

# SWIMMING POOL HEAT PUMP UNIT



## Installation & Instruction Manual



Solupiscinas

# contents

1) General Information	01
1.1) Introduction	01
1.2) Consumer Information and Safety	01
1.3) Energy Saving Tips	02
2) Specifications	02
2.1) Technical specifications of VA-WPH Models	02
2.2) Dimensions	03
3) Installation	04
3.1) General Information	04
3.2) Location	04
3.3) Clearance	05
3.4) Drainage	06
3.5) Electrical Wiring	06
3.6) Initial Startup	10
4) Operation	10
4.1) Control Panel	10
4.2) Instruction of SMS control	12
4.3) Error Code	13
4.4) Operation Data Setting	13
5) Maintenance and Trouble Shooting	13
5.1) Maintenance	13
5.2) Troubleshooting	14
6) Appendix	15
6.1) Spare Parts List	15
6.2) Acknowledgement	19

# 1 general information

## 1.1 Introduction

This manual provides installation and operation instructions for the heat pumps. Read these installation and operation instructions carefully before proceeding with the installation. Consult the local distributor with any questions regarding this equipment. Please read this manual carefully before you install. Start, repair or maintain the unit. Installation and service must be performed by a qualified installer. The manufacturer shall not be responsible for any damage of the unit or physical injury or death caused by improper installation, debugging, operation, maintenance or disregarding the manual.

## 1.2 Consumer Information and Safety

1. We recommend 80°F (27°C) as the optimum water temperature for swimming. Overheated water may cause tiredness and reduce comfort of swimming.
2. The drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness which could lead to unconsciousness, and subsequently result in drowning.
3. *Pregnant women take note!* Soaking in water above 102°F (38.5°C) can cause fetal damage during the first three months of pregnancy (which could result in the birth of a brain-damaged or deformed child). If pregnant women are going to use a spa or hot tub, they should make sure the water temperature is below 100°F (38°C) maximum.
4. The water temperature should always be checked with an accurate thermometer before entering a spa or hot tub.
5. Persons with a medical history of heart disease, diabetes, circulatory or blood pressure problems should consult their physician before using a hot tub or spa.
6. Persons taking any medication which induces drowsiness (e.g., tranquilizers, antihistamines, or anticoagulants) should not use spas or hot tubs.
7. Prolonged immersion in hot water can induce hyperthermia.

## 1.3 Energy Saving Tips

It is important to note that a heat pump will not heat a pool as fast as a large gas or electric pool heater. If the pool water is allowed to cool significantly, it may take several days to return to the desired swimming temperature. For weekend use, it is more economical to maintain the pool water temperature at or near your desired swimming temperature. If you do not plan to use your pool for a prolonged period, then you might choose to turn the heat pump completely off or decrease the temperature setting of the control several degrees to minimize energy consumption.

1. Use an accurate pool thermometer. A difference of 4°F (2°C), between 78°F and 82°F (26°C and 28°C), will significantly increase energy consumption.
2. Carefully monitor the water temperature of your pool in the summer time. You can reduce heat pump usage due to warmer air temperatures.
3. During the winter or when on vacation for longer than a week, turn off the heat pump.
4. Find the proper setting on the heat pump temperature control.
5. Where possible, shelter the pool from prevailing winds with well-trimmed hedges or other landscaping, cabanas, or fencing.
6. Always use a pool cover when practical. Besides providing a valuable safety feature, a pool cover will reduce heat loss.

# WINTERIZING - Important !

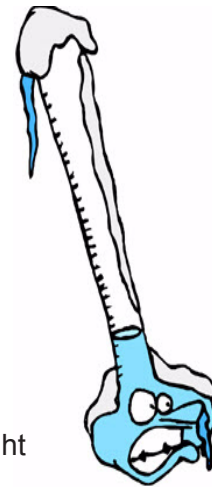
## Seasonal Use & Shut Down

### During the Swim Season:

- During the swim season, even if the pool or spa is not in use, allow water to flow through the heater. Doing so eliminates the need to reposition valves when you do wish to heat the pool or spa.
- During periods when heating or cooling is not desired, leave heater controls in the OFF position.

# Important !!!

## Information Critical to the Survival of Your Heater Follows...



### Freeze Protection & Extended Shut Down:

In areas where freezing conditions are a rare occurrence, allow the filtration system to run continuously throughout the freeze period. Typically, during light freeze conditions, circulating (moving) water will not freeze.

In areas where freezing conditions are prevalent and sustained, the heat pump MUST be winterized; please refer to winterizing instructions, below, and on the following pages.

### Winterizing for Hard Freeze Conditions:

#### CAUTION !

Failure to heed the following can result in damage to equipment and/or property.

Failure to properly winterize heat pump may result in serious equipment damage. Freeze damage is not covered under the heat pump warranty.

#### CAUTION !

Failure to heed the following can result in damage to equipment and/or property.

While the plumbing connections are in the winterized condition (not fully tightened), it is imperative pool/spa water not be circulated through the heat pump. Loss of water through loose plumbing connections may result in damage to circulating pump, pool/spa structure, and/or other equipment.

*(Winterizing continued on page following)*

# WINTERIZING - Continued

## Winterizing Procedure:

1. Disconnect all electrical power to the heater; turn OFF circulating pump.
2. At the two connection unions, disconnect the plumbing to the heater (removal is counter-clockwise).
3. Locate the hand drain tap below the two unions. See figure below. Rotate 90Deg.
4. Permit all of the water to drain out of the condenser and then rotate back
5. To prevent insects and vermin from entering the plumbing during the winterized period, partially reconnect the two (2) plumbing connection unions: couple each union one or two threads; this will permit condensation to drain, but will prevent most insects and animals from entering the plumbing circuit.
6. If you have used ball valves to isolate the heat pump then you can keep the pool pump running in winter or keep using the pool when repairing the heat pump, or for indoor pools this is essential
7. Next Season: To ready the heat pump for use, simply retighten plumbing connection unions. Hand-tight is generally sufficient.

## LOCATION OF EXTERNAL DRAIN PLUG AND UNIONS



## CAUTION !

Failure to heed the following can result in damage to equipment and/or property.

While the plumbing connections are in the winterized condition (not fully tightened), it is imperative pool/spa water not be circulated through the heat pump. Loss of water through loose plumbing connections may result in damage to circulating pump, pool-spa structure, and/or other equipment.

