SINKO

SAVE MONEY HIGH EFFICIENCY

SMART MULTI-FUNCTIONAL
DUAL ENERGY SAVING
HEAT RECOVERY UNIT

E-SWSH-1107A

SINKO's Professional Design Deserves Your Trust

DUAL ENERGY SAVING SINKO LEADS THE WAY

The SINKO group is dedicated to the research and manufacturing of high quality air conditioners. The Smart Multi-Functional Dual Energy Saving Heat Recovering Unit was developed under the Energy Saving Carbon Reduction Green Policies, and it is the first patented unit within the industry. It is an outstanding air conditioner which not only brings better energy saving and environment, it also helped many businesses in achieving "the least amount of investment with the shortest equipment investment recovery time", saving the greatest amount of money possible.

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E-SWSH-1107A

PURSUIT OF EXCELLENCE UNLIMITED WITH HOPE

The pursuit of continual growth and R&D is the core motivation of the SINKO Group. In the recent years, our R&D team have concentrated on the development of chilled / hot water multi-functional series of products to satisfy our customers with demands in areas which require large amount of hot water including hotels, bath houses, hospitals, car motels, SPA, warm water swimming pools, hot tubes, showers, temperature and humidity controlled areas. Our products are the result of a combination of the newest techniques with the most obvious effects, comprehensive balance, energy saved and scientifically reasonable product in the market today.

The heat recovery unit combines advanced technology and user-friendly designs; it is the only unit capable of providing chilled and hot water at the same time, 24 hours a day, and 365 days a year. It's all in one design completely replaces the old design where equipments to produce chilled and hot water had to be invested separately, which means more energy bills and management cost saved in your pocket!

With more than 10 years of accumulated manufacturing experiences, the SINKO Group has successfully integrated the application of coolant system steam caused by overheating due to saturation with high tech automatic control theory and practice, which has been broadly used in many applications both domestically and internationally. All actual applications have shown that the advanced dual energy saving heat recovery unit is able to satisfy all your customer's needs.

PREFACE

While the economy steadily grow and the peoples' living standards improve as each day passes by, the idea of saving energy, decrease carbon emission and strengthening green building living spaces with quiet, zero pollution and safe environment concept is infiltrating all aspects of human living today. Therefore, besides the comfortable environment brought to us by commercial air conditioners, our expectations of living, leisure, health and entertainment standards in the 21st Century will increase at the same time. If we take a look around at all the places that require hot water, such as warm water swimming pools, hospitals, SPA, hot tub, ultrasonic sauna, hotels, dorms, showers...etc, which generally utilizes traditional and not environmentally-friendly boilers that requires large amount of coal, gas, diesel fuel and heavy oil. Not only are these fuels not safe for the environment, the large amount of pollution it produces by burning the surrounding oxygen does not meet the safety requirements of being a green building.

