

SWIMMING POOL HEAT PUMP UNIT

Installation & Instruction Manual

Models

HP50AEE HP70AEE



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1. PREFACE

- In order to provide our customers with quality, reliability and versatility, this product has been made to strict production standards. This manual includes all the necessary information about installation, debugging, discharging and maintenance. Please read this manual carefully before you open or maintain the unit. The manufacture of this product will not be held responsible if someone is injured or the unit is damaged, as a result of improper installation, debugging, or unnecessary maintenance. It is vital that the instructions within this manual are adhered to at all times. The unit must be installed by qualified personnel.
- The unit can only be repaired by qualified installer centre , personnel or an authorised dealer.
- Maintenance and operation must be carried out according to the recommended time and frequency, as stated in this manual.
- Use genuine standard spare parts only. Failure to comply with these recommendations will invalidate the warranty.
- Swimming Pool Heat Pump Unit heats the swimming pool water and keeps the temperature constant. For split type unit, The indoor unit can be Discretely hidden or semi-hidden to suit a luxury house.

Our heat pump has following characteristics:

1 Durable

The heat exchanger is made of PVC & Titanium tube which can withstand prolonged exposure to swimming pool water.

2 Installation flexibility

The unit can be installed outdoors or indoors.

3 Quiet operation

The unit comprises an efficient rotary/ scroll compressor and a low-noise fan motor, which guarantees its quiet operation.

4 Advanced controlling

The unit includes micro-computer controlling, allowing all operation parameters to be set. Operation status can be displayed on the LCD wire controller. Remote controller can be chosen as future option.

2.SPECIFICATION

2.1 Performance data of Swimming Pool Heat Pump Unit

• REFRIGERANT: R410A

UNIT	Model	HP50AEE	HP70AEE
Rated Heating Power Input	kW	2.68	3.86
Range	kW	0.2-2.68	0.31-3.86
Rated Running Current Input	А	12.0	16.9
Range	А	1.1-12.0	1.5-16.9
Power Supply	V/Hz	208-230V~/60Hz	208-230V~/60Hz
Compressor Quantity		1	1
Compressor		rotary	rotary
Fan Quantity		1	1
Fan Power Input	W	100	100
Fan Rotate Speed	RPM	500-650	300-750
Fan Direction		horizontal	horizontal
Noise	dB(A)	43-53	42-57
Water Connection	inch	1.5"	1.5"
Water Flow Volume	m³/h /gpm	4.1/18.5	6.2/ 27.3
Water Pressure Drop(max)	kPa/psi	4.3/ 0.62	4.9/ 0.71
Unit Net Dimensions(L/W/H)	mm/ in	1048×442×770/ 41.2×17.4×30.3	1165×485×870/ 45.9×19.1×34.3
Unit Ship Dimensions(L/W/H)	mm/ in	1130×460×780/ 44.5×18.1×30.7	1210×510×880/ 47.6×20.1×34.6
Net Weight	kg	see nameplate	
Shipping Weight	kg	see package label	

Rated Heating: *Outdoor air temp: $27^{\circ}C/24.3^{\circ}C$, Inlet water temp: $26.7^{\circ}C$ During heating: Running ambient temperature: $-5^{\circ}C \sim 43^{\circ}C$.

2.SPECIFICATION

2.2 The dimensions for Swimming Pool Heat Pump Unit

HP50AEE



unit : mm/in

3.1 Installation illustration



Installation items:

The factory only provides the main unit and the water unit; the other items in the illustration are necessary spare parts for the water system ,that provided by users or the installer.

Attention:

Please follow these steps when using for the first time

1. Open valve and charge water.

2. Make sure that the pump and the water-in pipe have been filled with water.

3.Close the valve and start the unit.

ATTN: It is necessary that the water-in pipe is higher than the pool surface.

The schematic diagram is for reference only. Please check the water inlet/outlet label on the heat pump while plumbing installation.

