



Superstor Pro Pool Heater

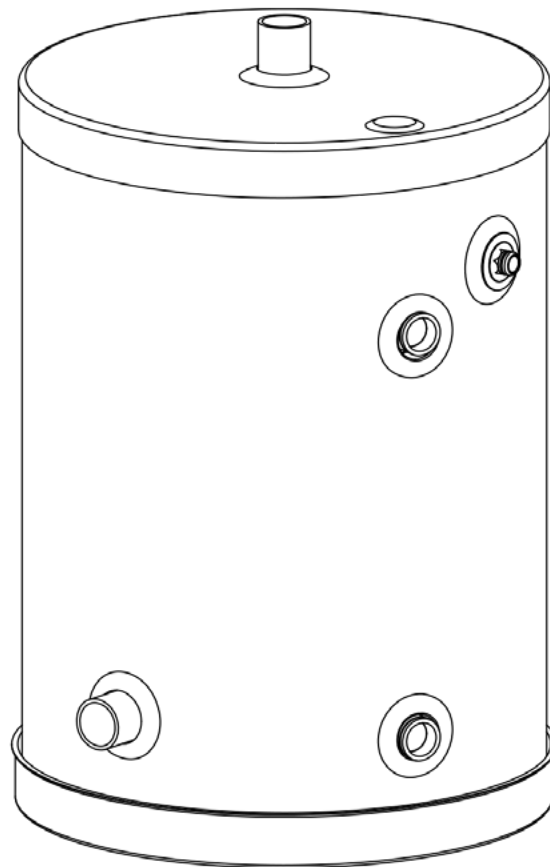
Installation

Start-Up

Maintenance

Parts

Warranty



SSP-20PH Model

CAUTION

The use of a salt chlorine generator is prohibited in a system serviced by this pool heater. Salinated water will cause corrosive damage to the pool heater tank and component parts and possibly lead to premature failure. Such failure is NOT covered by warranty. Please seek an alternative sanitation method.




WARNING

This manual must only be used by a qualified installer / service technician. Read all instructions in this manual before installing. Perform steps in the given order. Failure to do so could result in substantial property damage, severe personal injury, or death.

NOTICE

HTP reserves the right to make product changes or updates without notice and will not be held liable for typographical errors in literature.

NOTE TO CONSUMER: PLEASE KEEP ALL INSTRUCTIONS FOR FUTURE REFERENCE.

SPECIAL ATTENTION BOXES
The following defined terms are used throughout this manual to bring attention to the presence of hazards of various risk levels or to important product information.
 DANGER
DANGER indicates an imminently hazardous situation which, if not avoided, will result in serious personal injury or death.
 WARNING
WARNING indicates a potentially hazardous situation which, if not avoided, could result in personal injury or death.
 CAUTION
CAUTION indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor personal injury.
CAUTION
CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.
NOTICE
NOTICE is used to address practices not related to personal injury.

Foreword

This manual is intended to be used in conjunction with other literature provided with the pool heater. This includes all related control information. It is important that this manual, all other documents included in this system, and additional publications including the *Code for the Installation of Heat Producing Appliances* (latest version), be reviewed in their entirety before beginning any work.

Installation should be made in accordance with the regulations of the Authority Having Jurisdiction, local code authorities, and utility companies which pertain to this type of water heating equipment.

Authority Having Jurisdiction (AHJ) – The AHJ may be a federal, state, local government, or individual such as a fire chief, fire marshal, chief of a fire prevention bureau, labor department or health department, building official or electrical inspector, or others having statutory authority. In some circumstances, the property owner or his/her agent assumes the role, and at government installations, the commanding officer or departmental official may be the AHJ.

NOTE: HTP reserves the right to modify product technical specifications and components without prior notice.

For the Installer

This pool heater must be installed by qualified and licensed personnel. The installer should be guided by the instructions furnished with the pool heater, and by local codes and utility company requirements.

Installations Must Comply With:

Local, state, provincial, and national codes, laws, regulations, and ordinances.

