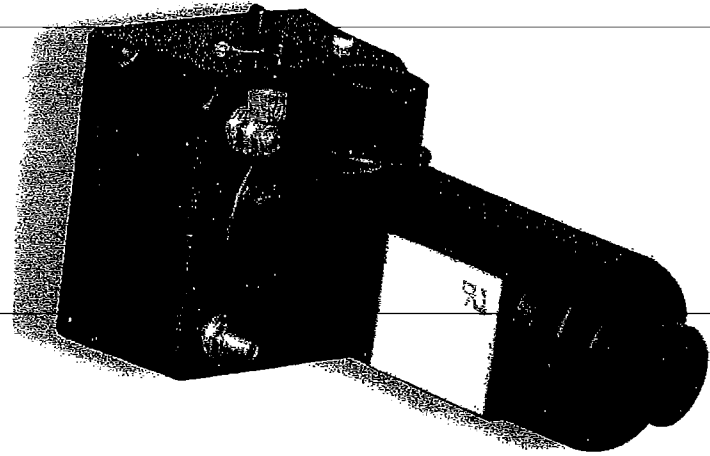


HEATER INSTALLATION AND OPERATING INSTRUCTIONS



MODEL HT-1



ALLIED INNOVATIONS, LLC

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Phone (702) 361-0600 Fax (702) 361-0613



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IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

READ AND FOLLOW ALL INSTRUCTIONS

INSTALLATION CONSIDERATIONS

The water in a pool or tub should never exceed 104°F (40°C). A water temperature in excess of 104°F (40°C) is considered unsafe for all persons. Lower water temperatures are recommended for extended use (exceeding 10 - 15 minutes) and for young children.

Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperature to 100°F (38°C).

Prolonged immersion in hot water may cause hyperthermia. The causes, symptoms and effects of hyperthermia may be described as follows: Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6°F (37°C). The symptoms of hyperthermia include dizziness, fainting, drowsiness, lethargy and an increase in the internal temperature of the body. The effects of hyperthermia include: (1) unawareness of impending hazard, (2) failure to perceive heat, (3) failure to recognize the need to exit pool or tub, (4) Physical inability to exit pool or tub, (5) Fetal damage in pregnant women and (6) Unconsciousness resulting in a danger of drowning.

WARNING - The use of alcohol, drugs, or medication before or during use of the spa can greatly increase the risk of fatal hyperthermia in pools and tubs.

Before entering a pool or tub the user should measure the water temperature at several occupant locations, using an accurate thermometer since the tolerance of water temperature-regulating devices may vary as much as +5°F (3°C).

Alcohol, drugs, or medication should not be used before or during pool or tub use since their use may lead to unconsciousness with the possibility of drowning.

Obese persons and persons with a medical history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using the pool or tub.

Persons using medication should consult a physician before using the spa since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.

Occasional users of the spa may not be aware of the potential risk associated with spa usage, they should be made aware of these Important Safety Instructions.

SAVE THESE INSTRUCTIONS

WARRANTY

Allied Innovations, LLC warrants its products to be free from defects in workmanship and material under normal use and conditions for a period of one year from the date of original manufacture. Should repair be required by reason of any defect or malfunction during the warranty period, Allied Innovations, LLC will repair, or at their discretion, replace this product without charge, subject to verification of the defect or malfunction, upon delivery of the product to the attention of:

Technical Service Department
ALLIED INNOVATIONS, LLC
7215 Bermuda Rd
Las Vegas NV 89119-4304

If repair is required after the expiration date of the warranty period, Allied Innovations, LLC will repair this product and bill for any necessary replacement parts, shipping and handling.

This warranty is void if:

- 1) the unit is not installed per the instructions;
- 2) is hooked up to improper voltage;
- 3) is subjected to chemical corrosion;
- 4) is mechanically or electrically altered in any way;
- 5) is subjected to water or immersion;
- 6) contacts show evidence of short circuiting, or the unit has been visibly damaged by accident or misuse or which has been damaged by wind, rain, lightning, freezing or other cause; or upon which the serial number or manufacture date has been altered, effaced or removed. There is a charge for replacement parts if the defective unit is returned for any of the reasons listed above.

Allied Innovations, LLC shall not be liable for any inconvenience, loss of time, or incidental expenses incurred. Allied Innovations, LLC shall not be liable for any labor charges associated with the removal or re-installation of any so-claimed defective products.

This is the only warranty expressed or implied by Allied Innovations, LLC. Warranties implied under state law, including any implied warranty of merchantability or fitness for a particular purpose, shall be limited to one year from the date of manufacture.

