



Swimming Pool Heat Pump INVERTER

INSTALLATION AND OPERATION MANUAL

IMPORTANT

It is important to register your product with us on our web site. This will help us find your warranty when you place a service call. If we cannot find your warranty registration, a proof of purchase will be necessary.

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Warning

- A. DO NOT use this unit for any other purpose than to regulate swimming pool water temperature. Utilization for any other application will void warranty.
- B. The inlet & outlet connection joint cannot support any other piping system's weight.
- C. Make sure outlet air cannot injure any person, animal & plant.
- D. Please make sure to switch off the power before any examination and/or repair.

Precautions

- A. The unit must be installed & maintained by a professional technician; the Power layout must comply with local concerned regulation. Please read the manual carefully.
- B. Set proper temperature in order to get desired water temperature.
- C. Please do not stack substances that can block air flow near inlet or outlet area.
- D. If the unit shuts off during a power shortage, it will automatically start up when power returns.
- E. If the machine is stopped for a long time or in winter season, please cut off the power supply and drain water clear of the machine by disconnecting the water inlet and outlet.
- F. Do not put your hand or objects into air outlet of evaporator, forbidden to disassemble unit with the working fan.
- G. If any abnormal status occurs such as abnormal noise, smell, smoke, electricity leakage, please switch off power immediately and contact your local dealer, please do not check the unit by yourself.
- H. Do not store combustible or flammable material near unit.

I. Application

The appliance should only be used for heating the pool water.

II. Features

1. Inverter control system: The Inverter compressor operates at a variable speed without stopping all the time. It changes its frequency of rotation so that the desired temperature remains stable. This means that it is not necessary to spend more energy to turn the compressor on or off. This is the big difference that makes the Swimming Pool Heat Pump Inverter an ally of the economy.
2. High accuracy of control and display of temperature: You can choose the desired temperature to maximize your comfort and pleasure.
3. Two modes of operation: The machine offers two modes of operation, heating and cooling*.
4. Three types of operation in heating mode: You can choose between STRONG, NORMAL and SILENT modes.
5. High pressure, low pressure & water flow protection system.
6. An automatic shutdown if the outside temperature is too low.
7. Automatic defrosting with hot gas*;
8. Highly efficient titanium heat exchanger;
9. International brand compressor;
10. Easy installation and operation;

*Depending on the heat pump inverter model, cooling mode and hot gas defrosting are not available.

III. Technical Parameters

Model	STRATOS 55 INVERTER	STRATOS 65 INVERTER	STRATOS 75 INVERTER	STRATOS 105 INVERTER
Heating capacity	55000 BTU	65000 BTU	75000 BTU	105000 BTU
Breaker	30A	30 A	40A	40A
Voltage/Frequency/phase	240/60/1			
Current (air 80°F, water 80°F, 90Hz)	16A	16 A	21A	27A
BTU Water/Air/Humidity/80/80/80°F				
Silent mode	24770	26000	33000	41804
Normal mode	45300	48800	56500	84550
Strong mode	57000	64000	77300	105000
COP Water/Air/Humidity/80/80/80°F				
Silent mode	10,7	10,5	11	9.3
Normal mode	7,7	7,4	6,7	6
Strong mode	5,2	5,5	5,4	5
BTU Water/Air/Humidity/80/80/63°F				
Silent mode	23340	24000	29500	36781
Normal mode	42130	43300	54500	78150
Strong mode	57900	60300	72050	98096
COP Water/Air/Humidity/80/80/63°F				
Silent mode	10	9	9,5	6.63
Normal mode	7,2	6,8	6,3	5.5
Strong mode	5,3	5,3	5,1	4.88
BTU Water/Air/Humidity/80/50/63°F				
Silent mode	12200	13800	17060	25056
Normal mode	26100	27500	33100	54500
Strong mode	36800	41000	44300	72652
COP Water/Air/Humidity/80/50/63°F				
Silent mode	4,8	5	5,3	4.97
Normal mode	5	4,4	4,5	4.09
Strong mode	4,1	3,8	3,8	3.56
Water Flow GPMUS	9 à 80	9 à 80	15 à 80	15 à 80
Length/Height and Width (inch)	38/22/12 (40/24/12)	40/24/12	40/24/12,5	46/28/17
Rated Current	8,7A	8.85 A	5,25A	23.5A

