		UNIT	SJ 150T3	SJ 180T3	SJ 300T3	SJ 360T3	SJ 200T4	SJ 240T4	SJ 320T4	SJ 360T4	SJ 400T4	SJ 480T4	SJ 520T4	SJ 560T4	SJ 680T4	SJ 760T4	SJ 840T4
Capacity		USRT	117.8	134.9	219.9	235.7	157.0	179.9	199.4	250.3	293.2	314.3	375.0	416.0	448.1	546.3	607.7
		kW	414.2	474.5	773.3	828.8	552.2	632.6	701.1	880	1031	1105	1319	1463	1576	1921	2137
Power Input		kW	110.3	123.4	195.8	208.4	147.1	164.5	182.3	224.8	261.1	277.8	331.0	365.7	392.2	469.4	520.0
COP		–	3.8	3.8	3.9	4.0	3.8	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.0	4.1	4.1
Current (RLA)		380V (A)	199.5	223.1	354.2	376.9	266.0	297.5	329.7	406.7	472.2	502.5	598.8	661.4	709.4	849.1	941
		400V (A)	189.6	212.0	336.5	358.0	252.7	282.6	313.2	386.4	448.6	477.4	568.8	628.4	673.9	806.7	894
		415V (A)	182.7	204.3	324.3	345.1	243.6	272.4	301.9	372.4	432.4	460.1	548.3	605.7	649.6	777.5	861
Compressor Qty		Cycle	3 Cycles				4 Cycles										
Capacity Control		%	9%~100% (STEP & STEPLESS)				7% ~ 100% (STEP & STEPLESS)										
Cooling Water Flow Rate		m³/hr	100.2	114.2	185.2	198.2	133.6	152.3	168.8	211.2	246.9	264.3	315.3	349.5	376.1	456.8	507.8
Cooling Water Press. Drop		mAq	4.1	4.7	5.0	5.0	4.7	4.8	4.8	5.5	6.2	6.1	6.2	6.2	7.7	7.7	7.8
Chilled Water Flow Rate		m³/hr	71.2	81.6	133.0	142.6	95.0	108.8	120.6	151.4	177.3	190.1	226.8	251.6	271.0	330.4	367.6
Chilled Water Press. Drop		mAq	4.7	5.2	5.5	5.5	4.5	4.7	4.6	5.1	5.0	5.8	5.7	5.7	5.8	6.2	6.5
Cooling Water Pipe		inch	5	6	8	8	6	6	8	8	10	10	10	10	12	12	14
Chiller Water Pipe		inch	5	5	8	8	6	6	8	8	8	10	10	10	10	10	12
Safety Line		inch	–	–	1x3	1x3	–	–	–	–	1x4	1x4	1x4	1x4	1x4	1x4	1x4
Size	Length	mm	3,486	3,912	4,848	5,065	4,177	4,227	4,522	5,622	5,622	5,644	5,644	5,644	6,644	6,644	8,037
	Width	mm	1,366	1,366	1,731	1,761	1,690	1,794	2,084	2,134	2,170	2,190	2,190	2,192	2,242	2,242	2,320
	Height	mm	1,750	1,750	1,917	1,947	1,915	1,915	1,770	1,770	1,770	1,770	1,770	1,788	1,870	1,870	1,950
Weight		kg	3,710	4,310	5,960	6,590	4,910	5,630	6,510	6,780	7,680	8,820	8,950	9,240	10,180	10,900	12,400
Running Weight		kg	4,220	4,900	7,010	7,760	5,650	6,450	7,680	7,950	9,040	10,430	10,750	11,040	12,360	13,100	15,200

- Evaporator Temp 2℃ (Chilled Water In/Out Temp 12/7℃)
- Condenser Temp 42℃ (Cooling Water In/Out Temp 32/37℃)

AIR COOLED SCREW CHILLER
D-SERIES

Refrigerant R-134a

SD – SINGLE UNIT



SD – MULTI UNIT

1. E[illegible]
2. T[illegible] ability
3. Stable operation under high temperature with attachment of high performance fin & tube
4. Stable structural design and low–noise condenser fan are equipped to achieve low vibration and low noise.
5. The product is used for various purposes in production, air conditioning and industrial facilities.