The latest version of the National Electrical Code, NFPA No. 70. In Canada, refer to Canadian Electrical Code C22.1.

CAUTION
The use of a salt chlorine generator is prohibited in a system serviced by this pool heater. Salinated water will cause corrosive damage to the pool heater tank and component parts and possibly lead to premature failure. Such failure is NOT covered by warranty. Please seek an alternative sanitation method.

Table of Contents


Part 1 - General Safety Information	2
A. When Servicing the Pool Heating System	3
B. Heater Water	3
Part 2 - Preparing for Installation	3
A. Locating the Pool Heater	3
B. Water Chemistry Requirements	3
Part 3 - Piping	3
A. Plumbing	3
B. Piping to the Pool Filter	4
C. Piping to the Boiler	4
D. Application	4
Part 4 - Heater Control and Wiring	4
A. Control	4
B. Sensor Installation	4
Part 5 - Sizing the Pool Heater	5
Part 6 - Maintenance	5
Five (5) Year Limited Warranty	6
Customer Installation Record Form	8

Part 1 - General Safety Information

This pool heater is intended to be connected to a boiler. Basic operation requires a boiler with adequate BTU capacity and a properly sized circulator to transfer the BTUs to the pool heater.

An optional control is available to monitor pool water temperature when the pool filter pump is on. This system will not operate if the boiler or pool filter pump is not operating.

Pool control with sensor and transformer - Part # SP-30

 WARNING
Installer - Read all instructions in this manual before installing. Perform steps in the given order.
User - This manual is for use only by a qualified heating installer / service technician. Have this pool heater serviced / inspected annually by a qualified service technician.
FAILURE TO ADHERE TO THESE GUIDELINES CAN RESULT IN SUBSTANTIAL PROPERTY DAMAGE, SEVERE PERSONAL INJURY, OR DEATH.
NOTE: Obey all local codes. Obtain all applicable permits before installing the pool heater.
NOTE: Install all system components and piping in such a manner that does not reduce the performance of any fire rated assembly.
NOTE: If the pool heater is exposed to the following, do not operate. Immediately call a qualified service technician. <ul style="list-style-type: none"> 1. Fire 2. Damage 3. Water
Failure to follow this information could result in property damage, severe personal injury, or death.
This pool heater must be installed upright in the vertical position as described in this manual. DO NOT attempt to install this pool heater in any other orientation. Doing so will result in improper pool heater operation and property damage, and could result in serious personal injury or death.
CAUTION
Do not use this pool heater for anything other than its intended purpose (as described in this manual). Doing so could result in property damage and WILL VOID product warranty.

CAUTION

High heat sources (sources generating heat 100°F / 37°C or greater, such as stove pipes, space heaters, etc.) may damage plastic components of the pool heater or plastic vent pipe materials. Such damages ARE NOT covered by warranty. It is recommended to keep a minimum clearance of 8" from high heat sources. Observe heat source manufacturer instructions, as well as local, state, provincial, and national codes, laws, regulations and ordinances when installing this pool heater and related components near high heat sources.

NOTICE

UNCRATING THE POOL HEATER - Any claims for damage or shortage in shipment must be filed immediately against the transportation company by the consignee.

A. When Servicing the Pool Heating System

To avoid electric shock, disconnect electrical supply before performing maintenance.

To avoid severe burns, allow pool heater and associated equipment to cool before servicing.

B. Heater Water

Do not use petroleum-based cleaning or sealing compounds in a pool heating system. Gaskets and seals in the system may be damaged. This can result in substantial property damage.

Do not use "homemade cures" or "patent medicines". Damage to the pool heater, substantial property damage, and/or serious personal injury may result.

Part 2 - Preparing for Installation

Remove all sides of the shipping crate to allow the heater to be moved into its installation location.

CAUTION

COLD WEATHER HANDLING - If the pool heater has been stored in a very cold location (BELOW 0°F) before installation, handle with care until the components come to room temperature. Failure to do so could result in damage to the pool heater.

A. Locating the Pool Heater

If the pool heater is to be located outdoors it must be in a covered area, protected from the rain and sun.

