POOLEX
NANO Fi

Manuel d'installation et d'utilisation
Installation and user manual
Manual de usuario y instalación
Manuale d'installazione e d'uso
Installations und Gebrauchsanleitung
Installatie en gebruikershandleiding

WWW.POOLEX.FR

Cher client,

Nous vous remercions pour votre achat et pour la confiance que vous accordez à nos produits.

Nos produits sont le résultat d'années de recherche dans le domaine de la conception et de la production de pompe à chaleur pour piscine et spa. Notre ambition, vous fournir un produit de qualité aux performances hors normes.

Nous avons réalisé ce manuel avec le plus grand soin afin que vous puissiez tirer le meilleur de votre pompe à chaleur Poolex.

Dear customer,

Thank you for your purchase and your trust in our products.

Our products are the result of years of research in the design and manufacture of heat pumps for pools. Our goal is to deliver high-quality products with exceptional performance.

We took great care to put together this manual so you can get the most out of your Poolex heat pump.

Estimado(a) cliente,

Agradecemos que haya comprado este producto y que haya confiado en nuestra empresa.

Nuestros productos son el fruto de años de investigación en el sector del diseño y de la producción de bombas de calor para las piscinas. Nuestro objetivo es ofrecerle un producto de calidad con un rendimiento excepcional.

Hemos redactado este manual de tal forma que podrá aprovechar al máximo su Poolex bomba de calor.

Gentile cliente,

La ringraziamo per il Suo acquisto e per la sua fiducia nei nostri prodotti.

Essi sono il risultato di anni di ricerche nella progettazione e produzione di pompe di calore per piscine. Il nostro scopo è di fornir. Le un prodotto di qualità con prestazioni fuori dal comune.

Abbiamo preparato questo manuale con la massima cura affinché Lei possa sfruttare al meglio la Sua pompa di calore Poolex.

Sehr geehrter Kunde,

Vielen Dank für Ihren Kauf und das damit verbundene Vertrauen in unsere Produkte.

Unsere Produkte sind das Ergebnis einer jahrelangen Forschungsarbeit auf dem Gebiet der Konstruktion und Fertigung von Schwimmbecken-Wärmepumpen. Wir haben den Anspruch, Ihnen ein qualitativ hochwertiges Produkt mit hervorragenden Leistungseigenschaften zu liefern.

Die vorliegende Anleitung wurde mit größter Sorgfalt erstellt und soll Ihnen dabei helfen, die Vorzüge Ihrer Poolex-Wärmepumpe bestmöglich zu nutzen.

Geachte klant,

Bedankt voor uw aankoop en uw vertrouwen in onze producten.

Ons doel is om u een uitzonderlijk goed prester- end kwaliteitsproduct te leveren. Het is onze ambitie om u een kwaliteitsvol product met uitstekende prestaties te leveren.

We hebben deze handleiding met de grootste zorg samengesteld, zodat u het maximale uit uw Poolex-warmtepomp kunt halen.

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WARNING

This heat pump contains a flammable refrigerant R32. Any intervention on the refrigerant circuit is prohibited without a valid authorization. Before working on the refrigerant circuit, the following precautions are necessary for safe work.

Only persons authorized by an accredited agency certifying their competence to handle refrigerants in compliance with sector legislation should work on refrigerant circuits.

Servicing shall be performed only as recommended by the manufacturer.

Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorises their competence to handle refrigerants safely in accordance with an industry recognised assessment specification.

Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

Signs for similar appliances used in a work area are generally addressed by local regulations and give the minimum requirements for the provision of safety and/or health signs for a work location.

All required signs are to be maintained and employers should ensure that employees receive suitable and sufficient instruction and training on the meaning of appropriate safety signs and the actions that need to be taken in connection with these signs.

The effectiveness of signs should not be diminished by too many signs being placed together.

Any pictograms used should be as simple as possible and contain only essential details.

The disposal of equipment using flammable refrigerants should be in accordance with local national regulations. The storage of the appliance should be in accordance with the applicable regulations or instructions, whichever is more stringent.

Storage package protection should be constructed in such a way that mechanical damage to the equipment inside the package will not cause a leak of the refrigerant charge. The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.

1. Checks to the area

Prior to beginning work on systems containing flammable refrigerants, safely checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

2. Work procedure

The work must be carried out according to a controlled procedure, in order to minimize the risk of presence of flammable gases or vapors during the execution of the works.

3. General work area

All persons in the area must be informed of the nature of the work in progress. Avoid working in a confined area. The area around the work area should be divided, secured and special attention should be paid to nearby sources of flame or heat.

4. Verification of the presence of refrigerant

The area should be checked with a suitable refrigerant detector before and during work to ensure that there is no potentially flammable gas. Make sure that the leak detection equipment used is suitable for flammable refrigerants, i.e. it does not produce sparks, is properly sealed or has internal safety.

5. Presence of fire extinguisher

If hot work is to be performed on the refrigeration equipment or any associated part, appropriate fire extinguishing equipment must be available. Install a dry powder or CO2 fire extinguisher near the work area.

6. No source of flame, heat or spark

It is totally forbidden to use a source of heat, flame or spark in the direct vicinity of one or more parts or pipes containing or having contained a flammable refrigerant. All sources of ignition, including smoking, must be sufficiently far from the place of installation, repair, removal and disposal, during which time a flammable refrigerant may be released into the surrounding area. Before starting work, the environment of the equipment should be checked to ensure that there is no risk of flammability. «No smoking» signs must be posted.

7. Ventilated area

Make sure the area is in the open air or is properly ventilated before working on the system or performing hot work. Some ventilation must be maintained during the duration of the work.

8. Controls of refrigeration equipment

When electrical components are replaced, they must be suitable for the intended purpose and the appropriate specifications. Only the parts of the manufacturer can be used. If in doubt, consult the technical service of the manufacturer.

The following controls should be applied to installations using flammable refrigerants:

- The size of the load is in accordance with the size of the room in which the rooms containing the refrigerant are installed;
- Ventilation and air vents work properly and are not obstructed;
- If an indirect refrigeration circuit is used, the secondary circuit must also be checked.
- The marking on the equipment remains visible and legible. Illegible marks and signs must be corrected;
- Refrigeration pipes or components are installed in a position where they are unlikely to be exposed to a substance that could corrode components containing refrigerant

9. Verification of electrical appliances

Repair and maintenance of electrical components must include initial safety checks and component inspection procedures. If there is a defect that could compromise safety, no power supply should be connected to the circuit until the problem is resolved.

Initial security checks must include:

• That the capacitors are discharged: this must be done in a safe way to avoid the possibility of sparks;
• No electrical components or wiring are exposed during loading, recovery or purging of the refrigerant gas system;
• There is continuity of grounding.

10.Initial safety checks shall include

- that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- that no live electrical components and wiring are exposed while charging, recovering or purging the system;
- that there is continuity of earth bonding.

11.Repairs to sealed components

During repairs to sealed component, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.

Ensure that apparatus is mounted securely.

Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

NOTE The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior ta working on them.

12.Repair to intrinsically safe components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.

Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

13.Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects .The check shall also take into account the effects of ageing or continual vibration from sources such as compressors or fans.

14. Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

15.Leak detection methods

The following leak detection methods are deemed acceptable for systems containing flammable refrigerants.

Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area. Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25% maximum) is confirmed.

Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

16.Removal and evacuation

When breaking into the refrigerant circuit to make repairs - or for any other purpose - conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:

1. remove refrigerant;
2. purge the circuit with inert gas;
3. evacuate;
4. purge again with inert gas;
5. open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be "flushed" with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task.

Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe - work are to take place.

Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

17.Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerant does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- Cylinders shall be kept upright.
- Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigeration system.

Prior to recharging the system it shall be pressure tested with OFN. The system shall be tested on completion of charging but prior to commissioning. A follow up leak test shall carried out prior to leaving the site.

18.Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.

a) Become familiar with the equipment and its operation.

b) Isolate system electrically.

c) Before attempting the procedure ensure that.

- mechanical handling equipment is available, if required, for handling refrigerant cylinders:
- all personal protective equipment is available and being used correctly
- the recovery process is supervised at all times by a competent person;
- recovery equipment and cylinders conform to the appropriate standards.

d) Pump down refrigerant system. if possible.

e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

f) Make sure that cylinder is situated on the scales before recovery takes place.

g) Start the recovery machine and operate in accordance with manufacturers instructions.

h) Do not overfill cylinders. (No more than 80 volume liquid charge).

i) Do not exceed the maximum working pressure of the cylinder, even temporarily.

j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.

k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

19.Labeling

Equipment shall be labeled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

20.Recovery

When removing refrigerant from a system, either for the servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge are available. All cylinders to be used are designate for the recovered refrigerant and labeled for that refrigerant (i.e. special cylinders for the recovery of Refrigerant). Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants In addition, a set of calibrated weighing scales shall be available and in good working order Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged. Do not mix refrigerants in recovery nits and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safety.

PLEASE READ CAREFULLY

These installation instructions are an integral part of the product.
They must be given to the installer and retained by the user.
If the manual is lost, please consult the website:

www.poolex.fr

The instructions and recommendations contained in this manual should be read carefully and understood since they provide valuable information concerning the heat pump's safe handling and operation. **Keep this manual in an accessible place for easy future reference.**

Installation must be carried out by a qualified professional person in accordance with current regulations and the manufacturer's instructions. An installation error may cause physical injury to persons or animals as well as mechanical damage for which the manufacturer can under no circumstances be held responsible.

After unpacking the heat pump, please check the contents in order to report any damage.

Prior to connecting the heat pump, ensure that the information provided in this manual is compatible with the actual installation conditions and does not exceed the maximum limits authorized for this particular product.

In the event of a defect and/or malfunction of the heat pump, the electricity supply must be disconnected and no attempt made to repair the fault.
Repairs must be undertaken only by an authorized technical service organization using original replacement parts. Failure to comply with the above-mentioned clauses may have an adverse effect on the heat pump's safe operation.

To guarantee the heat pump's efficiency and satisfactory operation, it is important to ensure its regular maintenance in accordance with the instructions provided.

If the heat pump is sold or transferred, always make sure that all technical documentation is transmitted with the equipment to the new owner.

This heat pump is designed solely for heating a swimming pool. Any other use must be considered as being inappropriate, incorrect or even hazardous.

Any contractual or non-contractual liability of the manufacturer/distributor shall be deemed null and void for damage caused by installation or operational errors, or due to non-compliance with the instructions provided in this manual or with current installation norms applicable to the equipment covered by this document.

CONTENTS

1. GENERAL

1.1 General Terms of Delivery

All equipment, even if shipped 'free of carriage and packing', is dispatched at the consignee's own risk.

The person responsible for receiving the equipment must carry out a visual inspection to identify any damage to the heat pump during transport (refrigerant system, body panels, electrical control box, frame). He/she must note down on the carrier's delivery note any remarks concerning damage caused during transport and confirm them to the carrier by registered letter within 48 hours.

The equipment must always be stored and transported vertically on a pallet and in its original packaging. If it is stored or transported horizontally, wait at least 24 hours before switching it on.

1.2 Safety instructions

WARNING : Please read carefully the safety instructions before using the equipment. The following instructions are essential for safety so please strictly comply with them.

During installation and servicing

Only a qualified person may undertake installation, start-up, servicing and repairs, in compliance with current standards.

Before operating or undertaking any work on the equipment (installation, commissioning, usage, servicing), the person responsible must be aware of all the instructions in the heat pump's installation manual as well as the technical specifications.

Under no circumstances install the equipment close to a source of heat, combustible materials or a building's air intake.

If installation is not in a location with restricted access, a heat pump protective grille must be fitted.

To avoid severe burns, do not walk on pipework during installation, repairs or maintenance.

To avoid severe burns, prior to any work on the refrigerant system, turn off the heat pump and wait several minutes before placing temperature and pressure sensors.

Check the refrigerant level when servicing the heat pump.

Check that the high and low pressure switches are correctly connected to the refrigerant system and that they turn off the electrical circuit if tripped during the equipment's annual leakage inspection.

Check that there is no trace of corrosion or oil stains around the refrigerant components.

During use

To avoid serious injuries, never touch the fan when it is operating.

Keep the heat pump out of the reach of children to avoid serious injuries caused by the heat exchanger's blades.

Never start the equipment if there is no water in the pool or if the circulating pump is stopped.

Check the water flow rate every month and clean the filter if necessary.

During cleaning

Switch off the equipment's electricity supply.

Close the water inlet and outlet valves.

Do not insert anything into the air or water intakes or outlets.

Do not rinse the equipment with water.

During repairs

Carry out work on the refrigerant system in accordance with current safety regulations.

Brazing should be performed by a qualified welder.

When replacing a defective refrigerant component, use only parts certified by our technical department.

When replacing pipework, only copper pipes conforming to Standard NF EN12735-1 may be used for repairs.

When pressure-testing to detect leaks:

To avoid the risks of fire or explosion, never use oxygen or dry air.

Use dehydrated nitrogen or a mixture of nitrogen and refrigerant.

The low and high side test pressure must not exceed 42 bar.

1.3 Water treatment

Poolex heat pumps for swimming pools can be used with all types of water treatment systems. Nevertheless, it is essential that the treatment system (chlorine, pH, bromine and/or salt chlorinator metering pumps) is installed after the heat pump in the hydraulic circuit.

To avoid any deterioration to the heat pump, the water's pH must be maintained between 6.9 and 8.0.

1.4 Operating limits

The performance of your NANO heat pump is optimal when the outside temperature is between -15°C and 43°C. Your pool must be properly insulated to enable the NANO heat pump to operate at optimum efficiency:

- The pool must be insulated.
- The pipework must be insulated.
- The pool must have a cover or insulating tarpaulin to prevent loss through evaporation.

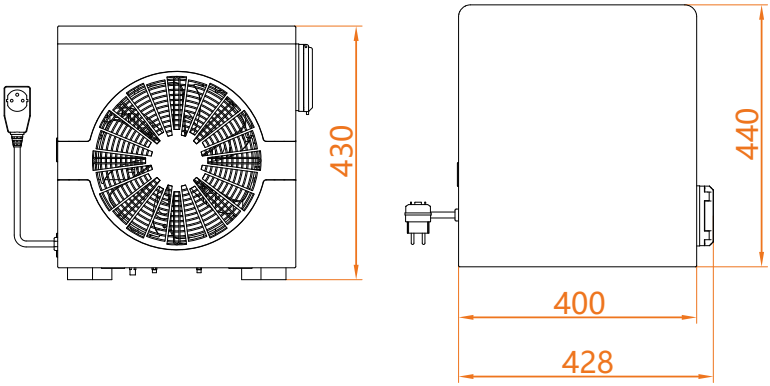
2. DESCRIPTION

2.1 Package contents

- ✓ Poolex Nano R32 heat pump
- ✓ 2 hydraulic connections 1" inlet to 32/38mm outlet and hose clamps
- ✓ Drainage kit
- ✓ 4 Anti-vibration pads (mounted directly on the heat pump)
- ✓ This installation and user manual

2.2 Unit dimensions

Dimensions in mm



2.3 General characteristics

A Poolex heat pump has the following features:

- High performance with up to 80% energy savings compared to a conventional heating system.
- Clean, efficient and environmentally friendly R32 refrigerant.
- Reliable high output leading brand compressor.
- Wide hydrophilic aluminum evaporator for use at low temperatures.
- User-friendly intuitive control panel.
- Heavy duty shell, anti-UV treated and easy to maintain.
- CE certification.
- Designed to be silent.

