

K-STAR

K-STAR ELECTRIC POOL/SPA HEATERS

INSTRUCTION MANUAL

APPROVED FOR RESIDENTIAL USE IN CANADA

MECHANICAL MODELS:

K-5, K-10, K-15
(Regular Elements)

K-5-TT, K-10-TT, K-15TT
(Titanium Elements)

DIGITAL MODELS:

K-5-D, K-10-D, K-15-D
(Regular Elements)

K-5-D-TT, K-10-D-TT, K-15-D-TT
(Titanium Elements)



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WARNING!

Risk of Electrical Shock or Electrocution. This electric heater must be installed by a licensed or certified electrician or a qualified pool technician in accordance with the Canadian Electrical Code and all applicable codes and ordinances. Improper installation will create an electrical hazard, which could result in death or serious injury to pool or spa users, installers or others due to electrical shock, and may cause damage to property.

Always turn off the power at the main breaker for the heater before installing or servicing the heater. Failure to do so could result in death or serious injury to the technician, pool or spa users or others due to electrical shock.

READ AND FOLLOW ALL INSTRUCTIONS

IMPORTANT:

THE K-STAR ELECTRIC HEATER IS FOR ALUMINUM OR STEEL POOLS ONLY AND NOT TO BE INSTALLED ON SOFT SIDED OR INFLATABLE POOLS!

WARRANTY SHALL BE CONSIDERED VOID IF THE K-STAR ELECTRIC HEATER IS:

- INSTALLED ON SOFT SIDED POOLS
- INSTALLED ON INFLATABLE POOLS
- IMPROPERLY INSTALLED

HEATER INSTALLATION: ALL MODELS

K-Star Heater may be installed indoors or outdoors at least 3 m (10 ft.) away from water and 6 in (16 cm) from any object. Ensure that the installation allows access for electrical and plumbing connections and that the Thermostat control is conveniently located (facing front).

Heater must be installed after the filter and before the Automatic Chlorinator and/or Salt Generator. Do not store any chemicals near heater.

HEATER INSTALLATION: USING MALE ADAPTERS – Figure 01

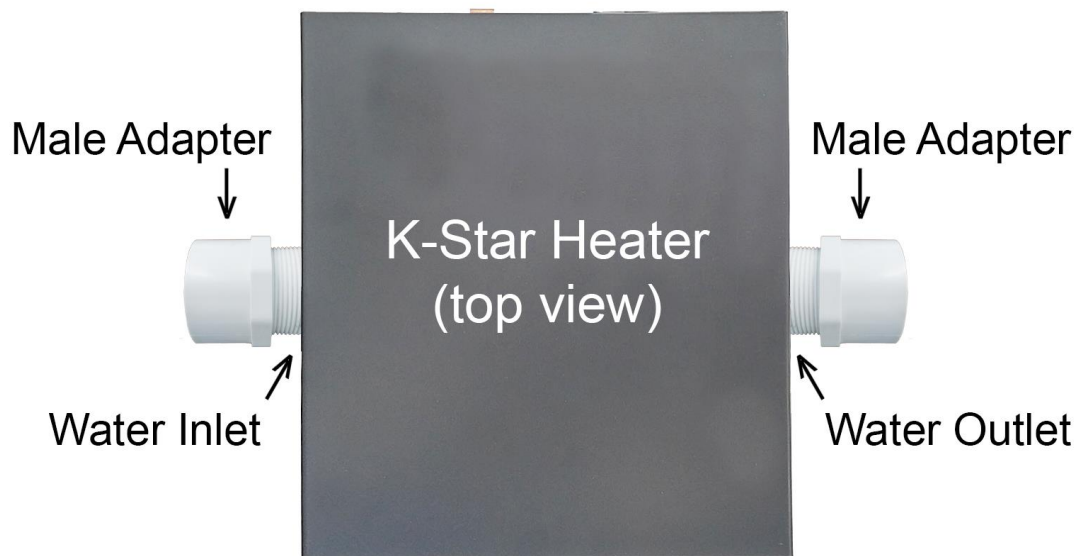
Install Male Adapters (not supplied with purchase) as per **Figure 01** before permanently positioning Heater. Install a Male Adapter at the Water Inlet, and another at the Water Outlet of the Heater. The installation of the Male Adapters shall be such that all water entering and leaving the Heater flows through them.

INLET / OUTLET PVC FITTINGS

CAUTION: DO NOT OVERTIGHTEN. HAND TIGHTEN ONLY!

Risk of damage to internal welded fittings and tank (not covered under warranty).

FIGURE 01.



After assembly of **Figure 01** is complete, proceed to install plumbing connections (not supplied) as per **Figure 02**.

