



MegaLife

FICHE D'INSTALLATION

**Ballon-Thermodynamique Inverter
Décoratif plus Echangeur**

NE-B150/100A



CONTENT

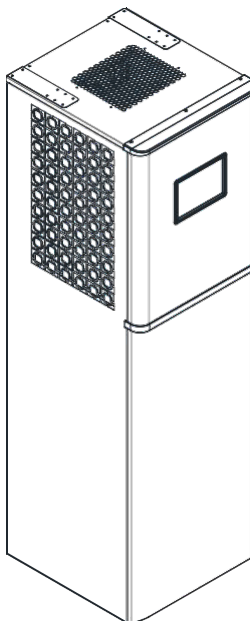
I、 Unit Parameter.....	02
1、 Parameter sheet.....	02
2、 Appearance.....	02
3、 Attention.....	03
II、 Main introduction of product.....	04
1、 Detail parameters.....	04
2、 External dimension.....	05
III、 Installation.....	05
1、 Unit installation position.....	05
2、 Connection diagram.....	08
3、 Ventilation Piping.....	09
4、 Circuit Connection.....	10
IV、 Trial running.....	13
1、 Check before operating.....	13
2、 Control System Instruction.....	14
3、 Maintenance.....	20
4、 Errors and Solutions.....	21
V、 Regular heat pump maintenance & Repair.....	28

I、Unit Parameter

1、Parameter Sheet

Model	Size (L*W*H mm)	N.W/ G.W(kg)	Voltage
NE-B150/100A	460×515×1590	92/98	220V-1ph~50HZ

2、Appearance



NE-B150/100A

3、Attention

3.1 、 please read the manual carefully before installation and using. It included all information related to correct installation,debugging, operation, and maintenance.

3.2 、 following the design standard strictly under producing,which can make sure the unit stay in safe, high quality state,and provide high reliability and excellent adaptation.

3.3 、 we assume no responsibility to any personal harm or machine damage which caused by improper debugging,unnecessary maintenance, non-compliance to manual and guidance.

3.4 、 The maximum water temperature is 60℃,When you use the water, please adjust the water temperature to a appropriate temperature (The most comfortable water temperature for body is 38~42℃, if the water temp above 50℃, there will be danger of burns!)

II、Main introduction of product

1、Detailed Parameters

ITEM	HEAT PUMP WATER HEATER
Model	NE-B150/100A
Rated of waterproof	IPX4
Rated of Elc.leakage protection	I
Rated voltage/frequency	220V/1Ph/50Hz
Rated outlet water quantity	220L/h
Tank capacity	100L
Rated heating capacity	5100W
Rated input power/current	1210W/5.6A
Heating capacity range	3500-7300W
Input power range	850-1800W
Max. input power/current	2400W/11A
Refrigerant	R410A
Rated outlet water temp.	55℃
Max. outlet water temp.	60℃
Net weight	92kg
Noise	≤50dB(A)
Max.tank pressure	≤0.8MPa
Max.gas system pressure	4.4MPa
Max.heat exchanger pressure	4.4MPa

Notice : Test conditions: according to IEC 60335-2 tested.
Detailed data was subject to the product nameplate, if change without prior notice.