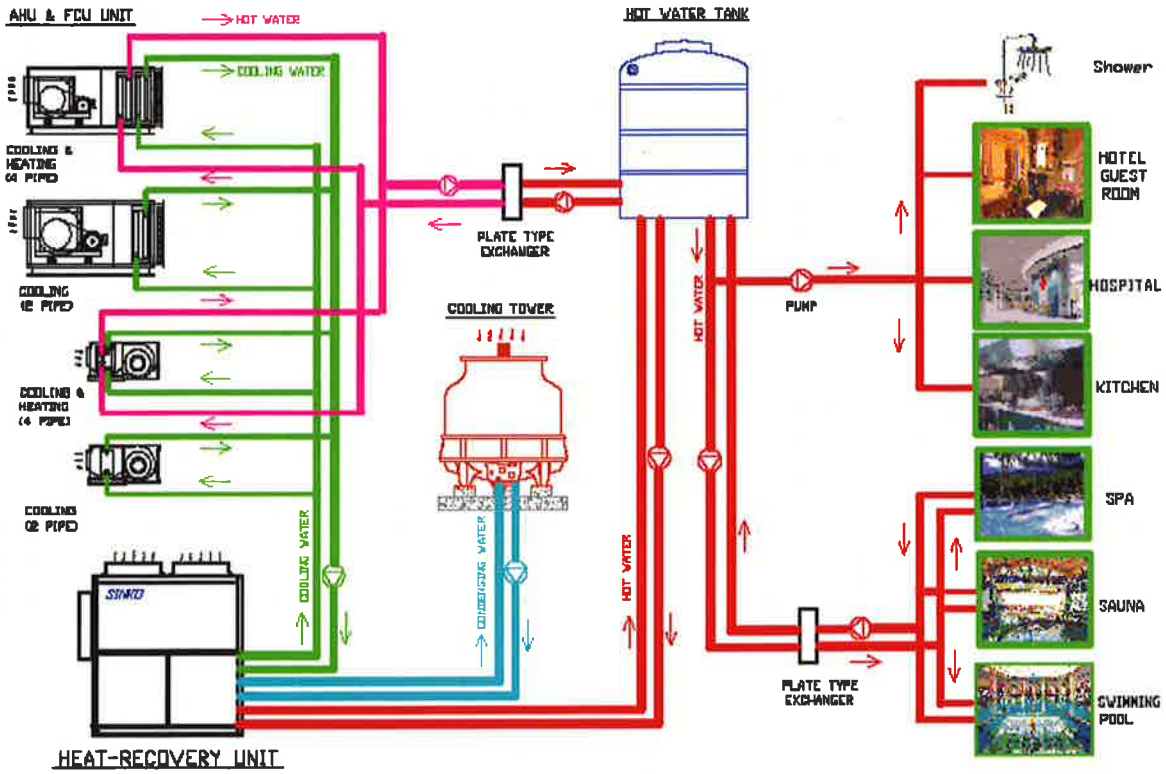
All the places that consume large amount of hot water require independent indoor air conditioners and boilers with low efficiency. The chilled and hot water generated by these equipments brings the owner extra fueling costs each month onto of air conditioning bills. The business owners usually ignore these expenses at the initial investment stage that turns into higher costs in the future.

The Smart Multi-Functional Dual Energy Saving Heat Recovery Unit developed by this company will be able to solve these problems and achieve environmentally-friendly fundamentals, at the same time brings you refreshing, comfortable environment and noticeable economical gains.

UNIT DEVELOPMENT

Most products out in the market today are designed with single function and vast amount of investments must be inputted for chilled / hot supplies, which is neither efficient nor environmentally-friendly. It also causes the investors to be stuck in an endless loop of funds, materials and labor investment, which is a shame. The specification of our Smart Multi-Functional Dual Energy Saving Heat Recovery Unit is designed to accommodate today's diversification, functionality, livelihood and environmental friendly requirements. Regardless of the location, seasons or time it is used, it is capable of making automatic adjustments to its system according to different requirements, supplying endless chilled and hot water. It is easy to operate and safe to use, it is truly a high tech multi-functional air conditioner.

