H2O fun

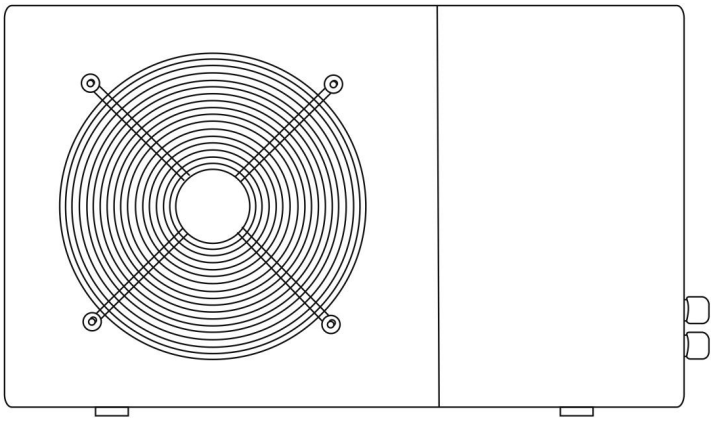
01322 554 870

hydro-pro®

7018522	Hydro-Pro Heat pump ABS 230V black type 5 horizontal
7018523	Hydro-Pro Heat pump ABS 230V black type 7 horizontal
7018524	Hydro-Pro Heat pump ABS 230V black type 10 horizontal
7018525	Hydro-Pro Heat pump ABS 230V black type 13 horizontal
7018526	Hydro-Pro Heat pump ABS 230V black Soft Start connection type 18 vertical
7018527	Hydro-Pro Heat pump ABS 230V black Soft Start connection type 22 vertical
7018528	Hydro-Pro Heat pump ABS 400V black type 22T vertical
7018529	Hydro-Pro Heat pump ABS 230V black Soft Start type 26 vertical
7018530	Hydro-Pro Heat pump ABS 400V black type 26T vertical

Swimming Pool Heat Pump

User and Service manual



English

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

Leak checks

1. Operators of equipment that contains fluorinated greenhouses gases in quantities of 5 tons of CO_2, equivalent or more and not contained in foams shall ensure that the equipment is checked for leaks.

2. For equipment that contains fluorinated greenhouse gases in quantities of 5 tons of CO_2 equivalent or more, but of less than 50 tons of CO_2 equivalent: at least every 12 months.

Picture of the equivalence CO_2

1. Load in kg and Tons amounting CO_2.

Load and Tons amounting CO_2	**Frequency of test**
From 2 at 30 kg load = from 5 at 50 Tons	Each year

Concerning the Gaz R 410a, 2.39kg amounting at 5 tons of CO_2, commitment to check each year.

Training and certification

1. The operator of the relevant application shall ensure that the relevant personnel have obtained the necessary certification, which implies appropriate knowledge of the applicable regulations and standards as well as the necessary competence in emission prevention and recovery of fluorinated greenhouse gases and handling safety the relevant type and size of equipment.

Record keeping

1. Operators of equipment which is required to be checked for leaks, shall establish and maintain records for each piece of such equipment specifying the following information:

a) The quantity and type of fluorinated greenhouse gases installed;
b) The quantities of fluorinated greenhouse gases added during installation, maintenance or servicing or due to leakage;
c) Whether the quantities of installed fluorinated greenhouse gases have been recycled or reclaimed, including the name and address of the recycling or reclamation facility and, where applicable, the certificate number;
d) The quantity of fluorinated greenhouse gases recovered
e) The identity of the undertaking which installed, serviced, maintained and where applicable repaired or decommissioned the equipment, including, where applicable, the number of its certificate;
f) The dates and results of the checks carried out;
g) If the equipment was decommissioned, the measures taken to recover and dispose of the fluorinated greenhouse gases.

2. The operator shall keep the records for at least five years, undertakings carrying out the activities for operators shall keep copies of the records for at least five years.

HYDRO-PRO Swimming Pool Heat Pump
User and Service manual

INDEX

Thank you for using HYDRO-PRO swimming pool heat pump for your pool heating, it will heat your pool water and keep the constant temperature when the air ambient temperature is at -5 to 43℃

⚠ **ATTENTION: This manual includes all the necessary information with the use and the installation of your heat pump.**
The installator must read the manual and attentively follow the instructions in implementation and maintenance.
The installator is responsible for the installation of the product and should follow all the instructions of the manufacturer and the regulations in application. Incorrect installation against the manual implies the exclusion of the entire guarantee.
The manufacturer declines any responsibility for the damage caused with the people, objects and of the errors due to the installation that disobey the manual guidline. Any use that is without conformity at the origin of its manufacturing will be regarded as dangerous.

WARNING: Please always empty the water in heat pump during winter time or when the ambient temperature drops below 0℃, 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 humidility.

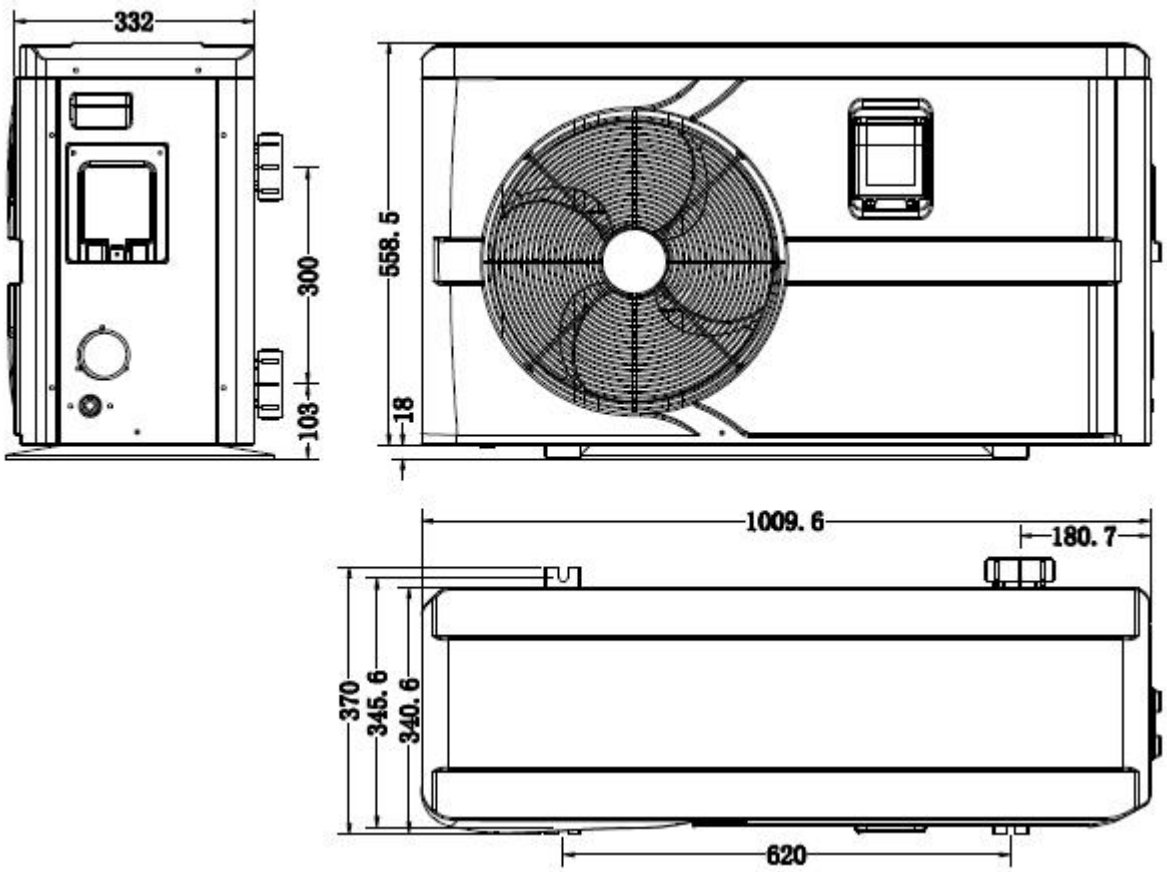
1. Specification
Technical data Hydro-Pro heat pumps ABS

Hydro-Pro	Model	5	7	10	13	18	22	22T	26	26T
Part number		7018522	7018523	7018524	7018525	7018526	7018527	7018528	7018529	7018530
Heating capacity A27/W27	kW	5	7	10	13	18	22	22	26	26
	BTU/h	17000	23500	34000	44300	61000	75000	75000	88700	88700
Heating capacity A15/W26	kW	3,7	4,3	6,5	8,2	13	14,5	14,5	16,5	16,5
	BTU/h	12500	14500	22000	28000	44000	49500	49500	56000	56000
Cooling capacity A35/W27	kW	2,8	3,5	5	7	10.8	11	11	15	15
	BTU/h	9500	12000	17000	24000	37000	37500	37500	51000	51000
Power input	kW	0,93	1,02	1,48	1,86	2,51	3,45	3,45	3,93	3,93
Maximum volume(good insulation)	m³	20	30	45	60	100	120	120	140	140
Running current	A	4,1	4,7	7	9,1	13,4	15	6,6	17,4	7,7
Mininum fuse	A	15	15	20	25	40	45	20	50	25
COP at A27/W27	W/W	5,8	5,9	6,2	6	6,1	5,9	5,9	5,8	5,8
COP at A15/W26	W/W	4	4,2	4,4	4,4	4,3	4,2	4,2	4,2	4,2
Power supply	V/Ph/Hz	220-240/1/50						380/3/50	220-240/1/50	380/3/50
Controller		Electronic								
Condenser		Titanium heat exchanger								
Compressor quantity		1								
Compressor type		Rotary				Scroll				
Refrigerant		R410a								
Fan quantity		1								
Fan power input	W	68	80	80	120	200	200	200	200	200
Fan speed	RPM	830~870				650				
Air Flow		Horizontal				Vertical				
Noise level (10m)	dB(A)	39	40	40	43	47	47	47	50	50
Noise level (1m)	dB(A)	48	49	49	52	56	56	56	59	59
Water connection	mm	50								
Nominal water flow	m³/h	2,5	2,5	2,8	3,5	6,2	6,2	6,2	7,1	7,1
Maximum pressure loss	kPa	12	12	12	15	18	18	18	18	18
Net dimensions	L/W/H	1010*340*577mm			1050*470*709mm	910*707*940mm				
Shipping dimensions	L/W/H	1080*405*616mm			1121*481*851mm	935*790*975mm				
Net/gross weight	Kg	36/38	44/47	49/52	63/67	115/125	125/135	125/135	150/160	150/160

