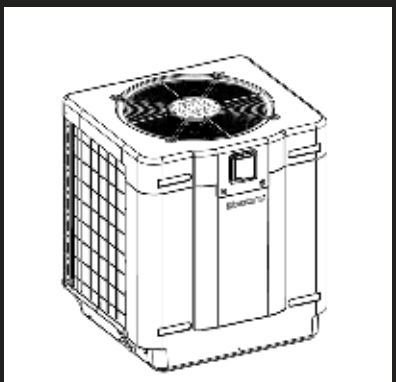
51300002101 RevH

HAYWARD®

Hayward HeatPro VS Heat Pump

Variable Speed Pool Water Heat Pump with Cooling

Installation and Operation Manual



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R-410A

HP50952T
HP51202T

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Phone: (908) 355-7995
www.hayward.com

IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

Basic safety precautions should always be followed, including the following: Failure to follow instructions can cause death and/or severe injury.

⚠ This is the safety-alert symbol. When you see this symbol on your equipment or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

⚠ **WARNING** - Warns about hazards that could cause death and/or severe injury or major property damage and if ignored presents a potential hazard.

⚠ **CAUTION** - Warns about hazards that could cause minor or moderate personal injury and/or property damage and if ignored presents a potential hazard. It can also make consumers aware of actions that are unpredictable and unsafe.

NOTICE - Indicates special instructions that are important but not related to hazards.

This Heat Pump is listed by ETL as complying with the latest edition of the UL Standard for Safety for Heating and Cooling Equipment", UL60335-1&2 and CSA C22.2 No.60335-1&2.

All Heat Pumps must be installed in accordance with all applicable National and Local codes. In the absence of local codes, refer to the latest edition of the National Electric Code (NEC) in the United States and the Canadian Electric Code (CEC) in Canada.

This product must be installed and serviced by authorized personnel, qualified in pool/spa heater installation. **Improper installation and/or operation can cause death, serious injury and/or property damage.**

See product rating plate for manufacturer information.

SAVE THESE INSTRUCTIONS

Getting Started

What to Expect When Operating Your Pool Heater

This flow chart provides guidance to protect pool users and product by maintaining good water quality.

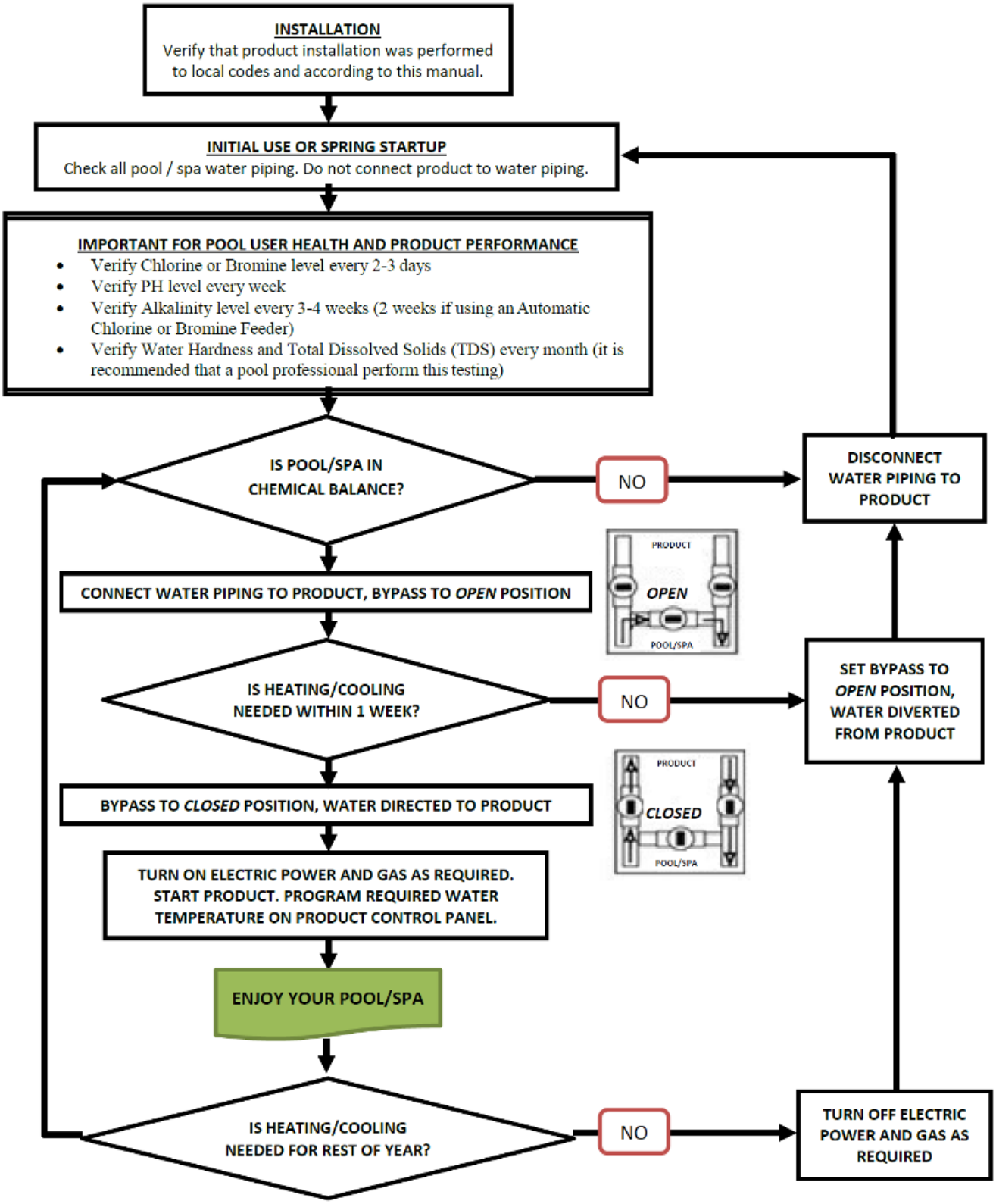
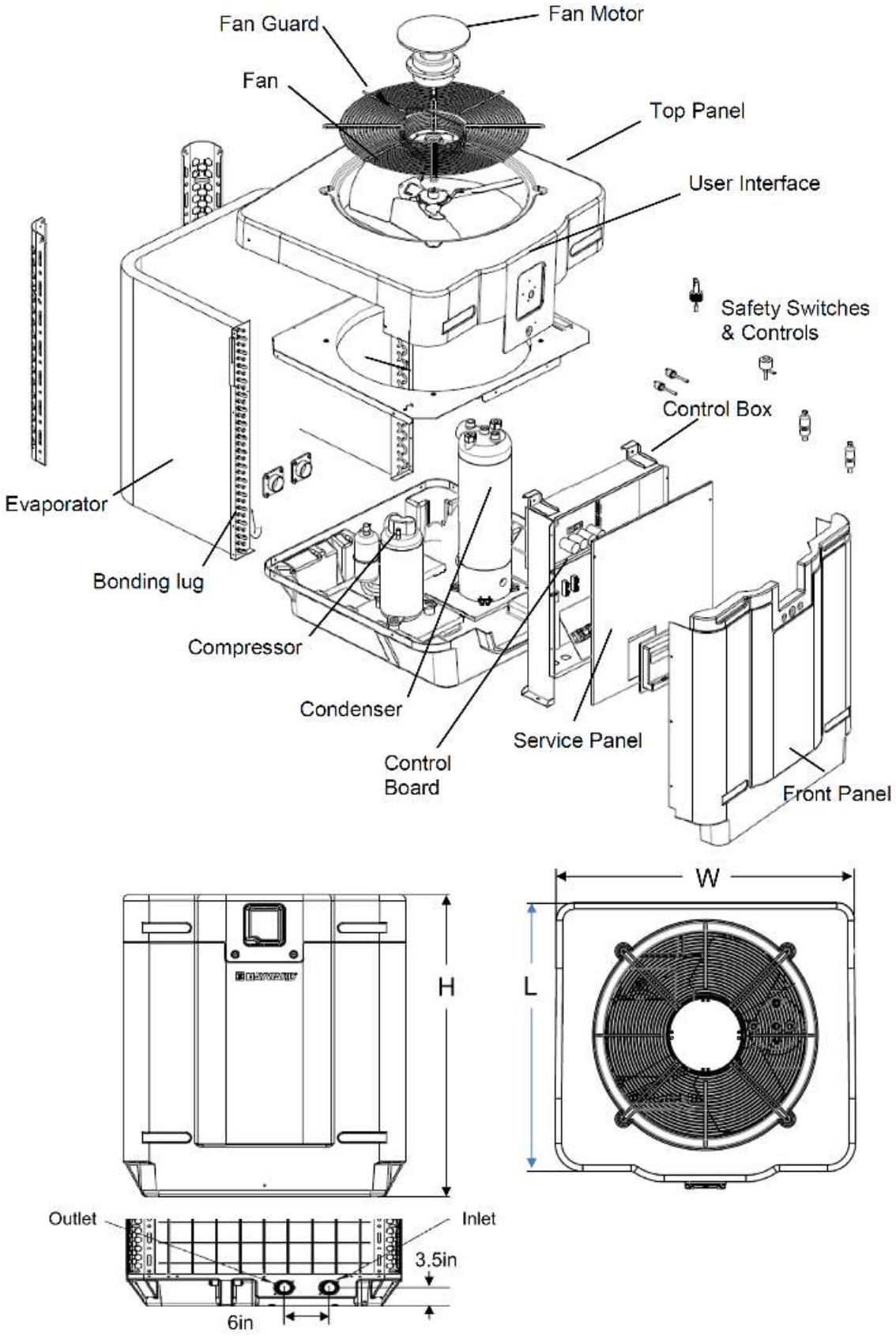


Figure 1: Name of Heat Pump components



Features

- R410A Inverter Compressor with Soft Start
- Titanium heat exchanger withstands the harshest water conditions
- Touch Screen Control with easy to read display
- Auto mode for automatic heating and cooling operation
- Remote enable connection
- Display of diagnostic codes
- Data backup and recovery
- Auxiliary timer and relay
- UV resistant cabinet for long life
- Defrost function to manage evaporator coil frosting for low ambient temperature operation
- High (580PSI) and low (44PSI) refrigerant pressure switches monitoring extreme operation
- Compressor sound blanket
- Corrosion resistant evaporator fins

Table 1: Specifications

Specifications	HP50952T	HP51202T
Voltage/Phase/Hz	208-230/1/60	208-230/1/60
Capacity (btu/h) 80A-80RH-80W	97,000	120,000
Power Input, KW (80A-80RH-80W)	5.4	6.1
COP 80A-80RH-80W	5.3	5.8
Capacity (btu/h) 80A-63RH-80W	92,000	112,000
COP 80A-63RH-80W	5.1	5.5
Capacity (btu/h) 50A-63RH-80W	60,000	65,000
COP 50A-63RH-80W	4.0	4.0
Compressor/Fan Motor/System RLA (amp)	29/1.7/30.7	30/1.7/31.7
Compressor/Fan Motor/System LRA (amp)	80	90
Min. Circuit Ampacity (amp)	43	45
Max Fuse Breaker Size (amp)	60	60
Recommended water flow (gpm)	41.8	50.5
Minimum water flow (gpm)	37	37
Maximum water flow (gpm)	56	56
Water Connector (dia. in)	2” x 2.5"	2” x 2.5"
Unit size L x W x H (in)	36.2 x 33.8 x 44.2	36.2 x 33.8 x 44.2
Weight (lbs)	251	286
Shipping Weight (lbs)	346	381
Shipping size L x W x H (in)	42.3 x 39.2 x 48.0	42.3 x 39.2 x 48.0