MULTI-FUNCTIONAL UNIT OPERATION SYSTEM DIAGRAM



HEAT RECOVERY UNIT INSTALLATION BENEFITS AND FEATURES

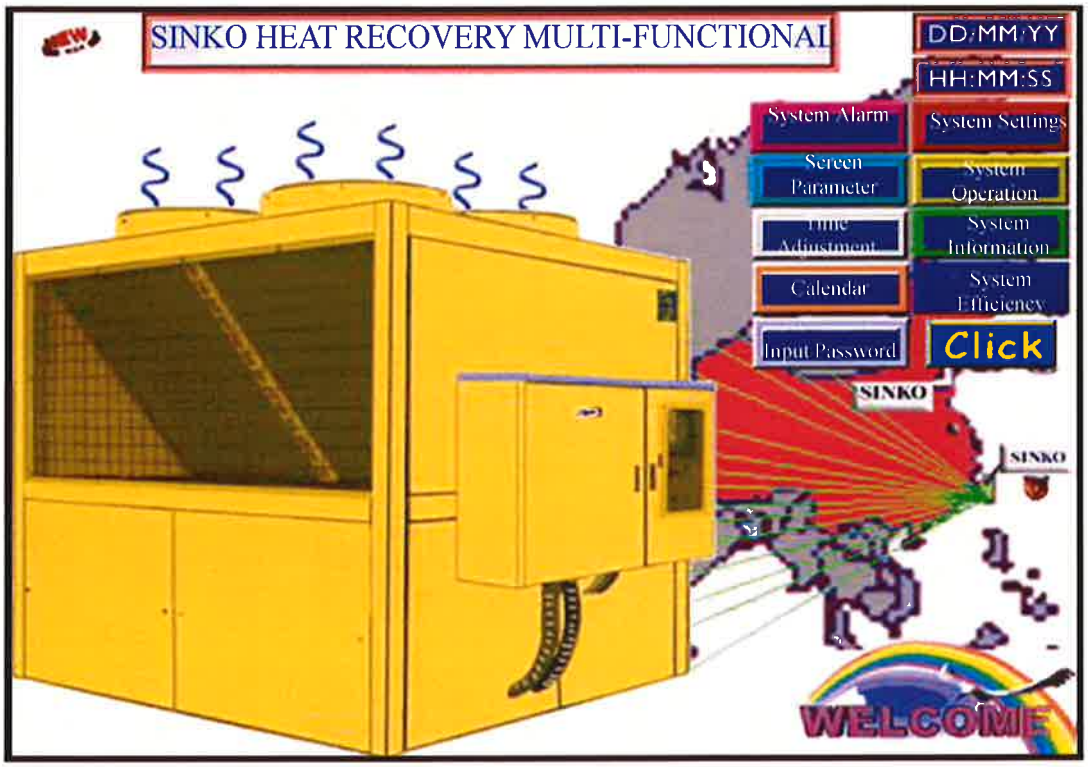
1.) Simultaneously provide both air conditioning and hot water for the room which saves you a maximum of 50 ~ 80% of fuel expenses.
2.) Fully automatic chilled / hot water supply control without any complex external control unit.
3.) The heat recovery unit is multi-functional, safe and reliable, with absolutely no industrial safety or environmental pollution concerns.
4.) Provides a year round function of heating 18°C input tap water to 57°C output water.
5.) Depending on the requirements of different indoor zones, when the unit is on, it is capable of switching automatically to five different operating modes through chilled supply or hot supply signals:

1. Supplies only chilled water (Used for indoor air conditioning)
2. Heat recycling operation, cooling capacity = heating capacity (simultaneously supply fully loaded air conditioning and hot water)
3. Heat recycling operation, cooling capacity > heating capacity (simultaneously supply fully loaded air conditioning but decreases hot water volume)
4. Heat recycling operation, cooling capacity > heating capacity (simultaneously supply fully loaded air conditioning but decrease chilled water volume)
5. Supplies only hot water (Used for indoor hot water)

OPERATION CHARACTERISITCS

HEAT RECOVERY UNIT TOUCH CONTROL DISPLAY PANEL

(OPTIONAL ACCESSORY)



Operating Characteristics of Human-Machine Interface

(1) Capable of choosing operation modes

1. On/OFF Mode	Directly switch ON or OFF the unit on human-machine interface
2. Remote Control Mode	(1) Remotely switch ON or OFF the unit through RS-485 communication interface (2) Remotely switch ON or OFF the unit through ON/OFF switch
3. Calendar Mode	Preset the ON/OFF mode according to the month, week, day, hour and minute on the human-machine interface
4. Chilled /Hot Water Operation Mode	Simultaneously set as chilled / hot water mode or independently run air conditioning or hot water according to the required loads

(2) Control Parameter Setting

1. Chilled water working temperature setting (°C)
2. Chilled water recovery temperature setting (°C)
3. Hot water working temperature setting (°C)
4. Hot water recovery temperature setting (°C)