Fan Motor (FLA)	0,53A	0.50 A	0.45 A	0.83A
Design pressure(High)	≤500 PSIG	≤500 PSIG	≤500 PSIG	≤500 PSIG
Design pressure(Low)	≤250 PSIG	≤250 PSIG	≤250 PSIG	≤250 PSIG
Refrigerant(R410A)	29oz (R32)/ 48oz(R410A)	35oz (R32)/ 48oz(R410A)	48oz(R32)	64oz(R410A)
Net Weight pounds (kg)	120(55)	132(60)	140(64)	177(80)
Decibels (at 3 meters)	38 - 50	38 - 50	38 - 52	38 - 52

Remarks:

1. This product can work well with temperatures between 2.2°C AND 35°C (36°F-95°F). Efficiency will not be guaranteed out of this range and parameters are different under various conditions.
2. Related parameters are subject to adjustment periodically for technical improvement without
3. further notice. For details please refer to nameplate.
4. This machine works in heating and cooling mode.

Note: The swimming pool heater must be grounded well.

Options for protecting devices and cable specification.

Model		STRATOS 55 INVERTER	STRATOS 65 INVERTER	STRATOS 75 INVERTER	STRATOS 105 INVERTER
Breaker	Rated current A	30	30	40	40
Fuse	A	30	30	40	40

IV. POSITIONING

Choosing the area where your heat pump will be installed is extremely important. You must respect the following guidelines.

VENTILATION AND ACCESSIBILITY

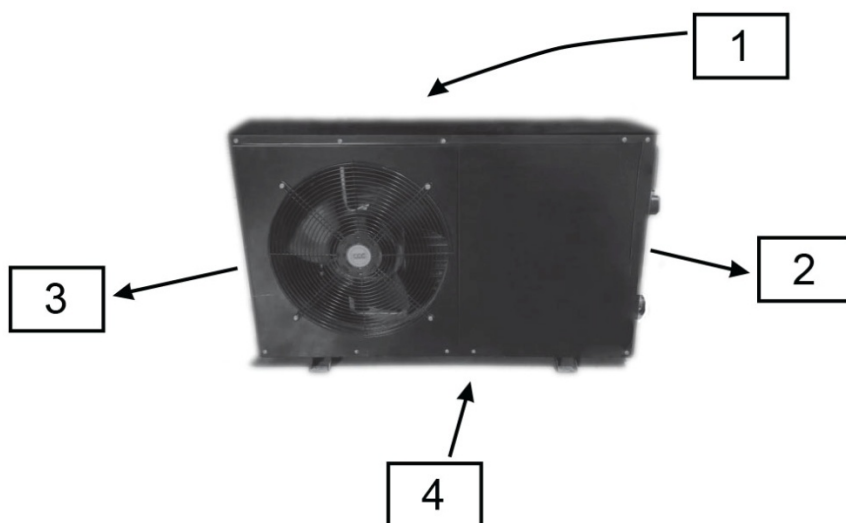
Your heat pump works, in large part, in symbiosis with the surrounding air: it is important that there be adequate ventilation all around the heat pump. Therefore, the device should not be installed in a closed space such as a garden shed or a basement.

IMPORTANT: Your heat pump must have sufficient free space around it to function properly.

You should also clear any obstructions surrounding the heat pump, as indicated in the table below:

	ALL MODELS
(1) in front of the evaporation coil	60 cm = 2 feet
(2) in front of all other surfaces	120 cm = 4 feet
(3) in front of the fan*	120 cm = 4 feet
(4) in front of the service panel	120 cm = 4 feet

*Objects should be placed as far away as possible from the area where air is evacuated.