For winterizing, the pool heater must be completely drained and have one gallon of non-toxic, food-grade propylene glycol, FDA rated as GRAS (Generally Recognized As Safe) pumped into the heat exchanger to prevent freezing.

Choose a location for the pool heater as centralized to the piping system as possible. Also, locate the pool heater and domestic water piping where it will not be exposed to freezing temperatures. All piping should be insulated. Additionally, place the pool heater so that the drain, controls, and inlets/outlets are easily accessible.

This pool heater must be installed vertical on a level surface.

WARNING

Ensure the location can support the entire filled weight of the pool heater. Failure to properly support the pool heater could result in property damage, severe personal injury, or death.

B. Water Chemistry Requirements

CAUTION

The use of a salt chlorine generator is prohibited in a system serviced by this pool heater. Salinated water will cause corrosive damage to the pool heater tank and component parts and possibly lead to premature failure. Such failure is NOT covered by warranty. Please seek an alternative sanitation method.

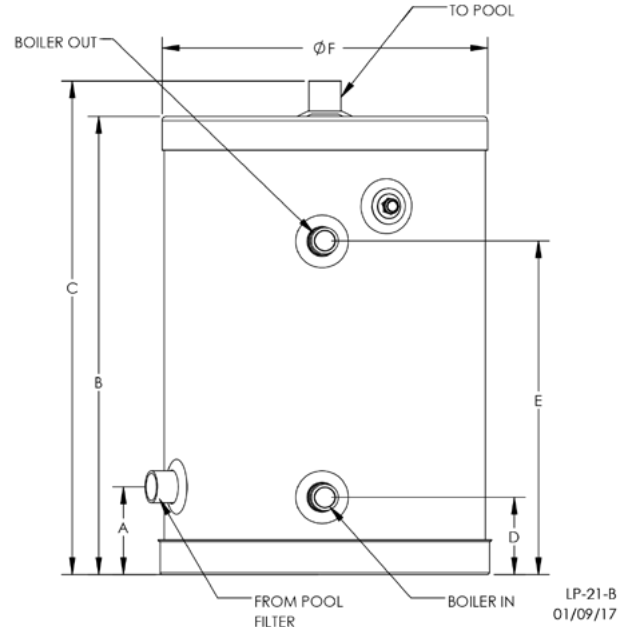


Figure 1 - Pool Heater Dimensions

CAUTION

Locate the pool heater where any leakage from the relief valve, related piping, tank, or connections will not result in damage to surrounding areas or lower floors of the building. The pool heater should be located near a floor drain or installed in a drain pan. Leakage damages ARE NOT covered by warranty.

DANGER

This pool heater must not be located near flammable liquids such as gasoline, butane, liquefied propane, adhesives, solvents, paint thinners, etc., as the controls of this pool heater could ignite these vapors and cause an explosion resulting in property damage, severe personal injury, or death.

NOTE: To save on heating costs and improve energy efficiency keep the distance between the boiler and pool heater to a minimum to reduce heat loss from excess piping and keep friction loss at a minimum. Ensure all piping between the boiler and pool heater is properly insulated to minimize heat loss.

The pool heater may be located some distance from the boiler provided the circulator meets flow requirements through the coil. The greater the distance from the pool heater to the boiler the longer the response will be to a call for hot water.

This pool heater must be installed vertical on a level surface.

Part 3 - Piping

A. Plumbing

It is mandatory that all plumbing be done in accordance with federal, local, and state plumbing codes and practices. Failure to properly install the pool heater WILL VOID the warranty. It is also necessary to use both

thread tape and pipe dope on all mechanical plumbing connections.

B. Piping to the Pool Filter

Pool water side piping (pool in and pool out) is recommended to be 1 1/2" PVC. A bypass will be necessary between the inlet and outlet of the pool heater. See Figure 2. The bypass will allow the boiler to keep up with the pool heater. If the bypass is not installed, the boiler may not be able to provide adequate temperature.

