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AIR SOURCE HOT WATER HEAT PUMP

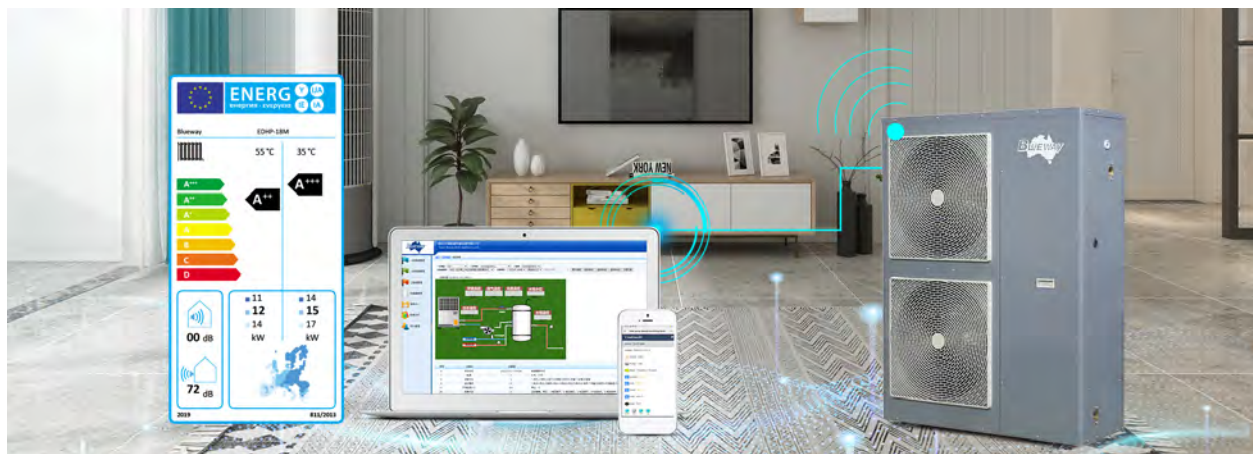
SAVES MORE THAN 2/3 ENERGY
THAN ELECTRICAL WATER HEATER





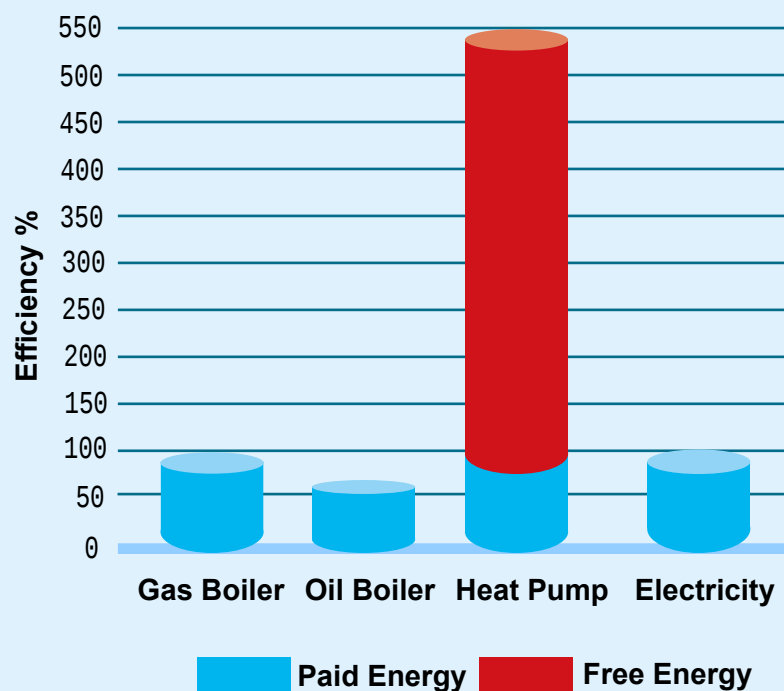
Enjoy comfortable life with

What Is A Heat Hump?