3.2 Swimming Pool Heat Pumps Location

The unit will perform well in any outdoor location provided that the following three factors are presented:

1. Fresh Air - 2. Electricity - 3. Pool filter piping

The unit may be installed virtually anywhere outdoors. For indoor pools please consult the supplier. Unlike a gas heater, it has no draft or pilot light problem in a windy area.

DO NOT place the unit in an enclosed area with a limited air volume, where the units discharge air will be re-circulated.

DO NOT place the unit to shrubs which can block air inlet. These locations deny the unit of a continuous source of fresh air which reduces it efficiency and may prevent adequate heat delivery.



Unit : mm/inch

3.3 How Close To Your Pool?

Normally, the pool heat pump is installed within 7.5 metres of the pool. The longer the distance from the pool, the greater the heat loss from the piping. For the most part the piping is buried. Therefore, the heat loss is minimal for runs of up to15 meters(15 meters to and from the pump = 30 meters total), unless the ground is wet or the water table is high. A very rough estimate of heat loss per 30 meters is 0.6 kW-hour, (2000BTU) for every 5 $^{\circ}$ C difference in temperature between the pool water and the ground surrounding the pipe, which translates to about 3% to 5% increase in run time.

3.4 Swimming Pool Heat Pumps Plumbing

The Swimming Pool Heat Pumps exclusive rated flow titanium heat exchanger requires no special plumbing arrangements except bypass(please set the flow rate according to the nameplate). The water pressure drop is less than 10kPa at max. Flow rate. Since there is no residual heat or flame Temperatures, The unit does not need copper heat sink piping. PVC pipe can be run straight into the unit.

Location: Connect the unit in the pool pump discharge (return) line downstream of all filter and pool pumps, and upstream of any chlorinators, ozonators or chemical pumps.

Standard model have slip glue fittings which accept 32mm or 50 mm PVC pipe for connection to the pool or spa filtration piping. By using a 50 NB to 40NB you can plumb 40NB

Give serious consideration to adding a quick coupler fitting at the unit inlet and outlet to allow easy draining of unit for winterizing and to provide easier access should servicing be required.



Condensation: Since the Heat pump cools down the air about $4 -5^{\circ}$, water may condense on the fins of the horseshoe shaped evaporator. If the relative humidity is very high, this could be as much as several litres an hour. The water will run down the fins into the basepan and drain out through the barbed plastic condensation drain fitting on the side of the basepan. This fitting is designed to accept 20mm clear vinyl tubing which can be pushed on by hand and run to a suitable drain. It is easy to mistake the condensation for a water leak inside the unit.

NB: A quick way to verify that the water is condensation is to shut off the unit and keep the pool pump running. If the water stops running out of the basepan, it is condensation. AN EVEN QUICKER WAY IS to TEST THE DRAIN WATER FOR CHLORINE - if the is no chlorine present, then it's condensation.

3.5 Swimming Pool Heat Pumps Electrical Wiring

NOTE: Although the unit heat exchanger is electrically isolated from the rest of the unit, it simply prevents the flow of electricity to or from the pool water. Grounding the unit is still required to protect you against short circuits inside the unit. Bonding is also required.

The unit has a separate molded-in junction box with a standard electrical conduit nipple already in place. Just remove the screws and the front panel, feed your supply lines in through the conduit nipple and wire-nut the electric supply wires to the three connections already in the junction box (four connections if three phase). To complete electrical hookup, connect Heat Pump by electrical conduit, UF cable or other suitable means as specified (as permitted by local electrical authorities) to a dedicated AC power supply branch circuit equipped with the proper circuit breaker, disconnect or time delay fuse protection.

Disconnect - A disconnect means (circuit breaker, fused or un-fused switch) should be located within sight of and readily accessible from the unit, This is common practice on commercial and residential air conditioners and heat pumps. It prevents remotely-energizing unattended equipment and permits turning off power at the unit while the unit is being serviced.

3.6 Initial startup of the Unit

NOTE- In order for the unit to heat the pool or spa, the filter pump must be running to circulate water through the heat exchanger.