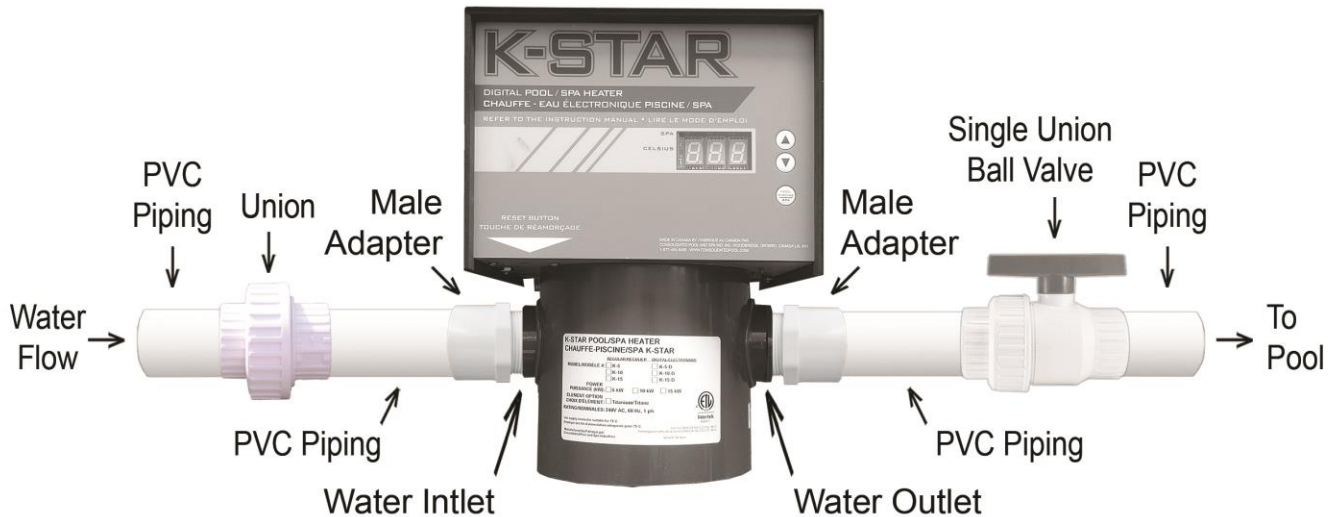
HEATER INSTALLATION: USING STRAIGHT FITTINGS – Figure 02

To service and/or disconnect the Heater, install a "Union" to the PVC Piping connected to the Male Adapter at the Water Inlet and install a "Single Union Ball Valve" to the PVC Piping connected to the Male Adapter at the Water Outlet of the unit.

Note:

DO NOT plumb elbow fittings directly to the Male Adapters on the Heater. Ensure all plumbing fittings connected to the Water Inlet and Water Outlet sides of the Heater are straight.

FIGURE 02.
 (Digital Model shown; applies to all Models)



HEATER INSTALLATION: USING BYPASS – Figure 03

Pumps with higher GPM (Gallons Per Minute) ratings will require the installation of a "Bypass" around the Heater with a "3 Way Valve" (see **Figure 03**) to reduce water flow to **Max GPM** of our K-Star Heaters as per **Table 01**.

FIGURE 03.
 (Digital Model shown; applies to all Models)

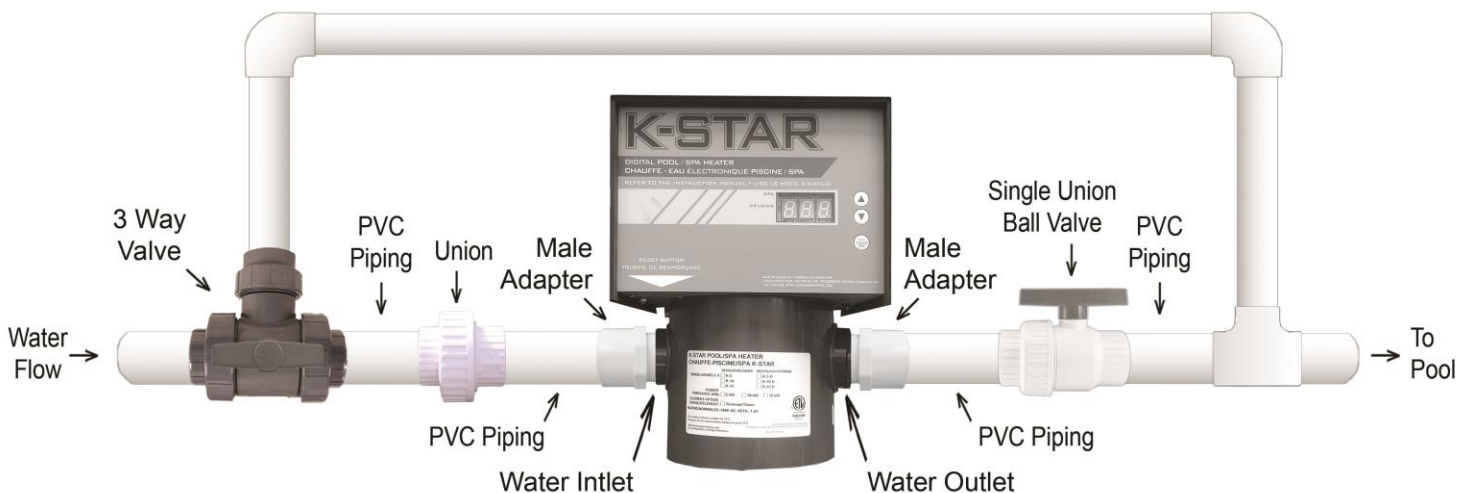


TABLE 01.

