Mini Max Digital Control

INSTALLATION & OPERATION MANUAL

4-30-1204F

IMPORTANT SAFETY INSTRUCTIONS

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

READ AND FOLLOW ALL INSTRUCTIONS

* A green colored terminal or a terminal marked G, GR, Ground, Grounding, or the "G" symbol is located inside the supply terminal box or compartment. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electric supply service panel with a continuous copper wire equivalent in size to the circuit conductors supplying this equipment.

* At Bus Bar marked "BONDING LUGS" is provided on the external surface of the supply terminal box or compartment. To reduce the risk of electric shock, connect the local common bonding grid in the area of the hot tub or spa to these terminals with an insulated or bare copper conductor not smaller than No. 6 AWG.

* All field-installed metal components such as rails, ladders, drains or other similar hardware within 3m of the spa or hot tub shall be bonded to the equipment grounding bus with copper conductors not smaller than No. 6 AWG.

SAVE THESE INSTRUCTIONS!

POTENTIAL RISKS OF PERSONAL INJURY OR HEALTH HAZARDS MAY BE ASSOCIATED WITH USE OF EQUIPMENT PLEASE READ AND FOLLOW ALL WARNINGS CAREFULLY !!

WARNING/ADVERTISSEMENT

* Children should not use spas or hot tubs without adult supervision.
  Ne pas laisser les enfants utiliser une cuve de relaxation sans surveillance.

* Do not use spas or hot tubs unless all suction guards are installed to prevent body and hair entrapment.
  Pour éviter que les cheveux ou une partie du corps puissent être aspirés, ne pas utiliser une cuve de relaxation si les grilles de prise d'aspiration ne sont pas toutes en place.

* People using medications and/or having an adverse medical history should consult a Physician before using a spa or hot tub.
  Les personnes qui prennent des médicaments ou ont des problèmes de santé devraient consulter un médecin avant d'utiliser une cuve de relaxation.

* People with infectious diseases should not use a spa or hot tub.
  Les personnes atteintes de maladies infectieuses ne devraient pas utiliser une cuve de relaxation.

* To avoid injury exercise care when entering or exiting the spa or hot tub.
  Pour éviter des blessures, user de prudence en entrant dans une cuve de relaxation et el sortant.

* Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning.
  Pour éniter l'évanouissement et la noyade éventuelle, ne prendre ni drogue ni alcool avant d'utiliser une cuve de relaxation ni quand on s'y trouve.

* Pregnant or possibly pregnant women should consult a physician before using a spa or hot tub.
  Les femmes enceintes, que leur grossesse soit confirmée ou non, devraient consulter un médicin avant d'utiliser une cuve de relaxation.

* Water temperature in excess of 38 degrees C may be injurious to your health.
  Il peut être dangereux pour la santé de se plonger dans de l'eau à plus de 38 degrees C.

* Before entering the spa or hot tub measure the water temperature with an accurate thermometer.
  Avant d'utiliser une cuve de relaxation mesurer la températrue de l'eau à l'aide d'un thermométre précis.

* Do not use a spa or hot tub immediately following strenuous exercise.
Ne pas utiliser une cuve de relaxation immédiatement après un exercise fatigant.

* Prolonged immersion in a spa or hot tub may be injurious to your health.
L'utilisation prolongé d'une cuve de relaxation peut être dangereuse pour la santé.

* Do not permit electric appliances (such as a light, telephone, radio or television) within 1.5 M of this spa or hot tub.
Ne pas placer d'appareil électrique (luminaire, téléphone, radio, téléviseur, etc.) à moins de 1.5 M de cette cuve de relaxation.

CONTENTS

A digital keypad at the spa side controls the temperature of the water in the spa or hot tub. Depressing the heat key will allow the water to reach a temperature of 104 degrees F in the spa or hot tub. NOTE: On units wired for 120 volts, spa water temperature can be expected to rise about 2 to 3 degrees per hour.

CAUTION: DO NOT OPERATE THE EQUIPMENT WHEN THERE IS LITTLE OR NO WATER IN THE SPA OR HOT TUB.

PROLONGED IMMERSION IN HOT WATER MAY INDUCE HYPERTHERMIA READ THE FOLLOWING SYMPTOMS:

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 37 degrees C. The symptoms of hyperthermia include drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include:

a) unawareness of impending hazard;
b) failure to perceive heat;
c) failure to recognize the need to exit spa;
d) physical inability to exit spa;
e) fetal damage in pregnant women, and
f) unconsciousness and danger of drowning.

WARNING: THE USE OF ALCOHOL OR DRUGS CAN GREATLY INCREASE THE RISK OF FATAL HYPERTHERMIA IN HOT TUBS AND SPAS

SAVE THESE INSTRUCTIONS !

