

INVERTER SWIMMING POOL HEAT PUMP



USER MANUAL



Read the instructions

VERZE 8. 6. 2017 / REVIZE: 10. 1. 2019

Illustrative photo

Regulation (EU) n° 517/2014 of 16/04/14 on fluorinated greenhouse gases and repealing
Regulation (EC) n° 842/2006

Thank you to choose the Inverter swimming pool heat pump for your pool heating, it will heat your pool water and keep the constant temperature when ambient temperature at 10°C to 35°C.

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ATTENTION: This manual includes all the necessary information with the use and installation of your heat pump .

1. The installer must read the manual and attentively follow the instruction in implementation and maintenance.
2. The installer is responsible for the installation of the product and should follow all the instructions of the errors due to the installation that disobey the manual guideline. Any use that is without conformity at the origin of its manufacturing will be regarded as dangerous.

WARNING : Please always empty the water in the heat pump during winter time or when the ambient temperature drops below 0°C, or else the Titanium exchanger will be damaged because of being frozen ,in such case ,your warranty will be lost.

WARNING : Please always cut the power supply if you want to open the cabinet to reach inside the heat pump, because there is high voltage electricity inside.

WARNING : Please well keep the display controller in a dry area ,or well close the insulation cover to protect the display controller from being damaged by humidity.

1. Specification

Model		XHPFD 80 E	XHPFD 100 E	XHPFD 140 E
* Performance at Air 27°C, Water 27°C, Humidity 80%				
Heating (Max./Std./Min.)	kW	-	10-2,3	-
Power consumption (Std.)	kW	-	1,52-0,18	-
C.O.P. (Std.)		-	13-6,6	-
* Performance at Air 15°C, Water 26°C, Humidity 70%				
Heating (Max./Std./Min.)	kW	-	7,1-1,9	-
Power consumption (Std.)	kW	-	1,4-0,25	-
C.O.P. (Std.)		-	7,5-5,1	-
When water flows	m ³ /h	-	3,00	-
Voltage		220 ~ 240 V/50 Hz/1 PH		
Std. Current Input	A	3,7	4,6	5,4
Maximum Current	A	-	6,65	-
Minimum fuse	A	18	18	18
Water in-out connection	mm	50		
Fan quantity		1		
Ventilation type		Horizontal		
Compressor brand		GMCC	GMCC	GMCC
Compressor type		DC inverter Rotary		
Noise level at 1m	dB(A)	40-52	40-52	40-52
Coolant (R410a)	kg	1,05	1,05	1,05
GWP		2088	2088	2088
CO2 Ekvivalent - tun			2,19	
Net dimension	mm	1045 x 415 x 695		1045 x 415 x 695
Net weight	kg	65	65	78
Packing dimension	mm	1140 x 430 x 745		1140 x 430 x 745
Gross weight	kg	70	77	83

* Above data may be modified without notice.

* Obsahuje fluorované skleníkové plyny

Model		XHPFD 160 E	XHPFD 210 E	XHPFD 260 E
* Performance at Air 27°C, Water 27°C, Humidity 80%				
Heating (Max./Std./Min.)	kW	17-3,8	-	-
Power consumption (Std.)	kW	2,54-0,29	-	-
C.O.P. (Std.)		13-6,7	-	-
* Performance at Air 15°C, Water 26°C, Humidity 70%				
Heating (Max./Std./Min.)	kW	11,5-3	-	-
Power consumption (Std.)	kW	2,2-0,37	-	-
C.O.P. (Std.)		8,2-5,2	-	-
When water flows	m ³ /h	5,00		
Voltage		220 ~ 240 V/50 Hz/1 PH		
Std. Current Input	A	7,2	9	11,9
Maximum Current	A	11,31	25	32
Minimum fuse	A	31		
Water in-out connection	mm	50		
Fan quantity		1		2
Ventilation type		Horizontální		
Compressor brand		MITSUBISHI	MITSUBISHI	PANASONIC
Compressor type		stejnoseměrný, se střídačem, rotační		
Noise level at 1m	dB(A)	41-56	41-56	41-56
Coolant (R410a)	kg	1,7	1,7	1,7
GWP		2088	2088	2088
CO2 Ekvivalent - tun		3,55		
Net dimension	mm	1070 x 410 x 850		
Net weight	kg	95	-	130
Packing dimension	mm	1140 x 430 x 990		1150 x 450 x 1360
Gross weight	kg	110	-	142

* Above data may be modified without notice.