Table 2: Certification And Compliance

Certification Codes And Standards	Usa	Canada
Design Certified	ETL/ILS	ETL/ILS
Design Compliant	UL60335-1&2	CSA C22.2 No.60335-1&2
Installation Compliant Electric	ANSI/NFPA 70 NEC	CSA C22.1 – Canadian Electrical Code, Part I

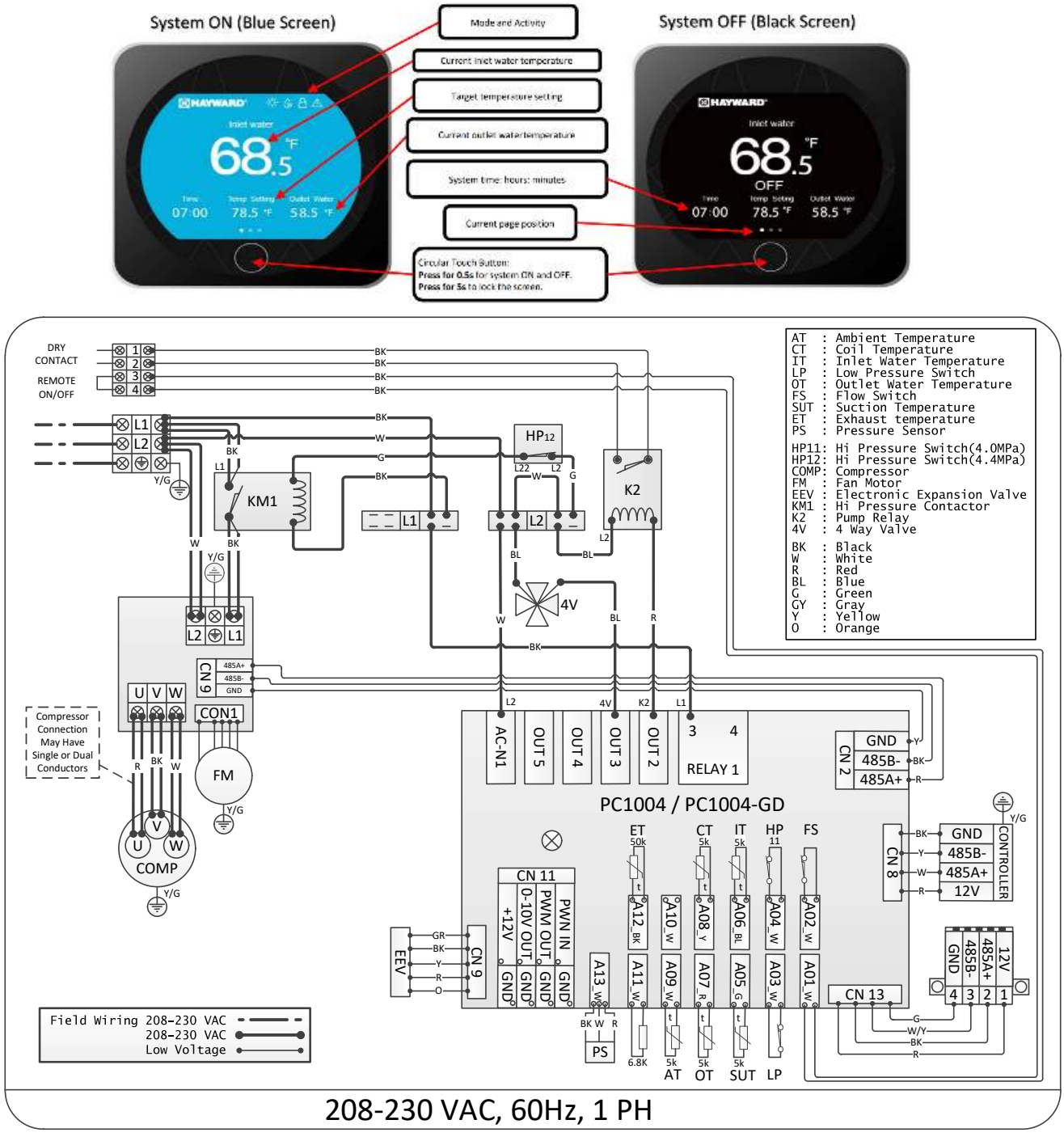
CONFORMANCE WITH CODES: The heater shall be installed in accordance with all local and state codes and with the requirements of the authority having jurisdiction of the installing site. The heater installation must conform to the latest edition of the above listed installation codes.

Wiring Connection Diagram

⚠WARNING - Risk of Electric Shock. Before working on any electrical equipment, turn off power supply to the equipment.

⚠WARNING - Risk of Electric Shock. All electrical wiring MUST conform to applicable local codes, regulations, and the National Electric Code (NEC). Hazardous voltage can cause death, shock, burn, and/or serious property damage. To reduce the risk of electric shock, do NOT use an extension cord to connect unit to electric supply. Provide a properly located electrical receptacle. To reduce the risk of electric shock replace damaged wiring immediately. Locate conduit to prevent abuse from lawn mowers, hedge trimmers and other equipment. Do NOT ground to a gas supply line.

Figure 2: Wiring Diagram



208-230 VAC, 60Hz, 1 PH

HAYWARD®

Safety Information

⚠ WARNING - Read, Understand, and Follow all Instructions in this manual and on the equipment. Failure to follow instructions can cause death, severe injury and/or serious property damage.

⚠ WARNING - **Suction Entrapment Hazard.** Suction in suction outlets and/or suction outlet covers which are, damaged, broken, cracked, missing, or unsecured can cause death and/or severe injury due to the following entrapment hazards:



Hair Entrapment - Hair can become entangled in suction outlet cover.



Limb Entrapment - A limb inserted into an opening of a suction outlet sump or suction outlet cover that is damaged, broken, cracked, missing, or not securely attached can result in a mechanical bind or swelling of the limb.



Body Suction Entrapment - This happens when a negative pressure applied to a large portion of the body or limbs can result in an entrapment.

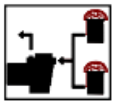


Evisceration/ Disembowelment - A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is, damaged, broken, cracked, missing, or unsecured can result in evisceration/ disembowelment.

Mechanical Entrapment - There is potential for jewelry, swimsuit, hair decorations, finger, toe or knuckle to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

⚠ WARNING - To Reduce the risk of Entrapment Hazards:

- When outlets are small enough to be blocked by a person, a minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall), must be installed a minimum of three feet (3') [1 meter] apart, as measured from near point to near point.
- Dual suction fittings shall be placed in such locations and distances to avoid "dual blockage" by a user.
- Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- The maximum system flow rate shall not exceed the flow rating of as listed on Table 1.
- Never use Pool or Spa if any suction outlet component is damaged, broken, cracked, missing, or not attached.
- Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- In addition two or more suction outlets per pump installed in accordance with latest ASME, APSP Standards and CPSC guidelines, follow all National, State, and Local codes applicable.
- Installation of a vacuum release or vent system, which relieves entrapping suction, is recommended.



⚠ WARNING - Failure to remove pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets can result in an increase potential for suction entrapment as described above.

⚠ WARNING - Failure to keep suction outlet components clear of debris, such as leaves, dirt, hair, paper and other material can result in an increase potential for suction entrapment as described above.

⚠ WARNING - Suction outlet components have a finite life, the cover/grate should be inspected frequently and replaced at least every seven years or if found to be damaged, broken, cracked, missing, or not securely attached.

⚠ CAUTION - Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as means of access to the pool by young children. To reduce risk of injury, do not permit children to use or climb on this product. Closely supervise children at all times. Components such as the filtration system, pumps, and heaters must be positioned to prevent children from using them as a means of access to the pool.



⚠ WARNING - **Hazardous Pressure.** Pool and spa water heating and circulation systems operate under hazardous pressure during start up, normal operation, and after pump shut off. Stand clear of circulation system equipment during pump start up. Failure to follow safety and operation instructions could result in violent separation of the pump housing and cover, and/or filter housing and clamp due to pressure in the system, which could cause death, severe personal injury and/or property damage, Before servicing pool and spa water circulation system, all system and pump controls must be in off position and filter manual air relief valve must be in open position. Before starting system pump, all system valves must be set in a position to allow system water to return back to the pool. Do not change filter control valve position while system pump is running. Before starting system pump, fully open filter manual air relief valve. Do not close filter manual air relief valve until a steady stream of water (not air or air and water) is discharged.



⚠ WARNING - **Separation Hazard.** Failure to follow safety and operation instructions could result in violent separation of pump and/or filter components. Strainer cover must be properly secured to pump housing with strainer cover lock ring. Before servicing pool and spa

circulation system, filters manual air relief valve must be in open position. Do not operate pool and spa circulation system if a system component is not assembled properly, damaged, or missing. Do not operate pool and spa circulation system unless filter manual air relief valve body is in locked position in filter upper body. Never operate or test the circulation system at more than 50 PSI. Do not purge the system with compressed air. Purging the system with compressed air can cause components to explode, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter, or piping.



⚠ **WARNING** - **Risk of Electric Shock.** All electrical wiring MUST be in conformance with applicable local codes, regulations, and the National Electric Code (NEC). Hazardous voltage can shock, burn, and cause death or serious property damage. To reduce the risk of electric shock, do NOT use an extension cord to connect unit to electric supply. Provide a properly located electrical receptacle. Before working on any electrical equipment, turn off power supply to the equipment. To reduce the risk of electric shock replace damaged wiring immediately. Locate conduit to prevent abuse from lawn mowers, hedge trimmers and other equipment. Do NOT ground to a gas supply line.

⚠ **WARNING** - **Risk of Electric Shock.** Failure to ground all electrical equipment can cause serious or fatal electrical shock hazard. Electrical ground all electrical equipment before connecting to electrical power supply.

⚠ **WARNING** - **Risk of Electric Shock.** Failure to bond all electrical equipment to pool structure will increase risk for electrocution and could result in injury or death. To reduce the risk of electric shock, see installation instructions and consult a professional electrician on how to bond all electrical equipment. Also, contact a licensed electrician for information on local electrical codes for bonding requirements.

Notes to electrician: Use a solid copper conductor, size 8 or larger. Run a continuous wire from external bonding lug to reinforcing rod or mesh. Connect a No. 8 AWG (8.4 mm2) [No. 6 AWG (13.3 mm2) for Canada] solid copper bonding wire to the pressure wire connector provided on the electrical equipment and to all metal parts of swimming pool, spa, or hot tub, and metal piping (except gas piping), and conduit within 5 ft. (1.5 m) of inside walls of swimming pool, spa, or hot tub. **IMPORTANT** - Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and other general wiring procedures.

