# ECO+ HEAT PUMP

# Installation & Instructions Manual

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# 1. Foreword

Our products are assembled to the most stringent standards in order to provide our clients with quality, reliability and flexibility. This manual contains all the information necessary for installing, starting up, winter care and maintenance. Read this manual thoroughly before you open or service the appliance. The appliance must be installed by qualified personnel. The following conditions apply for the warranty to be valid:

- The heat pump may only be opened and serviced by a certified technician.
- Operation and servicing must be carried out as laid down in this manual.
- Use only original spare parts.

Our warranty is invalidated if the above-mentioned requirements are not complied with.

The company is not responsible for damage or injury caused by incorrect installation, or faulty or unnecessary maintenance work.

The swimming pool heat pump heats the swimming pool water and maintains a constant temperature.

Our ECO+ heat pumps have the following characteristics:

**1. Durable**

The heat pump contains a PVC & Titanium heat exchanger that can withstand contact with the swimming pool water over the long term.

**2. Flexible Installation**

All our heat pumps are comprehensively tested and ready for use before they leave our factory.
At the point of installation, only the water and electricity connections need to be made.

**3. Low Noise Level**

The silent operation of our heat pumps is guaranteed by an exceptionally efficient rotary/scroll compressor and a low-noise fan.

**4. Advanced Operation**

All the parameters can be set and the status of all variables shown by means of the electronic service panel. Remote operation is also possible.

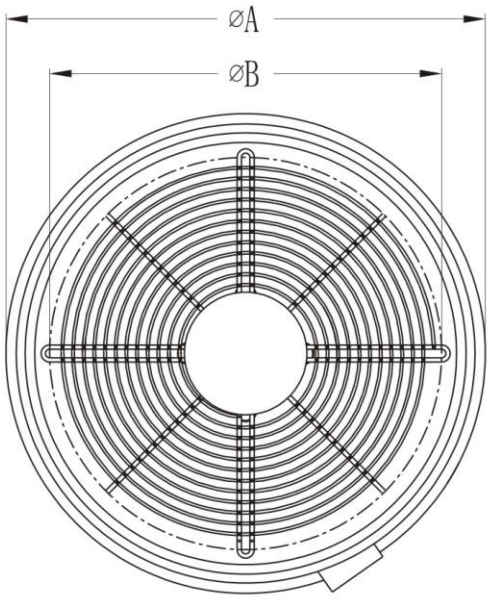
# 2. Specifications

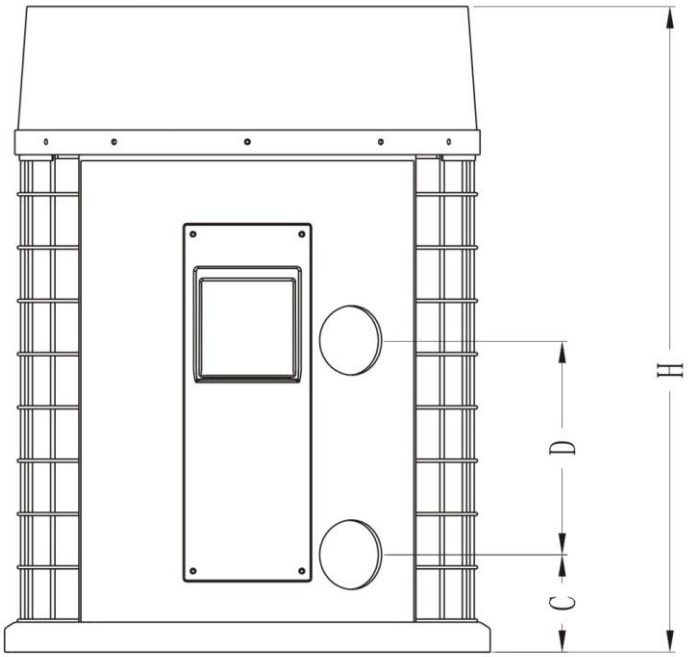
## 2.1 Summary of Technical Specifications

| Unit | Model | **ECO+5** | **ECO+8** | **ECO+10** | **ECO+12** |
|---|---|---|---|---|---|
| Heat Output | kW | 4.5 | 7.8 | 9.5 | 12.5 |
| | BTU/h | 15,300 | 26,600 | 32,500 | 42,650 |
| Cooling Output | kW | 0.86 | 1.5 | 1.83 | 2.4 |
| Maximum Swimming pool Volume | $m^3$ | 18 | 30 | 40 | 60 |
| Nominal current | A | 4.1 | 7.2 | 9.1 | 11.5 |
| Supply | V/Ph/Hz | 220-240/1/50 | | | |
| Condenser | | Titanium heat exchanger | | | |
| Compressors | | 1 | 1 | 1 | 1 |
| Compressor | | rotary | rotary | rotary | rotary |
| Fans | | 1 | 1 | 1 | 1 |
| Fan Output | W | 30 | 50 | 50 | 50 |
| Fan Speed | RPM | 880 | 880 | 880 | 880 |
| Fan Direction | | Vertical | Vertical | Vertical | Vertical |
| Noise at 2 m | dB(A) | 52 | 52 | 52 | 52 |
| Water Connection | mm | 1-1/2" | 1-1/2" | 1-1/2" | 1-1/2" |
| Nominal Water Flow | $m^3/h$ | 2 - 3 | 3 - 5 | 4 - 7 | 5 - 8 |
| Water Pressure Loss (max.) | kPa | 20 | 20 | 20 | 20 |
| External Dimensions | L/W/H mm | 456*456*606 | 550*550*802 | 570*570*939 | 570*570*939 |
| Packaged Dimensions | L/W/H mm | 466*466*620 | 560*560*820 | 585*585*980 | 585*585*980 |
| Total Despatch Weight | Kg | 29/34 | 44/51 | 49/57 | 50/57 |

**Conditions of Measurement:** Dry bulb: 24 ºC , Wet bulb: 19 ºC, water temperature 27 ºC

## 2.2 Dimensions




| | A | B | C | D | H |
|---|---|---|---|---|---|
| ECO+5 | Φ456 | Φ384 | 89mm | 170mm | 606mm |
| ECO+8 | Φ550 | Φ466 | 97mm | 260mm | 802mm |
| ECO+10 | Φ570 | Φ505 | 104mm | 400mm | 939mm |
| ECO+12 | Φ570 | Φ505 | 104mm | 400mm | 939mm |

# 3. Installation and Connection

## 3.1 Remarks

The factory supplies the heat pump on its own. Other components, including a by-pass where necessary, must be supplied by the user or installation technician.