2.4 Technical specifications

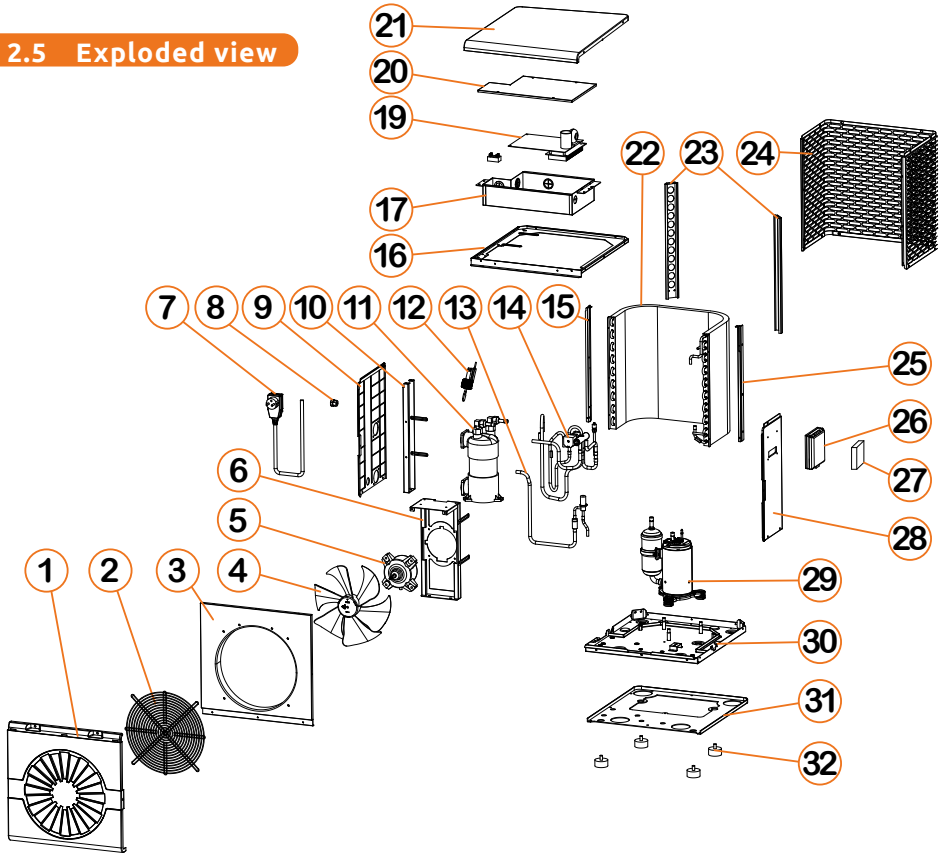
		3 kW	5 kW
Air [1] 26°C Water [2] 26°C *80% humidity*	Heating power (kW)	1.56~3.00	2.20~5.00
	Consumption (kW)	0.18~0.45	0.21~0.83
	COP (Coeff. of performance)	***6.74~9.0***	***6.00~8.4***
Air [1] 15°C Water [2] 26°C *70% humidity*	Heating power (kW)	1.05~2.45	1.56~3.50
	Consumption (kW)	0.15~0.57	0.20~0.81
	COP (Coeff. of performance)	***4.31~5.06***	***4.30~5.00***
Air [1] 35°C Water [2] 27°C *70% humidity*	Cooling capacity (kW)	1.32~1.80	1.52~2.00
	Consumption (kW)	0.45~0.68	0.45~0.87
	EER	***2.65~2.92***	***2.30~2.55***
Electricity supply		220-240V ~ 50Hz	
Maximum power (kW)		1,46	2,10
Maximum current (A)		8,00	11,00
Operating range		In heating mode: -15°C ~ 43°C In cooling mode: 15°C ~ 35°C	
Heating temperature range		15°C ~ 40°C	
Cooling temperature range		7°C ~ 30°C	
Température maximale de sortie d'eau		40°C	
Hydraulic connection (mm)		PVC 32 mm	
Water flow rate (m³/h)		1.3	2.15
Pression d'aspiration / P. de décharge (MPa)		2.5 / 4.4	
Pression maximale (MPa)		4.4	
Unit dimensions L × W × H (mm)		440 x 430 x 428	
Unit weight (kg)		23	27
Sound pressure level at 1 m (dBA) [3]		~ 50	
Sound pressure level at 10 m (dBA) [3]		< 35	
Heat exchanger (air side / water side)		Hydrophilic aluminium and copper tube with internal grooves / Titanium coil	
Compressor type		Rotary	
Refrigerant / GWP		R32 / 675	
Waterproof IP		IPX4	
Load loss (kPa)		10	
Control panel		LCD controller	
Mode		Heating/Cooling/Auto Smart / Boost / Silent	

The technical specifications of our heat pumps are provided for information purposes only. We reserve the right to make changes without prior notice.

[1] Ambient air temperature
[2] Initial water temperature
[3] Noise at 10 m in accordance with Directives EN ISO 3741 and EN ISO 354

2. DESCRIPTION

2.5 Exploded view



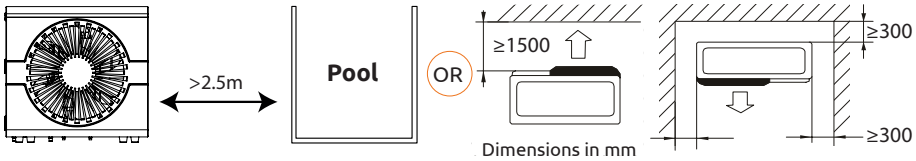
1. Front panel
2. Air outlet grille
3. Deflector
4. Fan blade
5. Fan motor
6. Fan motor bracket
7. Power cable
8. Power cable clamp
9. Left side panel
10. Left front upright
11. Titanium heat exchanger
12. Water flow switch
13. Throttle assembly
14. 4-way valve
15. Left evaporator bracket
16. Upper frame
17. Electrical box
18. —
19. Motherboard
20. Electrical box cover
21. Top cover
22. Evaporator
23. Rear uprights
24. Rear panel
25. Right evaporator support
26. Waterproof enclosure
27. Controller
28. Right side panel
29. Compressor
30. Chassis welding assembly
31. Chassis cover
32. Chassis feet

3. INSTALLATION

The heat pump is very easy to install, only water and power need to be connected during installation.

3.1 Location

Standard NF C 15-100 recommends installing the heat pump at least 2.5 meters from the pool. However, thanks to the differential circuit breaker, you can also choose to install it closer: Leave at least 1.50 m in front of the heat pump and 30 cm of empty space to the sides and rear of the heat pump..