⚠ **CAUTION** - These heaters are intended for use with permanently-installed pools and may be used with hot tubs and spas if so marked. Do not use with storable pools. A permanently-installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.

⚠ **WARNING** - **Risk of Hyperthermia.** To avoid hyperthermia the following "Safety Rules for Hot Tubs" are recommended by the U.S. Consumer Product Safety Commission.

1. Spa or hot tub water temperatures should never exceed 104°F [40°C]. A temperature of 100°F [38°C] is considered safe for a healthy adult. Special caution is suggested for young children. Prolonged immersion in hot water can induce hyperthermia.
2. Drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness, which could lead to unconsciousness and subsequently result in drowning.
3. Pregnant women beware! Soaking in water above 100°F [38°C] can cause fetal damage during the first three months of pregnancy (resulting in the birth of a brain-damaged or deformed child). Pregnant women should adhere to the 100°F [38°C] maximum rule.
4. Before entering the spa or hot tub, users should check the water temperature with an accurate thermometer; spa or hot tub thermostats may err in regulating water temperatures by as much as 4°F (2.2°C).
5. Persons taking medications, which induce drowsiness, such as tranquilizers, antihistamines or anticoagulants, should not use spas or hot tubs.
6. If the pool/spa is used for therapy, it should be done with the advice of a physician. Always stir pool/ spa water before entering the pool/ spa to mix in any hot surface layer of water that might exceed healthful temperature limits and cause injury. Do not tamper with controls, because scalding can result if safety controls are not in proper working order.
7. Persons with a medical history of heart disease, circulatory problems, diabetes or blood pressure problems should obtain a physician's advice before using spas or hot tubs.
8. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6°F [37°C]. The symptoms of Hyperthermia include: drowsiness, lethargy, dizziness, fainting, and an increase in the internal temperature of the body.

   The effects of Hyperthermia include:

   - Unawareness of impending danger.
   - Failure to perceive heat.
   - Failure to recognize the need to leave the spa.
   - Physical inability to exit the spa.
   - Fetal damage in pregnant women.
   - Unconsciousness resulting in danger of drowning.

Installation

This manual contains instructions for installation, operation, maintenance, troubleshooting, and parts lists for the proper operation of the swimming pool heaters. Manufacturer strongly recommends that the installer read the manual before installing the swimming pool heater. If after reviewing the manual any questions remain unanswered, contact the factory or local representative. Following heater installation, the installer should leave all manuals with the consumer for future reference.

NOTICE - The installation instructions are intended for the use of a qualified technician, specifically trained and experienced in the installation of this type of heating equipment. Some states or provinces require that installer be licensed. If this is the case in the state or province where heater is located, the contractor must be properly certified.

SPRINKLER HEADS: The heater is designed to handle the wettest weather conditions that are typical of rain and high humidity. Sprinkler heads force high-pressure water into the unit from the side at an odd angle. Make sure there are no sprinkler heads near the heater that will spray on or into the unit. Many sprinkler systems are connected to a well system, whose water is high in minerals, Sulphur, salt and other aggressive contaminates, that will leave a buildup on the unit and electronics causing corrosion and shortens life.

NOTICE -Damage from sprinkler interaction is not covered under the warranty agreement. Make sure that sprinklers are placed at a sufficient distance away so that normal wind will not carry the mist to the heat pump.

NOTICE - If located in an oceanfront area, the heat pump should be placed out of direct spray of sand and salt. This will clog, damage, and corrode the unit. You may also consider protecting the unit by creating a physical barrier outside of the minimum clearances between the unit and the prevailing beachfront wind. Damage caused by sand or salt spray is not covered by the warranty.

THE USE OF A POOL COVER IS RECOMMENDED: A pool cover reduces heat loss, conserves chemicals, lowers the load on filter systems and may provide a valuable safety feature

EQUIPMENT INSPECTION: On receipt of the heater, inspect the heater carton(s) for damage. If any carton(s) is damaged, note it when signing for it. Remove the heater from the carton(s) inspect it and advise the carrier of any damages at once.

NOTICE - Do not drop the heater from a pickup truck tailgate to the ground. This may damage the heater.

NOTICE - The heat pump must not be tipped or transported on its side as evaporator “oil logging” may occur.

Materials Needed For Installation

Installer is responsible for providing all external to unit electrical supplies. Extra hardware items may also be required for anchoring. Additional plumbing items needed:

For in ground installations: 2 inch PVC pipe Schedule 40 and 2 inch fittings and components as follows:

- 2 inch or larger Isolation Valves qty(3)
- 2 inch or larger Check Valve qty(1)
- 2 x 2 x 2 PVC Tee’s qty(2)

NOTICE - Pipe fittings such as reducers, tees, and elbows cause pressure to drop as water flows through them. Plan the plumbing layout carefully, using as few fittings as possible to connect your heat pump. See pad plumbing layout in the WATER PIPING section for further direction.

Locating The Heat Pump

The installation location of the heat pump is very important for its efficient operation. The heat pump will perform more efficiently when placed in direct sunlight with ample air intake and the avoidance of air re-circulation. Locate the pool heater in an area where its condensation will not result in damage to the area adjacent to the heater or a nearby structure.

NOTICE - DO NOT install the heat pump in a fully enclosed space (i.e. garage, shed etc.). Such an installation will void its warranty
All criteria given in the following sections reflect minimum clearances. However, each installation must also be evaluated on prevailing local conditions such as proximity and height of walls and public access areas.

OUTDOOR INSTALLATION AND SERVICE CLEARANCES: The heater must be installed outdoors such that the installation and service clearances shown in Table 3 and Figure 3 are maintained. Additional installation requirements are as listed:

1. Level surface for proper draining.
2. Suitable electrical supply line. See rating plate on the heat pump units for electrical specifications. A junction box is not needed at the heat pump;

connections are made inside the heat pump electrical compartment. Minimum wire size to be selected per NEC based on unit MCA.

3. Electric disconnect switch that will interrupt all power to the unit. This switch MUST be within line of sight of the heat pump
4. Do not install in a location where growing shrubs may in time obstruct a heater's air flow areas (sides or top).
5. Do not install the heater where water spray from ground level can contact the heater. The water could damage coil or reach the controls causing electrical damage.
6. Do not install under a deck.
7. Do not install within 24in of any outdoor HVAC equipment.
8. Do not install where water may run-off a roof into the heater. A gutter may be needed to protect the heater.

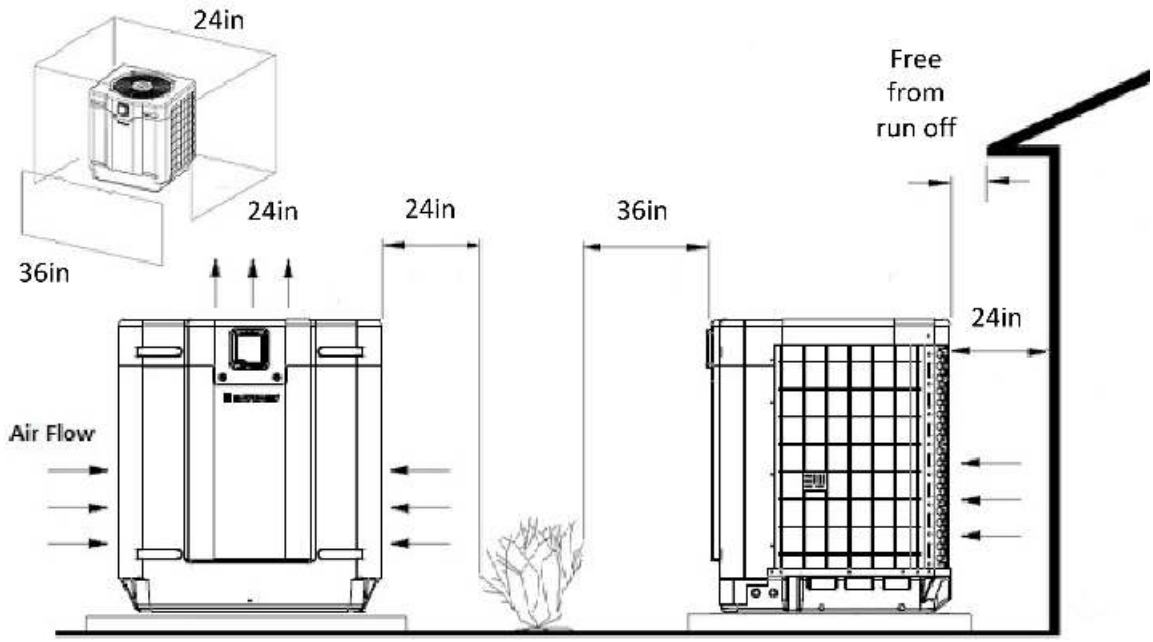
⚠CAUTION - Make sure the heat pump is not located where large amounts of water may run-off from the roof into the unit. Sharp sloping roofs without gutters will allow massive amounts of rainwater, mixed with debris from the roof to be forced through the unit. Failure to follow the instructions may result in property damage and a voided warranty.

1. See Table 3 and Figure 3 for clearances.
2. If the heat pump is to be installed below a vertical overhang such as shown in Figure 3, the unit must have a minimum of 72in. [1.8m] of clearance from the top of the heat pump to the bottom of the cover or overhang.
3. Install the heat pump a minimum of 60in. [1.5m] from the inside wall of the pool, spa, solid fence, or permanent barrier. Canadian installations require a minimum of 120 in. [3m] of clearance from pool water.

Table 3: Installation Required Clearances

Heat Pump Panel	Outdoor Clearance
Top	Unobstructed
Front (control)	24-36
Rest of Perimeter	24

Figure 3: Outdoor Minimum Clearances



EQUIPMENT PAD: Place the heat pump on a level surface such as concrete or a fabricated slab (pad). This allows proper drainage of condensation and rainwater from the base of the unit. If possible, the pad should be placed at the same level or slightly higher than the filter system equipment pad.

FLOORING: This heater may be installed on either non-combustible flooring or combustible flooring that does not reduce the bottom clearance of the heater. Ultralite™ or equivalent concrete-over-foam HVAC pads are acceptable.