**N.B.:**

Please follow the steps below when installing the heat pump:

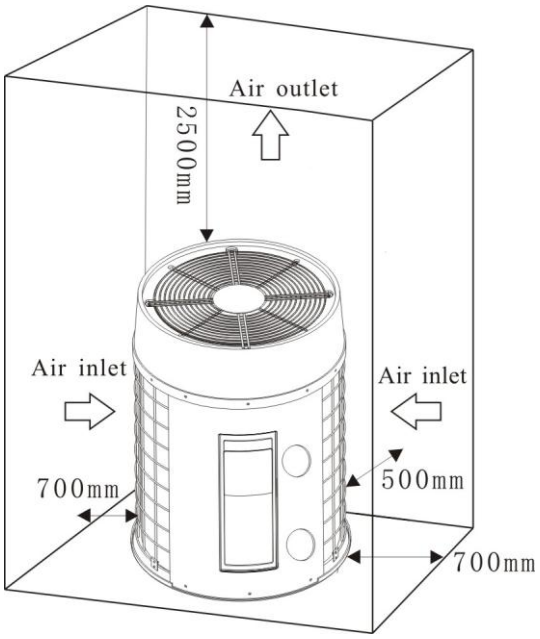
1. Any addition of chemicals must take place in the pipes located **behind** the heat pump.
2. Install a by-pass if the water flow of the swimming pool pump is more than 20% above the permitted flow through the heat exchanger of the heat pump.
3. Install the heat pump above the surface level of the swimming pool.
4. Always install the heat pump on a firm base and use the damping rubbers supplied to avoid vibration and noise.
5. Always keep the heat pump upright. If the appliance was held in a diagonal position, wait for at least 24 hours before starting the heat pump.

## 3.2 Siting of the Heat Pump

The appliance will operate properly in any location, provided that three points are observed:

**1. Fresh Air - 2. Electricity - 3. Swimming pool filters**

The appliance may be installed practically anywhere **outside**, as long as minimum distances to other objects are observed.




**CAUTION:**

Do not place the appliance in an enclosed space with restricted volume of air where the air expelled would be re-used, or near to shrubbery that might block the air inlet.

These locations hinder the continuous flow of fresh air, resulting in a reduction in efficiency and possibly obstructing adequate supply of heat.

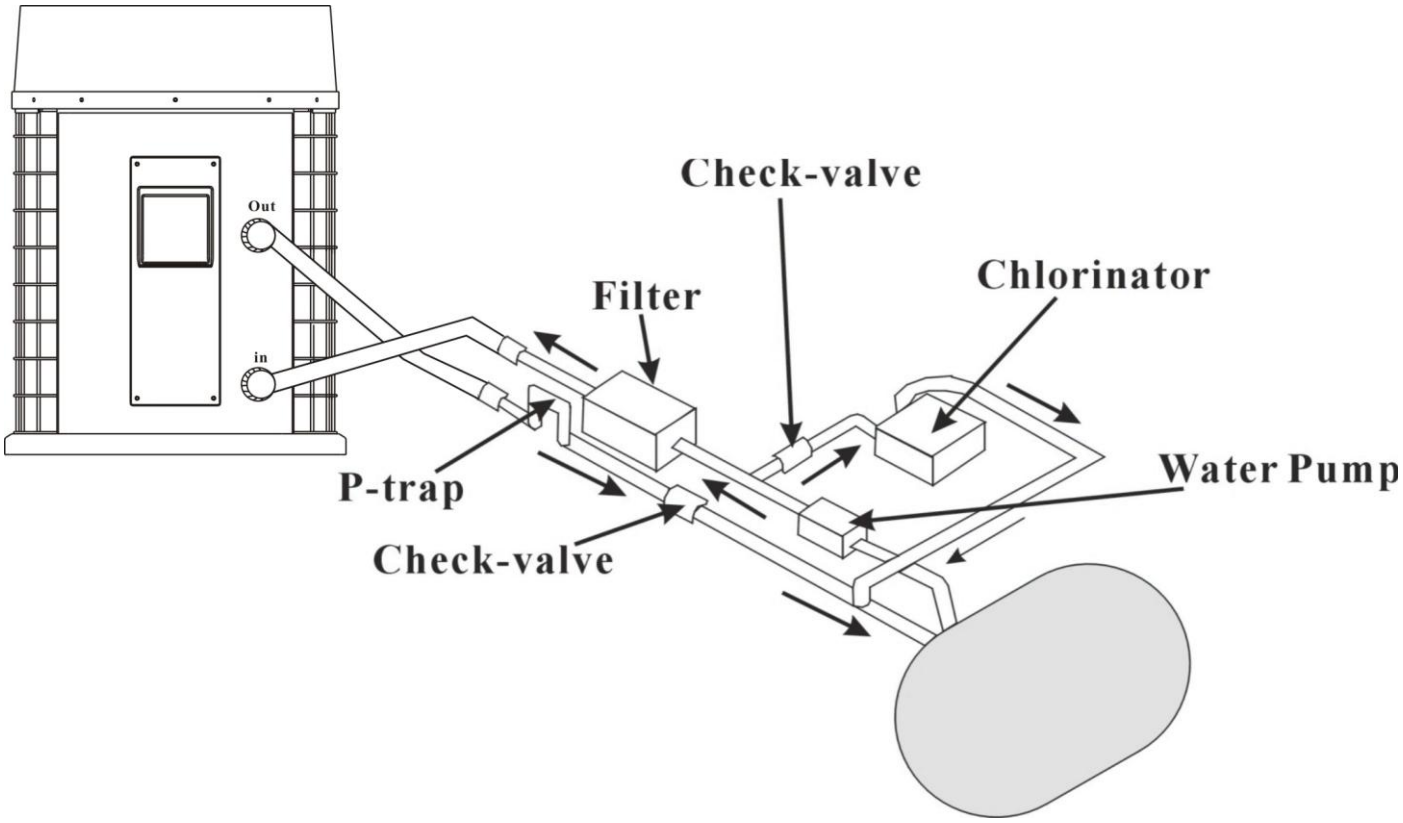
See diagram for the **minimum** distances.

## 3.3 Distance from the Swimming Pool

Install the heat pump as close as possible to the swimming pool in order to limit heat loss through the pipes.
Ensure a firm base and place the heat pump on the rubber blocks to avoid vibration.