The CTI Spa Pack that you have purchased is one of the very best available and incorporates features designed to assure long, reliable use if properly installed, operated and maintained. This model is certified for your safety and protection. The Spa Pack must be installed exactly in accordance to the instructions specified in this manual, otherwise the warranty is void.

Check for shipping damage before unpacking. CTI is not responsible for damage to the unit sustained during shipping. If damage is evident before unpacking, contact the freight carrier regarding shipping damage claims.

DESCRIPTION

The heater assembly described in this manual consists of one electric heating element mounted within a stainless steel manifold or vessel whose ends are fitted with unions for connection to the water input and output plumbing system. In addition, there is a water pressure-switch threaded into the body.

CAUTION

It is strongly suggested that you read this entire manual first before any installation has begun so that you are entirely familiar with the requirements that are absolutely necessary to accomplish a safe and reliable installation.

GENERAL INSTALLATION INSTRUCTIONS

This spa pak manual shows all of the options available, your particular model may not have all options shown.

DANGER - RISK OF ELECTRIC SHOCK

Do not permit any electric appliance such as a light, telephone, radio or television, within five feet (1.5 meters) of the spa, hot tub or pool. Never operate any electrical appliances from inside the water or while wet.

4. The electrical supply to this product must include a suitably rated switch or circuit breaker to open all un-grounded supply conductors to comply with Local Electric Codes.The disconnecting means must be readily accessible to the tub or pool occupant but installed at least five feet (1.5 meters) from the water.

5. All wiring connections should be made **USING COPPER CONDUCTORS ONLY**

6. **UNDER NO CIRCUMSTANCES SHALL AN EXTENSION CORD BE USED. USE OF AN EXTENSION CORD WILL INVALIDATE THE WARRANTY AND MAY DAMAGE ELECTRICAL COMPONENTS.**

7. It is necessary to use **ONLY A DEDICATED CIRCUIT** to supply power. A dedicated circuit is one where no other electrical appliances are connected to the same circuit. If a dedicated service is not available, or there is a question if the circuit serves other electrical appliances, it is the responsibility and obligation of the owner/user to have one installed by a qualified electrician.

CAUTION

8. An earth grounding wire must be attached to the heater housing and to any other piece of equipment in the system, such as the pump. The grounding connector should be at least the same size or larger than the wire size supplying the power.

DESCRIPTION AND USE OF CONTROLS :

ELECTRONIC THERMOSTAT

The electronic thermostat works through a processor and an "in water" temperature sensor, sometimes referred to as a thermo-probe or thermister. The temperature is adjusted by depressing the heat key on the topside control. There is an LED or LCD that displays the actual water temperature as well as the desired "set point" . See detail in the start up and operation section of this manual.

HIGH TEMPERATURE RESET SWITCH

If the temperature of the water reaches 118F, the system will shut down and can only be reset by depressing the heat key at the topside control. The water temperature must be less than 112F to be manually reset.

HEATER INDICATOR LIGHT (PILOT LIGHT)

This red pilot light is located on the main control box and is lit only when the heater is heating. This light will shut off when set temperature is attained.

PRESSURE SWITCH - TO BE ADJUSTED ONLY BY AUTHORIZED SERVICE TECHNICIAN !

This is switch is thread mounted to the stainless steel heater body. This switch measures the water pressure and is factory set for approximately 2.5 lbs. This switch (if adjustable) should be adjusted to suit each application as gravitational / static pressure will vary according to water volume and relative back pressure. To test this switch, run the spa pak and assure that there are no air locks in the system. Turn the temperature control up all of the way to turn the heater on. With the circulation pump running, unplug the same circulation pump. The heater should shut off in this state. The pressure switch dial should be turned counter-clockwise until the heater turns on and then immediately clockwise until the heater shuts off plus a half turn. If using a two speed pump, the low speed and high speed should be able to be switched back and forth without the pressure switch clicking open and closed due to the fluctuation in pump pressure.
An improper adjustment of this switch can cause an overheat situation. Further if the switch is not set properly, an accumulation of debris in the filter can cause it to open and close too frequently thus over-exercising the switch and the related heater relay. If this occurs, the heater relay may weld shut causing an overheat situation. - **THIS WILL VOID THE WARRANTY !**

TEMPERATURE SENSOR

The temperature sensor must be located where it will not be affected by ambient air. It is recommended that the sensor be located in an insulated dry well or a wet compression fitting in the side wall or foot well of the spa / hot tub. If there is doubt of the accuracy of the temperature readout after the sensor is installed, the test is to place the sensor directly in the spa / hot tub water and measure it against another accurate digital temperature thermometer. This will tell you if it is the sensor or the application.