2、 External dimension

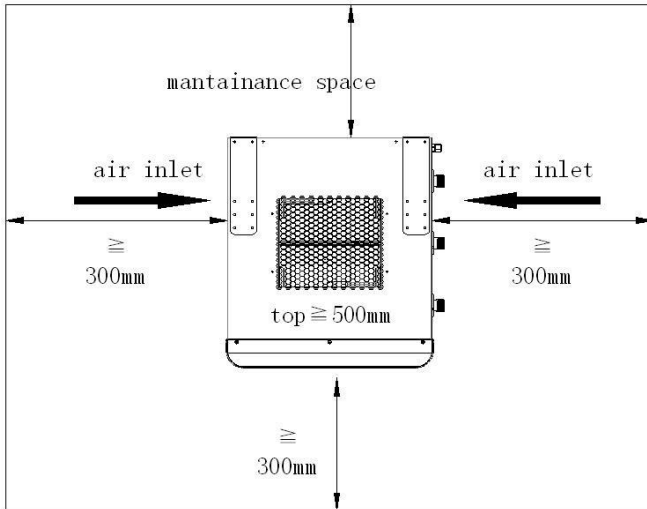
2.1、 NE-B150/100A



III、 Installation

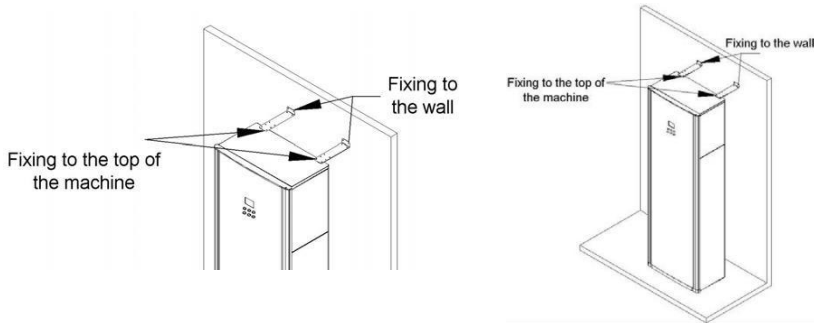
1.Installation position

1.1、 Units should be installed in a place which well ventilation, radiation or other heat sources, the distance with the surrounding walls or other obstructions between not less than shown as below:



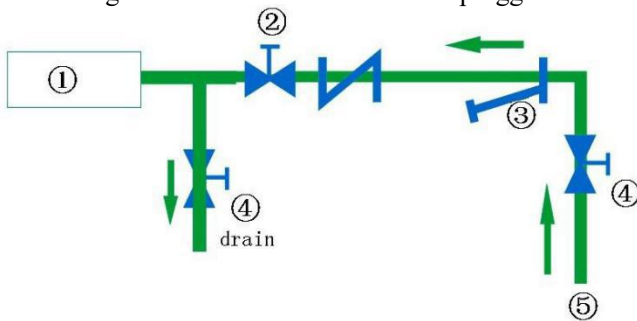
1.2、 The base of the installation should be concrete structures as well as steel bracket, but the surface must be smooth (The design of the base according to machine's quality). On the top of the machine, there are two pieces of ledger plates. Then reverse the plates and fix one end on the wall and one end on the top of the machine (shown below), adjust the level of the machine,

tilt < 5 degree. Connecting the condensate drain line with PVC pipe or tube and do not cut off the condensate drain line, connecting other inlet/outlet pipe and drain based on actual use. We suggest adding a drain at the cold water entrance for the water tank with double inner pots. When cleaning, the two drain work together (shown below).



1.3、Safety relief valve installation requirements:

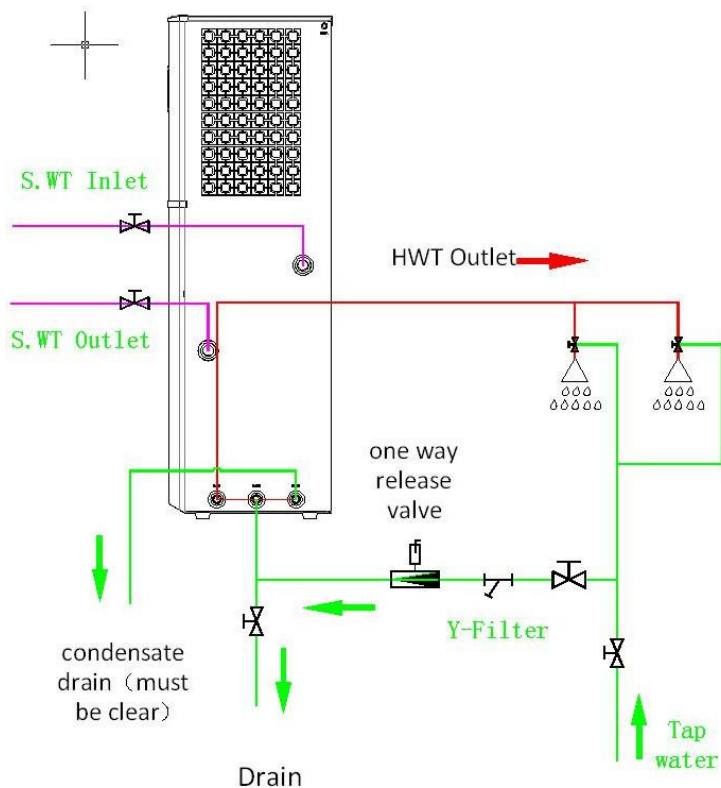
- 1)、Install the safety relief valve at the inlet of the water tank.
- 2)、Drainage pipe of the safety relief valve should be connected with the air.
- 3)、Safety relief valve should be cleaned periodical in order to remove the calcium carbonate deposition and guarantee that the device is not plugged.