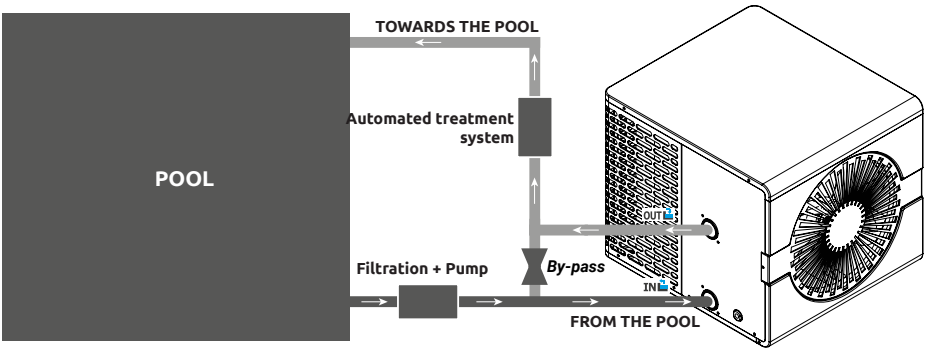
Do not place anything within 1.5m of the front of the heat pump.
Do not place any obstacles on top or in front of the device!
Do not use the heat pump as a step to access the spa or the pool.
Do not step on the heat pump.

Please comply with the following rules concerning the choice of heat pump location.

1. The unit's future location must be easily accessible for convenient operation and maintenance.
2. It must be installed on the ground, laid ideally on a level concrete floor. Ensure that the floor is sufficiently stable and can support the weight of the unit.
3. Check that the unit is properly ventilated, that the air outlet is not facing the windows of neighboring buildings and that the exhaust air cannot return. In addition, provide sufficient space around the unit for servicing and maintenance operations.
4. The unit must not be installed in an area exposed to oil, flammable gases, corrosive products, sulfurous compounds or close to high frequency equipment.
5. To prevent mud splashes, do not install the unit near a road or track.
6. To avoid causing nuisance to neighbors, make sure the unit is installed so that it is positioned towards the area that is least sensitive to noise.
7. Keep the unit as much as possible out of the reach of children.

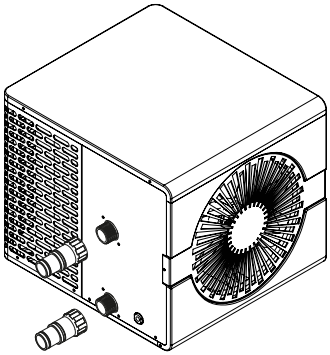
3. INSTALLATION

3.2 Installation layout

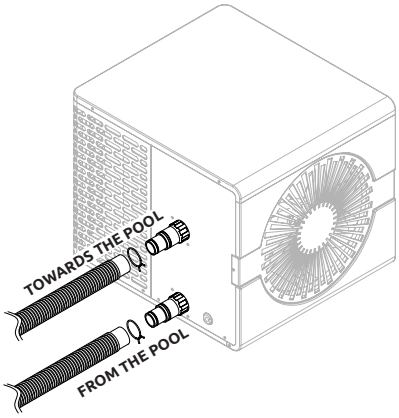


The filter located upstream of the heat pump must be regularly cleared so that the water in the system is clean, thus avoiding the operational problems associated with dirt or clogging in the filter. (By-pass ref. : PC-BYPASS-32)

3.3 Hydraulic connection



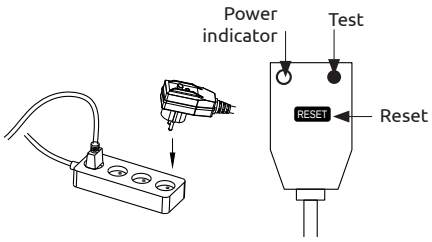
Step 1
Screw the connectors to the heat pump



Step 2
Connect the water outlet pipe and the water intake pipe

3.4 Electrical connection

The heat pump electrical plug integrates a 10mA differential circuit breaker.
Before connecting your heat pump, please ensure that the plug is connected to the ground.
The filter pump should function at the same time as the heat pump. Therefore, you need to connect them to the same electrical circuit.



3.5 Operation

Use conditions

For the heat pump to operate normally, the ambient air temperature must be between -15°C and 43°C.

Advance notice

Prior to starting the heat pump, please:

- Check that the equipment is in a stable position.
- Check that your electrical installation is in good working condition.
- Check that the hydraulic connections are properly tightened and there is no water leakage.
- Remove any object that is not required around the equipment and all tools.

Operation

1. Connect the power supply to the device.
2. Start the filtration pump.
3. Activate the device's electrical supply protection (differential switch situated on the power cable).
4. Start the heat pump.
5. Select the desired temperature using one of the modes appearing on the control panel.
6. The heat pump's compressor will start shortly after.

And you just need to wait for the target temperature to be reached.

⚠ **WARNING: Under normal conditions, a suitable heat pump can heat up the pool by 1°C to 2°C per day. It is therefore normal that you do not feel any difference in temperature at the outlet level when the heat pump is on.**

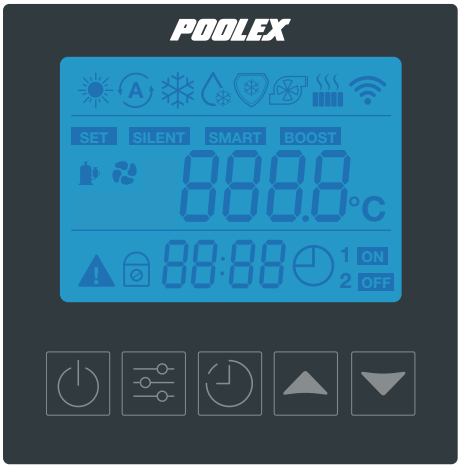
A heated tub must be covered and insulated to avoir any heat loss.

Good to know: restart after power failure

After a power failure or a usual interruption, turn the power back on, the system is on sleep mode. Restart the differential plus and switch on the heat pump.

4. USE

4.1 Control panel



⚠ **Before use, ensure that the filtration pump is working and that water is circulating through the heat pump.**

	Function
	ON/OFF button
	Mode selection button
	Clock button
	UP button
	DOWN button
	Compressor ON
	Fan ON
SET	Parameter

	Function
	Heating mode
	Automatic mode
	Cooling mode
	Defrosting
	Frost protection
	Circulation pump
	Electric Heater
	Wi-Fi
	Errors
	Lock icon
	Time programming
SILENT	Silent mode
SMART	Smart mode
BOOST	Boost mode

4.2 Unlocking

If the unit goes 60 seconds without any input operation, the controller screen enters a sleep state, the screen locks automatically and the icon lights up.
In the sleep state, click any button to turn the screen on.
Press the button for 3 seconds. The device emits a "beep" and the icon goes out.

4.3 Choice of operating mode

Heating mode

Select heating mode if you want to heat up the tub water with the heat pump.

Cooling mode

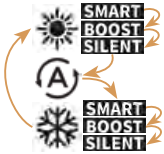
Select cooling mode if you want to cool the tub water with the heat pump.

Automatic mode

Select automatic mode if you want the heat pump to switch modes intelligently around the set temperature.

By default, the heat pump is in heating mode. The symbol for the active mode appears at the top of the screen.

To change the operating mode, when the heat pump is on, press the button , the heat pump will then switch to the next mode according to the cycle shown opposite.



Good to know:

The heat pump can take several minutes to change operating mode in order to preserve the refrigerant fluid.

4.4 Temperature setting

From the main interface, press or . The set temperature appears.
Press or to adjust the value. The icon SET lights up.
When you have set the temperature, press to exit the setting.
The setting range for heating is 15~40°C.
The refrigeration setting range is 7~30°C.
The automatic setting range is 7~40°C.

4.5 Manual defrosting

When the device is on, press for 3s under heating mode to enter forced defrosting.