Before performing the operations of this section, make sure you TURN OFF ALL ELECTRICAL POWER TO THE UNIT and that you have read and understood these instructions and the uses for the heater as previously described in this manual.

1. Make sure the spa is first filled with water. **DO NOT OPERATE THIS SYSTEM WITH LITTLE OR NO WATER IN THE SPA.**

2. Plug in each piece of peripheral equipment, (pump, blower, light, etc.) into the appropriate receptacle. All plug/receptacles are uniquely polarized, therefore you can not insert a plug into the "wrong" receptacle.

3. Review the start up an operation section of this manual.

4. Turn on the power to the unit and test the ground fault circuit interrupter (GFCI).

5. If a particular function does not seem to be working properly, first go back and re-read the DESCRIPTION AND USE OF CONTROLS section as well as START UP AND OPERATION section. If further problems persist, refer to the troubleshooting section of this manual.

The **CORRECT-TECH** Spa Pak that you have purchased may not have all of the options shown within this manual.

PLUMBING CONNECTIONS

Maintain adequate access clearance for the servicing of this unit and related equipment. PVC or CPVC schedule 40 pipe should be used. Water may flow in either direction through the heater. **Any obstruction of flow will cause the heater to shut off !** Refer to the troubleshooting section of this manual if this occurs.

FIGURE # 1

This is an installation where a two speed primary pump is used. Some filters are mounted directly on the spa.

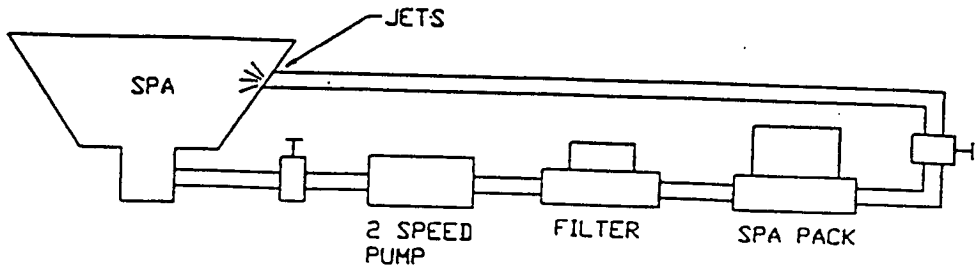
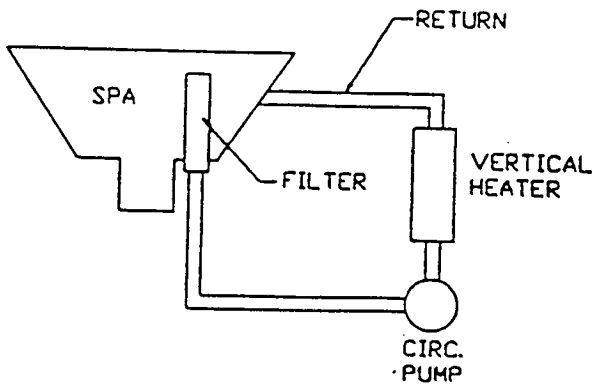


FIGURE # 2

This is an installation where a constant circulation pump is Used for heat and filtration.



- **NOTE: In all installations, the temperature sensing probe that connects to J2 on the circuit board must be installed where it will detect the actual water temperature inside the spa or hot tub. It is recommended that a dry well be installed in the side wall of the spa, and that it is well insulated so it is not affected by the outside (ambient) temperature.**

March 28, 2005

Freeze Protect Over-ride addition FPO

Not available on all models
This function is intended to be used on power-up or start-up after a fresh fill. The 6 hour duration of the FPO cycle is counted from the time the unit is powered-up and not from the time of its activation.

By pressing the **Pump 1 and Light key** simultaneously for 10 seconds, the freeze protect feature will be suspended for **6** hours. (i.e. the FPO will be activated) This is to allow the installer of the spa to check for normal operation if the spa is filled with water that is less than the set freeze protect level (45F or 52F depending on software). FPO will appear every 10 seconds at the topside control. To manually go back to freeze protect mode, power down the system and re-boot

In LC mode: Pump 1 must be in low speed, Pump 2 / AUX and Blower must be off before heater can be turned on.

TROUBLE-SHOOTING FPO:

- Water temperature must be below freeze protect level. (45F or 52F Depending on software)
- Both sensors must be plugged-in
- Ensure that there is no physical damage to the sensors.