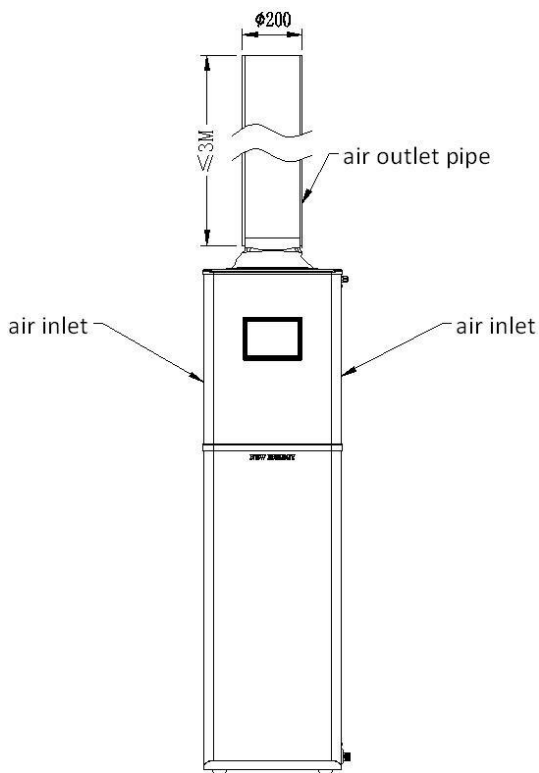
○1 :cold water inlet to water tank, ② :Unidirectional relief valve, ③ :Y-type filter, ④ :Check valve, ⑤ :water supply pipe

2、 Connection diagram

2.1、 NE-B150/100A



3、Ventilation Piping



4、Circuit connection

4.1 、Attentions

a 、 Before installation, please confirm if your local voltage is match with the voltage showed on the machine's nameplate and if the carrying capacity of the power supply, wires and sockets are suitable for this machine's input power;

The minimum conductor cross-section	
Rated current/A	cross-section/mm
≤ 0.2	tinsel cord ^a
$> 0.2 \& \leq 3$	0.5 ^a
$> 3 \& \leq 6$	0.75 ^b
$> 6 \& \leq 10$	1.0(0.75) ^b
$> 10 \& \leq 16$	1.5(1.0)
$> 16 \& \leq 25$	2.5
$> 25 \& \leq 32$	4
$> 32 \& \leq 40$	6
$> 40 \& \leq 63$	10
<p>A. The length of the wire and the wire protective sleeve is less than 2m that can use this type of wire.</p> <p>B. Wire length is no more than 2m, the portable appliance values in parentheses can be used.</p>	

b、 Require insurance tube: IEC regulations fuse rated current can be 90% -100% of rated nameplate maximum current,the maximum non-fusing current overload is 150% of the nameplate rated maximum power current;

c、 In GB4706.32-2012 No. 25.7 rules Units installed outdoors power lines should not be lighter than polychloroprene sheathed flexible cord(In IEC 60245 with No. 57 line);power line specifications according to the nameplate rated maximum current selection, as follows:

d、 Users are not allowed to change the power cord or socket. Wiring work must be carried out by a qualified electrician and ensure that the metal part of the machine has a good grounding. Changing the ground mode is strictly forbidden;

e、 The power supply must be equipped with the unit is connected to the power supply at least match and 3mm all-pole contact separation unit and disconnect from the leakage protection device; if the power cord is damaged, in order to avoid dangerous and must, its maintenance department or similar by the manufacturer professional sector replacement.

f、 After the completion of the construction of all wiring work, please make sure to recheck everything is well before power on.