4.6 Heater and circulation pump

Switch the circulation pump relay to manual mode :

Key + key : long press to start or stop the circulation pump

Switch the heater relay to manual mode:

Key + key : long press to start or stop the heater

4. USE

4.7 Clock setting

1. On the main interface, press the button for 5 seconds to access the clock setting interface. The hours and minutes flash simultaneously.
2. Press the key . The hour flashes. The minutes stop flashing.
3. Press or to set the clock hours.
4. Press the key . The minutes flash. The hours stop flashing.
5. Press or to set the minutes.
6. Press or to confirm the clock setting and return to the main interface.

4.8 Timing on/off setting

1. On the main interface, press the button to access the timing group setting interface. Time programming allows you to schedule two timing groups.
   When you enter the timer setting interface, timing group 1 flashes.
2. Press the button to access the setting of the hourly part of the start time for timing group 1. The hourly part of the start time flashes.
3. Press or to set the start time for timing group 1.
4. Press the key . The start minutes flash.
5. Press or to set the minutes for timing group 1.
6. Press the key to move on to setting the stop time for timing group 1. The setting method is the same as for the start time.
7. When the timing stop time is set, press the key to confirm the setting of the timing stop time for the current group.
8. Press or to enter the timing group 2 setting. The setting method is the same as for timing group 1.

If a timing group is valid, its number is displayed on the main interface.

Within a timing group, if the start time and stop time are identical, the group is invalid.

On the timing interface, if no key is pressed for 30 seconds, the current time setting is automatically validated and the screen returns to the main interface.

From the timing interface, press to confirm the current time setting and return to the main interface.

4.9 Status query

Press the key for 3s to view the status values.
Press the keys and to move up and down the page.

List of the unit's temperature status

No.	Description	Comment
T1	Exhaust temperature	
T2	Suction temperature	
T3	Water inlet temperature	
T4	Water outlet temperature	
T5	Heating coil temperature	
T6	Ambient temperature	
T7	IPM temperature	
T8	Cooling coil temperature	
Ft	Target frequency	
Fr	Actual frequency	
1F	Main EEV opening	
2F	Auxiliary EEV opening	
od	Operation mode	1 : cooling ; 2 : heating
Pr	Fan speed	
dF	Defrosting state	
OIL	Oil recovery state	
r2	Chassis electric heater state	
STF	Four-way valve switch	
Pu	Water pump state	
dcU	DC bus voltage	
dcC	Compressor current (A)	
AcU	Input voltage	
AcC	Input current	
HE1	Failure code history	
HE2	Failure code history	
HE3	Failure code history	
HE4	Failure code history	
Pr	Protocol version	Current version: 10
Sr	Software version	Current version: 10

4.10 User parameter

1. From the main interface, press the key for 3 seconds to access the user parameters consultation interface.
   Press or to view each parameter.
2. From the user parameters consultation interface, select a parameter and press to access the adjustment interface for that user parameter. SET flashes.
3. Press or to change the value of the current user parameter, then press to confirm the change and return to the parameter view.

Note: SET does not flash in query mode; SET flashes in set mode.

If no key is pressed for 30 seconds while viewing or setting user parameters, the modified parameter value is automatically saved and the screen returns to the main interface.

List of user settings

No.	Description	Adjustment range	Default V.
L0	Setting value of heating	15°C~40°C	38°C
L1	Temperature difference to start heating	1°C~5°C	3°C
L2	Temperature difference to stop heating	0°C~5°C	1°C
L3	Setting value of cooling	7°C~30°C	26°C
L4	Temperature difference to start cooling	1°C~5°C	2°C
L5	Temperature difference to stop cooling	0°C~5°C	1°C
L6	Setting value of auto mode	7°C~40°C	38°C
L7	Temperature difference to start for AUTO mode	1°C~5°C	2°C
L8	Circulation pump relay activation	0 (deactivated) /1 (activated)	0
L9	Water pump startup interval when the machine standby	30-90 min	60 min
L10	E-heater relay activation	0 (deactivated) /1 (activated)	0
L11	Ambient temperature to start the e-heater	0°C~25°C	5°C
L12	Temperature difference to start the e-heater automatically	1°C~5°C	5°C
L13	Temperature difference to start the e-heater manually	1°C~5°C	2°C

4.11 Factory settings

Contact your after-sales service: changing the factory settings without authorisation from the after-sales service will invalidate the warranty.

WARNING : This operation is used to assist servicing and future repairs. The default settings should only be modified by an experienced professional person.
Unauthorized modification of factory settings may invalidate the warranty.

Factory parameter view and setting

To view the advanced settings, press and hold down the keys for 3 seconds, then enter your password to continue:

- Press , or to change the value of the corresponding password: or to change the value of each digit; to move from one unit to another.
- When the appliance is off, **if you have been authorised to change a parameter:**
  - Press and for 3 seconds,
  - Enter the password provided by the After-Sales Service, then press to confirm.
  - Change only the parameter indicated by the after-sales service, then press to confirm.
- Press or to navigate to the advanced settings.
- Select a parameter and press to modify it. The icon SET starts flashing. Press or to change the value of the parameter, then press to confirm and return to viewing the parameter.
- If no key is pressed for 30 seconds, the modified parameter value is automatically saved and the screen returns to the main interface. To return to the main interface manually, press the button .

Reset the system

When the device is off, press , and for 3 seconds to restore factory setting.

Operation of the distribution network / wifi

Default distribution network: press and for 3 seconds to enter the default distribution network. The icon will start flashing.
Compatible distribution network: press and hold for 3 seconds to enter the compatible distribution network. The icon will start flashing slowly.
Pairing allows you to control your heat pump from a remote control application. This procedure is described in more detail in part “4.14 Pairing the heat pump”, page 60.

4. USE

Factory settings list

No.	Description	Adjustment range	Default V.	
			3 kW	5 kW
H0	Cumulative heating run time set value	1~120 min	45min	
H1	Maximum setting value of defrosting time	1~25 min	8min	
H2	Temperature to exit defrosting	1°C~25°C	18°C	
H3	Temperature for entering defrosting 1	-20°C~20°C	-5°C	
H4	Temperature for entering defrosting 2	-20°C~20°C	-5°C	
H5	Temperature for entering defrosting 3	-20°C~20°C	-10°C	
H6	Temperature for entering defrosting 4	-20°C~20°C	-10°C	
H7	Temperature difference to enter defrosting 1	-20°C~20°C	-10°C	
H8	Temperature difference to enter defrosting 2	-20°C~20°C	-10°C	
H9	Temperature difference to enter defrosting 3	-20°C~20°C	-8°C	-10°C
H10	Temperature difference to enter defrosting 4	-20°C~20°C	-8°C	-10°C
H11	Temperature difference to enter defrosting 5	-20°C~20°C	-8°C	-10°C
P0	The maximum compressor frequency when heating	30~100 Hz	70 Hz	
P1	The minimum compressor frequency when heating	20~60 Hz	30 Hz	
P2	The maximum compressor frequency when cooling	30~100 Hz	50 Hz	
P3	The minimum compressor frequency when cooling	20~60 Hz	30 Hz	
P4	The maximum opening of main EEV	40~480 P	480 P	
P5	The minimum opening of main EEV	40~480 P	40 P	
P6	The maximum opening of auxiliary EEV	40~480 P	480 P	
P7	The minimum opening of auxiliary EEV	40~480 P	80 P	
P8	Temperature for opening enthalpy-increasing solenoid valve	-25°C~25°C	15°C	
P9	Frequency for opening enthalpy-increasing solenoid valve	30~100 Hz	50 Hz	
P12	Heating target superheat (ambient T° > 5°C)	-5°C~5°C	1°C	0°C
P13	Exhaust temp. value for high-frequency adjustment	40°C~100°C	100°C	
P14	Target high-frequency superheat for EVI system	-5°C~5°C	2°C	
P15	Target low-frequency superheat for EVI system	-5°C~5°C	1°C	
P16	EVI system superheat regulation cycle	30s~200s	60s	
P17	Compressor running time required to open solenoid valve	5~30 min	5 min	
P21	Upper ceiling of enthalpy electron expansion valve	70°C~90°C	85°C	
P22	Lower exhaust of enthalpy electron expansion valve	40°C~70°C	70°C	
P23	Mode selection	0: heating only, 1: cooling only, 2: heating/cooling, 3: tripple supply	3	
P24	Maximum set temperature when heating	30°C~40°C	40°C	
P25	Minimum set temperature when heating	5°C~30°C	15°C	
P26	Maximum set temperature when cooling	15°C~30°C	30°C	
P27	Minimum set temperature when cooling	5°C~30°C	7°C	
C0	Test mode	1:Active; 0:OFF	0	
C1	Test mode: Manual frequency of compressor	10~120 Hz	80 Hz	
C2	Test mode: Manual opening of EEV	0~480 P	250 P	
C3	Test mode: Manual opening of auxiliary EEV	0~480 P	0 P	
C4	Test mode: Fan speed (*10 is the real fan speed)	30~200 rpm	90 rpm	

