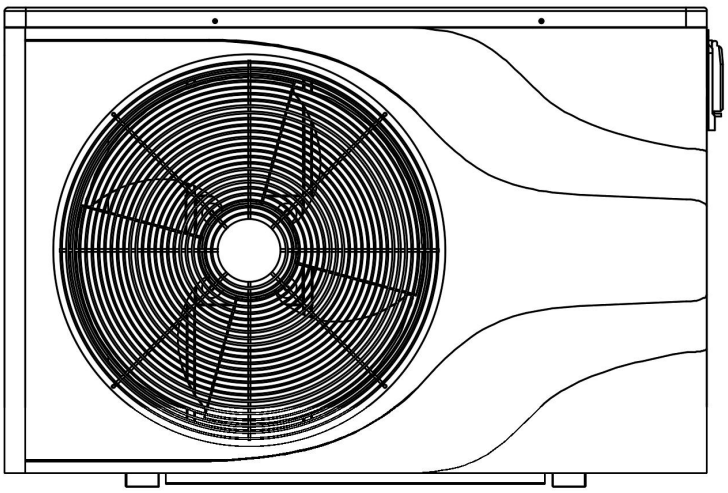
NIRVANA

SWIMMING POOL HEAT PUMP

Installation & Instruction Manual



IMPORTANT NOTE:

Thank you very much for purchasing our product. Before using your unit, please read this manual carefully and keep it for future reference.

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1. FOREWORD

1.1. Statement

To keep users and property under safe operating conditions, please follow the instructions below:

① Wrong operation may result in injury or damage;
② Please install the unit in compliance with local laws, regulations and standards;
③ Confirm power, voltage and frequency – NE45, NE55, NE75, NE100 Requires permanent 240Volt, 1 Phase, 60HZ Connection;
④ The unit must be permanently connected to the power supply by a qualified electrician according to local rules and regulations.
⑤ Independent power disconnect switch must be installed with the unit per local laws and regulations.

1.2. Safety Factors

The following safety factors need to be considered:

① Please read the following warnings before installation.
② Be sure to check the details that need attention, including safety related warnings.

Warning

Make sure that the unit is installed safely and is properly secured to a suitable base

- If the unit is not secured or installed properly, it may cause damage to the unit and surrounding area.
- Unit must be installed outdoors in a well ventilated or open area.

① Use the correct gauge wire determined by an electrician per local regulations and fasten it to the terminal block supported in a manner that there ensures no strain on the components or wiring.
② Improper wiring may cause injury or fire. Please connect power wire according to the wiring diagram in the manual to avoid fire or damage to the unit.
③ Be sure to use approved materials during installation. Wrong parts or wrong materials may result in fire, electric shock, or the unit falling or tipping over.
④ Install on the ground safely and properly secured, please read installation instructions. Improper installation may result in fire, electric shock, tipping of the unit, or water leaking.
⑤ Use professional tools for the electrical connections. If power supply capacity is insuffi-□ cient or circuit is not completed, it may cause fire or electric shock.
⑥ The unit must have grounding device. If power supply does not have grounding device, do not connect the unit.
⑦ The unit should only be removed or repaired by a professional technician. Improper movement or maintenance of the unit may cause water leakage, electric shock, or fire.
⑧ Don't connect or disconnect unit without first disconnect the power at the breaker ordis-connect. It may cause fire or electric shock.
⑨ Don’t touch or operate the unit when your hands are wet. It may cause fire or electric shock.

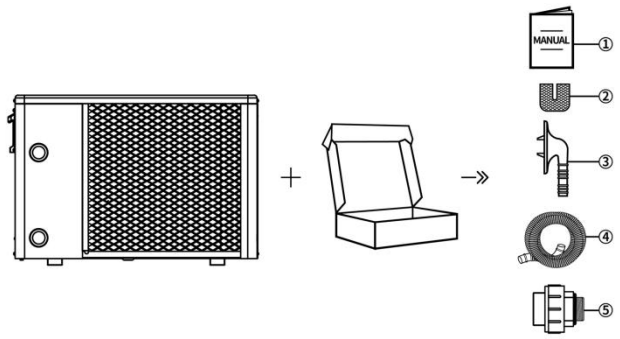
Warning

① Do not install the unit in a location where there may be flammable gas.
② If there is flammable gas near the unit, it may cause an explosion.
③ Do not clean the unit while power is on. Disconnect power at the circuit breaker before cleaning the unit. Not disconnecting the power may result in injury from a running fan or electric shock.
④ Stop operating the unit when there is a problem or a fault code.
⑤ Be careful when the unit is unpacked and not yet installed. Pay attention to sharp edges and to the fins of the heat exchanger.
⑥ After installation or repair, please confirm refrigerant is not leaking. If there is not enough refrigerant, the unit will not work properly.
⑦ Don't put your fingers into fan or evaporator. Touching a running fan may result in serious injury.
⑧ This appliance is not to be used by persons (including children) lack of experience and knowledge, unless they have been given supervision or instruction a professional technician. Children must use it under the supervision of an adult to ensure that they use the appliance safely. If the power wire is damaged, it must be replaced by a professional technician to avoid danger.