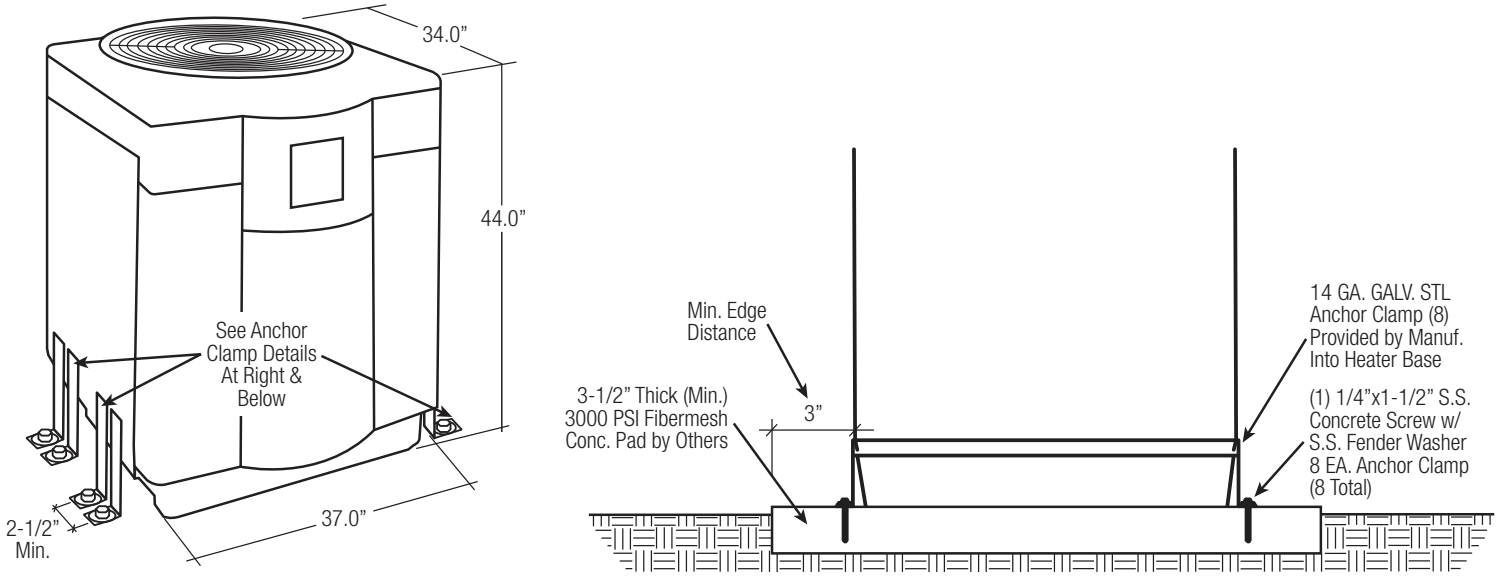
DRAINAGE AND CONDENSATION: Condensation will be produced by the evaporator coil when the unit is heating water and drain at a steady rate, usually three to five gallons per hour, depending upon ambient air temperature and humidity. The more humid the conditions, the more condensation will be produced. Use the supplied condensate drain to route the condensate away from the unit and dispose appropriately. It is easy to mistake the condensation for a water leak inside the unit. A way to verify that the water is condensation is to shut off the unit and keep the pool pump running. If the water stops running out of the base pan, it is condensation collecting around the unit. A quicker way is to check the water for CHLORINE. If there is no chlorine present in the water around the unit, then it's condensation.

ANCHORING: The heater is equipped for installation of anchoring screws when required by local codes. Follow all relevant Local, State and National requirements regarding wind load anchoring. When anchoring is required to secure the heat pump to concrete pad, use the specified hardware shown in Figure 4.

To complete the installation use the following:

Anchor Clamps	(FACTORY SUPPLIED; qty (8))
Concrete tapping screws	(FIELD SUPPLIED; Tapcons® stainless steel, qty (8), size to be ¼in diameter with a minimum length of 1-1/2in)
Fender washers	(FIELD SUPPLIED; stainless steel, qty (8), size to be 1-1/2in)

Figure 4: Equipment Pad and Anchoring

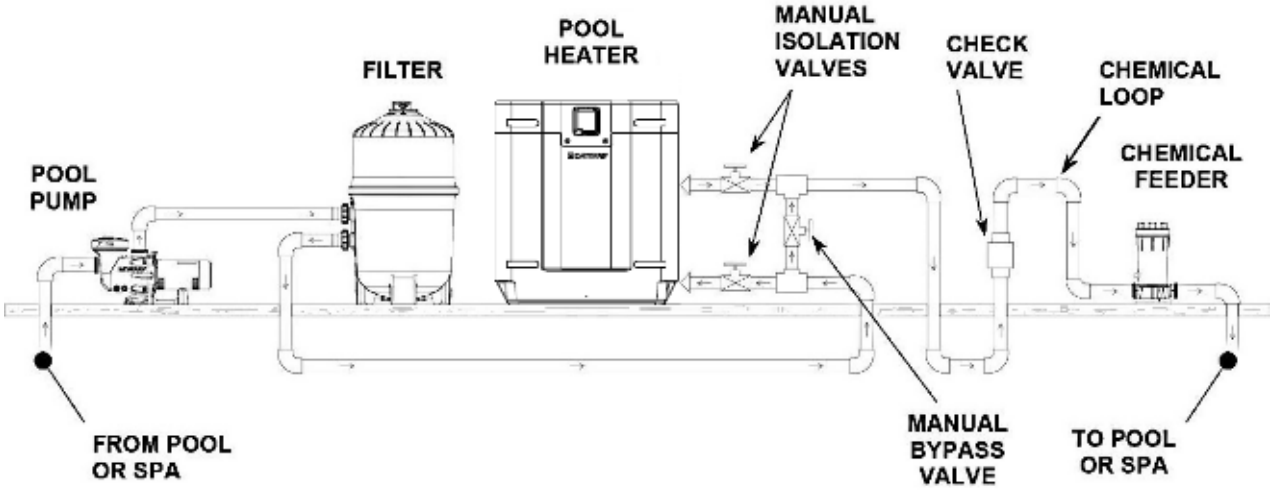


Water Piping

GENERAL: The heater is for use with pool and spa/hot tub water furnished by municipal water distribution systems only. The use of mineral water, seawater (PPM>5000), or other non-potable waters will invalidate the warranty. These heat pumps are designed for nominal water flows through the condenser. See specifications for minimum and maximum flow requirements to ensure sufficient heat removal and water erosion of heat exchanger tubing. The minimum flow rate is to be calculated or measured with the in-floor cleaning system in use, if the pool is so equipped, as well as any other jets or other demands on the water flow. Flow rates above specified maximum will create excessive pressure drop through the condenser and require unnecessarily high pumping energy. Bypass valve setting may be accomplished by temporarily installing a flow meter on the outlet line of the heater. Then adjust the manual bypass valve until the flow rate through the heater is within the flow rate range specified. Once the manual bypass valve is set, note the position and remove the valve handle to prevent accidental adjustment. Failure to install an External Bypass Assembly with flow rates above the specified maximum will void the warranty. Do not install any restriction in the water pipe between the heater outlet and the pool with the exception of; three-way switching valve, in-line chlorinator and/or chlorinator check valve as shown in Figure 5 on the following page.

AUTOMATIC CHLORINATORS AND CHEMICAL FEEDERS: If used, a chlorinator must be installed downstream from the heater in the pool return line and at a lower elevation than the heater as shown in Figure 5. Install a separate positive seal corrosion resistant check valve between the heater outlet and the chlorinator to prevent highly concentrated sanitizer from back siphoning into the heater. Back siphoning may occur when the pump is shut off and a pressure differential is created.

Figure 5: Pad Plumbing Layout



⚠**CAUTION** - Improperly adjusted manual bypass valves will result in damage to the heater if the flow rates are not maintained under all operating conditions as specified in listed SPECIFICATION. The heat exchanger will fail and this damage will not be covered under the manufacturer's warranty.

⚠**CAUTION** - The heat pump must be protected from back siphoning of water. If there is any chance of back siphoning, provide a check valve between the pool and the filter pump inlet. Failure to follow the instructions may result in property damage due to flooding.

⚠**CAUTION** - Automatic erosion type chlorinators, if used, must be installed downstream (between the heat pump and the pool) of the heat pump, and a check valve (or Hartford Loop) installed in a manner that will not allow the raw chlorine to drain back to the heat pump when the water pump is off. Failure to follow the instructions may result in property damage.

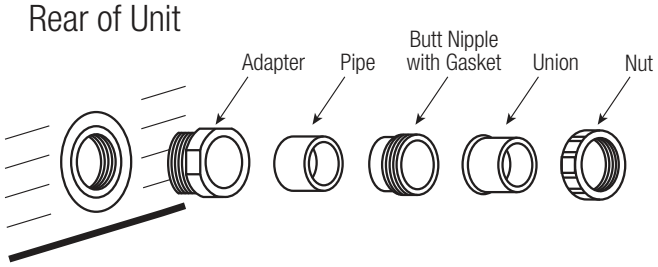
⚠**CAUTION** - Do not pour chemicals directly into the skimmer. It could result in damage to your system and heat pump.

NOTICE - Be advised, that when pool equipment is located below the pool surface, a leak at this lower level can result in large-scale water loss or flooding. Manufacturer is not responsible for water loss or damage it causes.

CONNECTIONS: The heater is equipped with detachable connectors for water. These fittings must be installed on the heat pump water inlet and outlet to facilitate servicing and winterizing the unit. (See Figure 6). Heat sinks, heat tapes, firemen switches, and check valves are not required on the heater. However, if there is any chance of "back-siphoning" of outlet water when the pump stops running, it is suggested that a check valve and chemical loop be used on the heater outlet pipe down stream of bypass system.

Figure 6: In Ground Included Connectors

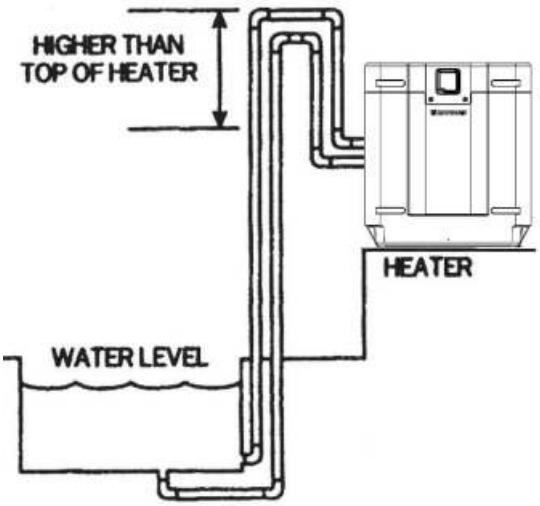
Rear of Unit



Installation Above Pool/Spa Surface

If the heater is installed more than three (3) feet above the surface of the pool/spa water, install a loop as shown in Figure 7 to prevent drainage of water in the heater during a filter change.

Figure 7: Heater Installation Above Pool



Typical Pool Arrangement

Figure 8 illustrates a typical pool piping diagram and layout for the pool equipment. Also shown is implementation of an optional Gas or Solar heater system for additional capacity. Other pool heaters, such as gas-fired or solar-powered devices must be installed in a parallel circuit and operated independently (only one at a time) for your warranty to be valid.

NOTICE - Because of the intense heat that can be generated by gas and solar units, isolating it with a shut-off valve and a check valve when gas or solar heater is in operation protects the heat pump. Failure to follow the instructions may result in property damage.

Notes:

1. Isolate the heat pump from hot water flow of heating devices such as gas or solar heater.
2. Install bypass loop for heat pump unit.