* Obsahuje fluorované skleníkové plyny

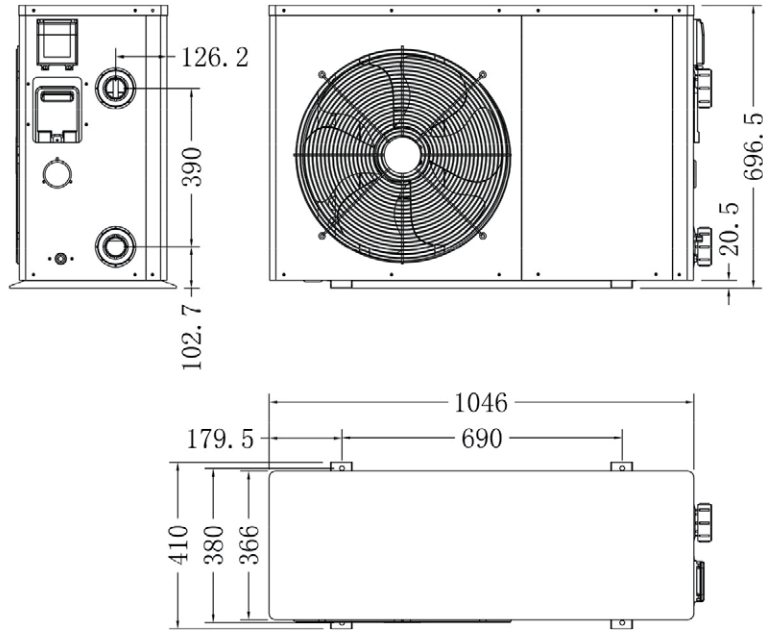
Model		XHPFD 260 EII	XHPFD 350 E	XHPFD 350 EII
* Performance at Air 27°C, Water 27°C, Humidity 80%				
Heating (Max./Std./Min.)	kW	26-13	33-16,5	33-6,5
Power consumption (Std.)	kW	2,56	3,26	3,26
C.O.P. (Std.)		7,6	7,6	7,6
* Performance at Air 15°C, Water 26°C, Humidity 70%				
Heating (Max./Std./Min.)	kW	20-10	25-12,5	25-12,5
Power consumption (Std.)	kW	2,67	3,34	3,34
C.O.P. (Std.)		5,6	5,6	5,6
When water flows	m ³ /h			
Voltage		380 V/50 Hz/3 PH	220 ~ 240 V/50 Hz/1 PH	380 V/50 Hz/3 PH
Std. Current Input	A	5,1	14,9	6,4
Maximum Current	A	15	40	18
Minimum fuse	A			
Water in-out connection	mm	50		
Fan quantity		2		
Ventilation type		Horizontální		
Compressor brand		PANASONIC		
Compressor type		stejnoseměrný, se střídačem, rotační		
Noise level at 1m	dB(A)	52	52	52
Coolant (R410a)	kg			
GWP				
CO2 Ekvivalent - tun				
Net dimension	mm	1050 x 430 x 1215		
Net weight	kg	130	145	145
Packing dimension	mm	1150 x 450 x 1360		
Gross weight	kg	142	157	157

* Above data may be modified without notice.

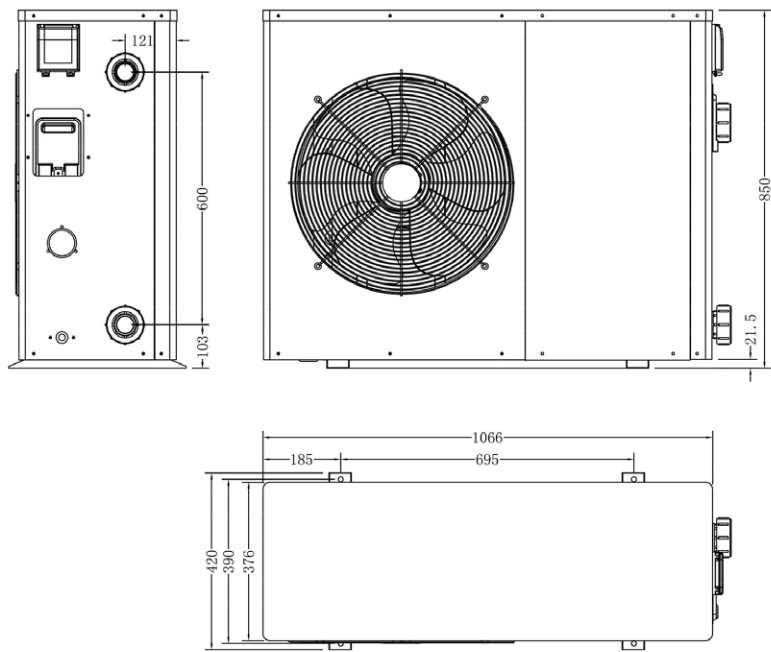
* Obsahuje fluorované skleníkové plyny

2. Dimension

XHPFD 100 E



XHPFD 160 E

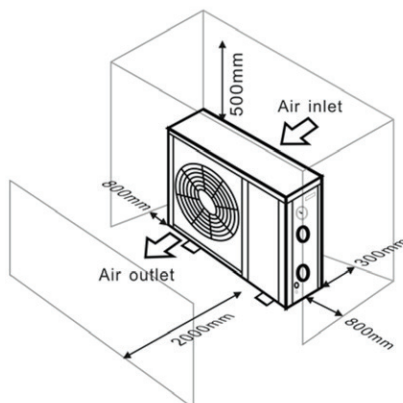


3. Installation

- (1) The heat pump unit must be installed by professional technicians .otherwise unit may be damaged or body injured, even dead
- (2) The unit is designed for outdoor location with good ventilation. Recirculation of cold discharge air back into evaporator coil will greatly reduce heating capacity and efficiency of the unit, which will void the compressor warranty.
- (3) The unit can be installed almost anywhere in the outdoors. To get a good performance, it needs to meet the three factors :
 - a) Good ventilation
 - b) Stable and reliable power supply
 - c) Recycled water system