Start up Procedure - After installation is completed, you should follow these steps:

1. Turn on your filter pump. Check for water leaks and verify flow to and from the pool.

2. Turn on the electrical power supply to the unit, then press the key ON/OFF of wire controller, It should start in several seconds.

3. After running a few minutes make sure the air leaving the top(side) of the unit is cooler(Between 5-10 °C)

4. With the unit operating turn the filter pump off. The unit should also turn off automatically,

5. Allow the unit and pool pump to run 24 hours per day until desired pool water emperature is reached. When the water-in temperature reach setting, The unit just shuts off. The unit will now automatically restart (as long as your pool pump is running)when the pool temperature drops more than 2°Cbelow set temperature.

Time Delay- The unit is equipped with a 3 minute built-in solid state restart delay included to protect control circuit components and to eliminate restart cycling and contactor chatter. This time delay will automatically restart the unit approximately 3 minutes after each control circuit interruption. Even a brief power interruption will activate the solid state 3 minute restart delay and prevent the unit from starting until the 5 minute countdown is completed. Power interruptions during the delay period will have no effect on the 3 minute countdown.

4.1. Color screen wire controller interface introduction

4.1.1 Main interface



4.1.2 Button and display Description

NO.	Name	Description
I	Time	Show the system time
11	Temp. Setting	Show the target temperature
	Outlet Water	Show the outlet water temperature
IV	Inlet Water	Show the inlet water temperature
1	ON/OFF or Back	Press to control the unit ON/OFF, or back to the previous interface
2	Defrost icon	The icon will display when the unit working on defrost mode
3	Mode	The icon will display the running mode (heating/ cooling/auto)
4	Compressor icon	The icon will display when the compressor work
5	Lock icon	The icon will display when the operation controller is locked
6	Fault icon	The icon will display when the unit fails
\bigcirc	Current Interface	Slide left or right to switch the interface display
8	Mode	Click to enter mode setting
9	Temp Setting	Click to set the target temperature for current mode
10	Silent Mode	Click to switch the silent mode
(1)	Silent Timing	Click to set the silent function timer
(12)	Time setting	Click to enter the system time setting
(3)	Timer	Click to enter the timing setting for the unit ON/OFF
(4)	Fault	Click to look up the fault history
(5)	Parameter	Click to enter system parameter interface

4.2. Color screen wire controller function introduction

4.2.1 Booting and shutdown

- In the main interface :
- 1) In shutdown status, press the ON/OFF button for 0.5s then the unit will be booted.
- 2) In booting status, press the ON/OFF button for 0.5s then the unit will be shut down.



4.2.2 Function selection interface

In the main interface, slide left or right to select the function selection.



4.2.3 Mode switch

In the Second function interface, click the Mode icon to enter into the Mode Setting interface. Slide up and down to select the mode (Cooling-Heating-Auto), click "OK" to save the setting and back to the previous interface; click Back button " \bigcirc " or " \leftarrow " to quit the settings.



Note: when the unit is designed for single Cooling mode or single Heating mode, the mode can not be switch.

4.2.4 Target temperature setting

In the Second function interface, click " (Ξ) " to enter into the Temp Setting interface, slide up or down to select the target temperature, click "OK" to save the setting and back to the previous interface; click Back button " \bigcirc " or " \leftarrow " to quit the settings.



4.2.5 System time setting

In the Third function interface, click "()" to enter into Time Setting interface.

Slide up or down to select the DATE, click " \rightarrow " to save and enter into time setting interface; click " \leftarrow " to cancel and back to the prevolus interface.

In the time setting interface, slide up or down to select TIME, click "OK" to save and return to the Third function interface; click " \leftarrow " back to the prevolus interface.



4.2.6 Timing settings

In the Third function interface, click "(O)" to enter into the Time setting interface, click the value of "ON" to enter into the Start time selecting interface, slide up or down to adjust the value, click "OK" to save (click " \leftarrow " backspace); click the value of "OFF" to enter into End time selecting interface, slide up or down to adjust the value, click "OK" to save (click " \leftarrow " backspace).