K-Star Heater All Models Mechanical & Digital	Max GPM Flow Rate
K-5	8
K-10	10
K-15	10

LEAKAGE CURRENT COLLECTORS: ALL MODELS

Leakage Current Collectors (not supplied with purchase) may be required with your Heater installation. Consult your local Electrical Safety Authority (ESA) to determine if Leakage Current Collectors are mandatory in your jurisdiction.

Please note; the Canadian Electrical Code only requires Leakage Current Collectors for HOT TUB/SPA applications.

HEATER INSTALLATION: USING LEAKAGE CURRENT COLLECTORS – Figure 04

Install Leakage Current Collectors (purchased separately – **Part # KSCC**) as per **Figure 04** before permanently positioning Heater. Install a Leakage Current Collector at the Water Inlet, and another at the Water Outlet of the Heater. The installation of the Collectors shall be such that all water entering and leaving the Heater flows through the two Collectors.

INLET / OUTLET LEAKAGE CURRENT COLLECTORS

CAUTION: DO NOT OVERTIGHTEN. HAND TIGHTEN ONLY!

Risk of damage to internal welded fittings and tank (not covered under warranty).

FIGURE 04.



After assembly of **Figure 04** is complete, proceed to install plumbing connections (not supplied) as per **Figure 05**.

HEATER INSTALLATION: USING LEAKAGE CURRENT COLLECTORS WITH STRAIGHT FITTINGS – Figure 05

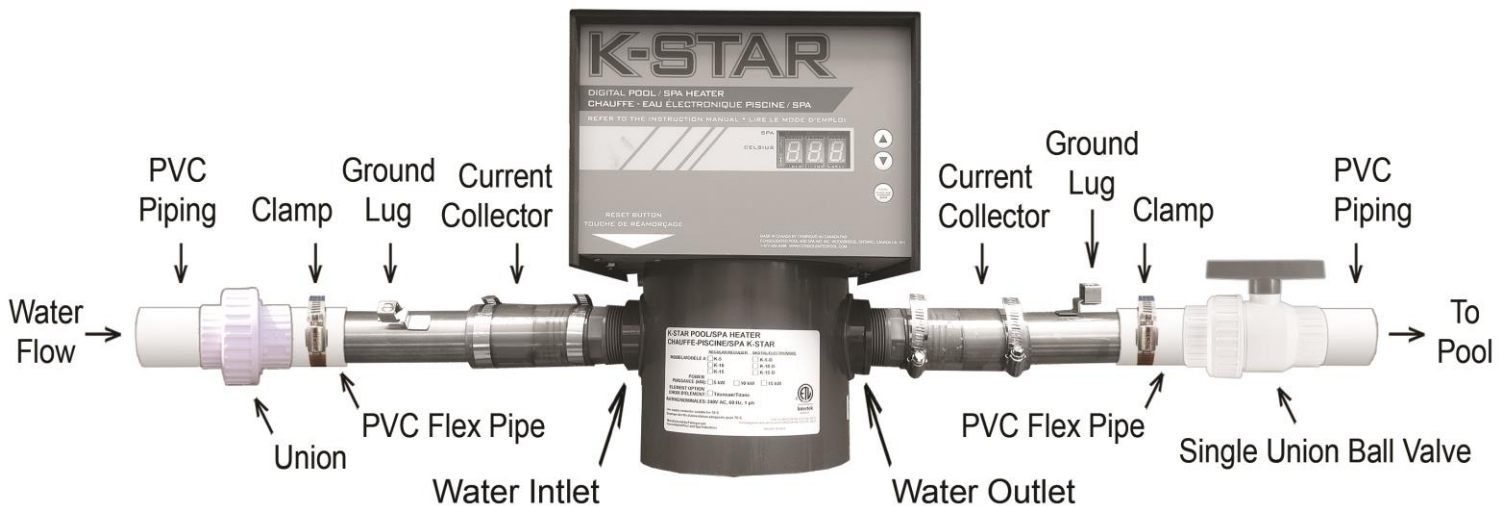
To service and/or disconnect the heater, install a "Union" to the Leakage Current Collector at the Water Inlet and a "Single Union Ball Valve" to the Leakage Current Collector at the Water Outlet of the unit.

Note:

DO NOT plumb elbow fittings directly to Heater. Ensure all plumbing fittings from Inlet and Outlet sides of Heater are straight.

FIGURE 05.