C. Piping to the Boiler

Piping between the boiler and pool heater should be 1 1/4" copper. It is very important to properly size the boiler circulator to match total system flow rates, pump curve (feet of head), and boiler output. For example, if the boiler is 100,000 BTU/H, the system requires a 8 GPM flow rate through the heat exchanger. See Table 1.

To achieve proper flow rates, calculate friction loss for the length of piping, plus the number of fittings, elbows, tees, pool heat exchanger, etc.

In systems with high mass Cast Iron Boilers, the operating temperature must be 160°F or higher to prevent condensation. Low boiler temperature will dramatically reduce the life of the boiler.

In systems with condensing boilers, the operating temperature may be lower than 160°F.

Model	BTU Output	Rec. Flow Rate	Heat Exchanger Pump Curve
SSP-20PH	96,000	8 GPM	1.7'
	122,000	10 GPM	2.3'
	149,000		
	155,000		

Table 1 - Pump Curve through the Heat Exchanger

NOTE: Pump Curve is depicted in Feet of Head

D. Application

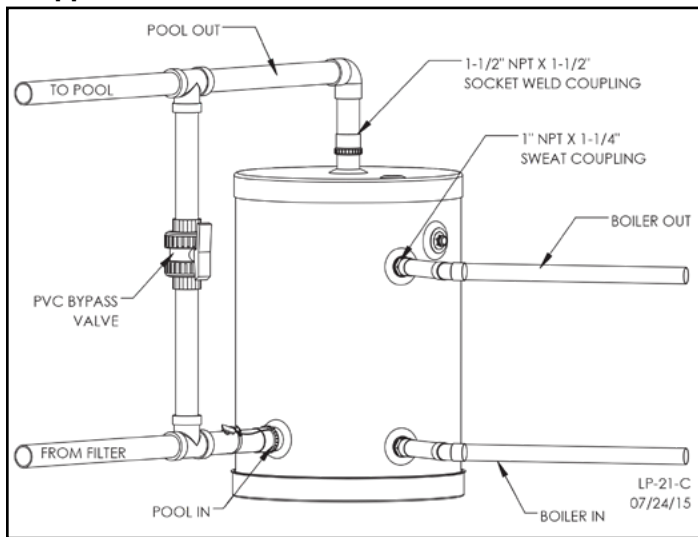


Figure 2 - Pool Heater Piping

NOTE: Use ball valve for bypass. Close ball valve until pressure on filter begins to rise, then watch boiler temperature. It is very important that the boiler temperature does not drop below 160°F on cast iron / low mass boilers. If temperature does drop below 160°F, open bypass valve slightly to raise boiler temperature.

CAUTION

Use two wrenches when tightening water piping at the heater. Use one wrench to prevent the heater return or supply line from turning. Failure to prevent piping connections from turning could cause damage to pool heater components.

Part 4 - Heater Control and Wiring

A. Control

If the pool heater control is to be located outdoors it must be located in a covered area, protected from the rain and sun. However, the control transformer must be kept indoors. A ground fault outlet is mandatory. The control probe needs to be installed onto the inlet line of the pool heater. This probe monitors incoming water temperature to the pool heater only when the pool filter is running. See Figure 3 for control wiring.

At the beginning of the season it may be necessary during start-up to leave the pool filter on for a few days to heat the pool. See Table 2 to determine actual heating time.

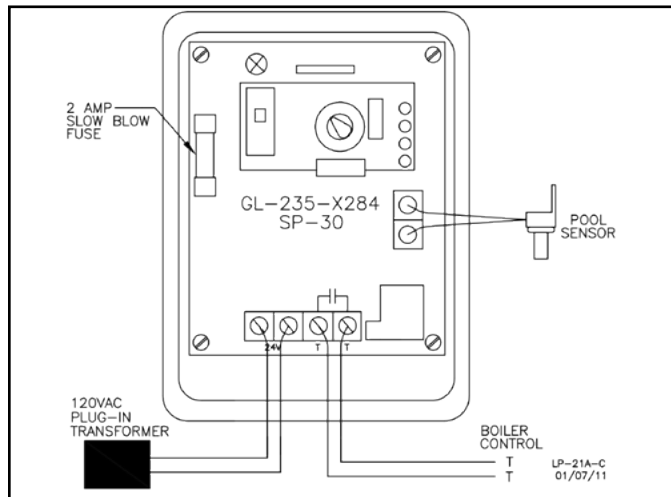


Figure 3 - Control Wiring

B. Sensor Installation

Proper sensor installation is critical for reliable and efficient operation. The sensor should be located close to the inlet of the pool heater (pipe running from the pool filter) as possible.