2. OVERVIEW OF THE UNIT

2.1. Accessories Supplied with the Unit

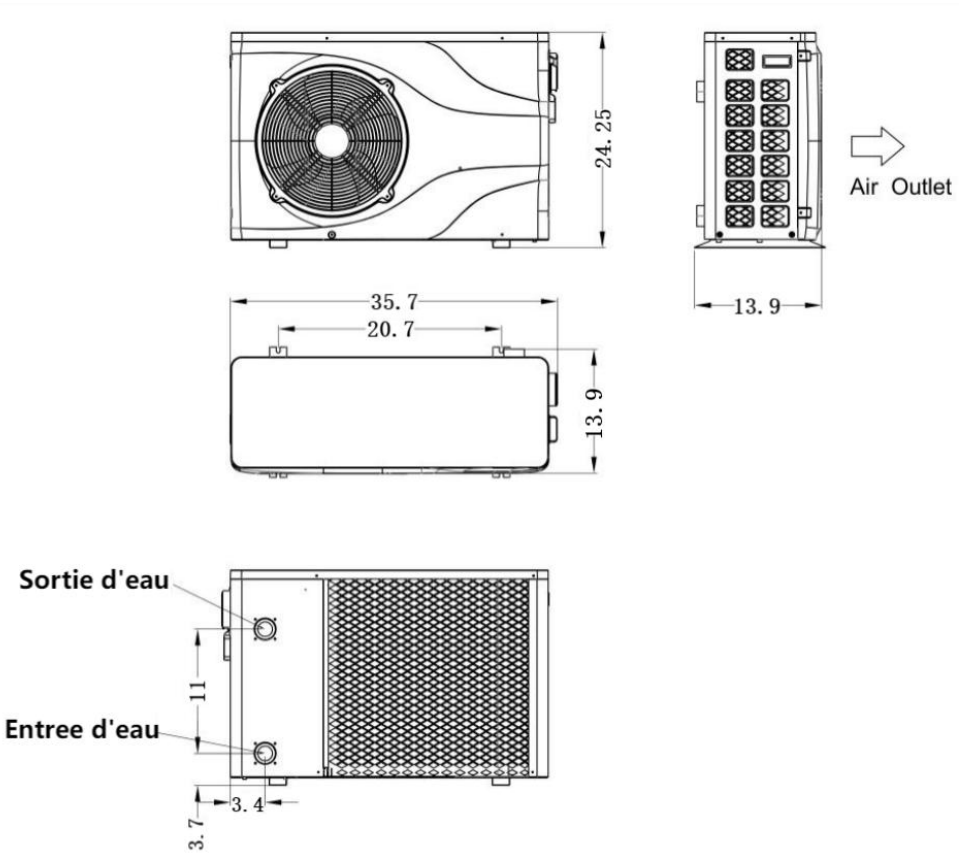
After unpacking, please check if you have all the following components.



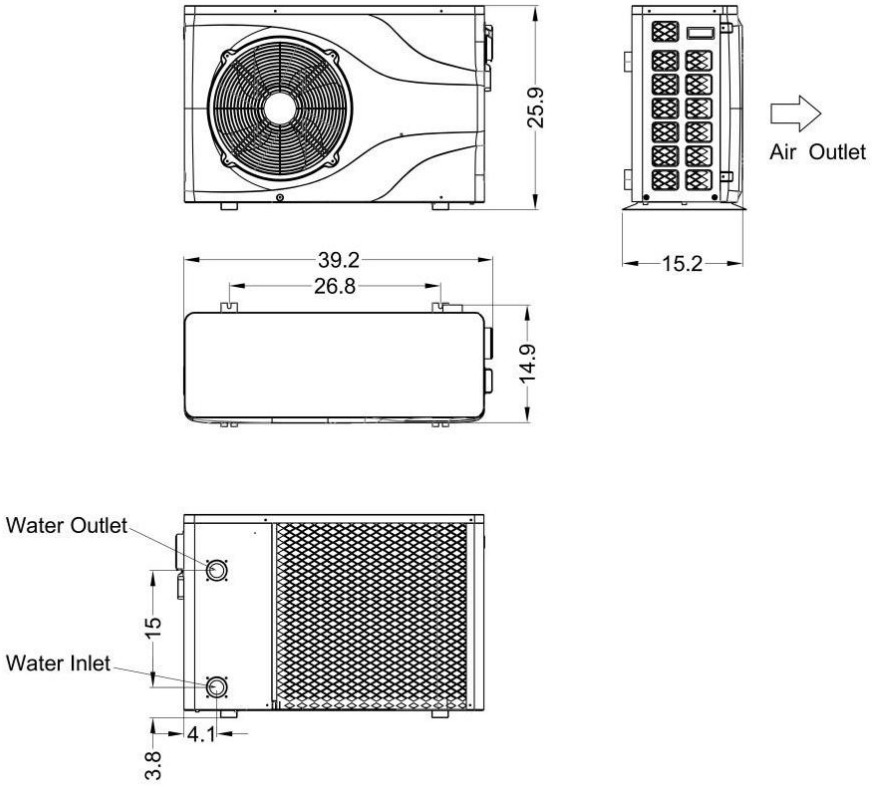
NO.	Components	Quantity	NO.	Components	Quantity
①	User Manual	1	④	Drain Pipe	1
②	Rubber Blanket	4	⑤	Water Pipe Joint	2
③	Drain Connector	1			