Figure 8: Typical Plumbing to Pool

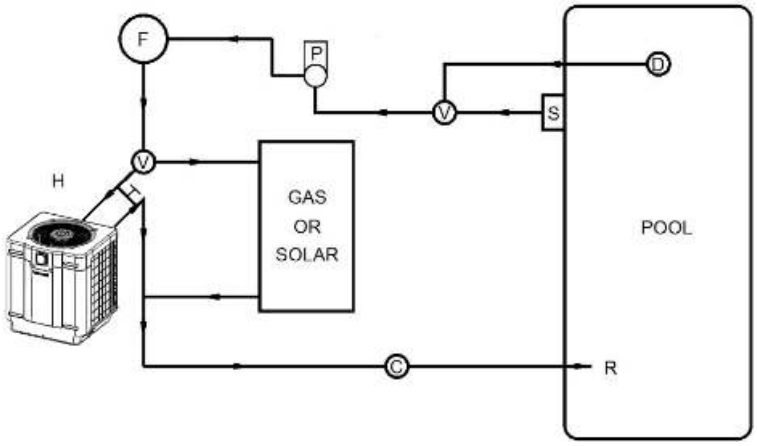
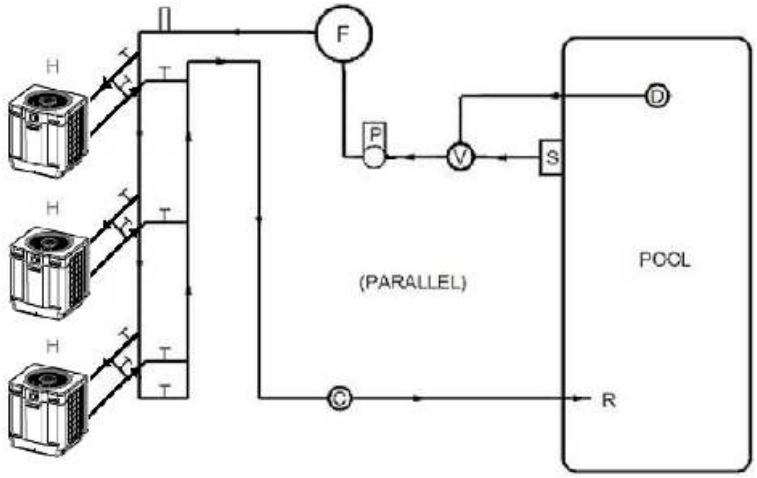


Figure 9 illustrates a multiple heater installation for very large pools with and without a manual bypass valve.

1. Maintain 4-6ft [1,2-1,8 m] clearance between the units, 2ft [0,6 m] around perimeter, and at least 6ft [1,8 m] over them. Refer to LOCATING THE HEATER section for more details.
2. Install bypass loops for each unit.
3. Install union style fittings from the heat pump CONSUMER KIT adjacent to the unit to facilitate easy service procedures

Figure 9: Multiple Heater System



Electrical Connections

GENERAL INFORMATION: An external supply of power is required to operate the pool heater system. Review SPECIFICATIONS for this heater in the GETTING STARTED section to properly size field power connections. All wiring connections to the heater must be made in accordance with the latest edition of the National Electrical Code ANSI/NFPA 70, unless local code requirements specify otherwise. In Canada, follow CSA C22.1 Canadian Electrical Code, Part 1. The heater must be electrically grounded and bonded in accordance with local codes or, in the absence of local codes, with National Electrical Code, ANSI/NFPA 70. Wiring connections must be made as shown in the wiring diagram found inside the heater cabinet, and a copy is provided for convenience in the GETTING STARTED section at the beginning of the manual. The heater must also have an independent ground and bond connections. There is a ground lug inside the control box adjacent to the power connections and a bonding lug on the side of the heater. Use a solid copper conductor, size 8 or larger. Run a continuous wire from external bonding lug to reinforcing rod or mesh. Connect a No. 8 AWG (8.4 mm2) solid copper bonding wire to the grounding lug provided on the heat pump and to all metal parts of swimming pool or spa, and to all electrical equipment, metal piping (except gas piping), and conduit within 5 ft. (1.5 m) of inside walls of swimming pool or spa. IMPORTANT - Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and other general wiring procedures.

⚠ WARNING - Risk of Electric Shock. Review all safety information provided in the GETTING STARTED section of this manual prior to servicing. Always disconnect power circuit before connecting the heat pump, or working on the heat pump. This equipment contains wiring that carries high voltage. Contact with these wires could result in death or personal injury and/or may also cause property damage.

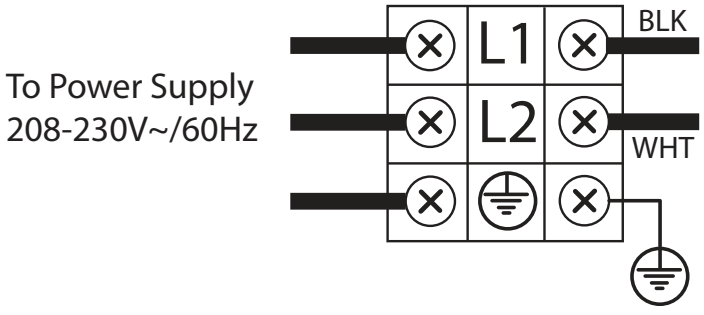
⚠ WARNING - All electrical wiring MUST be in conformance with all applicable local codes, regulations and the National Electric Code (NEC), in particular NEC Article 680: Swimming Pools, Fountains & Similar Installations and Article 440: Air-Conditioning & Refrigeration Equipment.

NOTICE - When GFCI breakers are required by installation codes, product will operate satisfactorily when using a Siemens QF250A GFCI breaker. This GFCI breaker has been tested and found to not nuisance trip. GFCI nuisance trips are not covered under warranty.

NOTICE - If voltage drops below 208V, this may damage the heat pump and void the warranty. Take proper steps to ensure correct voltage at the heat pump during operation

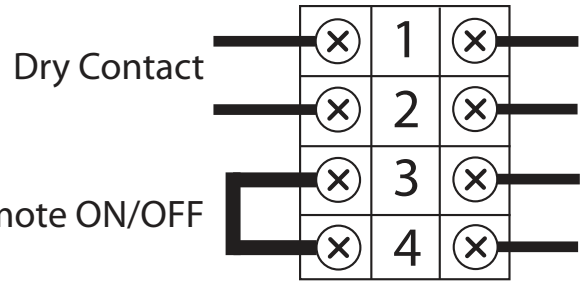
ELECTRICAL CONNECTIONS: Turn OFF source power to the heat pump before working on electrical connections. Any unused openings must be plugged and all wiring secured for proper strain relief. The power connections are to be made on the contactor terminals located in the control box (see Figure 10 Power Connections).

Figure 10: Power Connections



REMOTE ON/OFF CONNECTION: The heater is equipped for remote ON/OFF via an independent 2-wire connection. (See Figure 11 for remote ON/OFF connection). The unit is factory shipped with the jumper in place. The jumper can be replaced with a remote switch to activate the unit. It is recommended the unit be placed in Auto mode if only a remote switch closure is used. Temperature is set at the unit controller.

Figure 11: Remote ON/OFF



It is recommended if the unit is controlled remotely with external temperature control:

For heating, set mode to Heat set thermostat to 104°F
For cooling, set mode to Cool set thermostat to 55°F.
The remote on/off can then activate the unit as needed for remote temperature control operation.

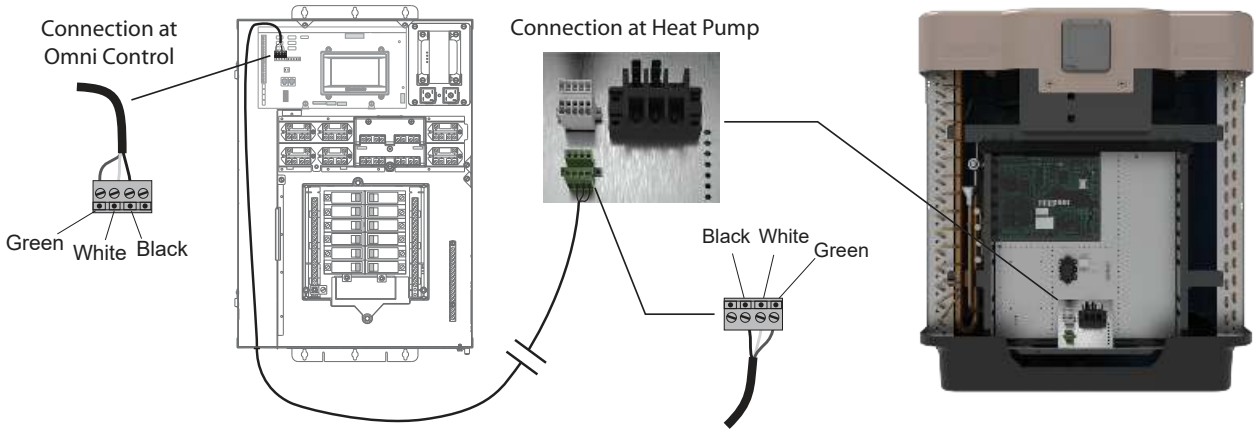
NOTICE - Pump must be running for unit to operate with remote control connection.

All remote wiring must be run in a conduit separate from incoming power. Use 22 AWG wire for runs less than 30 feet. Use 20 AWG wire for runs over 30 feet. The maximum allowable run is 200 feet.

Hayward Omni Connectivity

The HP50952T and HP51202T are Smart Heaters that can be fully controlled by a Hayward Omni pool automation control. These internet enabled controls allow you to remotely create schedules and set points for both heating and cooling while displaying real time heater status and diagnostics. The Omni family of products provide a cable connection used to communicate with the HP50952T/HP51202T and requires firmware revision R4.3.0 or later. Refer to your Omni Operation manual to the determine current firmware revision as well as instructions on how to upgrade.

Disconnect power to both the heat pump and the OmniLogic before removing their panels. Use a proper outdoor rated 3 conductor 22 AWG cable (20 AWG for runs over 30 ft) for the connection from the Omni control to the HP50952T/HP51202T. Route the cable through appropriate knockouts making sure they are not shared with high voltage wiring. Refer to the diagram below showing a Hayward OmniLogic control wired to the heat pump. Note that the position of each colored conductor is the same at both ends of the communication cable. Use this same wiring method regardless of which Omni control model used. After the communication cable is fastened and secure, refasten the panels.



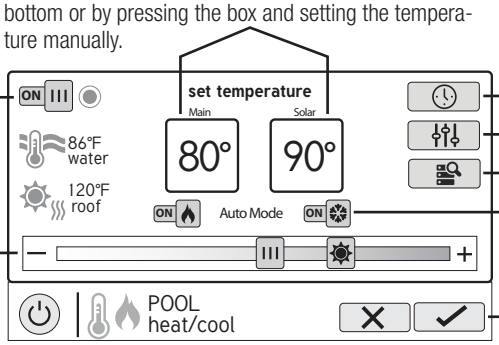
Omni Configuration and Operation

After wiring is complete, power must be applied to the HP50952T/HP51202T for it to be discovered by the Omni control. To add the new heater to your Omni control's configuration, use the Configuration Wizard for new installations and Quick Edit for existing installations. Progress through the configuration screens until you get to the Heater section as described in your Omni control's installation manual. Answer "Yes" to the question "Do you want to add a Smart Heater?". Progress through the following screens until the heater is configured.

Enable / Disable - Slide this switch to enable or disable heating/cooling. The setting will not take effect until the Save button is touched. To turn on the heater/chiller, adjust the set point higher or lower than the actual pool water temperature and then Save. When the circle icon is grayed out and stationary, equipment is currently idle. When in motion, the heater/chiller is actively heating/cooling.