Mount sensor by following the instructions in Figure 4. If the wiring needs to be longer, use commonly available thermostat "TT" wire on the transformer line to the boiler. If a standard control is used, install a tee in the inlet line and use a standard aquastat well to mount the control bulb.

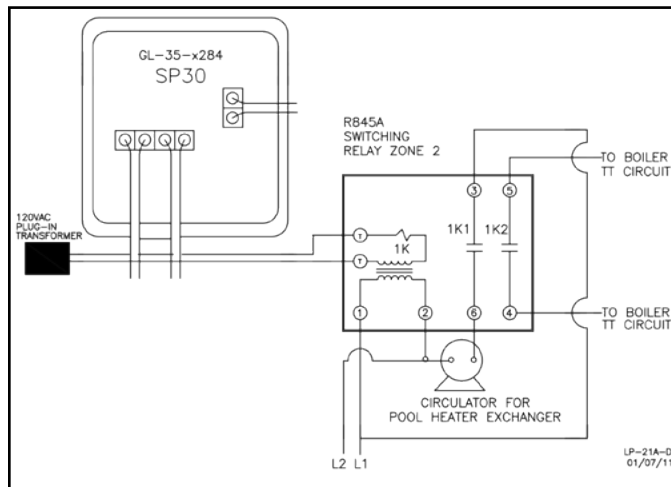


Figure 4 - Wiring Pool Heater Control to Boiler Control

Part 5 - Sizing the Pool Heater

Heating Time in Hours	Temperature Rise in Degrees Fahrenheit					
	20°	25°	30°	40°	50°	60°
6	40	50	60	80	100	120
12	20	25	30	40	50	60
24	10	12.5	15	20	25	30
48	5	6.3	*7.5	10	12.5	15
72	3.4	4.25	5.1	6.8	8.5	10.2
96	2.5	3	3.75	5	6.25	7.5
120	1.7	2	2.5	3.3	4.25	5
144	1.4	1.7	2.2	2.8	3.5	4.25
168	1.3	1.6	2.1	2.7	3.4	4.1
192	1.2	1.5	2.0	2.6	3.3	4
216	1.1	1.4	1.9	2.5	3.2	3.9
240	1	1.25	1.8	2.4	3.1	3.8

Table 2 - Pool Heater Sizing - *Temperature Rise Demonstrated in Example

NOTE: THE SSP-20PH CAN TRANSFER A MAXIMUM OF 200,000 BTU/H FROM THE BOILER. PLEASE MAKE SURE TO CORRECTLY SIZE THE CIRCULATOR OFF THE BOILER. SEE TABLE 1.

NOTE: The following is presented as a guide to determine the heating time in hours for pool heaters used to heat swimming pools and baptistries.

EXAMPLE FORMULA TO ESTABLISH POOL RECOVERY:

Boiler 84,000 BTU/H divided by pool capacity (gallons) = Factor

TO FIND POOL CAPACITY IN GALLONS:

1. Find volume of pool (or baptistry tank) in cubic feet. Length x width x average depth = cubic feet of water.
2. Convert cubic feet of water to gallons = multiply by 7.5.
3. Use SSP-20PH, i.e. 84,000 BTU/H.
4. To determine how long it is going to take to heat pool, divide 84,000 into pool capacity in gallons. The answer should be matched with the figures in Table 2 under the appropriate temperature rise column.

Example:

7500 Gallon Pool needs to be heated from 40°F to 70°F (30°F rise) = 84,000 BTU divided by 7500 gallons = 11.2* (*See Table 2) under 30°F rise columns. In less than 48 hours, this temperature rise can be accomplished.