# 2 specification

## 2.1 Technical specifications of VA-WPH models

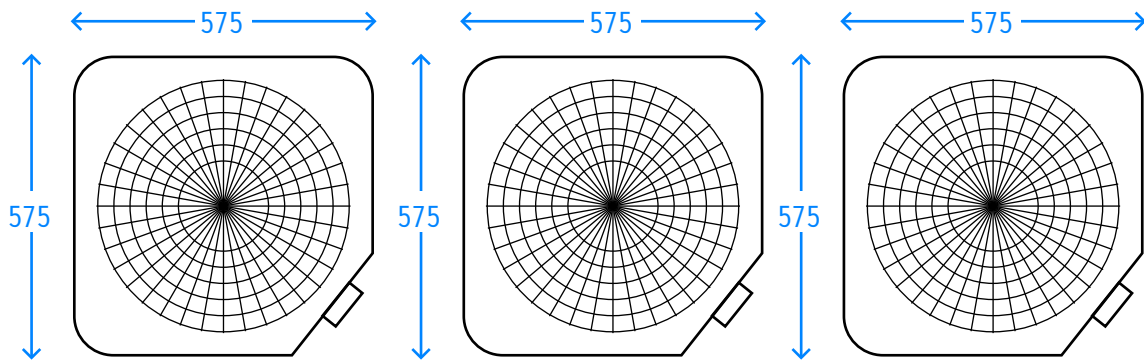
Item	Units	VA-WPH15	VA-WPH20	VA-WPH30	VA-WPH40	VA-WPH45	VA-WPH50	VA-WPH60L	VA-WPH60	
Fan Location		Top								
Heating Capacity	F	BTU/H	37150	42625	44330	57970	63085	68200	92070	92070
		W	11000	12500	1300	17000	18500	20000	27000	27000
	E	BTU/H	24552	32395	35805	54560	58652	61380	85250	85250
		W	7200	9500	10500	16000	17200	18000	25000	25000
Power Input	F	W	1320	1900	2730	2750	3300	4300	5100	6000
	E	W	1200	1800	2470	2600	3100	3750	4700	5500
COP	F		6.22	6.58	4.76	6.18	5.61	4.65	5.32	4.50
	E		6.0	5.28	4.25	6.15	5.55	4.80	5.29	4.55
Current	F	A	6.5	8.7	13.2	14.3	15.8	22.5	24.0	10.3
	E	A	5.7	8.2	11.8	13.6	15.0	19.5	22.2	9.7
Power Supply	V/Ph/Hz	220-240/1/50								380/3/50
Compressor		1 Set								
		Rotary								
Heat exchanger		Titanium heat exchanger in PVC housing								
Refrigerant		R407c / R22								
Fan Amount		1								
Power Input of Fan	W	175								
Rotate Speed	RPM	650								
Noise Level	dB(A)	47	47	47	51	54	56	58	58	
Connections	mm	50								
Water Flow	m <sup>3</sup> /h	2.2	3	4.5	6	6.0	3	4.5	6	
Water Pressure Drop	kPa	10					12			
Dimension	mm	575* 575* 680	575* 575* 780	575* 575* 780	575* 575* 780	575* 575* 780	575* 575* 880	575* 575* 880	575* 575* 880	
Package Size	mm	710* 710* 820	710* 710* 820	710* 710* 920	710* 710* 920	710* 710* 920	710* 710* 1020	710* 710* 1020	710* 710* 1020	
N.W/G.W	Kg	54/68	58/72	64/78	75/90	88/103	98/113	100/115	102/117	
F-factory test conditions surrounding temperature : 24°C db/19°C wb					E-european test conditions surrounding temperature : 15°C db/11°C wb					
27° Centering water COP : 4.5-7.0					27° Centering water COP : 4.0-6.1					
Note : the above data are for your reference. There will be no prior notice for technical improvement										

## 2.2 Dimensions

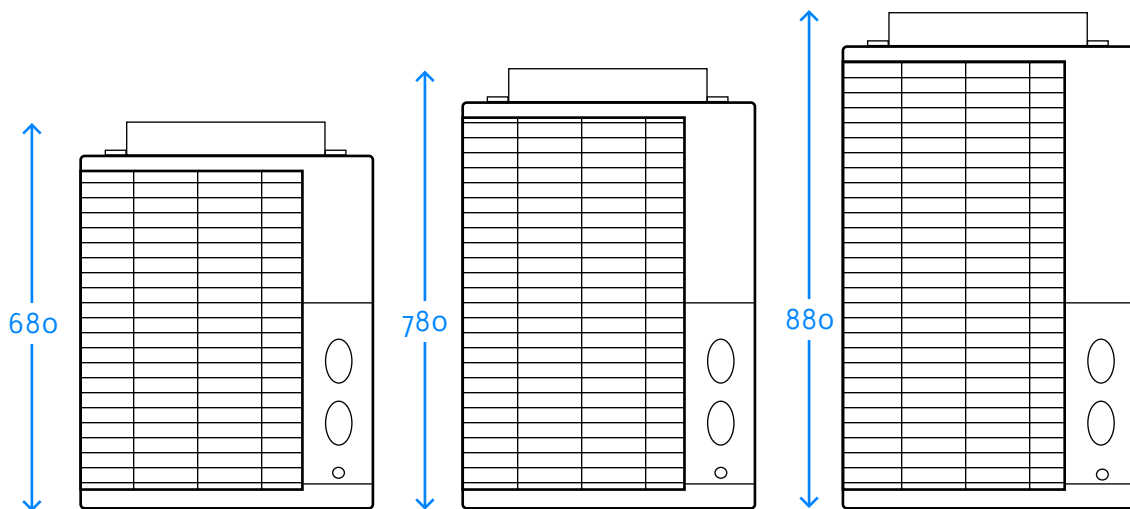
VA-WPH15  
VA-WPH20

VA-WPH30  
VA-WPH40  
VA-WPH45

VA-WPH50  
VA-WPH60L  
VA-WPH60



Platform



Side View



# 3 installation

## 3.1 General Information

Inspect the casing, unit and spare parts after receipt for possible for possible damage in transportation. Check whether there is breakage of the casing and cabinet, deformation of the unit, shed parts. The manufacturer shall not be responsible for any damage due to improper hanging or shipping.

Install the heat pumps in accordance with the procedures in this manual, local codes and ordinances.

Correct installation is required to assure safe operation. The requirements for heat pumps include the following:

1. Appropriate site location and clearances.
2. Sufficient air ventilation.
3. Proper electrical wiring.
4. Adequate water flow.

This manual provides the information needed to meet these requirements. Review all application and installation procedures completely before continuing the installation.

## 3.2 Location

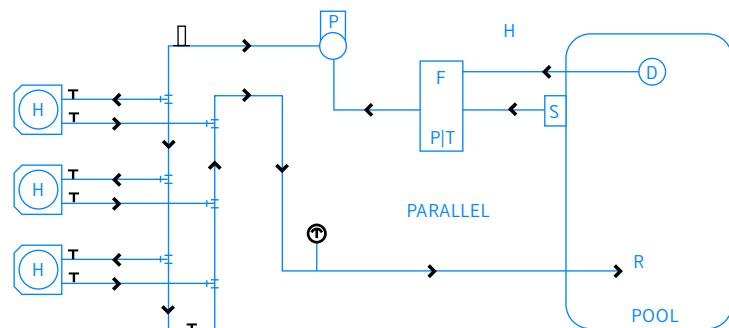
The unit should be usually installed outdoor (*NOTE: Indoor installations require special considerations for condensate drainage and venting the cold air produced by the heat pump.*)

Install the unit downstream of all pumps and filters and upstream of all chlorinators, ozonizers and chemical pumps.