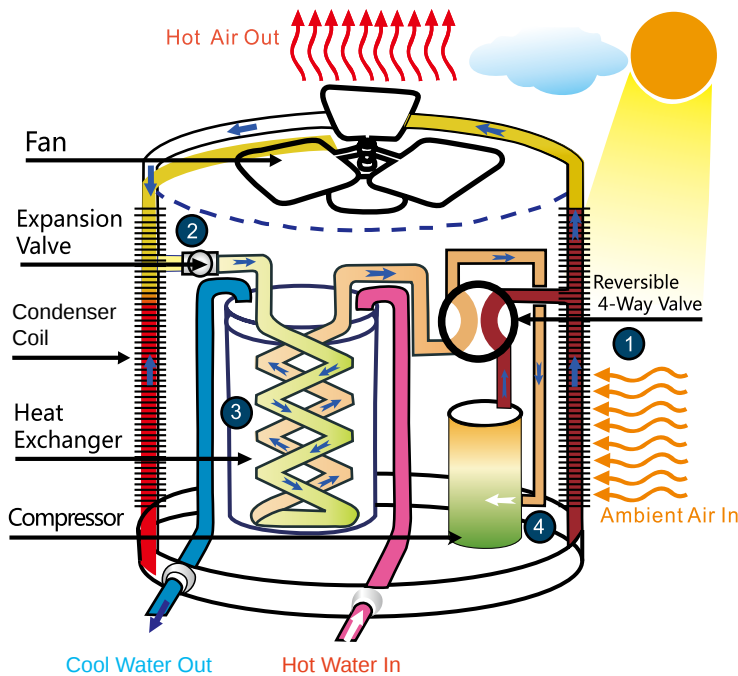
Heat pump is also known as heat pump air conditioner, uses refrigeration principles rather than fuel combustion to both heat and cool. Compared to gas, oil or electric heaters, it can obtain its heat source from air, ground or water, making it very versatile. Blueway heat pump will automatically either keep your home or business warm in the winter and cool in the summer, dramatically reducing the energy consumption and saving your expenses in energy costs each year, the operation costs of heat pump can up to 60%~80% less.

Heating Solution Efficiency Comparison



How does Blueway Water Chiller & Heat Pump System work?

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

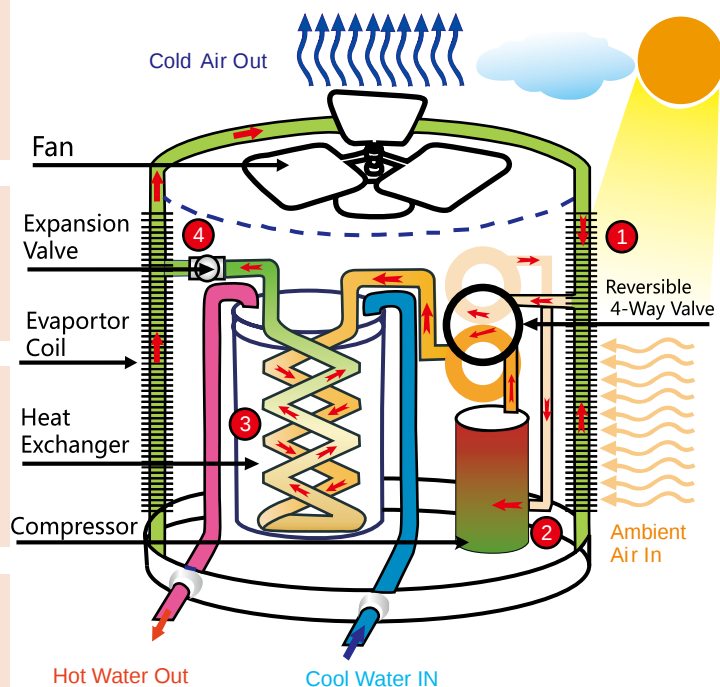
The gaseous refrigerant then passes to the compressor and is compressed. When compressed, the pressure is increased and the temperature of the vapor rises, effectively concentrating the heat.

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.