2.2. Dimensions of the Unit

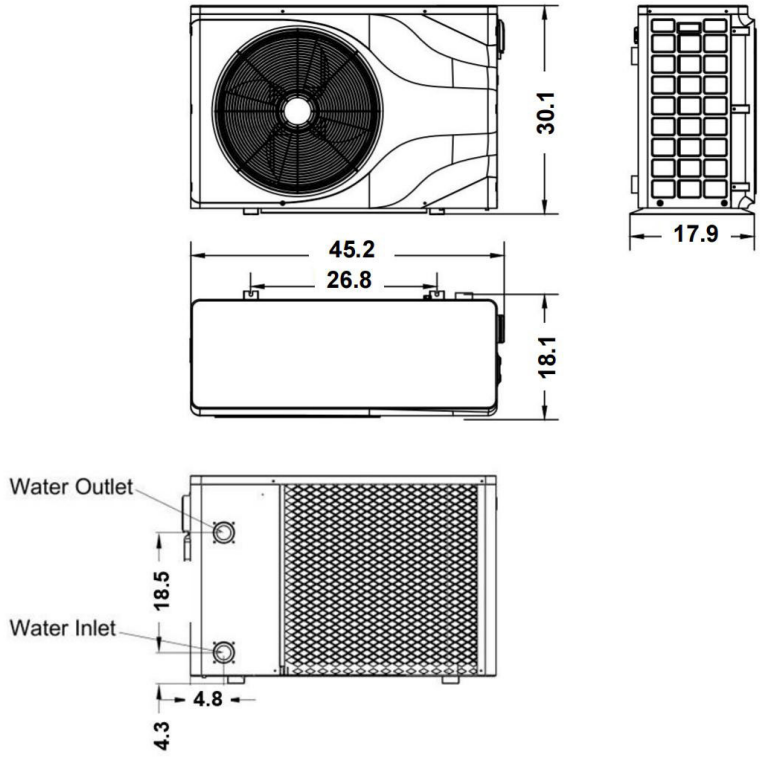
Model: NE50



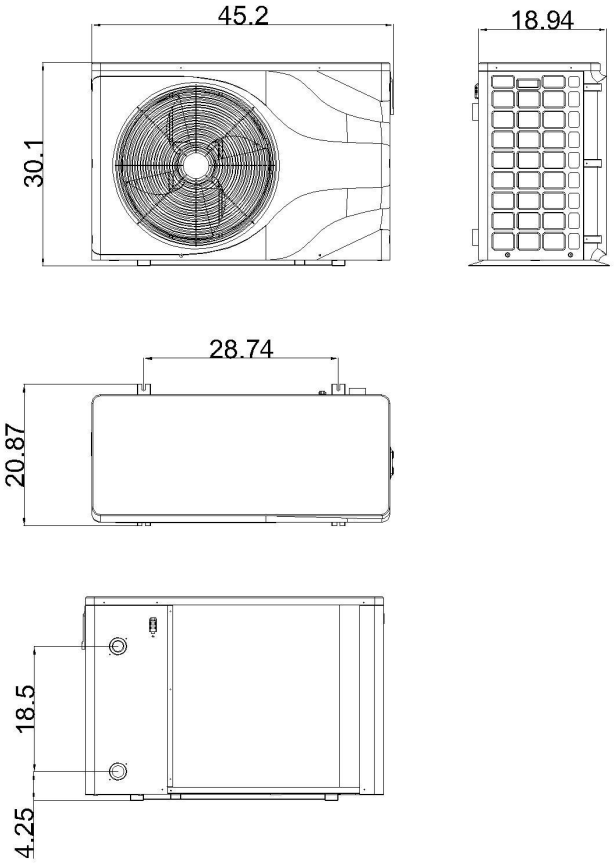
Model: NE60



Model: NE80

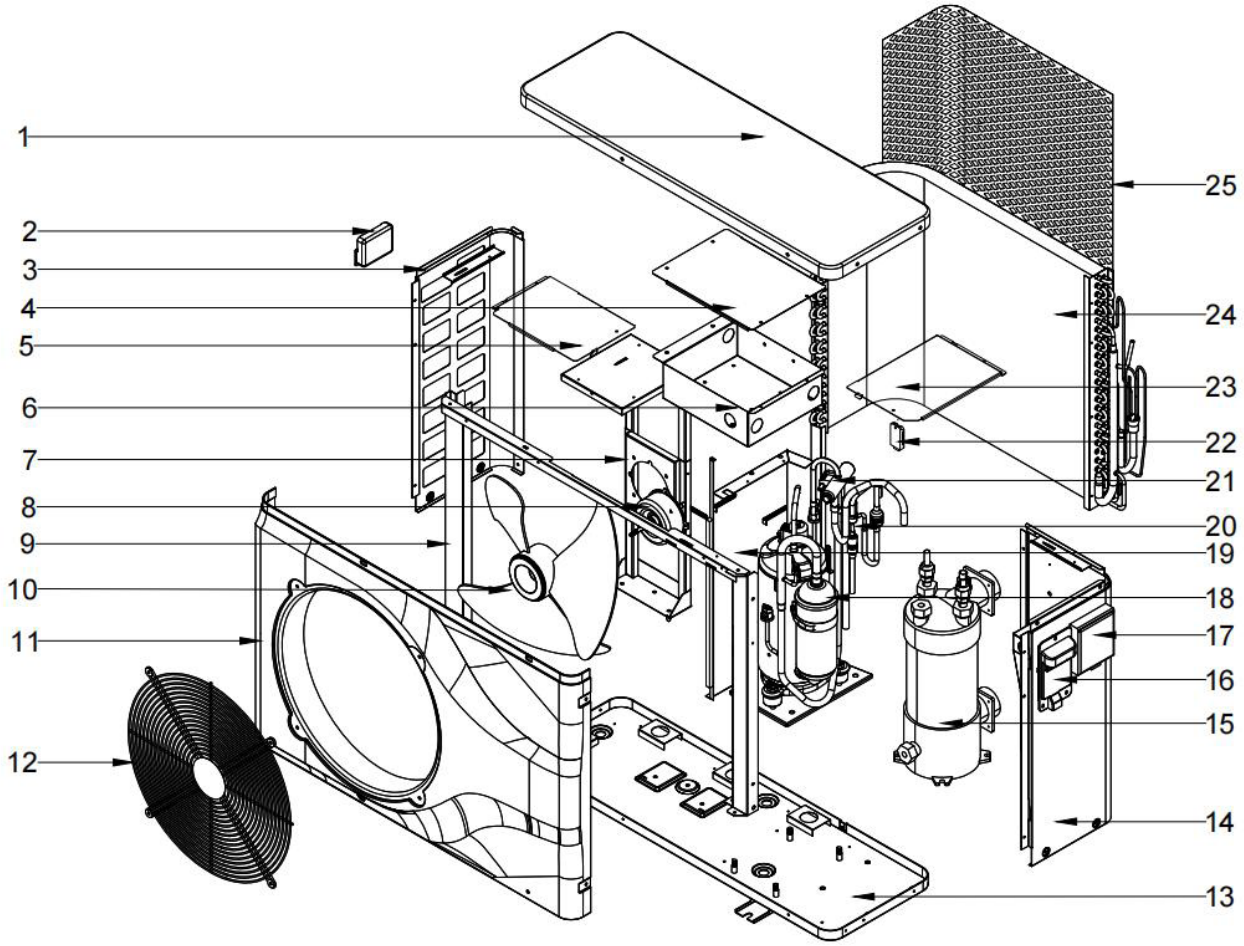


Model: NE100



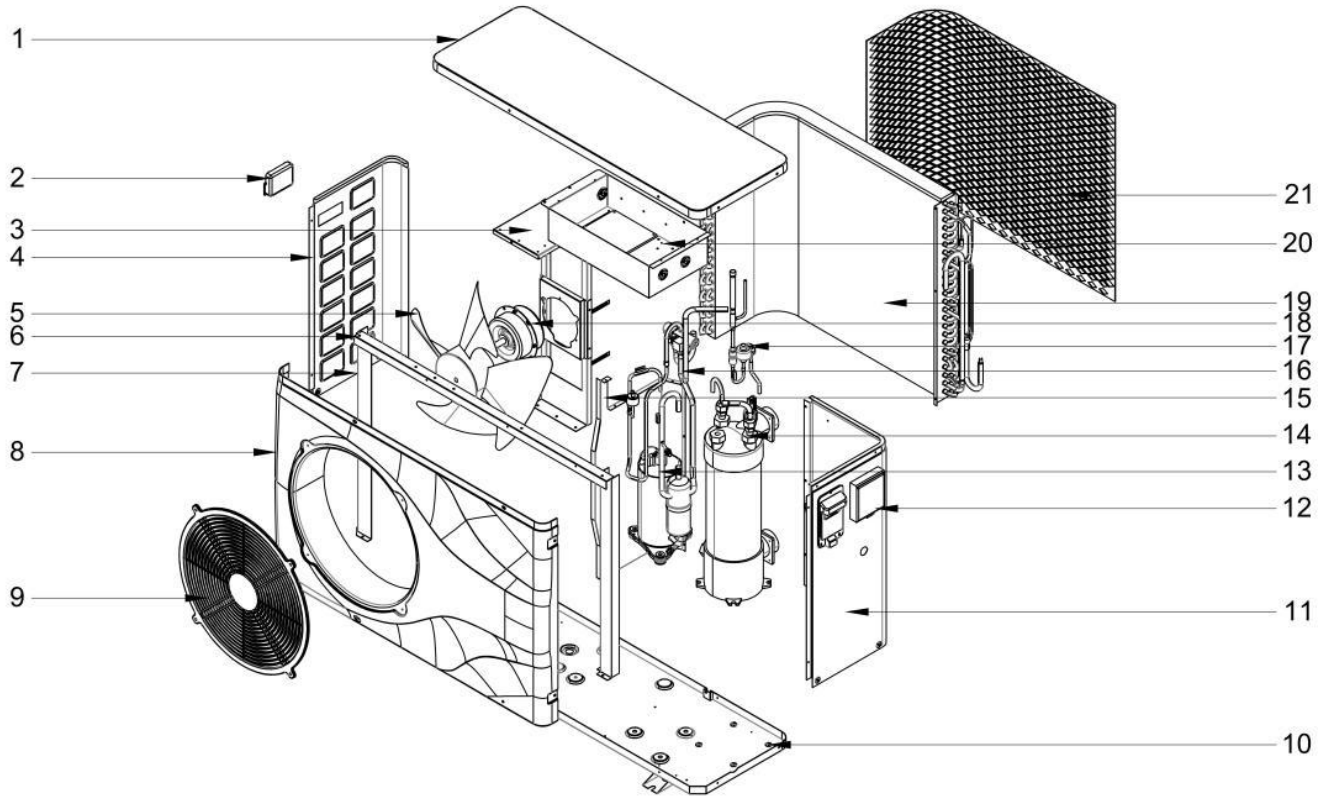
2.3. Main Parts of the Unit

Model: NE50



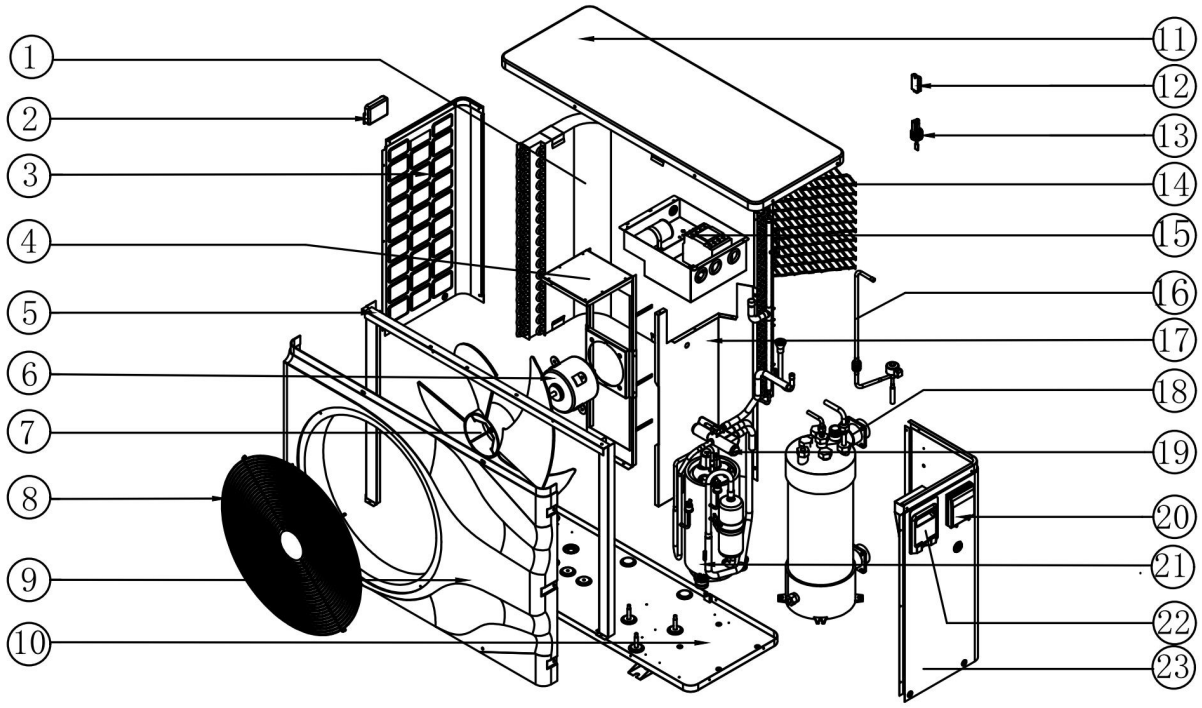
1	Top cover	10	Fan blade	19	Middle plate
2	Left handle	11	Front plate	20	EEV
3	Left plate	12	Fan motor cover	21	Four-way valve component
4	Electrical box cover	13	Chassis	22	Ambient temperature sensor
5	Fixed plate 1	14	Right plate	23	Fixed plate 3
6	Electrical box	15	Titanium heat exchanger	24	High efficiency finned heat exchanger
7	Motor support	16	Right handle	25	Back net
8	Fan motor	17	Wire controller		
9	Fixed plate 2	18	Compressor		

Model: NE60



1	Top cover	8	Front plate	15	Middle plate
2	Left handle	9	Fan motor cover	16	Pipe component
3	Motor support	10	Chassis	17	EEV
4	Left plate	11	Right plate	18	Fan motor
5	Fan blade	12	Wire controller	19	High efficiency finned heat exchanger
6	Fixed plate 1	13	Compressor	20	Electrical box