(3) Control Parameter Display

1. Inlet chilled water temperature (°C)	7. Condensation pressure value (kg/cm^2)
2. Outlet chilled water temperature setting (°C)	8. Evaporation pressure value (kg/cm^2)
3. Outlet hot water temperature setting (°C)	9. Consumed power (kw)
4. Inlet cooling water temperature (°C)	10. Accumulated kilowatt-hour (kwh)
5. Storage Tank Temperature (°C)	11. Compressor exhaust temperature (°C)
6. Ambient temperature (°C)	

(4). Operation Information Recording

1. Total starting frequency
2. Total starting time
3. Abnormality Records (Recent 20 counts)

(5). Operating Status Display

1. Unit Status	5. Status of cooling water pump
2. Operating status of the compressor	6. Status of hot water pump
3. Operating capacity of the compressor	7. Status of coil
4. Status of chilled water pump	8. Status of power meter

SPECIFICATIONS

Item \ Model			SWSH -040SC	SWSH -050SC	SWSH -060SC	SWSH -080DC	SWSH -100DC	SWSH -120DC
Power supply			3φ380V/50HZ					
Performance	Cooling	Cooling capacity Kcal/H	125500	150500	190900	251000	301000	381800
		Cooling capacity KW	146	175	222	292	350	444
		Chilled water flow M^3/H	25.1	30.1	38.2	50.2	60.2	76.4
	Heating	Heating capacity Kcal/H	158200	185700	239900	316400	371400	479800
		Heating capacity KW	184	216	279	368	432	558
		Hot water flow M^3/H	31.7	37.2	48	63.3	72	96
Total power consumption		KW	37.9	44.3	57	75.8	88.6	114
Operation / Start		Current A	64/352	76/420	98/540	128/416	152/496	196/638
Dimension	Length	mm	2260	2260	3230	4200	4200	5170
	Width	mm	2150	2150	2150	2150	2150	2150
	Height	mm	2400	2400	2400	2400	2400	2400
Compressor	Type		Screw semi-hermetic					
	Quantity		1	1	1	2	2	2
	Capacity control		100%~75%~0					
	Start way		Y-△					
Refrigerant	Type		R-134a					
	Control method		Automatic Thermostatic Expansion Valve					
Water Side Heat Exchanger	Type		High efficiency Horizontal Shell and Tube Type					
	Chilled water side piping connection (IN)		3"	3"	3"	4" flange	4"flange	5"flange
	Chilled water side pressure drop (Kpa)		40	42	45	55	55	58
	Condenser piping connection (IN)		3"	3"	3"	4"flange	4"	5"flange
	Condensing side pressure drop (Kpa)		40	42	45	55	55	55
Air Side Heat Exchanger	Type		High Efficiency Seamless Inner Thread copper and Anti-corrosion Aluminum Fin					
	Motor power × quantity		1.1kw×4	1.1kw×4	1.1kw×6	1.1kw×8	1.1kw×8	1.1kw×10
System Control Method			via Human-machine Interface Full-system Microcomputer Programmable Auto Control					
Protection Device			Compressor overload protector. High/Low pressure switch, Anti-freezing switch, Temperature switch, Oil level switch, Loss/Reverse phase protector, Low/High voltage protector, Fusible plug, Safety valve, Motor overload protector					
Unit Weight (Kg)			3670	3780	4130	5430	5830	6800
Operating Weight (Kg)			3800	4000	4380	5700	6100	7100

Note 1: The statistical requirements of the heat recovery system are inlet chilled water temperature 12°C, outlet water temperature 7°C, inlet hot water temperature 35°C and outlet water temperature 40°C.

Note 2: This unit can also apply to refrigerating or heating individually or at the same time.

Note 3: The *SINKO* reserve the rights to modify product design. Any specifications given in this catalogue are subject to change without notice.