Change Set Point - This slider will raise and lower the heater/chiller set point setting. The slider will change the Main set point and the slider will change the Solar set point (if used).

Set Point Temperature - The Main heater/chiller and Solar set point temperatures are shown in the boxes. The set-points can be changed using the sliders at the bottom or by pressing the box and setting the temperature manually.



Set Schedule - Touch this button to set a schedule for the heater/chiller.

Priority & Settings - If more than one heater/chiller is configured for the pool or spa, use this button to set priority, change differential and enable/disable physical heaters/chillers.

Heater Diagnostics - Press this button to view heater diagnostics.

Heater/Cooling Mode - Press these buttons to change the heating/cooling mode. Turn both ON to enable "Auto Mode".

Save Changes - Settings are not saved until this button is pushed.

Heat Mode - Heat Mode is enabled if the Heating on/off switch is ON and the Cooling on/off switch is OFF. In Heat Mode, the equipment will ONLY turn on to heat the pool/spa water.

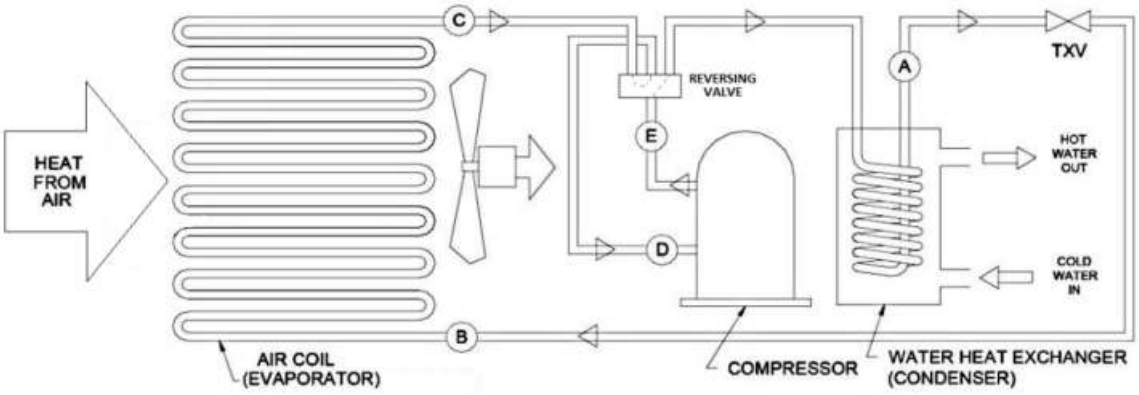
Cool Mode - Cool Mode is enabled if the Cooling on/off switch is ON and the Heating on/off switch is OFF. In Cool Mode, the equipment will ONLY turn on to cool the pool/spa water.

Auto Mode - Auto Mode is enabled if the Heating on/off switch and the Cooling on/off switch are both ON. In Auto Mode, the equipment will turn on to heat the pool/spa water when the pool/spa water temperature is too low, AND to cool the pool/spa water when the pool/spa water temperature is too high. Auto Mode will turn on the heater/chiller according to the set initial temperature differential. The default initial temperature differential is set to 2°F.

Operation

GENERAL: After completing the installation connections to the pool heater, follow the procedures outlined below to ensure that the pool heater is functioning properly. Before proceeding, MAKE CERTAIN there are no water leaks in any plumbing connections or piping and water flow is within the proper flow rate ranges. The heater is equipped with a control system that automatically monitors the water temperature set points and safety devices. As water conditioning is needed, it turns on the compressor to start the appropriate transfer of heat to the water. Figure 12 provides a summary of heater components and their locations in the system. Check that the pump is operating and the system is filled with water prior to starting the heater.

Figure 12: Location of Components (heating operation flow shown)



The heat pump takes heat from the environment and uses it to heat the pool water. During heat pump operation, high temperature, high-pressure sub cooled liquid Refrigerant (A) is throttled by Metering Device (TXV) and turned into low temperature, low-pressure saturated liquid (B). The two-phase Refrigerant flows through the Air Coil (Evaporator), where the liquid refrigerant evaporates into vapor by absorbing heat from the surrounding air. At the outlet of the Air Coil (Evaporator) it becomes a low temperature, low- pressure superheated vapor (C). The Compressor receives this flow at the suction line (D), and compresses it into a high temperature, high pressure superheated vapor, which is discharged from the Compressor (E) and flows through the reversing valve into the Water Heat Exchanger (Condenser). The heat carried by the flow is then released to the pool water. At the same time, the high temperature, high-pressure superheated vapor is then condensed back to high-pressure sub cooled liquid (A), which completes the cycle. The water, which is being forced through the Water Heat Exchanger (Condenser) by the pool pump, is thus heated as it passes through.

HEAT PUMP PROTECTION FEATURES: These heat pumps are equipped with safeguards that will stop heater operation to protect the unit in case of the following events:

- Excessively high refrigerant pressure
- Excessively high water temperature
- Loss of refrigerant
- Evaporator Freeze-up
- Low Ambient Temperature

Control Setup

This pool heater is equipped with a digital thermostat which allows the user to select the desired water temperature. The heater will then function automatically to maintain the desired temperature. The heater has 3 modes of operation:

1. HEATING: in this mode, the heater will automatically function to manage a minimum water temperature setting.
2. AUTO: In this mode the heat pump will automatically respond to either a call for heating or cooling as described above.
3. COOLING: in this mode, the heater will automatically function to manage a maximum water temperature setting.

Figure 13: User Interface Panel



USER INTERFACE PANEL AND INPUTS: The control displays temperatures, mode selections, diagnostic codes and accepts user inputs.

Display - When power is supplied to the heat pump unit, the display will show sensor temperature (in degrees F or C), operation mode and other useful information.

ON/OFF Button - Press the Circular Touch Button:

Press for 0.5s for system ON (Blue Screen) and OFF (Black Screen).

Press and hold for 5s to lock and unlock the screen. The Circular Touch Button will also cancel the present selection when making adjustments.

Function Selection

The status bar is in the upper right corner of the display, the current mode of operation is shown by

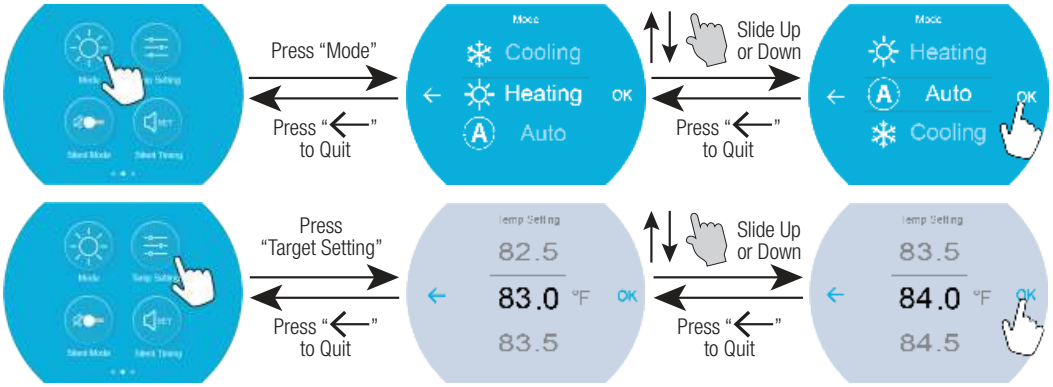
- Heating
- Cooling
- Auto
- Indicates the unit is defrosting
- Indicates that the screen is locked
- Indicates “fault occurred”

From the main interface screen, slide left or right to go to the function selection screens.



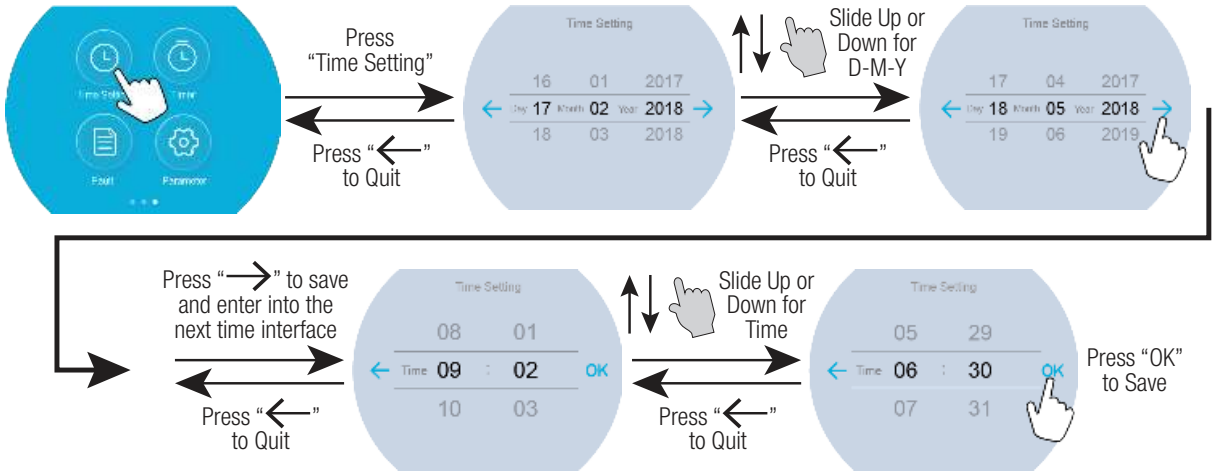
Main Interface | Page One Interface | Page Two Interface

Page One Interface This page allows user to select operational mode (Heating, Auto, Cooling), target temperature setting, silent mode and silent timing. Mode and temperature selection are shown below.

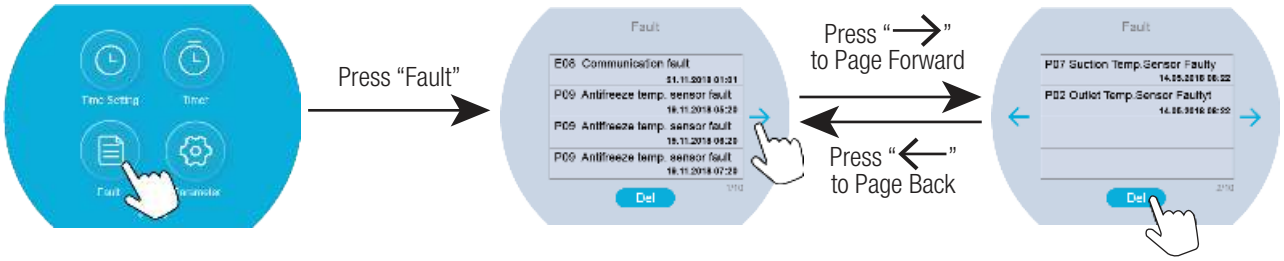


Silent mode and silent timing settings control the unit operation for minimum sound. Operation for minimum sound is accomplished by reducing unit capacity/ output.