4.12 Downloading & installing the application «Poolex»

About the Poolex app:

To control your heat pump remotely, you need to create a Poolex account.

The Poolex application lets you control your pool equipment remotely, wherever you are. You can add and control several devices at once. Appliances compatible with Smart Life or Tuya (depending on the country) are also compatible with the Poolex application.

With the Poolex application, you can share the devices you've set up with other Poolex accounts, receive real-time operating alerts and create scenarios with several devices, based on the application's weather data (geolocation essential).

Using the Poolex application also means taking part in the continuous improvement of our products.

iOS :

Scan or search for «Poolex» in the App Store to download the app:

Télécharger sur App Store

Check the compatibility of your phone and the version of your OS before installing the application.

Android :

Scan or search for «Poolex» in the play to download the app:

Télécharger sur Google Play

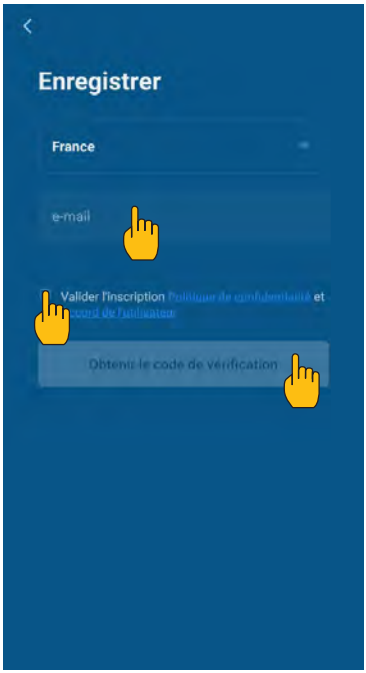
Check the compatibility of your phone and the version of your OS before installing the application.

4.13 Setting up the application

⚠ **WARNING:** *Before you begin, make sure you have downloaded the «Poolex» app, connected to your local WiFi network, and that your heat pump is electrically powered and running.*

You'll need to create a «Poolex» account to control your heat pump remotely. If you already have a Poolex account, please log in and go directly to step 3.

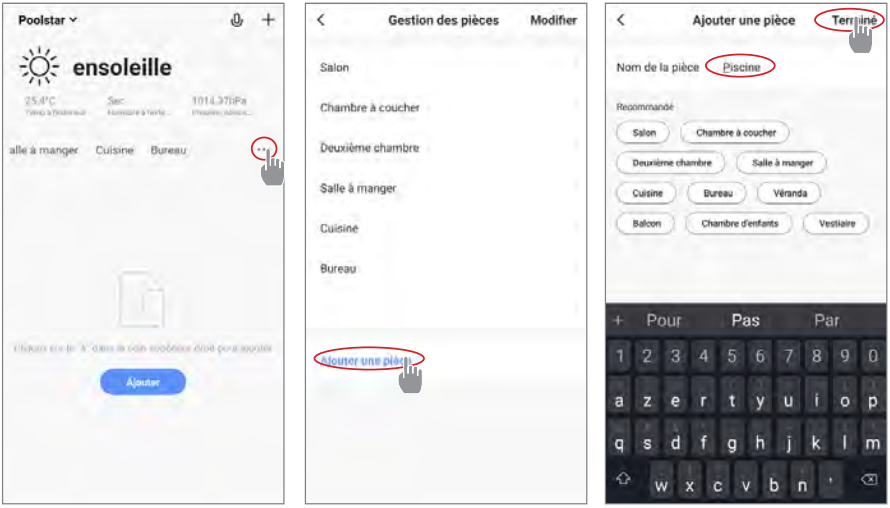
Step 1: Click on **«Create new account»** and choose to register by «**Email**» or «**Phone**,» where a verification code will be sent to you.
Enter your email address or phone number and click **«Send verification code»**.



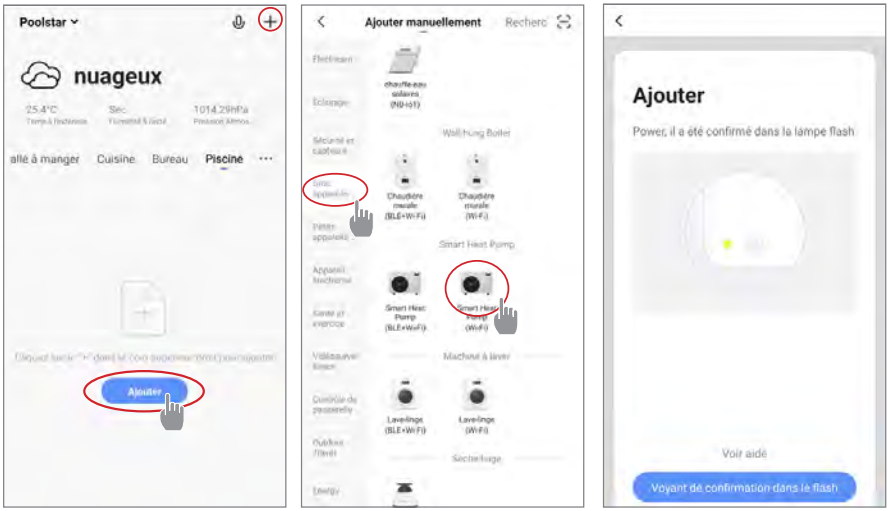
Step 2: Enter the verification code received by email or phone to validate your account.

Congratulations, you now belong to the "Poolex" community.

Step 3 (recommended): Add an object by clicking "..." and then "Add Object". Enter a name («Pool» for example), then click "Done".



Step 4: Now add a device to your "Pool".
Click "Add" or "+" and then "Large appliances..." followed by "Water heater".
At this point, leave your smartphone on the "Add" screen and go to the pairing step for your control box.



4.14 Pairing the heat pump

Step 1: Now start the pairing.
Choose your home WiFi network, enter the WiFi password and press “Confirm”.