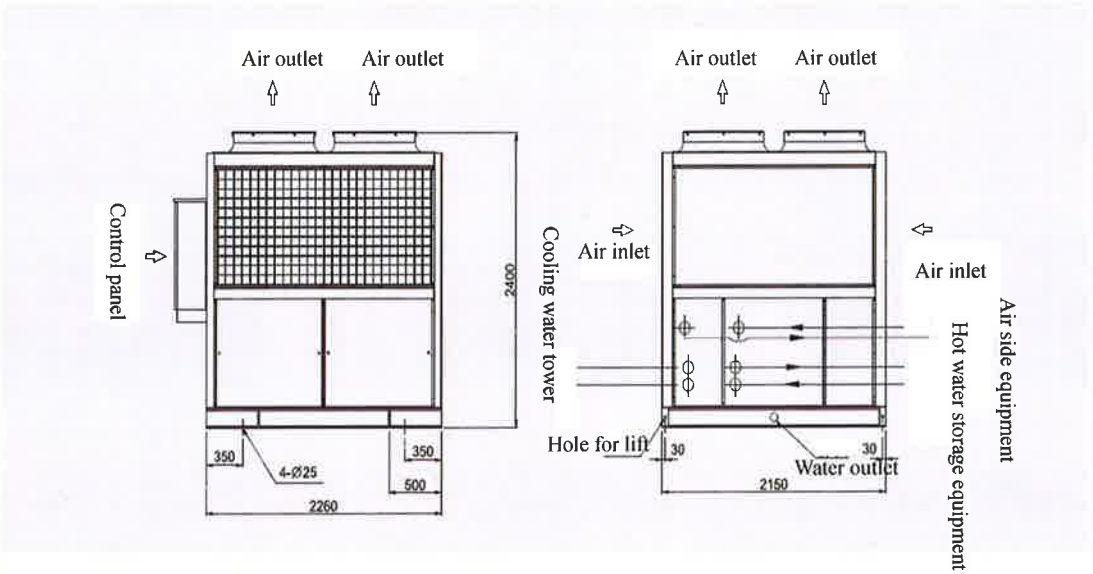
TABLE OF OPERATING PERFORMANCE

Outlet hot water temperature / Outlet chilled water temperature			SWSH-040SC				SWSH-050SC				SWSH-060SC			
			40℃	45℃	50℃	55℃	40℃	45℃	50℃	55℃	40℃	45℃	50℃	55℃
5℃	Cooling	CAP Kcal/H	115200	107300	98700	89700	135900	126400	116400	105800	175700	163400	150500	136700
		Flow rate M^3/H	23	21.5	19.7	17.9	27.2	25.3	23.3	21.2	35.2	32.7	30.1	27.4
	Heating	CAP Kcal/H	147500	142300	137300	132100	173400	167400	161400	155100	224000	216400	208500	200500
		Flow rate M^3/H	29.5	28.5	27.5	26.4	34.7	33.5	32.3	31.0	44.8	43.3	41.7	40.1
	Total power consumption (kw)		37.3	40.8	44.8	49.2	43.6	47.4	52.3	57.4	56.2	61.5	67.4	74
7℃	Cooling	CAP Kcal/H	125500	117100	108000	98000	150500	138500	127300	115400	190900	178500	164500	149600
		Flow rate M^3/H	25.1	23.4	21.6	19.6	30.1	27.7	25.5	23.1	38.2	35.7	32.9	29.9
	Heating	CAP Kcal/H	158200	152900	147100	141000	185700	179700	172900	166000	239900	232200	223600	214100
		Flow rate M^3/H	31.7	30.6	29.4	28.2	37.2	36.0	34.6	33.2	48	46.5	44.7	42.8
	Total power consumption (kw)		37.9	41.5	45.5	50.2	44.3	48.5	53	58.5	57	62.5	68.4	75.5
9℃	Cooling	CAP Kcal/H	136000	127300	117700	108400	160200	150000	138700	127800	207100	193900	179400	165200
		Flow rate M^3/H	27.2	25.5	23.5	21.7	32.1	30.0	27.8	25.6	41.4	38.8	35.9	33.1
	Heating	CAP Kcal/H	169200	164100	157500	151900	198900	193000	185100	178500	257100	249300	239100	230600
		Flow rate M^3/H	33.9	32.8	31.5	30.4	39.8	38.6	37	35.7	51.4	49.9	47.8	46.1
	Total power consumption (kw)		38.5	42.8	46.1	50.5	45	49.9	53.8	58.9	58	64.4	69.4	76