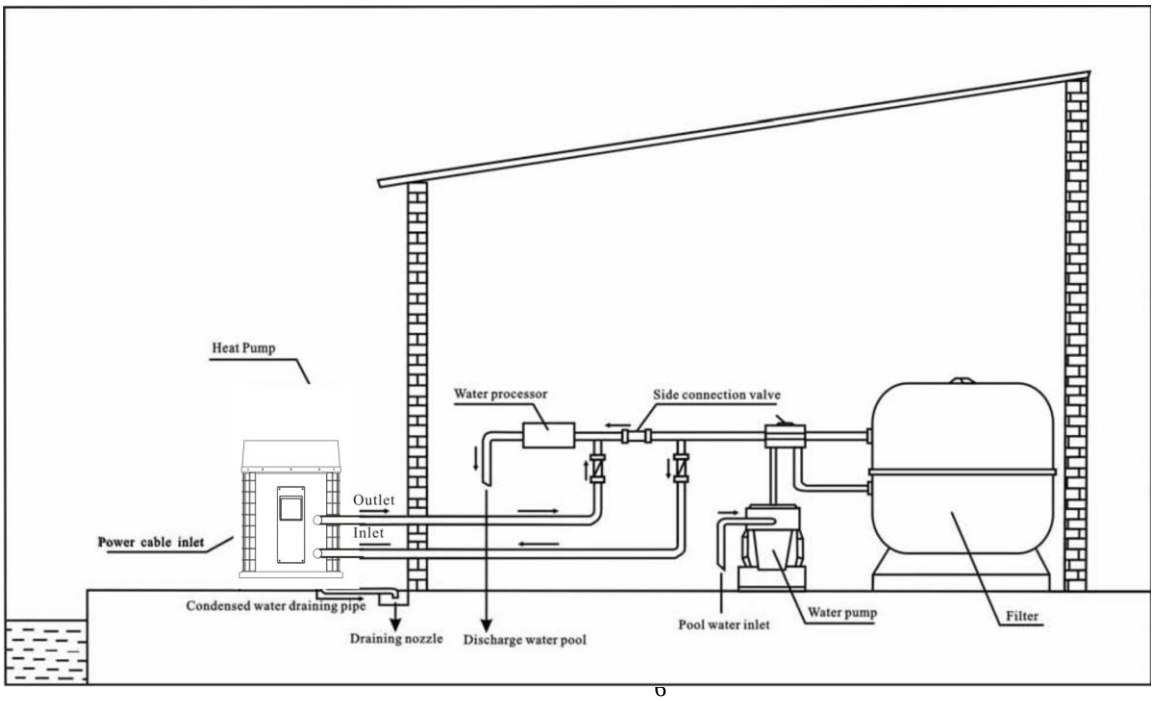
## 3.4 Installing the Check-Valve

**N.B.**– When using automatic chlorine and pH dosing systems, it is extremely important to protect the heat pump from excessive concentrations that could damage the heat exchanger. For this reason, facilities of this kind must always be installed in the piping located BEHIND the heat pump, and it is recommended to install a check-valve to prevent reverse flow in the absence of water circulation.
Damage to the heat pump caused by failing to observe these precautions is not subject to the warranty.

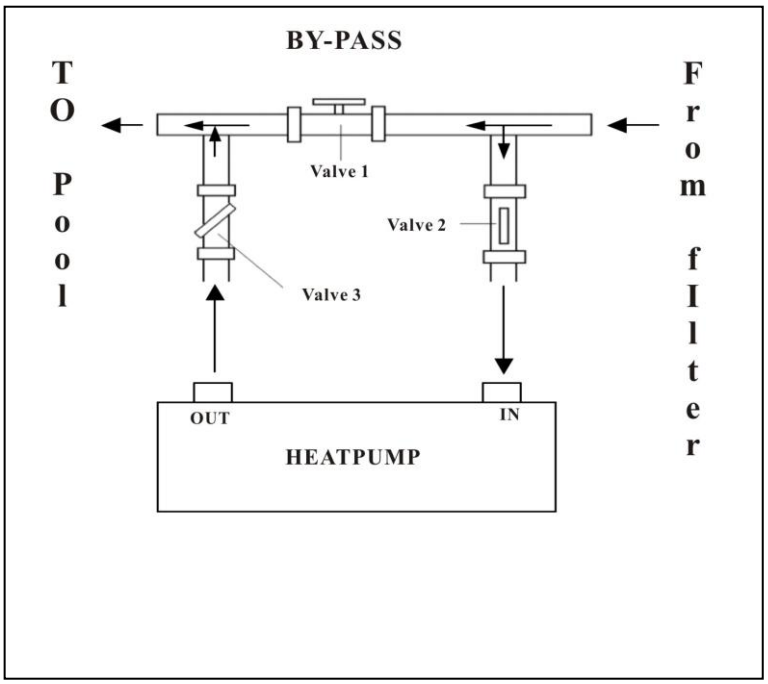



## 3.5 Typical Setup

**Remark – This setup is only an example for demonstration**



## 3.6 Setting the By-pass




Follow this procedure to set the by-pass:

- completely open the 3 taps
- close tap 1 gradually until the water pressure has risen by around 100-200 gram (see also 3.8)
- close tap 3 to around halfway to set the pressure of the refrigerant gas in the appliance.

Optimal operation of the heat pump is achieved if the refrigerant gas is at a pressure of 20+/-2 bar.
This pressure may be read off from the pressure gauge next to the service panel of the heat pump. The correct setting also ensures that the optimal water flow always passes through the appliance.

**Remark – The lack of a by-pass or poor setting may cause the heat pump not to operate optimally, or even become damaged. In that case the warranty is invalidated.**

## 3.7 Electrical Connection

**Important - Although the heat pump is electrically insulated from the rest of the swimming pool system, this merely prevents flow of current from and to the swimming pool water. An earth is still necessary to protect you against short circuits within the appliance. Ensure that there is a good earth.**

Check beforehand whether the supply voltage corresponds to the operating voltage of the heat pump.
It is advisable to make use of a separate fuse (delay type – D curve) along with adequate cabling (see table below).
**The heat pump must be used exclusively with the filter pump. For this reason, connect to the same fuse as the filter pump. If no water flows through the heat pump while in operation, it may be damaged and then the warranty is invalidated.**

Connect the cable carrying the current to the clamp connector block behind the panel located next to the fan.

| Model | Supply (Volt) | Safety Fuse (A) | Nominal Current (A) | Cable Diameter ($mm^2$) for 15 m in length |
|---|---|---|---|---|
| ECO+5 | 220-240 | 16 | 4.8 | 1.5 |
| ECO+8 | 220-240 | 20 | 7.5 | 2.5 |
| ECO+10 | 220-240 | 20 | 10 | 2.5 |
| ECO+12 | 220-240 | 20 | 13 | 2.5 |

These should be seen as guidelines only. Check the local regulations.

## 3.8 Starting up for the first time

After all the connections have been made and checked, the following steps must be taken:

1. Turn on the filter pump. Check for leaks and make certain that the water flows from and to the swimming pool.
2. Connect the current to the heat pump and set the switch to ON. The appliance will start up after the time delay (see below) has elapsed.
3. After a few minutes check whether the air being expelled from the appliance is cooler.
4. Leave the appliance and filter pump in operation 24 hours per day until the desired water temperature has been reached. At this point the heat pump ceases operation. The appliance will now start up again automatically (as long as the filter pump is in operation) whenever the swimming pool temperature falls to 1 degree below the programmed temperature.