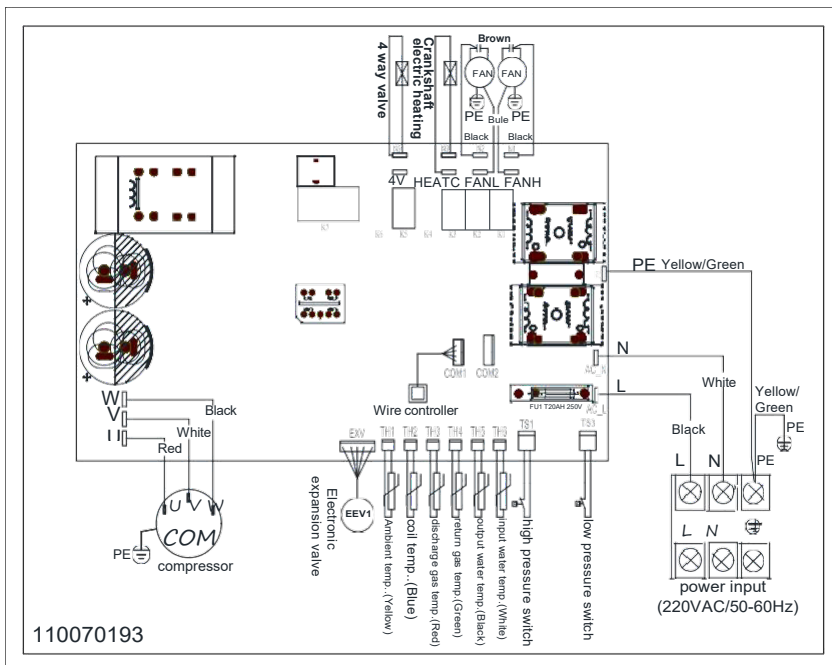
g、 The power supply must be equipped with the unit is connected to the power supply at least match and 3mm all-pole contact separation unit and disconnect from the leakage protection device;

h、 if the power cord is damaged, in order to avoid dangerous and must, its maintenance department or similar by the manufacturer professional sector replacement;

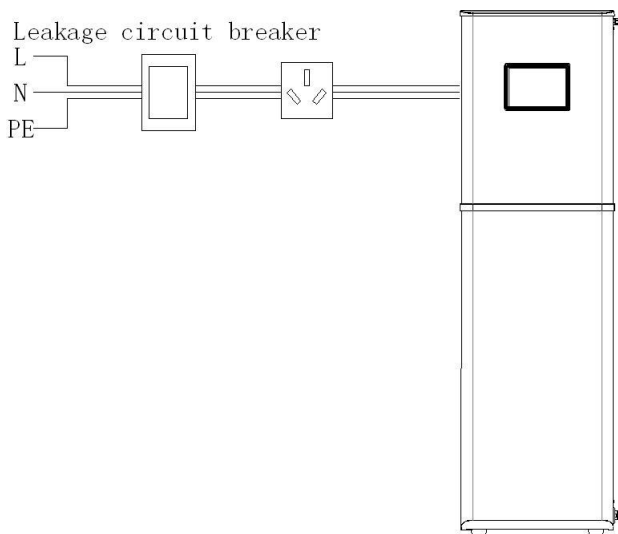
i、 Do not insert a hand or foreign matter into the air outlet of the water heater unit, which will cause danger to personnel and equipment;

j、 do not install in the wet, rain, acid, corrosive environment and where the light shines directly.

4.2 、Wiring diagram



4.3 、 Schematic diagram of power supply



IV、 Trial Operation

1、 Check before operating

- a、 Trial running must come after all the installation is completed;
- b、 Please confirm the following matters before the trial operation, put “√”in the boxes after confirmation:

- unit is installed correctly ☐
- power supply meets unit’s rated need ☐
- Piping and wiring correct ☐
- nit air inlet/outlet well-ventilated ☐
- Drain off water well ☐
- leakage protective device act effectively ☐

- Pipe insulation is perfect ☐

- Ground wire connected correctly ☐

c 、 All wiring and piping construction work is completed,After carefully checking everything then can switch on,and the water tank fill with water;

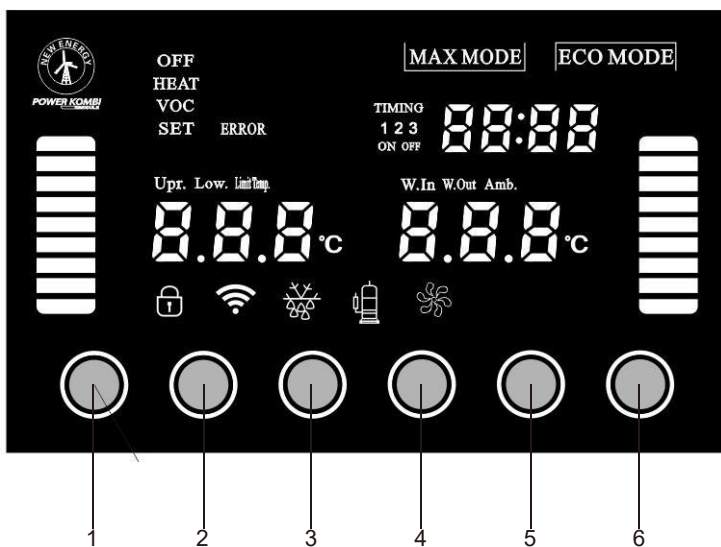
d、 Let the piping and water tank's air drain,click "on/off" button on the control panel,unit will accord to the set temperature operation;





e、 Trial run to be checked:

- ◆ First power on must check whether the operating current is normal;
- ◆ Operation panel 's function keys are normal or not
- ◆ The indicator is normal or not;
- ◆ The whole circulating hot water system whether there is water leakage;
- ◆ The condensed water discharge is normal or not;
- ◆ Whether there is abnormal sound and vibration in unit running state;







2、 Control System Instruction

2.1 、 1. Control panel



- 1——  means “On-off” 
- 2—— “**M**” means “Mode” 
- 3—— “**S**” means “Setting”  means “Clock”

2.2、Display key instruction

- 2.2.1、 : Press “” to turn on / off the machine
- 2.2.2、 **M**: Press “**M**” to do mode setting
- 2.2.3、 “**S**”: Press “**S**” enter the temperature setting state;
- 2.2.4、  or “” : Press  or  to change the


setting data (▲ ” add 1°C, ▼ ” reduce 1°C. Hold down the key for 0.5 second, the temperature will be rapid change)

2.2.5 、 ⌚ ”: timer &clock setting;

2.3 、 Display operation instruction

2.3.1 、 Display instruction:

2.3.1.1 、 Timer and clock display area always show clock、 timer、 operating parameters 、 error code and so on;Temperature display area always show water outlet temp.、 setting temp.、 parameters’ items and so on .Display bar displays blue only when the water

temperature is lower than 36°C.”  ”Display bar displays yellow only when the water temperature is from 36°C to 45°C;Display bar displays red only when the water temperature is higher than 46°C .When the system is heating, the temperature of the water increases or decreases with the increase of the inlet temperature.Display bar display dynamic (frame up or down) according to the inlet water temperature change,not just according to water temp. and having static display


2.3.1.2 、 30 seconds without button operation, digital display brightness automatically extinguished,Button (middle lights) off; button (circle) lights off for 5 seconds, on for 2 seconds


2.3.1.3 、 When the button is operated, the button (middle lights) and the button (circle) are always on;




2.3.1.4 、 Long press “▲” button, display inlet water temperature; long press “▼”key, display ambient temperature

2.3.2、 Key lock function



2.3.2.1、 **Key locked:** In the keyboard unlocked state, press “▲” and “▼” or 30 seconds without buttons’ operation , keyboard


locked, The “” icon lit, then press any key is invalid.


2.3.2.2、Key unlocked: In the keyboard locked state, press “▲” and “▼” to unlocked, keyboard unlocked, The “” icon off, then can do any key operating.

2.3.3、Temperature setting : Press  key, the screen in the middle of the  icon and the temperature display area would lit, then enter the temperature setting ,then press the “▲” or “▼” to adjust the value ,and then press “” button again, or 20 seconds without key operation will automatically exit the setting temperature and save the modified data

2.3.4、Check the running parameters

2.3.4.1 、enter check parameters: Long press the  button 5 seconds, the  Icon in the middle screen is always bright, you will enter the parameter setting state; Setting temperature display area display parameters items, water temperature display area display parameters' value






2.3.4.2 、exit check parameters : In check parameters state, Parameter items flashing display, press the “▲” or “▼” to display various running parameters; Press  key or 20 seconds without key operation automatically exit check parameter state.







2.3.4.3 、fault checking : When the unit is in trouble, the “” fault icon flashes; water temperature display area


displays the error code and temperature value cyclically, When the fault is eliminated, the normal display is restored.

2.3.5、 Check the running parameters


2.3.5.1 、 enter setting parameters : At the same time, press the



“”key and “”key for 5 seconds, the  Icon in the middle screen is flash,setting temperature display area displays the PAS,water temperature display area displays 000,will be prompted to enter the password ,press the“”and“”to select and enter the password, If the password is wrong, then the Err is displayed, and the current state is exited.;If the password is correct, then entry to setting parameter state.setting temperature display area **displays the parameters' item**,water temperature display area **displays the parameters details.(the default password is: 888)**



2.3.5.2 、 setting parameters: In the parameters setting state,the parameters would flash display, then, press the“”and“”to check different parameters' item,then press the ”key select different items,then press the“”and“”key again to change the value,After completion, press “  ”to save the current changes, and return to the parameters item flashing display status.