7	Fixed plate 2	14	Titanium heat exchanger	21	Back net

Models: NE80/NE100



1	High efficiency finned heat exchanger	9	Front plate	17	Middle plate
2	Left handle	10	Chassis	18	Titanium heat exchanger
3	Left plate	11	Top cover	19	Pipe component
4	Motor support	12	Ambient temperature sensor	20	Wire controller
5	Fixed plate	13	Water flow switch	21	Compressor
6	Fan motor	14	Back net	22	Right handle
7	Fan blade	15	Electrical box	23	Right plate
8	Fan motor cover	16	EEV		

2.4. Specifications

Model	NE50	NE60	NE80	NE100
Power supply(V/Ph/Hz)	208-230V~/60Hz		208-230V~/60Hz	
Rated Ambient Temp Range (°F)	23~104	23~104	23~104	23~104
[1]Heating Capacity (kBtu/h)	44	52.9	73.6	98.2
[1]COP	5.9	6.0	5.9	6.0
[2]Heating Capacity (kBtu/h)	25.5	33.78	46.54	62
[2]COP	3.79	4.0	4.0	4.1
Maximum Water Outlet Temp. (°F)	104	104	104	104
Rated Water Flow (gpm)	18.5	23.8	31.5	40.2
Rated Water Pressure Drop (psi)	1.16	3.77	1.95	2.9
Maximum Input Power (kBtu/h)	11.9	14.0	17.4	26.61
Fan Motor Rating Load (FLA) (A)	0.25	0.4	1.1	1.4
Fan Motor Horsepower (Hp)	0.06	0.123	0.200	0.195
Compressor Rated Load RLA (A)	12.7	15.7	21.0	30