Domestic Hot Water Heat Pump

Circulating & Instant Type

Circulating type of Domestic Hot Water Heat Pump adopts high efficiency tube-in-shell water heat exchanger and incorporates a built-in water pump for easy installation work. The unit is capable of producing high hot water with a maximum temperature up to 60°C. It can be retrofitted to existing geyser to replace electric water heater, saving more than 2/3 energy.

Instant type of Domestic Hot Water Heat Pump adopts advanced variable flow rate control technology, keeping a constant water temperature in the cold climate and hot climate. Unlike Circulating Models, the outlet water temperature from Instant Models directly reaches the setting temperature. The fast defrosting technology enables the system work well in the low temperature, moist ambient conditions.



Features & Highlights



- ◆ Famous brand high efficiency compressor
- ◆ High efficiency eco-friendly refrigerant, without ozone depletion
- ◆ Built-in circulation water pump
- ◆ Intelligent control: micro processor based digital controller with LCD display
- ◆ Adjustable water temp. setting: 25°C - 60°C
- ◆ Water heat exchanger: tube-in- shell for cycle type, tube-in-tube for direct type
- ◆ Automatic defrosting function included
- ◆ Anti- legionella function on regular intervals
- ◆ Can be retrofitted to existing geyser and used in conjunction with solar geyser
- ◆ On-off & inverter type is optional

Key Components

Water Heat Exchanger

1) High efficiency tube-in-shell heat exchanger for Circulating Heat Pumps

◆ High working pressure

The copper pipe is of 0.8~1.2 mm thickness, no welding inside. With its extraordinary pressure resistance property, the copper pipe is without any leakage under 5Mpa pressure test.

Working Conditions

	Refrigerant Side	Water Side
Max. Working Pressure	5.2Mpa	3.2Mpa
Working Temp. Range	-50~150°C	-50~150°C (above freezing point)

- ◆ The internal spiral surface of the copper tube ensures effectiveness of heat exchange and prevents from lubricant accumulation.
- ◆ Grooved external surface of the copper tube increases also the heat transfer area which is 3.7 times of the smooth surface.



2) High efficiency tube-in-tube heat exchanger for Instant Heating Heat Pumps



- ◆ Spiral tube used to increase heat transfer area for high efficiency
- ◆ Specially designed to provide excellent efficiency, reliability, and reduce fouling.

Compressor

- ◆ Famous brand rotary compressor for Domestic Heat Pumps
- ◆ Copeland, Danfoss or Panasonic scroll compressor for Commercial Heat Pumps





Enjoy comfortable life with

Domestic Hot Water Heat Pump (Circulating)

Technical Specifications

Model			DHW-3.5C	DHW-5C	DHW-7C	DHW-10C	DHW-14C	DHW-18C
Power supply		V/Hz/Ph	220-240/50/1					380-415/50/3
Heating Performance	Heating capacity	kW/h	3.5	5.2	7.2	9.8	14	18
	Power input	kW	0.74	1.05	1.48	2.00	2.97	3.83
	Running current	A	3.3	4.8	6.7	9.1	13.5	6.8
	COP	-	4.75	4.95	4.85	4.91	4.72	4.70
	Hot water production: 15/55°C	L/h	75	112	155	211	301	387
Suggested tank connection (capacity range)		Liter	100-300	150-350	200-500	300-600	400-800	500-1000
Ambient temp. range		°C	-10~43					
Rated/Max.outlet water temp.		°C	55/60					
Rated water flow rate		m³/h	0.60	0.89	1.24	1.69	2.41	3.10
Controller		-	Micro processor based digital wire controller with LCD display					
External cabinet		-	Galvanized steel with powder coating					
Compressor	Type	-	Rotary				Rotary/Scroll	Scroll
	Qty.	Nos.	1					
	Refrigerant	-	R22/R407c/R417a					
Heat exchanger (water side)		-	High efficiency tube-in-shell					
Billt-in water pump	Brand	-	Wilo/Shinhoo					
Water connection	Inlet&Outlet	inch	3/4"	3/4"	3/4"	3/4"	3/4"	1-1/4"
Noise level		dB(A)	52	52	52	55	55	55
Net dimension (W*D*H)		mm	770*300*490	930*280*580	1000*300*650	1000*300*650	750*340*1240	900*420*1390
Net weight		kg	38	50	59	65	95	140

The above data is based on the following testing condition: ambient temp.(DB/WB) = 20°C/15°C, inlet/outlet water temp. = 15°C/55°C.