2.3.5.3 、 exit setting parameters : Press the “  ” to exit the parameter settings state (does not save the current modified data), or 20 seconds no key operation will automatically exit the parameter settings and save the current modified data.

2.3.8 、 clock setting:

2.3.8.1 、 enter setting clock : Long press the “  ” 5 seconds, hours value digital flash display, to enter the state of the clock settings;

2.3.8.2 、 setting clock : Press the “”or“”to modify the

parameters, then click  key to confirm the modify and enter minute settings, minute value digital flash, press the “▲”or“▼”to modify the parameters, then click  key to confirm the modify and exit the clock setting status

2.3.8.3、 exit setting clock: In setting state, press the  to exit the clock settings, or 20 seconds, no key operation automatically exit.

2.3.9 、 Timer setting





2.3.9.1 、 Timing control has 3 types ,1~3type;each type Can be set to " timer on", "timer off" or "invalid"",The default is "invalid" state, that is, the time to on and off is the same


2.3.9.2、 enter setting timer:



Press “  ” key,the “



”icon flash display,and the hours value flash display ,entry the timer on setting for type 1,hour value digital flash ,Press the “▲”or“▼”to modify the parameters, then click “” key to confirm the modify and enter minute settings, minute value digital flash, press the “▲”or“▼”to modify the parameters, then click  key to confirm the modify and enter the timer off setting for type 1,hour value digital flash ,Press the “▲”or“▼”to modify the parameters, then click  key to confirm the modify and enter minute settings, minute value digital flash, press the “▲”or“▼”to modify the parameters, then click “  ” key to confirm the modify and enter the timer on setting for type 2,..set timer for type 2 and type 3 as above!

2.3.9.3、 exit timer setting: In setting state, press the  to exit the clock settings, or 20 seconds, no key operation automatically exit.

2.4、 Unit parameter code sheet

Code	Parameter name	unit	setting range	remark
d01	unit running frequency	Hz	0~150	
d02	Unit running current	A	0~30.0	
d03	Compressor outlet gas temp.	°C	-15~999	
d04	Compressor inlet gas temp.	°C	-30~999	
d05	Evaporator coil temp.	°C	-30~999	
d06	Ambient temp.	°C	-30~999	
d07	Inlet water temp.	°C	-15~999	
d08	Outlet water temp.	°C	-15~999	
d09	EEV opening	P	0~500	
d10	DC bus voltage value	V	0~500	
d11	Module temperature	°C	-15~999	

3、 Maintenance

3.1 、 Using a stiff nylon brush to clean the evaporator wings. Before scrub, clean it with vacuum cleaner. If there is compressed air, you can use high pressure air to clean the condenser or evaporator;

3.2、 Periodic inspecting if the air inlet or outlet is stopped up;

3.3、 Pay close attention to the outlet, inlet/ suction pressure of the system. If there is any abnormality, find out the reason and clearing the fault. If you can not determine the reason, get in touch with the technician of New Energy;

3.4、 Periodic inspecting the electrical connections and regularly monitored the operating voltage, operating current and phase balance. Timely to check the reliability of the electrical components, replace the expired and unreliable parts timely;

3.5、 Air source heat pump water heater uses NEW ENERGY patent heat exchanger and the outlet water temperature is high. After long time operation, the heat transfer surface of the water side heat exchanger will be deposited calcium oxide or any other minerals. If these minerals fouling too much on the heat transfer surface, it will effect heat transfer performance which could lead to power consumption increase, compressor outlet pressure too high or inlet pressure too low. So regular contaminant separation is necessary (Please use formic acid, citric acid, acetic acid and other organic acid to clean, any cleaning agents contains chloral acid or fluoride is strictly forbidden,because water side heat exchanger's material is stainless steel,and will be corroded to cause refrigerant leakage);

3.6、 Do routine maintenance work can make more efficient use of heat pump water heaters, while for failure problems can find in time, to avoid unnecessary trouble.