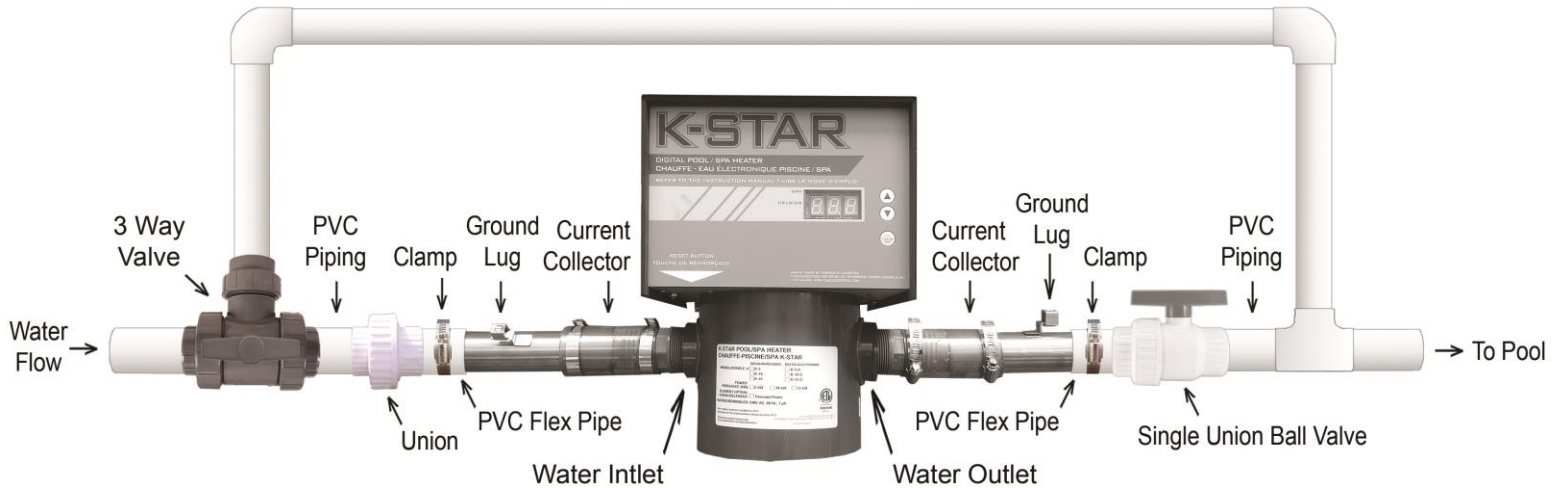
(Digital Model shown; applies to all Models)



HEATER INSTALLATION: USING LEAKAGE CURRENT COLLECTORS WITH BYPASS – Figure 06

Pumps with higher GPM (Gallons Per Minute) ratings will require the installation of a "Bypass" around the Heater with a "3 Way Valve" (see **Figure 06**) to reduce water flow to **Max GPM** of our K-Star Heaters as per **Table 01** (page 5).

FIGURE 06.
(Digital Model shown; applies to all Models)



ELECTRICAL INSTALLATION: ALL MODELS

Electrical work must be performed by a qualified Electrician and comply with the Canadian Electrical Code.

GROUNDING

In accordance with the Canadian Electrical Code, all Electric Heaters must be grounded as follows to reduce electrical shock:

Fuse Panel to Heater: Connect grounding wire of the electric service or supply panel to Heater "Ground Lug" (labelled within Heater) with a continuous green insulated wire equivalent in size to the circuit conductors supplying the Heater.

Leakage Current Collectors to Heater: Use bare copper wires to connect the Heater "Bonding Lugs" (labelled on back of Heater) to each of the Leakage Current Collector "Ground Lugs". Run individual wires for each side.

WIRING

Wire sizes required for all Heater Models (Mechanical and Digital) are illustrated in **Table 02** (below):

Table 02.

All Models Mechanical & Digital	PHASE	Volts	kW	Amps	Fuse Panel (240V G.F.C.I. Size)	Wire Size (Copper Only)	Current Collector Ground Wire (Copper Only)
K-5	1	240	5	21 A	30 A	10	10
K-10	1	240	10	42 A	60 A	6	6
K-15	1	240	15	63 A	100 A	Use supply conductor suitable for 75° C	Use supply conductor suitable for 75° C

OPERATING INSTRUCTIONS

Instructions must be strictly followed for warranty to be valid.

MECHANICAL MODELS

IMPORTANT:

Before starting the Heater, activate the Pool/Spa pump. Water must be circulating at all times when Heater is running.

