

WARRANTY

(For the Original Owner Only)

K-Star Pool/Spa Heater is guaranteed for a period of one year from the date of its purchase to the original owner against any manufacturing defects. Exception: factory installed heating elements carry a 90 day limited manufacturer warranty from date of heater installation only.

Any warranty claim must be pre-authorized by Consolidated Pool & Spa Industries Inc. and claim must include: Model number, Serial number and Date of purchase. Any defective unit shall be returned freight prepaid only. Consolidated Pool & Spa Industries Inc. will not be responsible for disconnection-reconnection charges.

The above warranty shall be considered void if:

- i. The installation instructions are not followed.
- ii. Unit is powered without any water circulation.
- iii. The power is disconnected and unit is not thoroughly drained at time of winterizing.
- iv. The Unit has been mishandled.
- v. If corrosion of the unit's internal parts occurs by unit being exposed to a salt water system, a system that uses salt to create a sanitizer or improper water chemistry (applies to all non-titanium heater models only). Warranty Registration must be done within ten days of purchase of the unit, by mailing warranty card below to:



361 Rowntree Dairy Road, Unit 4
Woodbridge, ON L4L 8H1 Canada

Tel: 905.264.6496 Fax: 905.264.6508
Email: info@consolidatedpool.com

(For Warranty Information, Please Mail to Manufacturer.)

Customer's Name : _____
Address : _____
Phone : _____

Unit

Serial # : _____
Model # : _____
Date Purchased : _____
Installer's Name : _____

INSTRUCTION MANUAL "K-STAR" DIGITAL Electric Pool/Spa Heaters

MODELS:

K-5-D / K-10-D / K-15-D
(Regular elements/digital Thermostat)

K-5-TT-D / K-10-TT-D / K-15-TT-D
(Titanium elements/digital Thermostat)



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READ AND FOLLOW ALL INSTRUCTIONS

1) Installation

- 1a) K-Star Heater may be installed indoors or outdoors with clearance of at least 6' away from water and minimum of 6" clearance from any object.
Ensure that the installation allows access for electrical and plumbing connections and that the Thermostat is conveniently located (facing front).

The installation of current leakage collectors should be done (as shown in **Figure 01**) before permanently positioning Heater.

Heater must be installed after the filter and before the Air Injector or Automatic Chlorinator.

A leakage current collector must be installed at the water inlet, and at the water outlet of the unit.

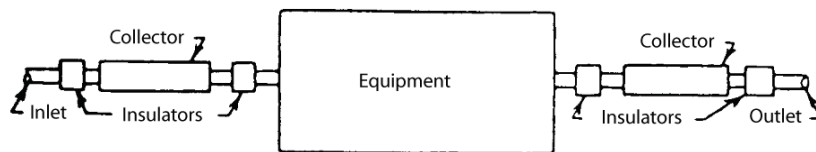
Leakage current collectors shall be grounded properly to the unit. The installation of the collectors shall be such, that all water entering and leaving the unit flows through the two current collectors (as shown in **Figure 01**). The length of the leakage current collectors shall be made of a corrosion resistant metal and shall be provided with a copper lug brazed to the collector body.

Hand tighten only. Do not use high force with a pipe wrench.

Winterization:

For maximum security, first turn the thermostat to the off position and switch off the electric power at the circuit breaker. Then completely empty the tank by removing the drain plug located at the bottom of the heater body. Drain plug must be left out all winter. Cover the control panel of the heater with ordinary plastic cover to prevent any penetration of moisture or water into electrical components. At all times the unit must be properly ventilated to avoid condensation.

FIGURE 01. LEAKAGE CURRENT COLLECTOR DIAGRAM



The “lock” condition is part of the security/safety feature of this heater and it is to ensure, that user will physically check the thermostat unit and verify the unit is in optimal operating condition before turning the Heater back on.

4) HIGH LIMIT RESET

- 1) A high limit manual reset thermostat is provided as a secondary back up high temperature limit protection. The reset thermostat may trip if the pump is switched off meaning no water flow to heater.
 - a. to reset, switch the heater breaker off. Allow the heater to cool and then depress the high limit (as shown in **Figure 04**).

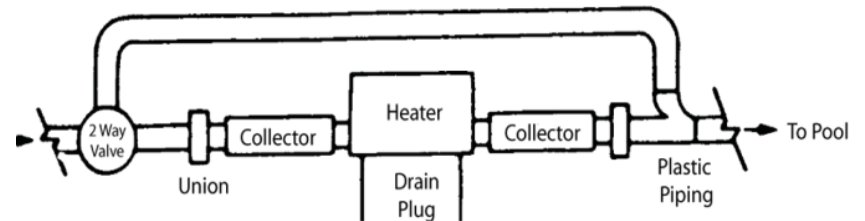
FIGURE 04. HIGH LIMIT RESET THERMOSTAT (LOCATED UNDERNEATH).



- 1b) The Heater shall be installed as per Figure 02. The water inlet and outlets are connected to straight pipe connectors of the heater.

SHOWING BY PASS

FIGURE 02.