OTHER RECOMMENDATIONS

You should not install the device below a roof, so that your heat pump becomes buried under snow or receives too much water if the roof is not fitted with gutters. Do not install your heat so that the sun directly hits the regulator. This will not cause damages, but the display will be harder to read.

Similarly, you should not install automatic sprinkler near your pool heat pump. The device must be installed on a flat, firm and level surface. A concrete slab or equivalent is preferred. Consider that your device will produce condensation, so there will be water leaking around the unit.

It is highly recommended to use a solar blanket to cover the pool in order to reduce the heat and evaporation loss, mainly during colder nights

WATER SUPPLY AND BACKFLOW PLUMBING CONNECTIONS

All STRATOS model connections have a 1 ½" diameter.

MINIMUM AND MAXIMUM WATER FLOWS

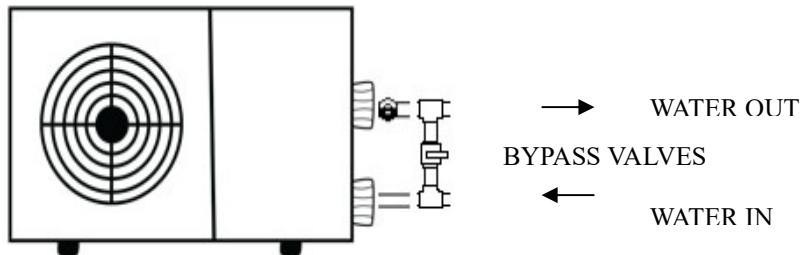
For maximum efficiency, your heat pump must operate with water flows between 57 liters per minute (15 U.S. gallons per minute) and 170 liters per minute (45 U.S. gallons per minute). With a water flow of less than 57 lpm (15 U.S. GPM) and greater than 170 lpm (45 U.S. GPM), the heat pump will not work properly and will suffer damage. (See table below).

A set of valves (Fig. A) to insulate the heat pump and adjust the water flow must be installed.

We recommend installing this set of valves (Fig. A) in order to be able to adjust the optimal water flow circulating in the heat exchanger (condenser). An adjustable automatic bypass valve must be installed when a water pump of 2 HP or more is used to circulate the pool water.

WARNING

If the above-prescribed water flows are not respected, damage will ensue and your warranty will be void.



By-pass valve closed during

Your water pump must be able to supply each heat pump with a water flow within the limits listed below.

MODEL	MINIMUM	IDEAL	MAXIMUM
STRATOS INVERTER	57 l/m (15 GPM US)	170 l/m (45 GPM US)	170 l/m (45 GPM US)