At last, slide right the right round button to active the timing settings or slide it left to Deactivate the timing settings; click " \leftarrow " back to the third function interface.



4.2.7 Silent Mode and silent timing

(1) Silent Mode

In the Second function interface, click " ())" to active the Silent Mode, the icon show " (), click the icon again the Silent Mode function can be off.



(2) Silent Timing

In the Second function interface, click " (I)" to enter into the Silent Timing interface, click the value to adjust the Start time or End time, slide the right round button to active or deactive the Silent Timing function.



Note:Start and end time setting value must be among the range of 00:00-23:00, and setting value can be precise to hour digit.

4.2.8 The fault interface

When fault occus, the fault icon " " will display in the main interface.

To check the fault record list, slide to the Third function interface, click " (B)" to enter into the Fault history record interface, click " \rightarrow "or " \leftarrow " to page up or down, the fault interface will record the time, code, name of the fault.

Click "Del" to clean the fault records and press the BACK button " \bigcirc " to return back to the Third function interface.



4.2.8 Keyboard locking

In the Main interface, press the " \bigcirc " button over 5 seconds, the screen is locked, press the " \bigcirc " button over 5 seconds again to unlock the screen.



4.3 Parameter list and breakdown table

4.3.1 Electronic control fault table

Protect/fault	Fault display	Reason	Elimination methods
Inlet Temp. Sensor Fault	P01	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Outlet Temp. Sensor Fault	P02	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Amibent Temp. Sensor Fault	P04	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Coil 1 Temp. Sensor Fault	P05	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Coil 2 Temp. Sensor Fault	P15	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Suction Temp. Sensor Fault	P07	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Discharge Temp. Sensor Fault	P081	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Exhaust Air over Temp Prot.	P082	The compressor is overload	Check whether the system of the compressor running normally
Antifreeze Temp. Sensor Fault	P09	Antifreeze temp sensor is broken or short circuited	check and replace this temp sensor
Pressure sensor Fault	PP	The pressure Sensor is broken	Check or change the pressure Sensor or pressure
High Pressure Prot.	E01	The high-preesure switch is broken	Check the pressure switch and cold circuit
Low Pressure Prot.	E02	Low pressure1 protection	Check the pressure switch and cold circuit
Flow Switch Prot.	E03	No water/little water in water system	Check the pipe water flow and water pump
Waterway Anti-freezing Prot.	E05	Water temp.or ambient temp. is too low	
Inlet and outlet temp. too big	E06	Water flow is not enough and low differential pressure	Check the pipe water flow and whether water system is jammed or not
Anti-freezing Prot.	E07	Water flow is not enough	Check the pipe water flow and whether water system is jammed or not
Primary Anti-freezing Prot.	E19	The ambient temp. Is low	
Secondary Anti-freezing Prot.	E29	The ambient temp. Is low	
Comp. Overcurrent Prot.	E051	The compressor is overload	Check whether the system of the compressor running normally
Communication Fault	E08	Communicat ion failure between wire controller and mainboard	Check the wire connection between remote wire controller and main board
Communication Fault (speed control module)	E081	Speed control module and main board communication fail	Check the communication connection
Low AT Protection	TP	Ambient temp is too low	
EC fan feedback Fault	F051	There is something wrong with fan motor and fan motor stops running	Check whether fan motor is broken or locked or not
Fan Motor1 Fault	F031	1. Motor is in locked-rotor state 2. The wire connection between DC-fan motor module and fan motor is in bad contact	1.Change a new fan motor 2.Check the wire connection and make sure they are in good contact
Fan Motor2 Fault	F032	 Motor is in locked-rotor state The wire connection between DC-fan motor module and fan motor is in bad contact 	 Change a new fan motor Check the wire connection and make sure they are in good contact