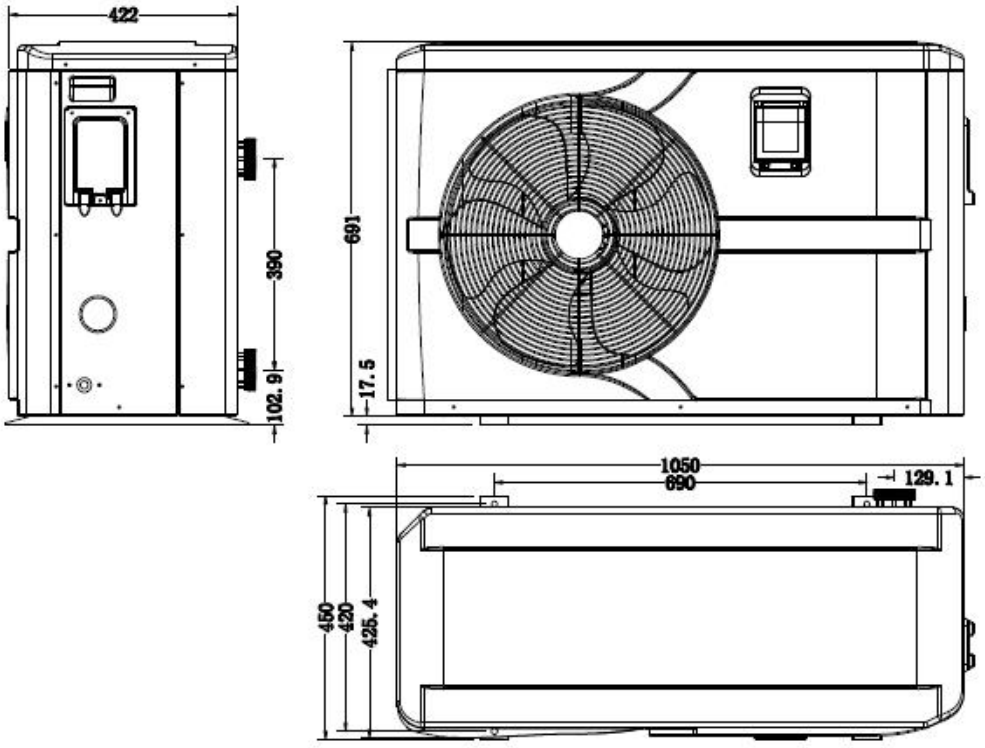
* Above data are subjects to modification without notice.

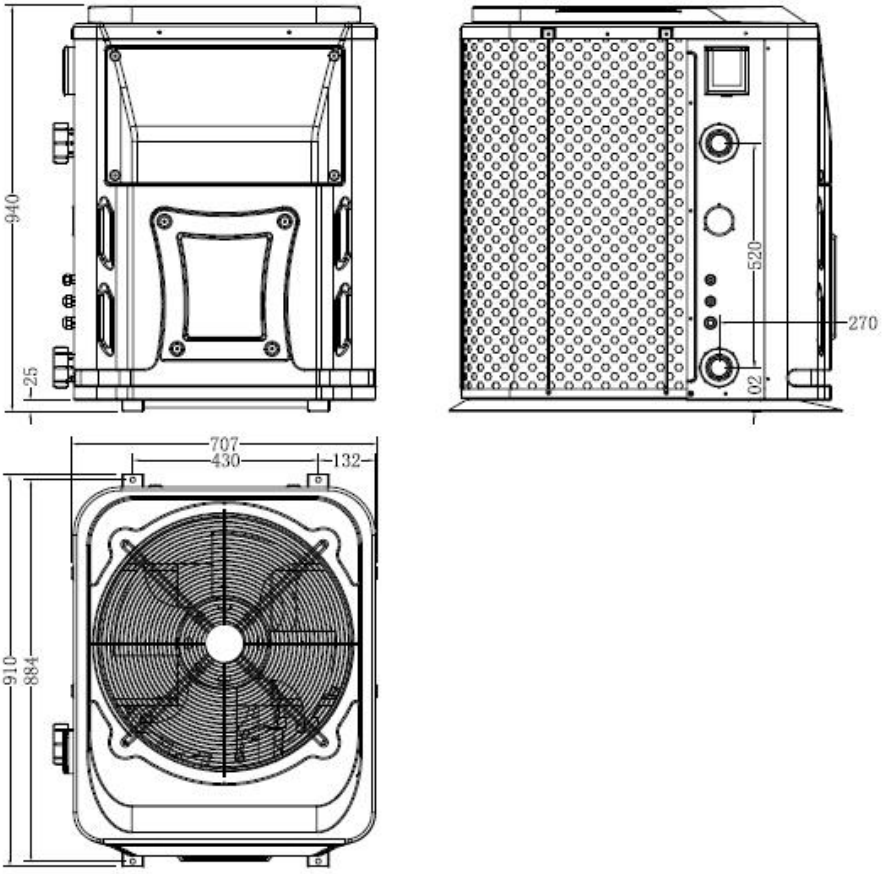
2. Dimension

Hydro Pro 5,7,10



Hydro Pro 13





3. Installation and connection

3.1 Notes

The factory supplies only the heat pump. All other components, including a bypass if necessary, must be provided by the user or the installer.

Attention:

Please observe the following rules when installing the heat pump:

1. Any addition of chemicals must take place in the piping located **downstream** from the heat pump.
2. Install a bypass if the water flow from the swimming pool pump is more than 20% greater than the allowable flow through the heat exchanger of the heat pump.
3. Install the heat pump above the water level of the swimming pool.
4. Always place the heat pump on a solid foundation and use the included rubber mounts to avoid vibration and noise.
5. Always hold the heat pump upright. If the unit has been held at an angle, wait at least 24 hours before starting the heat pump.

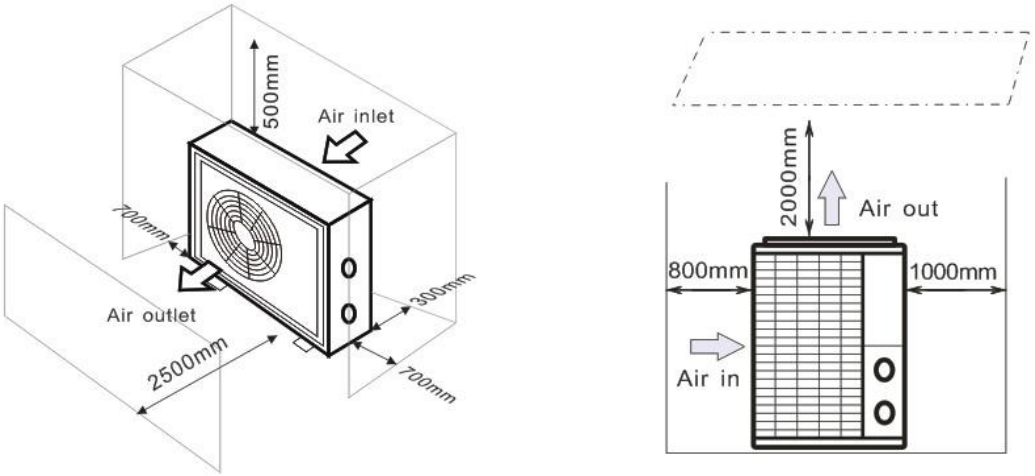
3.2 Heat pump location

The unit will work properly in any desired location as long as the following three items are present:

1. Fresh air – 2. Electricity – 3. Swimming pool filters

The unit may be installed in virtually any **outdoor** location as long as the specified minimum distances to other objects are maintained (see drawing below). Please consult your installer for installation with an indoor pool. Installation in a windy location does not present any problem at all, unlike the situation with a gas heater (including pilot flame problems).

ATTENTION: Never install the unit in a closed room with a limited air volume in which the air expelled from the unit will be reused, or close to shrubbery that could block the air inlet. Such locations impair the continuous supply of fresh air, resulting in reduced efficiency and possibly preventing sufficient heat output.
See the drawing below for minimum dimensions.