> ⚠ WARNING: The «Poolex» application only supports 2.4Ghz WiFi networks.
>
> *If your WiFi network uses the 5GHz frequency, go to the interface of your home WiFi network to create a second 2.4GHz WiFi network (available for most Internet boxes, routers and WiFi access points).*

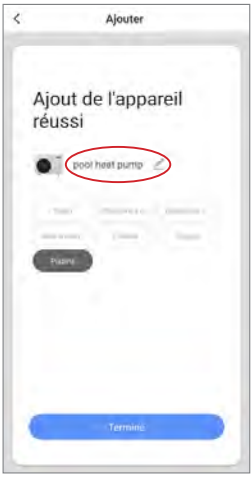
Step 2: Activate the pairing mode on your heat pump according to the following procedure:

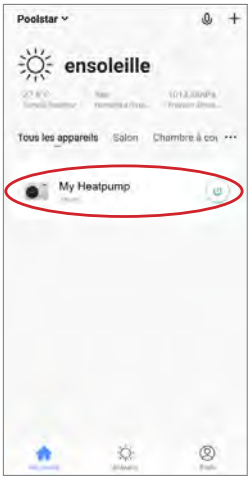
The procedure depends on the model of your control panel:

When the heat pump is running, press and hold one of the arrow buttons and the power button for 3 seconds to start WiFi pairing. The WiFi logo will flash.

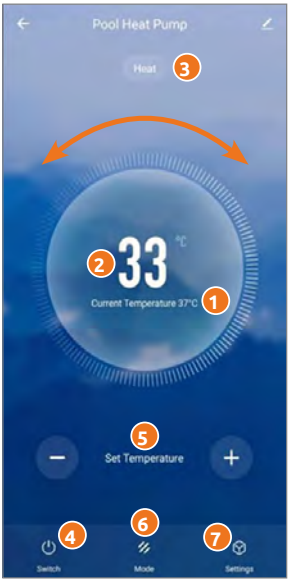
The pairing is successful, the "WiFi" logo remains fixed, you can rename your Poolex heat pump then press “Done”.

Congratulations, your heat pump can now be controlled from your smartphone.





4.15 Controlling

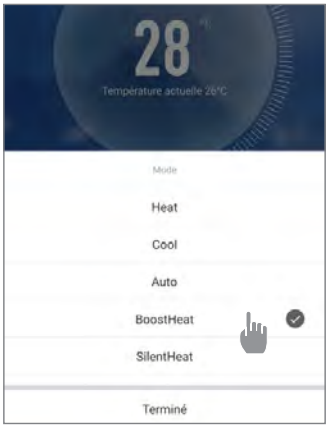


User interface

1. Current pool temperature
2. Temperature set point
3. Current operating mode
4. Switch the heat pump on/off
5. Change the temperature
6. Change operating mode
7. Set the operating range

Heat pump operating mode selector

Click on to open the drop-down menu for selecting the operating mode.



Available modes

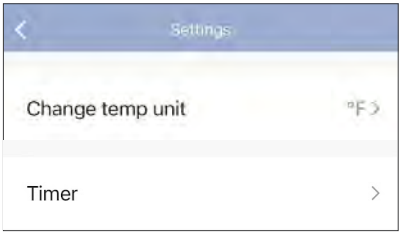
Smart heating
Smart cooling
Automatic
Heating boost
Silent heating
Cooling boost
Silent cooling

EN

4. USE

Options

To configure your heat pump's operating times, go to Settings and then enter "Timer". Then follow the steps below.

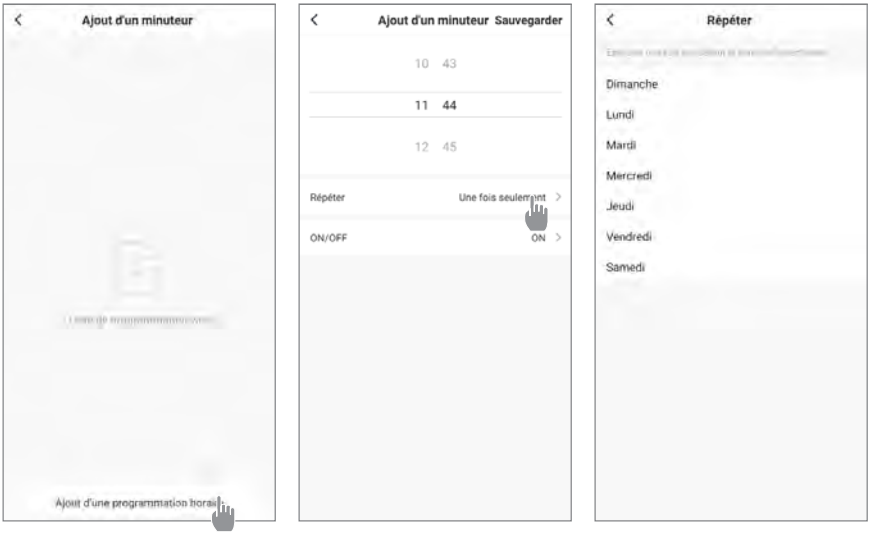


Choice of temperature unit (°C or °F)

Timer

Setting up the heat pump operating range

Step 1: Create a time schedule, choose the time, the day(s) of the week concerned, and the action (switch on or switch off), then save.



Step 2: To delete a time slot, press and hold the time slot.

5. MAINTENANCE AND SERVICING

WARNING: Before undertaking maintenance work on the unit, ensure that you have disconnected the electrical power supply.

5.1 Cleaning

The heat pump housing must be cleaned with a damp cloth. Using detergents or other household cleaning products may degrade the surface of the housing and affect its integrity.

The evaporator at the rear of the heat pump must be carefully cleaned with a vacuum cleaner and soft brush attachment.

5.2 Annual maintenance

The following operations must be undertaken by a qualified person at least once a year.

- ✓ Carry out safety checks.
- ✓ Check the integrity of the electrical wiring.
- ✓ Check the earthing connections.
- ✓ Contrôler la présence de fluide frigorigène

5.3 Wintering

Your heat pump is designed to operate in all weather. However, if you winterize your SPA, it is not recommended to leave the heat pump outside for long periods of time (eg over winter). After draining down the SPA for the winter, uninstall the heat pump and store it in a dry place.

6. REPAIRS

WARNING: Under normal conditions, a suitable heat pump can heat up the pool by 1°C to 2°C per day. It is therefore normal that you do not feel any difference in temperature at the outlet level when the heat pump is on.

A heated tub must be covered and insulated to avoir any heat loss.

In the event of a problem, the heat pump's screen displays an error code instead of temperature indications. Please consult the table below to find the possible causes of a fault and the actions to be taken.

Code	Anomaly detected	Resolution
E01	Discharge temperature fault	Check the temperature sensor
E05	Evaporator temperature fault	Check the temperature sensor
E09	Compressor inlet temperature fault	Check the temperature sensor
E18	Water temperature fault at the heat exchanger outlet	Check the temperature sensor
E19	Water temperature fault at the heat exchanger inlet	Check the temperature sensor
E21	Failure to communicate with the controller	1. Check the wiring connections. 2. Replace the controller 3. Replace the main PCB
E22	Ambient temperature fault	Check the temperature sensor
E25	Water flow switch failure	Check the water flow
E27	Failure of communication between the PCB and the compressor driver	1. Check the wiring connections. 2. Replace the external PCB 3. Replace the compressor driver
E28	Failure of EEPROM communication	1. Check the wiring connections. 2. Replace the EEPROM 3. Replace the controller
P02	High pressure protection	1. Check the fan motor 2. Check the water flow 3. Check the opening of the EEV
P06	Low pressure protection	
P11	Discharge temperature too high	1. Check the temperature sensor 2. Check that the fan motor is working properly during cooling. 3. Check the throttle
P15	Inlet and outlet temperature difference too great	1. Check the temperature sensor 2. Check that the fan motor is working properly during cooling.
P16	Ambient temperature too low for refrigeration	
P25	Ambient temperature too high/low	If the ambient temperature is not between -25 and 43°C, wait until it is.
P26	Outlet temperature too high/low	1. Check the water flow 2. Check the outlet temperature sensor

