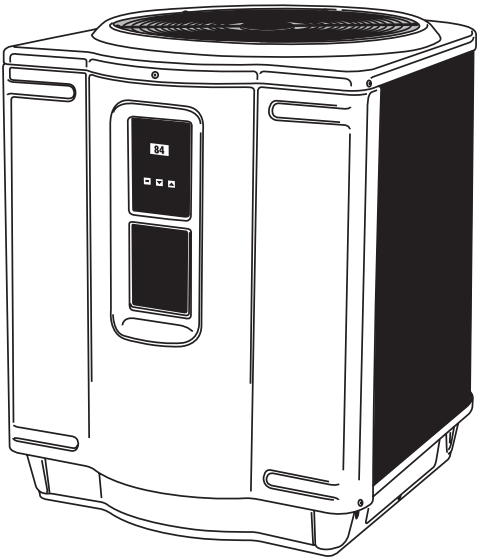
HAYWARD®

POMPES À CHALEUR
HEAT PUMPS
BOMBA DE CALOR
WÄRMEPUMPEN
POMPA DI CALORE
VERWARMINGSPOMPEN
BOMBA DE CALOR
VARMEPUMPER
ТЕПЛОВЫЕ НАСОСЫ



GUIDE DE L'UTILISATEUR
USER'S GUIDE
GUÍA DEL USUARIO
ANWENDER-HANDBUCH
GUIDA DELL'UTENTE
GEBRUIKERSHANDBOEK
GUIA DO UTILIZADOR
BRUKSANVISNING
РУКОВОДСТВО ПОЛЬЗОВАТЕЛЯ

CE

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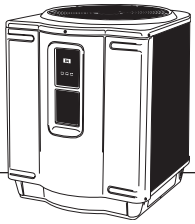
Table of contents



Introduction

Thank you for buying your heat pump from Hayward.

You have purchased the most efficient and technologically-advanced pool heat from Hayward. Heat Pump is the leading cost-effective method of pool water heating. Smart use and care will result in many years of enjoyment.

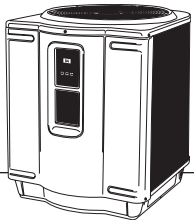
Each Heat Pump component has been selected with care to create high-quality products in an effort to exceed all industry standards.

These heat pumps feature a Scroll® compressor, an electronic card with auto-diagnostic, a heat exchanger with titanium coil **life guarantee** against corrosion, and UV-resistant plastic cover that eliminates all maintenance for life. All of the components are of superior quality, which enables us to offer you a high performance heat pump at the cutting edge of technology.

It is important to note that the heat pumps heat the water more slowly than conventional heating methods like gas boilers or electric heaters. Occasionally, it may be necessary to run the heat pump for up to 24 hours per day. However, this should not be of concern to the owner because the heater is designed to operate continuously. What's more, despite continuous operation, it will still heat the pool with far greater economy than other types of heaters.

The use of a cover is strongly recommended for your pool. It enables you to avoid losing heat during the night as well as evaporation of the water which also causes great loss of heat.

Introduction



Please read carefully

Your heat pump is both simple and efficient. A good understanding of its use, what you need to do and not do is essential. The installation of your heat pump is equally important for avoiding future problems. Consult this entire guide to ensure that you apply all of the regulations enabling your heat pump to give you its full output for several years.

Please complete the reminder below, enabling you to quickly have all of the necessary information about your heat pump.

Every time you phone our after-sales department, you should have the serial number and the model of your heat pump to hand. You will find this information on the plaque on the base of your heat pump.

Please also take note of your date or purchase, the name of your distributor, their address and telephone number.

Model:

Serial number:

Date of purchase:

Name of your distributor:

Address of your distributor:

Telephone number of your distributor:

Keep this manual as well as your original invoice in a safe place in case of future requirement

Safety instructions

We have our customers' safety at heart

Safety messages, for you and your heat pump, appear now and again inside this manual. We ask you to read them and always respect these safety instructions.

Note

A note signals additional relevant information which is useful but not imperative.

IMPORTANT

The indication **IMPORTANT** signals a note which contains important information or information essential to carrying out a task.

ATTENTION

The indication **ATTENTION** signals a risk. It draws attention to a procedure, use or similar condition, which, if it is not followed or respected, could cause equipment damage, especially to the product, the destruction of the product or one of its parts.

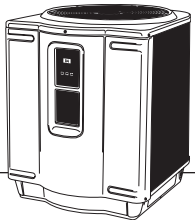
WARNING

The indication **WARNING** signals a danger. It draws attention to a procedure, use or similar condition, which, if it is not followed or respected, could cause a physical injury. These indications are rare, but extremely important.