Keep lawn sprinkler heads from spraying on the heat pump to prevent corrosion and damage. Use a deflector if needed.

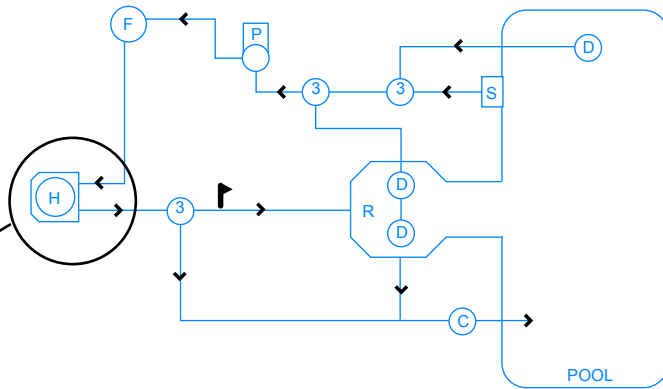
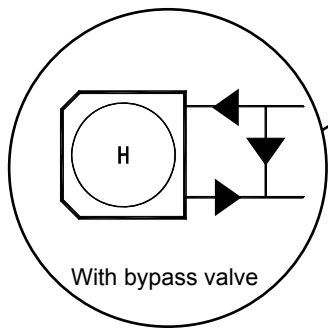
Make sure the heat pump is not located where large amounts of water may run-off from a roof into the unit. Sharp sloping roofs without gutters will allow massive amounts of rain water, mixed with debris from the roof to be forced through the unit. A gutter or down spout may be needed to protect the heat pump.

Multiple Heat Pump Installation

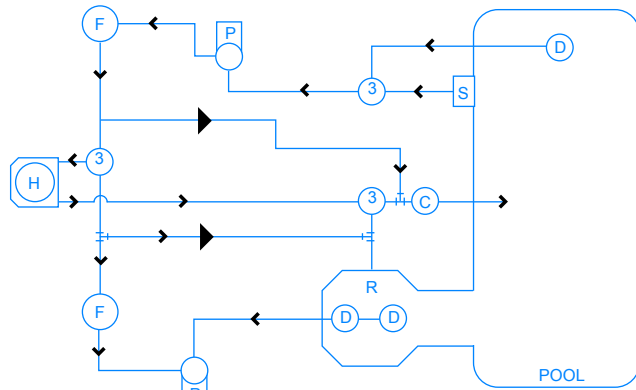




Pool/Spill over Spa- One Pump System



Pool/Spill over Spa- Two Pump System

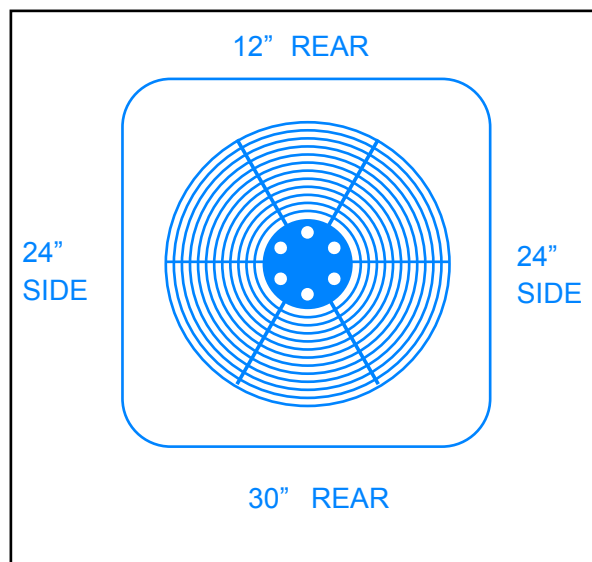


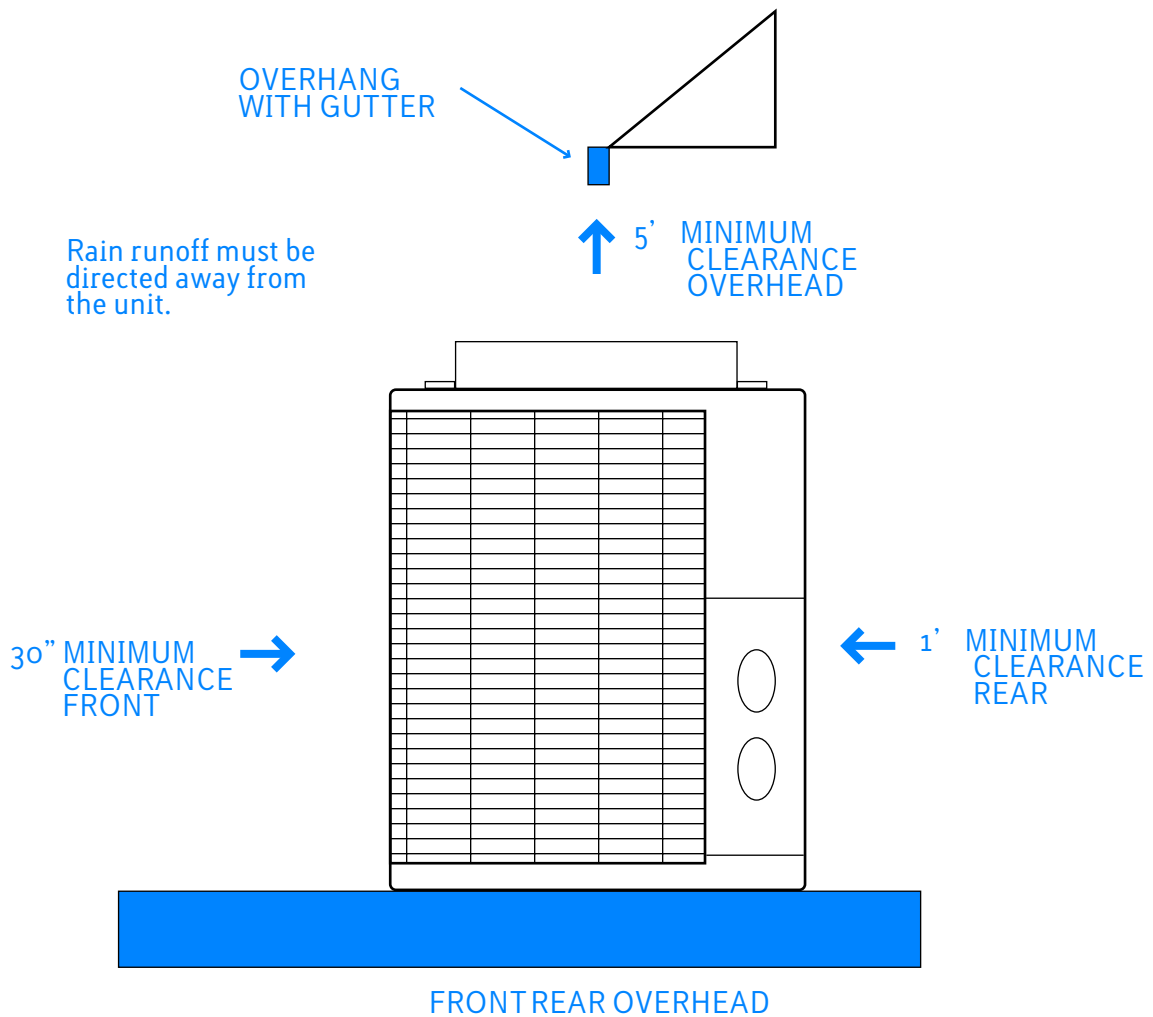
LEGENDS			
3	3 way valve		Flow Switch (ADT Kit)
C	Chlorinator		Throttle valve
D	Drain		Thermometer
F	Filter		By-Pass Check Valve
H	Heat pump		Flow meter
P	Pump		
R	Return		
S	Skimmer		

Note: the longer the pipes connecting your pool and the unit ,the more energy is lost. - we suggest insulating pipes where possible.