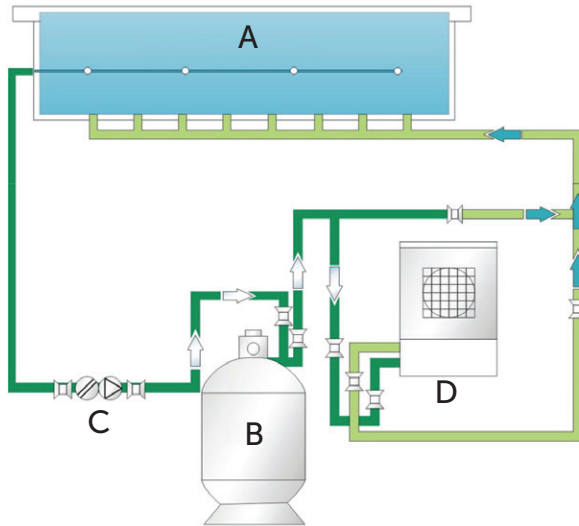
The difference from gas water heater, it should not bring environmental pollution or have the installing problems in-windy areas.

- (4) The unit should not be installed in a limited air ventilation area ,or placed in a bush where it will block the air inlet .
These location deny the unit of a continuous source of fresh air .When seasons changing, it may stick leaves on the evaporator coil , thereby reducing its efficiency and impact of its service life .
- (5) For indoor installation, please consult more instruction from technicians.
- (6) When install a bypass, it should be not exceed 30% of nominal flow rate.
- (7) Must make Water level higher than the circulation pump location.
- (8) Below picture show the minimum required distance on each side of pool heat pump unit.
- (9) Typically, the pool heat pump unit should be installed aside the pools, less than 7.5 meters distance.
- (10) To get the best heat exchange of heat pump unit, it should be matched the normal rate of water flow recommended in specification sheet.
- (11) It is required to increase the discharge pipe to prevent freezing in cold season, to put T fitting and ball valve to facilitate changing the water in winter or emptying the water out of system to prevent freezing when HP stop operating at the ambient temperature below zero ,otherwise the unit may be damaged .
- (12) It is suggested to install the quick adapter in front of water in-out connection, which could discharge water easily to prevent water freezing, and be convenient for maintenance and service.
- (13) When unit running ,there will be some condensation water discharged from the bottom, please hold the drainage nozzle (accessory) into the hole and clip well ,and then connect a pipe to drain the condensation water out.



(14) If water pressure is over 10 KPA, or water flow rate is more than 11 cubic meters through heat exchanger, it is necessary to install the by-pass pipe in water system.

(15) Installation illustration



- A Swimming pool
- B Filter
- C Pump
- D Heat pump

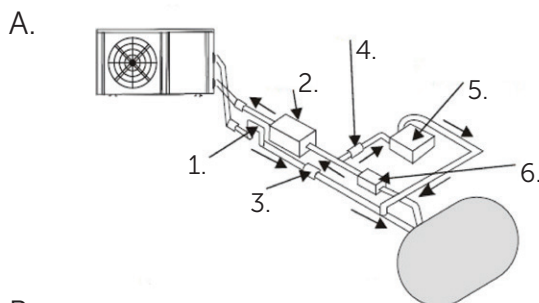
NOTE: The factory only provides the heat pump unit. The other items in the illustration are necessary spare parts for the water system which are provided by users or installers.

ATTENTION: Please follow these steps when operating the first time :

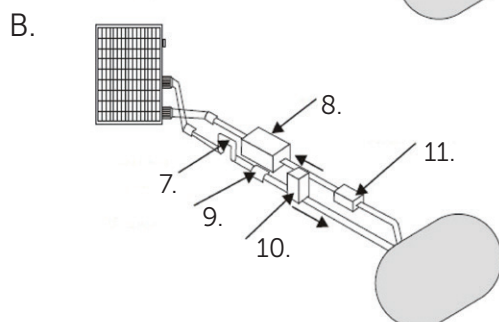
1. Open the derivation valves for charge water and close the valve (direct)
2. Make sure that the pump and the water-in pipe have been filled with water
3. Start the unit

(16) The location of chemical's instruction to your system is also critical to the heater's life. If an automatic chlorinator or brominates is used, it must be located downstream of the heater.

A trap must be installed between the chlorinator and the heater to prevent chlorine return into the heat pump. (See below pictures)

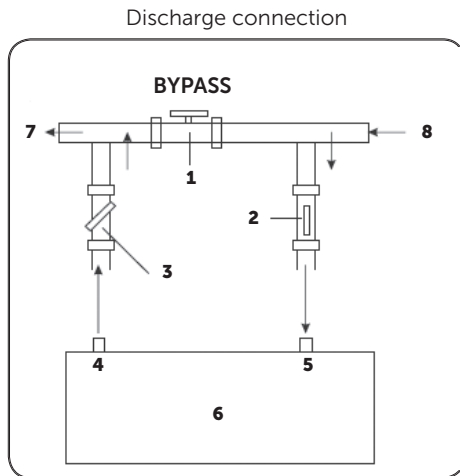


- A. Bypass connection
- 1. Sump
- 2. Filter
- 3. Return valve
- 4. Return valve
- 5. Water treatment
- 6. Pump