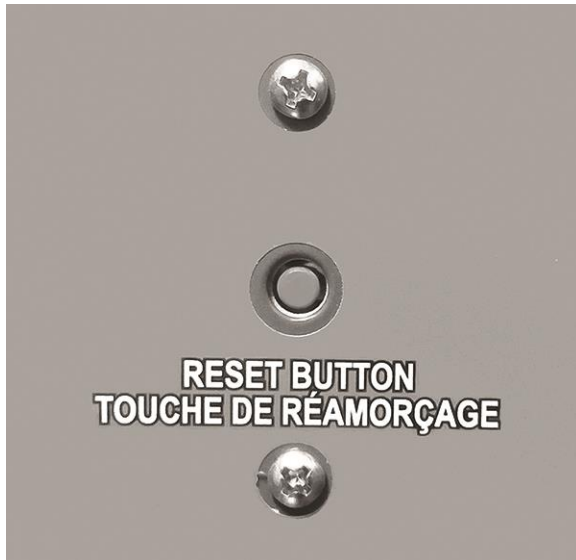
1. Switch on power to the Heater. Turn thermostat control knob clockwise to maximum position.
2. The red indicator lamp will only be lit once the water pressure has built up inside Heater tank. (All Heater Models have a built in adjustable pressure switch – Part # KSPS.)
3. While Heater is running, re-adjust the thermostat control knob to suit your desired temperature. The scale ranges from 70° F to 104° F.

HIGH LIMIT MANUAL RESET: Mechanical Model

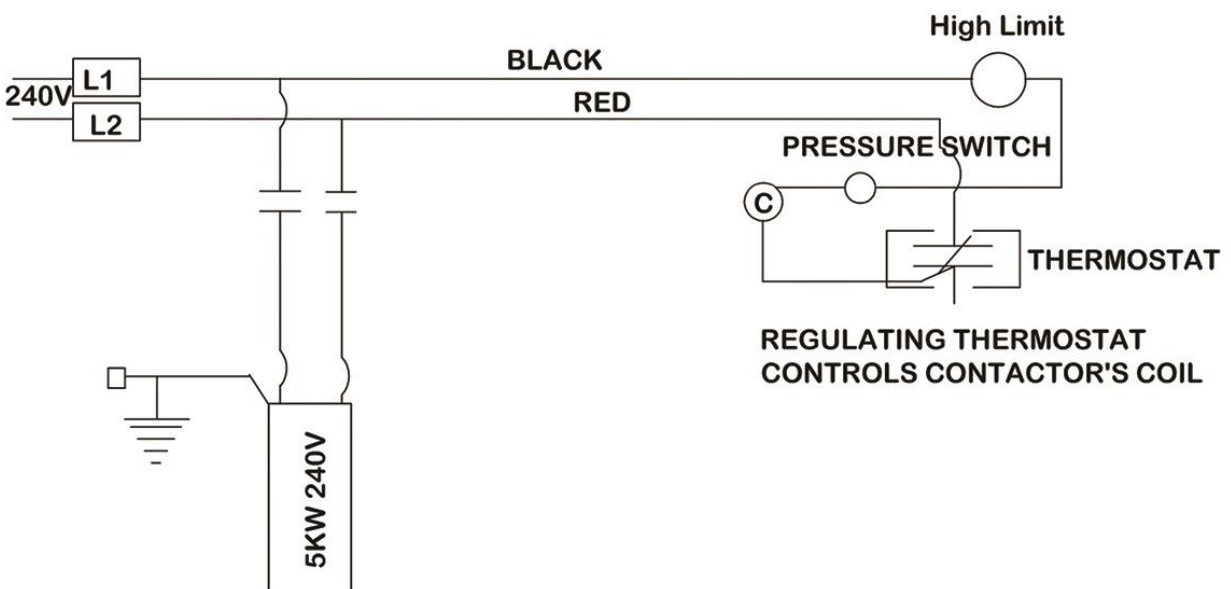
A “High Limit Manual Reset” is installed for high temperature limit protection. The High Limit Manual Reset may trip if temperature exceeds thermostat’s maximum range or if the pump is switched off and there is no water flow to the Heater.

To reset the High Limit, turn off main breaker for the Heater and allow the Heater to cool. Push in the “Reset Button”, located on the front of the Heater as per **Figure 07** below.

