INTER SOLAR
Since 1997

India's Most Advanced Heat Pump Water Heating System

For complete information. Please call or write us Your request will receive prompt attention

INTER SOLAR SYSTEMS PVT. LTD.

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VISION

Inter Solar system one of the largest manufacturer of solar energy equipments in India. We strive to optimize performance & efficiency at lower cost. Our R & D teams regularly tests New material, Manufacturing methods, designs & improves distribution systems. New Solar Technology is evaluated as it develops. Besides improving existing products and systems, Inter Solar research team explores exciting new solar ideas.

Inter Solar R&D achievements include freeze protection , scale protection, integrated solar controls, customized solar solutions & much more.

Company Profile

Inter Solar systems are pioneers manufacturer of solar equipments i.e. solar water heating systems, high temperature solar water heating systems, solar air heating systems, solar pool heating systems,heat pump, solar photovoltaic modules, solar power plants to meet the customer requirements for domestic, commercial, hotels, hospitals, swimming pools,etc.

The company introduces high end products strictly accordingly to ISO 9001, 14001 and 20001. Solar water heaters being manufactured are both CE & ISI marked.

Inter Solar having covered area for manufacturing setup of 70,000 sq. ft. with state-of-the-art technology with special purpose machinery. Inter Solar design and manufacture the system to meet the customer requirements and ensure customer satisfaction.

Inter Solar aims to continue manufacturing and marketing the best engineered product for both domestic and export and will continue to introduce new products to keep abreast with market trends

INTER SOLAR Since 1997 We have more than 23 years water heater manufacturing experience

Contents

OUR PRESTIGIOUS CLIENTS

HOTELS

RAMADA PLAZA · SAROVAR HOTELS & RESORTS · THE ALTIUS · apple country RESORT, MANALI · Best Western · COUNTRY INN & SUITES · GAJ RETREAT

KASAULI RESORT Where Dreams Happen · Snow Valley Resorts · FOUR POINTS BY SHERATON · THE FERN HOTELS & RESORTS Leading Environmentally Sensitive Hotels · Radisson BLU HOTELS & RESORTS · HOTEL MAHARAJA REGENCY · TAJ Hotels Resorts and Palaces

TIMBER TRAIL · VIVANTA · TRIDENT · GOLDEN TULIP HOTELS · SUITES · RESORTS · TURQUOISE · ClubMahindra · ITC HOTELS RESPONSIBLE LUXURY

EDUCATION

PINEGROVE SCHOOL · ISB · THE DOON SCHOOL · Cambridge INTERNATIONAL SCHOOL · BADDI UNIVERSITY OF EMERGING SCIENCES AND TECHNOLOGY · ALL SAINTS' COLLEGE

BIRLA INTERNATIONAL SCHOOL · BITS Pilani Pilani | Dubai | Goa | Hyderabad · CGC · Delhi Public School Yamuna Nagar - Jagadhri · THE SAGAR SCHOOL

CHITKARA UNIVERSITY · DOON INTERNATIONAL SCHOOL · PARTAP WORLD SCHOOL · Ivy WORLD SCHOOL pathways to learn always · RAYAT-BAHRA UNIVERSITY · William Girls' School · aditi mittu aditi international school · AUCKLAND HOUSE

HOSPITALS

Apollo HOSPITALS TOUCHING LIVES · COLUMBIA ASIA 21st Century Healthcare · Fortis HOSPITALS · Ivy Hospitals · JNU HOSPITAL · Silver Oaks Hospital · medanta THE MEDICITY

AIIMS

INDUSTRY

Ambuja Cement · TATA · Reliance · PEPSICO · kangaro® · Cipla · RANBAXY LABORATORIES LIMITED · Himalayan · Sharman Shawls · SUNLOC · Vardhmān

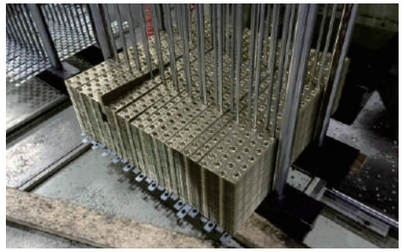
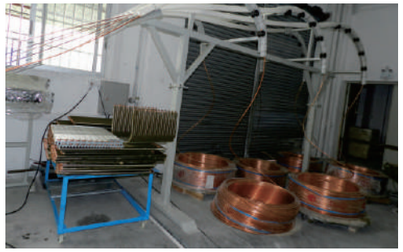
PARLE

CLUBS

CGA CHANDIGARH GOLF ASSOCIATION · Chandigarh Golf Club · Dehra Dun Club Ltd. · JAMMU CLUB · Gymkhana Club

Evaporator Workshop - Anti Corrosion Ultra Gold fin



The ultra gold hydrophilic fins are coated with an expoxy resign layer.This treatment enhances the durability of the System and ensures peak performance lifespan.

The Inter Solar Enthalpy Difference Test Lab




The Inter Solar Enthalpy Difference Test Lab is used to meansure the performance of various kinds of heat pumps by simulating various temperature and humidity conditions.

Domestic heat pump

Ideal for multi-storey apartment buildings.

1.Optional function weekly anti-bacterial cycle which prevents the spread of Legionnaires Disease, a serious and sometimes fatal form of pneumonia.