- B. Series connection (in-line)
- 7. Sump
- 8. Filter
- 9. Return valve
- 10. Water treatment
- 11. Pump

4. Adjusting the bypass



1. Valve 1
2. Valve 2
3. Valve 3
4. Outside
5. Inside
6. Pump
7. To swimming pool
8. From the filter

Use the following procedure to adjust the bypass:

- fully open all three valves
- slowly close valve 1 until the water pressure is increased by approximately 100 to 200 g
- Close valve 3 approximately half-way to adjust the gas pressure in the cooling system
- If the display shows „ON“ or error code EE3, close step by step the valve 2, to increase water flow and stop when the code disappear.

Optimal operation of the heat pump occurs when the cooling gas pressure is 22 ± 2 bar.

This pressure can be read on the pressure gauge next to the control heat pump panel. Under these conditions the water flow through the unit is also optimal.

Note: Operation without a bypass or with improper bypass adjustment may result in sub-optimal heat pump operation and possibly damage to the heat pump, which renders the warranty null and void.

5. Initial operation

Note: In order to heat the water in the pool (or hot tub), the filter pump must be running to cause the water to circulate through the heat pump. The heat pump will not start up if the water is not circulating.

After all connections have been made and checked, carry out the following procedure:

1. Switch on the filter pump. Check for leaks and verify that water is flowing from and to the swimming pool.
2. Connect power to the heat pump and press the On/Off button on the electronic control panel. The unit will start up after the time delay expires (see below).
3. After a few minutes, check whether the air blowing out of the unit is cooler.
4. When turn off the filter pump, the unit should also turn off automatically, if not, then adjust the flow switch.
5. Allow the heat pump and the filter pump to run 24 hours a day until the desired water temperature is reached. The heat pump will stop running at this point. After this, it will restart automatically (as long as the filter pump is running) whenever the swimming pool water temperature drops 2 degree below the set temperature.

Depending on the initial temperature of the water in the swimming pool and the air temperature, it may take several days to heat the water to the desired temperature. A good swimming pool cover can dramatically reduce the required length of time.

Water Flow Switch:

It is equipped with a flow switch for protecting the HP unit running with adequate water flow rate .It will turn on when the pool pump runs and shut it off when the pump shuts off. If the pool water level higher than 1 m above or below the heat pump’s automatic adjustment knob, your dealer may need to adjust its initial startup.

Time delay

The heat pump has a built-in 3-minute start-up delay to protect the circuitry and avoid excessive contact wear. The unit will restart automatically after this time delay expires. Even a brief power interruption will trigger this time delay and prevent the unit from restarting immediately. Additional power interruptions during this delay period do not affect the 3-minute duration of the delay.

Condensation

The air drawn into the heat pump is strongly cooled by the operation of the heat pump for heating the pool water, which may cause condensation on the fins of the evaporator. The amount of condensation may be as much as several liters per hour at high relative humidity. This is sometimes mistakenly regarded as a water leak.

Pressure gauge display (R410A)

Examine the pressure gauge which indicates the refrigerant gas pressure of the unit, the below table shows the normal value of the gas pressure (R410A) when the machine is in power off or running conditions.

Unit Condition	Power Off			
Ambient (°C)	-5 ~ 5	5 ~ 15	15 ~ 25	25 ~ 35
Water temp (°C)	/	/	/	/
Pressure gauge (Mpa)	0,68 ~ 0,93	0,93 ~ 1,25	1,25 ~ 1,64	1,64 ~ 2,1

Unit Condition	Running				
Ambient (°C)	/	/	/	/	/
Water temp (°C)	10 ~ 15	15 ~ 20	20 ~ 25	25 ~ 30	30 ~ 35
Pressure gauge (Mpa)	1,3 ~ 1,8	1,5 ~ 1,9	1,6 ~ 2,3	1,9 ~ 2,8	2,1 ~ 3,5

6. Controller Operation



6.1 button

Press  to start the heat pump unit, the LED display shows the desired water temperature for 5 seconds, then shows the inlet water temperature and the operation mode.

Press  to stop the heat pump unit and show "OFF"

During the parameter checking and setting, press the  to quick-exit and save the current setting.

Press  again to turn on/off the machine.

6.2 button

It will be under function only with other button.

6.3 and button

Clock/unlock the display:

Hold  and  for 5 seconds to lock/Unlock the display.

Water temperature setting:

Press  or  to set the water temperature directly.

6.4

Symbol of heating, the light will be on when it is in operation.

When defrosting, the light will flash.

6.5

Symbol of cooling, the light will be on when it is in operation.

6.6

Symbol of automatic stop when it is light.

6.7

Symbol of automatic start when it is light.

6.8 Parameter checking

Press  first, then press  to check the " User parameter from d0 to d11.