Function

- Used four–seasons
  - With Liquid injection system
  - With Receiver tank and Fan control system
- Chilled Water (Brine) Temp Range : –20 ℃ ~ 15 ℃
- Maximum operation Water pressure : 0.8 MPa
- With safety devices
- This product can Power input control (Option)
- Running Embient Temp Range : –15℃~50℃

R–134a Single Series (50Hz)

MODEL		UNIT	SD 30T1	SD 40T1	SD 50T1	SD 60T1	SD 70T1	SD 80T1	SD 90T1	SD 100T1	SD 115T1	SD 125T1	SD 150T1	SD 180T1	SD 200T1	SD 240T1
Capacity		USRT	16.4	18.6	23.7	27.4	30.4	37.9	44.6	48.4	57.7	64.0	69.0	84.0	93.4	117.3
		kW	57.7	65.5	83.4	96.3	106.7	133.2	156.9	170.0	202.9	225.1	242.5	295.2	328.4	412.3
Power Input		kW	20.6	23.1	28.8	33.1	36.5	44.9	51.8	57.1	67.0	73.6	79.7	98.2	107.7	132.0
COP		–	2.8	2.8	2.9	2.9	2.9	3.0	3.0	3.0	3.0	3.1	3.0	3.0	3.0	3.1
Current (RLA)		220V (A)	35.4	39.6	49.5	56.9	62.6	77.2	88.9	98.0	115.0	126.4	136.8	168.6	184.9	226.7
		380V (A)	33.7	37.6	47.0	54.1	59.5	73.3	84.5	93.1	109.2	120.1	130.0	160.2	175.7	215.3
		440V (A)	32.5	36.3	45.3	52.1	57.3	70.6	81.4	89.7	105.3	115.8	125.3	154.4	169.3	207.5
Compressor Qty		Cycle	1 Cycle													
Capacity Control		%	25% ~ 100% (STEP LESS)													
Fan Motor		Kw	1.9	1.9	1.9	2.5	2.5	3.8	3.8	5.0	5.0	5.0	6.3	10.0	10.0	10.0
Air Volume		CMM	450	450	550	660	660	900	900	1,390	1,390	1,390	1,740	1,950	2,430	2,780
Water Flow Rate		㎥/hr	9.9	11.3	14.3	16.6	18.4	22.9	27.0	29.2	34.9	38.7	41.7	50.8	56.5	70.9
Chilled Water Pipe		inch	2 1/2"	2 1/2"	3"	3"	3"	3"	4"	4"	4"	4"	4"	5"	5"	5"
Pressure Drop		mAq	2.1	2.2	2.2	2.4	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.1
Size	Length	mm	2,860	3,460	2,580	2,580	2,580	3,630	3,630	4,420	3,680	4,000	4,000	7,260	8,840	7,360
	Width	mm	1,035	1,035	1,976	1,976	1,976	2,140	2,140	2,180	2,300	2,300	2,300	2,140	2,180	2,300
	Height	mm	2,125	2,277	2,131	2,131	2,131	2,390	2,390	2,390	2,420	2,522	2,623	2,390	2,390	2,420
Weight		kg	1,480	1,480	1,680	1,730	1,770	2,340	2,410	3,180	3,280	3,380	3,400	4,480	4,930	5,120
Running Weight		kg	1,605	1,605	1,805	1,845	1,880	2,580	2,780	3,275	3,375	3,475	3,500	4,780	5,420	5,560

- Evaporator Temp 2℃ (Chilled Water In/Out Temp 12/7℃)
- Condenser Temp 50℃ (Embient Temp 35℃)

R-134a Multi Series (50Hz)