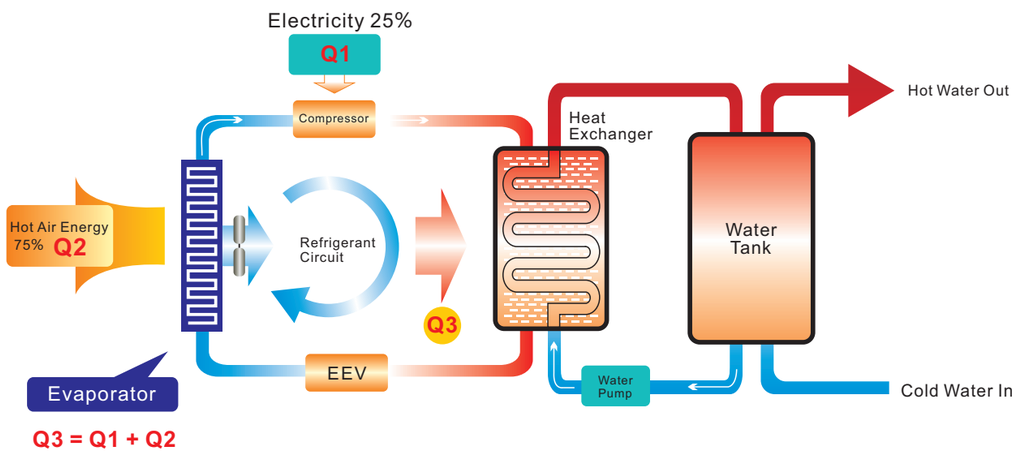
2.Proven high quality external Stainless Steel SUS304 /powder coated paint finish to ensure case is protected against weathering.

3.Intelligent controller complete with four section timer ON/OFF automatically.

4.Retrofit electric heating system &use existing geyser for storage avaliable.

5.Built-in water pump design ready to install with simple plumbing and electrical connections.

6.A unique "cross-over" switch ensures the client has hot water at all times should anything go wrong with the heat pump. (Optional function)



50Hz

Model Number		ISS-70D	ISS-100D	ISS-140D	ISS-200D
Outdoor Unit Air Outlet		Side Discharge Air Outlet			
Rated Heat Production Capacity	KW	3.25	4.64	6.5	9.28
	BTU/h	11100	15800	22100	31600
Rated Outlet Water Temp		55			
Max. Outlet Water Temp		60			
Rated Water Heating Capacity	L/h	70	100	140	200
Rated Input	KW	0.86	1.22	1.71	2.45
Rated Working Current	A	3.88	5.55	7.77	11
COP	W/W	3.8	3.8	3.8	3.8
Power Supply	V/PH/HZ	220~240V/1PH/50HZ			
Refrigerant		R410A/R417A/R22			
Compressor Brand		Panasonic /Rotary			
Compressor QTY	Unit	1			
Fan QTY	Unit	1			
Noise	dB(a)	55			
Water Inlet/Outlet Diameter	Inch	G¾"			
Circulation Pump		Built-In Circulation Pump			
Water-Refrigerant Heat Exchanger		Copper Pipe in Steel case Heat Exchanger			
Outline Dimension	L×W×H(mm)	750×300×510	930×360×560		1000×370×630
Packing Dimension	L×W×H(mm)	835×330×520	1045×375×570		1115×375×640
Net Weight	KG	38	50	55	70
Gross Weight	KG	40	53	58	74

Commercial heat pump

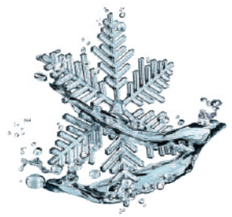
High performance/Long life brand named Copeland / Panasonic compressors.

Latest technology with easy to use LCD display controller.

Super large surface ultra gold fin coil evaporator optimised for high heat transfer.

Inter Solar's Heat Pump Can Provide you Cold Water from 10 Deg. C and Hot Water up to 60 Deg.C

Can be retro-fitted to existing boiler geysers and can be used in conjunction with solar water heater tanks for centrol hot water supply projects.



Fully automatic defrosting function included.

High / Low Pressure Safety Switches - protect pump against damage.

4-Way Reverse Valve option of cooling down water if need (min 10℃)

50Hz

Model Number		ISS-03C	ISS-05C	ISS-07C	ISS-10C	ISS-13C	ISS-15C	ISS-20C
Water Heating Capacity(KW)		11	19	22	39	45	56	70
Water Cooling Capacity(KW)		8	15	18	31	36	45	56
Hot Water Yield L/H(ΔT=40)		220	410	470	840	960	1200	1500
COP		3.8	4.4	3.8	4.6	3.8	4.4	3.8
Rated Input	KW	2.89	4.3	5.79	8.47	11.84	12.73	18.42
Max. Input	KW	4.05	6.02	8.11	11.84	15.39	16.55	23.95
Rated Input Current	A	13.16	8.14	10.96	16.02	19.50	20.00	32.00
Max. Input Current	A	18.42	11.40	15.35	22.43	25.30	28.00	45.00
Power Supply	V/PH/HZ	220V/1PH/50HZ	380~415V/3PH/50HZ					
Working Temperature Availabe		−5°C ~+43°C						
Max. Water Outlet Temperature		60°C						
Rated Water Outlet Temperature		55°C						
Condenser		Copper Pipe In Steel Case Heat Exchanger						
Defrosting		Included						
Intelligent Control		5 meters signal wire						
Compressor /Refrigerant		Copeland /Scroll Compressor /R417A /R410A/R22						
Compressor QTY	Unit	1	1	1	1	2	2	4
Fan QTY	Unit	1	1	1	1	2	2	2
Sound Level	dB(a)	65	65	65	65	68	68	68
Water Inlet/Outlet Diameter	Inch	G1"	G1"	G1"	G1½"	G1½"	G1½"	G2½"
Water Flow Rate	m³/h	2.5	4	5.6	7	8.4	15	13.8
Outline Dimension	L×W×H(mm)	710×710×850	810×810×1055	810×810×1355	1580×910×1180	1580×910×1380	1750×1050×1900	2000×1100×2300
Packing Dimension	L×W×H(mm)	840×840×1030	890×890×1240	950×950×1550	1650×980×1340	1650×980×1540	1900×1160×2110	2200×1300×2500
Net Weight	KG	100	147	160	300	400	460	560
Gross Weight	KG	115	170	190	350	460	510	620