1 U.S. gallon per minute (1GPM US) = 3.78 liters per minute (3.78 l/m)

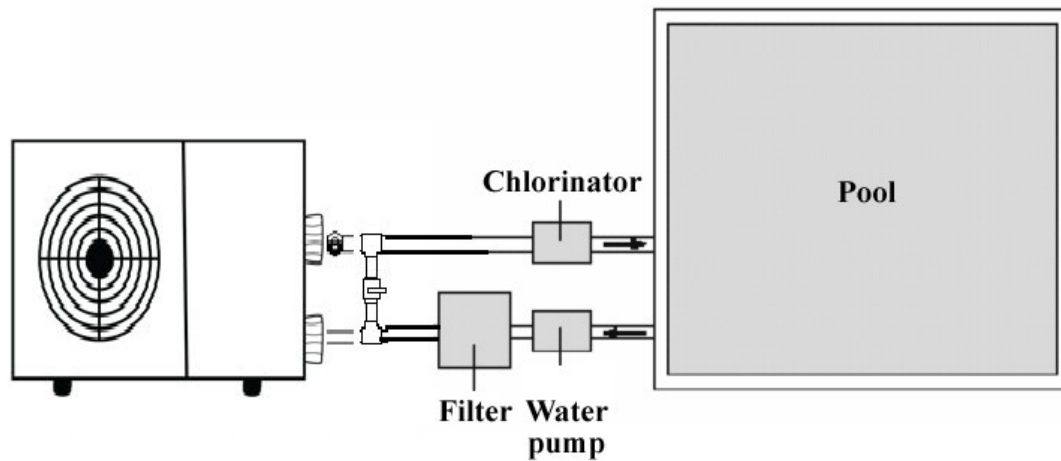
WARNING

Pool heat pumps normally operate with (12-15 PSI) water pressure. The maximum operating water pressure is 2.0 bars (30 PSI). Failure to respect the prescribed water pressures will void the warranty of your heat pump.

CHLORINATORS, BROMINATORS AND OTHER AUTOMATIC SYSTEMS

BASIC CONNECTIONS, INLINE CHLORINATOR OR BROMINATOR

This connection is mandatory to ensure the long working life of your pool heat pump.



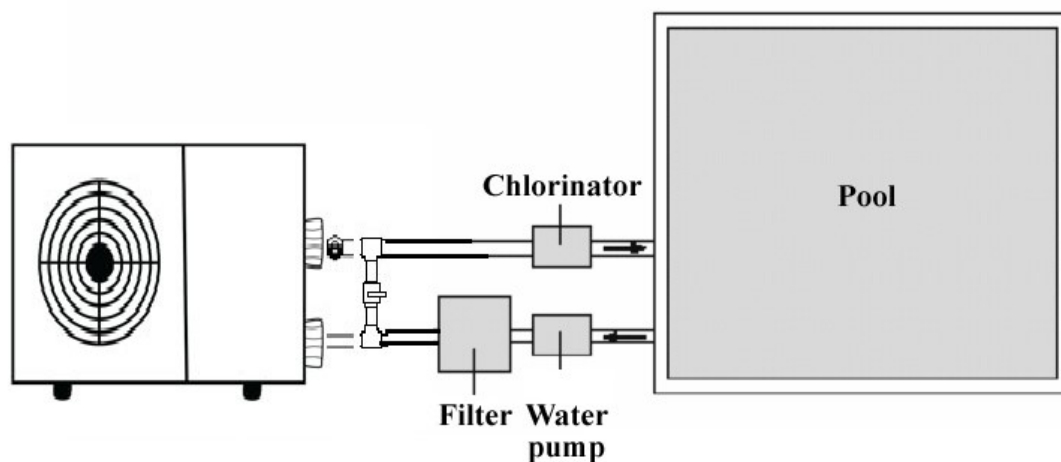
Any automatic distribution system for chemicals, chlorine, bromine or other, must be installed so that the distribution system's water output is located after the pool's heat pump. The heat pump's warranty will be void if the installation is not compliant to this rule.

SALT CHLORINATORS

Salt chlorinators are made to be installed as inline chlorinators. Therefore, they must be installed as prescribed in the section above (“inline chlorinator or brominator”).

PRESSURIZED CHLORINATOR OR BROMINATOR

Pressurized chlorinators or brominators start by using a small quantity of water as it exits the filter, then add chemicals and forward this highly concentrated solution into the pool. Check valves must therefore be extremely resistant to corrosion. Only use the valves that have been supplied or recommended by the manufacturer of your chlorinator or brominator.