Compressor Lock Rotor Amperage (LRA) (A)	70	86	112	140
Rated Circuit Ampacity (A)	15	12	15	21
Maximum Over-Current Protection (A)	19.9	26	28	46.5
Refrigerant Quantity (lbs)	R410A/2.095	R410A/3.417	R410A/4.409	R410A/6.17
Dry Weight (lbs)	123.5	134.5	171.9	256
Net Dimensions W×D×H (inches)			45.2×17.9×30.1	
Water Pipe Connection（mm）	48.3			
Water Proof Class	IPX4			
Electricity Shock Proof Class	Ⅰ			
Refrigerant Side Pressure Limits (psi)	638/217			
Water Side Pressure Limits (psi)	101.5			
[1]Ambient Temperature	(DB/WB) 80.6° F/71.2° F			
Water Inlet/Outlet Temperature	80° F			
[2]Ambient Temperature	(DB/WB) 50° F/44.3° F			

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

3. INSTALLATION

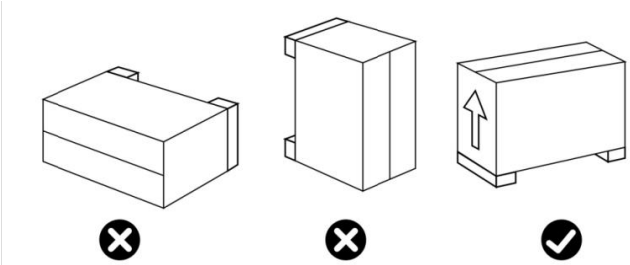
⚠ **WARNING:** The heat pump must be installed by a qualified technician. Improper installation, adjustment, service, maintenance or use can cause fire, electrical shock or other conditions which may cause injury or property damage.

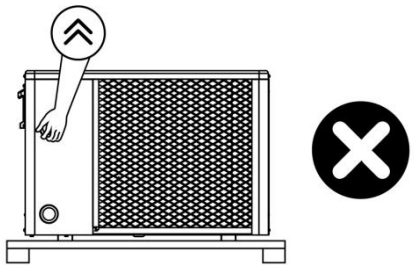
This section is provided for information purposes only and must be adapted according to the actual site conditions.