### 3.3 Clearances

The unit needs continuous fresh air while running. Please leave enough space around the unit for unobstructed air absorption and discharging. Don't locate the unit in an enclosed area, or the discharged cold air will circulate into the unit again and consequently lower the heating efficiency.





### 3.4 Drainage

While the unit is running water in the air may condense on the fins of the evaporator. If the air humidity is very high, the condensation water within an hour can be several gallons. The water will flow down to the base plate through the fins. The factory provides optional drip tray to collect the condensation water.

### 3.5 Electric wiring

General Requirements:

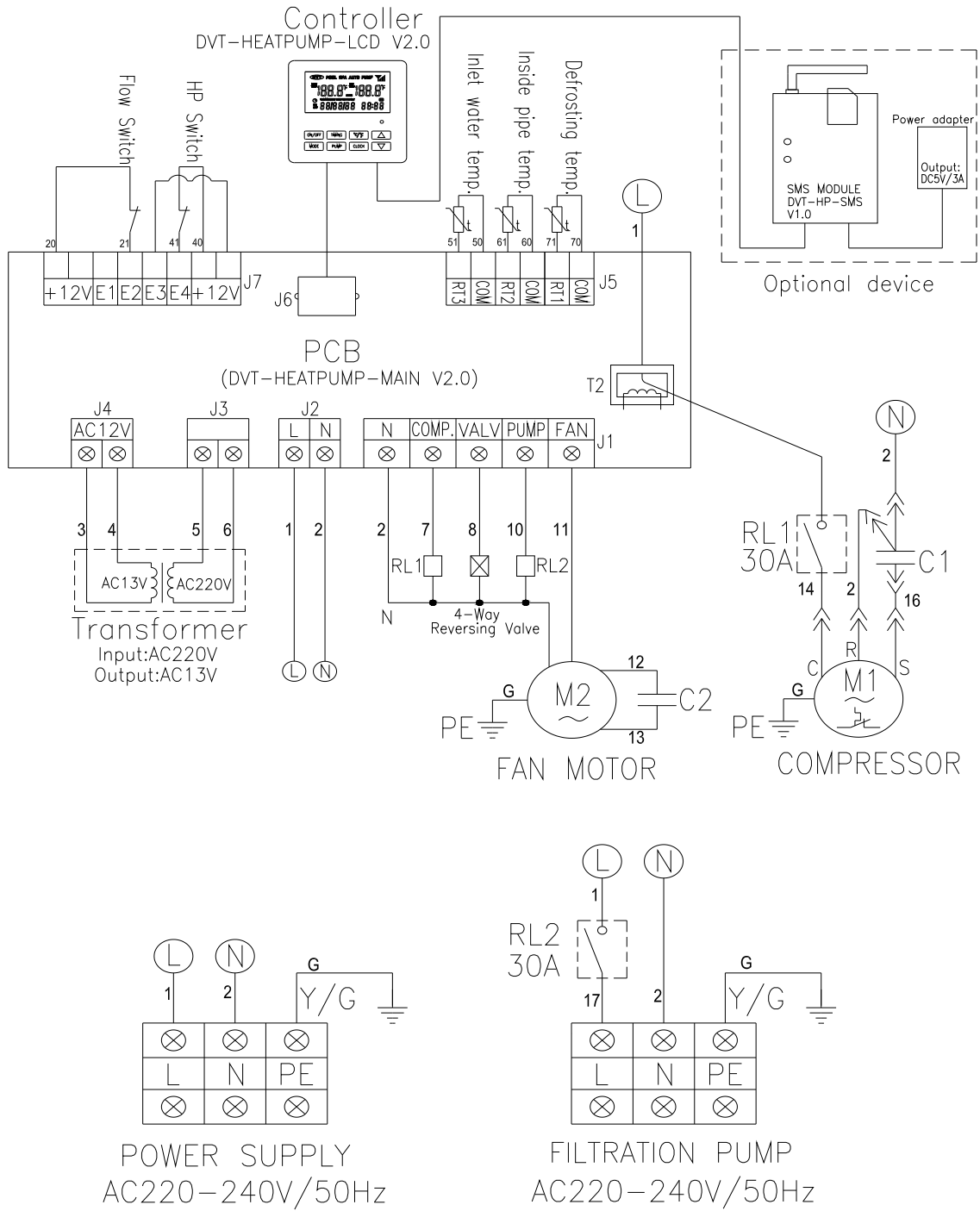
Read the information of the manual before connecting. It is compulsively required that the cables should be wired by a qualified electrical technician. Connection made by unprofessional people may cause electric shock even death. The manufacturer shall not be responsible for the consequences of connection made by unqualified people or disregarding the manual.

1. No power supplied to the unit while connecting.
2. Always comply with the national and local electrical codes and standards.
3. In case any emergency occurs, the unit must be equipped with a breaker.
4. The unit must be well earthed.