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Domestic Hot Water Heat Pump (Instant)

Technical Specifications

Model			DHW-3.5I	DHW-5I	DHW-7I	DHW-10I	DHW-14I	DHW-18I
Power supply		V/Hz/Ph	220-240/50/1					380-415/50/3
Heating Performance	Heating capacity	kW/h	3.5	5.2	7.2	9.8	14	18
	Power input	kW	0.80	1.18	1.63	2.24	3.18	4.12
	Running current	A	3.6	5.4	7.4	10.2	14.5	7.4
	COP	-	4.39	4.41	4.42	4.38	4.40	4.37
	Hot water production: 15/55°C	L/h	75	112	155	211	301	387
Suggested tank connection (capacity range)		Liter	100-300	150-350	200-500	300-600	400-800	500-1000
Ambient temp. range		°C	-10~43					
Rated/Max.outlet water temp.		°C	55/60					
Rated water flow rate		m³/h	0.60	0.89	1.24	1.69	2.41	3.10
Controller		-	Micro processor based digital wire controller with LCD display					
External cabinet		-	Galvanized steel with powder coating					
Compressor	Type	-	Rotary				Rotary/Scroll	Scroll
	Qty.	Nos.	1					
	Refrigerant	-	R22/R407c/R417a					
Heat exchanger (water side)		-	High efficiency tube-in-tube					
Billt-in water pump	Brand	-	Wilo/Shinhoo					
Water connection	Inlet&Outlet	inch	3/4"	3/4"	3/4"	3/4"	3/4"	1-1/4"
Noise level		dB(A)	52	52	52	55	55	55
Net dimension (W*D*H)		mm	930*280*580	930*280*580	1000*300*650	1000*300*650	750*340*1240	900*420*1390
Net weight		kg	40	50	59	65	95	140

The above data is based on the following testing condition: ambient temp.(DB/WB) = 20°C/15°C, inlet/outlet water temp. = 15°C/55°C.

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Enjoy comfortable life with



Commercial Hot Water Heat Pump

Cycle Heating & Direct Heating Type



Blueway Commercial Hot Water Heat Pump is designed to offer hot water for commercial and (or) industrial application. In order to achieve the required water temperature, large heat pump units apply unique "V" style evaporator design, which enlarges the heat exchange surface and increases efficiency.

Features & Highlights



- ◆ World famous scroll compressor for reliability and superior performance
- ◆ High efficiency eco-friendly refrigerant, without ozone depletion
- ◆ Intelligent control: micro processor based digital controller with LCD display
- ◆ Water heat exchanger: tube-in- shell for cycle type, tube-in-tube for direct type
- ◆ Heavy gauge galvanized steel cabinet with epoxy powder coating, weather resistant for long lasting outdoor life span
- ◆ Adjustable water temperature setting: 25°C -60°C

Options:

- ◆ Circulating Heating / Instant Heating
- ◆ Electrical boosting element





Enjoy comfortable life with

Commercial Heat Pump (Circulating)

