INSTALLATION & USER MANUAL

Thank you for choosing Full-inverter pool heat pump

SUMMER WAVE

SUMMARY

PLEASE READ IT CAREFULLY AND KEEP IT FOR SUBSEQUENT USE

This manual provides you necessary information for optimal use and maintenance

 Warning：

a. Please read the following tips before installation, use and maintenance.
b. Installation, removal and maintenance must be carried in accordance with the instructions.
c. Before and after installation, if you detect any gas leakage the unit must be turned off and reported to your supplier.

1. Use

a. Any maintenance work on the heat pump must be carried out only by a qualified Service Technician.
b. Do not place put items on the heat pump.
c. Do not block air outlet of the heat pump.

2. Installation

a. This product must be kept away from any source of fire.
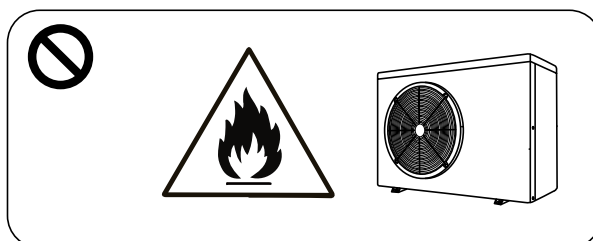
b. The installation can't be in a closed environment or indoors, and must be kept well ventilated.
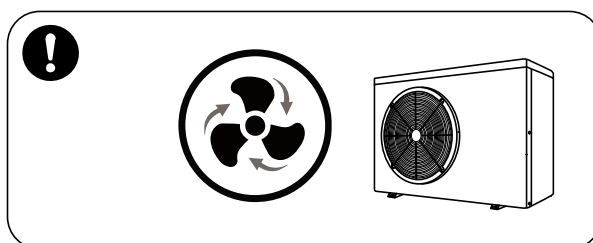
c. Vacuum completely before welding, any maintenance or welding must be carried out by a qualified Service Technician, field welding is not allowed.

d. If a gas leak is detected during installation all work must stop and be reported to the heat pump supplier for service repair.
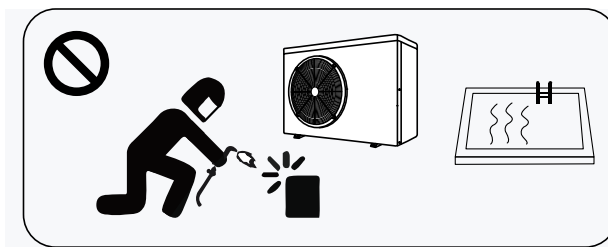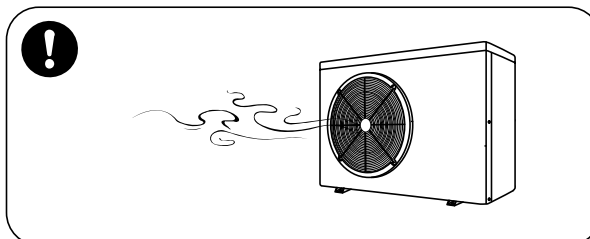

3. Transportation & Storage

a. Secure load for transportation.
b. Care should be taken as not to damage the heat pump during transportation.
c. The product must be kept away from any source of fire.
d. Storage place should be well ventilated.

4. Maintenance Notice

a. For repair or scrap, please contact a qualified Service Technician for advice.

b. Qualification requirement
   Only qualified Service Technicians are permitted to carry any service work on heat pump.

c. Repairing or filling refrigerant R32 may only be carried out by a qualified Service Technician.

1. GENERAL INFORMATION

1.1. Contents:

After unpacking, please check if you have all the following components.
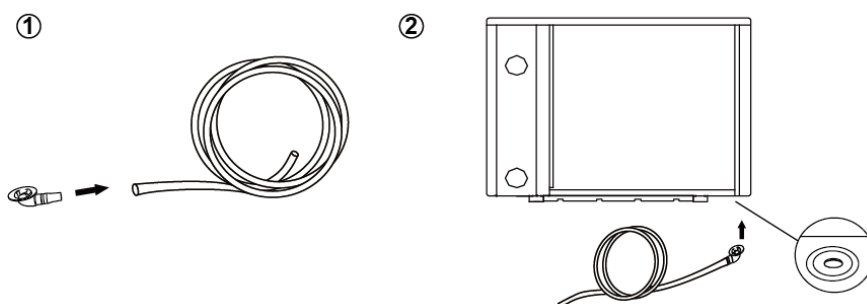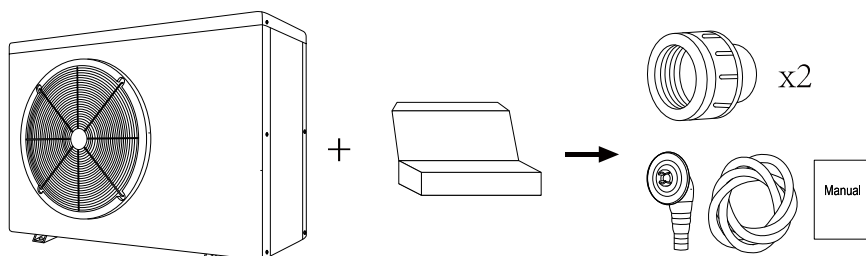
1.2. Operating conditions and range:

ITEMS		RANGE
Operating range	Air temp	-7℃～43℃
Temp. setting	heating	18℃～40℃
	cooling	12℃～30℃

The heat pump will have ideal performance in the operation range Air 15°C～25°C.

1.3. Advantages of different modes:

The heat pump has two modes: Smart and Silence. They have different advantages under different conditions.

1.4.   **Kind**

MODE	RECOMMENDATION	ADVANTAGES
▁▂▃	Smart mode As standard	Heating capacity: 20% to 100% capacity Intelligent optimization Fast heating
▁▂	Silence mode Use at night	Heating capacity: 20% to 80% capacity Sound level: 3dB (A) lower than Smart mode.

reminder:

⚠️ **This heat pump has Power-off memory function. When the power is recovered, the heat pump will restart automatically.**

1.4.1. The heat pump can only be used to heat the pool water. **It can NEVER** be used to heat other flammable or turbid liquid.