4.3.2 Frequency conversion board fault table:

Protection/fault	Fault	Reason	Elimination methods
Drv1 MOP alarm	F01	MOP drive alarm	Recoveryafter the 150s
Inverter offline	F02	Frequency conversion board and main board communication failure	Checkthe communicationconnection
IPM protection	F03	IPM modular protection	Recoveryafter the 150s
Comp. Driver Failure	F04	Lack of phase, step or drive hardware damag	Checkthe measuringvoltage check requencyconversion board hardware
DC Fan Fault	F05	Motor current feedback open circuit or short circuit	Checkwhether currentreturn wires connectedmotor
IPM Overcurrent	F06	IPM Input currentis large	Checkand adjustthe current measurement
Inv. DC Overvoltage	F07	DC bus voltage>Dc bus over-voltage protection value	Checkthe input voltagemeasurement
Inv. DC Lessvoltage	F08	DC bus voltage <dc bus="" over-voltage<br="">protection value</dc>	Checkthe input voltagemeasurement
Inv. Input Lessvolt.	F09	The input voltage is low, causing the inputcurrent is high	Checkthe input voltagemeasurement
Inv. Input Overvolt.	F10	The input voltage is too high, more than outage protection current RMS	Checkthe input voltagemeasurement
Inv. Sampling Volt.	F11	The input voltage sampling fault	Checkand adjustthe current measurement
Comm. Err DSP-PFC	F12	DSP and PFC connect fault	Checkthe communicationconnection
Input Over Cur.	F26	The equipment load is too large	
PFC fault	F27	The PFC circuit protection	ck the PFC switch tube short circuit not
IPM Over heating	F15	The IPM module is overheat	Checkand adjustthe current measurement
Weak Magnetic Warn	F16	Compressor magnetic force is not enough	
Inv. Input OutPhase	F17	The input voltage lost phase	Checkand measurethe voltage adjustment
IPM Sampling Cur.	F18	IPM sampling electricity is fault	Checkand adjustthe current measurement
Inv. Temp. Probe Fail	F19	Sensor is short circuit or open circuit	Inspectand replacethe sensor
Inverter Overheating	F20	The transducer is overheat	Checkand adjustthe current measurement
Inv. Overheating Warn	F22	Transducer temperature is too high	Checkand adjustthe current measurement
Comp. OverCur. Warn	F23	Compressor electricity is large	The compressorover-current protection
Input Over Cur. Warn	F24	Input current is too large	Checkand adjustthe current measurement
EEPROM Error Warn	F25	MCU error	Checkwhether the chip is damaged Replacethe chip
V15V over/undervoltage fault	F28	The V15V is overload or undervoltage	Check the V15V input voltage in range 13.5v~16.5v or not

5. MAINTENANCE AND INSPECTION

(2) Parameter list

Meaning	Default	Remarks
Refrigeration target temperature set point	27ഒ	Ajustable
Heating the target temperature set point	27ഒ	Ajustable
Automatic target temerature set point	27ഒ	Ajustable

5. Maintenance and inspection

- Check the water supply device and the release often. You should avoid the condition of no water or air entering into system, as this will influence unit's performance and reliability. You should clear the pool/spa filter regularly to avoid damage to the unit as a result of the dirty of clogged filter.
- The area around the unit should be dry, clean and well ventilated. Clean the side heating exchanger regularly to maintain good heat exchange as conserve energy .
- The operation pressure of the refrigerant system should only be serviced by a certified technician.
- Check the power supply and cable connection often,.Should the unit begin to operate abnormally, switch it off and contact the qualified technician.
- Discharge all water in the water pump and water system ,so that freezing of the water in the pump or water system does not occur. You should discharge the water at the bottom of water pump if the unit will not be used for an extended period of time. You should check the unit thoroughly and fill the system with water fully before using it for the first time after a prolonged period of no usage.