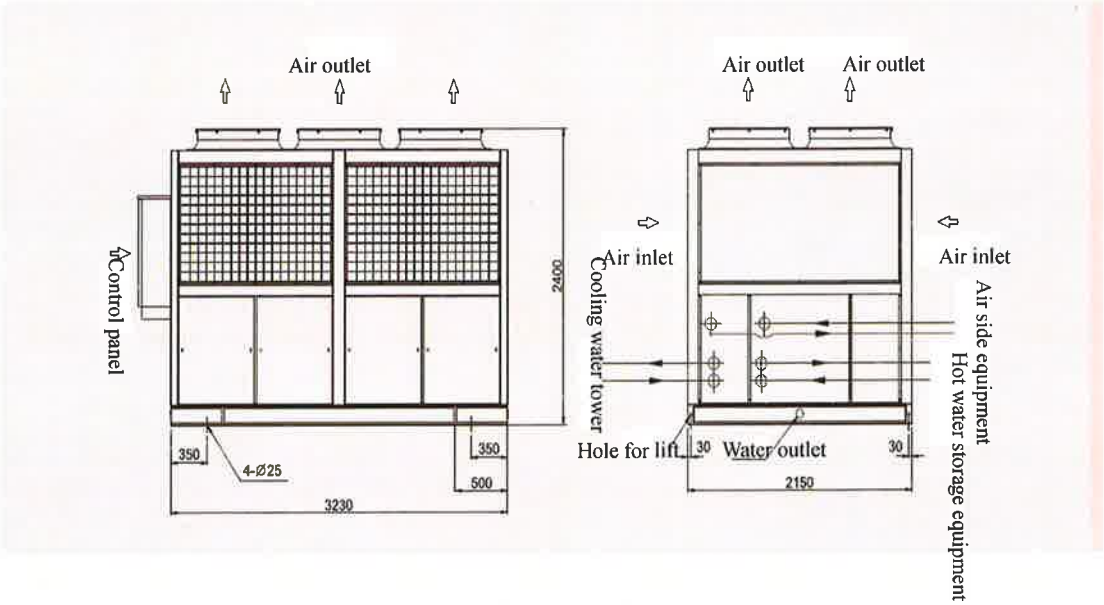
Outlet hot water temperature / Outlet chilled water temperature			SWSH-080DC				SWSH-100DC				SWSH-120DC			
			40℃	45℃	50℃	55℃	40℃	45℃	50℃	55℃	40℃	45℃	50℃	55℃
5℃	Cooling	CAP Kcal/H	230400	214600	197400	179400	271800	252800	232800	211600	351400	326800	301000	273400
		Flow rate M^3/H	46.1	42.9	39.5	35.9	54.4	50.6	46.6	42.3	70.3	65.4	60.2	54.7
	Heating	CAP Kcal/H	295000	284600	274600	264200	346800	334800	322800	310200	448000	432800	417000	401000
		Flow rate M^3/H	59.0	56.9	54.9	52.9	69.4	67	64.6	62.1	89.6	86.6	83.4	80.2
	Total power consumption (kw)		73	81.6	89.6	98.4	87.2	94.8	104.6	114.8	112.4	123	134.8	148
7℃	Cooling	CAP Kcal/H	251000	234200	216000	196000	301000	277000	254600	230800	381800	357000	329000	299200
		Flow rate M^3/H	50.2	46.9	43.2	39.2	60.2	55.4	50.9	46.2	76.4	71.4	65.8	59.9
	Heating	CAP Kcal/H	316400	305800	294200	282000	371400	359400	345800	332000	479800	464400	447200	428200
		Flow rate M^3/H	63.3	61.2	58.9	56.4	72	71.9	69.2	66.4	96	92.9	89.5	85.7
	Total power consumption (kw)		75.8	83	91	100.4	88.6	97	106	117	114	125	136.8	151
9℃	Cooling	CAP Kcal/H	272000	254600	235400	216800	320400	300000	277400	255600	414200	387800	358800	330400
		Flow rate M^3/H	54.4	50.9	47.1	43.4	64.1	60.0	55.5	51.1	82.9	77.6	71.8	66.1
	Heating	CAP Kcal/H	338400	328200	315000	303800	397800	386000	370200	357000	514200	498600	478200	461200
		Flow rate M^3/H	67.7	65.7	63	60.8	79.6	77.2	74.1	71.4	102.9	99.8	95.7	92.3
	Total power consumption (kw)		77	85.6	92.2	101	90	99.8	107.6	117.8	116	126.4	139.1	153