1.4.2. Avoid catching the water union when moving the heat pump to avoid the titanium heat exchanger damage.
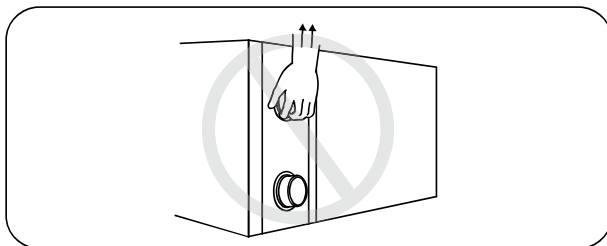
1.4.3. Don't put obstacles in front of the air inlet and outlet of the heat pump. Otherwise, heating efficiency will be sharply reduced, even stopping the system.
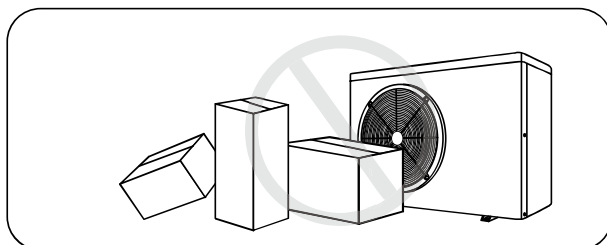
1.4.4. Do not put anything into inlet or outlet, do not remove fan cover.
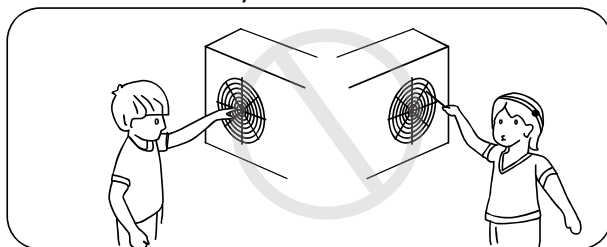
1.4.5. Do not use or store combustible gas or liquid such as thinners, paint and fuel to avoid fire.
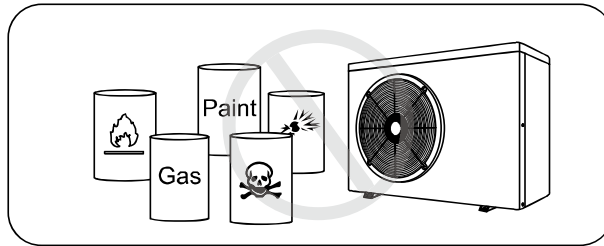
1.4.6. If any abnormal circumstances occurred,
e.g.: abnormal noises, smells, smokes and leakage of electricity, switch off the main power immediately and contact your local dealer. Do not try to repair the heat pump by yourselves.
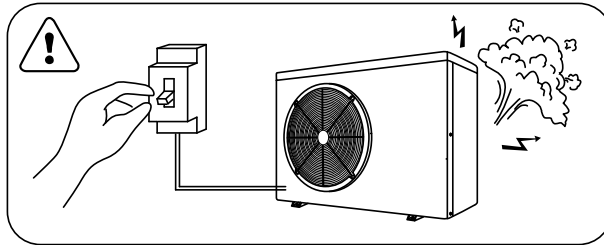
1.4.7. The main power switch should be out of the reach of Children.
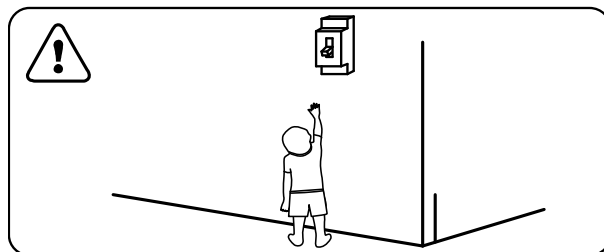
1.4.8. Cut off the power in a lightning storm, power surges can damage heat pumps.
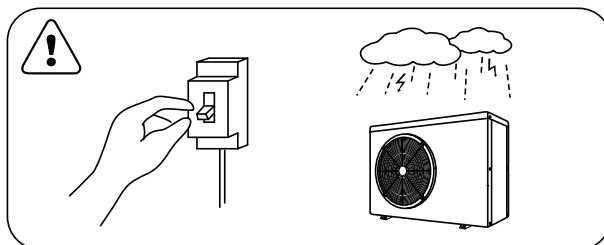
1.4.9. Please note that following codes are not failure.

	CODES
No water flow	E3
Anti-Freezing Reminder	Ed
Out of the operating temp. range	Eb
Insufficient water flow or pump blocked	E6
Abnormal outdoor power supply	E5

2. OPERATIONS

2.1. Notice before using

2.1.1. The user is advised to start the water pump before the heat pump, and turn off the heat pump before the water pump for long life circle.
2.1.2. Check firstly for any water leakage of piping connection, then power on, press the ON/OFF button of the heat pump, and set suitable temperature.

2.2. Operation instructions
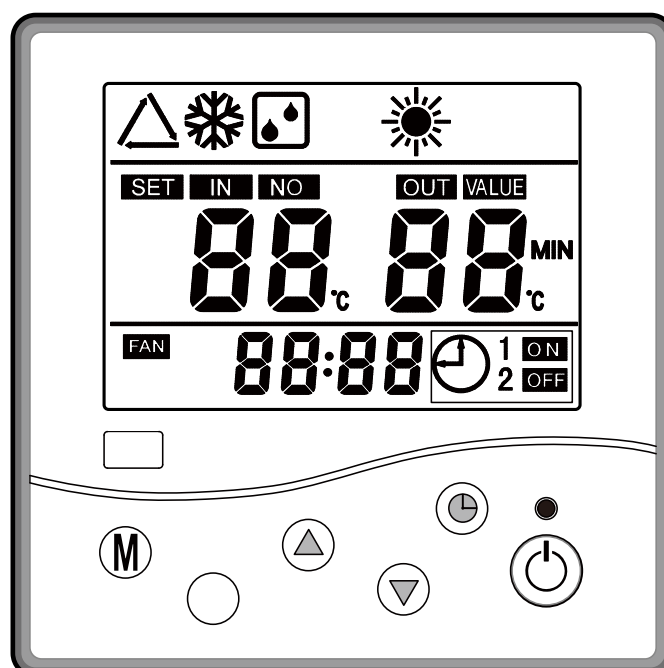
SYMBOL	DESIGNATION	OPERATION
(power symbol)	**Power ON/OFF**	Press to power on or off the heat pump
(▲) (▼)	**Up/ Down**	Press to set desired water temperature
(M)	**Heat/Cool/Auto**	Press to shift among cooling, heating and auto
(fan symbol)	**Fan**	Press to select Silence mode ON/OFF

Note:
- You may set the desired water temperature from 12 to 40℃.
- The (display symbol) on the right shows the inlet water temperature. The (display symbol) on the left shows the outlet water temperature.
- After you turn on the heat pump, the fan will start to run in 3 minutes. In another 30 seconds, the compressor will start to run.