ATTENTION

All electrical connections must be done by a qualified electrician according to local electrical codes (p30). Always cut off main power on the unit whenever the electrical panel is opened or removed. Always install the unit outdoors (unless otherwise approved by the manufacturer) and follow the minimal clearances needed above and around the unit for proper operation and heating.
If the supply cord is damaged, it must be replacing by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

Safety instructions



⚠ ATTENTION

Regularly check the chemical composition of your water: This is essential for your health and for your heat pump. Give particular attention to the total alkalinity. It is formally recommended that you have an independent retailer check your water.

Water quality standards must be observed

DESCRIPTION	NORMAL LEVEL	VERIFICATION
pH level	7.2 to 7.6	Once a week
Concentration of bleach	1.0 to 3.0 ppm	Once every 2-3 days
Alkalinity level	80 to 120 ppm	Once every 2-3 weeks
Hardness of the calcium	200 to 300 ppm	Once a month

☞ WARNING

Warning as regards children/people with reduced physical capacity This device is not intended to be used by people (including children) whose physical and/or sensory or mental capacities are reduced, or people without experience or knowledge, except if they can benefit, by the intermediary of a person responsible for their safety, of a surveillance or prior instructions regarding the use of the device.

Installation instructions

Location

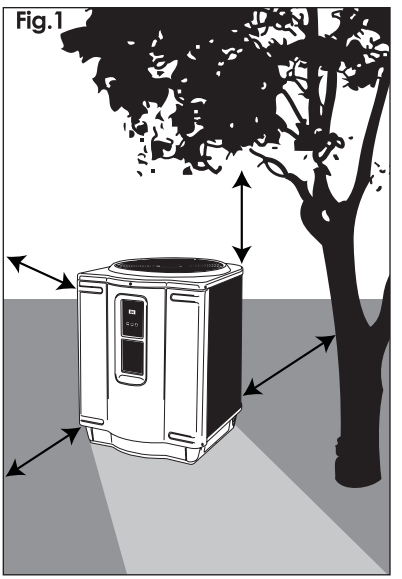
The location of your heat pump is very important in order to optimise the performances of the device. You should also arrange easy access for maintenance.

Your heat pump is designed for external installation and **MUST NOT** be installed in a closed place such as a garage or "pool house", in order to avoid any risk of recirculation of air which would affect the performances of the heat pump.

The heat pump must be placed as close as possible to the pump and filter of your pool in order to minimise load losses. Do not however forget to observe a minimum clearance of at least 60 cm around your heat pump. Avoid the use of right angle bends and small radius bends. It is however essential to respect the safety distance required by the installation standard in force (p30).

Mount the unit on a sturdy base, preferably a concrete slab or a set of blocks. The base should be completely isolated from the building foundation wall to prevent possible transmission of sound or vibration into the building. The size of the base should not be less than 1m x 1m.

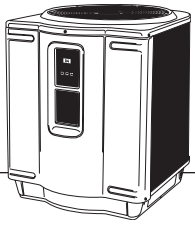
Fig.1



IMPORTANT

All of the heat pump models use a ultra-quiet ventilation system. The air is pumped in through the evaporator and pumped out through the top of the device. A clearance distance of at least 1.5 m must be respected at the top of the device so that the air circulates freely around the heat pump. ***A complete clearance area of at least 60 cm must also be observed all around the heat pump.*** *This will maximise the functionality of your device as well as access for programming and maintenance.*

Installation instructions



Hydraulic connection

IMPORTANT

The pool components must be put into place according to the following sequence: **filtering pump > filter > heat pump > water treatment device > water pool return**.
If an automatic chlorine distributor or electrolyser is used, it must be installed in the water pool return pipes after the heat pump with the aim of protecting it from concentrated chemical products. It is preferable to use rigid PVC pipes.
All of the pipe nozzles must be attached with PVC glue. When the hydraulic installation is complete (respect the glue sticking time), start the heat pump and check the system to see if there are any leaks. Then make sure that the filter pressure is normal.

Note: *Some installations use a "By-pass" system enabling the water to circulate only in the base circuit of the pool without going through the heat pump. If the water circulation has stopped in the heat pump for a few days, make sure the condensor is drained.*

Electrical connection

WARNING

Your electrical installation must be carried out professionally by a registered qualified electrician and complying with the standards in force (p30)