3.1. Transportation

1. When storing or moving the heat pump, the heat pump should be in an upright position. Never Tilt the unit more than 30 degrees

2. When moving the heat pump, do not lift it by the water unions as this may damage the titanium heat exchanger inside the heat pump.

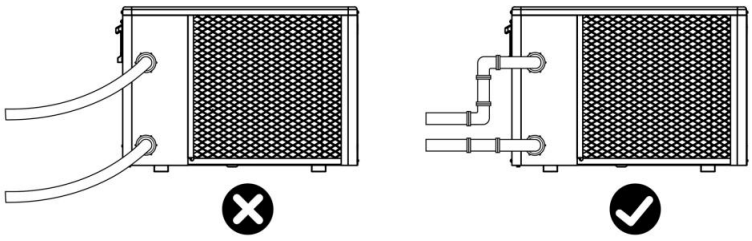




3.2. Notice Before Installation

1. The water unions are not designed to support the weight of unsupported flexible tubing. The heat pump must be connected with properly supported tubing that does not pull or strain on the heat pump unions!

2. To ensure heating efficiency, the length of the piping between the pool and the heat pump should be less than 30ft.



3.3. Installation Instructions

3.3.1 Pre-requirements

Equipment necessary for the installation of your heat pump:

① Power supply cable suitable for the unit's power requirements and compliant with your local regulations.

② A By-Pass kit, sufficient PVC tubing suitable for your installation, as well as PVC , PVC adhesive and sandpaper.

③ A set of wall plugs and expansion screws suitable to attach the unit to your support or base.

④ We recommend that you connect the unit to your installation by means of well supported flexible PVC pipes to reduce the transmission of vibrations.

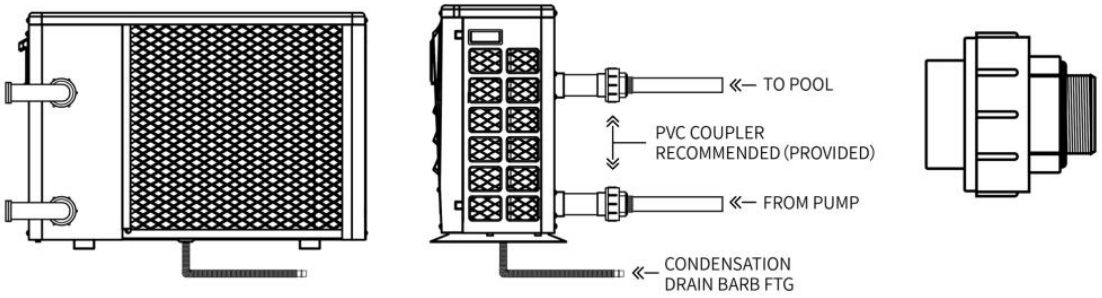
⑤ Suitable fastening studs may be used to raise the unit.

3.3.2 Heat Pump Installation

① The heat pump must be fixed using bolts (M10) to a concrete foundation or suitable brackets. The concrete foundation must be solid; the brackets must be strong enough and treated against corrosion.

② The heat pump needs a water pump (Supplied by the user). Max. lift 30ft;

③ When the heat pump is running, there will be condensate water discharged from the bottom that must be properly managed and directed away from the heat pump. Please insert the drainage tube (accessory) into the hole and clip it in properly, then connect a pipe to drain the condensate water away. Install the heat pump, at least 3" off the ground with solid, water-resistant pads, then connect the drainage pipe to the opening located under the heat pump.



3.3.3 Location and Size

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

① The unit's location must be easily accessible for convenient operation and maintenance.

② It must be installed on the ground, fixed ideally on a level concrete floor. Ensure that the floor is sufficiently stable and can support the weight of the unit.

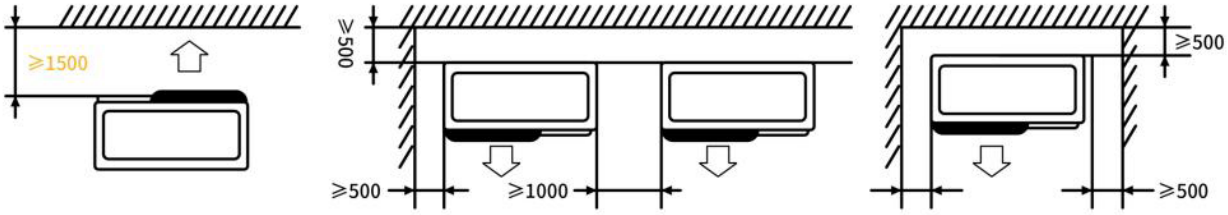
③ A water drainage device must be provided close to the unit in order to protect the area where it is installed.

④ If necessary, the unit may be raised by using suitable mounting pads designed to support its weight.

⑤ Check that the unit is in a properly ventilated area, that the air outlet is not facing the windows of neighboring buildings and that the exhaust air cannot return to the heat pump. In addition, provide sufficient space around the unit for servicing and maintenance operations.