2.2.1   Status on the display

△ Auto Mode   (defrost symbol) Defrost Mode   (heating symbol) Heating Mode   ❄ Cooling Mode
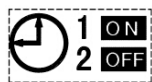
(timer symbol) 1 ON / 2 OFF   Timer ON/OFF

2.2.2.   Time setting

➢ Press (clock symbol) for 5 seconds to enter time setting. 88:88 is flashing on the display

➢ Press (▲) and (▼) to adjust the time (fast adjusting by continuous pressing). Then, press (clock symbol) to confirm and exit.

➢ In the time setting mode, if no operation for 30 seconds, the previous pressing will be lost and exit automatically.

2.2.3.   Timer on and off

➢ Press the (clock symbol) for 10 seconds to enter the timer setting. The "ON" will be flashing to enter the Timer ON setting. Press the (▲) and (▼) to adjust Timer ON time. You can choose Timer on (Display: ON), or Repeat Timer ON (display: 1 ON) by pressing (clock symbol). Then press (fan symbol) to confirm

➢ When the "ON" stops flashing, and "OFF" is flashing, you enter the Timer OFF mode. Press the (▲) and (▼) to adjust Timer OFF time. You can choose Timer OFF (Display: OFF), or Repeat Timer OFF (display: 2 OFF) by pressing (clock symbol). Then press (fan symbol) to confirm

➢ After entering the Time ON/OFF setting, press ⊗ directly without adjusting the time to cancel the relevant Timer setting.

➢ Exit automatically if no operation for 30 seconds in the Timer ON/OFF mode,

2.2.4   Silence mode

➢ The Smart mode as default will be activated when the machine is tuned on. And the display shows ⊿ⅼ.

➢ When machine is on, press "⊗" button to enter the Silence mode. ⊿ will be light. Press "⊗" again to exit.

2.2.5. Compulsory defrost

➢ When the machine is on heating and the compressor is working continuously for 10 minutes, press both "⊗" and "▽" buttons for 5 seconds to start compulsory defrost. (Note: the break between compulsory defrost needs to be more than 30 minutes.)

➢ The symbol of defrost is twinkling when machine is compulsory or auto defrost.

➢ The period and ending of compulsory defrost is the same as auto defrost.

2.3. Daily maintenance and winterizing

2.3.1. Daily Maintenance

⚠ **Please don't forget to cut off power supply of the heat pump**

➢ Please clean the evaporator with household detergents or clean water, NEVER use gasoline, thinners or any similar fuel.

➢ Check bolts, cables and connections regularly.

2.3.2. Winterizing

In winter season when you don't swim, please cut off power supply and drain water out of the heat pump. When using the heat pump under 2℃, make sure there is always water flow.

⚠**Important:**

Unscrew the water union of inlet pipe to let the water flow out.

When the water in machine freezes in winter season, the titanium heat exchanger may be damaged.
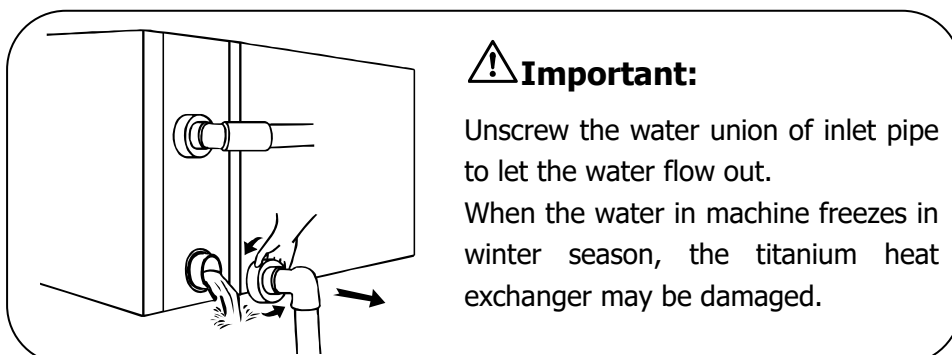
3. TECHNICAL SPECIFICATION