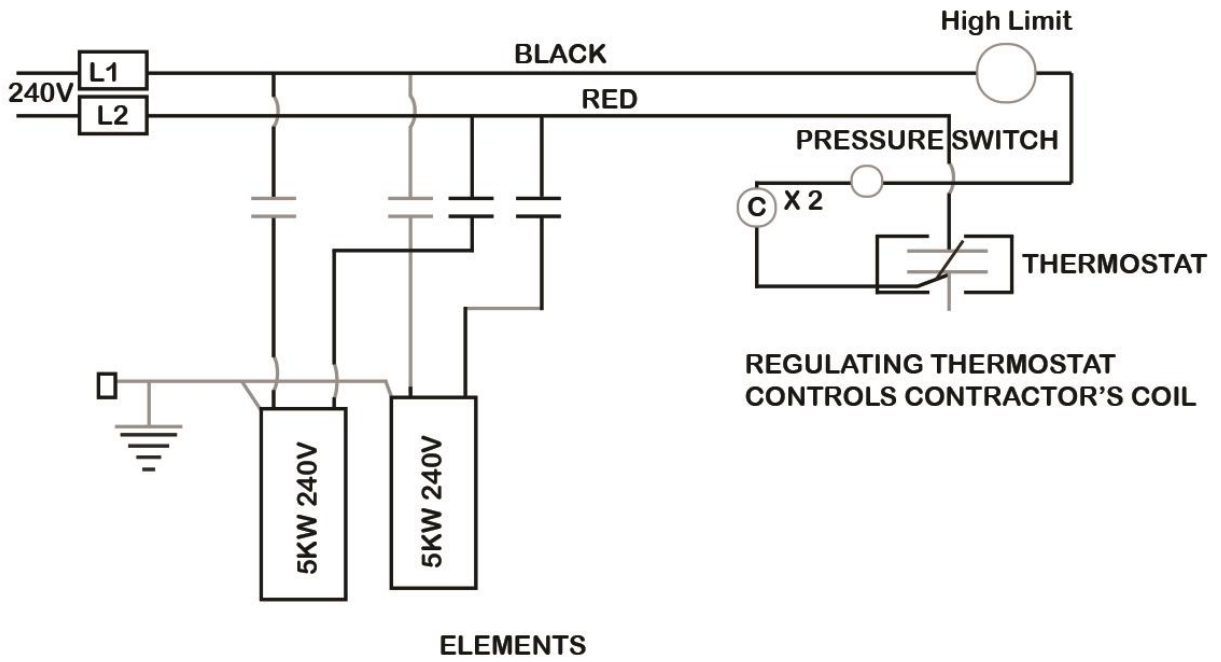
FIGURE 07.



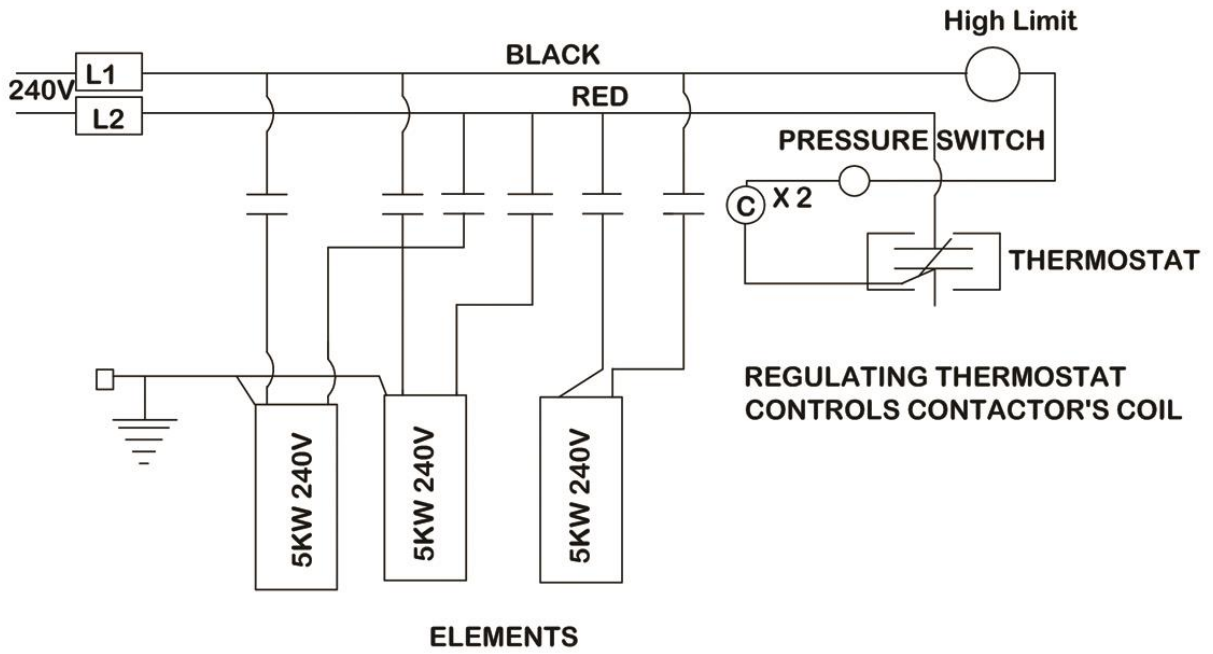
MECHANICAL WIRING DIAGRAMS (below)



K5 5KW HEATER 240 V



K10 10KW HEATER 240V



K15 15KW HEATER 240 V

DIGITAL MODELS

IMPORTANT:

Before starting the Heater, activate the Pool/Spa pump. Water must be circulating at all times when Heater is running.

Switch on power to the Heater. The LED display will read the temperature (**C** or **F**) or display “**OFF**”. To set up the Digital Heater Modes, follow steps 1, 2 and 3.

1. Selecting SCALE: Choose C – Celsius or F – Fahrenheit

- a) To access the Temperature **Scale** selection the unit has to be in **Set Point Mode** (showing either “**OFF**” or decimal points “---”).
- b) 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.
- c) Press **POOL/SPA** button to accept your choice.