CONNECTION TO ELECTRICAL POWER

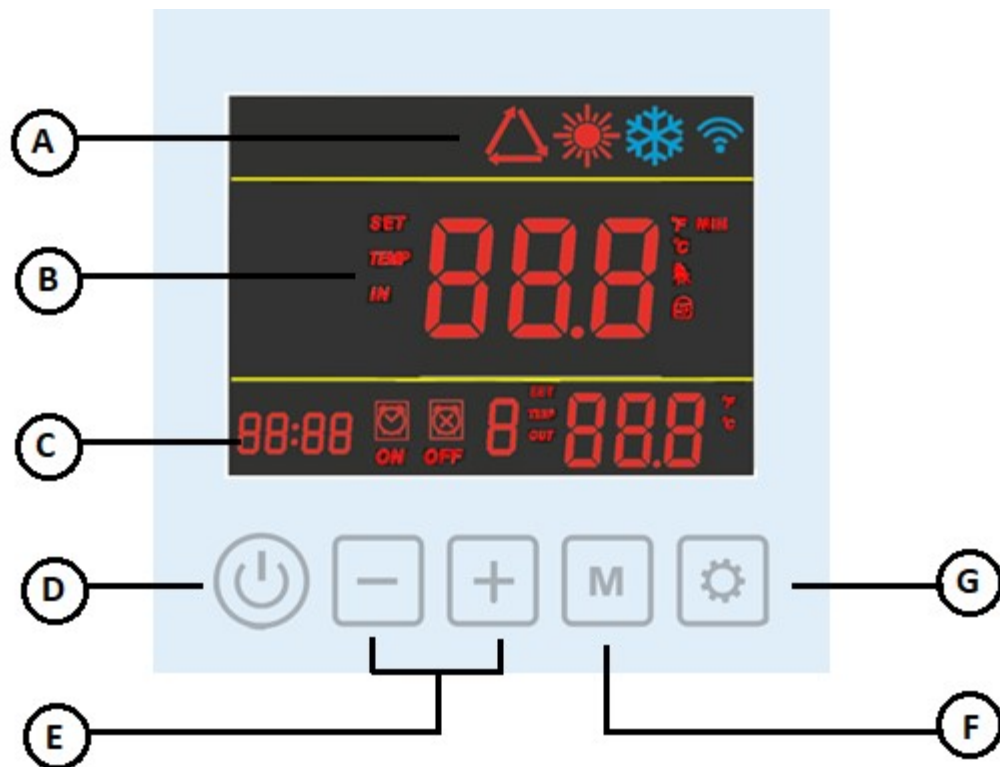
To ensure your safety and the proper functioning of the device, the electrical connections must be performed by a qualified electrician according to national codes, provincial and local regulations.

A circuit breaker must be installed close to the heat pump, in an accessible location.

Never open the electrical box without shutting off the power to all sources used for the operation of the heat pump. If your heat pump has a pool pump control option, remember to close the circuit breaker to this pump.

The spec sheet for the heat pump contains all the requirements for voltage and amps. If the power cord is damaged, it must be replaced by a qualified electrician.

V. OPERATION INSTRUCTION



A - Operation mode display

B - Display

C - Clock

D - On / Off

E - Setting (required temperature and clock / timer)

F - Operation mode

G - Clock / Timer Configuration

1. Operation Display

- The display shows Time when the machine is off.
- The display shows Temperature of the swimming pool water when the machine is on.

2. Operation mode

- Press the button  for 3 seconds to switch the machine on / off.
- Press the key  for 3 seconds to change the mode: STRONG , NORMAL , SILENT  and COOLING .

3. Adjusting the water temperature

- a. Press the key  or  to set water temperature. The controller indicates flashing temp.
- b. The controller display will return to normal mode a few seconds later.

4. Setting the clock

- a. Available no matter whether the machine is on or off.
- b. Press the key . The dial to change the time flashes.
- c. Press the key  or  to set the required time. You can press and hold  or  to change automatically.
- d. Press the key . The dial to change the minutes flashes.
- e. Press the key  or  to set the minutes.
- f. Press the key  to finish the setting.

5. Setting the timer

- a. Press and hold  for 3 seconds to set the timer.
- b. The dial - Timer 1 - flashes. Press the key  or  to set the required time. You can press and hold  or  to change automatically.
- c. Press the key . The dial to change the minutes flashes. Press the key  or  to set the minutes.
- d. Press the key  to finish the configuration of the minute. The dial - Timer 2 - flashes, you can repeat the procedure to set another timer.
- e. Press the key  to return to the home page.
- f. In the home page, it can show the timer frame number that has been set.