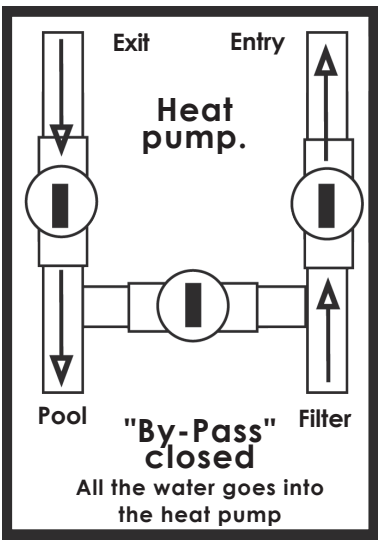
Single-phase Supply: 230V ∿ - 50Hz - 1 phase
Three-phase Supply: 400V ∿ - 50Hz - 3 phases

Make sure that you switch off the power supply before proceeding with installation and maintenance of the heat pump and its electrical elements.
All the electrical wires of the heat pump must satisfy the electrical standards in force especially as regards the earth connection.
The circuit must be installed by an registered qualified electrician.
With any electrical connection, ensure that the supply voltage, the live wire number and the electrical power of the unit match those of the installation location.
The electrical supply of the heat pump must be protected by a leak circuit-breaker with 30mA earth curve D without sharing the supply with any other device.
Check that the voltage and supply frequency correspond to those indicated on the heat pump.

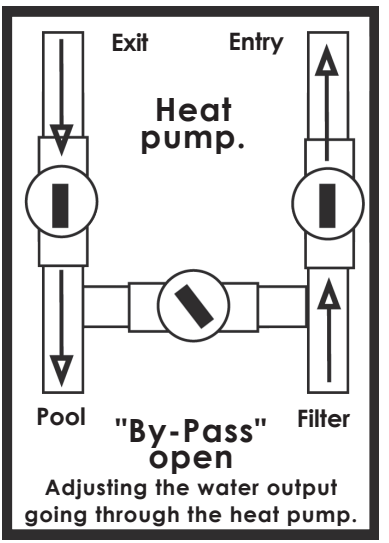
Hydraulic connection diagram

All of the automatic chlorine distributor or electrolyser models **must be installed after the heat pump**.
The filter must be located in front of the heat pump.
A "By-Pass" system must be installed on all of the systems to facilitate maintenance of the equipment and, if necessary, to adjust the water output going through the heat pump.
This output adjustment is compulsory when the installation output exceeds 17 m³/H *(see Fig. 3 for the "By Pass" setting)*

Fig.3



Standard position for an installation whose output is less than 17 m³/H



Standard position for an installation whose output is greater than or equal to 17 m³/H

SETTINGS: PRESSOSWICH SENSITIVITY.

The circulation safety is ensured by a pressoswitch, it is set in the factory but it may be necessary to adjust it in cases of specific installation configurations. Adjustment of the pressoswitch is done inside the electric box (reference point 17 page 38).
The necessity for adjustment may be motivated by an early release of this function when the heat pump is located far below the level of the pool.

Installation instructions

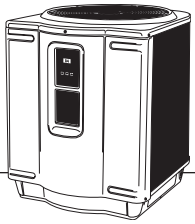
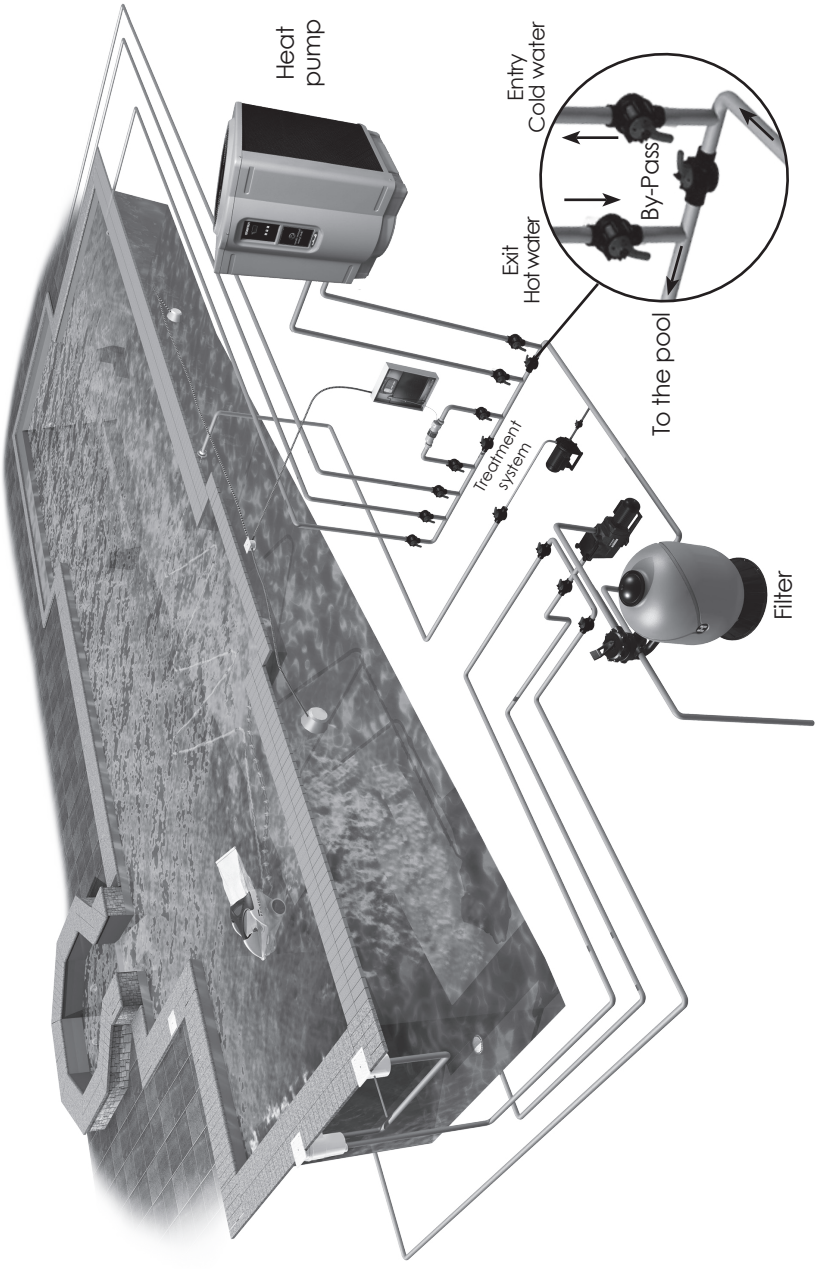