Model	Summerwave 80Fi	Summerwave 100Fi	Summerwave 135Fi	Summerwave 150Fi	Summerwave 175Fi	Summerwave 210Fi	Summerwave 270Fi	Summerwave 270Fi	Summerwave 350Fi
Advised pool volume (m³)	20~40	25~45	30~55	35~65	40~75	50~95	65~120	65~120	90~160
Working air temp (°C)	-7~43								
Performance Condition: Air 26°C, Water 26°C, Humidity 80%									
Heating capacity (kW)	8.4	10.3	12.8	15.0	17.3	20.4	27.3	27.0	35.6
C.O.P	14.1~7.0	14.5~6.9	15.0~7.4	15.5~6.7	14.8~5.9	14.5~5.7	14.6~6.2	14.5~6.2	14.6~5.5
C.O.P at 50% capacity	10.3	10.4	11.0	10.9	10.5	10.2	10.8	10.8	10.3
Performance Condition: Air 15°C, Water 26°C, Humidity 70%									
Heating capacity (kW)	6.1	7.1	8.9	10.5	11.4	14.0	18.0	18.0	24.0
C.O.P	7.0~4.8	7.3~4.6	7.7~4.8	7.8~4.6	7.5~4.3	7.4~4.2	7.8~4.6	7.6~4.5	7.7~4.5
C.O.P at 50% capacity	6.3	6.4	6.8	6.6	6.1	6.1	6.5	6.5	6.8
Performance Condition: Air 35°C, Water 26°C, Humidity 80%									
Cooling capacity (kW)	4.0	4.5	5.5	6.8	7.7	9.8	12.1	12.1	16.4
Rated input power(kW) at air 15°C	0.17~1.2	0.19~1.5	0.22~1.73	0.27~2.2	0.3~2.6	0.38~3.3	0.57~3.8	0.53~3.9	0.62~5.2
Rated input current(A) at air 15°C	0.74~5.2	0.83~6.5	0.96~7.52	1.17~9.6	1.3~11.3	1.65~14.3	2.48~16.5	0.76~5.6	0.89~7.4
Power supply	230V/1 Ph/50Hz							400V/3 Ph/50Hz	
Advised water flux (m³/h)	2~4	3~4	4~6	5~7	6.5~8.5	8~10	10~12	10~12	12~18
Sound pressure 1m dB(A)	38.8~48.2	38.6~49.9	42.1~50.7	41.3~54.0	43.1~53.8	40.9~54.2	43.5~54.9	43.5~54.9	42.6~54.7
Sound pressure 10m dB(A)	18.8~28.2	18.6~29.9	22.1~30.7	21.3~34.0	23.1~33.8	20.9~34.2	23.5~34.9	23.5~34.9	22.6~34.7
Water pipe in-out Spec (mm)	48.3								
Net Dimension LxWxH (mm)	961×340× 658	961×340× 658	961×340× 658	961×340× 658	961×420× 658	961×420× 758	1092×420× 958	1092×420× 958	1161×530× 958
Net Weight (kg)	45	49	50	52	63	68	90	93	117

- *The values indicated are valid under ideal conditions: Pool covered with an isothermal cover, filtration system running at least 15 hours a day.*
- *Related parameters are subject to adjustment periodically for technical improvement without further notice. For details please refer to nameplate.*

1. TRANSPORTATION

1.1. When storing or moving the heat pump, the heat pump should be at the upright position.
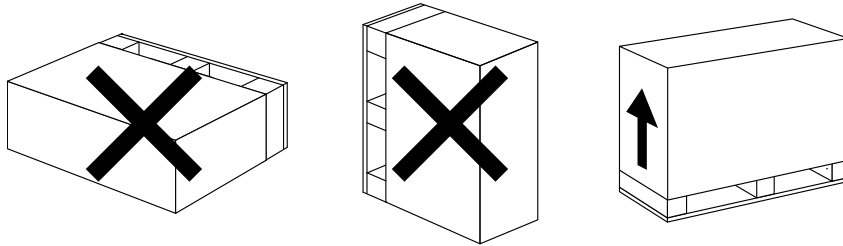
1.2. When moving the heat pump, do not lift the water union since the titanium heat exchanger inside the heat pump will be damaged.
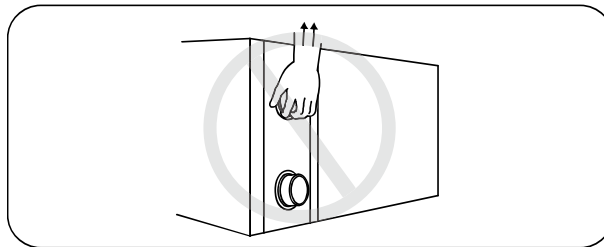
2. INSTALLATION AND MAINTENANCE

⚠️ **The heat pump must be installed by a professional team. The users are not qualified to install by themselves, otherwise the heat pump might be damaged and risky for users' safety.**

2.1. Notice before installation：

2.1.1. The inlet and outlet water unions **can't** bear the weight of soft pipes. The heat pump must be connected with hard pipes!
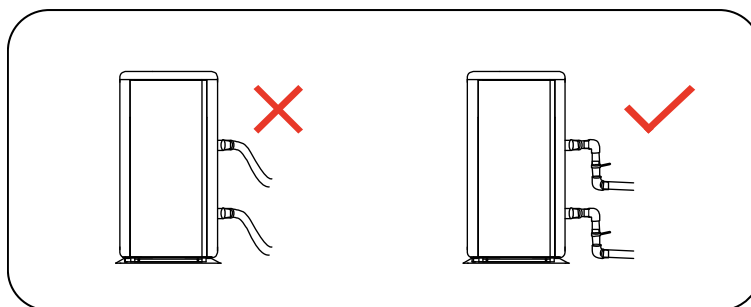
2.1.2. In order to guarantee the heating efficiency, the water pipe length should be ≤10m between the pool and the heat pump.

2.2. Installation instruction

2.2.1. Location and size

⚠️ **The heat pump should be installed in a place with good ventilation**

* MINIMUM DISTANCE
❶ **Filter**
❷ **Water switch**
❸ **Water processor**
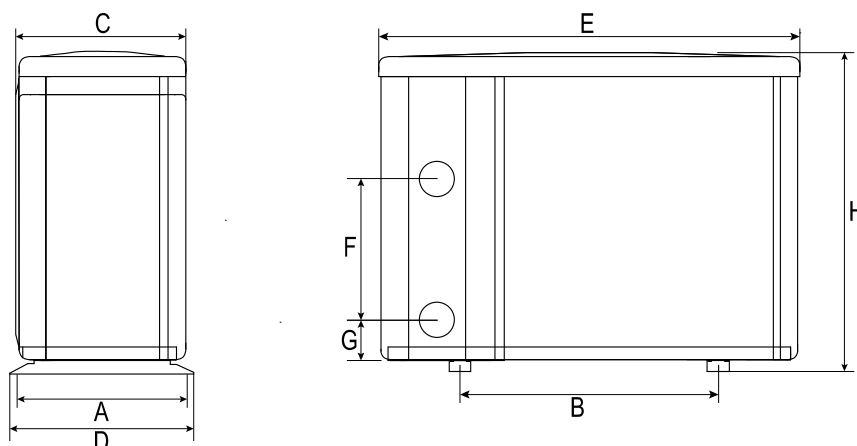
UNIT=MM	A	B	C	D	E	F	G	H
Summerwave 80Fi	315	590	312	340	961	250	74	658
Summerwave 100Fi	315	590	312	340	961	290	74	658
Summerwave 135Fi	315	590	312	340	961	280	74	658
Summerwave 150Fi	315	590	312	340	961	340	74	658
Summerwave 175Fi	395	590	392	420	961	390	74	658
Summerwave 210Fi	395	590	392	420	961	460	74	758
Summerwave 270Fi	395	720	392	420	1092	620	74	958
Summerwave 270Fi	395	720	392	420	1092	620	74	958
Summerwave 350Fi	505	790	496	530	1161	650	74	958