Depending on the initial temperature of the swimming pool water and the air temperature, several days may be needed to bring the water up to the temperature required. Covering the swimming pool properly can considerably shorten this period.

**Time Delay** – the appliance is fitted with built-in start-up delay of 3 minutes as protection for the electronics and to increase the life of the contacts. After this interval, the appliance will restart automatically. Even a brief interruption in the flow of current will activate this delay and thus prevent the appliance from starting up immediately. Additional interruptions in the current during this delay will have no influence on the 3-minute countdown.

## 3.9 Condensation

The intake air is cooled significantly as a result of the operation of the heat pump when heating the swimming pool water, and water may condense on the fins of the evaporator. When humidity is high, this could even amount to several litres per hour. This is sometimes erroneously seen as a water leak.

# 4. Control the heat pump (LED)

**Preparation before startup**

A) Inspection of the heat pump

- Check whether the outer appearance of the unit or pipeline system in the unit is damaged during transportation.
- Check whether the ventilator fan does not touch any part of the unit

.

B) Verifying the electrical connections

- Check whether power supply complies with specifications in this manual or on the label placed on the unit.
- Check whether the power cabling is connected correctly and firm according to the wiring diagram. Adequate grounding is required to protect against electrical shock.

## 4.1 Controller diagram

A. ⏻ : Switch heat pump on or off

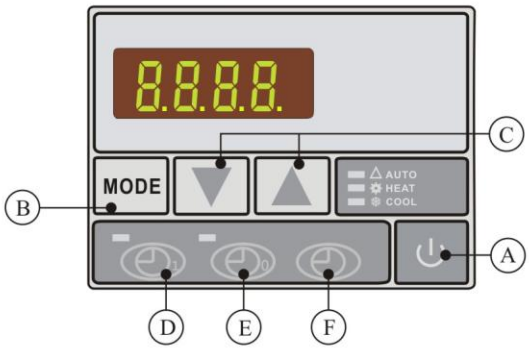
B. MODE : Select auto, heating or cooling mode. Corresponding indicator light will go on when selected.

C. ▼ or ▲ : Press to change digits.

D. : "Timer start "setting button.

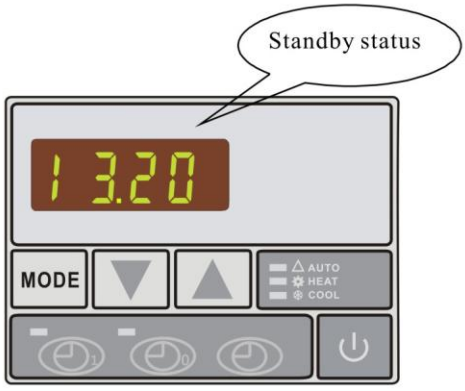
E. : "Timer stop" setting button.

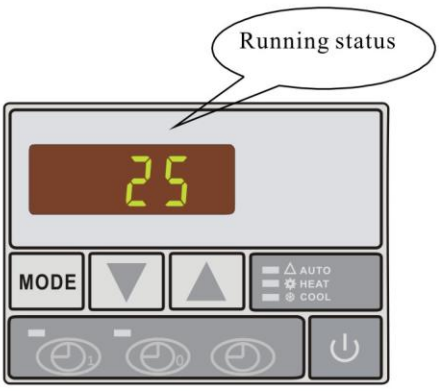
F. : Time setting button.




## 4.2 How to start heat pump

When connected with power, the controller will display the time. This means that the unit is in standby. Press ⏻ to start the heat pump. The display will show the inlet water temperature.




## 4.3 How to change mode

Press MODE to select auto, heating or cooling mode: the indicator light on the right side of the controller will indicate the mode selected.


## 4.4 How to set desired water temperature.

1.How the temperature setting works.

The unit has a unique temperature controlling system, to suite all kind of needs.

**Heating Mode:** In Heating Mode the heat pump will only heat. It will heat up to 1 deg. higher that the "Set" Temp. Then the heat pump will stop, but the heat pump will continue to watch the temperature in your pool. (The filter pump has to run to enable the heat pump to measure the temperature).

When the temperature in the pool is 1 deg lower than the "Set" Temp. the heat pump will start again.

**Cooling Mode:** This works the same way, but will only cool when temperature exceed 1 deg over the cooling "Set" Temp. and cool down to 1 deg below the "Set" Temp.

Remember that the highest Cooling "Set" is 28 deg. C.

**Auto Mode:** In Auto Mode your heat pump will try to keep your wanted pool temperature at all time.

**Example:**

If you want your pool to be 30 deg. C.

A: If the pool-water is below 29 deg. C the heat pump will start heating.

B: When the temperature reach 31 deg. C the heat pump will stop.

C: If the temperature in your pool continue to rise, and pass 32 deg. C, the heat pump will start again, >> BUT in Cooling Mode. And cool down to 30 deg. C

G: If now the temperature continue to sink, and sink below 29 deg. C, the heat pump will start again, BUT in Heating Mode.

In Auto Mode the heat pump will try to keep the temperature within 2 deg. C higher and 1 deg. C lower that your "Set" Point. (Remember that the Filter pump has to run when the heat pump shall work)

## 4.5 How to set by the display controller :

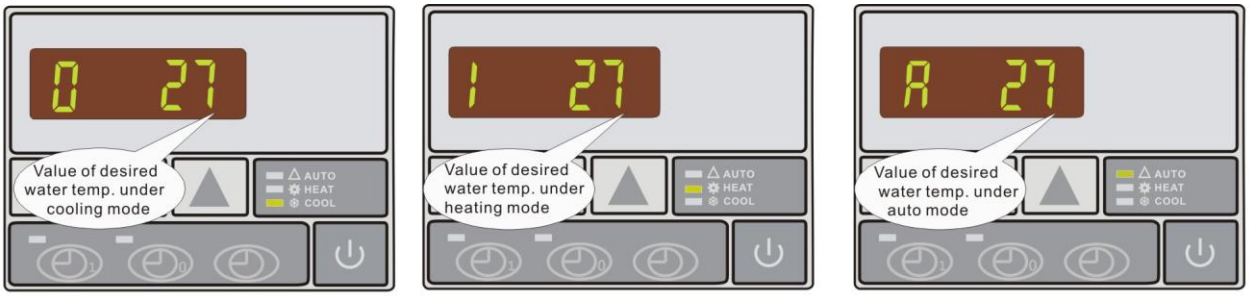
1. First select the desired mode: auto, heating or cooling

2. Regardless if the heat pump is "running" or in "standby" press ▲ or ▼ .

The display will show the currently set water temperature of the selected mode with a flashing number: While it is blinking you can change the water temperature by pressing ▲ or ▼ to the temperature you wanted.