2. Selecting RANGE: Choose POOL or SPA Application

- 2a) After **Scale** has been completed, the display will show “**RA**” (for **Range**) 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.
- 2c) Only in **SPA** mode LED indicator light will be on.

After **RANGE** is completed the display will read “- - -” for one second and revert to “**OFF**”.

3. Changing Temperature Set Point (Desired Temperature Setting)

POOL Application:

Minimum Setting (lowest set point) 70 degrees F or 20 degrees C

Highest Setting (highest set point) 88 degrees F or 31 degrees C

SPA Application:

Minimum Setting (lowest set point) 70 degrees F or 20 degrees C

Highest Setting (highest set point) 104 degrees F or 40 degrees C

- a) Press **UP** or **DOWN** button to increase or decrease the temperature setting by one degree. Press and hold **UP** or **DOWN** button to rapidly increase or decrease the temperature setting.
- b) Once desired Pool or Spa temperature has been set, the Heater will start up.
- c) After 5 seconds without pressing any buttons, the unit will automatically display the actual water temperature.

Note: Heater will show “**OFF**” on display if temperature is below the lowest set point (70 degrees F / 20 degrees C). 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 clockwise or counterclockwise. Clockwise = increase water pressure; Counterclockwise = decrease 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**” + “**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**”. Heater will be “**OFF**” and remain in this condition 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.

If unit remains in “**LOC**” mode and the temperature cannot be adjusted, this could mean High Limit has tripped and needs to be reset or replaced.

The “**lock**” condition is part of the safety/security feature of this Heater and is to ensure the user will physically check that the thermostat and high limit control units are in optimal operating condition before turning the Heater back on.