Page Two Interface This page allows user to set system time, set ON/OFF timer override, display faults and review and adjust system parameters. Setting system time is set as follows;

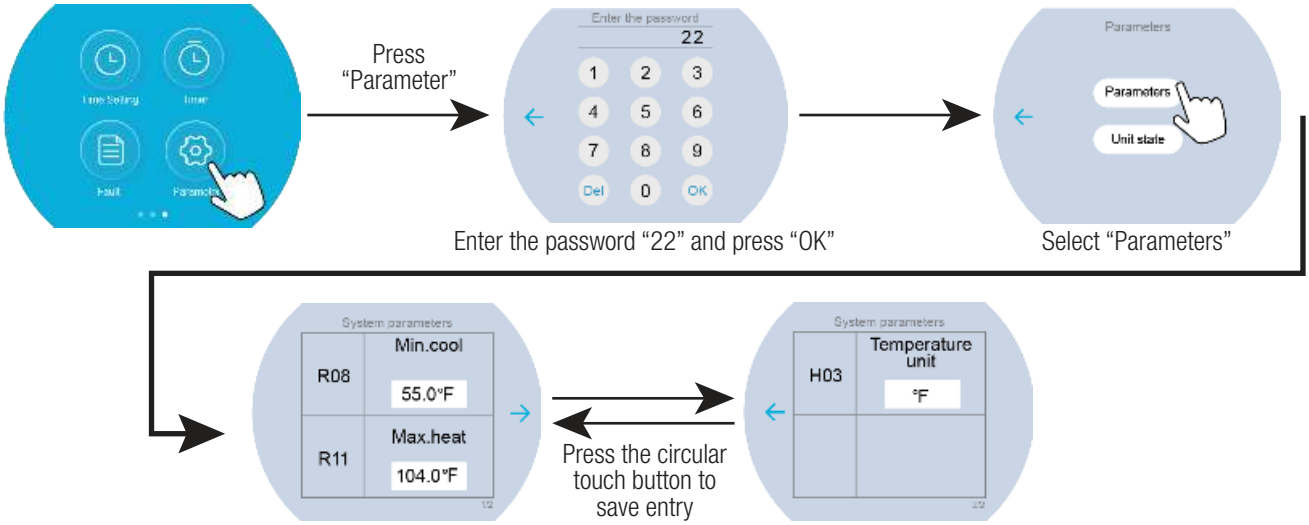


Displaying faults are available as follows:



A complete listing of the faults can be found in TABLE 6: Fault Code Index.

The system parameters for setting minimum allowable cooling set point, maximum allowable heating set point and temperature display units can be adjusted as follows:



TWO-SPEED PUMP: In a few cases the flow from a two-speed pump is below the minimum required to operate the water flow switch on the heater. In these cases the pump must be run at high speed to operate the heater. If the pump and piping arrangement are such that the required minimum flow cannot be obtained, do not attempt to operate the heater. Correct the installation.

NOTICE - Heater installation, checkout, and start-up should now be completed. BE SURE to leave this manual with the pool owner.

Maintenance & Service

PERIODIC INSPECTION: The heater is designed and built for long performance life when installed and operated according to the manufacturer's directions. Regular inspection by qualified service personnel is recommended to keep the heater working properly. The following inspection points are suggested to help maximize heater life.

1. Periodically check the fan discharge area. The fan discharge must never be obstructed in any way and minimum clearances must be observed. Remember that shrubs grow and in time may obstruct
2. Keep the entire pool heater area clean and free of all debris, corrosive materials, and other flammable vapors and liquids. Remove any leaves or paper from around the heater.
3. Do not store chlorine, other pool chemicals, or other corrosives in the vicinity of the heater.
4. Do not use the heater if any part has been under water. Contact a qualified service technician to inspect the entire heater and replace any part of the control system that was under water. If heater has been totally submerged in water it must be removed and the entire heater must be replaced.
5. An inspection program is a good preventative maintenance measure. Keep this manual in a safe place for future reference for yourself as well as for a service technician to consult when inspecting or servicing the heater. Additional inspection procedures to be performed by a qualified service technician.

Water Chemistry

⚠ WARNING - **Water Chemistry.** Failure to maintain proper water chemistry may cause premature heat exchanger damage or failure.

The heat exchanger in your pool heater is made from the highest quality of materials. The titanium condenser is a premium material and the processes used to manufacture the heat exchanger are state of the art in pool heater design and manufacture. However, it remains vital that the heat exchanger be protected from damaging or corrosive chemicals, insufficient water flow or improperly balanced water chemistry. Heat exchanger damage or failure resulting from improper flow, improperly balanced pool water or the improper addition of sanitizer into the water is NOT covered under the terms of the warranty. The following factors are critical to heat exchanger protection. Follow these guidelines to help prevent pre-mature damage or failure to your heater and heat exchanger.

1. WATER FLOW THROUGH HEATER Water must be flowing through the heater at the minimum rated flow rate during operation. Check that the pump is operating and the system is filled with water and purged of all air prior to starting the heater. The minimum rated flow rates are listed in the specifications section.

Table 4: Water Chemistry

Chemical	Recommended Level	Effect of Low Levels	Effect of High Levels
Chlorine	1 - 3 ppm	hazy water, algae growth, bacteria causing infections	swimmer irritation, bleaching of clothes/hair, corrosive to heat exchanger
Bromine	2 - 4 ppm		
pH	7.4 - 7.6	corrosive to heat exchanger, swimmer irritation	cloudy water, scaling of heat exchanger, reduced sanitizer effectiveness
Total Alkalinity	80 -120 ppm	corrosive to heat exchanger, large fluctuations in pH	scaling of heat exchanger
Calcium Hardness	200 - 400 ppm	corrosive to heat exchanger	scaling of heat exchanger
Salt	2700 - 5000 ppm	poor salt chlorinator performance	corrosive to heat exchanger

2. WATER CHEMISTRY: The chemistry balance and mineral content of swimming pool and spa water changes rapidly due to the addition of sanitizing chemicals, user loads, exposed rain, runoff and the amount of sun - to name a few. Improper chemistry (See Table4) balance and mineral content can cause scaling and deposits to form on pool walls, in the filtration system, in the heat exchanger tubes and additionally can promote corrosive action to all metals in the water path. Changing spa water regularly and maintaining the correct chemical balance in your pool/spa will keep the pool/spa safe and sanitary, and will help the heat exchanger longevity. Use a 4-way pool/spa water test kit to check your water frequently (at least weekly). Use the following guidelines to help maintain proper water chemistry:
3. SKIMMER CHLORINATION: Placing chlorine or bromine Tablets directly into the skimmer may result in high chemical concentrations flowing through the heater. DO NOT place chlorine or bromine Tablets in the skimmer.
4. CHLORINATOR INSTALLATION: Chlorinators must be installed downstream of the heater, and a check valve must be installed between the heater and chlorinator to prevent high chemical concentrations from back flowing into the heater. Make sure your piping arrangement meets the chlorinator installation requirements shown on page 26.
5. USE BYPASS: Until water chemistry is properly balanced, so that corrosive and potentially damaging water will not flow through the heater and therefore the heat exchanger. Close the bypass valve once the water is properly balanced.

⚠ WARNING - **Bypass.** Failure to close the bypass valve when attempting to operate the heater will result in extensive damage to the heat exchanger.

Ensure water flow through the heater is restored before operating the heater. A bypass feature is also advantageous for service needs and for the ability to remove the heater from the water path when not heating.

Winterization

In moderate climates, the heater can continue to operate during short-term cold spells. Do not use the heater to maintain the water temperature just above freezing or for freeze protection. Care must be taken to avoid freeze-up in the heater. When it is used during freezing weather, the pump must run continuously. The heater is not warranted against freeze-ups. In regions where freezing temperatures are encountered, all water must be drained from the heater when it is out of service, to prevent damage to the heater and piping. Draining the heat exchanger is recommended as part of the season's shutdown procedures.

NOTICE - A heater damaged by freezing is not covered under the manufactures warranty.

DRAINING THE HEAT EXCHANGER: This procedure applies to installations where the heater is located higher than the pool water level. If itis necessary to drain a pool heater located below the pool water level, you must either partially drain the pool, or isolate the pool heater from the pool using valves, then perform draining the heat exchanger.

1. Set the heater to OFF mode.
2. Turn the electricity to the heater OFF at the circuit breaker panel.
3. Be sure the circulating pump is OFF.
4. If no drain plug is provided, open lower inlet water union and allow all water to drain from the heater.
5. Re-install the drain plug or reattach the water union.

SPRING START-UP: This procedure should be performed annually to ready your heater for the upcoming season. In addition to the steps outlined below, it is recommended that a PERIODIC INSPECTION also be performed.

1. Inspect and clean the heater, being sure the heater is free of leaves and debris prior to startup.
2. Properly attached inlet and outlet piping and confirm the drain valve is closed.
3. Turn the filtration system pump ON and allow the system to run long enough to purge all the air from the lines.
4. Turn the electricity to the heater ON at the circuit breaker panel.
5. Set the heater to H mode and adjust the set point to the desired temperature setting.
6. If operating difficulties are encountered, contact a qualified service company for assistance.

Component Service

NOTICE - Only qualified service technicians, with appropriate test equipment, should be allowed to service the heater. For conditions where refrigerant must be managed, an EPA certified technician is required. All of the components that comprise the system have an effect on heater operation. Before proceeding with heater related troubleshooting tips, be certain that the pump is operating correctly, the filters and strainers are not blocked, the valves in the piping are properly positioned, and the time clocks are properly set.



⚠ **WARNING** - **Explosion Hazard.** Do not attempt to repair broken or faulty components of this heater. Do not modify the heater or its components in any manner. To do so may result in a malfunction that could result in death, personal injury, or property damage. Check with the pool owner to see if any part of the heater has been under water. Replace any electrically operated component that has been under water.



⚠ **WARNING** - **Risk of Electric Shock.** Review all safety information provided in the GETTING STARTED section of this manual prior to servicing. Always disconnect power circuit before connecting the heat pump, or working on the heat pump. This equipment contains wiring that carries high voltage. Contact with these wires could result in death or personal injury and/or may also cause property damage.

Troubleshooting

TROUBLESHOOTING: See TABLE 5: Troubleshooting Lookup Chart.
ERROR and OPERATION CODES: See TABLE 6: Display Code Index.

AUTOMATIC RESET TIME: The heater will automatically reset when an error condition is corrected and resume operation.

NOTICE - These instructions are intended for the use of qualified personnel trained and experienced in the installation and servicing of this type of heating equipment and its related system components. Some states may require installation and service personnel to be licensed. Persons not qualified should not attempt to repair this equipment according to these instructions. These instructions and procedures are not for the use of "do-it-yourself" consumers.

NOTICE - As a preliminary check, make sure that all wire connections are clean and tight and that all wiring conforms to the wiring diagram.

INTERNAL WIRING: If the heater display is blank after the electrical has been installed, refer to Troubleshooting Lookup Chart to determine the cause. Note, the cable between the display board and the control board is keyed to ensure correct connection.

⚠ **WARNING** - To avoid possible outer jacket damage or injury: (1) no materials should be stored against the jacket and (2) care should be taken to avoid unnecessary contact (especially by children) with the jacket.