Parameter code	Condition	Range	Remarks
d1	IPM mould temperature	0-120 °C	Real testing value
d1	Inlet water temperature	-9-99 °C	
d2	Outlet water temperature	-9-99 °C	
d3	Ambient temperature	-30 °C-70 °C	
d4	Gas return temperature	-30 °C-70 °C	
d5	Pipe temperature	-30 °C-70 °C	
d6	Gas exhaust temperature	0-C5 °C (125 °C)	
d7	Steps of electronic expansion valve	0-99	N*5
d8	Compressor operating frequency Powerful: 65, 70, 75 Hz Smart: 50, 55, 60 Hz Silent: 30, 35, 40, 45 Hz	0-99 Hz	Real testing value
d9	Compressor current	0-30 A	
d10	Current fan speed	0-1200(RPM)	Real testing value
d11	Error code for last time	All error code	

6.9 Press **M** first, then press **▼** to check/adjust the " User parameter from P1 to P7

Parameter code	Condition	Range	Default	Remarks
P1	Working mode	0-1	1	1 Heating mode, 0 cooling mode
P2	Timer on/off	0-1	0	1 Timer on/off is under function, 0 Timer on/off is out of function (The setting of P4 and P5 won't work)
P3	Water pump	0-1	0	1 Always running, 0 Depends on the running of compressor
P4	Current time	HH:MM	00:00	0-23:0-59
P5	Timer on	HH:MM	00:00	0-23:0-59
P6	Timer off	HH:MM	00:00	0-23:0-59
P7	Inlet water temp. correction	-9~9	0	Default setting: 0

ATTENTION:

If the current time is in the range of time OFF, the heat pump will be turn OFF automatically after setting the time of automatic start and the time of automatic stop. Whereas the heat pump will operate normally.

6.10 Powerful

Press this button, the light will be flash, the heat pump will operate in 'Full output' only.

6.11 Smart

While you choose the Smart, the heat pump will just operate in 'Medium output' and 'Full output'.

When in 'Medium output', the light of Smart will flash.

When in 'Full output', the lamp of Smart is lighting, the lamp of Powerful will be flash.



6.12 Silent

While you choose the Silent , the heat pump will just operate in 'Medium output' and 'Small output'.

When in 'Small output', the light of Silent will flash.

When in 'Medium output', the lamp of Silent is lighting, the lamp of Smart will be flash.

6.13 System reset function

Press  and  in 10s, the system will reset and display "0000" on the controller.

7. Operation logic

7.1 The heating operation logic

Working status	Working mode	Water in temperature	Heat pump working level
1-8 Start-up of heat pump	Smart	$\leq \text{setT} - 1$	Powerful
		$\text{setT} - 1 < a < \text{setT} + 1$	Smart
		$\geq \text{setT} + 1$	Standby
	Silent	$\leq \text{setT} - 1$	Smart
		$\text{setT} - 1 < a < \text{setT} + 1$	Silent
		$\geq \text{setT} + 1$	Standby
	Powerful	$< \text{setT} + 1$	Powerful
		$\geq \text{setT} + 1$	Standby
9-15 Re-start to heat water in standby status	Smart	$> \text{setT} - 1$	Standby
		$\text{setT} - 3 < a \leq \text{setT} - 1$	Smart
		$\leq \text{setT} - 3$	Powerful
	Silent	$> \text{setT} - 1$	Standby
		$\text{setT} - 3 < a \leq \text{setT} - 1$	Silent
		$\leq \text{setT} - 3$	Smart
		$\leq \text{setT} - 1$	Powerful

7.2 The Cooling operation logic

Working status	Working mode	Water in temperature	Heat pump working level
1-8 Start-up of heat pump	Smart	$\leq \text{setT} - 1$	Standby
		$\text{setT} - 1 < a < \text{setT} + 1$	Smart
		$\geq \text{setT} + 1$	Powerful
	Silent	$\leq \text{setT} - 1$	Standby
		$\text{setT} - 1 < a < \text{setT} + 1$	Silent
		$\geq \text{setT} + 1$	Smart
	Powerful	$> \text{setT} + 1$	Powerful
		$\leq \text{setT} + 1$	Standby
9-14 Re-start to cool water in standby status	Smart	$\geq \text{setT} + 1$ a < $\text{setT} + 3$	Smart
		$\geq \text{setT} + 3$	Powerful
	Silent	$\geq \text{setT} + 1$ a < $\text{setT} + 3$	Smart
		$\geq \text{setT} + 3$	Powerful
	Powerful	$\geq \text{setT} + 1$	Powerful
			Standby

NOTE :

setT = Setting water temperature
 setT-1 = less 1°C than Setting temperature
 setT+1= more 1°C than Setting temperature

NOTE:

① Water temperature rise ② Water temperature drop

7.3 The operating logistic of shift between Silent, Smart and Powerful mode: the default setting in factory is in Smart operating mode.