*** NOTE : This is for CTI standard software. The spa that you have may have a different operation procedure provided on additional documentation.**

- Power up system and " Pur" will appear for 30 seconds while system is in purge mode and then normal operation will assume.

- It may be necessary to bleed excess air from heater body prevent overheating of heater on start up. See spa operating Instruction for procedure to bleed air.

- Press Heat key and Auxiliary (Pump 2 or Blower) keys simultaneously and hold to adjust filter cycle from 2-12 hrs of each 12 hr period.

- Press Auxiliary (Pump 2 or Blower) and Light keys simultaneously and hold to toggle from degrees C or F.

- Press Jets One Key to activate Pump One. The system will run for 30 minutes at which time the system will automatically shut off unless done so manually prior to the 30 minute period.

- Press Light Key to activate light on/off.

- Press Heater Key to adjust temperature. Press once and hold will raise temperature. Press a second time and hold will lower the temperature to the minimum set point of 70 F or 21C. A red LED will flash at the topside control when the heater is on.

- Press Auxiliary Key to activate Blower or Pump 2 on/off. This system does not have both Blower and Pump 2, it has one or the other as a auxiliary option.

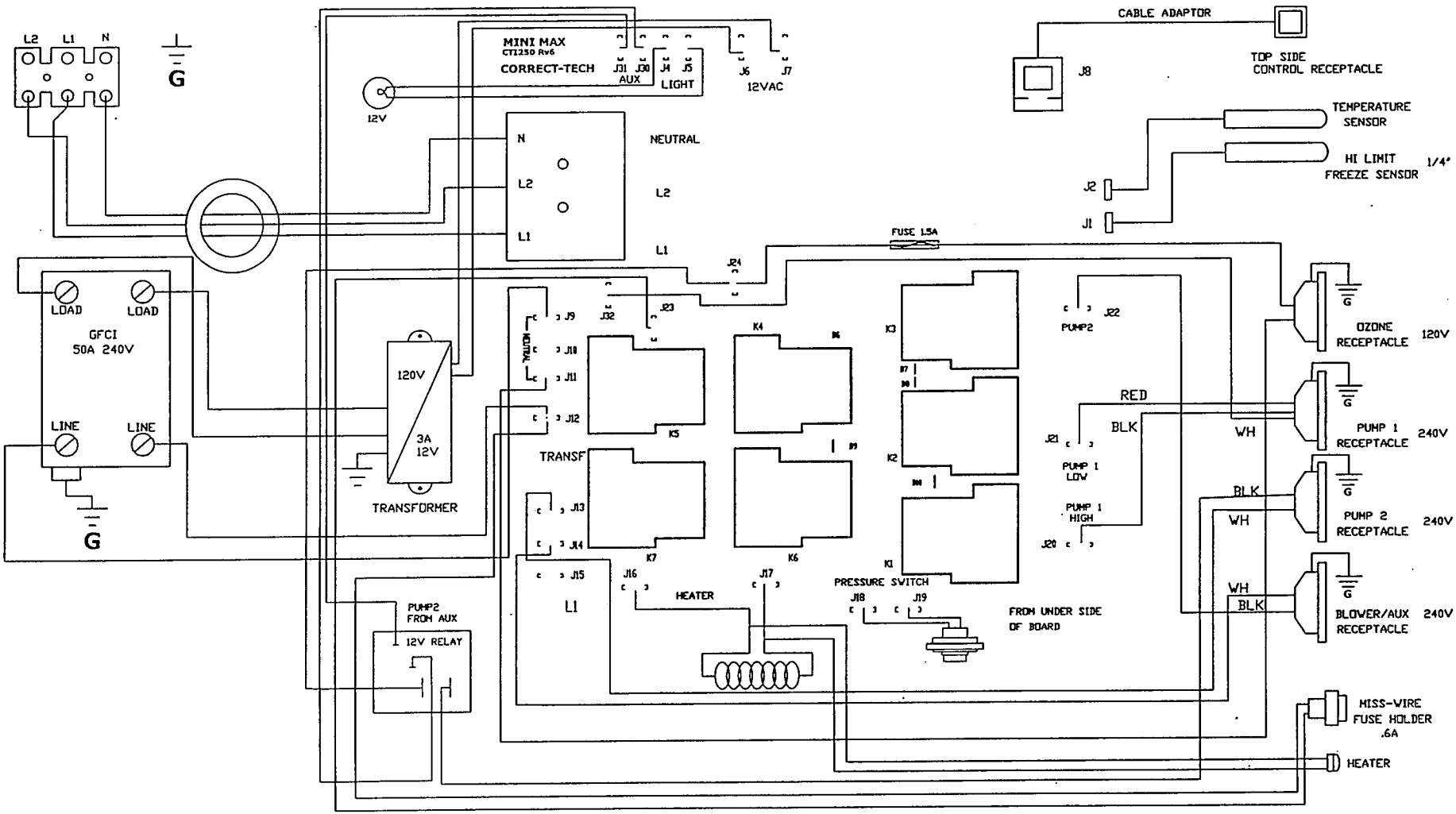
- Press Heat Key and Pump 1 Key simultaneously to activate temperature LOC and the same do de-activate.