MODEL		UNIT	SD 80T2	SD 100T2	SD 120T2	SD 140T2	SD 160T2	SD 180T2	SD 200T2	SD 230T2	SD 250T2	SD 300T2	SD 240T3	SD 270T3	SD 300T3	SD 350T3
Capacity		USRT	37.2	47.4	54.8	60.7	75.8	89.3	96.7	115.4	128.0	137.9	113.6	133.9	145.1	173.1
		kW	130.9	166.8	192.6	213.4	266.4	313.9	340.1	405.8	450.2	484.9	399.6	470.8	510.1	608.7
Power Input		kW	47.4	58.9	66.3	72.9	89.8	103.6	115.3	135.1	152.3	161.9	134.8	155.4	173.0	202.7
COP		–	2.8	2.8	2.9	2.9	3.0	3.0	2.9	3.0	3.0	3.0	3.0	3.0	2.9	3.0
Current (RLA)		220V (A)	81.4	101.1	113.8	125.2	154.3	177.8	198.0	232.0	261.4	277.9	231.4	266.8	297.0	348.0
		380V (A)	77.3	96.0	108.1	118.9	146.5	168.9	188.1	220.4	248.4	264.0	219.8	253.4	282.2	330.6
		440V (A)	74.5	92.5	104.2	114.6	141.2	162.8	181.3	212.4	239.4	254.4	211.9	244.3	272.0	318.6
Compressor Qty		Cycle	2 Cycles										3 Cycles			
Capacity Control		%	13% ~ 100% (STEP LESS)										10% ~ 100% (STEP LESS)			
Fan Motor		Kw	5.0	5.0	5.0	5.0	7.5	7.5	11.2	11.2	15.0	15.0	11.2	11.2	16.8	16.8
Air Volume		CMM	1,220	1,220	1,530	1,530	2,090	2,090	3,130	3,130	3,650	3,650	3,130	3,130	4,700	4,700
Water Flow Rate		㎥/hr	22.5	28.7	33.1	36.7	45.8	54.0	58.5	69.8	77.4	83.4	68.7	81.0	87.7	104.7
Chilled Water Pipe		inch	3"	4"	4"	4"	5"	5"	5"	5"	5"	5"	5"	5"	5"	6"
Pressure Drop		mAq	2.6	2.8	3.0	3.1	3.5	3.6	3.8	3.8	3.9	4.3	4.3	4.8	5.5	5.8
Size	Length	mm	4,115	4,115	4,315	4,315	4,315	4,315	6,120	6,120	6,820	6,820	6,420	6,420	8,970	8,970
	Width	mm	1,940	1,940	2,040	2,040	2,040	2,040	2,180	2,180	2,300	2,300	2,040	2,040	2,180	2,180
	Height	mm	2,040	2,040	2,040	2,390	2,390	2,390	2,390	2,390	2,595	2,595	2,390	2,390	2,390	2,390
Weight		kg	2,570	2,640	2,740	3,100	3,330	3,360	4,180	4,360	5,090	5,090	5,200	5,510	6,270	6,540
Running Weight		kg	2,850	2,940	3,060	3,440	3,690	3,740	4,580	4,780	5,530	5,550	5,680	6,010	6,800	7,090