⑥ The unit must not be installed in an area exposed to oil, flammable gases, corrosive products, sulfur compounds or close to high frequency equipment.
⑦ To prevent external damage to the unit, do not install it near a road or track.
⑧ To avoid causing nuisance to neighbors, make sure the unit is installed in an area that is not sensitive to noise.
⑨ Keep the unit out of the reach of children.
⑩ Installation space:

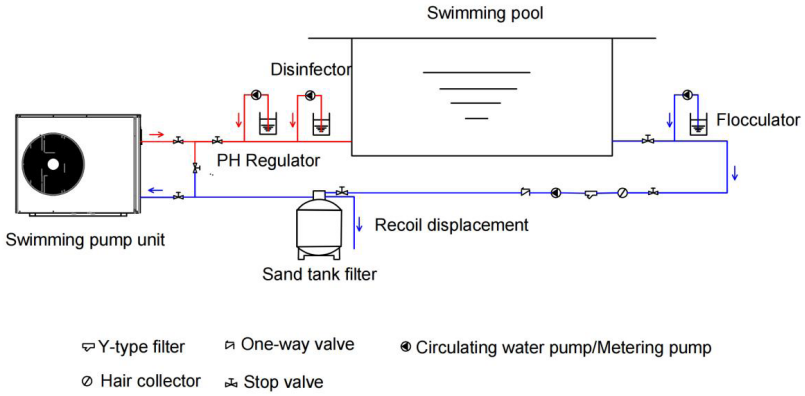
Unit: mm



Do not put anything less than 1500mm (5ft) in front of the heat pump.
Leave 500mm (2ft) of empty space on the sides and back of the heat pump and free space for air circulation above
Do not leave any obstacles above or in front of the device!

3.3.4 Installation Layout

The installation diagram is shown in the following figure –
Pool →Pump →Filter →Heat Pump →Sanitizer →Return to Pool:



No.	Item	Quantity	No.	Item	Quantity
1	Swimming Pump Unit	1	7	PH Regulator	1
2	Y-Type Filter	1	8	Sand Tank Filter	1
3	One-Way Valve	1	9	Flocculator	1
4	Circulating Water Pump	1	10	Disinfector	1
5	Hair Collector	1	11	Metering Pump	3
6	Stop Valve	7			

Notice: The filter must be cleaned regularly to ensure that water in the system is clean and to avoid lack of water flow. It is necessary that a drainage valve is fixed at the lowest point in the lower water pipe to completely drain water out of the system for winterizing. If the unit is not running during winter months, please disconnect power supply and drain water from the unit through the drainage valve or by disconnecting the quick connect fittings. If unit is used at ambient temperatures below 0℃, please keep ensure that the water pump continuously runs to avoid water freezing inside the machine.

3.3.5 Electrical Installation

To function safely and maintain the integrity of your electrical system, the unit must be connected to your electrical supply in accordance with the following regulations:

① The heat pump must be connected to a suitable circuit breaker in accordance with current standards and regulations in the country where the system is installed.

② The electrical supply cable must be adapted to match the unit's rated power and the length of wiring required for the installation. The cable must be suitable for outdoor use.

③ In places open to the public, or where required by law, an emergency stop button or power disconnect switch should be installed near the heat pump. **Power Supply Wire Size**

Model	Power Supply Wires		
	Electrical Supply	Cable Diameter	Specification
NE50	208-230V~/60Hz	selected by electrician	selected by electrician
NE60	208-230V~/60Hz	selected by electrician	selected by electrician
NE80	208-230V~/60Hz	selected by electrician	selected by electrician
NE100	208-230V~/60Hz	selected by electrician	selected by electrician

3.3.6 Electrical Connection

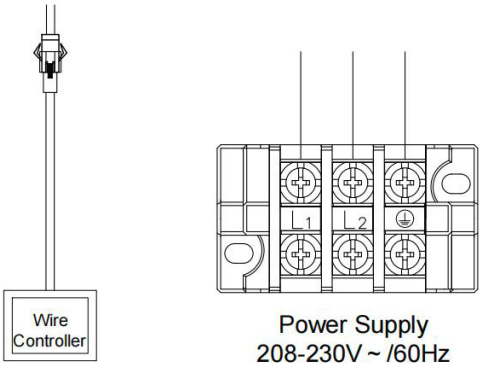
⚠ **WARNING:** Power supply must be disconnected before performing any work on the heat pump.

Please comply with the following instructions to connect the heat pump.

Step 1: Detach electrical side panel with a screwdriver to access electrical terminal block.

Step 2: Insert cable into the heat pump unit port.

Step 3: Connect power supply cable to terminal block according to the diagram below.



3.4. Commissioning the heat pump after Installation

⚠ **WARNING:** Please check all the wiring carefully before turning on the heat pump.

3.4.1 Inspection Before First Trial Run

Before performing initial functional test, confirm below items and write √ in block;

☐	Correct unit installation
☐	Power supply voltage is the same as unit rated voltage
☐	Correct piping and wiring
☐	Air inlet & outlet port of unit are unblocked
☐	Drainage and venting are unblocked and there are no water leaks
☐	GFCI Breaker / Current Leakage protector are working (If required by local regulations)
☐	Ground wire / bonding wire are connected correctly

3.4.2 Trial Run

Step 1: Run test can begin after completing the installation;

Step 2: All wiring and piping should be connected well and carefully checked, then start circulating the water before power is switched on;

Step 3: Empty all air within the water circulation pipes, then press the “on-off” button on the control panel to run the unit at the temperature setting;

Step 4: Items that need to be checked during the commissioning test:

① Check that unit current is normal per nameplate specifications;
② Check that each button on the control panel functions normally;
③ Check that the screen is displaying information normally and that there are no error codes;
④ Check for any water leaks in the circulation system;
⑤ Check that the Condensate drain is not obstructed;
⑥ Check for any abnormal sounds or vibrations?
⑦ Check that heat pump shuts off on a water flow error as soon as the water pump is turned off

4. REMOTE CONTROLLER OPERATION GUIDANCE

4.1. Control Panel Diagram

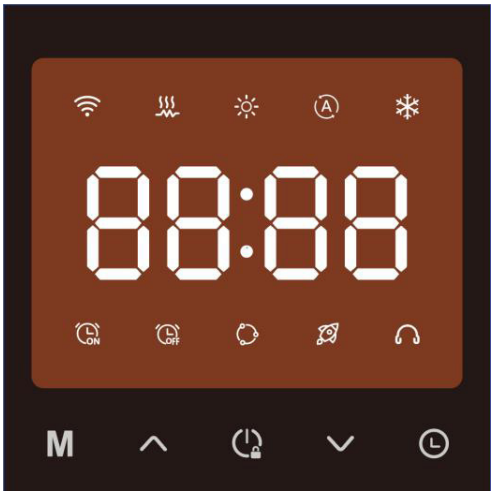


Table 1

Icon	Meaning	Icon	Meaning
	Heating mode		Timer on
	Defrost state(Flash)		Timer off
	Automatic mode		
	Cooling mode		