4、 Errors and Solutions

4.1 、 Error code description

ite m	code	description	ite m	code	description
1	A21	Water inlet temp,sensor fault	12	A41	Main control board and drive plate Communication fault
2	A22	Evaporator coil temp.sensor fault	13	A42	Control panel EEPROM fault
3	A23	Outlet gas temp.sensor fault	14	A43	PCB EEPROM fault
4	A24	Ambient temp.sensor fault	15	A61	DC inverter drive module fault
5	A25	Water outlet temp,sensor fault	16	A62	Excessive current fault
6	A26	Inlet gas temp.sensor fault	17	A63	Compressor outlet gas temperature over high
7	A11	Reserve	18	A64	Antifreeze function failure
8	A12	Low pressure switch fault	19		
9	A13	High pressure switch fault	20		
10	A14	Reserve	21		
11	A40	PCB &LCD Communication fault	22	A70- A93	IPM module protection

4.2 、 Solutions

Code	Specification	Reason	Clear
A12	System low pressure alarm	Low pressure switch's connecting line connect to electronic control board correct or not	Check connecting line correct or not
		Electronic control board low pressure switch I/O input port damage	Manual short circuit electronic control board's low pressure switch to confirm fault occurs or not
		Low pressure switch damage	When system pressure is normal, use resistance scale of the Multimeter to check resistance value between low pressure switch connecting line, if value is 1, it means pressure switch damage

		Heat pump system fault	<p>1、connect pressure gage to check system low pressure normal or not</p> <p>2 、 Capillary or expansion valve dirty block or not</p>
A13	System high pressure alarm	High pressure switch's connecting line connect to electronic control board correct or not	Check connecting line correct or not
		Electronic control board high pressure switch I/O input port damage	Manual short circuit electronic control board's high pressure switch to confirm fault occurs or not
		High pressure switch damage	hen system pressure is normal , use resistance scale of the Multimeter to check resistance value between low pressure switch connecting line, if value is 1,it means pressure switch damage

		Heat pump system fault	1、check water tank temp.the same as actual water out temp.or not 2、 waterway scaling or not
A21	Water in temp,sensor fault	Water in temp,sensor fault	Use Multimeter to check sensor resistance value correct or not
		Electronic control board water in temp,sensor I/O input port damage	Change electronic control board
A22	Coil temp.sensor fault	Coil temp.sensor fault	Use Multimeter to check sensor resistance value correct or not
		Electronic control board coil temp.sensor I/O input port damage	Change electronic control board
A23	Exhaust temp.sensor fault	Exhaust temp.sensor fault	Use Multimeter to check sensor resistance value correct or not

		Electronic control board exhaust temp.sensor I/O input port damage	Change electronic control board
A24	Ambient temp.sensor fault	Ambient temp.sensor damage	Use Multimeter to check sensor resistance value correct or not
		Electronic control board ambient temp.sensor I/O input port damage	Change electronic control board
A25	Water out temp.sensor fault	Water out temp.sensor damage	Use Multimeter to check sensor resistance value correct or not
		Electronic control board water out temp.sensor I/O input port damage	Change electronic control board

Line drop	Linear controller and main control panel communication outage	Linear controller communication circuit damage	Change electronic control board
		Main control panel communication circuit damage	Change electronic control board
		Communication connecting line damage	Change electronic control board
High temp.	Exhaust high temp.protection	Exhaust temp.sensor shows temp.on the high side	Use Multimeter to check sensor resistance value correct or not
		Heat pump system fault	1 、 use Amperemeter to check input current over nominal value or not 2、 waterway scaling or not

V. Regular heat pump maintenance & Repair

- **Parts replacement:**

When replace the parts, you must use resource.

- **System maintenance:**

Whether need to refill the refrigerant depend on the value of exhaust/suction pressure. The air tight test should be done. in case of leakage or replacements of the components of the circulate system. In accordance with the following two situations when refill the refrigerant:

1. The refrigerant leak completely:

If this happens, you must use 40Kgf/cm²r high pressure nitrogen or a small amount of refrigerant to do leak detection. Before repair welding, the gas in the system must be drained. Before refill the refrigerant, the system must be thoroughly dried and vacuum.

- a、Connecting the vacuuming pipe to the refrigerant injection needle valve of low pressure side. Use vacuum pump to vacuumize the system for more than 15 minutes. Then confirm if the vacuum gauge shows at $-1.0 \times 10^5 \text{Pa}$ (-76cmHg) .
- b 、 After achieving the required vacuum effect, filling the refrigerant to the system with refrigerant bottle. On the nameplate and main technical parameters we have marked the suitable refrigerant. Make sure to fill the refrigerant at the low pressure side of the system
- c 、 The refilling refrigerant quantity subject to the ambient

temperature. If you do not meet the required filling quantity and cannot filling longer, you can turn on the machine, then starting filling continuously from low pressure side, in the meantime must prevent damage from liquid refrigerant.

2. Refill the refrigerant

Connecting the refrigerant bottle at the refrigerant injection needle valve of low pressure side and connecting the pressure gauge at the low pressure side. Then turn on the machine, filling the refrigerant into the system slowly and inspect the high and low pressure.