MODEL		UNIT	SD 160T4	SD 200T4	SD 240T4	SD 280T4	SD 320T4	SD 360T4	SD 400T4	SD 460T4	SD 500T4	SD 200T5	SD 250T5	SD 300T5	SD 350T5	SD 400T5
Capacity		USRT	74.5	94.9	109.5	121.4	151.5	178.5	193.4	230.8	256.0	93.1	118.6	136.9	151.8	189.4
		kW	261.8	333.6	385.2	426.9	532.8	627.8	680.1	811.6	900.3	327.3	417.0	481.5	533.6	666.0
Power Input		kW	94.8	117.7	132.6	145.8	179.7	207.2	230.7	270.2	304.6	118.5	147.2	165.7	182.3	224.6
COP		–	2.8	2.8	2.9	2.9	3.0	3.0	2.9	3.0	3.0	2.8	2.8	2.9	2.9	3.0
Current (RLA)		220V (A)	162.8	202.1	227.6	250.4	308.5	355.7	396.0	464.0	522.9	203.4	252.6	284.5	313.0	385.6
		380V (A)	154.6	192.0	216.2	237.9	293.1	337.9	376.2	440.8	496.7	193.3	240.0	270.3	297.3	366.3
		440V (A)	149.0	185.1	208.4	229.3	282.5	325.7	362.6	424.8	478.8	186.3	231.3	260.5	286.6	353.1
Compressor Qty		Cycle	4 Cycles										5 Cycles			
Capacity Control		%	8% ~ 100% (STEP LESS)										5% ~ 100% (STEP LESS)			
Fan Motor		Kw	10.0	10.0	10.0	10.0	14.9	14.9	22.4	22.4	30.0	12.5	12.5	12.5	12.5	18.7
Air Volume		CMM	2,430	2,430	3,060	3,060	4,170	4,170	6,260	6,260	7,300	3,040	3,040	3,830	3,830	5,220
Water Flow Rate		㎥/hr	45.0	57.4	66.3	73.4	91.6	108.0	117.0	139.6	154.9	56.3	71.7	82.8	91.8	114.5
Chilled Water Pipe		inch	5"	5"	5"	5"	6"	6"	6"	8"	8"	5"	5"	5"	6"	6"
Pressure Drop		mAq	3.7	4.3	4.7	5.1	5.5	5.6	5.8	5.9	6.2	5.5	5.6	5.7	5.9	6.2
Size	Length	mm	7,965	7,965	8,165	8,165	8,365	8,365	11,870	11,870	13,245	9,970	9,970	9,970	9,970	10,470
	Width	mm	1,940	1,940	2,040	2,040	2,040	2,040	2,180	2,180	2,300	1,940	1,940	1,940	1,940	2,180
	Height	mm	2,065	2,065	2,065	2,415	2,415	2,415	2,415	2,415	2,620	2,620	2,415	2,415	2,415	2,415
Weight		kg	5,610	5,850	6,180	6,560	6,720	6,800	8,370	8,510	8,950	7,840	7,950	8,200	8,450	8,740
Running Weight		kg	6,080	6,340	6,690	7,090	7,270	7,370	8,960	9,120	9,600	8,490	8,620	8,890	9,180	9,620

- Evaporator Temp 2℃ (Chilled Water In/Out Temp 12/7℃)
- Condenser Temp 50℃ (Embient Temp 35℃)

AIR COOLED SCREW CHILLER
M-SERIES

Refrigerant R-407c

SM – SINGLE UNIT

SM – MULTI UNIT

1. Environment–friendly refrigerant
2. Trustability fro
3. Stable operation under high temperature with attachment of high performance fin & tube
4. Stable structural design and low–noise condenser fan are equipped to achieve low vibration and low noise.
5. The product is used for various purposes in production, air conditioning and industrial facilities.

Function

- Used four–seasons
  – With Liquid injection system
  – With Receiver tank and Fan control system
- Chilled Water (Brine) Temp Range : –20 ℃ ~ 15 ℃
- Maximum operation Water pressure : 0.8 MPa
- With safety devices
- This product can Power input control (Option)

R–407c Single Series (50Hz)