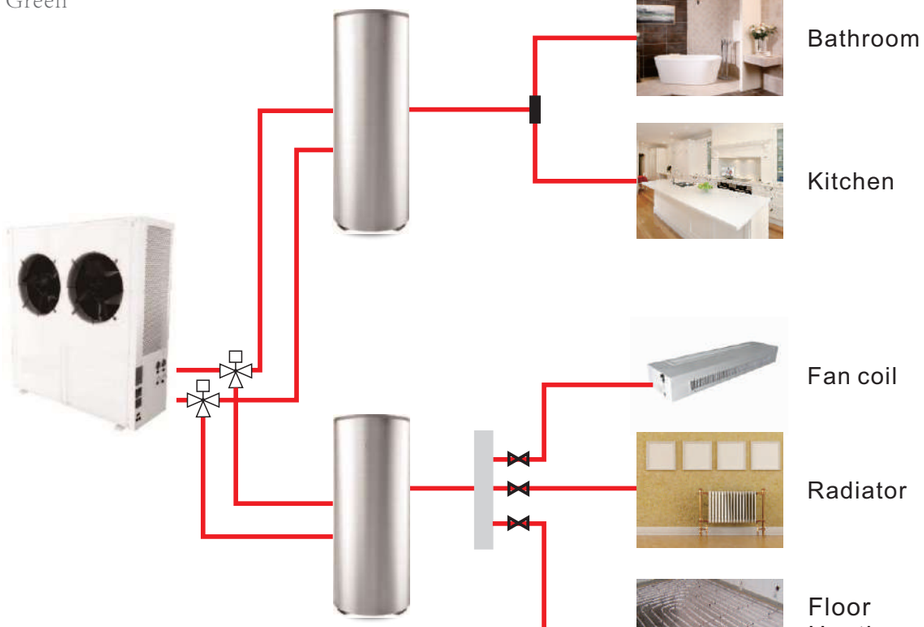
Low Temperature Heat Pump

1. EVI Copeland Scoll compressor ensure the perfect heating performance even in -20℃ ambient temperature.
2. Uses R407C refrigerant - ozone friendly (does not require yearly inspection).
3. State of the art technology has been used to produce specifically whisper quiet fans.
4. Digital controller makes the operation totally automatic and programmable supplying sanitary hot water and space heating purpose.
5. Electronic expansion valves(EEV) control the volume of the refrigerant accurately and improve units performance.

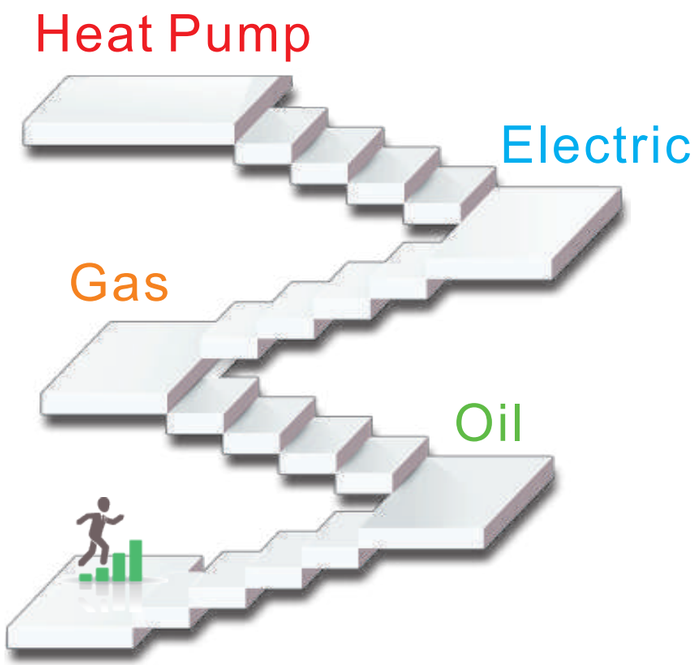
-25℃

Enjoy the perfect temperature in house

Go Green



Comparison



Advantage

Home
Neat and Clean

Energy Saving
& Comfort

CO_2 Emissions
Reduction

Energy Efficiency
Enhancement

Product Parameter

Model		ISS-03LD	ISS-04LD	ISS-05LD	ISS-10LD
PowerSupply	V/Ph/Hz	220-240V/1PH/50HZ	220-240V/1PH/50HZ	380-415V/3PH/50HZ	380-415V/3PH/50HZ
*Ambient Temp.（Dry Bulb/Wet Bulb）：7 /6 ，Water Temp.（In/Out）：30 /35					
Output	KW	7.85	12.16	16.48	33
Input	KW	1.9	3	4.01	8
COP	W/W	4.1	4.12	4.11	4.12
*Ambient Temp.（Dry Bulb/Wet Bulb）：2 /1 ，Water Temp.（In/Out）：30 /35					
Output	KW	6	9.3	12.62	25.2
Input	KW	1.9	2.96	4.02	8.05
COP	W/W	3.14	3.15	3.14	3.13
*Ambient Temp.（Dry Bulb/Wet Bulb）：-7 /-8 ，Water Temp.（In/Out）：30 /35					
Output	KW	4.5	7	9.51	19
Input	KW	1.9	2.96	4.01	8.02
COP	W/W	2.3	2.37	2.36	2.37
*Ambient Temp.（Dry Bulb/Wet Bulb）：-15 /-16 ，Water Temp.（In/Out）：30 /35					
Output	KW	3.4	5.3	7.22	14.5
Input	KW	1.85	2.87	3.89	7.8
COP	W/W	1.86	1.85	1.83	1.86
*Ambient Temp.（Dry Bulb/Wet Bulb）：35 /24 ，Water Temp.（In/Out）：12 /7					
Output	KW	4.9	6.95	9	18
Input	KW	1.97	3.01	4.14	8.3
EER	W/W	2.17	2.27	2.17	2.17
Compressor	N/A	Copeland Scroll EVI	Copeland Scroll EVI	Copeland Scroll EVI	Copeland Scroll EVI
Compressor QTY	pc	1	1	1	2
Fan Motor	N/A	Side Blowing	Side Blowing	Side Blowing	Side Blowing
Fan Motor QTY	pc	1	2	2	2
Refrigerant	N/A	R407C	R407C	R407C	R407C
Max. Water Temp.		60			
Refrigerant Control		Electric Expansion Valve			
Defrosting		4-way valve reverse auto defrosting			
Working Temp.		Min. :-25/Max.: +43			
Nozzles Size	Inch	1	1	1	1.5
Water Flow Rate	m^3 /h	2.5~3.0	3.5~4.0	3.5~4.0	6.0~6.5
Noise	dB(a)	60	65	65	68
Unit Dimension:	cm	850×520×123	1305×505×1245	1305×505×1245	1565×575×1710
N.W/G.W:	Kgs	100/120	145/170	145/170	330/370