Fig.2



Electrical characteristics

WARNING

Electrical installation of the heat pump must be done by a registered qualified electrician. To connect the heat pump, you must screw the five screws of the front panel, pass your electric cable through the cable gland and then insert it into the control box.

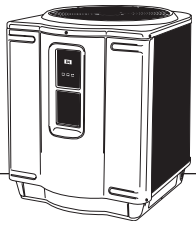
Models	14 Kw Mono R407C	14 Kw Tri R407C	19 Kw Mono R407C	19 Kw Tri R407C	24 Kw Tri R407C	11 Kw Mono R410A	30 Kw Tri R410A
Electrical supply	230V~ 1Ph - 50 Hz	400V~ 3Ph - 50 Hz	230V~ 1Ph - 50 Hz	400V~ 3Ph - 50 Hz	400V~ 3Ph - 50 Hz	230V~ 1Ph - 50 Hz	400V~ 3Ph - 50 Hz
Supply cable	3 G 2.5 mm^2	5 G 2.5 mm^2	3 G 4 mm^2	5 G 2.5 mm^2	5 G 2.5 mm^2	3 G 2.5 mm^2	5 G 2.5 mm^2
Nominal power absorbed in W (*)	2 422	2 405	3 406	3 355	4 473	2.258	4.905
nominal intensity absorbed (+/-10%) in A (*)	10.9	4.4	14.5	5.3	7	13	10.9
maximum intensity in A	15	6.6	18	7.4	9	16	15
Startup current in A	45	46	45	62	74	45	100
Fuse diameter aM in A	16	10	20	10	10	20	16
Circuit-breaker diameter D in A	16	10	20	10	10	20	16