MODEL		UNIT	SM 30T1	SM 40T1	SM 50T1	SM 60T1	SM 70T1	SM 80T1	SM 90T1	SM 100T1	SM 115T1	SM 125T1	SM 150T1	SM 180T1	SM 200T1	SM 240T1
Capacity		USRT	28.9	32.8	41.8	47.9	53.1	66.7	78.1	83.7	99.9	110.8	119.4	145.5	186.4	203.4
		kW	101.5	115.2	147.1	168.5	186.8	234.5	274.7	294.4	351.3	389.7	419.8	511.7	655.4	715.2
Power Input		kW	38.5	44.0	56.2	62.4	68.6	85.1	97.8	105.2	128.4	140.6	150.0	177.1	224.4	251.6
COP		–	2.6	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.7	2.8	2.8	2.9	2.9	2.8
Current (RLA)		220V (A)	114.1	130.5	166.8	184.9	203.5	252.3	290.1	312.0	380.9	–	–	–	–	–
		380V (A)	66.0	75.5	96.5	107.0	117.8	146.1	168.0	180.6	220.5	241.4	257.5	304.1	385.3	432.0
		440V (A)	57.0	65.2	83.4	92.4	101.7	126.2	145.1	156.0	190.5	208.5	222.4	262.6	332.8	373.1
Compressor Qty		Cycle	1 Cycle													
Capacity Control		%	25% ~ 100% (STEP LESS)													
Fan Motor		Kw	2.3	3.0	4.5	4.5	4.5	6.0	6.0	7.5	12.0	12.0	12.0	12.0	15.0	24.0
Air Volume		CMM	630	760	1,030	1,040	1,040	1,600	1,600	2,000	2,240	2,800	2,800	3,200	4,000	4,480
Water Flow Rate		㎥/hr	17.5	19.8	25.3	29.0	32.1	40.3	47.2	50.6	60.4	67.0	72.2	88.0	112.7	123.0
Chilled Water Pipe		inch	3"	3"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"	6"	6"
Pressure Drop		mAq	2.6	2.7	2.7	2.9	3.3	3.3	3.4	3.4	3.5	3.5	3.6	3.6	3.7	3.8
Size	Length	mm	2,860	3,460	2,580	2,580	2,580	3,630	3,630	4,420	3,680	4,000	4,000	7,260	8,840	7,360
	Width	mm	1,035	1,035	1,976	1,976	1,976	2,140	2,140	2,180	2,300	2,300	2,300	2,140	2,180	2,300
	Height	mm	2,125	2,277	2,131	2,131	2,131	2,390	2,390	2,390	2,420	2,522	2,623	2,390	2,390	2,420
Weight		kg	1,480	1,480	1,680	1,730	1,770	2,340	2,410	3,180	3,280	3,380	3,400	4,480	4,930	5,120
Running Weight		kg	1,605	1,605	1,805	1,845	1,880	2,580	2,780	3,275	3,375	3,475	3,500	4,780	5,420	5,560

- Evaporator Temp 2℃ (Chilled Water In/Out Temp 12/7℃)
- Condenser Temp 50℃ (Embient Temp 35℃)

R-407c Multi Series (50Hz)

MODEL		UNIT	SM 80T2	SM 100T2	SM 120T2	SM 140T2	SM 160T2	SM 180T2	SM 200T2	SM 230T2	SM 250T2	SM 300T2	SM 240T3	SM 270T3	SM 300T3	SM 350T3
Capacity		USRT	54.6	69.7	79.9	88.5	111.1	130.2	139.5	166.5	184.7	199.0	166.7	195.3	209.3	249.8
		kW	192.0	245.2	280.9	311.3	390.8	457.8	490.6	585.5	649.5	699.6	586.2	686.6	736.0	878.3
Power Input		kW	73.3	93.7	103.9	114.3	143.0	164.3	177.9	214.1	234.4	249.9	214.5	246.4	274.3	321.1
COP		–	2.6	2.6	2.7	2.7	2.7	2.8	2.8	2.7	2.8	2.8	2.7	2.8	2.7	2.7
Current (RLA)		220V (A)	125.9	160.8	178.4	196.3	245.5	282.0	305.4	367.5	402.4	429.1	368.3	423.0	470.9	551.3
		380V (A)	119.6	152.8	169.4	186.5	233.3	267.9	290.1	349.2	382.3	407.6	349.9	401.9	447.4	523.7
		440V (A)	11.5	14.7	16.3	18.0	22.5	25.8	28.0	33.7	36.8	39.3	33.7	38.7	43.1	50.5
Compressor Qty		Cycle	2 Cycles										3 Cycles			
Capacity Control		%	13% ~ 100% (STEP LESS)										10% ~ 100% (STEP LESS)			
Fan Motor		Kw	5.0	7.5	7.5	7.5	11.2	11.2	15.0	20.0	20.0	20.0	16.8	16.8	30.0	30.0
Air Volume		CMM	1,530	2,090	2,090	2,090	3,130	3,130	3,650	3,900	4,870	4,870	4,700	4,700	5,220	5,220
Water Flow Rate		㎥/hr	33.0	42.2	48.3	53.5	67.2	78.7	84.4	100.7	111.7	120.3	100.8	118.1	126.6	151.1
Chilled Water Pipe		inch	4"	5"	5"	5"	5"	5"	6"	6"	6"	8"	6"	8"	8"	10"
Pressure Drop		mAq	3.0	3.1	3.3	3.4	3.8	3.9	4.2	4.2	4.3	4.8	4.8	5.3	6.1	6.3
Size	Length	mm	4,315	4,315	4,315	4,315	6,120	6,120	6,820	7,780	8,420	8,420	8,970	8,970	8,370	8,370
	Width	mm	2,040	2,040	2,040	2,040	2,180	2,180	2,300	2,300	2,300	2,300	2,180	2,180	2,300	2,300
	Height	mm	2,040	2,390	2,390	2,390	2,390	2,390	2,595	2,570	2,670	2,775	2,415	2,415	2,778	2,976
Weight		kg	2,610	2,950	3,170	3,200	3,980	4,150	4,850	5,650	6,110	6,320	6,880	7,250	7,750	7,980
Running Weight		kg	2,890	3,250	3,490	3,540	4,340	4,530	5,250	6,070	6,550	6,780	7,360	7,750	8,280	8,530