Swimming Pool Heat Pump

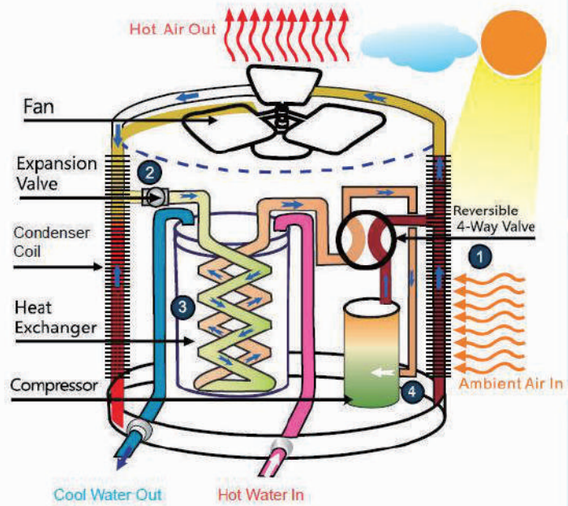
Extend Your Swim Season in Comfort

Corrosion resistant

Titanium Tube Heat Exchanger

Schematic diagram

AS A CHILLER



1 STAGE ONE
The temperature of the hot gaseous refrigerant discharged from the compressor is much higher than the outside ambient air temperature. When the outside air passes across the condenser coil, the gaseous refrigerant transfers its heat to the air and condenses into liquid.

2 STAGE TWO
The liquid refrigerant passes through the expansion valve, reducing its pressure and temperature.

3 STAGE THREE
The low temperature refrigerant passes to the heat exchanger evaporator, where the actual heat transfer takes place: the refrigerant absorbs heat from the water pumped into the heat exchanger and evaporates, whereby the water temperature is reduced.

4 STAGE FOUR
The gas refrigerant is then sucked to the compressor and compressed, increasing its pressure and temperature, ready to start the whole cycle once again.

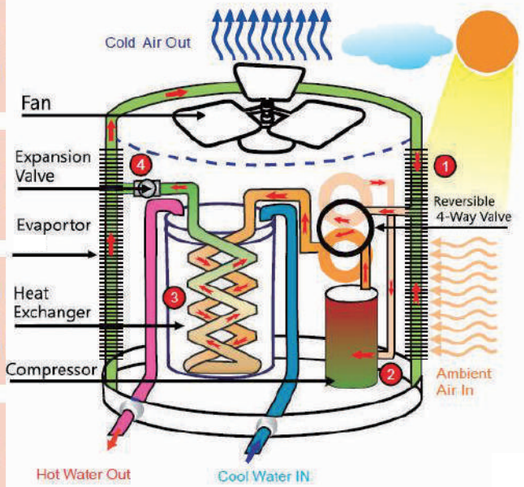
AS A HEAT PUMP

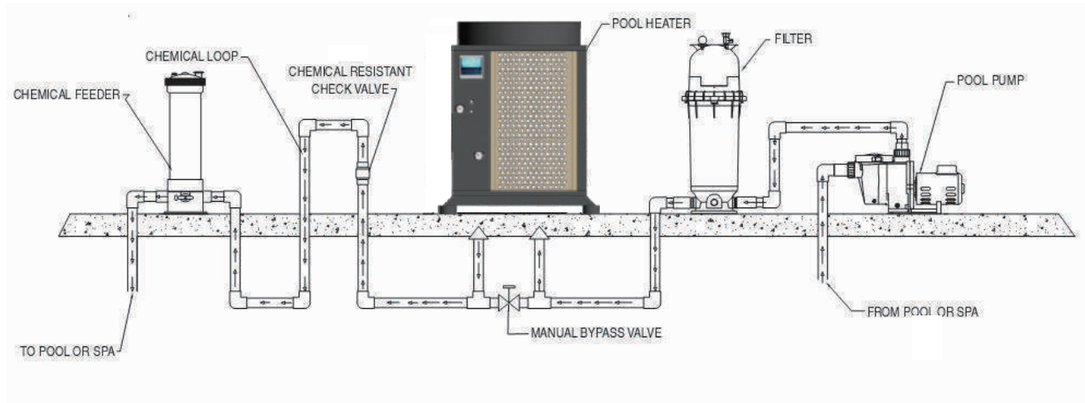
1 STAGE ONE
The heat transfer medium (the refrigerant) is colder than the outside air. As the outside air passes across the evaporator coil, the liquid refrigerant absorbs heat from the air and evaporates.

2 STAGE TWO
The gaseous refrigerant then passes to the compressor and is compressed. When compressed, the pressure is increased and the temperature of the vapor rises, effectively concentrating the heat.