Allied Innovations, LLC disclaims any liability for any incidental or consequential damages.

Ship as follows:

1. Pack the unit in a well padded, heavy corrugated box.
2. Include name, return address, and daytime phone number along with a short description of problem with control.
3. Mail the unit, prepaid, to the above address.

Some states do not allow the exclusion or limitation of incidental or consequential damages, therefore the above limitation may not apply to you.

Considerations must also be given to the following items:

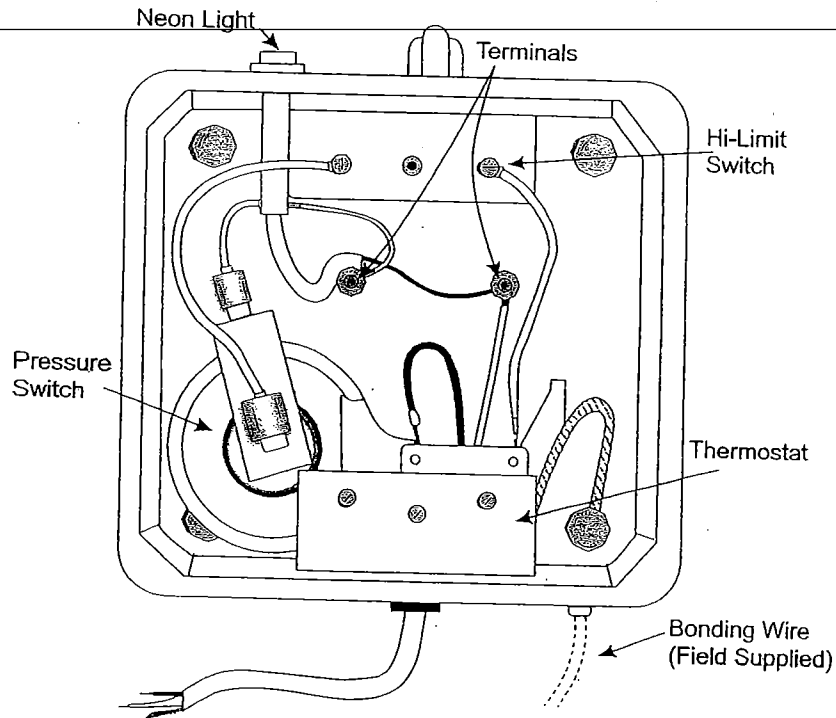
The Heater Assembly must be installed in such a position as to allow easy access to the Thermostat knob and Hi-Limit re-set button.

Plumbing unions should be used at both inlet and outlet ports to allow removal of the Heater Assembly for service.

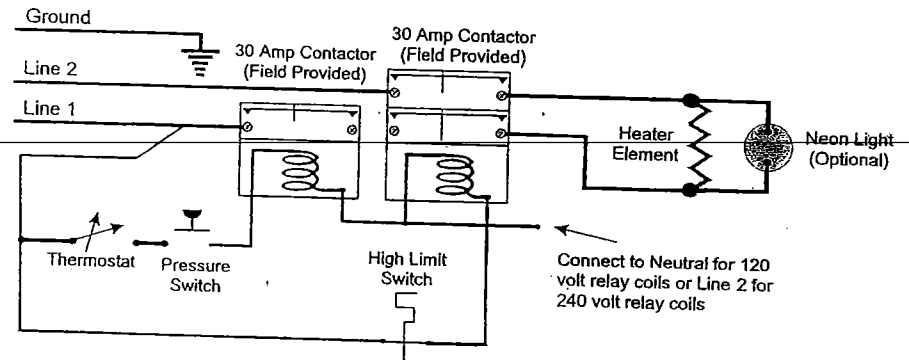
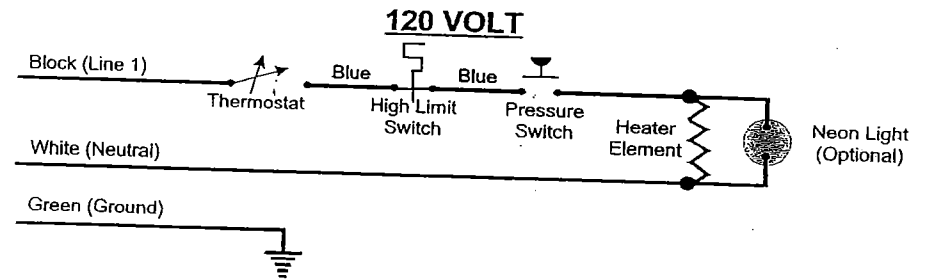
The Heater Assembly must be supported so that the full weight of the assembly is not hanging on the plumbing lines alone.