*If you choose the **Silent**, the heat pump will just operate at **silent and smart mode**.
 If you choose the **Smart mode**, the heat pump will just operate at **Smart and Powerful mode**.
 If you choose the **Powerful mode**, the heat pump will just operate at **powerful mode**.*

8. Malfunction and Trouble shooting

8.1 Error code display on LED wire controller

Faults	Remark	Reason	Solution
Sensor error inlet water temperature	PP01	The sensor is open or short circuited	Check or replace the sensor
Sensor error outlet water temperature	PP02	The sensor is open or short circuited	Check or replace the sensor
Sensor error heating condenser	PP03	The sensor is open or short circuited	Check or replace the sensor
Sensor error gas return	PP04	The sensor is open or short circuited	Check or replace the sensor
Sensor error ambient temperature	PP05	The sensor is open or short circuited	Check or replace the sensor
Sensor error gas at the condenser output	PP06	The sensor is open or short circuited	Check or replace the sensor
Frost protection in winter	PP07	Ambient temperature or water inlet temperature is too low	
Protection from cold temperatures	PP08	Ambient temperature or water inlet temperature is too low	
Cooling pipe temperature too high protection	PP10		Check the system
High pressure error	EE01	1. Too much refrigerant, 2. Too high water or environment temperature, 3. Operating frequency is too high, 4. Motor failure	1. Drain excess refrigerant, 2. Clean air heat exchanger, 3. Check and reconnect the electrical cables from the high pressure switch, 4. Replace the high pressure switch.
Low pressure error	EE02	1. Not enough refrigerant, 2. Insufficient flow, 3. Dirty filter, 4. EEV failure, 5. Fan motor fault, 6. Low pressure switch failure	1. Check that there are no gas leaks, have a specialised company change add refrigerant, 2. Clean air heat exchanger, 3. Replace the filter, 4. Check and reconnect the electrical cables from the low pressure switch, 5. Replace the low pressure switch
Impaired water flow	EE03or „ON“	Weak flow of water, flow in the wrong direction or flow switch failure	1. Make sure the water flow is sufficient 2. Make sure the water flow switch is connected correctly 3. Check the wiring to the water flow switch 4. Replace with a new water flow switch.
The water temperature is heated above the temperature in heating mode	EE04	The water flow is insufficient, or there is no water	1. Check and repair pump 2. Clean water pipe system 3. Check the water flow switch
Failure of exhaust gas temperature sensor	EE05	1. Defrosting is not working properly, 2. Insufficient gas, 3. The throttle device is jammed, 4. Weak flow of water	1. Manual defrost, 2. Refill the gas, 3. Replace the throttle device 4. Check the water pump
Regulator fault	EE06	1. Electrical connection is not working properly 2. Regulator fault	1. Check or replace cable 2. Restart power 3. Replace the regulator
Compressor check	EE07	The compressor downstream is too high	Turn off the heat pump for 10 seconds and then turn it on again
Communication error between the cable controller and the instrument panel	EE08	1. Bad cable connection, 2. Control error	1. Check or replace the connecting cable, 2. Turn off the heat pump for 10 seconds and then turn it on again, or replace the controller
Communication error between the instrument panel and control panel	EE09	Bad cable connection	Reconnect the cables or replace the instrument panel
Protection against high voltage	EE10	The voltage is too high.	Check the power supply
IPM module protection	EE11	Bad or corrupted data	Turn off the heat pump for 10 seconds and then turn it on, or replace the instrument panel
Protection against too low voltage	EE12	The voltage is too low.	Check the power supply
Protection against overcurrent	EE13	The voltage is too low, the heat pump is overloaded	1. Check the power 2. Make sure the water temperature is not too high

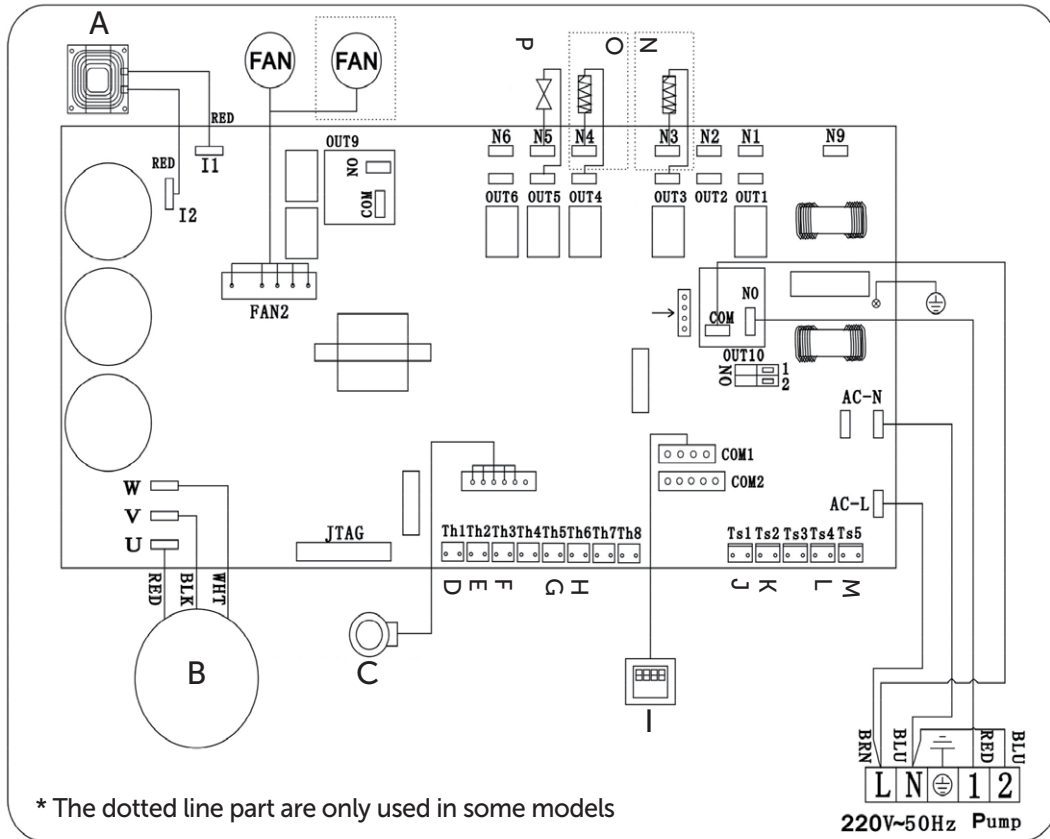
Faults	Remark	Reason	Solution
IPM module output circuit temperature sensor failure	EE14	The sensor output is abnormal	Check the instrument panel or replace
Protection against excessively high IPM module temperatures	EE15		Check the instrument panel or replace
Protection of PFC module	EE16		Check the instrument panel or replace
DC fan error	EE17		Check the instrument panel or replace
IPM module input circuit temperature sensor failure	EE18		Check the instrument panel or replace
Protection against excessively high PFC module temperatures	EE19		Check the instrument panel or replace
Electrical power failure	EE20	The supply voltage is too variable	Check the instrument panel or replace
Software check error	EE21	The compressor runs outside of preset steps	Check the instrument panel or replace
Current detection circuit fault	EE22	Abnormal amplification of the output voltage	Check the instrument panel or replace
Compressor switch fault	EE23		Check the instrument panel or replace
Ambient temperature thermometer control unit failure	EE24		
Compressor phase error	EE25	1. Badly connected wiring. 2. Connection of one or two phases	Monitor the controller
Defrosting symbol, heater check is lit	Defrosting of glass		