(Before you select the wanted temperature, make sure you are in the correct mode： Heating / Cooling / Auto.)

**After you see the wanted temperature blinking, just wait 5 sec. and the temperature is stored.**



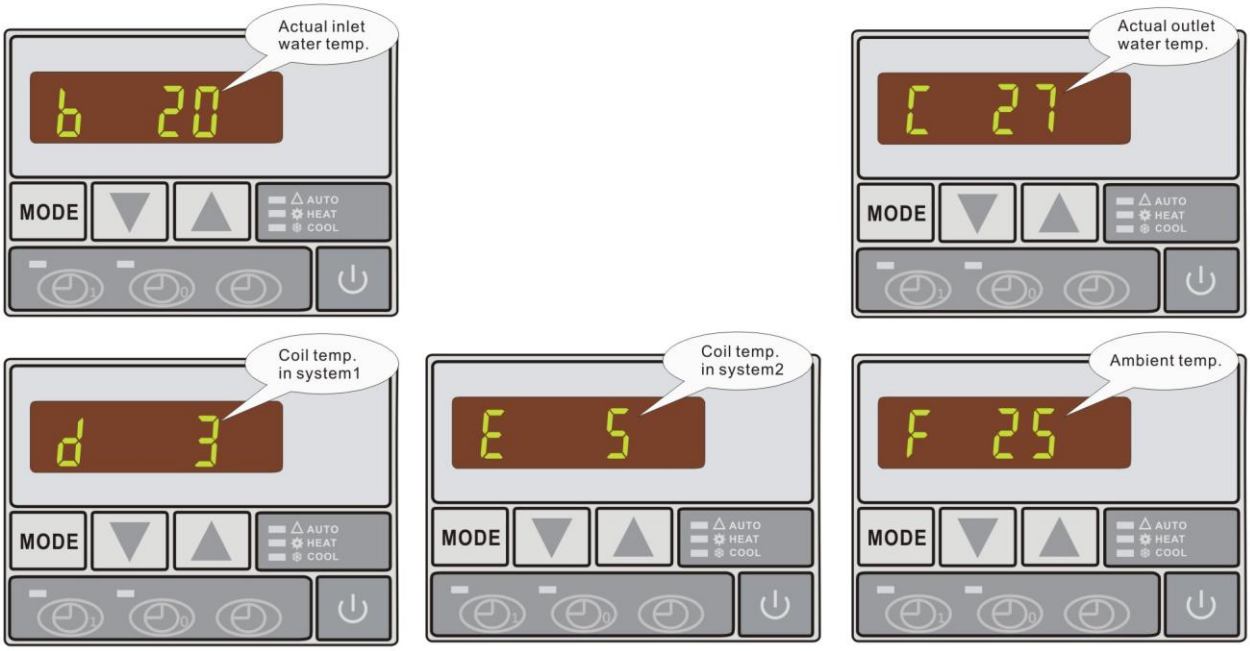

**Cooling Mode**
**Range 8 - 28℃**

**Heating Mode**
**Range 15 - 40℃**

**Auto Mode**
**Range 8 - 40℃**

## 4.6. How to check parameter settings and measured values of current status

Regardless whether the hat pump is "running" or in "standby" press MODE for 5 sec.
The display will start to blink (Both digits)
The first digit indicate the "parameter"
The second digit(s) indicate the value of the "parameter"
This " reading mode" will be deactivated if you do not press a button for 10 sec.
By pressing ▲ or ▼ you will see parameters from 0 to F (one by one)
Make a note of each parameter, (for your records.)
Just wait 10 sec. and this function is deactivated (You are back to normal)



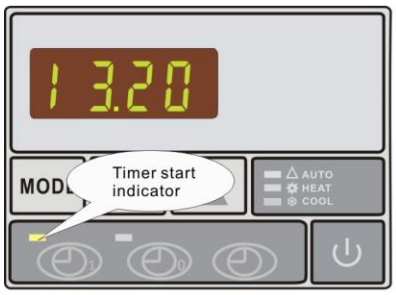

## 4.7. How to set the clock

1.In standby, press ⏲ hour digits will flash to indicate that they can be modified by pressing ▲ or ▼
2.press ⏲ minute digits will flash to indicate that they can be modified by pressing ▲ or ▼
3.press ⏲ again for final confirmation of time setting
Once time has been set, LED display will show time when heat pump is on standby.

## 4.8. How to set timer start and timer stop

a)Press to activate 'timer start' setting: hour and minute digits will be flashing together.
b)Press again to modify the hour setting: the hour digits will flash meaning they are ready to be modified by pressing ▲ or ▼.
c)Press again to modify the minute setting: the minute digits will flash meaning they are ready to be modified by pressing ▲ or ▼.
d)Press to confirm setting - display will return to standby status. 'Timer start' green indicator light will light up to show the starting time has been set.
e)Repeat the same procedure using instead of to set 'timer stop'. 'Timer stop' red indicator light will light up to show the stopping time has been set.

**Note:** 'timer start' and 'timer stop' can be set together or separately (i.e. it is possible to set 'timer start' only and then stop the unit manually or set 'timer stop' only and start the unit manually)





## 4.9. How to cancel 'timer start' and 'timer stop

Press to activate 'timer start' or to activate 'timer stop': the corresponding indicator light will be flashing. Press to cancel 'timer start' or 'timer stop'.

INFO:
The parameter can be changed by an skilled person. A code is needed to do so.
The procedure for this is in the "Main Manual"
The keypad can be locked to prevent unauthorized use or changes of the heat pump.
The procedure for this is in the "Main Manual"
If the control-panel is locked, your dealer can advise you how to unlock.

# 5. Guidelines

## 5.1 Chemistry of the swimming pool water

Special attention should be paid to the chemical balance of the swimming pool water. The following limits must be observed at all times:

| | Min. | Max. |
|---|---|---|
| pH | 7.0 | 7.4 |
| Free chlorine (mg/l) | 0.5 | 1.2 |
| TAC (mg/l) | 80 | 120 |
| Salt (g/l) | | 3 |

**Important: failure to observe these limits will invalidate the warranty.**

**Remark: exceeding one or more of the limits may result in irreparable damage to the heat pump. Always install appliances for treating the water behind the heat pump water outlet, especially if chemical products are automatically added to the water.**
**A return check-valve must also be installed between the heat pump outlet and these appliances in order to prevent these products flowing back into the heat pump when the filter pump is not in operation.**

## 5.2 Winter Care of the Heat Pump

**Important: failure to take the necessary precautions for winter care may result in damage to the heat pump that invalidates the warranty.**

The heat pump, the filter pump, the filter and the pipes should be protected along the sections where temperatures may drop to freezing. Carry out the following to remove all the water from the heat pump:

1. switch off the electrical current to the heat pump.
2. close the water supply to the heat pump; completely close taps 2 and 3 of the by-pass.
3. disconnect the water connections to the heat pump and allow the water to flow away.
4. connect the water connections to the heat pump once more to prevent dirt from getting into the pipes.