3 STAGE THREE
The hot gaseous refrigerant passes to the heat exchanger condenser, where the actual heat transfer takes place: the intensely hot gaseous refrigerant transfers its heat to the water pumped into the heat exchanger and condenses back into a liquid.

4 STAGE FOUR
The liquid refrigerant then passes through an expansion valve, reducing its pressure and temperature, ready to start the whole cycle once again.





Characteristic

1.Available in a wide range of sizes and models to suit most pools and budgets.
2.Titanium heat exchanger with 50mm standard coupling connections for easy installation.
3.All use the ozone friendly refrigerant and are all designed to be the most energy efficient in their class.
4. Smart control program constant the desired temperature at any time of the day.
5. The uniquely designed fan ensures super quiet operation.
6. Heating or cooling the pool inversable by four way valve.
7.Safety Flow Switch if pool pump fails.

Product Parameter

Vertical Discharge Series:50Hz

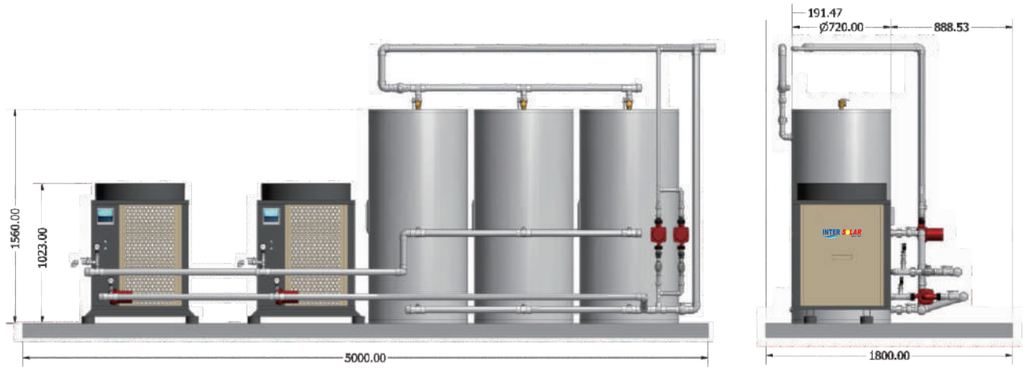
Model		ISS-02SPi	ISS-03SPi	ISS-04SPi	ISS-05SPi	ISS-10SPi	ISS-13SPi	ISS-20SPi	ISS-25SPi
Air /Water 24 /26	Output Power (KW)	8.94	15.11	18.0	21.0	40.0	52.0	90.0	105
	Input Power(KW)	1.52	2.66	3.21	3.82	7.5	9.8	17	20
	COP	5.88	5.66	5.6	5.5	5.3	5.3	5.3	5.3
	Current	7.27	12.73	15.36	6.81	13.37	17.47	30.30	35.65
Air /Water 15 /26	Output Power (KW)	8.13	12.89	15.95	18.65	31	40	81	95
	Input Power(KW)	1.32	2.58	3.13	3.73	6.2	8.1	16.9	19.8
	COP	5.34	5.0	5.09	5.0	5.0	5.0	4.8	4.8
	Current	6.32	12.34	14.98	6.65	11.05	14.44	30.12	35.29
Air /Water 7 /26	Output Power (KW)	5.68	10.45	13.17	16	26	33	70	81
	Input Power(KW)	1.52	2.67	3.1	3.72	6	7.8	16.3	18.8
	COP	3.9	3.92	4.25	4.3	4.3	4.3	4.3	4.3
	Current	7.27	12.78	14.83	6.63	10.7	13.9	29.06	33.51
Electric Power		220V/1PH/50Hz			380V~415V/3PH/50Hz				
Compressor		Panasonic Rotary	Panasonic Scroll	Panasonic Scroll	Panasonic Scroll	Panasonic Scroll	Panasonic Scroll	Panasonic Scroll	Panasonic Scroll
Heat Exchanger		Titanium Tube in PVC Shell			Titanium Tube in PVC Shell				
Refrigerant		R22/ R417A /R410A			R22/ R417A /R410A				
Defrost		Included			Included				
Remote		5meter Signal Wire			5meter Signal Wire				
Cabinet		Galvanized steel sheet and sprayed baking paint			Galvanized steel sheet and sprayed baking paint				
Water Connection Port(mm)		Exterior 50mm/ Interior 40mm				Exterior 60mm/ Interior 50mm		Exterior 70mm/ Interior 60mm	
Fan Power Input (w)		90	200	400	400	400	400×2	850	850
Fan Power Output(w)		50	90	250	250	250	250×2	550	550
Fan (RPM)		750	850	850	850	850	850	940	940
Noice dB(A)		51	49	49	58	58	58	65	65
Water Flow Rate(m^3 /h)		6~8	8~10	10~12	12~15	20~25	25~30	40~50	50~60
Water Pressure Drop (Kpa)		14	14	14	15	16	18	30	35
Product Dimension(mm)		570×500×600	710×710×780	810×810×1050	810×810×1050	1580×910×1180	1580×910×1380	2000×1100×2300	2000×1100×2300
Packing Dimension(mm)		630×575×770	840×840×1030	950×950×1250	950×950×1250	1650×980×1340	1650×980×1540	2200×1300×2500	2200×1300×2500
Net/ Gross Weight(kgs)		51/57	100/115	112/122	147/170	250/280	280/310	620/540	650/570