MODEL		UNIT	SM 160T4	SM 200T4	SM 240T4	SM 280T4	SM 320T4	SM 360T4	SM 400T4	SM 460T4	SM 500T4	SM 200T5	SM 250T5	SM 300T5	SM 350T5	SM 400T5
Capacity		USRT	109.2	139.5	159.8	177.1	222.3	260.4	279.1	333.0	369.4	136.5	174.3	199.7	221.3	277.9
		kW	383.9	490.4	561.8	622.6	781.6	915.5	981.3	1,171.0	1,299.0	479.9	613.0	702.2	778.2	977.0
Power Input		kW	146.7	187.4	207.8	228.7	286.0	328.5	365.7	428.2	488.8	183.4	234.2	259.7	285.8	357.6
COP		–	2.6	2.6	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.6	2.6	2.7	2.7	2.7
Current (RLA)		220V (A)	251.8	321.7	356.7	392.6	491.1	564.0	627.9	735.1	839.1	314.8	402.1	445.9	490.7	613.8
		380V (A)	239.2	305.6	338.9	372.9	466.5	535.8	596.5	698.3	797.2	299.0	382.0	423.6	466.2	583.2
		440V (A)	230.6	294.6	326.6	359.4	449.7	516.4	574.9	673.1	768.3	288.2	368.2	408.3	449.3	562.1
Compressor Qty		Cycle	4 Cycles										5 Cycles			
Capacity Control		%	8% ~ 100% (STEP LESS)										5% ~ 100% (STEP LESS)			
Fan Motor		Kw	10.0	14.9	14.9	14.9	22.4	22.4	40.0	40.0	60.0	12.5	18.7	18.7	18.7	28.0
Air Volume		CMM	1,530	2,090	2,090	2,090	3,130	3,130	3,650	3,900	4,870	4,870	4,700	4,700	5,220	5,220
Water Flow Rate		㎥/hr	66.0	84.3	96.6	107.1	134.4	157.5	168.8	201.4	223.4	82.5	105.4	120.8	133.9	168.0
Chilled Water Pipe		inch	5"	6"	6"	8"	8"	10"	10"	10"	10"	6"	6"	8"	10"	10"
Pressure Drop		mAq	4.3	5.0	5.4	5.8	6.3	6.5	6.6	6.8	7.1	6.3	6.5	6.5	6.8	7.2
Size	Length	mm	8,445	8,075	8,075	8,075	11,475	11,475	10,675	10,675	16,075	8,100	8,100	8,100	8,100	11,500
	Width	mm	2,040	2,040	2,040	2,040	2,180	2,180	2,300	2,300	2,300	2,040	2,040	2,040	2,040	2,180
	Height	mm	2,040	2,390	2,390	2,390	2,390	2,390	2,778	2,976	2,778	2,040	2,390	2,390	2,390	2,390
Weight		kg	5,630	6,050	6,400	6,480	7,560	8,105	8,650	8,980	10,750	7,040	7,560	8,000	8,100	9,450
Running Weight		kg	6,100	6,540	6,910	7,010	8,110	8,675	9,240	9,590	11,300	7,690	8,230	8,690	8,830	10,750

- Evaporator Temp 2℃ (Chilled Water In/Out Temp 12/7℃)
- Condenser Temp 50℃ (Embient Temp 35℃)