6.1 Connection of PCB illustration

(1) Wire control interface diagram and definition



Sign	Meaning
V	12V (power +)
R	No use
Т	No use
А	485A
В	485B
G	GND(power-)

(2) Controller interface diagram and definition



Connections explanation[§]

No.	Symbol	Meaning
1	OUT1	Compressor (output 220-230VAC)
2	OUT2	Water pump (output 220-230VAC)
3	OUT3	4-way valve (output 220-230VAC)
4	OUT4	High speed of fan (output 220-230VAC)
5	OUT5	Low speed of fan (output 220-230VAC)
6	AC-L	Live wire (input 220-230VAC)
7	AC-N	Neutral wire (input 220-230VAC)
8	AI/DI01	Emergency switch (input)
9	AI/DI02	Water flow switch (input)
10	AI/DI03	System low pressure (input)
11	AI/DI04	System high pressure (input)
12	AI/DI05	System suction temperature (input)
13	AI/DI06	Water input temperature (input)
14	AI/DI07	Water output temperature (input)
15	AI/DI08	System fan coil temperature (input)
16	AI/DI09	Ambient temperature (input)
17	AI/DI10	Mode switch / coil 2 temperature (input)
18	AI/DI11	Master-slave machine switch / Antifreeze temperature (input)
19	AI12(50K)	System Exhaust temperature (input)
20	0_5V_IN	Compressor current detection/Pressure sensor(input)
21	PWM_IN	Master-slave machine switch / Feedback signal of EC fan (input)
22	PWM_OUT	AC fan control (output)
23	0_10V_OUT	EC fan control (output)
24	+5V	+5V (output)
25	+12V	+12V (output)
26	GND	
27	485_B1	
28	485_A1	Frequency conversion board communications
29	12V	
30	GND	
31	485_B2	Color line controller communication
32	485_A2	
33	12V	
34	Cn9	Electronic expansion valve
35	GND	
36	485_B3	The port for centralized control
37	485_A3	
38	12V	
39	FUSE	T5AL250V

6.2 Wiring Diagram:



6.3 Exploded View - HP50AEE

(1) Complete machine structure explosion diagram



(2) Electrical control structure explosion diagram



(3) Spare Parts List

No.	Code	Name	Specifications	Qty
1	301090-20120001	Front box	ABS	1
2	20000-230596	Trademark	250X55	1
3	72200070	CP203	82300038 + 82400012	1
4	20000-220369	Fan net	ABS	1
5	20000-270004	Axial fan blade	Z500-145	1
6	20000-330132	DC	ZWS75-A	1
7	32012-120166	Finned heat exchanger	680x290x700x¢7x1.5 2.0	1
8	301070-20080006	Back network	Galvanized sheet	1
9	32012-210570	Motor bracket	black 9005	1
10	32012-210493	Top support plate	ABS black fine lines	1
11	32012-210489	Top cover	ABS	1
12	32008-210167	Condenser splint	Galvanized sheet 1.0 black 9005	1
13	32012-210494	Electrical box cover	Galvanized sheet 1.2 black 9005	1
14	301060-20120002	Titanium tube heat exchanger	¢9.52x9m ¢110 thread	1
15	301070-20120021	Right side panel	Galvanized sheet	1
16	32009-220029	Junction box	B ABS black	1
17	32009-220029	Middle partition	Galvanized sheet 1.0 black 9005k	1
18	20000-110436	compressor	5RD160ZAA21	1
19	301070-20120022	Chassis assembly	Galvanized sheet	1
20	20000-360005	Flow switch	PSL-1 3/4	1
21	20000-360157	Pressure Switch	0.30MPa/0.15MPa ±0.05 normally open	1
22	2001-3605	Pressure Switch	3.2MPa/4.4MPa ±0.15 normally closed	1
23	20000-360059	Pressure Switch	3.2MPa/4.0MPa ±0.15 normally closed	1
24	20000-360157	Needle valve	40mm 1/2" T0305-10	2
25	2000-1460	Three links	¢6.5-2x¢6.5(T)x0.75 T2M	2
26	304030-00000002	Three links	¢9.52-2x¢6.35(T)x1.0	2
27	20000-140449	Electronic expansion valve	DPF(TS1)1.8C-03	1
28	2004-1444	Filter (R410A)	¢9.7-¢9.7 (¢28) T2Y2	1
29	20000-140618	Filter (R410A)	¢9.7-¢6.5(¢28) T2Y2	1
30	20000-140484	Four - way valve	DSF-9-R410A	1
31	2000-3242	Sensor	150-502-98674(5K) 800mm	5
32	80701652	Electrical box assembly	Black 9005	1
33	20000-310170	Variable frequancy drive	SA.FNB75GW.1	1
34	32012-210497	Electrical box line	Galvanized sheet	1
35	95005-310569	PC1002 Controller	20000-430177+35005-310569	1
36	20000-390231	5-position terminal block	UTD-32/5P(L1、L2、PE、1、2)	1
37	20000-360297	Relay	HATF903AS30AC220 AC220V 30A	1
38	20000-360006	Contactor	HCC-1NU04AA	1
39	2000-3909	2-position terminal block	RS9211(450V~ 4mm2)	1