* Air 27°C - HR 80% - Water 27°C

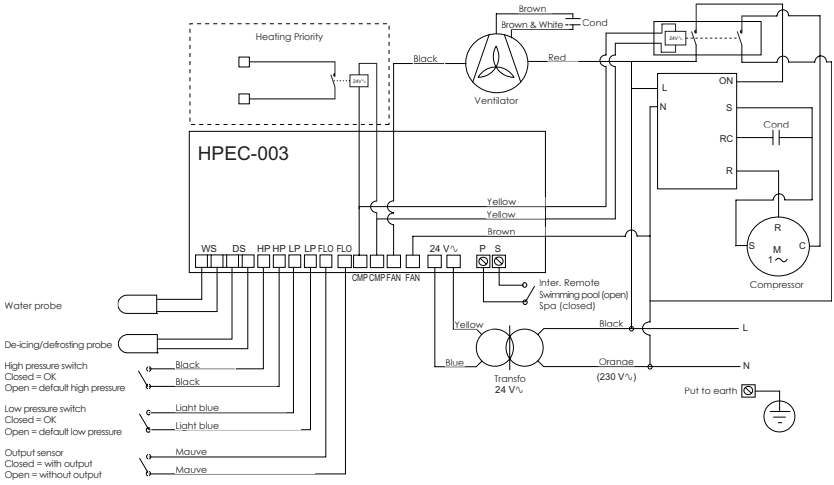
Electric standard/country

F	NF EN C 15-100		GB	BS7671:1992
D	DIN VDE 0100-702		EW	EVHS-HD 384-7-702
A	ÖVE 8001-4-702		H	MSZ 2364-702:1994 / MSZ 10-533 1/1990
E	UNE 20460-7-702 1993, REBT ITC-BT-31 2002		M	MSA HD 384-7-702.S2
IRL	Wiring Rules + IS HD 384-7-702		PL	PN-IEC 60364-7-702:1999
I	CEI 64-8/7		CZ	CSN 33 2000 7-702
LUX	384-7.702 S2		SK	STN 33 2000-7-702
NL	NEN 1010-7-702		SLO	SIST HD 384-7-702.S2
P	RSIUEE		TR	TS IEC 60364-7-702

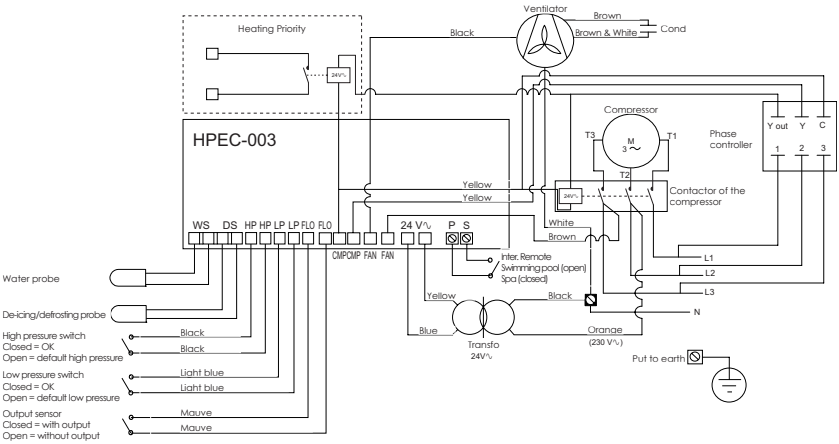
Electrical diagrams



Single-phase Supply: 230V ∿ - 50Hz - 1 phase

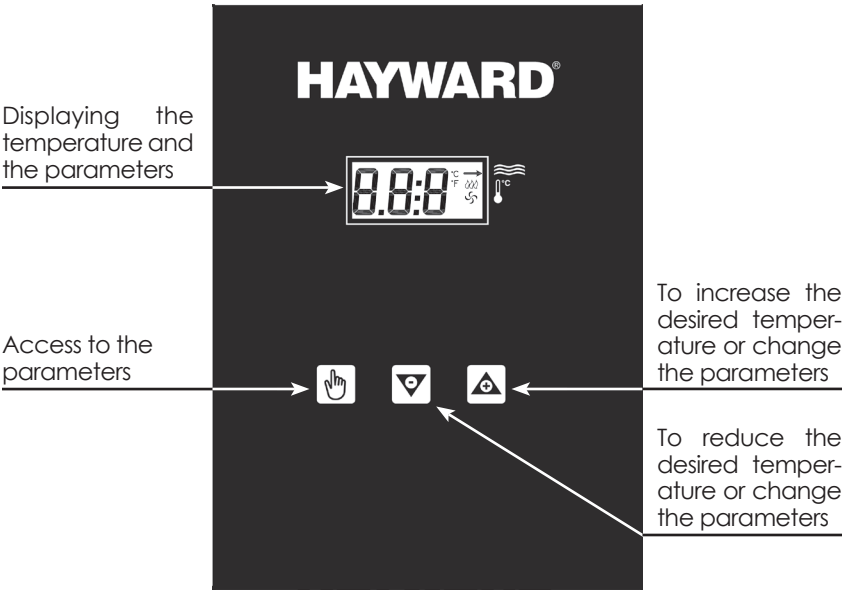


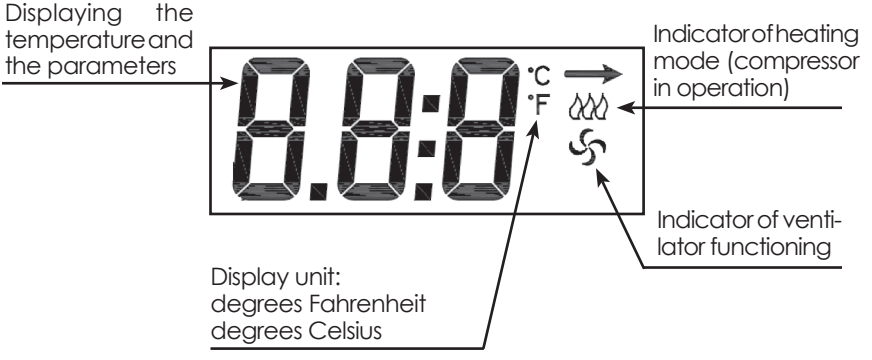
Three-phase Supply: 400V ∿ - 50Hz - 3 phases



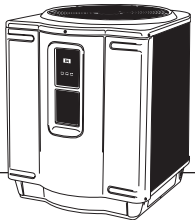
Front control panel

The control panel is adjusted in the factory to display the temperature in Fahrenheit degrees.