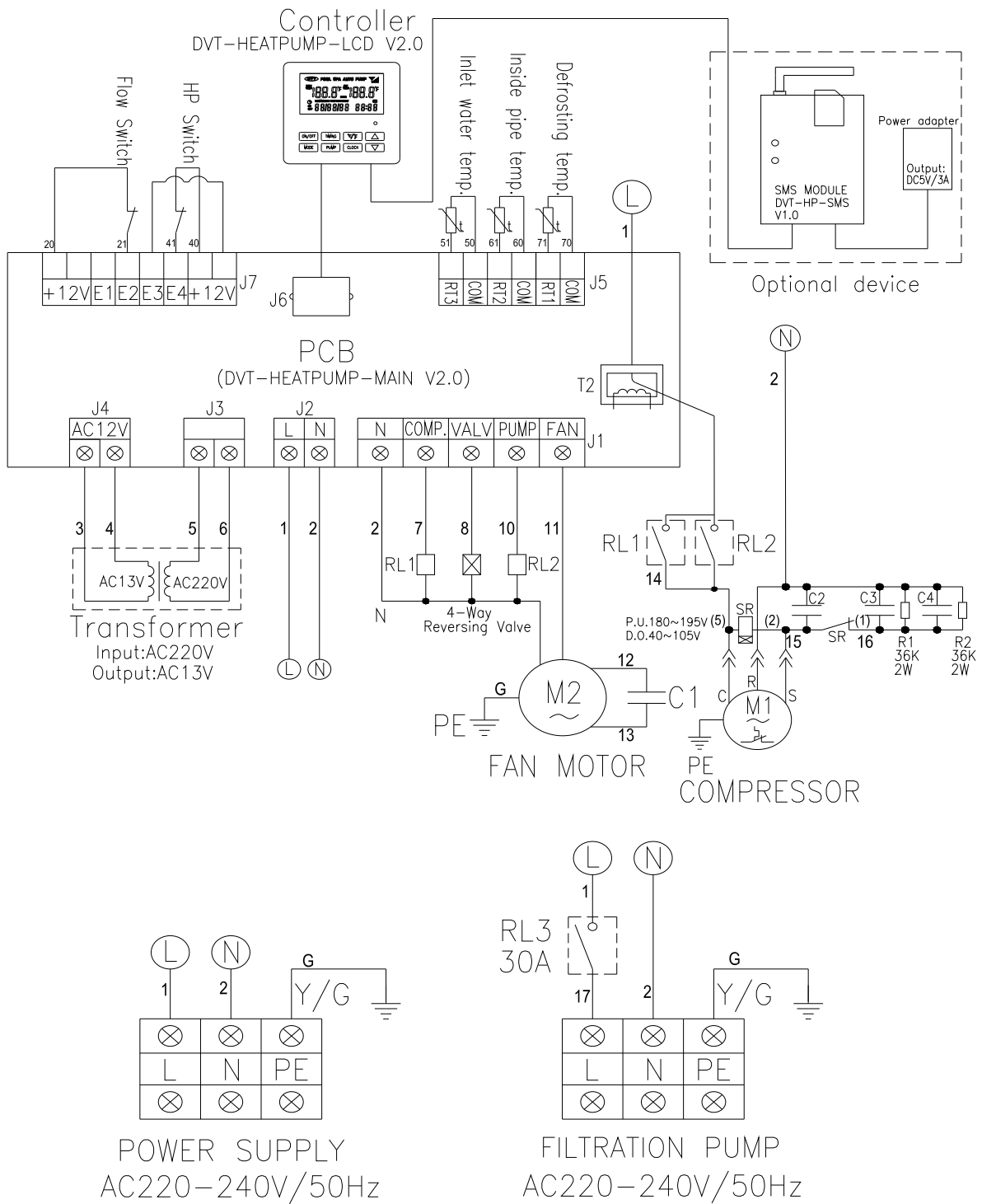
Several screws fix the front board of the cabinet. Drive them out and remove the front panel. Mount the front panel after connecting. Make sure that it is fixed firmly by the screws.

# Wiring Diagram - Single Phase

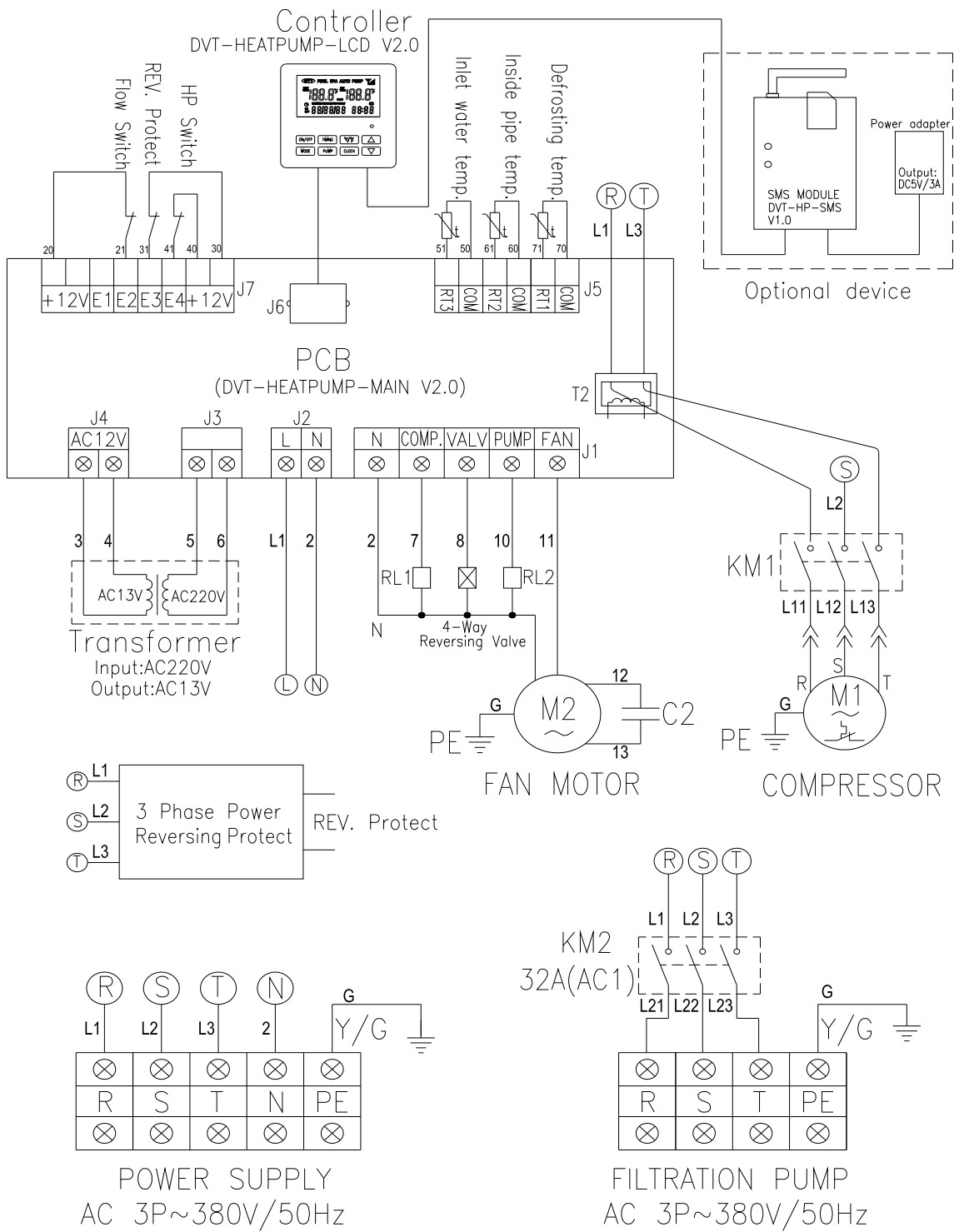
Single phase (VA-WPH15 VA-WPH20 VA-WPH30 VA-WPH40 VA-WPH45)



# Single Phase ( VA-WPH50 VA-WPH60L )



### 3 Phase



## 3.6 Initial startup

Start the unit after finishing connecting for comprehensive examine and debugging.  
Notice : the unit will not heat the pool when the water pump is not working.