5. The boiler must supply enough BTUs for the gross output of the pool heater. Once the pool is at temperature (70°F in this example), the pool heater will require very few BTU/H to maintain the pool at temperature.

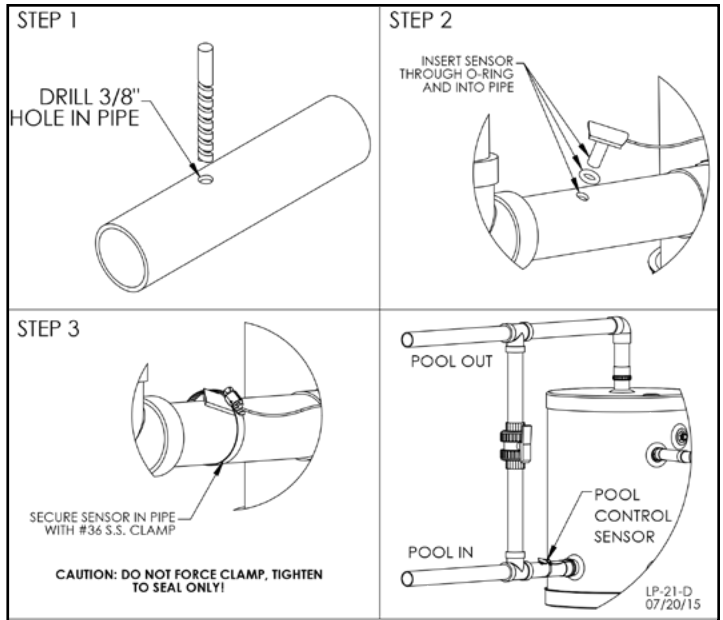


Figure 5 - Installing the Sensor

Part 6 - Maintenance

When heater is not used during the winter months, turn off power to heater and drain water from the tank and piping to prevent freezing.

For winterizing, disconnect tank and pump one gallon of non-toxic food-grade propylene glycol, FDA rated as GRAS (Generally Recognized As Safe) into the heat exchanger to prevent freezing.

**SuperStor Pro Pool Heater
Five (5) Year
Limited Warranty**

HTP warrants each pool heater to be free from defects in materials and workmanship according to the following terms, conditions, and time periods. UNLESS OTHERWISE NOTED THESE WARRANTIES COMMENCE ON THE DATE OF INSTALLATION. This limited warranty is only available to the **original consumer purchaser** (hereinafter "Owner") of the pool heater, and is non-transferable.

COVERAGE

Warranted Unit	Components	Warranty Period
Pool Heater Assembly	Stainless Steel Storage Tank, Insulation, and Outer Jacket	Five (5) Years

- A. Should a defect or malfunction result in a leakage of water from the pool heater within the above-stated warranty periods due to defective material or workmanship, malfunction, or failure to comply with the above warranty, with such defect or malfunction having been verified by an authorized HTP representative, HTP will replace the defective or malfunctioning pool heater with a replacement of the nearest comparable model available at the time of replacement. The replacement pool heater will be warranted for the unexpired portion of the applicable warranty period of the original pool heater.
- B. In the event of a leakage of water of a replacement pool heater due to defective material or workmanship, malfunction, or failure to comply with the above warranty, HTP reserves the right to refund to the Owner the published wholesale price available at the date of manufacture of the original pool heater.
- C. If government regulations, industry certification, or similar standards require the replacement pool heater or component(s) to have features not found in the defective pool heater or component(s), the Owner will be charged the difference in price represented by those required features. If the Owner pays the price difference for those required features or other features available on a new replacement pool heater or component(s), the Owner will also receive a complete new limited warranty for that replacement pool heater or component(s).
- D. If at the time of a request for service the Owner cannot provide a copy of the original sales receipt or the warranty registration, the warranty period for the pool heater shall then be deemed to have commenced thirty (30) days from the date of manufacture of the pool heater and NOT the date of installation of the pool heater.
- E. This warranty extends only to pool heaters utilized in heating applications that have been properly installed by qualified professionals based upon the manufacturer's installation instructions.
- F. It is expressly agreed between HTP and the Owner that repair, replacement, or refund are the exclusive remedies of the Owner.