Operation



TO INCREASE THE TEMPERATURE

Press the key [ ] until you can read **POL**.
The programmed temperature will be displayed.

Press the arrow pointing upwards [ ] to increase the temperature of the water one degree at a time.

TO LOWER THE TEMPERATURE

Carry out the same operation mentioned above, but using the arrow which points downwards [ ] .

TO DISPLAY THE TEMPERATURE iN °F OR °C

Press key [ ] until the display shows **F_C**. Then, press on one or other of the arrows to confirm your choice (°F or °C). The selected mode will be displayed for five seconds and will return to the actual temperature of the pool water.

First start-up

IMPORTANT

Before the first start-up, it is important to check that the heat pump is correctly connected electrically, that the order of phases is respected for the three-phase machines (a green light comes on on the phase controller located in the electrical box), only the water entry and exit valves are open and no element disturbs the rotation of the ventilator.

Next, all you have to do is adjust to the desired temperature. The ventilator will start up immediately. ***There will be a delay of 3 to 4 minutes before the compressor starts.***

When the compressor is in operation, the ***HEATING*** *light, located to the right of the display, symbolised by ⩚ should be on.* ***At the first start-up, it is normal for the heat pump to function 24/7****.*

It is also normal to see water dripping from the holes at the base of the unit. *This is normal condensation.*

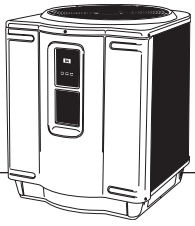
Definition of the display codes

Codes of the analyser

The majority of problems are detected by the self-diagnosis. When a problem occurs, a corresponding code appears on the digital indicator of your heat pump.

Display	Definition of the codes
OFF	The desired temperature which is programmed is lower than 17 °C (63 °F).
LP & LP3	No refrigerant fluid in the unit or low pressure controller faulty. The digital display will display the LP3 code after having displayed the LP code three times and will then deactivate your heat pump.
HP & HP3	Low water output to the unit or high pressure controller faulty. Check the water output. Clean your filter, check the skimmers panel and pump. The digital display will display the HP3 code after displaying the HP code three times and will then deactivate your heat pump in order to protect it.
Po	The water temperature probe connected to the WS edge may be disconnected. If it isn't, the probe is possibly in open or defective contact.
Pc	The water temperature probe may be short-circuited or faulty.
FLo & FL3	Possible causes: - The valve of the filter is not in "Filtration" position. - The filtration pump has stopped. - The filter is dirty. - Lack of water at the level of the filtration pump. - The water pressure switch must be adjusted, or it is damaged. - The device is in protection mode and will display FL3. Press any key to restart the unit. The FL3 code deactivates your heat pump in order to protect you.
dPo	The de-icing probe connected to DS on the electronic card may be disconnected. If it isn't, the probe is possibly in open or faulty contact.
dPc	The de-icing probe may be short-circuited or faulty.
FS	Device presently in de-icing cycle (the ventilator is working, but the compressor is on stop). This is normal when the external temperature is low.

Breakdown servicing



THE HEAT PUMP DOES NOT START

Check that the heat pump is properly switched on and that in the case of a three-phase the phase controller is lit green.
The control panel of the heat pump indicates that it is in "OFF" position.

- ***Adjust the temperature above 17°C (63°F) and the heat pump will restart.***

The desired temperature is reached.

- ***The heat pump will start working automatically as soon as the temperature goes back below the desired degree.***

The circuit-breaker has started.

- ***Reactivate it.***

If the LED on the phase controller is RED

- ***Check the phase order on the main power terminal, switch two phase wires.***
  Warning: Never switch two phase wires directly on the phase controller but on the main power terminal.
- ***Check that the three phase wires are connected to the main power terminal***

THE CONTROL PANEL INDICATES "FLO" AND THE HEAT PUMP DOES NOT START

The filtration pump has stopped.

- ***start it.***

Your filter may be dirty, which considerably reduces the water output.

- ***Clean the filter and try again.***

A valve remains closed.

- ***Check the valves.***

THE VENTILATION IS FUNCTIONING, BUT THE COMPRESSOR IS NOT FUNCTIONING

The heat pump is in protection mode.