Starting Steps.

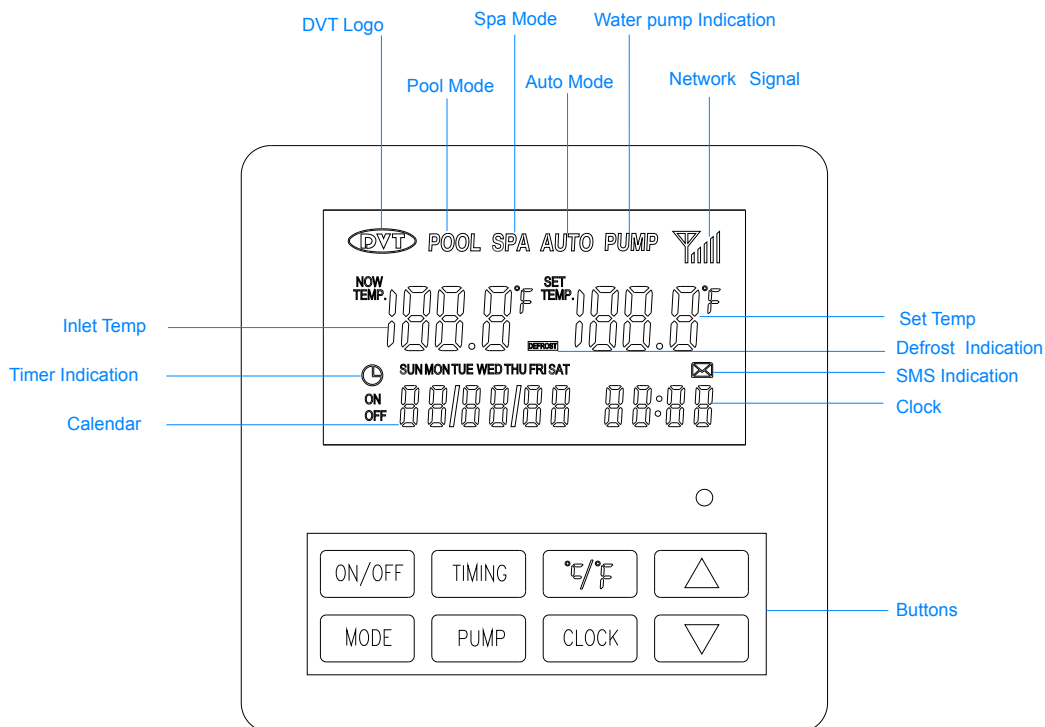
1. Check whether the connections, wires and cables of the unit, water pump, chlorinator, ozonizer, chemical pumps and control panel are correctly coupled or connected .
2. Turn on the water pump and filter. Check for water leakage and verify the water flow.
3. Turn on the power of the unit. Then press the button ON/OFF on the control panel. The unit will start in several seconds.
4. After the unit runs for a few minutes, check whether the air discharged from the fan is cooler than the ambient air.
5. Turn the water pump off while the unit is running. The unit should stop working automatically. If not, adjust the flow switch.
6. Turn on the unit again, set the temperature on the control panel and keep the whole pool system running. The unit will stop running automatically as the pool water reaches the set temperature. When the temperature drops to 1°C lower than the set temperature, The unit will restart automatically.

# 4 operation

## 4.1 Control Panel

The control panel can be mounted outdoor or indoor for remote control of the unit.

Buttons and Functions



### Turn on/off the Heater

Press "ON/OFF" to turn on or turn off the heater.

Note : In order to protect itself, the compressor will not start within approx. 5 minutes of stopping. If the user would like to start the heater again after turning it off, he should wait around 5 minutes.

Despite the technical nature of all of the features of the controller, it can also be used in the simplest mode possible - that is :

**Press "ON/OFF" button to turn the heater on and use the up or down arrow to set the desired pool temperature - that is it !**

However, it is recommended you take advantage of it's enhanced features overleaf, to bring you convenience & cost saving.

This Heat pump has an advanced control unit that can be used so that heat pump has control over the Pool Filter pump. Power supply from the heat pump to the Pool filter pump can be connected or left un-connected, depending which features you require. The advanced features are only available with the Filter pump power supply connected. Please see below for **1. SIMPLE & 2. ADVANCED FUNCTIONS:**

## 1. SIMPLE FUNCTIONS (AVAILABLE WITH OR WITHOUT FILTER PUMP CONTROLLER WIRED)

### Running Mode Shift

Turn the heater on, press "MODE" to shift between POOL,SPA and AUTO modes. User can choose the suitable heating mode for the swimming pool (POOL mode,original set temperature 27°C ) or spa (SPA mode, original set temperature 38°C ). You can also choose AUTO mode to let the heater choose the right mode by learning the temperature rising rate monitored from the water.

### Temperature setting

Turn the heater on, press "▼" and "▲" to set the desired Pool temperature . The buzzer would make a long beep some seconds later to confirm the new setting. Note : The Heat pump will run till the water temp. Is 1Deg above set point. It will switch off when the water temp. Is 1Deg below set point.

### Temperature Display Shift

Press "°C /°F" to shift between celsius and fahrenheit display.

### Date and time adjustment

Turn the heater on and press "CLOCK" to enter date and time setting. Press "▼" and "▲" to change the setting and press "CLOCK" to shift and confirm the new setting.

**Timing for ON/OFF (Note : If the timing below is set outside of the filter pump timer, then it becomes an advanced function & requires the Pool filter pump connection)**

**Pattern I - sets the heat pump to turn on & off within a daily time period & within a date period.**

**Pattern II - sets the heat pump to turn on & off within a daily time period only.**

**Pattern III - sets the heat pump to a different temperature each day of the week.**

(The above three patterns can't be activated at the same time. Any of them is activated,the other two are null.)

**Pattern I (St1) :** turn the heater on, press and hold "TIMING" for five seconds to enter the setting for turning on/off date and time, "NOW TEMP" will indicate "St1", with the screen displaying "ON". Press "▼" and "▲" to set and press "TIMING" to shift and confirm the new setting. The screen would display "OFF" once the setting of turning on time is finished. Then set turning off time the same way.

The timer indication

would be on once the setting of turning on and off time is finished. Press "MODE" to choose the running mode, and then turn off the heater. The heater would run following the timer.

**Pattern II (St2):** after entering setting,press "°C /°F" to shift from pattern I to pattern II of timing, screen will display "St2"instead of "St1".

Press "▼" and "▲" to set turning on/off time and press TIMING to shift and confirm the new setting. The heater would run according to the setting everyday .

**Pattern III (St3):** after shifting from "St1",to "St2", press "°C /°F" again to enter pattern III, screen displaying"St3"and "SUN". By pressing "▼" and "▲" and "TIMING" , the user can set desired temperature of each day in a week . After setting of all days in a week is finished, the screen would show the setting two seconds a day for one time. Then the timer indication would be on. Under this pattern please DON'T turn off the unit.