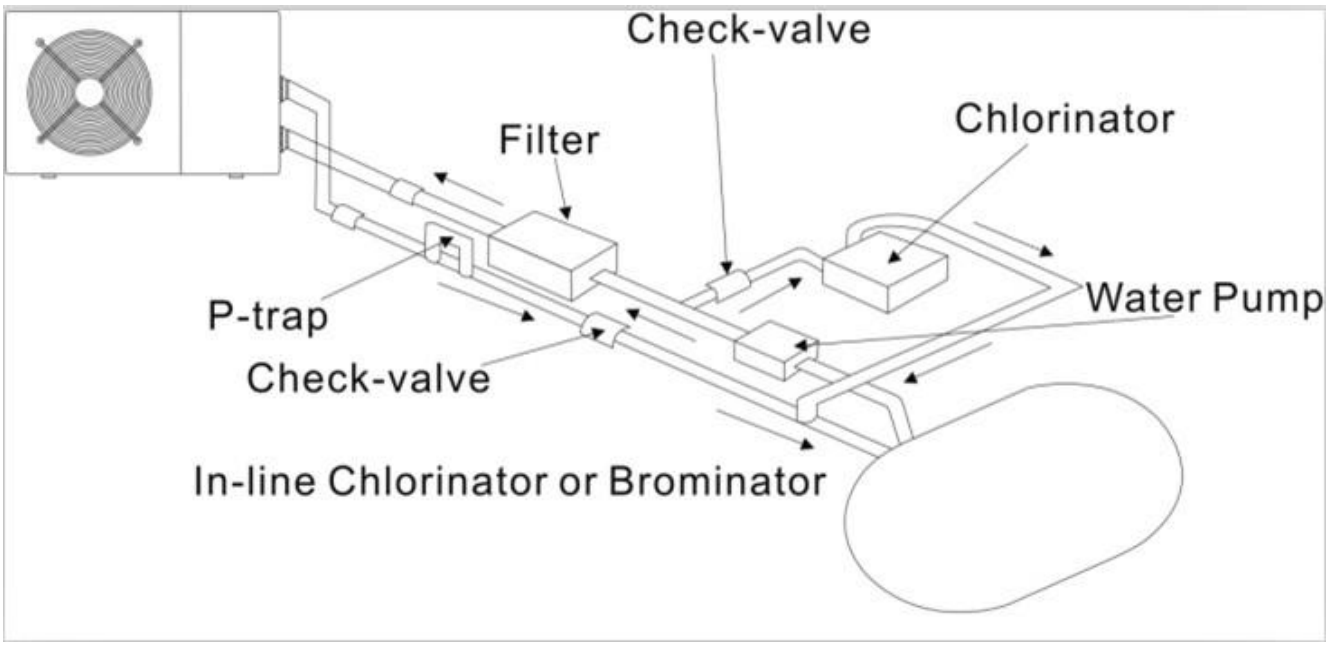


3.3 Distance from your swimming pool

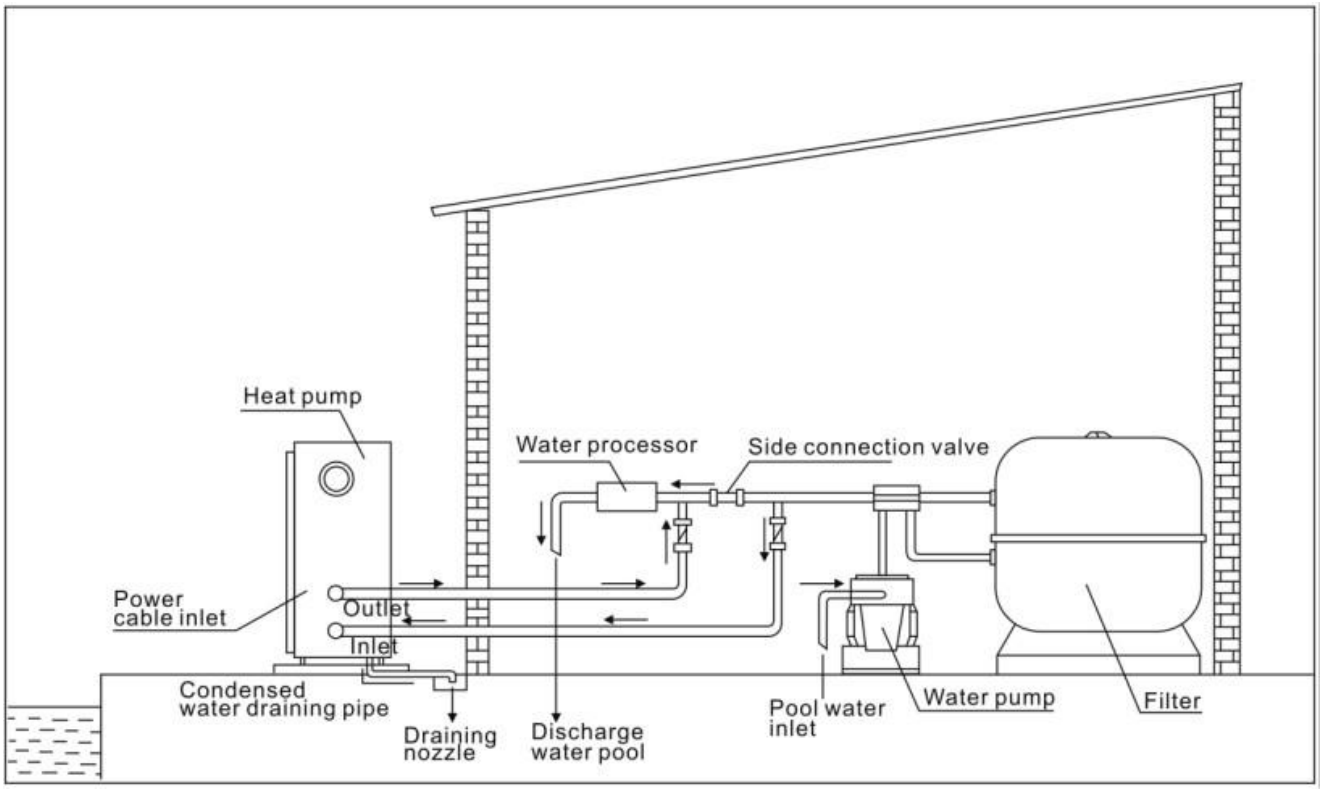
The heat pump is normally installed within a perimeter area extending 7.5 m from the swimming pool. The greater the distance from the pool, the greater the heat loss in the pipes. As the pipes are mostly underground, the heat loss is low for distances up to 30 m (15 m from and to the pump; 30 m in total) unless the ground is wet or the groundwater level is high. A rough estimate of the heat loss per 30 m is 0.6 kWh (2,000 BTU) for every 5 ºC difference between the water temperature in the pool and the temperature of the soil surrounding the pipe. This increases the operating time by 3% to 5%.

3.4 Check-valve installation

Note: If automatic dosing equipment for chlorine and acidity (pH) is used, it is essential to protect the heat pump against excessively high chemical concentrations which may corrode the heat exchanger. For this reason, equipment of this sort must always be fitted in the piping on the **downstream** side of the heat pump, and it is recommended to install a check-valve to prevent reverse flow in the absence of water circulation.
Damage to the heat pump caused by failure to observe this instruction is not covered by the warranty.

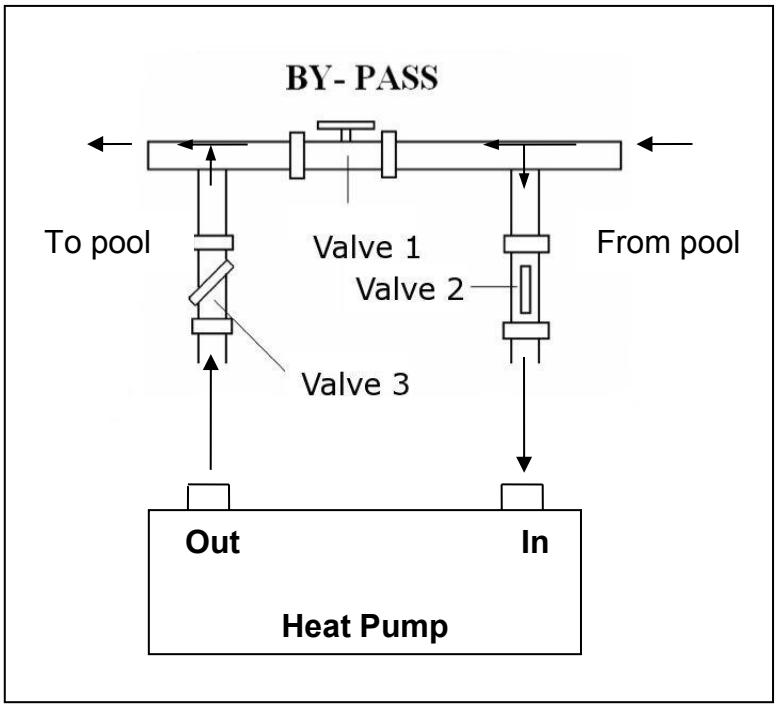


3.5 Typical arrangement



Note: This arrangement is only an illustrative example.

3.6 Adjusting the bypass



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.

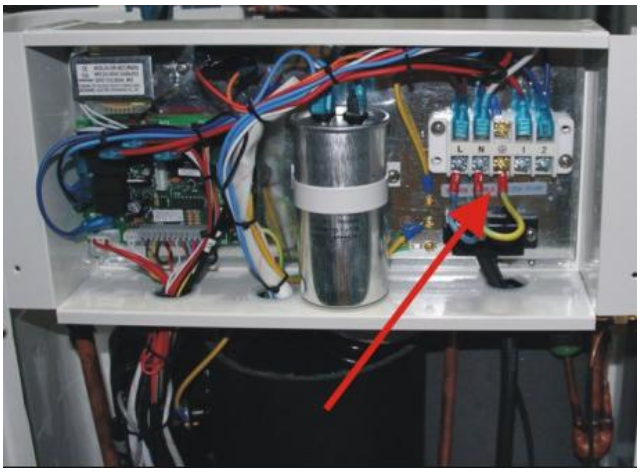
Optimal operation of the heat pump occurs when the cooling gas pressure is 22 ±2 bar. This pressure can be read on the pressure gauge next to the control heat pump panel. Under these conditions the water flow through the unit is also optimal.

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.

3.7 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.
It is recommended to connect the heat pump to a circuit with its own fuse or circuit breaker (slow type; curve D) and to use adequate wiring (see table below).
For horizontal models (Hydro Pro 5, 7, 10 and 13): remove the top panel.
For vertical models (Hydro-Pro 18, 22, 22T and 26T): remove front panel.
Connect the electrical wires to the terminal block marked ‘ POWER SUPPLY ’.
A second terminal block marked ‘WATER PUMP ’ is located next to the first one. The filter pump (max. 5 A / 240 V) can be connected to the second terminal block here. This allows the filter pump operation to be controlled by the heat pump.



Note: In the case of three-phase models, swapping two phases may cause the electric motors to run in the reverse direction, which can lead to damage. For this reason, the unit has a built-in protective device that breaks the circuit if the connection is not correct. If the red LED above this safety device lights up, **you must swap the connections of two of the phase wires**.

Model	Voltage (V)	Fuse or circuit breaker (A)	Rated current (A)	Wire diameter mm^2 (with max. 15 m length)
HYDRO PRO5	220–240	15	4.1	2x 1.5 + 1.5
HYDRO PRO7	220–240	15	4.7	2x 1.5 + 1.5
HYDRO PRO10	220–240	20	7	2x 2.5 + 2.5
HYDRO PRO13	220–240	25	9.1	2x 2.5 + 2.5
HYDRO PRO18	220–240	40	13.4	2x 6 + 6
HYDRO PRO22	220–240	45	15	2x 6 + 6
HYDRO PRO22T	3x 380	20	6.6	4x 2.5 + 2.5
HYDRO PRO26	220–240	50	17.4	2x 6 + 6
HYDRO PRO26T	3x 380	25	7.7	4x 2.5 + 2.5

3.8 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 r ate .It will turn on when the pool pump runs and shut it off when the pump shuts off. If the p ool water level higher than 1 m above or below the heat pump's automatic adjustment kno b, 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.

3.9 Condensation

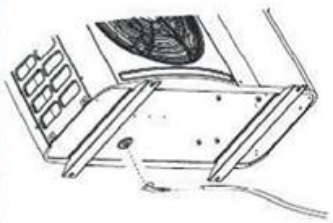
The air drawn into the heat pump is strongly cooled by the operation of the heat pump for heating the pool water, which may cause condensation on the fins of the evaporator. The amount of condensation may be as much as several litres per hour at high relative humidity. This is sometimes mistakenly regarded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

4. Accessories

4.1 Accessories list

 Anti-vibration base, 4 pcs	 Draining jet, 2 pcs	 Waterproof box, 1 pc
 10M Signal wire, 1 pc	 Water drainage pipes, 2 pcs	