OWNER'S RESPONSIBILITIES

The Owner or Qualified Installer / Service Technician must:

- 1. Install, operate, and maintain the pool heater in accordance with the installation manual. Preventive maintenance can help to avoid any unnecessary breakdown of the pool heater and keep it operating at optimum efficiency.
- 2. Have a relief valve bearing the listing marks of the American Society of Mechanical Engineers (ASME) installed with the pool heating system in accordance with federal, state, and local codes.
- 3. Maintain all related system components in good operating condition.
- 4. Use the pool heater in an open system, or in a closed system with a properly sized and installed thermal expansion tank.
- 5. Use the pool heater at water pressures not exceeding the working

pressure shown on the rating label.

- 6. Keep the pool heater free of damaging scale deposits.
- 7. Make provisions so if the pool heater or any component or connection thereto should leak, the resulting flow of water will not cause damage to the area in which it is installed.
- 8. Not use a salt chlorine generator with the pool heater. Salinated water will damage the tank.

WARRANTY EXCLUSIONS

This limited warranty will not cover:

- 1. Any pool heater purchased from an unauthorized dealer.
- 2. Any pool heater not installed by a qualified heating installer/service technician, or installations that do not conform to ANSI, CSA, and/or UL standards, as well as any applicable national or local building codes.
- 3. Service trips to teach you how to install, use, maintain, or to bring the pool heater installation into compliance with local building codes and regulations.
- 4. Failure to locate the pool heater in an area where leakage of the tank or water line connections and the relief valve will not result in damage to the area adjacent to the pool heater or lower floors of the structure.
- 5. Any failed components of the heat system not manufactured by HTP as part of the pool heater.
- 6. Pool heaters repaired or altered without the prior written approval of HTP.
- 7. Damages, malfunctions, or failures resulting from improper installation, or failure to install the pool heater in accordance with applicable building codes/ordinances or good plumbing and electrical trade practices; or failure to operate and maintain the pool heater in accordance with the manufacturer's provided instructions.
- 8. Damages, malfunctions, or failures resulting from failure to operate the pool heater at pressures not exceeding the working pressure shown on the rating label.
- 9. Failure to operate the pool heater in an open system, or in a closed system with a properly sized and installed thermal expansion tank.
- 10. Failure or performance problems caused by improper sizing of the pool heater, expansion device, or piping.
- 11. Damages or failures caused by the use of a salt chlorine generator with the pool heater.
- 12. Damages, malfunctions, or failures caused by operating the pool heater with modified, altered, or unapproved parts.
- 13. Damages, malfunctions, or failures caused by abuse, accident, fire, flood, freeze, lightning, acts of God and the like.
- 14. Failures (leaks) caused by operating the pool heater in a corrosive or contaminated atmosphere.
- 15. Failure of the pool heater due to the accumulation of solid materials and lime deposits.
- 16. Any damage or failure resulting from conditions resulting from exposure to foreign particles in the tank and exposure to chlorine content higher than 100 parts per million, or not maintaining a proper chemical balance in your pool and or spa (pH level between 7.2 and 7.8, total alkalinity [TA] between 80 and 120 ppm. Total dissolved solids [TDS] less than 2000.)
- 17. Any damages, malfunctions, or failures resulting from the use of dielectric unions.
- 18. Production of noise, odors, discoloration, or rusty water.
- 19. Pool heaters replaced for cosmetic reasons.
- 20. Components of the pool heater that are not defective, but must be replaced during the warranty period as a result of reasonable wear and tear.
- 21. Damages, malfunctions, or failures resulting from the use of any attachment(s) not supplied by HTP.
- 22. Pool heaters installed outside the fifty states (and the District of Columbia) of the United States of America and Canada.
- 23. Pool heaters moved from the original installation location.
- 24. Pool heaters that have had their rating labels removed.