8.2 Other Malfunctions and Solutions (No display on LED wire controller)

Malfunctions	Observing	Reasons	Solution
Heat pump is not running	LED wire controller no display.	No power supply	Check cable and circuit breaker if it is connected
	LED wire controller displays the actual time.	Heat pump under standby status	Startup heat pump to run.
	LED wire controller displays the actual water temperature.	1. Water temperature is reaching to setting value, HP under constant temperature status. 2. Heat pump just starts to run. 3. Under defrosting.	1. Verify water temperature setting. 2. Startup heat pump after a few minutes. 3. LED wire controller should display „Defrosting“.
Water temperature is cooling when HP runs under heating mode	LED wire controller displays actual water temperature and no error code displays.	1. Choose the wrong mode. 2. Figures show defects. 3. Controller defect.	1. Adjust the mode to proper running 2. Replace the defect LED wire controller, and then check the status after changing the running mode, verifying the water inlet and outlet temperature. 3. Replace or repair the heat pump unit
Short running	LED displays actual water temperature, no error code displays.	1. Fan NO running. 2. Air ventilation is not enough. 3. Refrigerant is not enough.	1. Check the cable connections between the motor and fan, if necessary, it should be replaced. 2. Check the location of heat pump unit, and eliminate all obstacles to make good air ventilation. 3. Replace or repair the heat pump unit.
water stains	Water stains on heat pump unit.	1. Concreting. 2. Water leakage.	1. No action. 2. Check the titanium heat exchanger carefully if it is any defect.
Too much ice on evaporator	Too much ice on evaporator.		1. Check the location of heat pump unit, and eliminate all obstacles to make good air ventilation. 2. Replace or repair the heat pump unit.

9. Electrical Wiring

XHPFD 100 E, XHPFD 140 E, XHPFD 160 E



- A Transformer
- B Compressor
- C Electronic Expansion Valve
- D Ambient temperature
- E Heating pipe temperature
- F Temperature of exhaust gases
- G Water out temperature
- H Water in temperature
- I Display, Control
- J Water flow switch
- K Defrost switch
- L Low Pressure switch
- M High Pressure switch
- N Crankcase heater
- O Base Electric Heater
- P 4way valve

Electrical connection

Note: Although the heat pump is electrically isolated from the rest of the swimming pool system, this only prevents the flow of electrical current to or from the water in the pool. Earthing is still required for protection against short-circuits inside the unit. Always provide a good earth connection.

Before connecting the unit, verify that the supply voltage matches the operating voltage of the heat pump.

NOTE:

- (1) Above electrical wiring diagram only for your reference, please subject machine posted the wiring diagram.
- (2) The swimming pool heat pump must be connected ground wire well, although the unit heat exchanger is electrically isolated from the rest of the unit .Grounding the unit is still required to protect you against short circuits inside the unit .Bonding is also required.