4.2 Accessories Installation

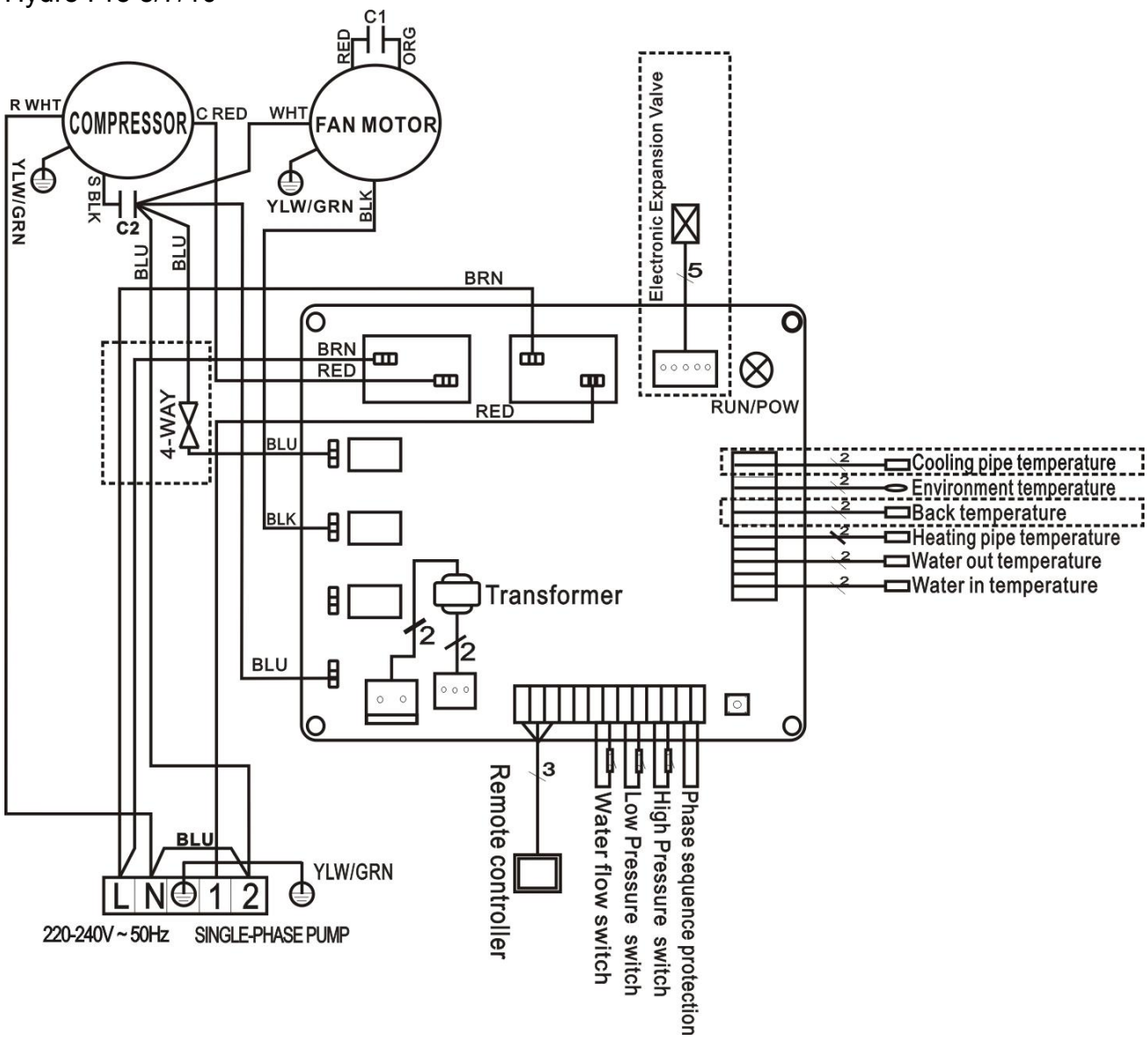
	**Anti-vibration bases** 1. Take out 4 Anti-vibration bases 2. Put them one by one on the bottom of machine like the picture.
 	**Draining jet** 1. Install the draining jet under the bottom panel 2. Connect with a water pipe to drain out the water. Note: Lift the heat pump to install the jet. Never overturn the heat pump, it could damage the compressor.

	**Water Inlet & outlet junction** 1. Use the pipe tape to connect the water Inlet & outlet junction onto the heat pump 2. Install the two joints like the picture shows 3. Screw them onto the water Inlet & outlet junction
	**10M Signal wiring** 1. Take one side of the 10M Signal wire, to connect with the controller. 2. The other side needs to be pulled through the hole, like the third picture shows. 3. Then connect to the PC board inside the machine : the brown one --- first joint; the blue one --- second joint; the yellow one --- third joint.
	**Cable wiring** 1. Connect the power supply wire through the white hole like the picture shows. 2. Fix the other side on joints inside the electric box.
	**Water pump wiring** 1. Connect the water pump wire through the white hole marked 2. Fix the other side on joints inside the electric box.

5. Electrical Wiring

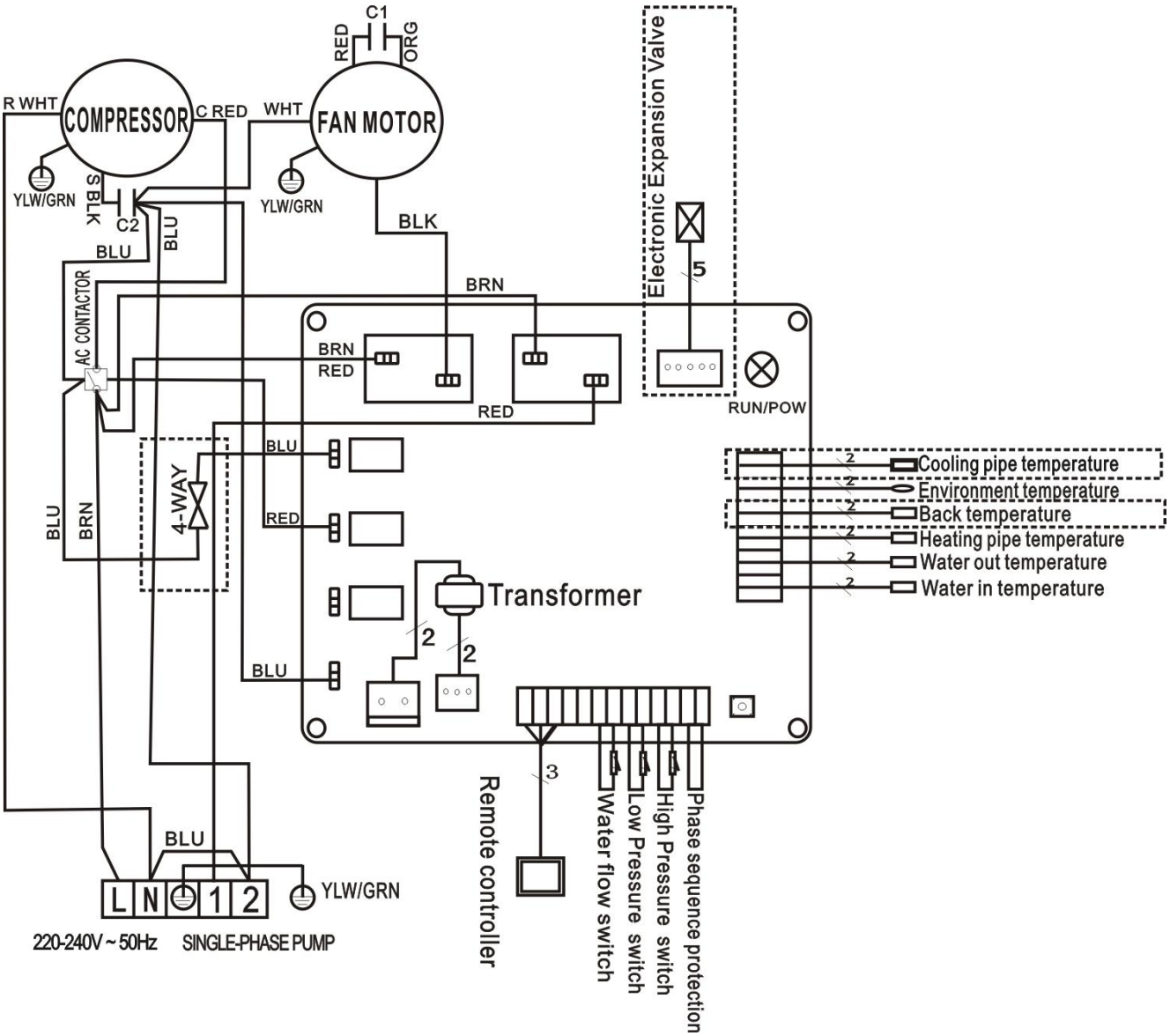
5.1 SWIMMING POOL HEAT PUMP WIRING DIADRA

Hydro Pro 5/7/10



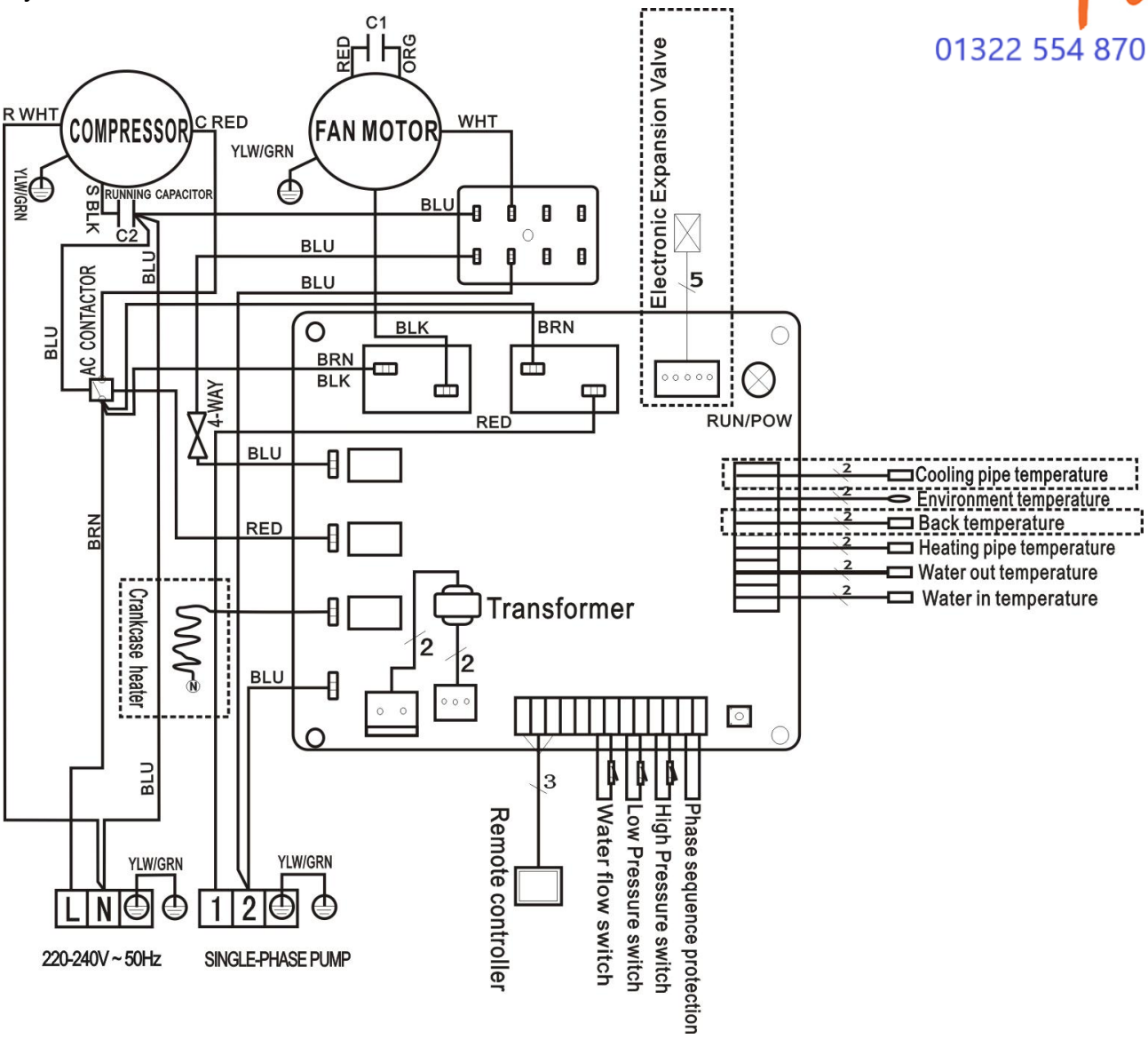
5.2 SWIMMING POOL HEAT PUMP WIRING DIADRA