## 5.3 Starting up after the winter

If your heat pump has been shut down for the winter, you should go through the following steps to start up in the spring:

1. check beforehand whether any dirt has got into the pipes and whether there are any structural problems.
2. check that the water connections are properly attached to the heat pump.
3. start the filter pump to provide water flow to the heat pump. Reset the by-pass.
4. reconnect the electrical current to the heat pump and switch to ON.

## 5.4 Checks

ECO+ heat pumps have been developed and constructed for a long operating life, if they are installed in the correct way and operate under normal circumstances. Regular care is important to ensure that your heat pump continues to work safely and efficiently for years.
The following guidelines may help you in this:

1. ensure easy access to the service panel.
2. keep the environs of the heat pump clear of any garden waste.
3. prune the greenery around the heat pump to ensure adequate free space.
4. remove any water sprayers from the environs of the heat pump. They may damage the heat pump.
5. prevent rain water falling directly from a roof onto the heat pump. Ensure the necessary drainage.
6. do not use the heat pump if it is standing in water. Contact a qualified technician immediately to inspect the heat pump and to carry out repairs if necessary.

Condensation may occur during operation of the heat pump. This is able to drain away through an opening in the baseplate of the appliance. The amount of condensation water will increase with higher humidity. Remove any dirt that may impede drainage.
During operation, 10 to 20 litres of condensation water may occur. If more occurs, stop the heat pump and wait for an hour to check whether there is a leak in the pipes.

**REMARK: A quick way of checking whether the water results from condensation is to switch off the appliance and to let the swimming pool pump run. If no more water comes out of the condensation outlet, then it is condensation. AN EVEN QUICKER METHOD – TEST THE DRAINAGE WATER FOR CHLORINE – if there is no chlorine present, it is condensation.**

Ensure free air intake and complete removal of the cooled air. Avoid allowing the expelled air being sucked in again.

# 6. Maintenance and Inspection

## 6.1 Maintenance

- Check the water inlet and outlet regularly. You must ensure that sufficient water and air are able to enter the system, otherwise the output and reliability of your system will be affected. You should clean the swimming pool filter regularly to prevent damage resulting from a blocked filter.
- There must be sufficient space and ventilation around the appliance. Regularly clean the side of the heat pump to ensure proper operation and to save energy.
- Check the operation of all processes in the appliance, particularly the pressure in the cooling system.
- Regularly check the electricity supply and cable connections. Check that nothing is abnormal and whether there is a bad smell around the electrical parts. If this is the case, replace in good time.
- Winter care: drain all the water from the heat pump and other systems to prevent damage resulting from freezing.
- You should also drain the water if the appliance is to remain idle for a lengthy period. And you should check all components thoroughly and fill the system with water completely before restarting the appliance.

## 6.2 Problem-solving

Incorrect installation may cause electric shock leading to the death or serious injury of the users, technicians or others, or damage to property.

**DO NOT MAKE ANY** internal alterations to the heat pump.

1. Keep hands and hair away from the fan vanes to avoid injury.
2. If you are not familiar with your swimming pool filter system and heat pump:
    a. **Do not carry out any** alterations or maintenance without consulting your dealer, swimming pool or air conditioning supplier.
    b. Read the installation and user's manual completely before attempting to use, service or alter the appliance.
    **c. Start the heat pump 24 hours after installation at the earliest in order to avoid damage to the compressor.**

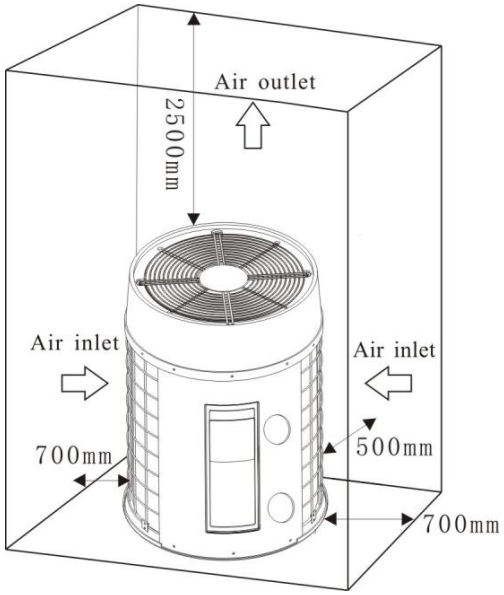
**N.B.:** Switch off the current before you service or repair the appliance.

| ***Problem*** | ***Cause*** | ***Solution*** |
|---|---|---|
| **Heat pump fails to operate** | | |
| | 1. No current | 1. Turn on the current |
| | 2. Heat pump switched off | 2. Turn on the heat pump |
| | 3. Incorrect temperature | 3. Adjust the temperature setting |
| | 4. By-pass not set | 4. Set the by-pass (see above) |
| | 5. No gas pressure | 5. Contact your technician |
| | 6. Time delay still activated | 6. Wait until the heat pump starts up |
| | 7. Air temperature below 8°C | 7. Wait until it warms up |
| **Inadequate heating** | | |
| | 1. Blockage to airflow | 1. Remove the obstacles |
| | 2. Ice forming on evaporator | 2. Turn heat pump off temporarily |
| | 3. By-pass not set | 3. Set the by-pass (see above) |
| | 4. Water flow too high | 4. Set the by-pass (see above) |

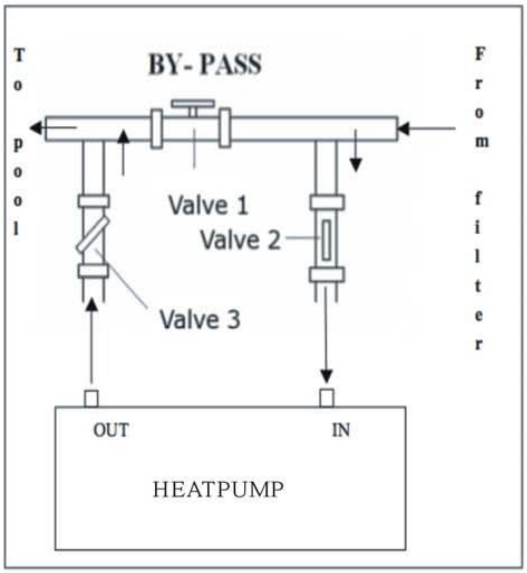
# 6.3 Checklist for Installation

## ATTENTION / OPGELET / ATTENTION / ACHTUNG

**1. Free area / vrije ruimte / espace libre / freier platz**




**2. Install a by-pass / installeer een by-pass / installez un by-pass / installieren sie eine Überbrückung**




**3.Electrical connection / elektrische aansluiting / raccordement électrique / elektrischer Anschluss**

| | | | |
|---|---|---|---|
| ECO+5 | 220-240V | 10A | 2*2,5+2,5mm² |
| ECO+8 | 220-240V | 10A | 2*2,5+2,5mm² |
| ECO+10 | 220-240V | 16A | 2*4+4mm² |
| ECO+12 | 220-240V | 16A | 2*4+4mm² |