Technical Specifications

Model			CHW-005C	CHW-006C	CHW-007C	CHW-010C	CHW-012C	CHW-015C	CHW-018C	CHW-020C	CHW-025C	CHW-030C	CHW-040C	CHW-050C
HP			5	6	7	10	12	15	18	20	25	30	40	50
Power supply		V/Hz/Ph	380-415/50/3											
Heating Performance	Heating capacity	kW/h	18	21	24.6	36.0	42	49	60	74	90	100	148	180
	Power input	kW	4.30	4.90	5.85	8.60	9.80	11.80	14.30	17.40	21.00	23.70	35.00	42.00
	Running current	A	7.7	8.8	10.5	15.4	17.5	21.1	25.6	31.1	37.5	42.4	62.6	75.1
	COP	-	4.23	4.29	4.21	4.19	4.29	4.15	4.20	4.25	4.29	4.22	4.23	4.29
	Hot water production: 15/55°C	L/h	391	451	529	774	903	1053	1290	1591	1935	2150	3181	3869
Ambient temp. range		°C	-10~43											
Rated/Max.outlet water temp.		°C	55/60											
Rated water flow rate		m³/h	3.13	3.61	4.23	6.19	7.22	8.43	10.32	12.73	15.48	17.20	25.45	30.95
Rated pressure drop		kPa	50	50	50	50	50	50	50	50	50	50	50	50
Controller		-	Micro processor based digital wire controller with LCD display											
External cabinet		-	Heavy gauge galvanized steel with powder coating											
Compressor	Type	-	Scroll											
	Qty.	Nos.	1	1	1	2	2	2	2	2	2	4	4	4
	Refrigerant	-	R22/R407c/R417a											
Water heat exchanger		-	High efficiency tube-in-shell											
Water connection	Inlet&Outlet	inch	1"	1"	1"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2-1/2"	2-1/2"	3"	3"
Noise level		dB(A)	56	56	57	59	59	63	69	69	71	72	73	74
Net dimension	W	mm	740	740	740	1470	1470	1470	2000	2000	2000	2000	2000	2000
	D	mm	740	740	740	840	840	840	950	950	950	1100	1900	1900
	H	mm	835	835	835	950	950	950	2000	2000	2100	2050	2000	2000
Net weight		kg	130	135	140	230	236	253	550	550	600	740	1075	1180

The above data is based on the following testing condition: ambient temp.(DB/WB) = 20°C/15°C, inlet/outlet water temp. = 15°C/55°C.

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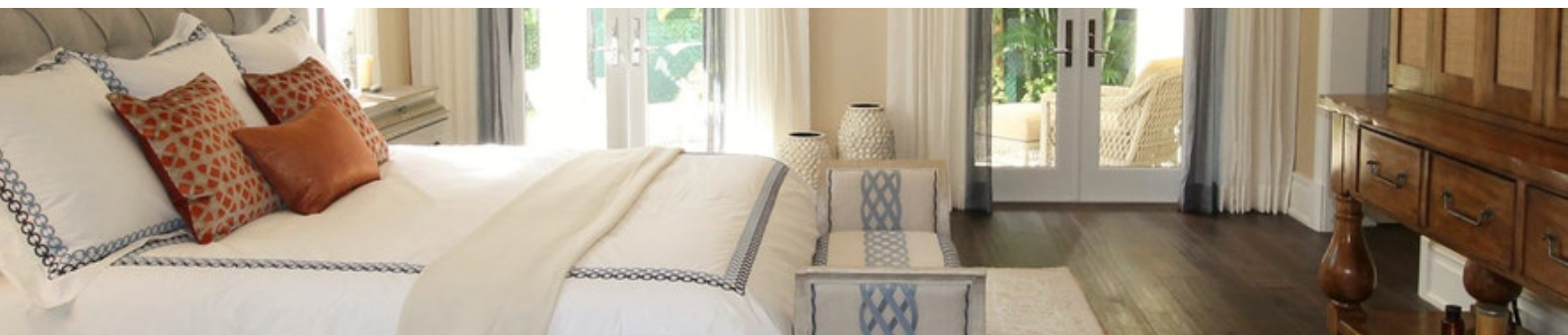
Commercial Heat Pump (Instant)