(MODEL)

※ *Above data is subject to modification without notice.*

2.2.2.   Heat pump installation.
➢ The frame must be fixed by bolts **(M10)** to concrete foundation or brackets. The concrete foundation must be solid; the bracket must be strong enough and anti-rust treated;
➢ The heat pump needs a water pump **(Supplied by the user)**. The recommended pump specification-flux: refer to Technical Parameter, Max. lift **≥10m**
➢ When the heat pump is running, there will be condensation water discharged from the bottom, please pay attention to it. Please insert the drainage tube(accessory) into the hole and clip it well, then connect a pipe to drain off the condensation water.

2.2.3.   Wiring & protecting devices and cable specification
➢ Connect to appropriate power supply, the voltage should comply with the rated voltage of the products.
➢ Well earth the heat pump.
➢ Wiring must be connected by a professional technician according to the circuit diagram.
➢ Set breaker or fuse according to the local code (leakage operating current **≤ 30mA**).
➢ The layout of power cable and signal cable should be orderly and not affecting each other.

⚠ 1. Wiring diagram

A. For power supply:　230V　50Hz
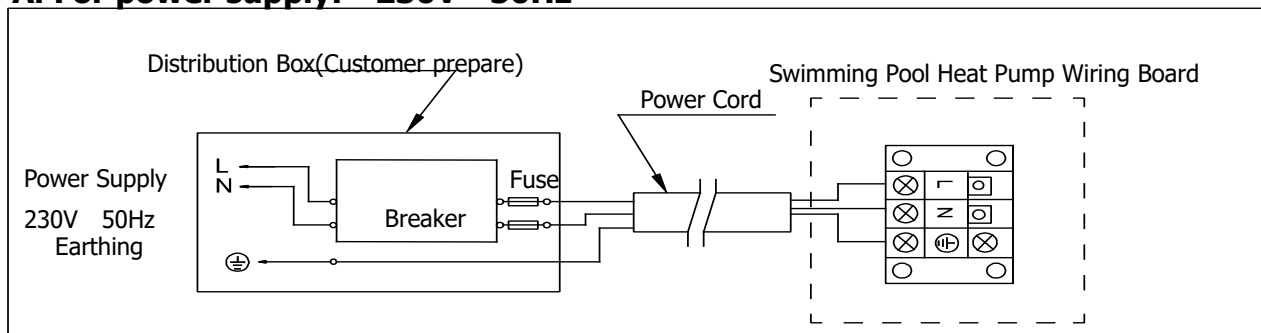
B. For power supply: 400V　50Hz
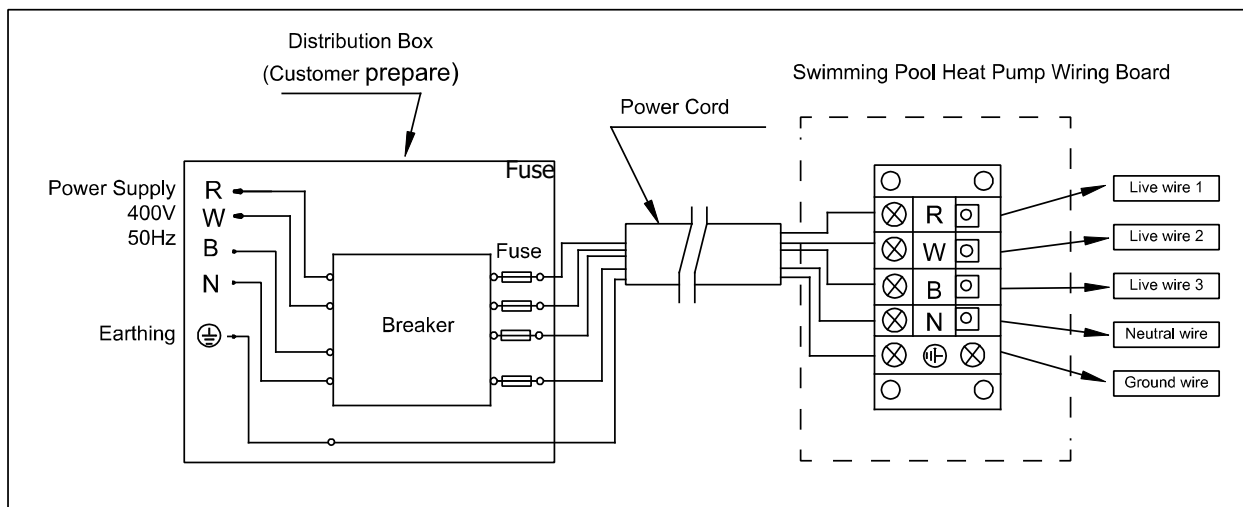
NOTE:

⚠ Must be hard wired, no plug allowed (In Australia, Summerwave 80Fi~ Summerwave 135Fi has plug for optional).

- For your safe use in winter, it's strongly recommended to equip heating priority function.
- For the detailed wiring diagram, please refer to Appendix 1.

2. Options for protecting devices and cable specification

MODEL		Summerwave 80Fi	Summerwave 100Fi	Summerwave 135Fi	Summerwave 150Fi	Summerwave 175Fi	Summerwave 210Fi	Summerwave 270Fi	Summerwave 270Fi	Summerwave 350Fi
Breaker	Rated Current A	10.5	12.0	14.5	16.5	18.0	21.0	24.0	9.0	12.0
	Rated Residual Action Current mA	30	30	30	30	30	30	30	30	30
Fuse　　A		10.5	12.0	14.5	16.5	18.0	21.0	24.0	9.0	12.0
Power Cord（mm²）		3×2.5	3×2.5	3×2.5	3×2.5	3×4	3×4	3×6	5x2.5	5x2.5
Signal cable（mm²）		3×0.5	3×0.5	3×0.5	3×0.5	3×0.5	3×0.5	3×0.5	3×0.5	3×0.5

NOTE: The above data is adapted to power cord ≤ 10m. If power cord is ＞10m, wire diameter must be increased. The signal cable can be extended to 50m at most.