The Heater Assembly must be wired into the pump circuitry so that the heater is never energized unless the pump is ON.

The Heater Assembly may need to be connected to a Ground Fault Circuit Interrupter (GFCI) if dictated by local electrical code.



WIRING INSTRUCTIONS



240 VOLT

The HT-1 Heater Assembly is designed to operate either on standard household electrical current - 120 volts, 60 Hz, 12.5 Amperes and will produce approximately 1500 Watts of heat; or 240 volts, 60 Hz, 25.0 Amperes and will produce approximately 6000 Watts of heat.

A bonding lug is provided on the outside of the Heater Assembly housing for connection of a #8, solid copper bonding wire, or as may otherwise be dictated by local electrical code.

The electrical installation must be accomplished by a licensed electrician, in accordance with the National Electrical Code, or other local codes in effect at the time of installation.

OPERATING INSTRUCTIONS

The heater will maintain the temperature of the water in the pool or tub, or increase the temperature a few degrees per hour. The heater includes the following components, which may need adjustment or resetting.

THERMOSTAT: The adjustable thermostat allows the heater to be set or reset to the desired temperature. Adjust to the proper temperature by turning the knob 3/4-turn clockwise from the "OFF" position, wait for the temperature to stabilize and then increase rotation in small intervals to the desired setting. The regulating Thermostat has a maximum set-point of 104°F, $\pm 5^\circ\text{F}$. The Hi-Limit control has a trip point of 118°F $\pm 3^\circ\text{F}$. Refer to *Important Safety Instructions on page 1*.

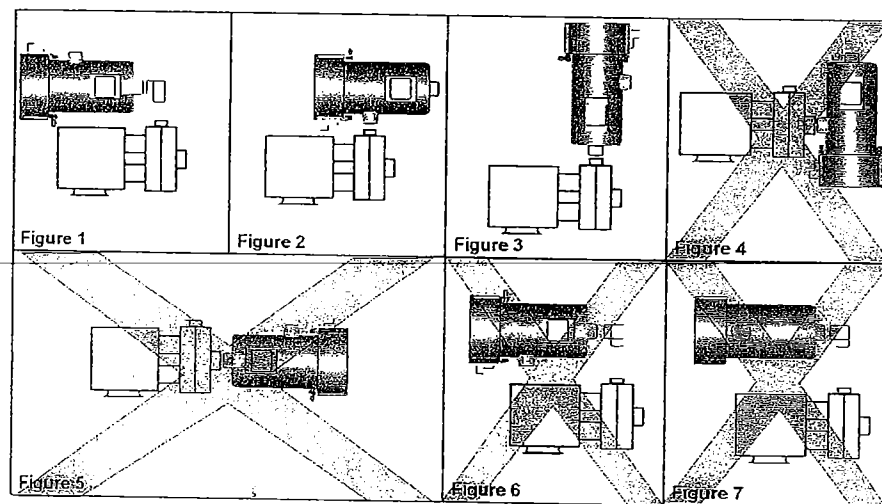
HI-LIMIT: A safety switch that will shut the heater OFF if the temperature within the heater assembly reaches a factory set, non-adjustable limit of 118°F. If the high-limit trips repeatedly, contact your dealer to correct the problem.

PRESSURE SWITCH: The heater is equipped with a built-in pressure switch. The pressure switch is factory adjusted to an operating pressure of approximately 1.5 psi.

INDICATOR LAMP (Optional): The heater may be equipped with an indicator lamp. When this lamp is illuminated, the heater is operating.

CAUTION: Do NOT operate the heater when the pump is off. Turn all power to the heater OFF when draining the pool or tub. When filling the pool or tub, operate the pump for several minutes to assure that all air has been removed from the system before operating the heater.

INSTALLATION INSTRUCTIONS



The HT-1 Heater Assembly is designed for installation on the discharge (output) side of the pump **ONLY**; never on the suction (input) side.

The mounting configuration shown in Figure 1 above is preferred. The configurations shown in Figures 2 and 3 are also acceptable, however, consideration must be given to the possibility of air becoming trapped within the heater housing. **SPECIAL NOTE:** If local plumbing codes require a 100% drain installation, the Figure 1 configuration may not be acceptable. The configurations in Figures 2 & 3 are 100% draining.

The Heater Assembly may also be mounted remote from the pump, providing that the final configuration provides a water flow through the heater as shown in Figure 1.

Plumbing connections must be made to the inlet and outlet ports of the heater housing with a good commercial grade of solvent cement. Either PVC-to-PVC or PVC-to-ABS formulations are acceptable.