Hydro Pro 13



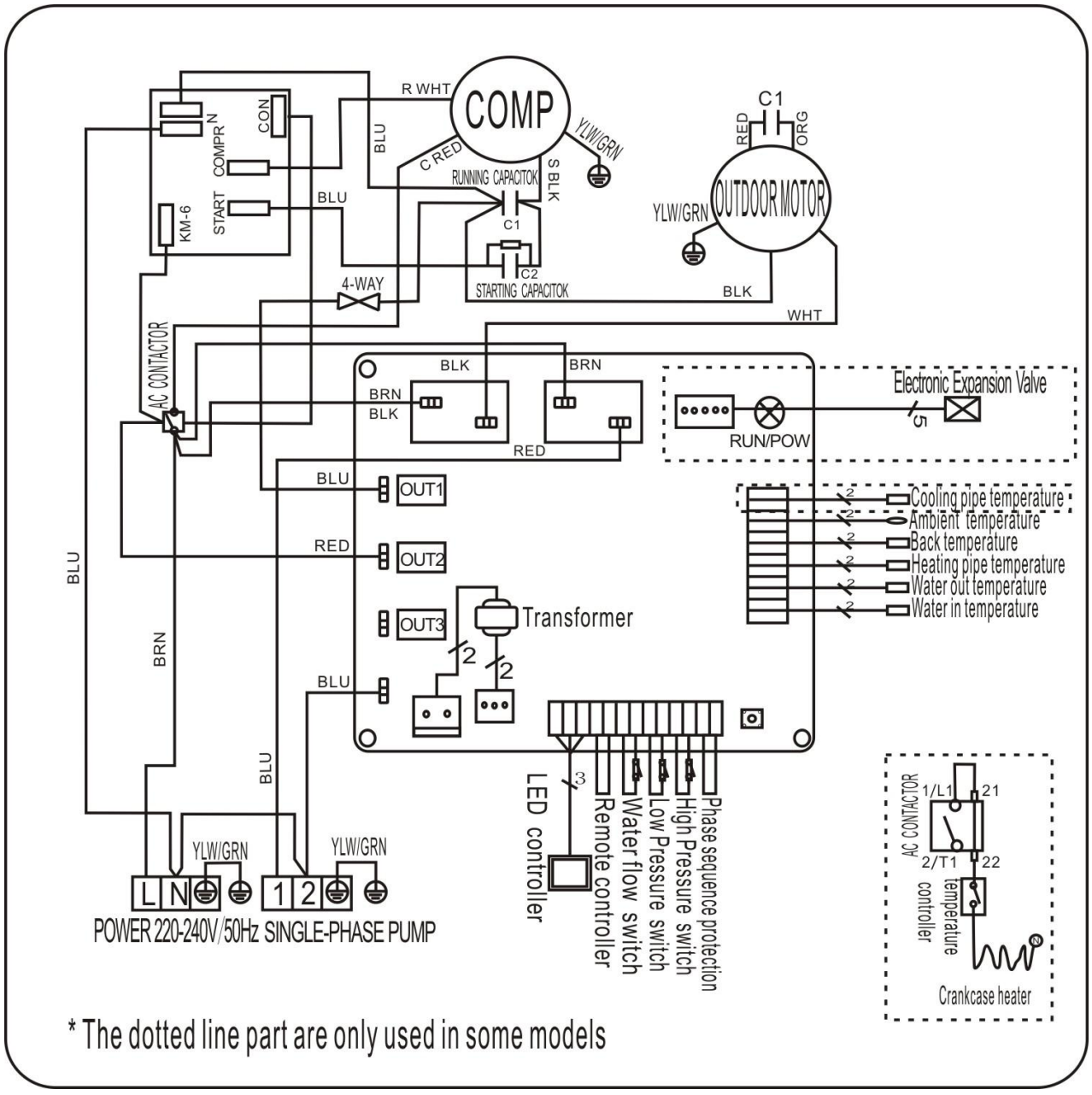
5.3 SWIMMING POOL HEAT PUMP WIRING DIADRA

Hydro Pro 18/22



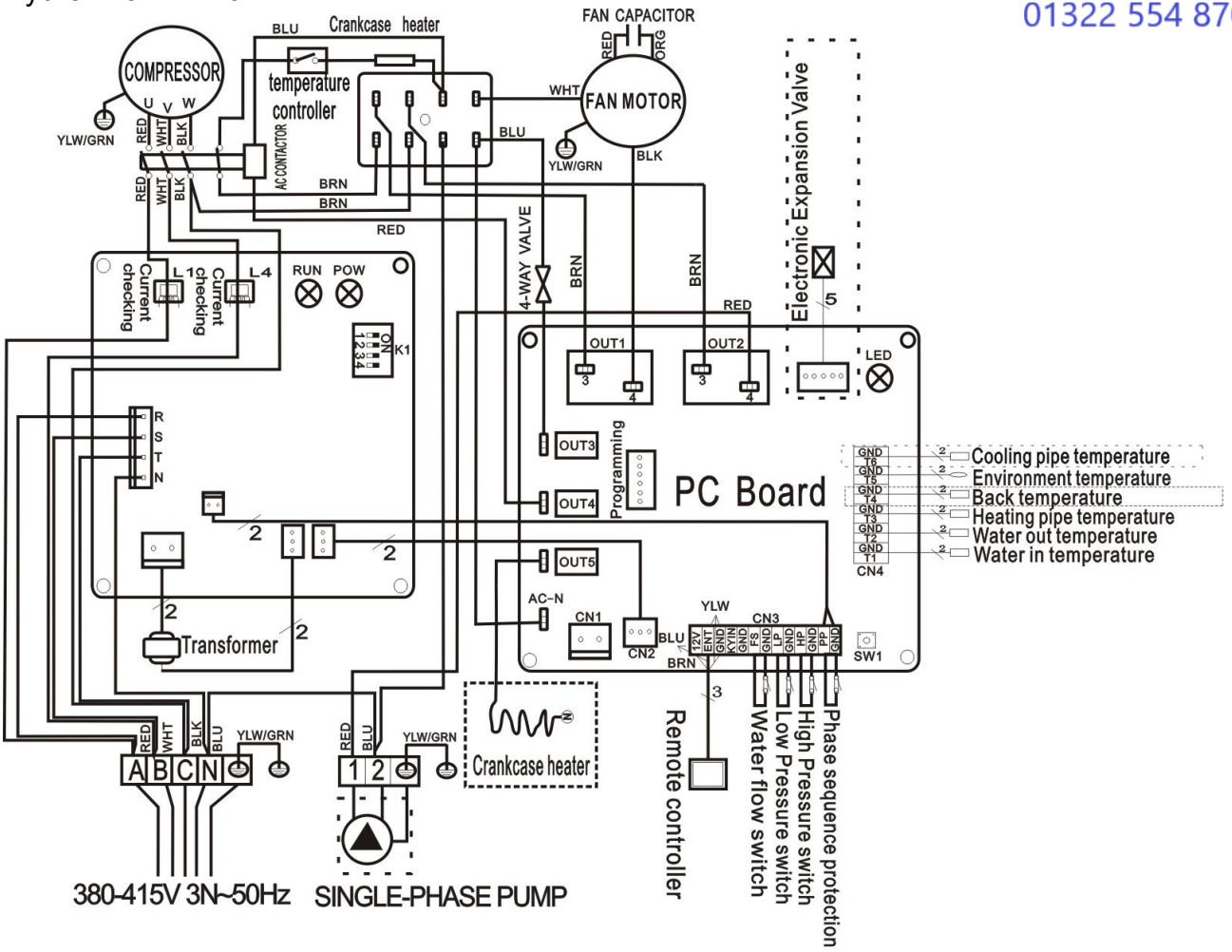
5.4 SWIMMING POOL HEAT PUMP WIRING DIADRA

Hydro Pro 26



5.5 SWIMMING POOL HEAT PUMP WIRING DIADRA

Hydro Pro 22T/26T



* The dotted line part are only used in some models

NOTE:

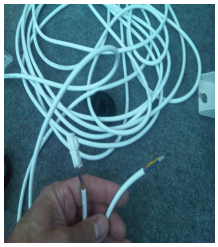
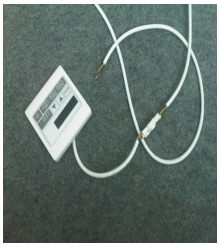
(1)Above electrical wiring diagram only for your reference, please subject machine posted the wiring diagram.

(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.

5.6 Installation of the display deportee

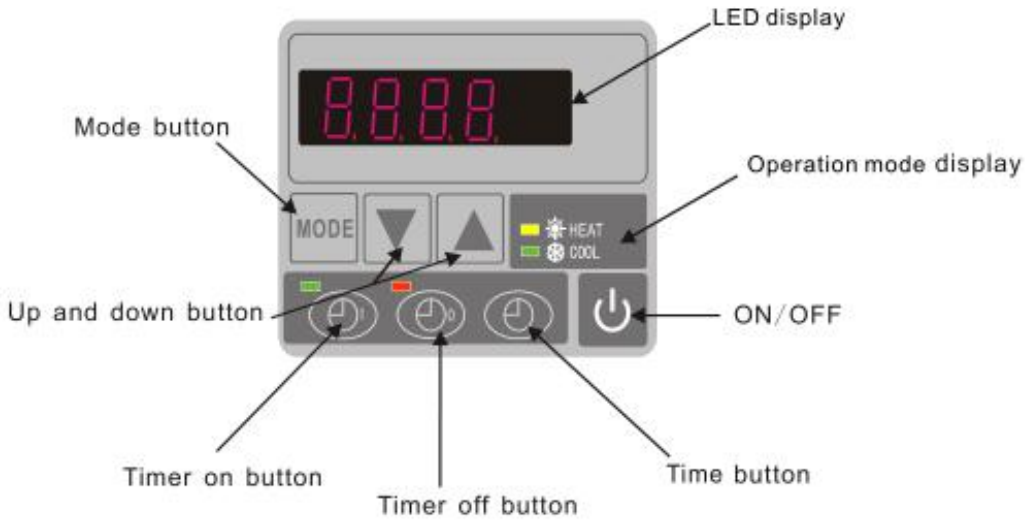
Photo (1) Photo (2) Photo (3)

- Disassembling of and degrafage control board of the connector (photo1)
- Installation of the provided cable (photo 2)
- To pass the cable by the press pack (photo 3) and to connect the sons directly

6. Display Controller Operation

6.1 The buttons of LED wire controller



When the heat pump is running, the LED display shows the inlet water temperature.
When the heat pump is standby, the LED display shows the real time.

6.2 Start or stop the heat pump.

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

Press  to stop the heat pump unit.

6.3 Choose heating or cooling mode:

Press  until “heat” or “Cool” light is on.