High Temperature Heat Pump

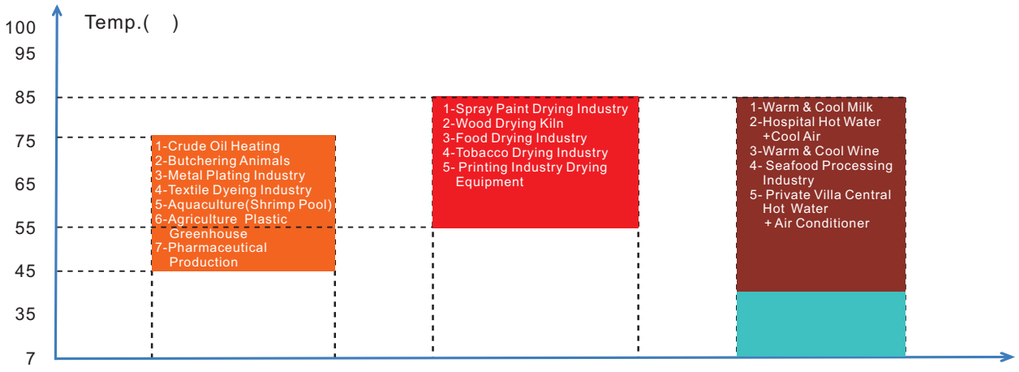
Max. 80℃ hot water temperature

Sanitary Hot Water
Industrial Heating
Printing and Dyeing
Food Industry Hot Water
Electroplating Treatment

Schematic diagram



Inter Solar High Temp. Heat Pump Application (R134A Refrigerant)



High Temp. Hot Water Demand

Food Drying Industry Application

Hot Water+ Cool Air

Characteristic

Copeland Scroll compressor

Water temperature up to 80 ℃

Multi Protection:
Compressor Current Overhigh protection
High pressure switch
Low pressure switch
Water flow protection

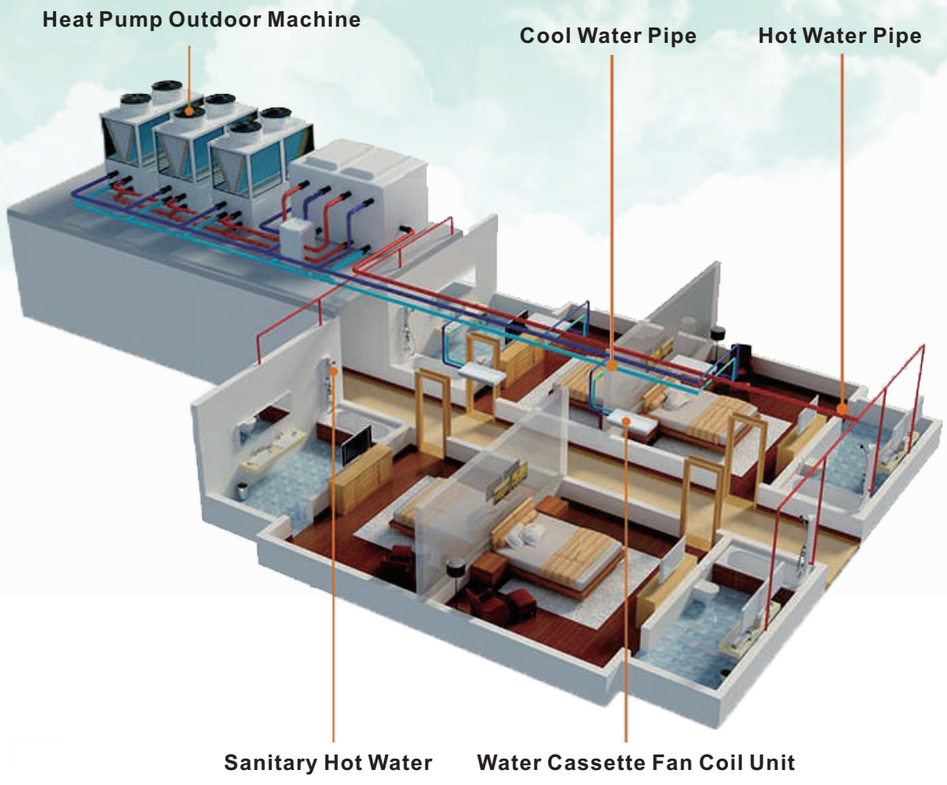
User-friendly LCD remote provide quick and easy access to water temperature,timer program and system diagnostics