- ***In this case, there may be a delay of 5 minutes before it starts.***

The heat pump is in its de-icing cycle.

- ***The control panel should show "FS".***
  The compressor will start automatically a few minutes after the control panel stops indicating "FS".

THE CONTROL PANEL DISPLAYS NO INDICATION AND THE VENTILATOR IS NOT WORKING, BUT THE COMPRESSOR IS WORKING

- Ask your electrician to check the power supply of your heat pump.

(continue to the next page)

Breakdown

THERE IS WATER AROUND THE HEAT PUMP

When your heat pump is in heating mode, a large quantity of hot and humid air goes through the evaporator and causes condensation.
It is normal to see this condensation running below your heat pump.

- ***To check if there is a possible leak, you must first deactivate the heat pump and let the filtration pump operate for over five hours. If there is still water running after this time, call your installer.***

THE HEAT PUMP IS FUNCTIONING WELL, BUT DOES NOT MANAGE TO REACH THE DESIRED TEMPERATURE

Sometimes, the heat loss caused by the external temperature is too great to be compensated for only by the heat pump.

- ***Cover your pool as often as you can.***

The evaporator may be dirty.

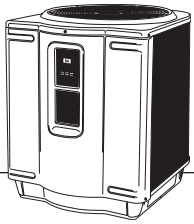
- ***Clean it.***

Evaporation is done poorly due to inappropriate positioning of the heat pump (see the "location" section on page 26 of this manual).

- ***The water output may be insufficient.***
- ***Adjust it.***

(continue to the next page)

Recommendations



IMPORTANT

Any intervention of the refrigerating circuit should be done professionally following the safety regulations in force in the profession: retrieval of freezing agent fluid, brazing under nitrogen, etc...
Any brazing intervention should be done by professional qualified refrigeration engineers.
This device has equipment under pressure, the refrigerating pipes.
Only use the original parts for replacing faulty refrigerating components.
Replacement of pipes may only be done with copper tube complying with standard NF EN 12735-1.
Any replacement with a part which is not an original one, any modifications of the refrigerating circuit, any replacement of the freezing agent fluid by a different fluid from that indicated on the identification plate, any use of the device outside of the application limits appearing in the documentation, will result in cancellation of the warranty as well as the EC labelling complying with the Equipment under Pressure Directive (if necessary) which will become the responsibility of the person who carried out these modifications.

Maintenance

Dirt may accumulate in the evaporator. You can easily dislodge it with the help of a jet of water without damaging the aluminium fins.

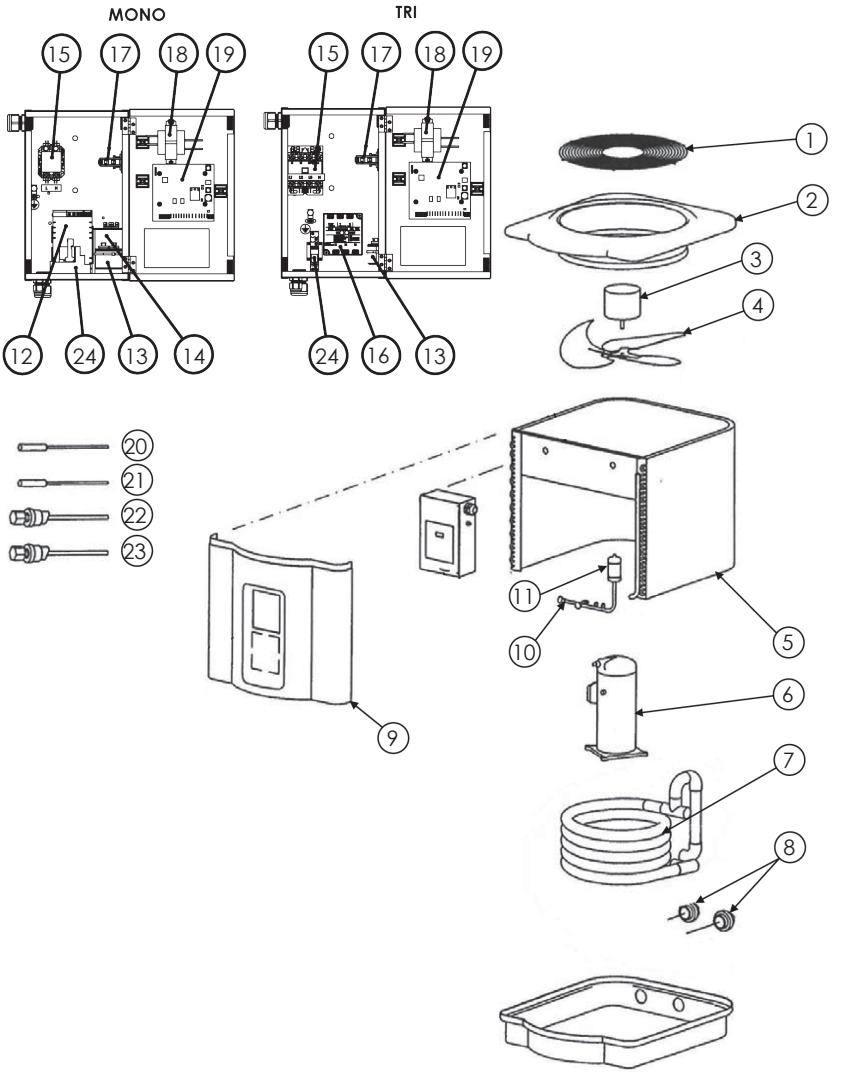
You can clean the plastic parts using a brush and all-purpose soap.