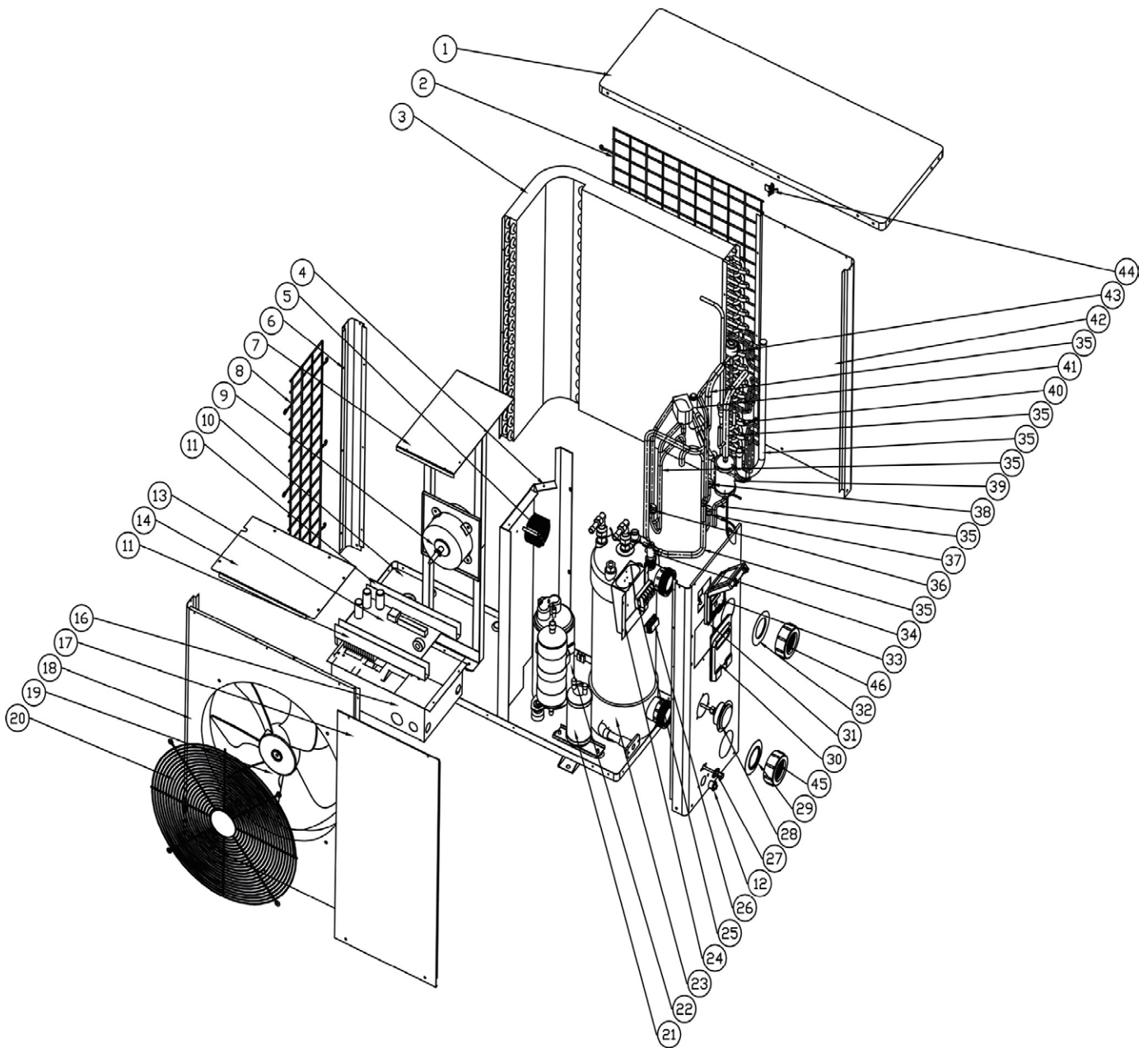
Disconnect:

: 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 heat pumps. It prevents remotely-energizing unattended equipment and permits turning off power at the unit while the unit is being serviced.

10. Maintenance

- (1) You should check the water supply system regularly to avoid the air entering the system and occurrence of low water flow, because it would reduce the performance and reliability of HP unit.
- (2) Clean your pools and filtration system regularly to avoid the damage of the unit as a result of the dirty or clogged filter.
- (3) You should discharge the water from bottom of water pump if HP unit will stop running for a long time (specially during the winter season).
- (4) In another way, you should check the unit is water fully before the unit start to run again.
- (5) After the unit is conditioned for the winter season, he is preconize to cover the heat pump with special winter heat pump.

11. Exploded view



No.	Part name	No.	Part name
1	Top cover	26	Wiring terminal
2	Rear grille	27	Intake valve
3	Vaporiser	28	Pressure gauge
4	Insulation plate	29	Blue sealing lip
5	PFC coil	30	Cover for wiring power supply
6	Pillar	31	Watertight box
7	Fan motor handle	32	Red sealing lip
8	Side grille	33	Regulator
9	Fan motor	34	Flow switch
10	Base	35	Copper pipes
11	Lead	36	High pressure switch
12	Drainage stopper	37	Low pressure switch 1
13	PC inverter board	38	Low pressure switch 2
14	Regulator box cover	39	Filter
16	Regulator box	40	Temperature sensor handle
17	Distribution board	41	4-way valve
18	Front panel	42	Rear panel
19	Fan blade	43	Electronic expansion valve
20	Fan grille	44	Ambient temperature sensor handle
21	Tank for liquid	45	Discharge water connection nut
22	Compressor	46	Water supply connection nut
23	Titanium exchanger		
24	Terminal block		
25	5-position electric terminal		