Product Parameter

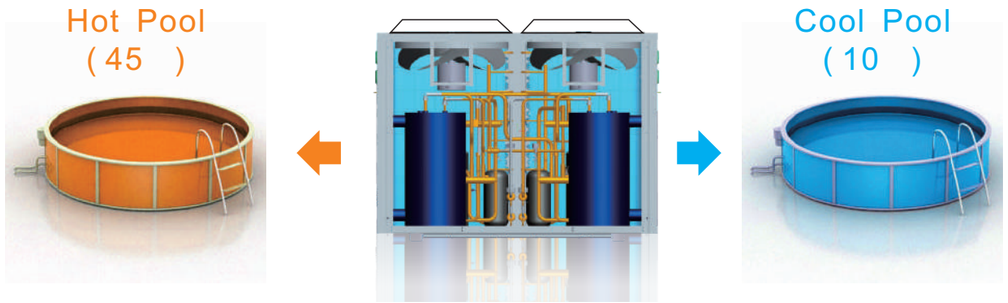
50Hz

Model Number		ISS-03HD	ISS-05HD	ISS-10HD	ISS-20HD	ISS-25HD
Water Heating Capacity(KW)		8.5	14	28	56	70
Water Cooling Capacity(KW)		6.8	11.2	22.4	44.8	56
Hot Water Yield L/H(ΔT=40)		180	300	600	1200	1500
COP		3.8	3.8	3.8	3.8	3.8
Rated Input	KW	2.24	3.68	7.37	14.74	18.42
Max. Input	KW	2.91	4.79	9.58	19.16	23.95
Rated Input Current	A	10.17	4.47	8.94	17.86	22.33
Max. Input Current	A	13.22	5.81	11.61	23.22	29.03
Power Supply	V/PH/HZ	220V/1PH/50HZ	380~415V/3PH/50HZ			
Working Temperature Available		0°C ~+43°C				
Max. Water Outlet Temperature		80°C				
Rated Water Outlet Temperature		65°C				
Condenser		Copper Pipe In Steel Case Heat Exchanger				
Defrosting		Included				
Intelligent Control		5 meters signal wire				
Compressor /Refrigerant		Copeland /Scroll Compressor /R134A				
Compressor QTY	Unit	1	1	2	4	4
Fan QTY	Unit	1	1	2	2	2
Sound Level	dB(a)	65	65	68	68	68
Water Inlet/Outlet Diameter	Inch	G1"	G1"	G1½"	G2½"	G2½"
Water Flow Rate	m³/h	2.5	4	7	13.8	17.2
Outline Dimension	L×W×H(mm)	710×710×850	810×810×1055	1580×910×1380	2000×1100×2300	2000×1100×2300
Packing Dimension	L×W×H(mm)	840×840×1030	950×950×1250	1650×980×1540	2200×1300×2500	2200×1300×2500
Net Weight	KG	100	130	260	560	700
Gross Weight	KG	115	160	300	620	760

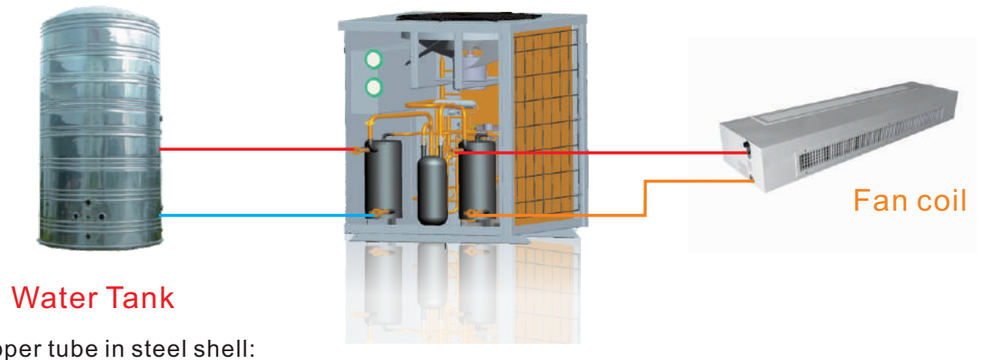
Double Source Heat Pump



Schematic diagram



Titanium tube in SUS316L Shell:
one heat exchanger make hot water supply to SWIMSPA
another heat exchanger make cool water supply to JACUZZI



Copper tube in steel shell:
make hot water or cool water at the same time :
one heat exchanger make hot water supply to sanitary shower heating
another heat exchanger make cool water supply to cassettes chilled water coil (cool air)

Applicable place

Hotel: Sanitary Hot Water + Air Cooling.

SPA: one side provide hot water , another side provide cold water.