6.4 Setting the real time

On standby or running mode, press "  ", then press  or  to adjust hour/minute.

Then press the "  " again to store the new data.

When setting the time,  and  cannot work.

6.5 Water temperature setting:

On standby or running mode, press  and  to adjust the desired water temperature

Note : the heat pump can running only if the water circle/filtration system is running.

6.6 Automatic start/stop the heat pump

To set the time to start the unit

Press  to set the time to start the unit, then press  or  to adjust the time (set the time for start
5 minutes after the water pump).

Press  again to store the new data.

To set the time to stop the unit

Press  to set the time to stop running, then press  or  to adjust the time (set the time for stop
5 minutes before the water pump).

Press  again to store the new data.

6.7 Concell the automatic start/stop

To concell the automatic starter

Press  , then press "  ",  light off and the automatic start is off.

To concell the automatic starter

Press  , then press "  ",  light off and the automatic stop is off.

Note : If the water filtration system is stop before the heat pump, the unit will shut down (security condition) and the code EE3 or ON advertise on the controller. It is important to program the heat pump link the time program of the water filtration system. For restart the heat pump, turn off and turn on the electrical power supply to restart the unit.

7. Running data setting

7.1 How to check the parameters

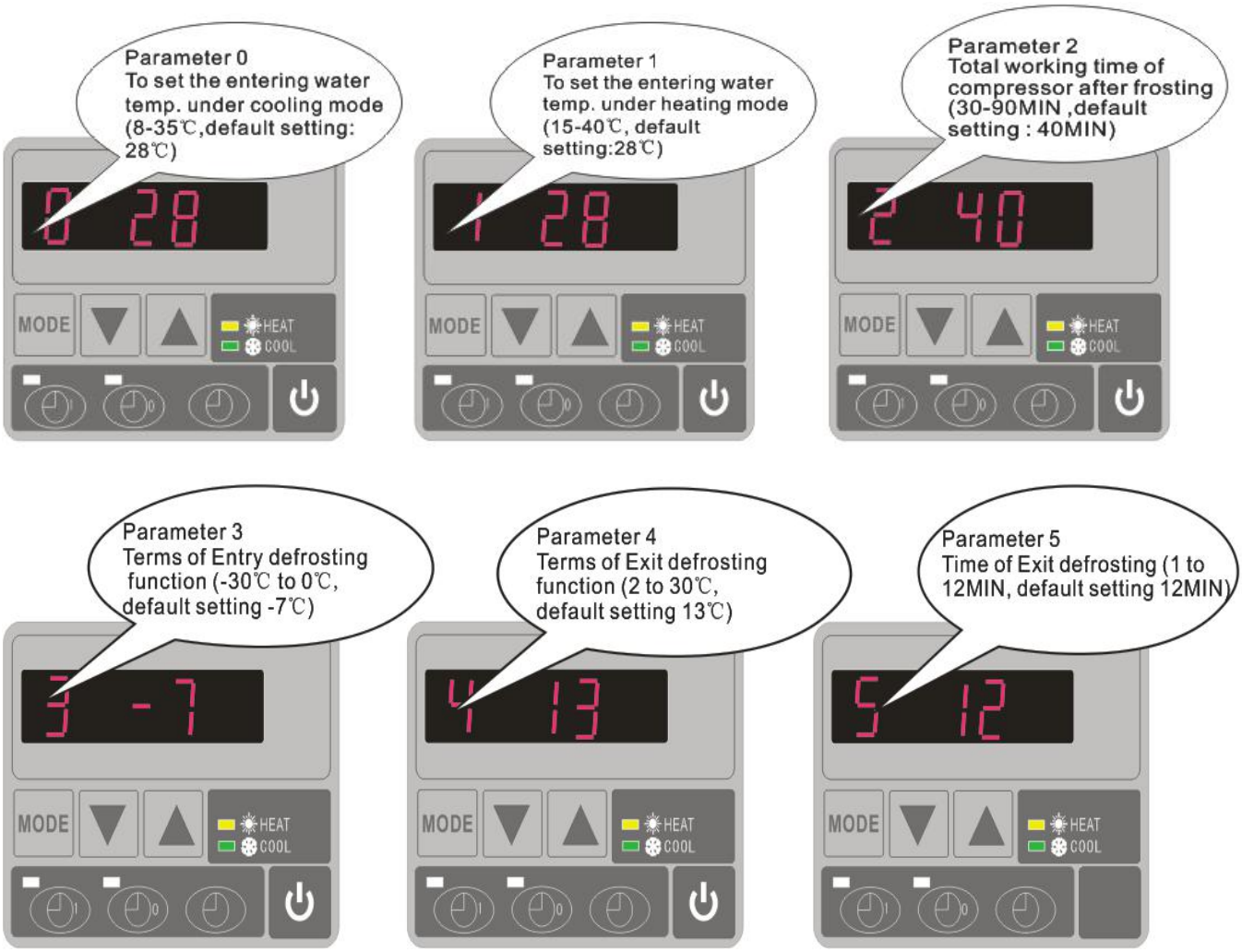
On standby or running mode, long press " " for 10 seconds, then press ▼ or ▲ to check the parameters (from 0 to H, see operation parameter table).

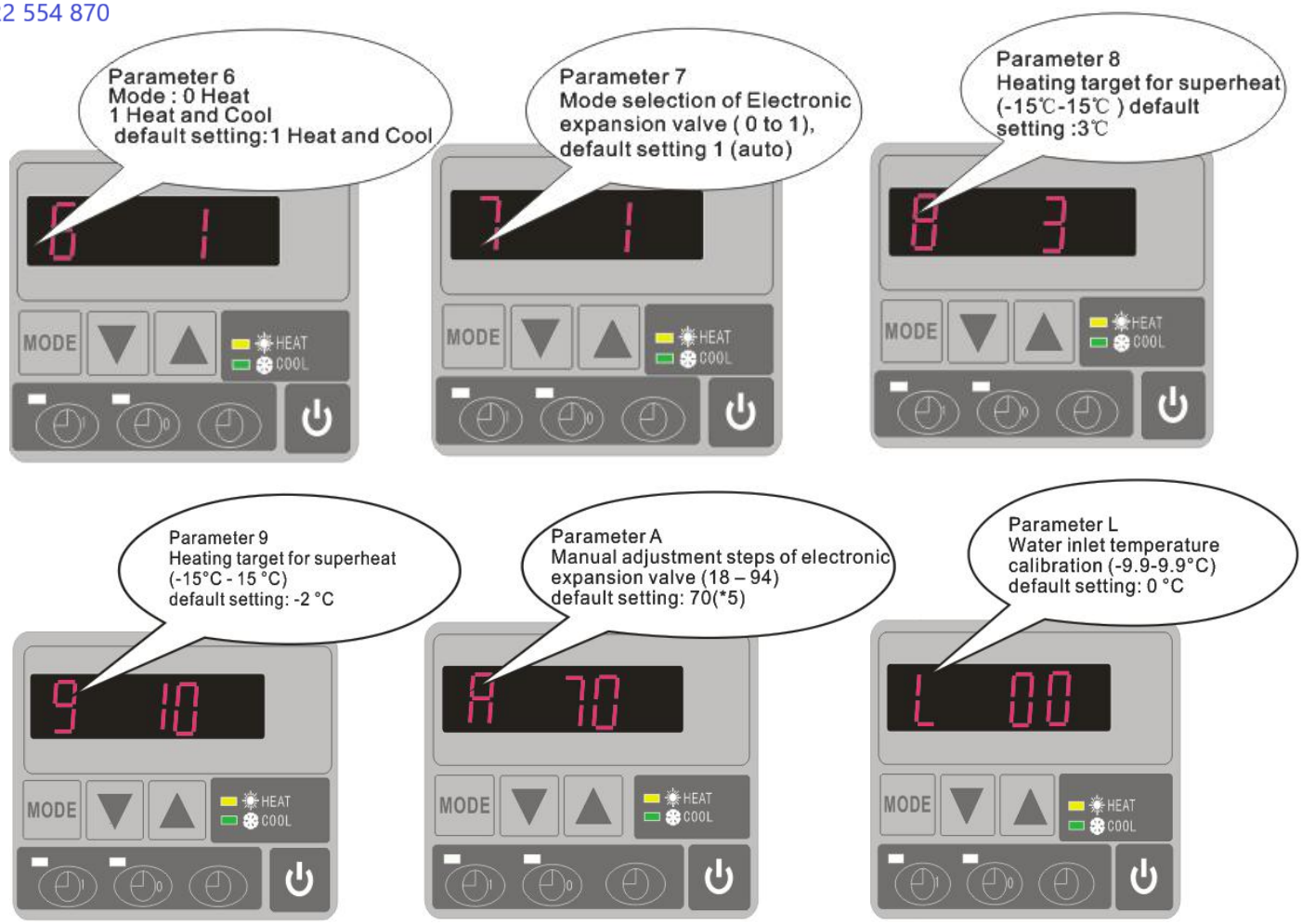
7.2 How to adjust the parameters (Can only adjust on standby mode)

1) Long press " " for 10 seconds, press " " again to select the data (from 0 to L, see operation parameter table) you want to adjust.

2) Then press ▼ or ▲ to adjust the parameter, press " " again to store the new data.

3) Then press ▼ or ▲ select the other datas you want to adjust, repeat above operation.