**Note : To cancel any of the above timings just hold "TIMING" for five seconds and then press the on/off button. You will notice the clock symbol disappear but the Heat pump will remain on.**

## 2. ADVANCED FUNCTIONS AVAILABLE WHEN FILTER PUMP CONTROLLER IS WIRED (In addition to simple functions)

### Energy saving mode (Timing for water pump delay)

Generally this feature would be used if the pool is still calling for heat outside of the set filter pump time period for pool cleaning/filtering (It also means you do not need to leave the Filter pump running 24/7). Below shows how it works & how to set it :

Once the set temperature is reached, the compressor and fan motor would stop and stand by, circulation pump stopping running after 10 minutes delay (to protect the compressor) and restart within a user specified set time. For example, if set temperature is 28 Deg and set time is 240 minutes, once the heatpump heats the water to 29 degrees, the compressor and fan motor would stop and the circulation pump would go on running for another 10 minutes. At the end of the 10 minutes, if the water temperature is below 27 degrees, the heat pump would start to run again. If, however, the water temperature is above 28 Deg the heat pump will switch off & the controller will only turn on the filter pump after the set time of 240 minutes. To set the timing for restart of the water pump :

Press pump to enter the setting. The clock would show the last setting . Press "▼" and "▲" to set the timing and press pump to confirm the setting (setting range : 10-300 minutes, display for water temperature would not refresh during this period).

Note : This function is null with SPA mode (the water pump would not stop running under SPA mode).



## 2. ADVANCED FUNCTIONS (cont.)

### Timing for turning on/off water pump

Note : This timing is for pool cleaning or summer days when heat pump heat is not needed to run. Heat pump will not run once this timing is activated. Turn on the heat pump, press and hold "pump" for 5 seconds. "NOW TEMP" would indicate "SP", screen displaying "SUN" and "ON". Then the user can set the turning on time on Sunday by pressing "▼" and "▲" and "PUMP".

Press "PUMP" again to confirm the setting for turning off time on Sunday. Then the screen would display "OFF" instead of "ON" which allows the user to set the turning off time on Sunday. The screen would display "MON" instead of "SUN" once the turning off time on Sunday is confirmed. In the same way, the user can set the turning on/off time of each day in a week. "PUMP" would twinkle once two seconds to indicate that the timing is activated and

## 4.2 Instruction of SMS control

To use SMS control, the following conditions need to be reached:

- A) One available SIM card which accords to the GSM is needed.
- B) Make sure this card can send and receive SMS without problem.
- C) Insert the SIM card in the slot of the SMS control device.

Connect the SMS control device to the controller and the DC power source pack with the heater. The screen of the controller would show the strength of the network signal. Please put the SMS control device where the signal is good enough.

Caution : it's forbidden to pull out the SIM card when the power of the SMS control device is still on.

Format of Short Message:

#### A) Temperature setting:

Write message in the following format and send in to the SIM card in the SMS control device:

CODE : 889988 SET TEMPERATURE: (889988 refers to password. refers to set temperature , unit: )

E.g. set temperature is 30.0 ,the message should be written as following:

CODE:889988 SET TEMPERATURE: 30.0

#### B) turning on the heater:

send the following message to turn on the heater:

CODE:889988 OPEN

#### C) turning off the heater:

send the following message to turn on the heater:

CODE:889988 CLOSE

#### D) Status check:

send the following message to the SMS control device to check the current status of the heater:

CODE:889988 OK?

#### E) Timing for start and stop:

Send message in the following format to set the turning on/off time:

CODE:889988 POWER ON TIME1:DD/MM/YY,HH:SS POWER OFF

TIME1:DD/MM/YY,HH:SS

e.g.turning on time is 15:30,23jan,2008,turning off time 18:50,25jan,2008. The message should be written as following: CODE:889988

POWER ON TIME1:23/01/08,15:30 POWER OFF TIME1:25/01/08,18:50

#### F) Change Password

Send message in the following format to change the password:

CODE: 889988 NEW CODE: XXXXXXX (889988: original password; XXXXXXX :new password)

Note: there is no space after the punctuations.

After receiving a message, the SMS indication on the controller screen would light and the heater would automatically send a message to the sender's mobile phone as a reply.

Note : the SMS control device can treat only one message in each minute. More than one message in a minute can result in jam and wrong operation.

### 4.3 Error Code

Code	Explanation
E0	Phase failure(only for 3 phase unit)
E1	Compressor overload
E2	HP protection
E3	Water flow switch protection
E9	Communication failure
F10	Defrosting sensor short circuit
F11	Defrosting sensor open
F20	Condensing sensor short circuit
F21	Condensing sensor open
F30	Inlet water temperature sensor short circuit
F31	Inlet water temperature sensor open

### 4.4 Operation Data Setting

The operation data of the unit can be set on the control panel .

Data	Meaning	Range	Default	Adjust (yes/no)
00	Return water temp. Setting (heating mode)	16-45°C	27°C	Yes
01	Model Shift	button	Heating Mode	No

# 5 maintenance & troubleshooting

### 5.1 Maintenance

General Maintenance:

1. The unit should be kept clean to preserve paintwork . Occasionally the fins surrounding the unit should be sprayed lightly to remove any collected dirt/debris/insects. (The fins need as large a surface area as possible for heat exchange)
2. The unit must be winterised if it is not going to be used all year round - eg unless used for indoor pools

Keep proper water flow:

1. Keep the filter clean. The filter may get dirty along with using. A dirty filter can reduce the water flow.
2. Keep the pump clean, too.
3. Check the valves often.

## 5.2 Troubleshooting

The unit would not run:

1. Is the screen of control panel lit? If on, make sure the electrical wires and cables are correctly connected and the power is on.
2. If the screen displays E7, check the water flow. Whether the water pump is running normally or the filter is jammed?
3. The unit will stop running automatically when the pool water reaches the set temperature

The unit is running but not heating:

1. Is the air discharged from the fan cooler than the ambient temperature? If not, ask a professional technician to check the refrigerant system.
2. Be sure the space around the unit is broad enough. There should not be obstruction of air.
3. The unit will defrost when the ambient temperature is lower than normal condition (usually when the temperature is lower than 8°C).