WATER COOLED SCREW CONDENSING UNIT F,P-SERIES

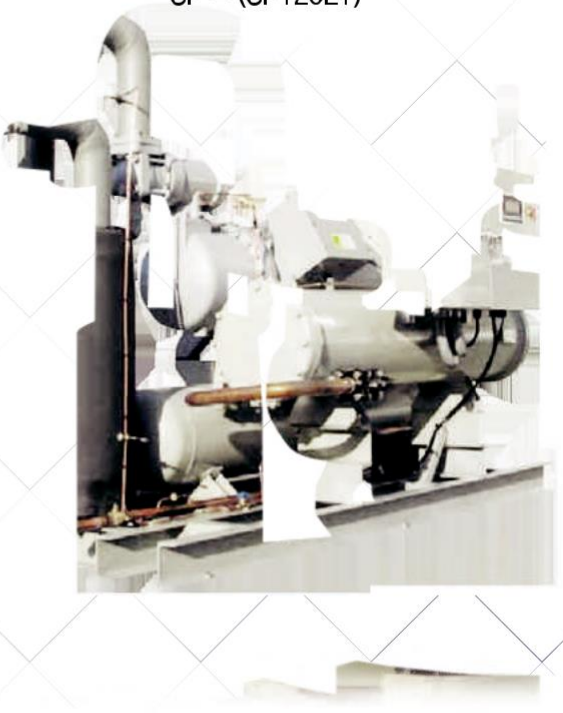
SF – (SF60L1)

SF – (SF60L1)

Refrigerant R-134a, R-407c

1. Initial facility expenses are low due to simple installation and construction.
2. High quality is guaranteed because main components are directly produced by our company, and a more compact structure reduces the area.
3. Excellent compatibility of automatic control allows easier central monitoring control.
4. The product is useful for clean room, low temperature storage and air conditioning facilities.

SP – (SP120L1)



Function

- Used four–seasons : With Liquid injection system
- Chilled Air Temp Range : –20 ℃ ~ 15 ℃
- Cooling Water Temp check
  : With Cooling Tower Fan control system
- Maximum operation Water pressure : 0.8 MPa
- With safety devices
- Without Refrigerant

SF–Series / R–134a (50Hz)

MODEL	UNIT	SF 40T1	SF 50T1	SF 60T1	SF 80T1	SF 100T1	SF 120T1	SF 150T1	SF 180T1	SF 200T1

SP–Series / R–407c (50Hz)

MODEL	UNIT	SP 40T1	SP 50T1	SP 60T1	SP 80T1	SP 100T1	SP 120T1	SP 150T1	SP 180T1	SP 200T1

- Evaporator Temp 2℃ (Air Temp 7℃)
- Condenser Temp 42℃ (Cooling Water In/Out Temp 32/37℃)

AIR COOLED
SCREW CONDENSING UNIT
G,Q-SERIES

SG – (SG60T1)

SQ – (SQ80T1)

Refrigerant R-134a, R-407c

1. Initial facility expenses are low due to simple installation and construction.
2. High quality is guaranteed because main components are directly produced by our company, and a more compact structure reduces the area.
3. Excellent compatibility of automatic control allows easier central monitoring control.
4. The product is useful for clean room, low temperature storage and air conditioning facilities.

Function

- Used four–seasons
  – With Liquid injection system
  – With Receiver tank and Fan control system
- Chilled Air Temp Range : –20 ℃ ~ 15 ℃
- Maximum operation Water pressure : 0.8 MPa
- With safety devices
- Without Refrigerant

SG–Series / R–134a (50Hz)

MODEL	UNIT	SG 40T1	SG 50T1	SG 60T1	SG 80T1	SG 100T1	SG 120T1	SG 150T1	SG 180T1	SG 200T1

SQ–Series / R–407c (50Hz)

MODEL	UNIT	SQ 40T1	SQ 50T1	SQ 60T1	SQ 80T1	SQ 100T1	SQ 120T1	SQ 150T1	SQ 180T1	SQ 200T1

- Evaporator Temp 2℃ (Air Temp 7℃)
- Condenser Temp 50℃ (Embient Temp 35℃)

FIELD INSTALLED

World EnC Co.,Ltd.