SINKO DIMENTION DRAWING

SINGLE COMPRESSOR: SWSH-040SC / SWSH-050SC



SINGLE COMPRESSOR: SWSH-060SC



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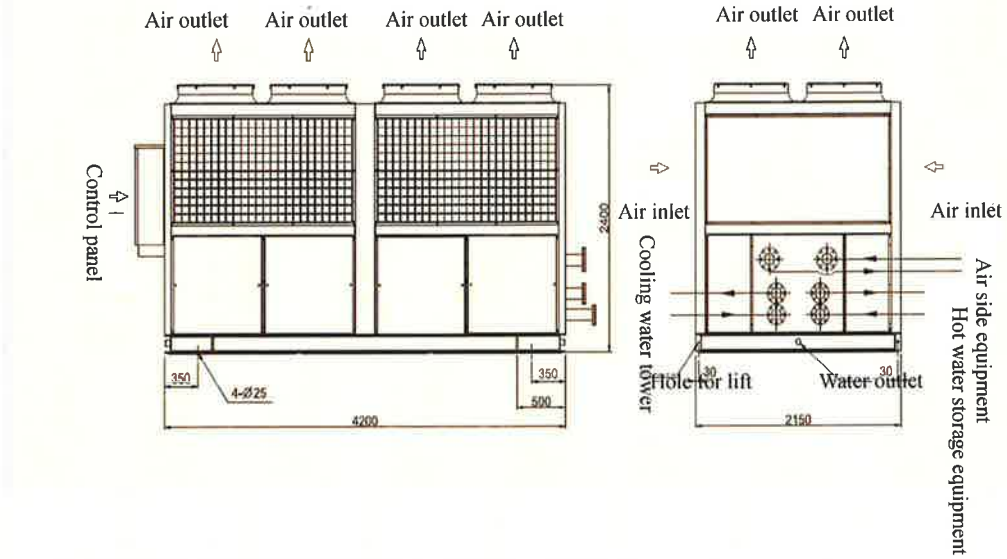
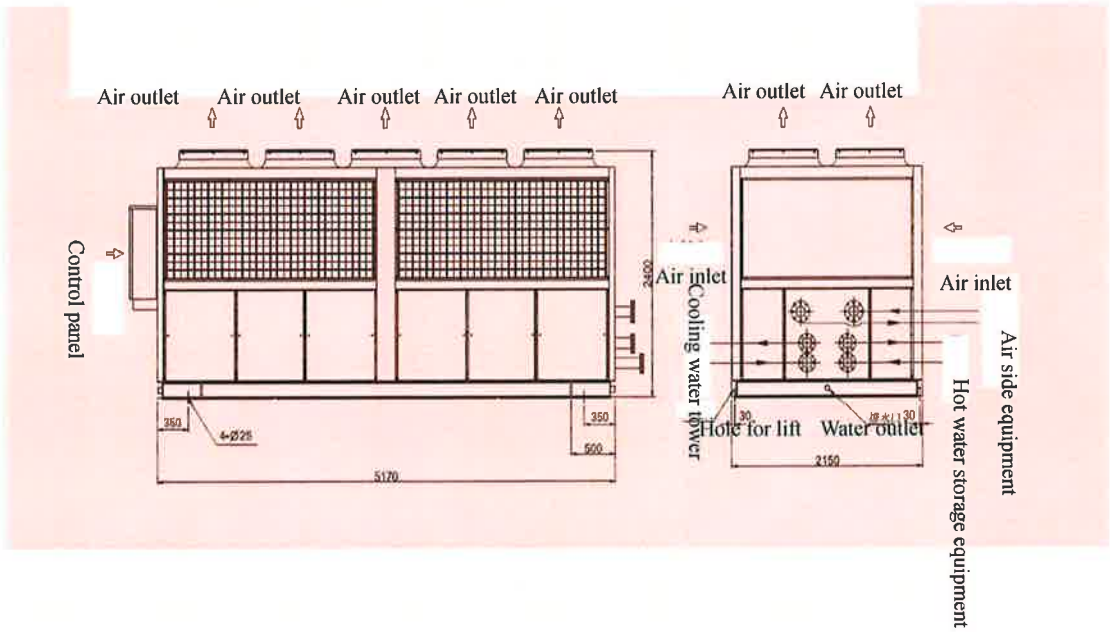
DOUBLE COMPRESSOR: SWSH-080DC / SWSH-100DC