# 6

# appendix

## 6.1 Spare Parts List

VA-WPH15		
Number	Name	Model or Size
V15-1	PCB	V2.0
V15-2	Control panel	V2.0
V15-3	Temperature sensor (black)	50K
	Temperature sensor (red)	50Kn+1%
V15-4	Fan motor capacitor	5uF/450 V
V15-5	Compressor capacitor	35uF
V15-6	Relay	JQX-105F-4/220AK1H
V15-7	High pressor switch	YK-3.0/2.4
V15-8	Water flow switch	R1F8
V15-9	Heat exchanger	1050-0015-1
V15-10	Compressor&Accessories	CSL211CV-C7LU
V15-11	Fan motor	YYK-60B-6A
V15-12	4-way reversing valve	STF-0201
V15-13	Transformer	GB4126(CE/TY300002.01)
V15-14	Waterproof cover (optional)	OP-01-A
V15-15	Waterproof box for controller (optional)	OP-02
V15-16	Drip tray (optional)	OP-03

### VA-WPH20

Number	Name	Model or Size
V15-1	PCB	
V15-2	Control panel	
V15-3	Temperature sensor (black)	50K
	Temperature sensor (red)	50Kn±1%
V15-4	Fan motor capacitor	5μF/450V
V15-5	Compressor capacitor	50μF
V15-6	Relay	JQX-105F-4/220AK1H
V15-7	High pressure switch	YK-3.0/2.4
V15-8	Water flow switch	R1F8
V15-9	Heat exchanger	1050-0002-1
V15-10	Compressor & Accessories	CHY33MC4-U
V15-11	Fan motor	YYK-60B-6A
V15-12	4-way reversing valve	STF-0201
V15-13	Transformer	GB4126(CE/TY300002.01)
V15-14	Waterproof cover (optional)	OP-01-A
V15-15	Waterproof box for controller (optional)	OP-02
V15-16	Drip tray (optional)	OP-03

### VA-WPH30

Number	Name	Model or Size
V15-1	PCB	V2.0
V15-2	Control panel	V2.0
V15-3	Temperature sensor (black)	50K
	Temperature sensor (red)	50Kn±1%
V15-4	Fan motor capacitor	5μF/450V
V15-5	Compressor capacitor	55μF
V15-6	Relay	JQX-105F-4/220AK1H
V15-7	High pressure switch	YK-3.0/2.4
V15-8	Water flow switch	R1F8
V15-9	Heat exchanger	1050-0003-1
V15-10	Compressor & Accessories	CHV33YC6-U
V15-11	Fan motor	YYK-60B-6A
V15-12	4-way reversing valve	SHF-9-45U-G(3.5P)
V15-13	Transformer	GB4126(CE/TY300002.01)
V15-14	Waterproof cover (optional)	OP-01-B
V15-15	Waterproof box for controller (optional)	OP-02
V15-16	Drip tray (optional)	OP-03

**VA-WPH40**

Number	Name	Model or Size
V15-1	PCB	V2.0
V15-2	Control panel	V2.0
V15-3	Temperature sensor (black)	50K
	Temperature sensor (red)	50Kn±1%
V15-4	Fan motor capacitor	5μF/450V
V15-5	Compressor capacitor	40μF
V15-6	Relay	JQX-105F-4/220AK1H
V15-7	High pressure switch	YK-3.0/2.4
V15-8	Water flow switch	R1F8
V15-9	Heat exchanger	1050-0004-1
V15-10	Compressor & Accessories	C-RN-220H5B
V15-11	Fan motor	YYK-60B-6A
V15-12	4-way reversing valve	SHF-9-45U-G(3.5P)
V15-13	Transformer	GB4126(CE/TY300002.01)
V15-14	Waterproof cover (optional)	OP-01-B
V15-15	Waterproof box for controller (optional)	OP-02
V15-16	Drip tray (optional)	OP-03

**VA-WPH45**

Number	Name	Model or Size
V15-1	PCB	V2.0
V15-2	Control panel	V2.0
V15-3	Temperature sensor (black)	50K
	Temperature sensor (red)	50Kn±1%
V15-4	Fan motor capacitor	5μF/450V
V15-5	Compressor capacitor	40μF
V15-6	Relay	JQX-105F-4/220AK1H
V15-7	High pressure switch	YK-3.0/2.4
V15-8	Water flow switch	R1F8
V15-9	Heat exchanger	1050-0004-1
V15-10	Compressor & Accessories	C-SCN261H5A
V15-11	Fan motor	YYK-60B-6A
V15-12	4-way reversing valve	SHF-9-45U-G(3.5P)
V15-13	Transformer	GB4126(CE/TY300002.01)
V15-14	Waterproof cover (optional)	OP-01-B
V15-15	Waterproof box for controller (optional)	OP-02
V15-16	Drip tray (optional)	OP-03

### VA-WPH50

Number	Name	Model or Size
V15-1	PCB	V2.0
V15-2	Control panel	V2.0
V15-3	Temperature sensor (black)	50K
	Temperature sensor (red)	50Kn±1%
V15-4	Fan motor capacitor	5μF/450V
V15-5	Compressor capacitor	60μF
V15-6	Relay	JQX-105F-4/220AK1H
V15-7	High pressure switch	YK-3.0/2.4
V15-8	Water flow switch	R1F8
V15-9	Heat exchanger	1050-0005-1
V15-10	Compressor & Accessories	C-SBN301H5A
V15-11	Fan motor	YYK-60B-6A
V15-12	4-way reversing valve	SHF-9-45U-G(3.5P)
V15-13	Transformer	GB4126(CE/TY300002.01)
V15-14	Waterproof cover (optional)	OP-01-C
V15-15	Waterproof box for controller (optional)	OP-02
V15-16	Drip tray (optional)	OP-03

### VA-WPH60

Number	Name	Model or Size
V15-1	PCB	V2.0
V15-2	Control panel	V2.0
V15-3	Temperature sensor (black)	50K
	Temperature sensor (red)	50Kn±1%
V15-4	Fan motor capacitor	5μF/450V
V15-5	Compressor capacitor	----
V15-6	Relay	JQX-105F-4/220AK1H
V15-7	High pressure switch	YK-3.0/2.4
V15-8	Water flow switch	R1F8
V15-9	Heat exchanger	1050-0006-1
V15-10	Compressor & Accessories	JT170GBBY1L
V15-11	Fan motor	YYK-60B-6A
V15-12	4-way reversing valve	STF-0401
V15-13	Transformer	GB4126(CE/TY300002.01)
V15-14	Waterproof cover (optional)	OP-01-C
V15-15	Waterproof box for controller (optional)	OP-02
V15-16	Drip tray (optional)	OP-03



## VA-WPH6oL

Number	Name	Model or Size
V15-1	PCB	V2.0
V15-2	Control panel	V2.0
V15-3	Temperature sensor (black)	50K
	Temperature sensor (red)	50Kn±1%
V15-4	Fan motor capacitor	5μF/450V
V15-5	Compressor capacitor	35μF
V15-6	Relay	JQX-105F-4/220AK1H
V15-7	High pressure switch	YK-3.0/2.4
V15-8	Water flow switch	R1F8
V15-9	Heat exchanger	1050-0006-1
V15-10	Compressor & Accessories	C-SBN371H5A
V15-11	Fan motor	YYK-60B-6A
V15-12	4-way reversing valve	STF-0401
V15-13	Transformer	GB4126(CE/TY300002.01)
V15-14	Waterproof cover (optional)	OP-01-C
V15-15	Waterproof box for controller (optional)	OP-02
V15-16	Drip tray (optional)	OP-03

*Note: the parts written in italic letters are not universal.*

## 6.2 Acknowledgement

Thank you for choosing our swimming pool heat pump!  
If you have any question, please contact with the local distributor.

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