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2.3. Trial after installation

⚠ **Please check all the wirings carefully before turning on the heat pump.**

2.3.1．Inspection before use
➢ Check installation of the whole heat pump and the pipe connections according to the pipe connecting drawing;
➢ Check the electric wiring according to the electrical wiring diagram and earthing connection;
➢ Make sure that the main power is well connected;
➢ Check if there is any obstacle in front of the air inlet and outlet of the heat pump

2.3.2．Trial
➢ The user is advised to start the water pump before the heat pump, and turn off the heat pump before the water pump for long life circle.
➢ The user should start the water pump, and check for any leakage of water; Power on and press the ON/OFF button of the heat pump, and set desired temperature in the thermostat.
➢ In order to protect the heat pump, the heat pump is equipped with start delay function. When starting the heat pump, the fan will start to run in 3 minutes, in another 30 seconds, the compressor will start to run.
➢ After pool heat pump starts up, check for any abnormal noise from the heat pump.
➢ Check the temperature setting.

2.4. Maintenance and winterizing

2.4.1 Maintenance

⚠ **The maintenance should be carried out once per year by qualified professional technician.**

➢ Cut off power supply of the heat pump before cleaning, examination and repairing . Do not touch the electronic components until the LED indication lights on PCB turn off.

➢ Please clean the evaporator with household detergents or clean water, NEVER use gasoline, thinners or any similar fuel.
➢ Check bolts, cables and connections regularly.
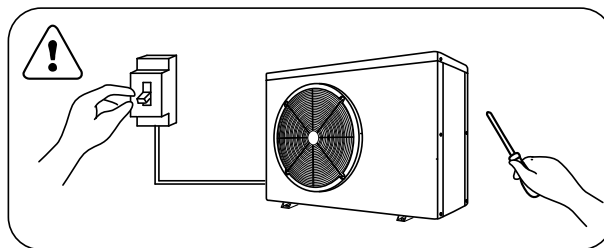
2.4.2 Winterizing

In winter season when you don't swim, please cut off power supply and drain water out of the heat pump. When using the heat pump under 2°C, make sure there is always water flow.

⚠️**Important:**

Unscrew the water union of inlet pipe to let the water flow out.

When the water in machine freezes in winter season, the titanium heat exchanger may be damaged.

3. TROUBLE SHOOTING FOR COMMON FAULTS

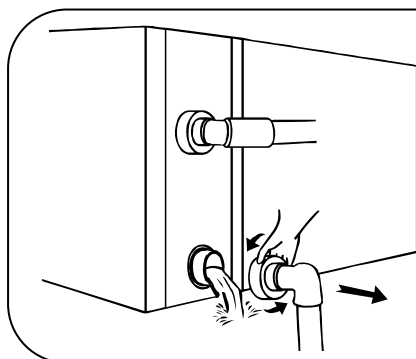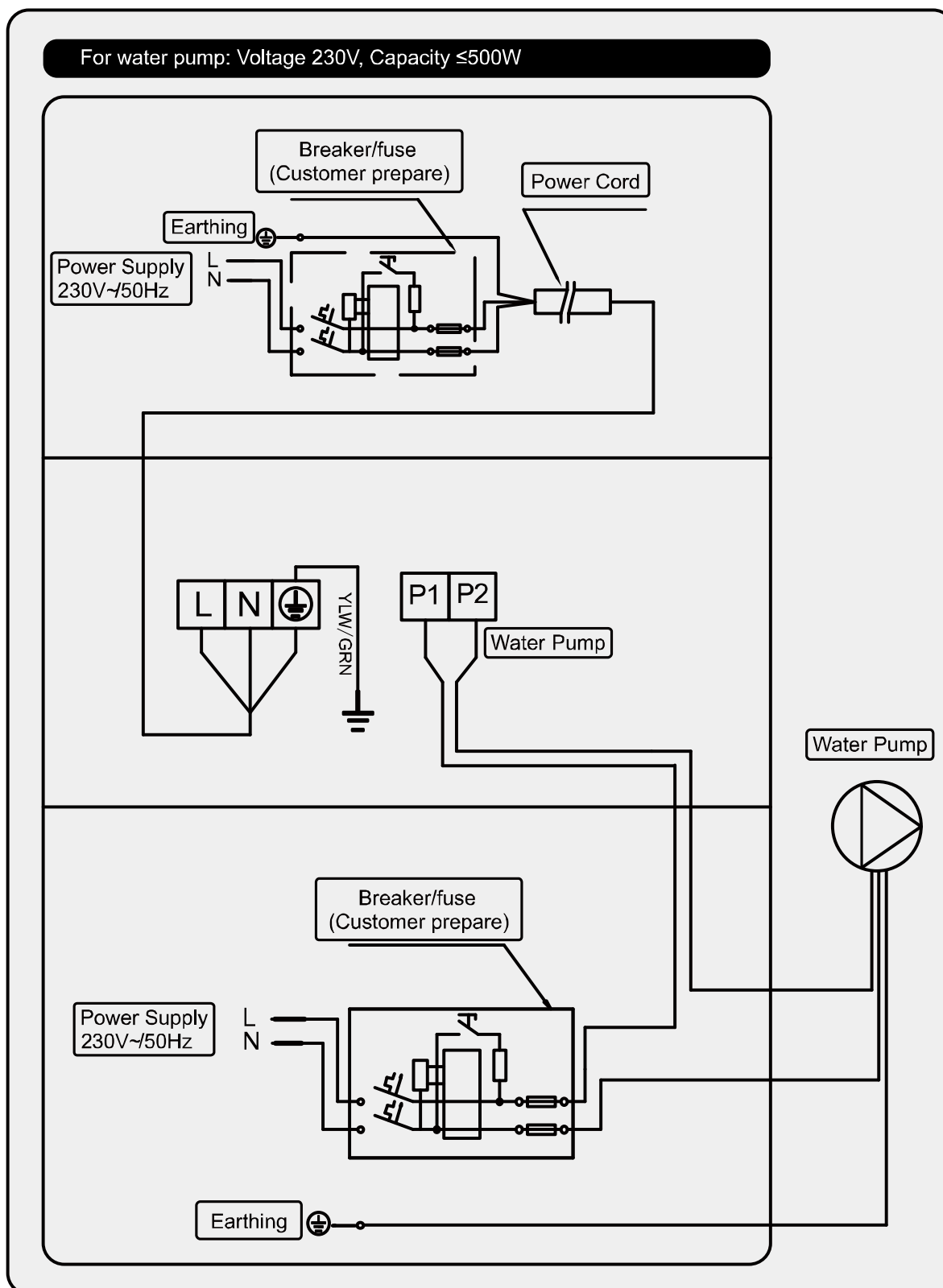| FAILURE	REASON	SOLUTION
Heat pump doesn't run	No power	Wait until the power recovers
	Power switch is off	Switch on the power
	Fuse burned	Check and change the fuse
	The breaker is off	Check and turn on the breaker
Fan running but with insufficient heating	evaporator blocked	Remove the obstacles
	Air outlet blocked	Remove the obstacles
	3 minutes start delay	Wait patiently
Display normal, but no heating	Set temp. too low	Set proper heating temp.
	3 minutes start delay	Wait patiently
If above solutions don't work, please contact your installer with detailed information and your model number. Don't try to repair it yourself.		