Table 5: Troubleshooting Lookup Chart

Problem	Possible Cause	Possible Solution(s)
Unit is not operating	No power to unit	Make sure power is on
	Breaker is tripped	Check the breaker / see note above
	Thermostat too low	Turn thermostat up until unit comes on
	3 minute compressor delay timer still running	Be sure the delay has passed
	Low water flow	Make sure filter is clean
		Make sure filter pump is on
		Unhook cleaning devices
	Outside temperature too low	Check outside ambient temperature or wait for warmer temperatures to operate (Refer to Operating section)
	Fan not functioning	Call for service
Heat pump is running but Display not on	System Component Failure	Call for service
Heat pump runs continually	Thermostat set too high for ambient temperature	Turn thermostat down
	Evaporator is dirty	Clean by running tap water over the coil without additional nozzle attachment. Do not use pressurized water as it can damage the coil and void warranty.
	Electrical component failure	Turn off pump. If the unit is still running after 3 minutes, turn off the power to the unit and call for service.
Heat pump is cycling (on / off too quickly)	Bad bypass valve or improper water flow	Ensure water flow is sufficient (is the filter pump running continually?) If heat pump continues to cycle, turn unit off to prevent compressor damage.
	Low refrigerant, low abient temperature, or high humidity with low ambient temperature	Check evaporator coil for severe frost. Turn unit off to prevent compressor damage.
		If heat pump continues to cycle, turn unit off to prevent compressor damage. Call for service.
Water is coming from bottom of unit	Condensation	This is normal and there is no reason to be concerned
	Possible water leak	Turn the unit off for several hours, but leave the filter pump running continuously. If water quantity decreases, then it is only condensation. Otherwise there is a possible leak.

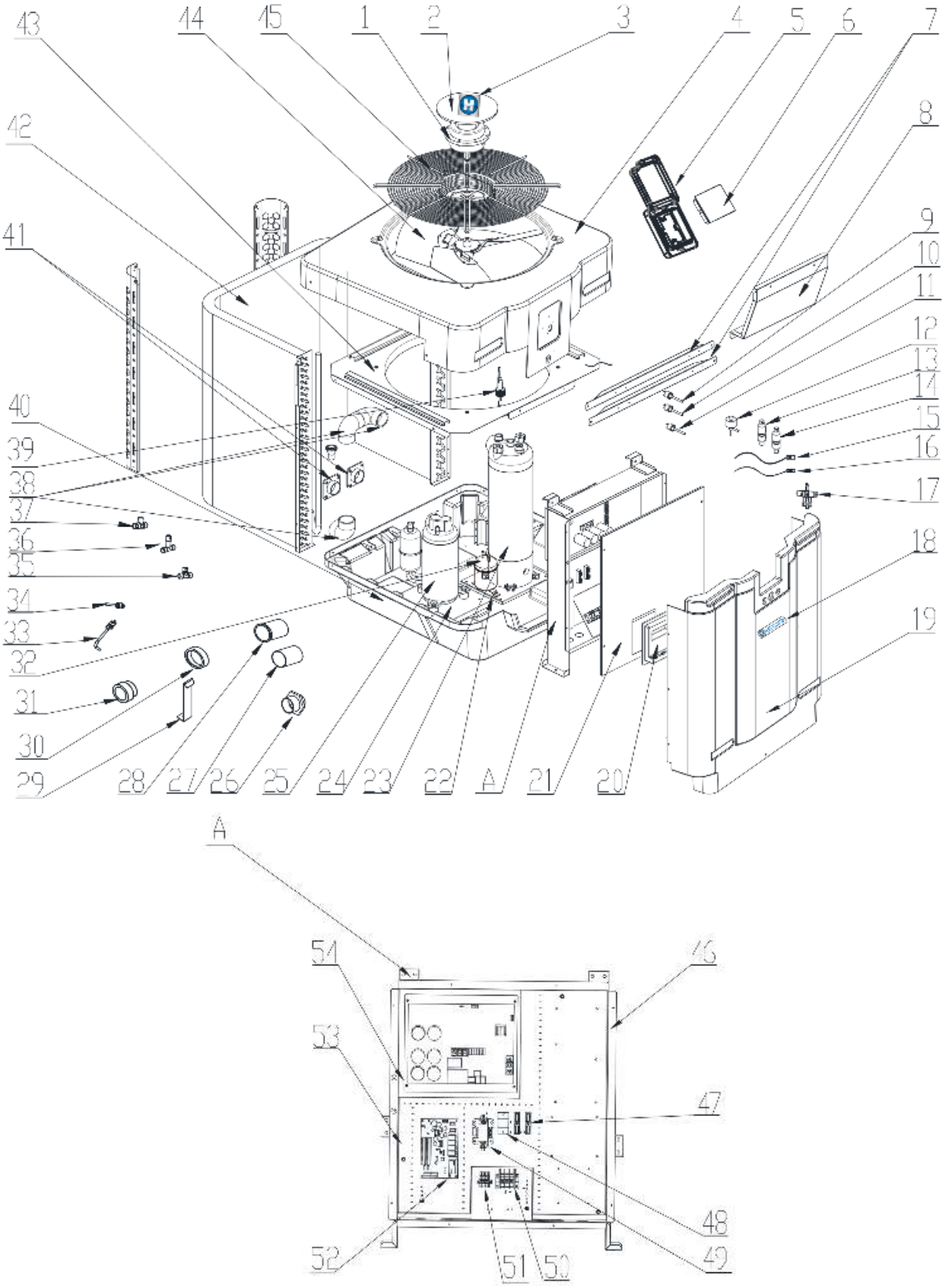
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Table 6a: Fault Code Index			
Display	**Malfunction**	**Possible Cause**	**Information**
(blank)	No power to heat pump	Tripped circuit breaker / no power supply	Check breaker and ensure that the unit is properly installed
		Faulty electrical component	Call for service
	Unit will not turn on	Display module failure	Call for service
E01	High pressure switch, circuit open	Low water flow	Check water flow to heat pump. Ensure pool pump is on.
			Clean your filter
			Make sure all valves are fully open and bypass valve is closed
			Turn off other water flows; fountains, etc.
		High water temp	Check pool temperature. Confirm within allowable limits for heating and cooling.
			Call for service.
E02	Low Pressure Switch, circuit open	Air flow obstruction	Remove debris and other items restricting air flow to heat exchanger
		Low Ambient Temperature cutoff	Wait for outside temperature to reach 20F
		Unit low on refrigerant	Call for service
E03	Flow Switch circuit open	Low or no water flow or remote on/off in use	Check water flow to heat pump. Ensure pool pump is on.
			Make sure all valves are fully open and bypass valve is closed
			Clean your filter
E05	Water temperature freeze protection	Water freeze warning activated	Unit can't keep water above freeze point
E06	Unit water temperature rise too great	Low water flow	Call for service
E07	Freeze up during cooling mode	Low water flow	Call for service
E19	Primary anti-freezing protection heating mode	Ambient temperature too low for operation	Call for service
E29	Primary anti-freezing protection heating mode	Ambient temperature too low for operation	Call for service
P01 , P02	Inlet or Outlet temperature sensor failure	Sensor short circuit, open circuit, or not connected	Call for service or replace sensor
P04	Ambient temperature sensor failure	Sensor short circuit, open circuit, or not connected	Call for service or replace sensor
P05 , P15	Coil temperature sensor failure	Sensor short circuit, open circuit, or not connected	Call for service or replace sensor
P07	Suction temperature sensor failure	Sensor short circuit, open circuit, or not connected	Call for service or replace sensor
P081	Discharge temperature sensor failure	Sensor short circuit, open circuit, or not connected	Call for service or replace sensor
P082	Discharge temperature out of range	Compressor overloaded	Call for service or replace sensor
PP	Pressure sensor failure	Sensor short circuit, open circuit, or not connected	Call for service or replace sensor

Table 6b: Display Code Index			
Display	**Malfunction**	**Possible Cause**	**Information**
F02	Inverter offline	Inverter to control board communication failure	Check the communication cable for connection
F04	Compressor start failure	Compressor power overload	Call for service
F05 , F051	Fan fault	Motor feedback open circuit or short circuit	Call for service
F06 , F26	Inverter overcurrent fault	Inverter power high	Restart unit, Call for service
F10	Inverter under voltage fault	Unit supply voltage too low	Confirm ample power supply to unit, Call for service
F19 , F20 , F22	Inverter over temperature	Inverter temperature out of range or near limits	Restart unit, Call for service
F25	Inverter EEPROM warning	Inverter check-sum communication error	Restart unit, Call for service

Replacement Parts

Figure 14: Service Parts Exploded View



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Table 7: HP50952T and HP51202T Common Service Parts

Item No.	Part No.	Description	Item No.	Part No.	Description
1	HPX20000-330402	Axial flow fan motor	27	HPX81800029	Pipe
2	HPX20000-220320	Cover plate	28	SPX3200UNKIT	Union
3	HPX83700122	The trademark	29	HPX80705641	Fixed bracket
4	HPX80900744	The top	30	HPX81800025	Nut
5	HPX80900320	Rain guard	31	SPX3200UNADP	Butt Nipple w Gasket
6	HPX82300038	CP203	33	HPX20000140150	Needle valve
7	HPX80705635	The beam	34	HPX20000140512	Needle valve
8	HPX32004210137	The fan guard	35	HPX30403000000002	Tee
9	HPX20000360187	Pressure switch	36	HPX20001460	Tee
10	HPX20000360052	Pressure switch	37	HPX20001435	Tee
11	HPX20000360054	Pressure switch	38	HPX20011359	The 90
12	HPX20000140401	Electronic expansion valve	39	HPX83000069	Water Flow Switch
13	HPX20000140027	The filter	41	HPX20031379	Joint
14	HPX20041444	The filter	43	HPX32015210035	Top support plate component
15	HPX20003202	Thermistor	44	HPX20000270057	Axial flow fan
16	HPX20003223	Thermistor	45	HPX80700160	Fan nets (with plastic cover)
18	HPX83700118	The trademark	47	HPX20003909	Two socket
19	HPX80900745	The front panel	48	HPX20000360297	Relay
20	HPX20000220247	The junction box body	49	HPX20000360006	Single phase ac contactor
24	HPX32004210134	Press stents	51	HPX20000390046	Terminal
26	HPX81800023	Adapter	52	HPX72200562F	PC1004

Table 7: HP50952T and HP51202T Unique Service Parts

Item No.	Description	Part Number	HP50952T	HP51202T
17	4-Way Valve	HPX20011491	√	
		HPX81000137		√
21	Electrical Plate	HPX80705636	√	
		HPX80716224		√
22	Titanium Pipe Support	HPX32004210135	√	
		HPX80715847		√
23	Titanium Tube Heat Exchanger	HPX32016120011	√	
		HPX80601793		√
25	Compressor	HPX20000110373	√	
		HPX80100221		√
32	Liquid Storage Tank	HPX72200101B	√	
		HPX20000140579		√

Item No.	Description	Part Number	HP50952T	HP51202T
40	Chassis	HPX80900743	√	
		HPX80901442		√
42	Finned Heat Exchanger	HPX80600731	√	
		HPX80601540		√
46	Electrical Box	HPX80705637	√	
		HPX80716223		√
50	Three Terminal Blocks	HPX20000390223	√	
		HPX2000090237		√
53	Electrical Box Liner	HPX80707055	√	
		HPX80717057		√
54	Variable Frequency Driver Module	HPX82300018	√	
		HPX20000310165		√

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Notes

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