PROCEDURES FOR WARRANTY SERVICE REQUESTS

Any claim for warranty assistance must be made promptly. Determine if the pool heater is "in-warranty" (that is, within the applicable warranty period) by reviewing a copy of the original sales receipt or warranty registration. The Owner must present a copy of the original sales receipt or warranty registration for a warranty service request.

If the pool heater is "in-warranty", contact the retailer from whom the pool heater was purchased (or the installer) for assistance. Be prepared to provide the retailer or installer with a copy of the original receipt, complete model and serial numbers, and the date of installation of the pool heater, in addition to explanation of the pool heater problem.

Warranty coverage is subject to validation of "in-warranty" coverage by HTP claims department personnel. All alleged defective or malfunctioning components must be returned to HTP via the local distribution channels where original purchase was made. **NOTE: Any components or heaters returned to HTP for warranty analysis will become the property of HTP and will not be returned, even if credit is denied.** If all warranty conditions are satisfied, HTP will provide replacement components to the retailer.

For questions about the coverage of this warranty, please contact HTP at the following address or phone number: HTP, 272 Duchaine Blvd, New Bedford, MA, 02745, Attention: Warranty Service Department, 1(800) 323-9651.

SERVICE, LABOR AND SHIPPING COSTS

This limited warranty does not extend to any shipping charges, delivery expenses, or administrative fees incurred by the Owner in repairing or replacing the pool heater or component(s). This warranty does not extend to labor costs beyond the coverage specified in this warranty document. All such expenses are the Owner's responsibility.

LIMITATIONS OF YOUR HTP WARRANTY AND REMEDIES

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND ARE GIVEN AND ACCEPTED TO THE FURTHEST EXTENT UNDER APPLICABLE LAW IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY OBLIGATION, LIABILITY, RIGHT, CLAIM OR REMEDY IN CONTRACT OR TORT, WHETHER OR NOT ARISING FROM HTP'S NEGLIGENCE, ACTUAL OR IMPUTED. THE REMEDIES OF THE OWNER SHALL BE LIMITED TO THOSE PROVIDED HEREIN TO THE EXCLUSION OF ANY OTHER REMEDIES INCLUDING WITHOUT LIMITATION, INCIDENTAL OR CONSEQUENTIAL DAMAGES, SAID INCIDENTAL AND CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, PROPERTY DAMAGE, LOST PROFIT OR DAMAGES ALLEGED TO HAVE BEEN CAUSED BY ANY FAILURE OF HTP TO MEET ANY OBLIGATION UNDER THIS AGREEMENT INCLUDING THE OBLIGATION TO REPAIR AND REPLACE SET FORTH ABOVE. NO AGREEMENT VARYING OR EXTENDING THE FOREGOING WARRANTIES, REMEDIES OR THIS LIMITATION WILL BE BINDING UPON HTP. UNLESS IN WRITING AND SIGNED BY A DULY AUTHORIZED OFFICER OF HTP. THE WARRANTIES STATED HEREIN ARE NOT TRANSFERABLE AND SHALL BE FOR THE BENEFIT OF THE OWNER ONLY.

NO OTHER WARRANTIES

This warranty gives the Owner specific legal rights. The Owner may also have other rights that vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages so this limitation or exclusion may not apply to the Owner.

These are the only written warranties applicable to the pool heater manufactured and sold by HTP. HTP neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with said pool heaters.

HTP reserves the right to change specifications or discontinue models without notice.

Customer Installation Record Form	
The following form should be completed by the qualified installer / service technician for you to keep as a record of the installation in case of a warranty claim. After reading the important notes at the bottom of the page, please also sign this document.	
Customer's Name	
Date of Installation	
Installation Address	
Product Name / Serial Number(s)	
Comments	
Installer's Code / Name	
Installers Phone Number	
Signed by Installer	
Signed by Customer	

IMPORTANT

Customer: Please only sign after the qualified installer / service technician has fully reviewed the installation, safety, proper operation, and maintenance of the system. If the system has any problems please call the qualified installer / service technician. If you are unable to make contact, please call your sales representative.

Distributor / Dealer: Please insert contact details.