6.3 Exploded View - HP70AEE

(1) Complete machine structure explosion diagram



(2) Electrical control structure explosion diagram



(3) Spare Parts List

No.	Code	Name	Specifications	Qty
1	301090-00000004	Front box	ABS	1
2	20000-230596	Trademark	250X55	1
3	72200070	CP203	82300038 + 82400012	1
4	20000-220369	Fan net	ABS	1
5	20000-270004	Axial fan blade	Z500-145	1
6	20000-330132	DC	ZWS75-A	1
7	80701595	Back network	Galvanized sheet	1
8	301060-20180001	Finned heat exchanger	714x353x800x¢7x2 2.0	1
9	32009-210663	Support plate	Galvanized sheet 1.5 black 9005	1
10	80900216	Top cover	ABS black fine lines	1
11	32009-210662	Motor bracket assembly	Black 9005	1
12	32009-210658	Electrical cover	Galvanized sheet 1.0 black 9005	1
13	80600265	Titanium tube heat exchanger	¢12.7x7m+¢9.52x5m ¢160 thread	1
14	80701596	Right side panel	Galvanized sheet	1
15	32009-220029	Junction box	B ABS black	1
16	32009-210664	Middle partition	Galvanized sheet 1.0 black 9005	1
17	20000-110217	compressor	TNB220FLHMC	1
18	80701594	Chassis assembly	Galvanized sheet	1
19	2000-1460	Three links	¢6.5-2x¢6.5(T)x0.75 T2M	1
20	304030-00000002	Three links	40mm 1/2" T0305-10	1
21	20000-140150	Needle valve	¢9.52-2x¢6.35(T)x1.0	1
22	20000-140572	Electronic expansion valve	DPF(B)2.0C-008	1
23	20000-360157	Pressure Switch	0.30MPa/0.15MPa ±0.05 normally open	1
24	2001-3605	Pressure Switch	3.2MPa/4.4MPa ±0.15 normally closed	1
25	20000-360059	Pressure Switch	3.2MPa/4.0MPa ±0.15 normally closed	1
26	2004-1444	Filter (R410A)	¢9.7-¢9.7(¢28) T2Y2	1
27	20000-140618	Filter (R410A)	¢9.7-¢6.5(¢28) T2Y2	1
28	20000-360005	Flow switch	PSL-1 3/4	1
29	20000-140485	Four-way valve	DSF-11E-R410A	1
30	2000-3242	Sensor	150-502-98674(5K) 800mm	5
31	20000-390231	5-position terminal block	UTD-32/5P(L1、L2、PE、1、2)	1
32	20000-390049	Terminals	MSB 2.5-F	1
33	20000-390048	Terminals	MSDB 2.5-M	1
34	20000-390046	Terminals	MSB 2.5-M	1
35	20000-390047	Terminal block	D-MSB 1.5-F	1
36	20000-360297	Relay	HATF903AS30AC220 AC220V 30A	1
37	20000-360006	Contactor	HCC-1NU04AA	1
38	2000-3909	2-position terminal block	RS9211(450V~ 4mm2)	1
39	95005-310569	PC1002 Controller	20000-430177+35005-310569	1
40	20000-310170	Variable frequency drive	SA.FNB75GW.1	1
41	32009-210651	Electrical box assembly	Black 9005	1