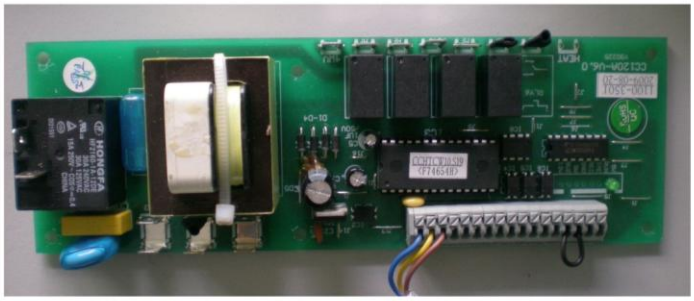
**Read the installation manual for more detailed instructions**

**Lees aandachtig de instructies in de installatiehandleiding**

**Lisez les instructions dans le manuel d'installation**

**Lesen sie die Anweisungen im Installation Handbuch**

## 6.4 Failure code table for smart PCB.

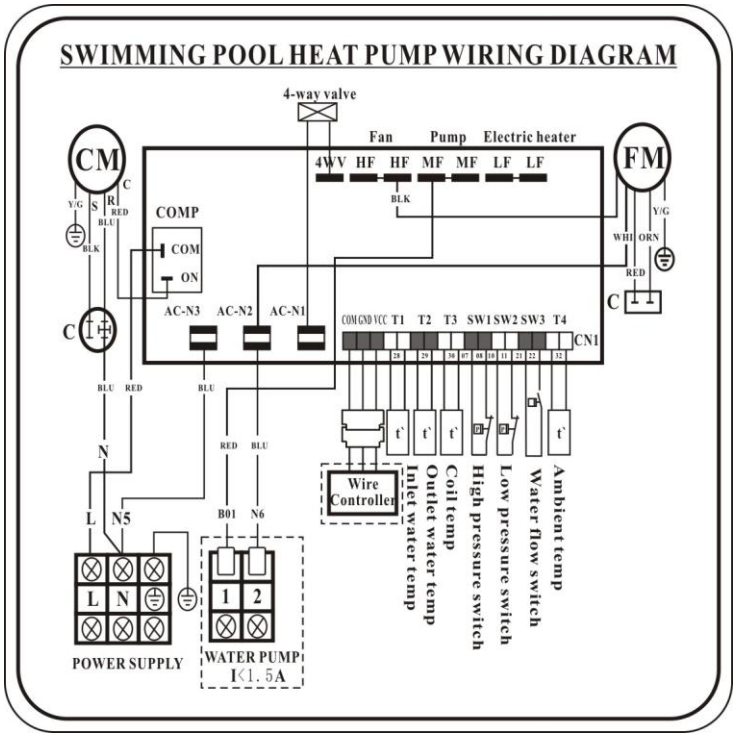


| Wire controller | Protection/Failure | Check | Solution |
|---|---|---|---|
| PP01/PP1 | Inlet water temp. sensor failure | 1. Check the connection of inlet water sensor.<br>2. Check if the sensor is broken. | 1. Reconnect the sensor.<br>2. Replace the sensor. |
| PP02/PP2 | Outlet water temp. sensor failure | 1. Check the connection of outlet water sensor.<br>2. Check if the sensor is broken. | 1. Reconnect the sensor.<br>2. Replace the sensor. |
| PP03/PP3 | Coil temp. sensor failure | 1. Check the connection of coil temperature sensor.<br>2. Check if the sensor is broken. | 1. Reconnect the sensor.<br>2. Replace the sensor. |
| PP05/PP5 | Ambient temp. sensor failure | 1. Check the connection of ambient temperature sensor.<br>2. Check if the sensor is broken. | 1. Reconnect the sensor.<br>2. Replace the sensor. |
| PP06/PP6 | Protection for over-big temp. Difference between water inlet & outlet | 1. Check if there is any jam in the water circuit.<br>2. Check if the water flow volume is enough.<br>3. Check if the water pump has failed to work. | 1. Remove the jam.<br>2. Increase the water flow volume.<br>3. Repair or replace the water pump. |
| PP07/PP7 | Anti-freeze protection for cooling | Refer to PP06. | Refer to PP06. |
| PP07/PP7 | Winter anti-freeze protection Ⅰ | No action required | |
| PP07/PP7 | Winter anti-freeze protection Ⅱ | No action required | |
| EE01/EE1 | High pressure protection | 1. Check if high pressure switch is broken<br>2. Check if there's jam in water circuit or water flow not enough.<br>3. Check if refrigerant circuit jam. | 1. Replace new high pressure switch.<br>2. Charge enough refrigerant.<br>3. Remove jam or adjust bigger water flow.<br>4. Send heat pump to dealer for detailed check. |
| EE02/EE2 | Low pressure protection | 1. Check if low pressure switch is broken.<br>2. Check if lack of refrigerant.<br>3. Ambient temp. and water inlet temp. is too low. | 1. Replace new low pressure switch.<br>2. Charge enough refrigerant.<br>3. Send heat pump to dealer for detailed check. |
| EE03/EE3 | Water flow switch failure | 1.Check if wiring connection of flow switch is in position.<br>2.Check if enough water flow.<br>3.Check if flow switch is broken.<br>4.Check if water pump failure. | 1.Reconnect the wiring.<br>2.Increase enough waterflow.<br>3.Replace flow switch.<br>4.Repair or replace water pump. |
| EE04/EE4 | Order of phases incorrect (only for 3 phase model) | Order of phases incorrect | Reconnect the phases in right order. |
| EE05/EE5 | Failure of over-big temp. difference between water inlet & outlet | 1. Check if there is enough water flow volume.<br>2. Check if inlet / outlet water temp. sensor failure. | 1. Adjust bigger water flow.<br>2. Replace related sensor. |
| No display | Defrosting | | |
| EE08/EE8 | Communication failure | Check the connection | Reconnect the connection wire. |