Caution:

- i. Do not store chlorine near or in the same room as heater.
- ii. Valves must not be installed in the piping on the outlet of heater to the pool/spa.
- iii. Use Teflon Tape for connecting leakage current collectors into tank body and use Teflon tape as sealer in the threads for drain plug.

The water flow in GPM should not exceed the following limits:

Table 01

All Models	Max GPM/Flow Rate
K-5 (all Models)	8
K-10 (all Models)	10
K-15 (all Models)	10

Important:

Systems with higher GPM ratings will require a bypass around Heater or 2 way valve to reduce water flow if required. This would be necessary if a high velocity pump is employed in the system.

Recommended:

Add water softener for longer heater life.

2) Electrical

- 2a) Work must be performed by a qualified Electrician and comply with the Canadian Electrical Code or the American National Standard Electrical Code.
- 2b) Required wire sizes for heater models (see Table 02)

Table 02. The wire sizes to be used are as follows:

All Models	PH	Volts	kW	Amps	Fuse Panel (240V G.F.I. Size)	Wire Size (90' Copper Only)	Current Collector Ground Wire (Copper Only)
K5-TT /K-5	1	240	5	21 A	30 A	10	10
K-10-TT /K-10	1	240	10	42 A	60 A	6	6
K15-TT /K-15	1	240	15	63 A	100 A	Use Supply conductor suitable for 75° C	Use Supply conductor suitable for 75°C

Notes:

Heater will show “OFF” on display, if temperature is below the lowest set point (70 degree. F / 20 degree. C). Therefore the heater is in the off-position. Start to follow point 3 for Pool or Spa application to turn heater on and to set it to desired temperature.

4) **ERROR Codes – Digital Thermostat**

“PSI” (Pressure Switch)

LOW or NO water pressure is detected; “PSI” needs to be adjusted by turning small wheel on Pressure Switch up or down. Up = increases water pressure; Down = decreases water pressure.

“LO”

Low water temperature is detected; meaning that the temperature is below the range of the thermostat. Heater is still running. Follow point 3 instructions to correct this error code.

“HI” (HAUT) + “LOC”

High water temperature is detected; meaning that the water temperature goes above the range of the thermostat (see point 3 for highest temperature setting). The Heater will turn OFF for safety. The display will show “HI” until the temperature decreases to the original programmed temperature setting (customer’s setting).

As a built-in safety feature, the heater will automatically go into “lock” mode, once the programmed temperature has been reached. This is to avoid any manual temperature adjustments at that time.

The display will now show “LOC” and the heater is turned **OFF**.

The thermostat will remain in this condition (OFF) even if power is turned off and on again.

To **clear the lock (LOC)** condition, press the **UP** or **DOWN** button (to decrease or increase desired temperature) .

2) **Selecting RANGE (choose POOL or SPA application)**

2a) After point 1 has been completed, the display will show “**RA**” (for **RA**nge) for one second. Press **UP** or **DOWN** button to toggle between “**P**” (for Pool) or “**S**” (for Spa) mode. Choose the scale setting according to your application “**P**” (for Pool) or “**S**” (for Spa).

2b) Press **POOL/SPA** button to accept your application.

Note: Indicator light will be lit when heater is in SPA mode only!

After completing points 1 + 2 the display will read “- - -” for one second and revert back to “OFF”.

3) **Changing temperature set point (desired temperature setting)**

Pool application:

Minimum Setting (lowest set point) 70 degree. F or 20 degree. C
Highest Setting (highest set point) 88 degree. F or 31 degree. C

SPA application:

Minimum Setting (lowest set point) 70 degr. F or 20 degr. C
Highest Setting (highest set point) 104 degr. F or 40 degr. C

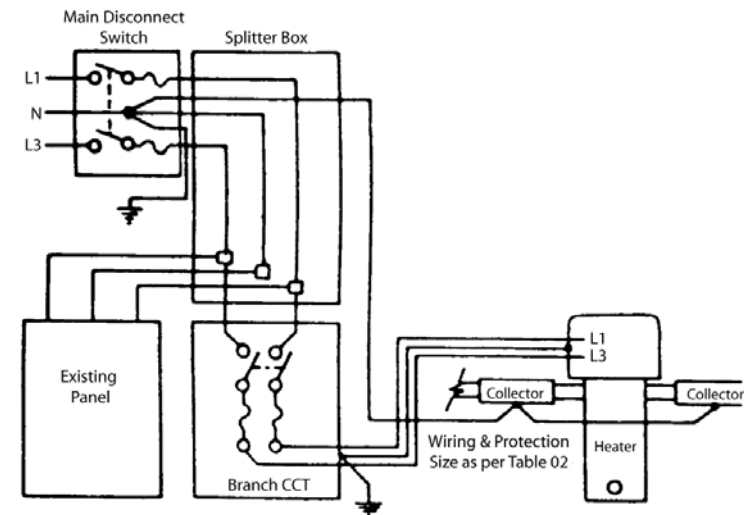
3a) Press **UP** or **DOWN** button to increase or decrease the temperature setting by one degree or Press and hold **UP** or **DOWN** button to rapidly increase or decrease the temperature setting.