DOUBLE COMPRESSOR: SWSH-120DC



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SINKO COMPANY CERTIFICATIONS

CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of

Taiwan Sinko Kogyo Co.,Ltd
19-1, Ta Chiu Tien, Tu Keng Tsun, Kuei Shan Hsiang, Taoyuan Hsien, Taiwan R. O. C.

has been approved by Lloyd's Register Quality Assurance to the following Quality Management System Standards:

ISO 9001:2000

The Quality Management System is applicable to:

Design and Manufacture of Air Conditioning Equipment Including Air-Cooled/Water-Cooled Chillers, Fan-Coil Units, Air Handling Units, Ventilation Units and Heat-Recovery Units.

Original Approval: 24 April 1997
Current Certificate: 20 April 2009
Certificate Expiry: 19 April 2012

ISO CERTIFICATION by LLOYD'S REGISTER INSPECTION LIMITED

ISO 9001 certified air conditioning equipment manufacturer

Taiwan Sinko Kogyo Co., Ltd.
ISO-9002 quality certification in 1997
ISO-9001 quality certification in 2003

TECHNICAL PATENTS

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APPLICATION REFERENCE

The Great Roots Forestry SPA Resort

Chilled water: Restaurant air conditioning
Hot water: Outdoor SPA and Shower

The Yonghe iMore Motel

Chilled water: Rooms air conditioning
Hot water: Massage tub, shower and SPA

The Kaohsiung Lakeside Motel

Chilled water: Rooms air conditioning
Hot water: Massage tub, shower and SPA

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APPLICATION REFERENCE

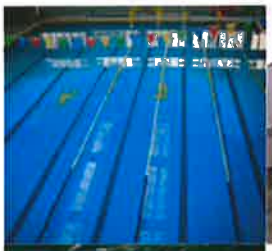





Hsinchu Wego Boutique Hotel

Chilled water: Rooms air conditioning

Hot water: Massage tub, shower and SPA






Xinzhuang Heng Yee Catholic High School

Chilled water: Activity Center air conditioning

Hot water: Warm water swimming pool, shower and the dorm






Taipei Ren Ai Di Bao Luxury Condos

Chilled water: Swimming pool & fitness center air conditioning

Hot water: Warm water swimming pool and the shower

APPLICATION REFERENCE

The Chu Pei Swimming Pool

Chilled water: Swimming pool & activity center air conditioning

Hot water: Warm swimming pool and shower

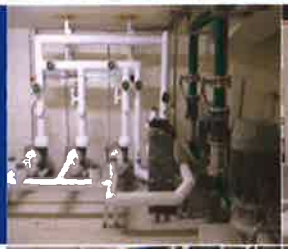


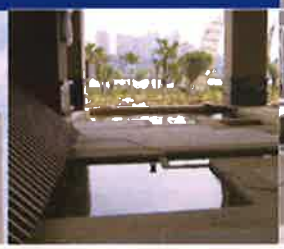



The Danshui Multi-Family Housing

Chilled water: Rooms air conditioning

Hot water: Massage tub, shower and SPA



The Kaohsiung Golf Course

Chilled water: The lobby

Hot water: Shower for the members






International Brand, the Authority in Air Conditioning Equipment

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