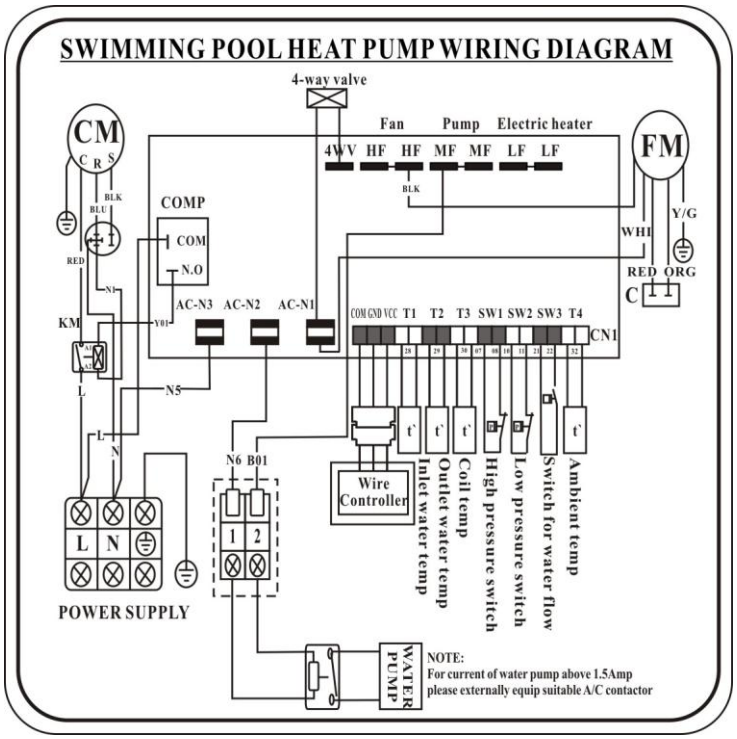
# 7. Detailed Specifications

## 7.1 Wiring diagram of the heat pump

ECO+5, ECO+8, ECO+10




ECO+12



# 8. Warranty and Returns

## 8.1 Warranty

### LIMITED WARRANTY

Thank you for purchasing our heat pump.

We warrant all parts to be free from manufacturing defects in materials and workmanship for a period of two years from the date of retail purchase.

This warranty is limited to the first retail purchaser, is not transferable, and does not apply to products that have been moved from their original installation sites. The liability of the manufacturer shall not exceed the repair or replacement of defective parts and does not include any costs for labour to remove and reinstall the defective part, transportation to or from the factory, and any other materials required to make the repair. This warranty does not cover failures or malfunctions resulting from the following:

1. Failure to properly install, operate or maintain the product in accordance with our published "Installation & Instruction Manual" provided with the product.
2. The workmanship of any installer of the product.
3. Not maintaining a proper chemical balance in your pool **[pH level between 7,0 and 7,4. Total Alkalinity (TA) between 80 to 120 ppm. Free Chlorine between 0,5 – 1,2mg/l. Total Dissolved Solids (TDS) less than 1200 ppm. Salt maximum 3g/l]**
4. Abuse, alteration, accident, fire, flood, lightning, rodents, insects, negligence or acts of Gods.
5. Scaling, freezing or other conditions causing inadequate water circulation.
6. Operating the product at water flow rates outside the published minimum and maximum specifications.
7. Use of non-factory authorized parts or accessories in conjunction with the product.
8. Chemical contamination of combustion air or improper use of sanitizing chemicals, such as introducing sanitizing chemicals upstream of the heater and cleaner hose or through the skimmer.
9. Overheating, incorrect wire runs, improper electrical supply, collateral damage caused by failure of O-rings, DE grids or cartridge elements, or damage caused by running the pump with insufficient quantities of water.

**LIMITATION OF LIABILITY**

This is the only warranty given by Manufacturer. No one is authorized to make any other warranties on our behalf.

**THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. WE EXPRESSLY DISCLAIM AND EXCLUDE ANY LIABILITY FOR CONSEQUENTIAL, INCIDENTAL, INDIRECT OR PUNITIVE DAMAGES FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY**.

This warranty gives you specific legal rights, which may vary, by country.

**WARRANTY CLAIMS**

For prompt warranty consideration, contact your dealer and provide the following information: proof of purchase, model number, serial number and date of installation. The installer will contact the factory for instructions regarding the claim and to determine the location of the nearest service center.

All returned parts must have a **Return Material Authorization number** to be evaluated under the terms of this warranty.

# 8.2 RMA request form

| | | | | | |
|---|---|---|---|---|---|
| Company: | | | | Date: | |
| Address: | | | | | |
| City: | | Zip: | | Country: | |
| Contact: | | | | Phone: | |
| | E-mail: | | | Fax: | |

| | | | |
|---|---|---|---|
| Contact: | | Date: | |

| | | | |
|---|---|---|---|
| **Internal use** | | | |
| **RMA #:** | | | |
| Issued by: | | Date: | |

Return for: Copy of customer's invoice attached? ☐

| |
|---|
| Other documents attached to RMA request? ☐ |
| Description of documents: |
| |

| | | | |
|---|---|---|---|
| Model no.: | | Invoice no.: | |
| Serial no.: | | Invoice date: | |
| Problem: | | | |
| | | | |

**Policy for repair under warranty:**

1. Despatch costs for returns should be paid in advance. All despatch costs relating to a return are entirely for your account.
2. Products may be returned to us only if prior agreement has been obtained from the company. Returns for which the company has not given permission will be sent back to you. The entire costs for this despatch are for your account.
3. We will replace or repair products and despatch them to you free of charge through the despatch service of your choice.
4. Should you prefer despatch by express (through a despatch service of your choice) the despatch costs will be for your account.

**Procedure for return:**

1. Please request an RMA number from us beforehand in order to check whether you have complied fully with the guidelines for installation and operation contained in the manual.
2. Phone our RMA department to request an RMA application form.
3. Ensure that ALL the information on the RMA application form has been completed in full.
4. For returns within the warranty period, you should include a copy of the client's copy attached to your original sales invoice.
5. Send the RMA request form, the sales invoice and any other documentation (photographs etc.) to us or provide them by email. An RMA number will be allocated to you within 24 hours of receipt of the required documentation. Absence of the information required in points (3) and (4), may result in refusal to allocate you an RMA number.
6. **The RMA number should be shown clearly on the despatch label on the package and on the despatch documentation.**
7. All products reaching us without a label, or with an incomplete or illegible label, will be refused, with costs for the return despatch for your account.
8. All packages delivered to us showing plainly visible damage will be refused without further action.
9. Please check beforehand whether the products you are despatching to us are the same products as those for which an RMA number has been issued. If the products received do not correspond with the products entered under the RMA number allocated, we will return all of them to you at your expense.
10. Returns without RMA number will not be accepted under any circumstances. No exceptions to this of any kind are allowed at all.
11. **An RMA number remains valid only for 21 calendar days after allocation. We retain the right to refuse returned products received more than 21 days after the allocation date of the RMA number.**

**Products that are not (any longer) covered by the warranty:**

**The customer bears the despatch and repair costs. You will be informed of the estimated repair costs after the faults of the returned products have been diagnosed.**
**The costs for a diagnosis come to 50.00 € or more.**

**MegaGroup Trade Holding BV**
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