Technical Specifications

Model			CHW-005I	CHW-010I	CHW-012I	CHW-015I	CHW-020I	CHW-025I	CHW-030I	CHW-040I	CHW-050I
Power supply		V/Hz/Ph	380-415/50/3								
Heating Performance	Heating capacity	kW/h	19	37.5	45	55	75	90	110	150	180
	Power input	kW	4.34	8.43	10.20	12.22	17.24	19.87	24.61	33.26	40.72
	Running current	A	7.8	15.1	18.2	21.8	30.8	35.5	44.0	59.5	72.8
	COP	-	4.38	4.45	4.41	4.50	4.35	4.53	4.47	4.51	4.42
	Hot water Production: 15/55℃	L/h	408	806	967	1182	1612	1935	2365	3224	3869
Ambient temp. range		℃	-10~43								
Rated/Max.outlet water temp.		℃	55/60								
Rated water flow rate		m³/h	3.27	6.45	7.74	9.46	12.90	15.48	18.92	25.80	30.95
Rated pressure drop		kPa	50	50	50	50	50	50	50	50	50
Controller		-	Micro processor based digital wire controller with LCD display								
External cabinet		-	Heavy gaugle galvanized steel with powder coating								
Compressor	Type	-	Scroll								
	Qty.	Nos.	1	1	1	1	2	2	3	4	4
	Refrigerant	-	R22/R407c/R417a								
Water heat exchanger		-	High efficiency tube-in-tube								
Water connection	Inlet&Outlet	inch	1-1/4"	1-1/4"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3"	3"
Noise level		dB(A)	56	59	59	63	69	72	72	72	72
Net dimension (W*D*H)		mm	800*760*975	1470*840*950	1470*840*950	1470*840*950	2000*950*2000	2000*950*2100	2000*1100*2050	2000*1900*2000	2000*1900*2000
Net weight		kg	130	380	380	500	570	600	1140	1200	1200

The above data is based on the following testing condition: ambient temp.(DB/WB) = 20°C/15°C, inlet/outlet water temp. = 15°C/55°C.

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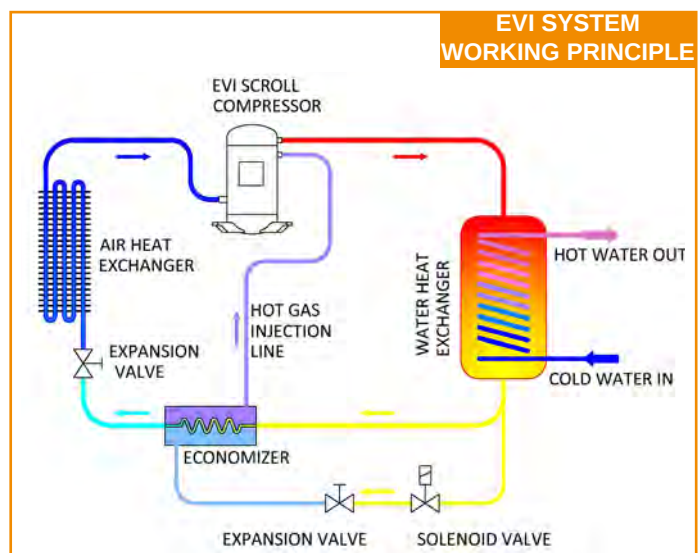


High Temperature Heat Pump

On-off & Inverter Type



Blueway High Temperature Heat Pump adopts EVI (Enhanced Vapor Injection) scroll compressor and the unit is capable of producing hot water with a maximum temperature up to 80°C, which is ideal for both commercial and industrial applications to kill legionella and some other bacteria. It uses R134A refrigerant, which is not only eco-friendly but reliable and stable especially for the system producing high temperature hot water.



Features & Highlights



- ◆ EVI Scroll compressor specially designed for high water temperature heat pump
- ◆ Adjustable water temp. setting: 25°C –80°C
- ◆ Intelligent LCD wired controller
- ◆ Automatic defrosting function included
- ◆ Anti-legionella function on regular intervals
- ◆ Adopt R134a eco-friendly refrigerant is reliable for system producing high water temperature
- ◆ High efficiency tube-in-shell water heat exchanger
- ◆ Inner grooved copper tube for higher efficiency
- ◆ Blue hydrophilic aluminum fins to resist corrosion
- ◆ Back-up heating element for emergency (optional)