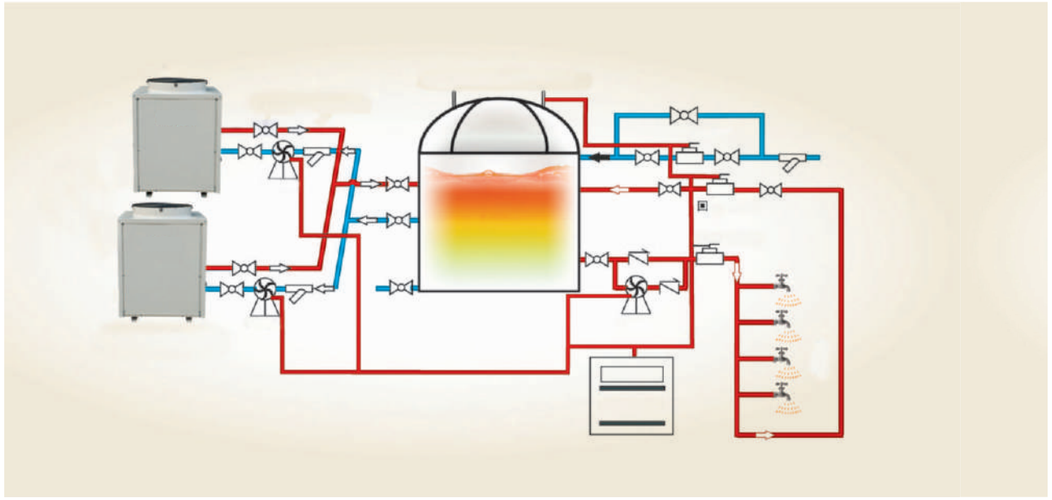
Product Parameter

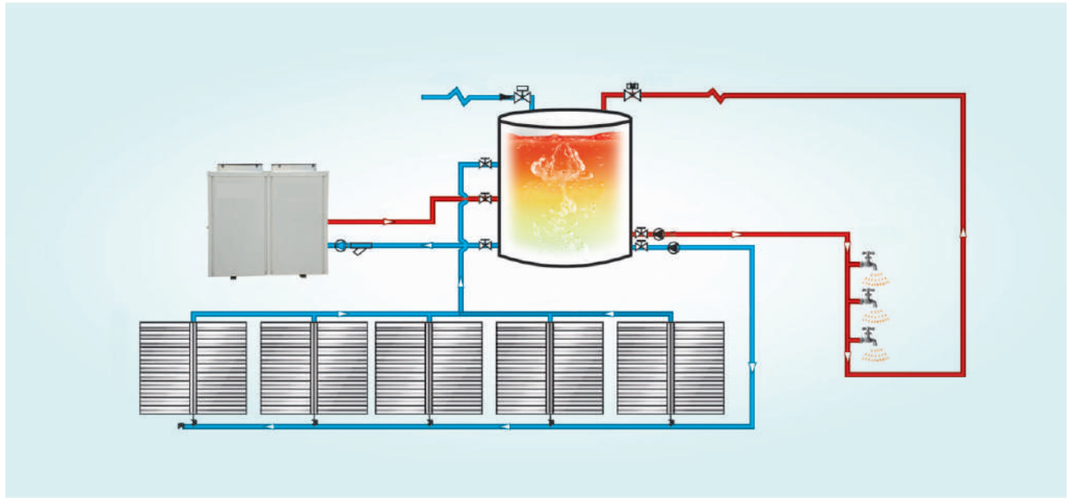
Model Number		ISS-05DS	ISS-05DS	ISS-10DS	ISS-20DS	ISS-05DSi	ISS-10DSi
Compressor Refrigerant		Copeland Scroll /R134A					
Compressor QTY		1	1	2	4	1	2
Heat Exchanger		Copper Pipe In Steel Case				Titanium tube in SUS316L Case	
		One heat exchanger for water heating ,another heat exchanger for water cooling					
Power Supply	V/PH/HZ	220-240V/1PH/50HZ	380~440V/3PH/50HZ				
Rated Heat Production Capacity	KW	14	14	28	56	14	28
Rated Water Heating Capacity	L/h	300	300	600	1200	300	600
Rated Cooling Capacity	KW	11.2	11.2	22.4	44.8	11.2	22.4
Rated Water Cooling Capacity	L/h	240	240	480	960	240	480
Rated Hot Water Outlet Temp.		65	65	65	65	65	45
Max. Hot Water Outlet Temp.		80	80	80	80	75	60
Rated Input	KW	3.7	3.7	7.36	14.7	3.7	7.36
Rated Working Current	A	19	5.6	11.2	22.3	5.6	11.2
COP (DB/WB: 20°C/15°C)	W/W	3.8	3.8	3.8	3.8	3.8	3.8
Fan QTY	Unit	1	1	2	2	1	2
Sound Level	dB(a)	64	64	68	68	64	68
Water Inlet/Outlet Diameter	Inch	1"	1"	1.5"	2.5"	1"	1.5"
Water Flow Rate	Ton/h	2.4	2.4	4.8	9.6	2.4	4.8
Outline Dimension	L×W×H(mm)	810×810×985	810×810×985	1450×750×1100	2000*1100*2300	810×810×985	1450×750×1100
Packing Dimension	L×W×H(mm)	890×890×1160	890×890×1160	1550×850×1200	1550×850×1200	890×890×1160	1550×850×1200
Net Weight	KG	130	130	290	560	130	290
Gross Weight	KG	160	160	330	620	160	330

1.Testing Condition:
** Dry-bulb temperature 20
** Wet-bulb temperature 15
** Water temp.rises 40 degree (from 15 to 55)

2.Technical specification is subject to change without notice,final information please refer to the nameplate on machine.

Commercial Project Diagram





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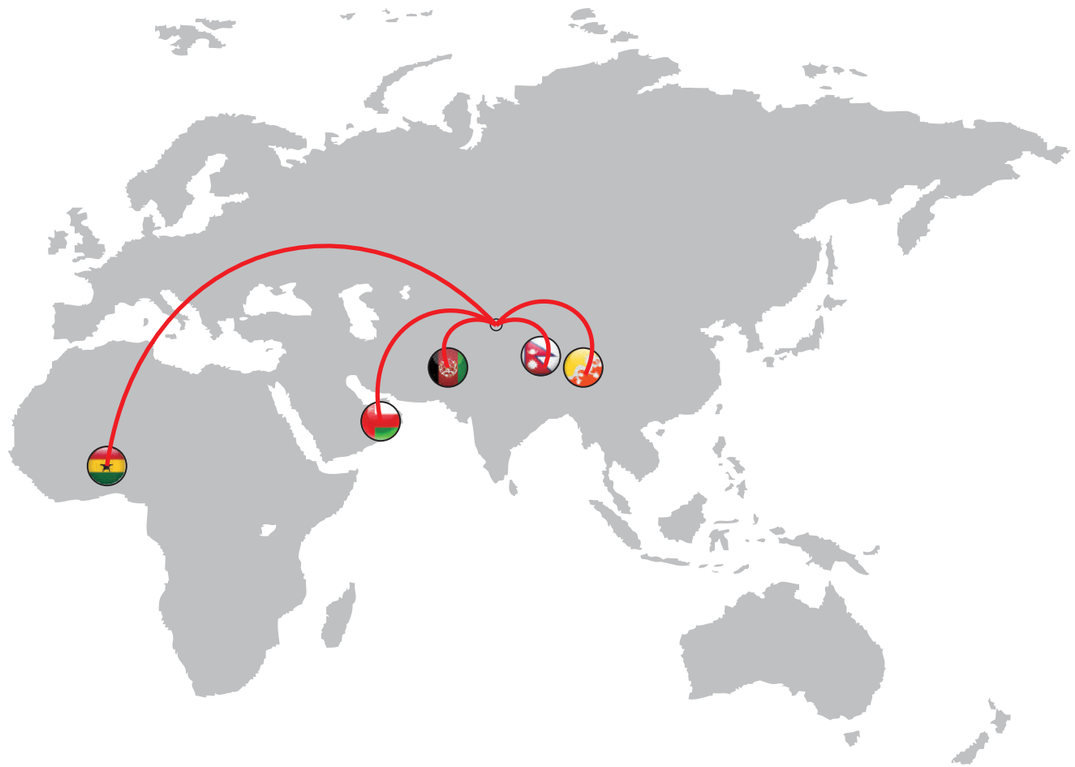

- Nepal
- Bhutan
- Afghanistan
- Sultanate of Oman
- Ghana