6. Cancel the timer

When the set ON time and OFF time are the same, the current timer is canceled.

VI. Testing

1. Inspection before use

- A. Check installation of the whole machine and the pipe connections according to the pipe connecting drawing; (Blue water IN / Red water OUT)
- B. Check the electric wiring according to the electric wiring diagram; and grounding connection.
- C. Make sure that the main machine power switch is off
- D. Check the temperature setting.
- E. Check the air inlet and outlet.

2. Trial

- A. The user must “Start the Pump before the Machine, And Turn off the Machine before the Pump”, or the machine will be damaged.;
- B. The user should start the pump, check for any leakage of water; and then set suitable temperature in the thermostat, and then switch on power supply.
- C. In order to protect the swimming pool heater, the machine is equipped with a time lag starting function, when starting the machine, the blower will run 3 minutes earlier than the compressor.
- D. After the swimming pool heater starts up, check for any abnormal noise from the machine.

VII. Precautions

1 Attention

- A. Set proper temperature in order to get comfortable water temperature; to avoid overheating.
- B. Please don't stack substances that can block air flow near inlet or outlet area, or the efficiency of the heater will be reduced or even stopped.
- C. Please don't put hands into outlet of the swimming pool heater, and don't remove the screen of the fan at any time.
- D. If there are abnormal conditions such as noise, smell, smoke and electrical leakage, please switch off the machine immediately and contact the local dealer. Don't try to repair it yourself.
- E. Don't use or stock combustible gas or liquid such as thinners, paint and fuel to avoid fire.
- F. In order to optimize the heating effect, please install heat preservation insulation on pipes between swimming pool and the heater. During running period of the swimming pool heater, please use a recommended cover on the swimming pool.
- G. Connecting pipes of the swimming pool and the heater should be $\leq 10\text{m}$, or the heating effect of the heater cannot be ensured.

2 Safety

- A. Please keep the main power supply switch far away from the children.
- B. When a power cut happens during running, and later the power is restored, the heater will start up automatically. So please switch off the power supply when there is a power cut, and reset temp when power is restored.
- C. Please switch off the main power supply in lightning and storm weather to prevent from machine damage that caused by lightning.
- D. If the machine is stopped for a long time, please cut off the power supply and drain water out of the exchanger by disconnecting the inlet/outlet pipe.

VIII. Maintenance

- A. “Cut off” power supply of the heater before any examination and/or repair.
- B. In winter seasons, please drain water clear of the machine, “cut off” power supply to prevent any machine damage, and cover the machine body with plastic foil to avoid dust.
- C. Please clean this machine with household detergents or clean water, NEVER use gasoline, thinners or any similar fuel.

IX. Trouble shooting for common faults

Faulty	Reason	Solutions
Not starting	Main power is off	Wait for power to be reinstated
	Switch off	Switch on
	Burnt out fuse	Replace it
	Circuit breaker drops out	Switch Circuit Breaker back on
There is air outlet but the heating is not satisfactory	Blocked air inlet	Clean out the stem
	Blocked air outlet	Clean out the stem
	3 minute time lag protection	Please wait
	Temperature set too low	Increase temperature setting accordingly

Attn: Please don't disassemble and repair the swimming pool heater by yourself, please leave it to the professionals.

X. Failure code

E 03	Low water pressure protection
E 04	When the temperature<+36°F , auto stop protection (not Failure)
E 05	High pressure protection
E 06	Low pressure protection
E 12	Discharge temperature failure
E 15	Water inlet temperature failure
E 16	Outer coil temperature failure
E 20	Inverter module abnormal protection
E 21	Ambient temperature failure
E 27	Water outlet temperature failure
E 29	Suction temperature failure
E 35	Compressor electric current protect
E 42	Inner coil temperature failure



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