6. REPAIRS

Code	Anomaly detected	Resolution
P27	Evaporator temperature too high during cooling	1. Check the fan motor. 2. Ensure there are no obstructions around the evaporator.
r01	Overcurrent at the compressor	1. Check the input voltage at the compressor 2. Check the water flow 3. Check for throttling 4. Check the heat exchange around the heat pump
r02	Compressor start failure	Check the input voltage at the compressor.
r03	Fan motor A failure	1. Check the connection of the motor concerned 2. Check that the fan motor is not blocked
r05	IPM overheating	1. Check the fan motor 2. Replace the IPM board and/or compressor driver
r06	AC input overcurrent protection	Check the voltage at the circuit input.
r08	Communication failure with PCB	1. Check the wiring connections 2. Replace the PCB 3. Replace the compressor driver
r10	DC overvoltage	Check the voltage at the circuit input.
r11	DC undervoltage	Check the voltage at the circuit input.
r12	AC input overvoltage fault	Check the voltage at the circuit input.
r13	AC input undervoltage fault	Check the voltage at the circuit input.
r16	EEPROM fault	1. Replace the main PCB 2. Update the software
r23	Compressor phase loss	1. Check the voltage at the circuit input. 2. Check the wiring connections.
r25	Overcurrent in current sampling signal (hardware overcurrent)	1. Check the voltage at the circuit input. 2. Check that there are no obstacles around the heat pump. 3. Check the water flow rate.

7. WARRANTY

Poolstar guarantees the original owner against material defects and manufacturing defects of Poolex heat pump Nano for a period of **two (2) years**.

The compressor is guaranteed for a period of five (5) years.

The titanium tube heat exchanger has a period of fifteen (15) years guarantee against chemical corrosion, except for frost damage.

The condenser's other components are guaranteed for five (5) years.

The warranty enters into force on the first billing date.

This warranty does not apply to the following situations:

- Malfunction or damage resulting from installation, use or repair that does not comply with the safety instructions.
- Malfunction or damage deriving from an unsuitable chemical environment of the swimming pool.
- Malfunction or damage resulting from conditions unsuitable for the intended use of the device.
- Damage resulting from negligence, accident, or force majeure.
- Malfunction or damage deriving from the use of unauthorized accessories.

Repairs undertaken during the warranty period must be approved before being carried out by a qualified technician. This warranty is void in the event of repairs to the device made by individuals which have not been authorised by Poolstar.

The parts under warranty shall be replaced or repaired at the discretion of Poolstar. Faulty parts must be returned to us during the warranty period in order to be covered. The warranty does not cover unauthorized labor or replacement costs. Delivery costs for returning the faulty part are not covered by the warranty.

Dear customer,

A question? A problem? Or simply register your warranty, find us on our website:

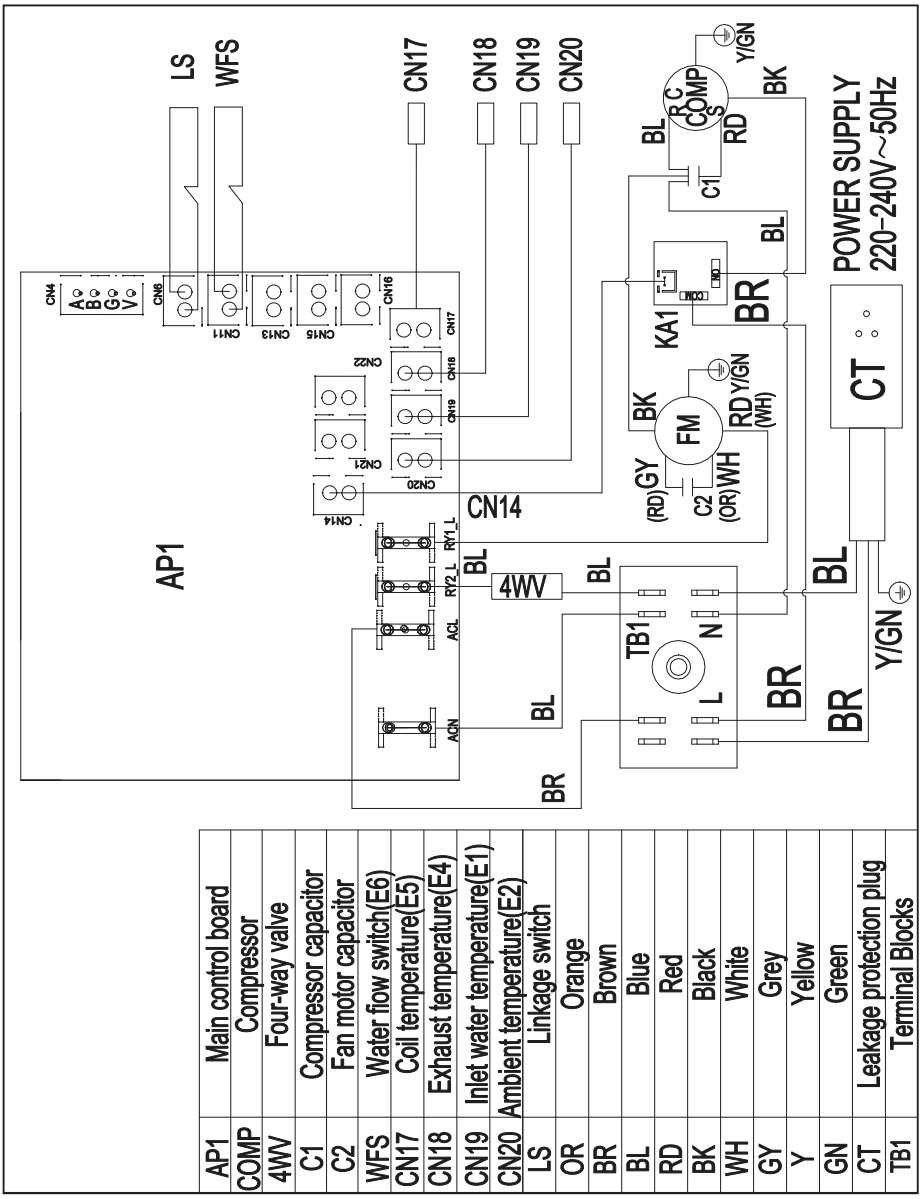
https://assistance.poolstar.fr/

Thank you for you trust and support. Happy bathing!

Your personal information is processed in accordance with the French Data Protection Act of 06 January 1978 and will not be shared with 3rd parties.

A. ANNEXES / APÉNDICES / APPENDICI / APPENDICES / ANHÄNGE / BIJLAGE

A.1 Schémas de câblage de la carte électronique / Diagramas de cableado / Schemi di cablaggio / Wiring diagrams / Schaltpläne / Bedradingsschema



AP1	Main control board
COMP	Compressor
4WV	Four-way valve
C1	Compressor capacitor
C2	Fan motor capacitor
WFS	Water flow switch(E6)
CN17	Coil temperature(E5)
CN18	Exhaust temperature(E4)
CN19	Inlet water temperature(E1)
CN20	Ambient temperature(E2)
LS	Linkage switch
OR	Orange
BR	Brown
BL	Blue
RD	Red
BK	Black
WH	White
GY	Grey
Y	Yellow
GN	Green
CT	Leakage protection plug
TB1	Terminal Blocks

POOLEX

Assistance technique - Technical support -
Asistencia técnica - Assistenza tecnica -
Technische unterstützung - Technische bijstand

www.assistance.poolstar.fr

Poolex is a brand of the group :

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