Table 2

Key	Meaning	Function
M	Mode key	Switch mode and set parameter
	Up key	Manual defrost and set water temp.
	Power key	Turn ON/OFF,lock/unlock and return to main interface
	Down key	Check parameter and set water temp.
	Timer key	Set timer ON/OFF

4.2. Key Operating Instruction

No.	Item	Operation Way
1	ON/OFF	At the main interface, press " " to turn on / off.
2	Lock/Unlock	At the main interface, long press " " for 3s to lock or unlock.
3	Select Running Mode	At the main interface, press " M " to select mode among Heating/Cooling / Automatic mode.
4	Set Temp.	At the main interface, press" ∨ " or " ∧ " to enter the Temp. setting. At the Temp. setting interface, press " ∨ " or " ∧ " to set the Temp. Press " M " or no operation in 5s, it will save setting and return to main interface . Press " " to quit setting and return to main interface .
5	Set Clock	At the main interface, press " " for 3s to enter the current time hour setting. The hour part flash. With " ∨ " and " ∧ " to adjust. Then press " " enter the current time minute setting. The minute part flash. With " ∨ " and " ∧ " to adjust, and then press " " to save it. At the minute setting interface, press " " or no operation in 5s, it will save setting and return to main interface. At the hour setting interface, press " " or no operation in 15s, it will quit setting and return to main interface.

No.	Item	Operation Way
6	Timer	● At the main interface, press " " to enter the timer query interface.With " ∨ " and " ∧ " to query. Press " " or no operation in 15s, it will return to main interface. ● At the timer query interface, press " " to enter the timer on/off set interface. Press " ∨ " and " ∧ " to set hour part.Then press " " to confirm and enter the minute part setting. Press " ∨ " and " ∧ " to set minute part. Press " " or no operation in 5s, it will save setting and enter the timer off set interface. Timer off is the same as timer on. Press " ", it will quit the setting and return to main interface. ● At the timer query interface, press " " for 2s to cancel the timer on/off setting.
7	Recover Factory Setting	At the main interface, press " " and " ∧ " for 2s to enter recover factory setting interface.
8	Manual Defrost	Under the heating mode, press " " + " ∨ " for 3s to enter the manual defrost function.
9	Fahrenheit/Celsius Switch	At the main interface, long press " M " and " ∧ " for 5s to switch °F / °C.

4.3. System Status

Code	Name	Unit	Range
d01	Inlet water temp.	℃	-15 ~ 999
d02	Outlet water temp.	℃	-15 ~ 999
d03	Ambient temp.	℃	-15 ~ 999
d04	Exhaust temp.	℃	-15 ~ 999
d05	Suction temp.	℃	-15 ~ 999

Code	Name	Unit	Range
d06	Outer coil temp.(Heating)	℃	-15 ~ 999
d07	Inner coil temp.(Cooling)	℃	-15 ~ 999
d08	EEV steps	N	0~480

4.4. Fault/Protection Code

Code	Fault/Protection Name
E01	Communication fault
E02	Water flow fault
E03	High pressure protection
E04	Low pressure protection
E10	Inlet water temp.sensor fault
E11	Outlet water temp.sensor fault
E14	Ambient temp.sensor fault
E15	Suction temp.sensor fault
E16	Exhaust temp.sensor fault
E17	Outer coil temp.sensor fault(Heating)
E18	Inner coil temp.sensor fault(Cooling)
E25	Low outlet water temp.protection(Cooling)
E26	High temp. difference between inlet and outlet water protection
E27	High exhaust temp.protection
E28	Anti-freezing protection

5. MAINTENANCE AND WINTERIZING

5.1. Maintenance

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

1. Cleaning

a. The heat pump's casing must be cleaned with a damp cloth. The use of detergents or other household products could damage the surface of the casing and affect its properties.

b. The evaporator at the rear of the heat pump must be carefully cleaned with a vacuum

2. Annual maintenance

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

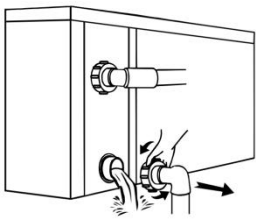
a. Carry out safety checks.
b. Check the integrity of the electrical wiring.
c. Check the grounding/bonding connections.
d. Monitor the condition of the pressure gauge and the presence of refrigerant.

5.2. Winterizing

"CUT OFF" power supply to the heater before cleaning, examination and repairs

In winter season when you don't swim:

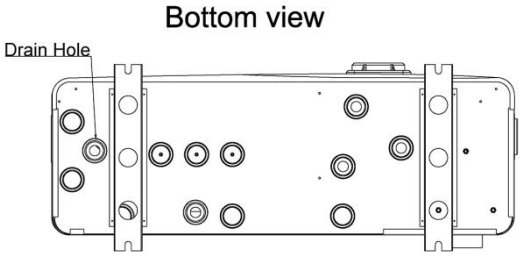
a. Cut off power supply to prevent any machine damage.
b. Drain water out of the machine.



!! Important:

Unscrew the water inlet pipe fitting to let the water flow out of the unit. If water freezes in the machine during the winter season, the titanium heat exchanger may be damaged.

c. Drainage of chassis condensate.



!! Important:

When the unit runs at an ambient temperature of less than 5℃, please remove the rubber plug of the drain hole of the chassis to ensure its smooth drainage.

d. Cover the machine body when not in use.

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