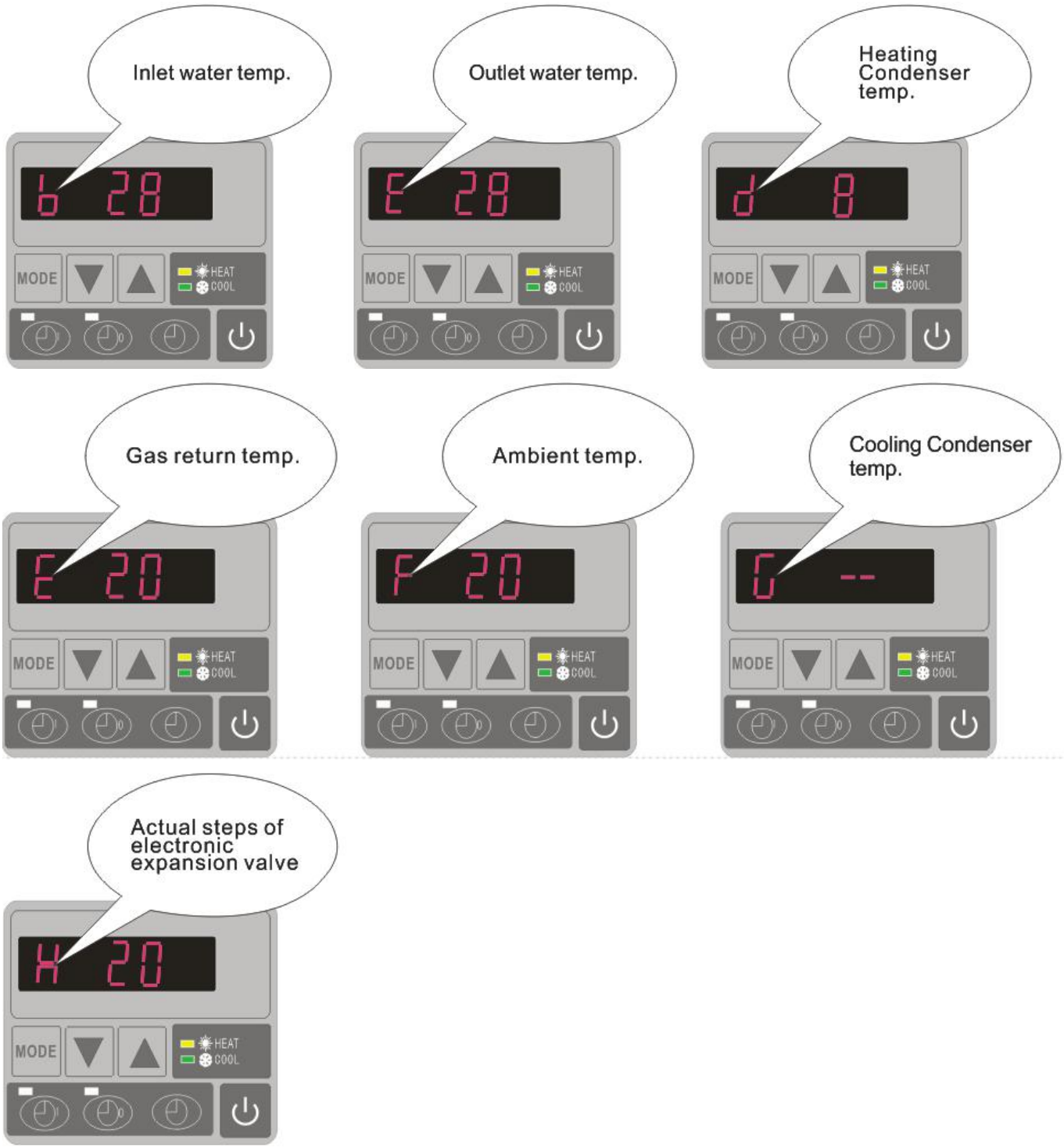
Please kindly noted:

A) Press “MODE” to choose mode (Mode only be changed for “1” or “2” setting of parameter 6)

B) Mode can be changed while running

C) Auxiliary electrical heating is not applicable to these modes.

7.3 How to know the current status



Parameter	Meaning	Range	Default	Remarks
0	To set the entering water temp. under cooling mode	8-35℃	28℃	Adjustable
1	To set the entering water temp. under heating mode	15-40℃	28℃	Adjustable
2	Entry into defrosting time period	30-90MIN	40MIN	Adjustable
3	Terms of Entry defrosting function	-30℃to0℃	-7℃	Adjustable
4	Terms of Exit defrosting	2 to 30℃	20℃	Adjustable
5	Time of Exit defrosting	1 to 12MIN	12MIN	Adjustable
6	Mode: 0 Heat 1 Heat and Cool	0-1	1(Heat and Cool)	Adjustable
7	Mode selection of Electronic expansion valve	0-1	1(auto)	Adjustable
8	Superheat for heating target	-15℃-15℃	3℃	Adjustable
9	Superheat for cooling target	-15℃-15℃	-2 ℃	Adjustable
A	Manual adjustment steps of electronic expansion valve	18-94	70	Adjustable
B	Inlet water temperature	-9-99℃		Exact testing by value
C	Outlet water temperature	-9-99℃		Exact testing by value
D	Condenser temperature under heating mode	-9-99℃		Exact testing by value
E	Gas return temperature	-9-99℃		Exact testing by value
F	Ambient temperature	-9-99℃		Exact testing by value
G	Condenser temperature under Cooling mode	-9-99℃		Exact testing by value
H	Actual steps of electronic expansion valve	N*5		Exact testing by value
L	Entering water temperature calibration	-9.9-9.9℃	0℃	Adjustable

Remarks:

(1) When HP stop running in 30 seconds, water pump will shut off automatically

(2) LED wire controller can operate the water pump after connected additional cable to the pump device in the position of “PUMP” terminal accurately.

(3) It is necessary to put an extra 3-phase transfer device for 3 phase water pump.

8. Troubleshooting

8.1 Error code display on LED wire controller

Malfunction	Error code	Reason	Solution
Inlet water temperature sensor failure	PP1	The sensor in open or short circuit	Check or change the sensor
Outlet water temperature sensor failure	PP2	The sensor in open or short circuit	Check or change the sensor
Heating condenser sensor failure	PP3	The sensor in open or short circuit	Check or change the sensor
Gas return sensor failure	PP4	Connect some wire wrongly on gas return sensor position	Confirm there is nothing on this point, restart the machine
Ambient temperature sensor failure	PP5	The sensor in open or short circuit	Check or change the sensor
Temperature difference between water inlet and outlet is too much	PP6	Water flow volume not enough ,water pressure difference is too low	Check the water flow volume or water jammed or not
Cooling outlet water temperature is too low	PP7	Water flow volume is not enough	Check the water flow or water system is jammed or not
First grade antifreeze protection in Winter	PP7	Ambient temperature or water inlet temperature is too low	Water pump will run automatically for first grade antifreeze
Second grade antifreeze protection in Winter	PP7	Ambient temperature or water inlet temperature is too low	Heat pump will start heating for second grade antifreeze
Cooling condenser sensor failure	PP8	Connect some wire wrongly on gas return sensor position	Confirm there is nothing on this point, restart the machine
High pressure protection	EE1	1. Refrigerant is too much 2. Air flow is not enough	1. Discharge redundant refrigerant from HP gas system 2. Clean the air exchanger
Low pressure protection	EE2	1. Refrigerant is not enough 2. Water flow is not enough 3. Filter jammed or capillary jammed	1. Check if there is any gas leakage ,re-fill the refrigerant 2. Clean the air exchanger 3. Replace the filter or capillary
Flow switch closed	EE3 or "ON"	Low water flow, wrong flow direction, or flow switch failure.	Check if the water flow is enough and flow in right direction, or else the flow switch could be failed.
Power supply connections wrong (for 3 phase unit)	EE4	Wrong connection or lack of connection	Check the connection of power cable
Inlet and outlet water temperature difference malfunction	EE5	Water flow volume is not enough ,water pressure difference is too low	Check the water flow rate ,or water system is jammed or not
Communication failure	EE8	Wire connection is not good	Check the wire connection

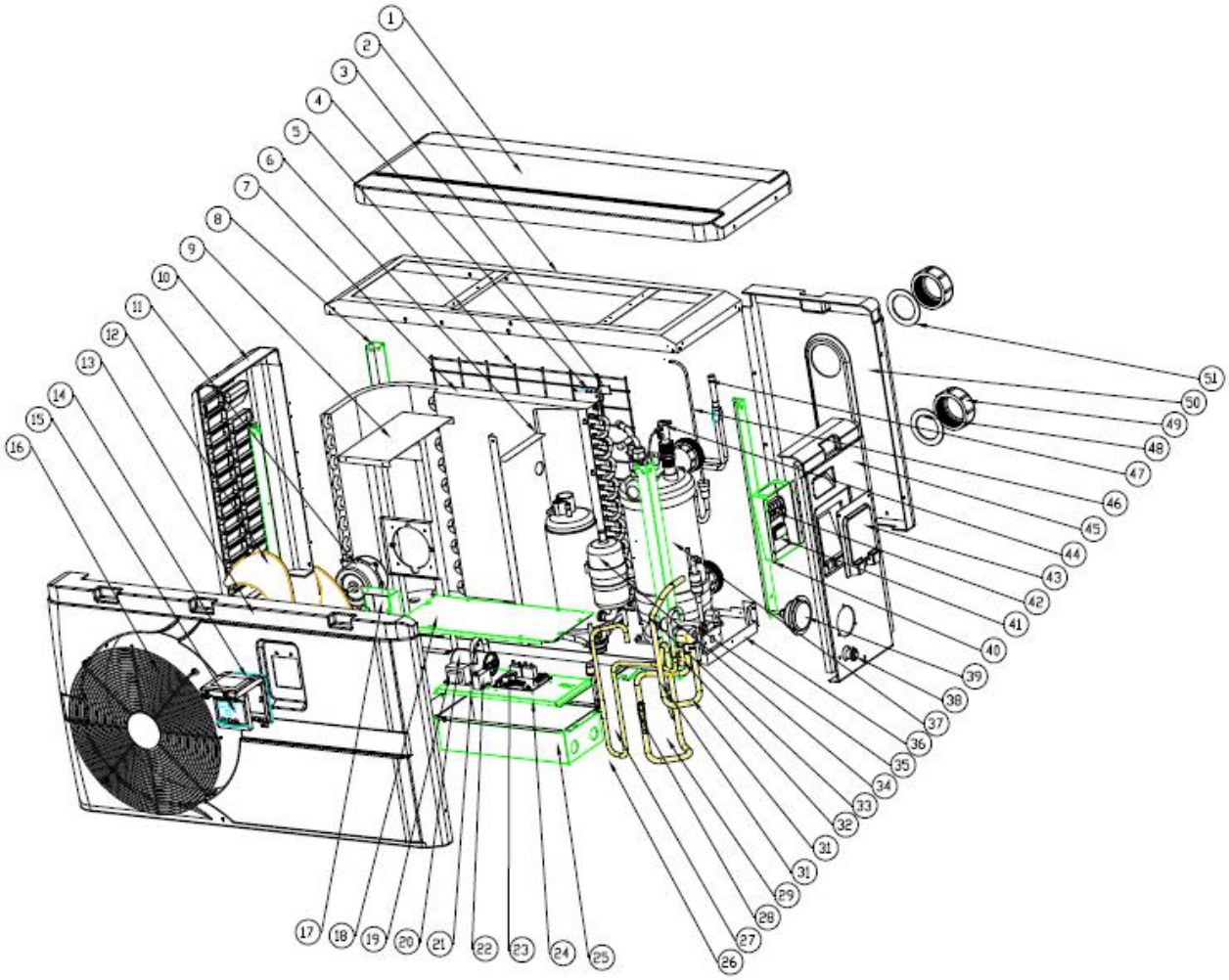
8.2 Other Malfunctions and Solutions (No display on LED wire controller)

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. Exploded Diagram and Maintenance