HIGH LIMIT MANUAL RESET: Digital Model

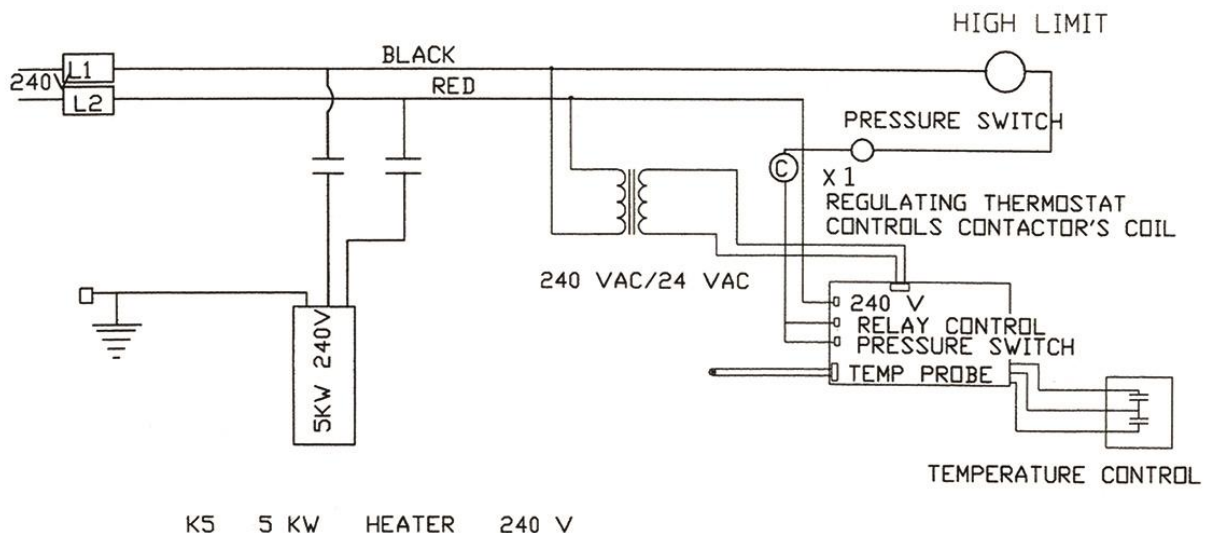
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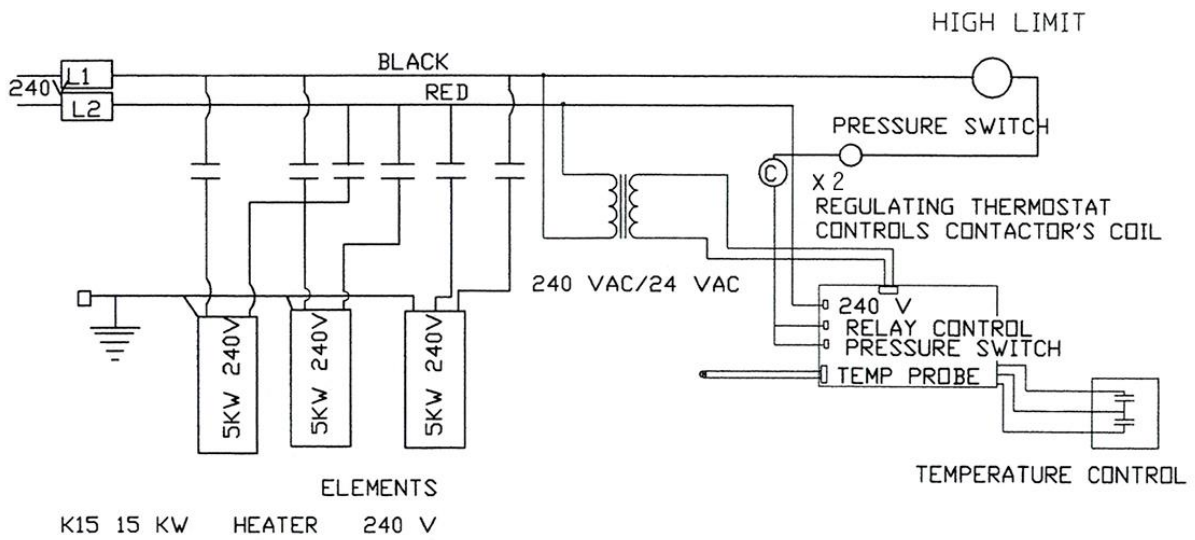
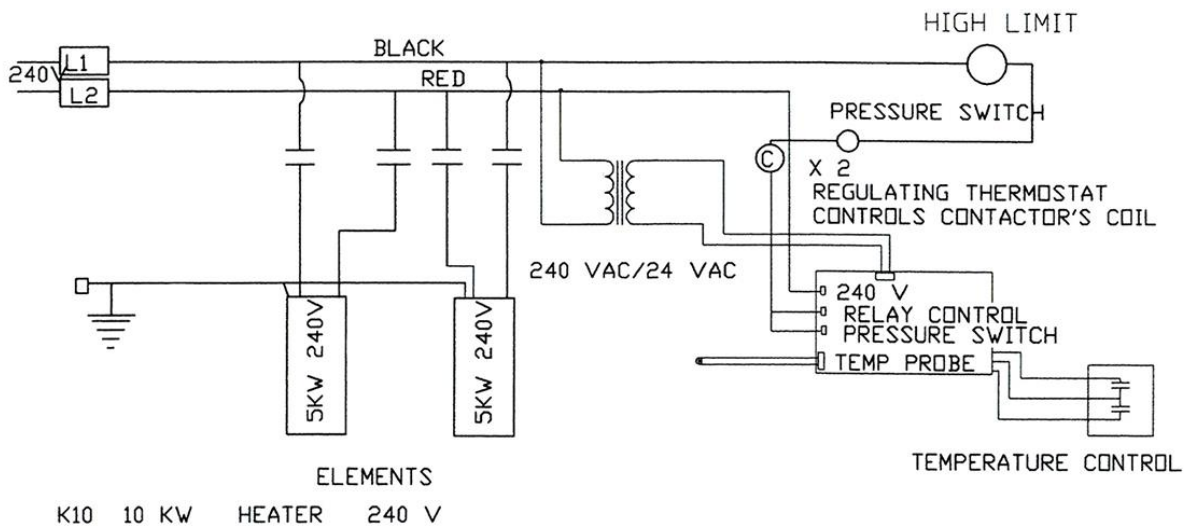
To reset the High Limit, turn off main breaker for the Heater and allow the Heater to cool. Push in the “Reset Button”, located underneath the front panel of the Heater as per **Figure 08** below.

FIGURE 08.



DIGITAL WIRING DIAGRAMS (below)





WINTERIZATION: ALL MODELS

Turn the thermostat to the OFF position. Turn OFF the power at the main breaker for the Heater. If unit is equipped with a bypass system as per **Figure 03/Figure 06**, divert 3-Way-Valve to bypass the Heater completely and ensure Single-Union-Ball-Valve is closed. Disconnect unions and remove Heater from system. Drain Heater completely of all water by removing Drain Plug (located at bottom of tank). Drain Plug must be left out all winter in order to avoid any residual water remaining in the PVC tank from freezing. Heater must be stored indoors.

SAVE THESE INSTRUCTIONS

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.

All warranty claims must be pre-authorized by Consolidated Pool & Spa Industries Inc. All claims must include: Model Number, Serial Number and Proof of Purchase. Consolidated Pool & Spa Industries Inc. will repair and/or replace defective Heater and/or defective components at its discretion during the warranty period provided. All defective products must be returned prepaid. Factory authorization **MUST BE OBTAINED** under this warranty prior to returning defective products. Consolidated Pool & Spa Industries Inc. will not be responsible for labour charges.

The above warranty shall be considered void if:

1. Installation instructions are not followed (improper installation).
2. Unit is powered without any water circulation.
3. Unit is improperly winterized.
4. Unit has been mishandled.
5. 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).
6. Products were purchased outside Canada.



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