Enjoy comfortable life with

High Temp. Heat Pump (Cycle Heating) 50Hz

Technical Specifications

Model			HTHP-005C	HTHP-010C	HTHP-015C	HTHP-020C	HTHP-025C	HTHP-030C	HTHP-040C	HTHP-050C
Power supply		V/Hz/Ph	380-415/50/3							
A20 / W65°C	Heating capacity	kW/h	13	26	39	52	65	78	104	130
	Power input	kW	4.27	8.52	12.66	17.05	21.24	25.91	34.21	43.05
	Running current	A	7.6	15.2	22.6	30.5	38.0	46.3	61.2	76.9
	COP	-	3.07	3.05	3.08	3.05	3.06	3.01	3.04	3.02
A20 / W70°C	Heating capacity	kW/h	12.71	25.22	37.83	50.44	63.05	75.66	100.88	126.1
	Power input	kW	4.50	8.99	13.35	17.98	22.40	27.32	36.07	45.39
	Running current	A	8.0	16.1	23.9	32.1	40.0	48.8	64.5	81.1
	COP	-	2.82	2.81	2.83	2.81	2.82	2.77	2.80	2.78
Ambient temp. range		°C	-5~43							
Rated/Max.outlet water temp.		°C	75/80							
Rated water flow rate		m³/h	2.25	4.47	6.71	8.94	11.18	13.41	17.88	22.36
Rated pressure drop		kPa	50	50	50	50	50	50	50	50
Controller		-	Micro processor based digital wire controller with LCD display							
External cabinet		-	Heavy gauge galvanized steel with powder coating							
Compressor	Type	-	Scroll							
	Qty.	Nos.	1	2	2	2	2	2	4	4
	Refrigerant	-	R134a							
Water heat exchanger		-	High Efficiency Tube-in-Shell							
Water connection	Inlet&Outlet	inch	1-1/4"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	4"
Noise level		dB(A)	56	59	63	69	72	72	72	72
Net dimension (W*D*H)		mm	85	380	500	570	600	1200	1200	1200
Net weight		kg	800*760*975	1470*840*950	1470*840*950	2000*950*2000	2000*950*2100	2000*1100*2050	2600*1100*1960	2600*1100*1960

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High Temp. Heat Pump (Cycle Heating) 60Hz

Technical Specifications

Model			HTHP-005C	HTHP-010C	HTHP-015C	HTHP-020C	HTHP-025C	HTHP-030C	HTHP-040C	HTHP-050C
Power supply		V/Hz/Ph	380-415/60/3							
A20 / W65℃	Heating capacity	kW/h	15.70	31.20	46.00	62.00	78.00	90.00	120.00	150.00
	Power input	kW	5.11	10.23	14.94	20.33	25.49	29.90	39.47	49.67
	Running current	A	9.1	18.3	26.7	36.3	45.6	53.4	70.6	88.8
	COP	-	3.07	3.05	3.08	3.05	3.06	3.01	3.04	3.02
A20 / W70℃	Heating capacity	kW/h	15.23	30.26	44.62	60.14	75.66	87.30	116.40	145.50
	Power input	kW	5.39	10.79	15.75	21.43	26.88	31.53	41.62	52.37
	Running current	A	9.6	19.3	28.1	38.3	48.0	56.4	74.4	93.6
	COP	-	2.82	2.81	2.83	2.81	2.82	2.77	2.80	2.78
Ambient temp. range		℃	-5~43							
Rated/Max.outlet water temp.		℃	75/80							
Rated water flow rate		m³/h	2.70	5.37	7.91	10.66	13.41	15.48	20.64	25.80
Rated pressure drop		kPa	50	50	50	50	50	50	50	50
Controller		-	Micro processor based digital wire controller with LCD display							
External cabinet		-	Heavy gauge galvanized steel with powder coating							
Compressor	Type	-	Scroll							
	Qty.	Nos.	1	2	2	2	2	2	4	4
	Refrigerant	-	R134a							
Water heat exchanger		-	High Efficiency Tube-in-Shell							
Water connection	Inlet&Outlet	inch	1-1/4"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	4"
Noise level		dB(A)	56	59	63	69	72	72	72	72
Net dimension (W*D*H)		mm	85	380	500	570	600	1200	1200	1200
Net weight		kg	800*760*975	1470*840*950	1470*840*950	2000*950*2000	2000*950*2100	2000*1100*2050	2600*1100*1960	2600*1100*1960

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