3b) Once desired Pool or Spa temperature has been set, the heater will start up.

3c) After 5 seconds without pressing any buttons, the unit will automatically display the actual water temperature.

2c) **For installation see wiring Schematic figure 03.**

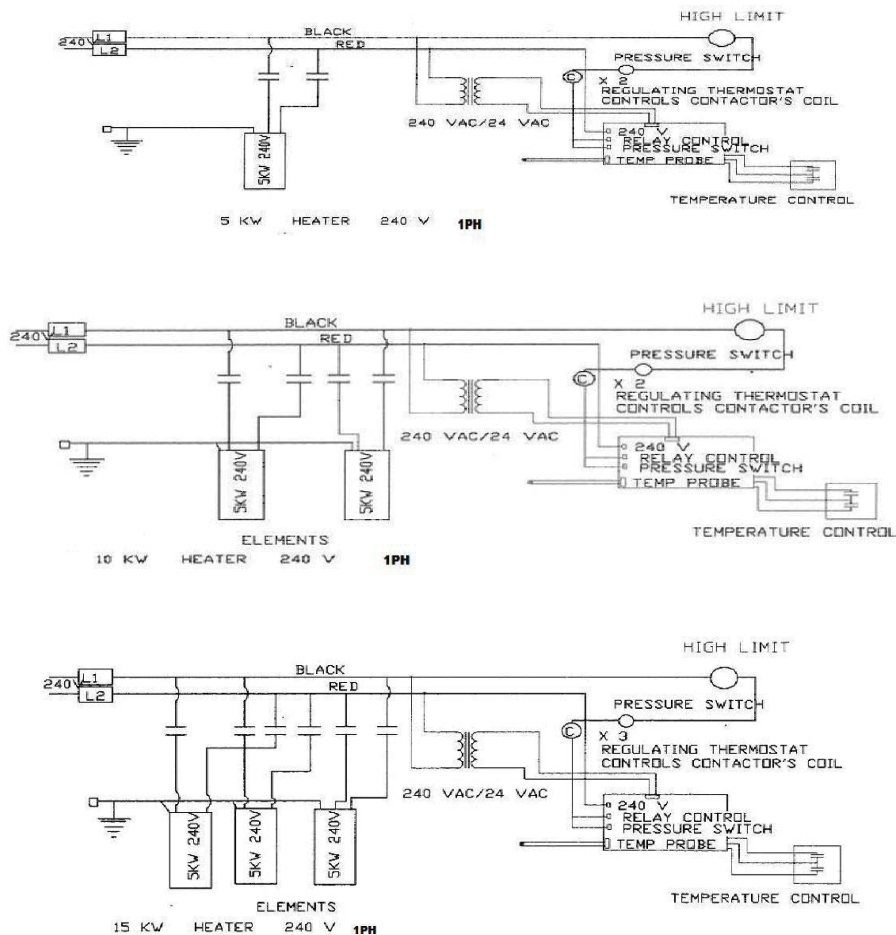
FIGURE 03. WIRING SCHEMATIC



In Accordance with Electrical Code (see 2a)

- A green coloured terminal (or a wire connector marked “C”, “GP”. “Ground” or “Grounding”) is provided within the control box. To reduce the risk of electric shock, connect this terminal or connector to the grounding terminal of the electric service or supply panel with a continuous green insulated copper wire equivalent in size to the circuit conductors supplying this equipment. Additional bonding lugs are provided and marked “Bonding Lugs”. To reduce the risks of electric shock connect the bonding lugs in accordance with the Canadian Electric Code.
- It is mandatory that all Electrical Heaters be installed with Leakage Collectors as per Figure 02.

2d) Wiring Diagrams – All Models



Warning:

Ensure that the unit is properly grounded at the provided lug within the unit and that the leakage collectors are separately grounded at the back of the unit (marked "BONDING LUGS"). Improper installation may be a potential cause of fire, electric shock, personal injury or health hazards and great care should be taken to avoid these. Make sure that all wiring is secure.

3) Operating Instructions

Must be strictly followed for warranty to be valid.

Before starting the heater, activate the pump and make sure that the air is out of the heater chamber (Tank). Water circulation (Pump) must be on at all times when unit is running.

3a) Digital Thermostat Operating Instructions

At start up, the display will show the actual water temperature or "OFF".

- 1) **Selecting temperature SCALE (choose F – Fahrenheit or C – Celsius)**
 - 1a) to access the temperature **SC**ale selection the unit has to be in **Set point mode** (showing either "OFF" or decimal points "---").
 - 1b) Press and hold **POOL/SPA** button for three seconds and release when the display shows "SC"(for Scale). The display will show "**SC**" for one second. Press **UP** or **DOWN** button to toggle between Celsius and Fahrenheit mode. Choose the scale setting to read: "**C**" for Celsius or "**F**" for Fahrenheit.
 - 1c) Press **POOL/SPA** button to accept your choice.