Warning: When doing leakage hunting and air tight test, only high pressure nitrogen and refrigerant is allowed to use, filling oxygen, acetylene or other flammable or toxic gases is strictly forbidden.

Malfunction analyze and clearing:

phenome non	reason		check	clear
Machine does not work	Power cut/outage		Measure the voltage of circuitry	Wait for power resume
	The operation panel has display, but machine can not turn on, key failure	Operation panel lines not	Check the circuitry	connect
		Operation panel damaged	Substitution method	Replace operation panel
		disturbed	Check the source of interference	Clear the source of interference
			If the line lengthened by the non-shielded cable	Replace the line(use shielded cable)
		Low voltage	Check the circuitry voltage	Replace the line or increase voltage stabilizer

		PCB damaged	Substitution method	Replace PCB
Machine does not work	operation panel no display	Transformer damaged	Measure with multi-meter	Replace transformer
		Operation panel lines not connected well	Check the circuitry	Welding with soldering iron
		Operation panel damaged	Substitution method	Replace operation panel
		PCB damaged	Substitution method	Replace PCB
		disturbed	Check the source of interference	Clear the source of interference

			If the line lengthened by the non-shielded cable	Replace the line(use shielded cable)
Fan does not work	Fan blade is stuck		Check the fan blade	Clear foreign body
	The sub High pressure(fan uninstall) system' pressure over high	sub high pressure switch	Check the sub high pressure	Replace(short it)
		Too much refrigerant	Check the pressure	Discharge some refrigerant
		Water system dirty	Check if filter is installed	Clean water system and install filter
			Check water system	Clean water system
		Lack of water flow	Check filter	Clean filter

		Water pump damaged	Check water pump	Replace water pump
		Water flow of water pump is small	Measure the water flow of water pump	Change a bigger water pump
	Without power supply	Power cut off	Measure the circuitry voltage	Wait for power supply
		Circuit breaker	Check the circuitry	Connect the circuitry
		PCB damaged (no output)	Measure the output voltage	Replace PCB
		Transformer damaged	Measure the winding and output voltage	Replace transformer
	Capacitor damaged	Capability become smaller	Check the capability of the capacitor	Replace the capacitor
		open circuit	Measure with multi-meter	Replace the capacitor

		short circuit	Measure with multi-meter	Replace the capacitor
	Motor damaged	Motor winding open circuit	measure the winding	Replace the motor
		Motor winding short circuit	measure the winding	measure the winding
		Motor winding groundin g	measure the winding	measure the winding
The compress or does not work	Compressor wiring terminal without power supply(PC B no output)	The machine is power off	Check the operation panel	Power on
		Setting temperature is lower than water	Check setting temperature	reset
		PCB damaged	Substitution method	Replace PCB
		Transformer damaged	Substitution method	Replace transformer

		Power cut	Measure the circuitry voltage	Wait for power supply
Compressor does not work	Capacitor damaged		Check the capability of the capacitor	Replace the capacitor
	External overload protector damaged		Measure protector's resistance	Replace
	Built-in protector	Too much refrigerant	Measure pressure, current and water temperature	Discharge some refrigerant

	Built-in protector	Too little refrigerant	Measure pressure, current and water temperature parameter	Refill refrigerant
		The voltage is low	Measure voltage	Change the lines or increase voltage regulator
		Compressor cylinder jammed	Measure pressure, current and water temperature parameter	Shunt capacitor, fill refrigeration oil
		Compressor oil shortage, noisy, excessive temperature	Listen to the noisy and test the compressor temperature	fill refrigeration oil

Not defrosting	Defrosting temperature sensor reinstalled after broken	Short circuit	Test the resistance	Replace sensor
		Open circuit	Test the resistance	Replace sensor
		Resistance variation	Test the resistance	Replace sensor
	Defrosting temperature sensor loose		Check the sensor	refit
	No frost at the installation site of the defrosting temperature sensor		Visual inspection	Adjust the installation site
	Defrosting detection time is too long		Check the defrosting time	Reset the time
	Defrosting condition setting inappropriate		Setting defrosting temperature too high	Adjust the temperature
	Four way valve does not work	Four way valve coil damage	Measure the winding	Replace the coil

		Four way valve stuck	Knock the four way valve	Replace four way valve
	Four way valve blowby	Touch and feel for way valve's temp. Measure current and voltage		Replace four way valve
	PCB damaged	Force to defrost, check whether PCB have power output.		Replace PCB