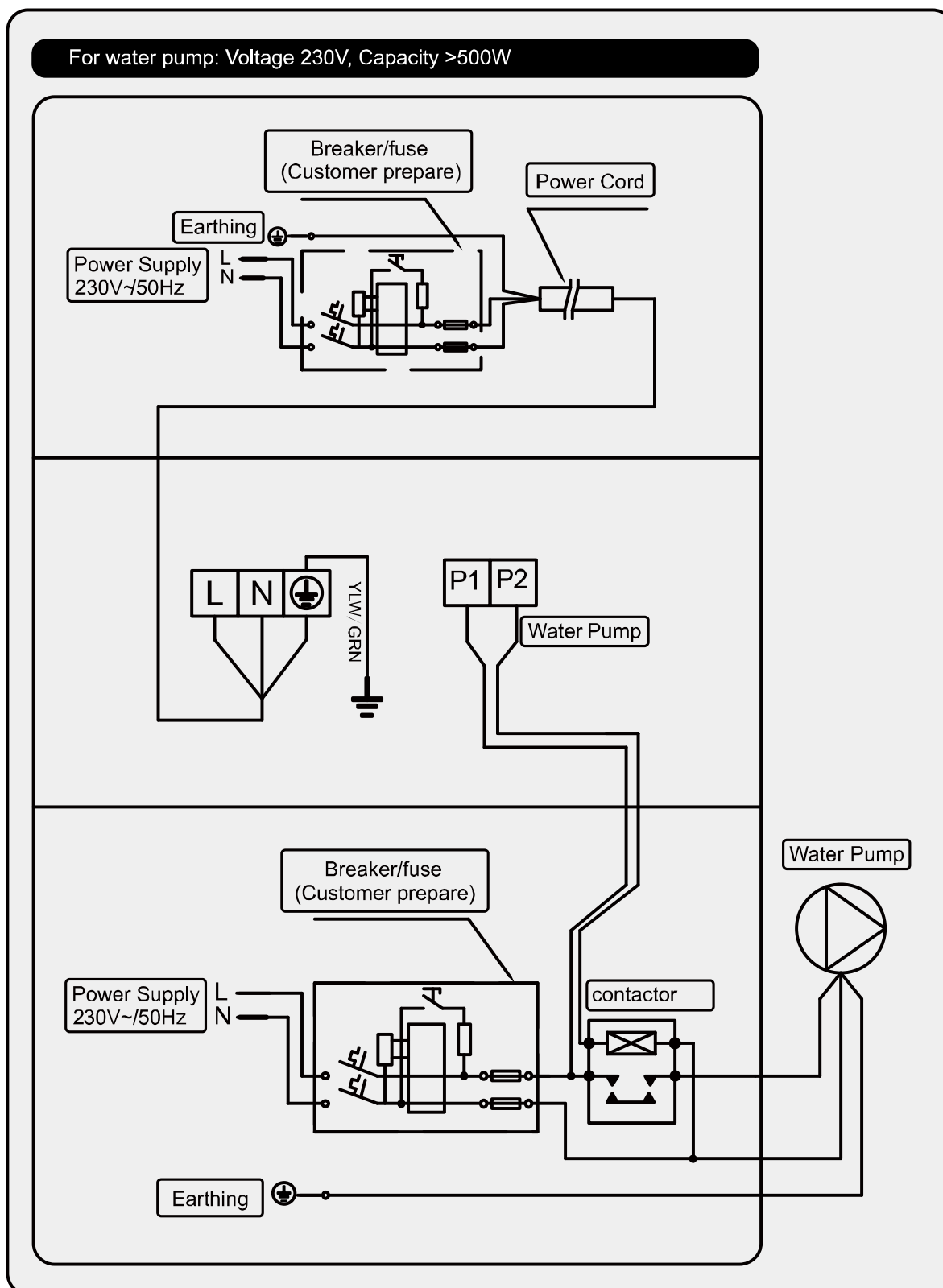**ATTENTION！Please don't try to repair the heat pump by yourself to avoid any risk.**

4. FAILURE CODE

NO.	DISPLAY	NOT FAILURE DESCRIPTION
1	E3	No water protection
2	E5	Power supply excesses operation range
3	E6	Excessive temp difference between inlet and outlet water(Insufficient water flow protection)
4	Eb	Ambient temperature too high or too low protection
5	Ed	Anti-freezing reminder