Wintering

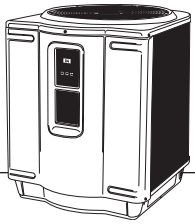
Put the heat pump in OFF mode, to do so set the pre-defined temperature to the minimum then cut the electrical supply of the heat pump.

At the end of the heating season it is essential to drain the condenser in order to avoid the water turning to ice by the extreme temperatures which would risk causing irreversible damage. To do this, close the water entry and exit valve then disconnect the pipe to let the water in the condenser drain freely. You could even use a jet of compressed air to eliminate any stagnant water in the condenser. With the water entry and exit stop valves closed and the pipe drained you can reconnect the pipe.
It is recommended that you cover the heat pump with its wintering cover in order into protect it against bad weather and the rigours of winter.

Spare parts



Spare parts



N°	Ref.		N°	Ref.
1	SMX305000004			
2	SMX309077011		10	SMX305077002 (14 kW)
3	SMX300055035			SMX305050001 (19 & 24 kW)
4	SMX303140002 (11, 14 & 19 kW)			SMX15024889 (11 kW)
	SMX303140003 (24 & 30 kW)			SMX15024893 (30 kW)
5	SMX24024427 (11 & 14 kW)		11	HPX1462
	SMX24024414 (19 & 24 kW)		12	SMX306000047 (11, 14 & 19 kW Mono)
	SMX24024408 (30 kW)		13	HPX11024151
6	SMX11024832 (14 kW Mono)		14	SMX11024644 (14 kW Mono)
	SMX11024837 (14 kW Tri)			SMX306150002 (19 kW Mono)
	SMX11024833 (19 kW Mono)			SMX306000028 (11 kW Mono)
	SMX11024834 (19 kW Tri)		15	HPX1985 (11, 14,& 19 kW Mono)
	SMX11024835 (24 kW Tri)			SMX306000022 (14, 19, 24 & 30 kW Tri)
	SMX11024838 (11 kW Mono)		16	SMX306000048 (14, 19, 24 & 30 kW Tri)
	SMX11024836 (30 kW Tri)		17	HPX2181
7	SMX24024511 (14 kW)		18	HPX11023693
	SMX24024862 (19 kW Mono)		19	SMX11024570
	SMX24024863 (19 & 24 kW Tri)		20	SMX306000023
	SMX24024920 (11 kW)		21	SMX306000024
	SMX24024510E (30 kW)		22	SMX306000001 (LP R407C)
8	SMX14024924			HPX11024259 (LP R410A)
			23	SMX306000002 (HP R407C)
9	SMX309077013 (11 & 14 kW)			HPX11024258 (HP R410A)
	SMX309099013 (19, 24 & 30 kW)		24	SMX11024839

Use Only Genuine Hayward Replacement Parts.

Warranty for the heat pump

All of the HAYWARD products are guaranteed against all manufacturing or material faults for a period of two years from the date of purchase. All warranty requests should be accompanied by a proof of purchase with the date. We therefore encourage you to keep this invoice.
The HAYWARD warranty is limited to the repair or replacement, at HAYWARD's choice, of faulty products as far as they have been subject to normal use, in accordance with the instructions mentioned in the user manual, that the product has not been modified in any way and used only with HAYWARD components and parts Damage due to frost and attacks by chemical agents are not guaranteed.
All other charges (transport, labour) are excluded from the warranty.
HAYWARD cannot be held responsible for any direct or indirect damage resulting from the incorrect installation, connection or operation of a product.
To invoke a warranty and request the repair or replacement of an item, contact your reseller.
No equipment return to our factory will be accepted without our prior written agreement.
Worn parts are not covered by the warranty.

Products with a warranty extension:
Titanium Material constituting the condenser tube: life warranty.