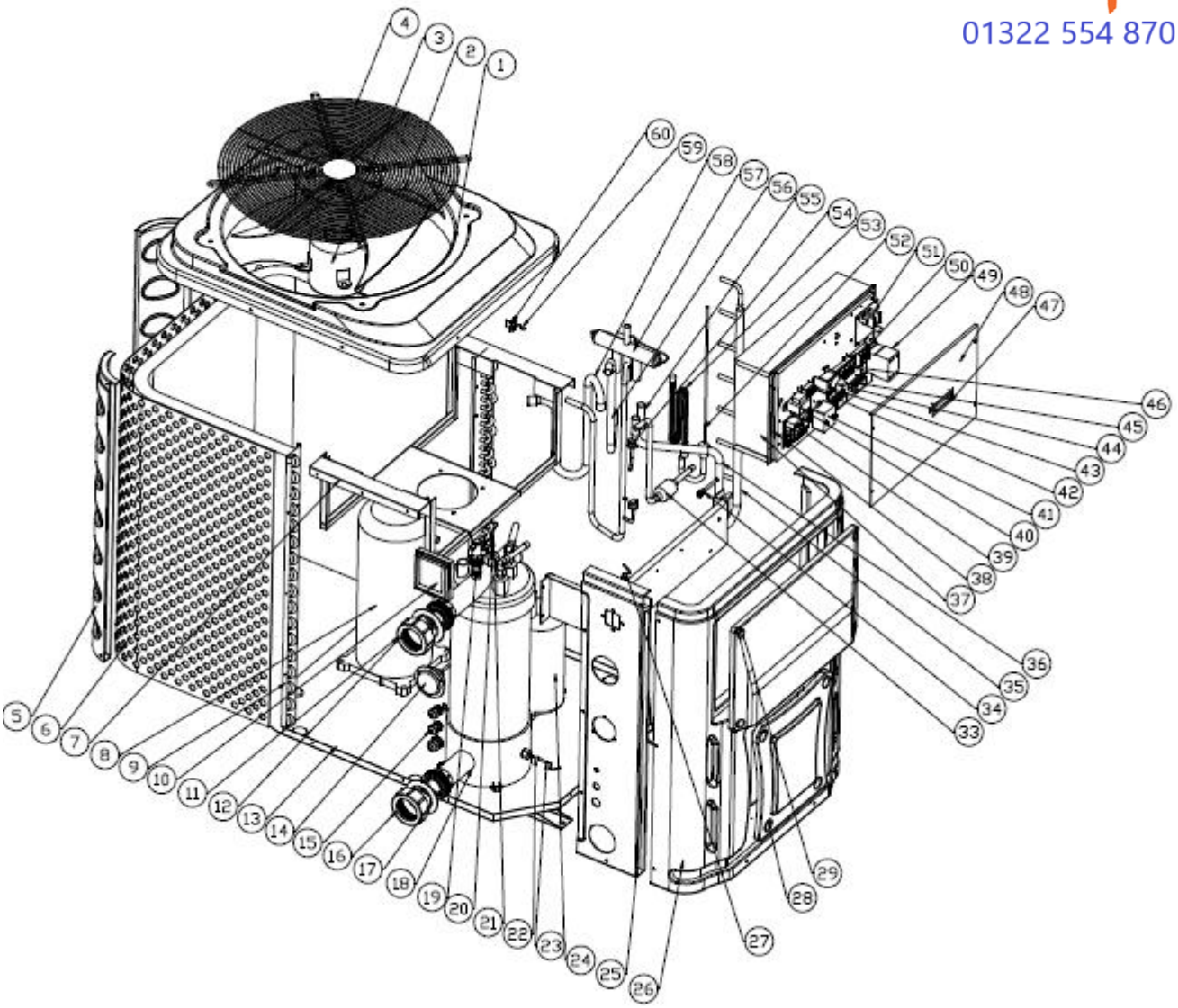
9. 1 Exploded Diagram

Model 7 kw



NO	Part Name	NO	Part Name
1	Top cover	27	Exhaust pipe
2	Top frame	28	Needle
3	Ambient temp. sensor	29	Return pipe
4	Ambient temp. sensor clip	30	Low pressure switch
5	Back grill	31	Piping (4-way valve to exchanger)
6	Isolation panel	32	Piping (4-way valve to collective pipe)
7	Evaporator	33	4-way valve
8	Pillar	34	Compressor
9	Motor fixture	35	Base tray
10	Left panel	36	Piping (exchanger to capillary)
11	Motor	37	Heat exchanger
12	Fan blade	38	Drainage plug
13	Front panel	39	Gauge
14	Waterproof box	40	Terminal box
15	Display	41	Clip
16	Ventilation	42	5-seat terminal
17	Wiring box	43	Terminal cover
18	Electric box cover	44	Water flow switch
19	Transformer	45	Right panel
20	Compressor capacitor	46	Distribution pipe
21	Clip	47	Collective pipe
22	Motor capacitor	48	Blue rubber ring
23	PCB	49	Water connection
24	scaleboard	50	Back panel
25	Electric box	51	Red rubber ring
26	High pressure switch		

Model 22kw



NO	Part Name	NO	Part Name
1	Top cover	31	Exhaust pipe
2	Fan blade	32	High pressure switch
3	Motor	33	Filter sembly
4	Top grill	34	Needle
5	Back pillar	35	Collective pipe
6	/	36	4-way valve to collective pipe
7	Motor fixture	37	Electric box
8	Compressor	38	Scaleboard
9	Evaporator	39	PCB
10	Controller	40	Transformer
11	Water connection	41	Motor capacitor

12	rubber ring	42	Terminal
13	Base tray	43	Temp. controller fixture
14	Gauge	44	Temp. controller
15	Waterproof connection	45	Clip
16	Water connection	46	Terminal
17	rubber ring	47	Wire cover
18	Heat exchanger	48	Electric box cover
19	Water flow switch	49	AC contactor
20	Outlet water temp. sensor clip	50	Water pump terminal
21	Outlet water temp. sensor	51	Phase protection board
22	Inlet water temp. sensor clip	52	Distributor assembly
23	Inlet water temp. sensor	53	Capillary assembly
24	Segregator	54	Low pressure switch
25	Left panel	55	4-way valve to segregator
26	Front panel	56	4-way valve to heat exchanger
27	Piping temp. sensor	57	4-way valve
28	Service panel 2	58	Return pipe
29	Service panel 1	59	Ambient temp. sensor
30	Electric box support panel	60	Ambient temp. sensor clip

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 of 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.

(6) When the unit is running, there is all the time a little water discharge under the unit.

11. Warranty and returns

11.1 Warranty

LIMITED WARRANTY

Thank you for purchasing a heat pump from us.

This warranty covers manufacturing and material defects in all components for a period of two years after the date of purchase.

This warranty is limited to the original purchaser in the retail sector. It is not transferable, and it is not applicable to products that have been removed from their original installation location. The liability of the manufacturer is limited to the repair or replacement of defective components and does not include the cost of labour for removing and replacing the defective component(s), the cost of transporting component(s) from or to the factory, or costs associated with other materials necessary for carrying out repairs. This warranty does not cover any defects attributable to the following causes:

1. Installation, operation or maintenance of the product other than in accordance with the guidelines and/or instructions in the Installation and Operation Manual supplied with the product.
2. Faulty or deficient work performed on the product by an installer.
3. Failure to maintain the correct chemical balance in the swimming pool **[pH between 7.0 and 7.8; total alkalinity (TA) between 80 and 150 ppm; free chlorine concentration between 0.5 and 1.2 mg/l; total dissolved solids (TDS) less than 1,200 ppm; maximum salt concentration 8 g/l]**.
4. Improper use, modification, accident, fire, flood, lighting strike, rodents, insects, negligence, neglect, or force majeure.
5. Deposits, freezing, or other conditions that impair proper water flow through the product.
6. Operating the product with a flow rate outside the published minimum and maximum specifications.
7. Use of components or accessories not designed or made for this product.
8. Chemical contamination of the air used by the product or improper use of decontaminating chemicals, such as the addition of decontaminating chemicals through the skimmer or in the pipes or lines located upstream of the heat pump and the cleaning hose.
9. Overheating, improper electrical connections, improper power supply, secondary damage attributable to defective O-rings, diatomaceous filters or filter cartridges, or damage caused by putting the pump into operation in the absence of sufficient water.

LIMITATIONS ON LIABILITY

This is the sole warranty provided by the manufacturer. Nobody is authorised to grant other warranties in our name.

THIS WARRANTY REPLACES ALL OTHER EXPLICITLY GRANTED OR IMPLICIT WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY FORM OF IMPLICIT WARRANTY OF SUITABILITY FOR A PARTICULAR PURPOSE OR FITNESS FOR SALE. WE EXPLICITLY DISAVOW ANY LIABILITY FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE OF A PUNITIVE NATURE RESULTING FROM THE VIOLATION OF AN EXPLICITLY GRANTED OR IMPLICIT WARRANTY.

This warranty gives you specific legal rights, which may vary depending on the country.

WARRANTY CLAIMS

To ensure prompt handling of your warranty claim, please contact your dealer and provide the following information to the dealer: proof of purchase, model number, serial number and date of installation. The installer will contact the factory to obtain instructions regarding the procedure for making warranty claims and to find out the location of the closest service centre.

All returned components must be marked with a **RMA number** so that it can be determined whether they are covered by the warranty.

11.2 RMA request form

Company:				Date:	
Street address:					
City/town:		Postal code:		Country:	
Contact:				Phone:	
	E-mail:			Fax:	

Contact:		Date:	

Reserved for internal use			
RMA no.:			
Assigned by:		Date:	

Reason for return:

Copy of customer invoice included? ☐

RMA request accompanied by other documents? ☐
Description of the documents:

Model no.:		Invoice no.:	
Serial number:		Invoice date:	
Problem:			

Warranty repair policy

1. Shipping costs for returned products must be paid in advance. All shipping costs associated with a return shipment are borne by you.
2. Products may be sent back to us only after prior approval by the company. Return shipments for which approval has not been given by the company will be sent back, with all shipping costs to be borne by you.
3. We will replace or repair the products and return them to you free of charge using the shipping service of your choice.
4. If you choose express shipment (by a shipping service selected by you), you are responsible for paying the shipping costs.

Return procedure

1. Before requesting an RMA number from us, please check whether you have properly observed the installation and use instructions in the manual.
2. Contact our RMA department by phone and ask for an RMA request form.
3. Ensure that **all** fields of the RMA request form are fully completed.
4. In the case of returns during the warranty period, please include the customer copy of your original sales invoice.
5. Send the RMA request form, the sales invoice and any other relevant documents (photos, etc.) to us or provide them by e-mail. An RMA number will be assigned to you within 24 hours after we receive the necessary documents. We may refuse to assign you an RMA number if the information mentioned in points 3 and 4 above is missing.

6. **The RMA number must be marked clearly on the shipping label of the package and noted on the shipping documents.**
7. All products received by us that lack labels or that have incorrect, incomplete or unreadable labels will be refused, with return shipping costs to be borne by you.
8. All packages delivered to us with clearly visible damage will be refused immediately.
9. Before returning products, please check that the products you intend to return to us are the same as the products for which an RMA number was issued. If the received products do not match the products registered under the assigned RMA number, we will return all of the products at your expense.
10. No return shipments at all will be accepted without an RMA number. Absolutely no exceptions to this rule are allowed.
11. **An RMA number remains valid for just 21 calendar days after it is assigned. We reserve the right to refuse to accept products returned to us if they are received more than 21 days after the date when the RMA number was assigned.**

Products not covered or no longer covered by the warranty

The customer is responsible for paying shipping and repair costs The estimated repair costs will be advised after the problem(s) with the returned products have been diagnosed.

The minimum charge of a diagnosis is £100.00.