NO.	DISPLAY	FAILURE DESCRIPTION
1	E1	High pressure protection
2	E2	Low pressure protection
3	E4	3 phase sequence protection (three phase only)
4	E7	Water outlet temp too high or too low protection
5	E8	High exhaust temp protection
6	EA	Evaporator overheat protection (only at cooling mode)
7	P0	Controller communication failure
8	P1	Water inlet temp sensor failure
9	P2	Water outlet temp sensor failure
10	P3	Gas exhaust temp sensor failure
11	P4	Evaporator coil pipe temp sensor failure
12	P5	Gas return temp sensor failure
13	P6	Cooling coil pipe temp sensor failure
14	P7	Ambient temp sensor failure
15	P8	Cooling plate sensor failure
16	P9	Current sensor failure
17	PA	Restart memory failure
18	F1	Compressor drive module failure
19	F2	PFC module failure
20	F3	Compressor start failure
21	F4	Compressor running failure
22	F5	Inverter board over current protection
23	F6	Inverter board overheat protection
24	F7	Current protection
25	F8	Cooling plate overheat protection
26	F9	Fan motor failure
27	Fb	Power filter plate No-power protection
28	FA	PFC module over current protection

APPENDIX 1: HEATING PRIORITY WIRING DIAGRAM (OPTIONAL)

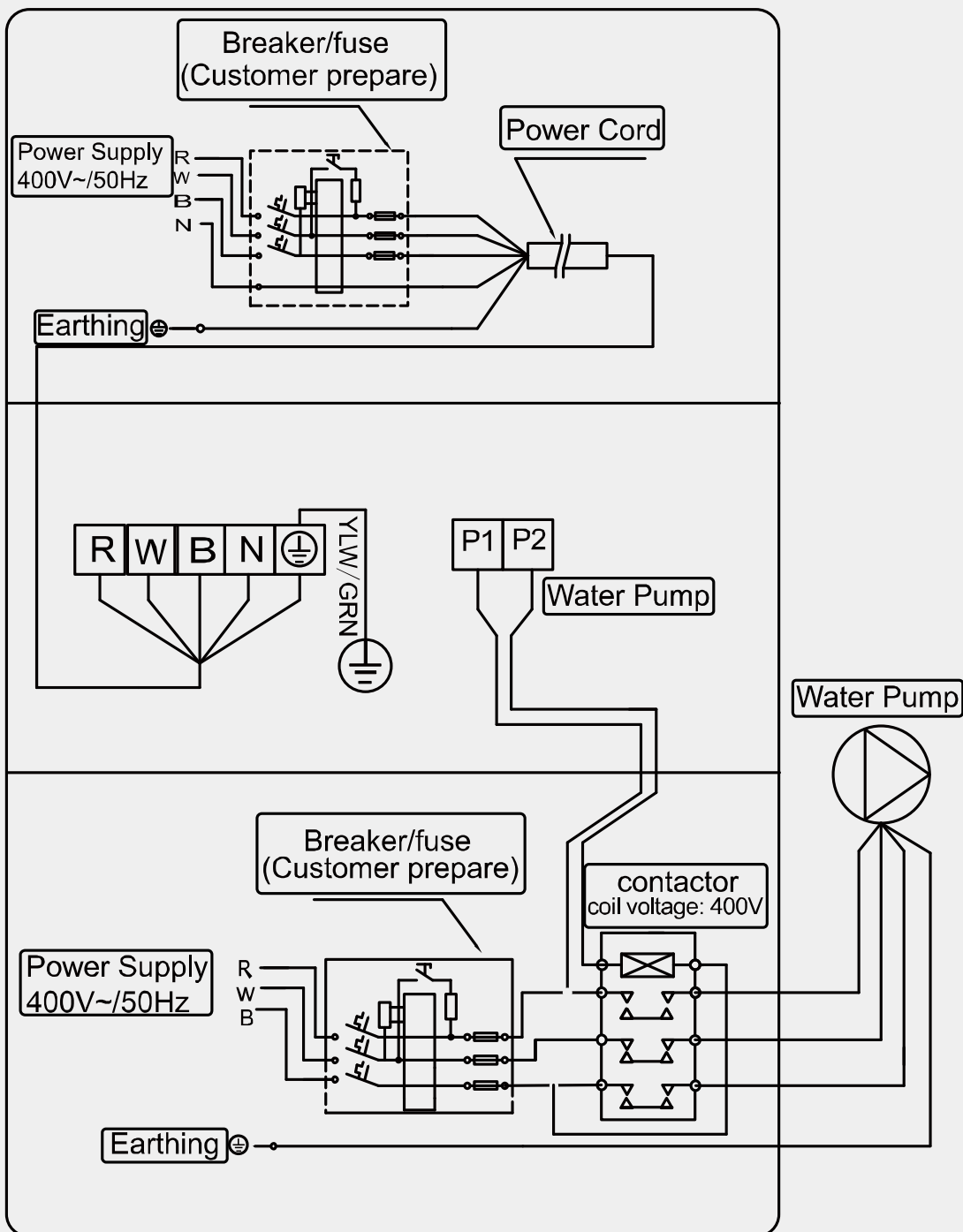For water pump: Voltage 230V, Capacity ≤500W

Breaker/fuse (Customer prepare)

Power Cord

Earthing

Power Supply 230V~/50Hz

L
N

L N ⏚   YLW/GRN

P1 P2

Water Pump

Water Pump

Breaker/fuse (Customer prepare)

Power Supply 230V~/50Hz

L
N

Earthing

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APPENDIX 2: HEATING PRIORITY WIRING DIAGRAM (OPTIONAL)

For water pump: Voltage 230V, Capacity >500W

Breaker/fuse
(Customer prepare)

Power Cord

Earthing

Power Supply
230V~/50Hz
L
N

L N

YLW/ GRN

P1 P2

Water Pump

Breaker/fuse
(Customer prepare)

Water Pump

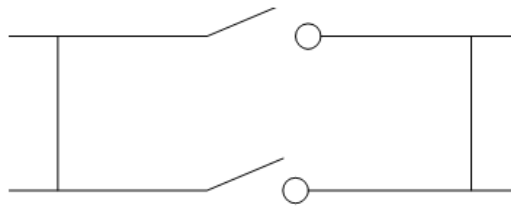Power Supply
230V~/50Hz
L
N

contactor

Earthing

18

APPENDIX 3: HEATING PRIORITY WIRING DIAGRAM (OPTIONAL)

For water pump:Voltage 400V

Parallel connection with filtration clock

A: Water pump timer

B: Water pump wiring of Heat Pump

Note: The installer should connect A parallel with B (as above picture). To start the water pump, condition A or B is connected. To stop the water pump, both A and B should be disconnected.

Thank you for choosing Full-inverter Pool heat pump