Hot Water Absorption Chiller

Lotte Chemical Industry
1300RT 3units, 975RT 1unit

Incheon Airport
975RT 8units

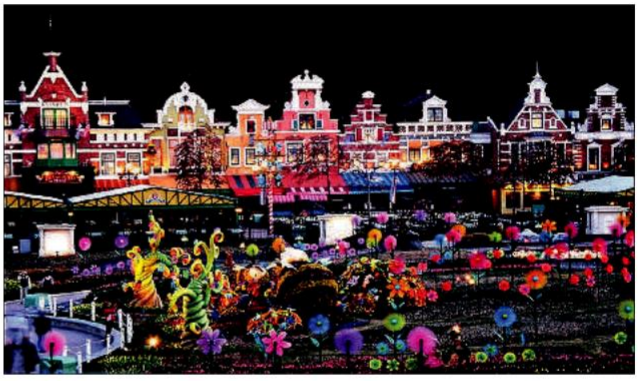
Lotte Mall
1050RT 3units, 600RT 1unit, 155RT 2units

Sejong City Government Office
600RT 8units

Cogeneration Plant
210RT 4units, 180RT 3units

Daegu Regional Government Complex
420RT 2units

Korea Venture Town
340RT 6units, 300RT 4units



Everland
400RT 3units, 210RT 3units

Nexen RnD Center
1000RT 2units

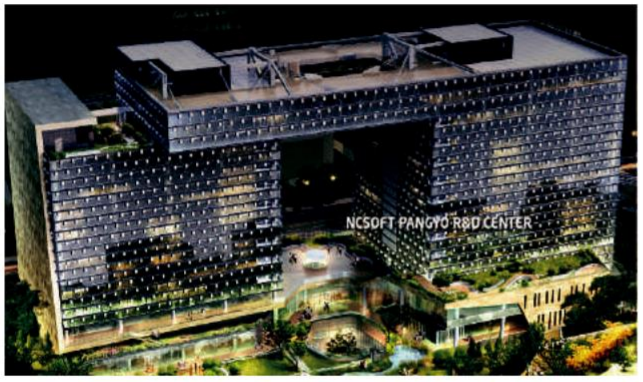
Hanlim University Hospital
900RT 2units

Pangyo CHA Hospital Institute
675RT 3units

SK V1 Center
750RT 3units

Hanwha Techwin
675RT 3units

Samsung Training Institute
600RT 5units



NC Soft R&D Center
600RT 4units

Korea Institute of Brain Research
825RT 2units

FIELD INSTALLED

World EnC Co.,Ltd.

Hot Water Absorption Chiller

Knowledge Industry Center (Hanam)
525RT 5units

Knowledge Industry Center (Moonjung)
800RT 5units

Complex Building
470RT 2units, 340RT 4units

Harrington Tower
240RT 5units

IT Valley
825RT 5units, 270RT 3units

N-Square
520RT 3units, 370RT 2units

Avenue Hill
200RT&300RT 8units

Lotte Outlet
600RT 7units, 135RT 2units

Direct Fired Absorption Chiller

Garak APT
630RT 2units

International Building
500RT 2 units, 560RT 2units, 150RT 2units

Gimpo Airport
700RT 12units

Namdaemun office building
560RT 2 units

Home Plus
650RT 5units

Busan University Hospital
320RT 4units

Lotte Mall
700RT 6units

Inha Univ. Hospital
800RT 3units

FIELD INSTALLED

World EnC Co.,Ltd.

RAAF

Steam Fired Absorption Chiller

Ilsan Hospital
900RT 2units, 300RT 1unit

Aju Univ. Hospital
1100RT 1unit

Korean Armed Forces Capital Hosipta
800R 1 unit

Iran BAHAR Hospital
500RT 2units

Holiday Inn
400RT 2units

GyungSang Univ. Hospital
300RT 2units

Seoul Cerebrovascular Hospital
280RT 2units

Asan Inddor Pool
120RT 2units

MEMO

RAAF

Mainzer Landstr.127

60327 Frankfurt am Main, Germany

Tel: +49 69 34867944

info@raaf-hvac.de

www.raaf-hvac.de