- If the tub temperature reaches 112 F the control will flash " OH "with the temperature, and shut the system down until the temperature drops below 112F. If the heater body temperature reaches 112 F, the control will flash " hot " and the system will shut down. When it drops below 112 F it will automatically turn back on. There is a third level of protection via a high limit relay that will trip at 118 F. If this trips, the readout at the topside control will read "HL" (HIGH LIMIT)and the tub must cool to less than 112F. This hi limit trip can be manually reset by pressing the heat key of the control pad or re-booting the system. If this trips repeatedly, call your dealer for service.

- If a two speed pump is supplied that provides filtration on low speed, the low speed will shut off if the temperature creeps more than 2 degrees above the set point. It will turn back on when temperature drops to the set point.

CORRECT-TECH INC.
1832Bonhill rd. Miss. On. Canada L5T 1C4
Ph. 888-772-7208
www.correct-tech.com

YOUR SPA PAK MAY NOT HAVE ALL OPTIONS SHOWN.
IF A GFCI IS NOT INCLUDED IN YOUR SPA PAK,
ONE MUST BE INSTALLED IN YOUR POWER SUPPLY.



FOR 120V NEUTRAL MUST BE JUMPED TO L2 AND PROGRAM SET TO LOW CURRENT-LC

Rev.No.	DATE	DESCRIPTION	ECN
4	05/06/9	CHANGED DESCRIPTION	
3	04/07/8	ADDED GFCI	
2	04/04/07	SCHEMATIC CHANGED	
1	03/09/23	SCHEMATIC CHANGED	E2003213

MINI MAX DIGITAL SPA PAK DWG # 4-30-1806N-2

2 PUMPS AND 240V BLOWER/AUXILIARY C/W SDS LED

240V 60Hz 48A MAX.

MINI MAX DIGITAL TROUBLE SHOOTING GUIDE

No display at topside
- Check that connection to main board is clean and sound at J8
- Test a new topside control.
- Check for 120V primary power going into the transformer and for 12V secondary power out of the transformer to J6 & J7 on the board before replacing the transformer.
- Replace board if there is 12V to J6 & J7

Display flashes " th1 / 39 " on system start up
- Check that temperature sensing probe connection to main board is clean and sound at location J2.
- Try new temperature sensing probe.

Display flashes " th2 / current temperature " on system start up
- Check that the temperature sensing probe connected to the main board is clean and sound at location J1.
- Try new temperature sensing probe

Display flashes " th2 / 39 " on system start up
- This indicates that **both thermisters** are detecting tub water temperature of less than 39F / 4C or they are both disconnected (open). Pump(s) and blower will run in this condition.

Display flashes " OH " (OVER HEAT)
- This indicates that the **spa** water temp is over 112F. The system should be shut down in this state and will re-start automatically when the water cools below 112F.

Display flashes " hot " (OVER HEAT)
- This indicates that the **heater body** is over 112F. The system should be shut down in this state and will re-start automatically when the water cools below 112F.

Display flashes " HL " (HIGH LIMIT)
- This indicates that either the heater or the spa has reached **118F** or higher. The system will not re-start automatically. To re-start the system, the water temperature must be below 112F and the heater key at the topside control must be pressed.

Display flashes " FLO" (FLOW)
- This indicates that there is a water flow problem or defective pressure switch.
- make sure filters are clean
- check that service valves are open
- check for obstruction of flow
- adjust pressure switch (see pressure switch detail under description and use of controls)

Display Flashes " FLC "

- This indicates that the pressure switch is stuck in the closed Position and should be replaced.

Erratic operation at topside panel

- Check for proper connection at J8
- Shut off system and restart
- Check for debris inside topside panel control housing
- Check cable connection at the topside control remove, clean reconnect
- Try new topside control
- Replace main board

No heat

- Check the topside control for " HL". This indicates that the system has overheated. Make sure the temperature has fallen to less than 112F and press the heat key to reset.
- Check that temperature set point is higher than actual tub temperature.
- Check for flashing LED at topside control to indicate heat demand
- Check to see if the pilot light at the equipment panel is on. This indicates if power is actually getting to the heater element. If this light is on and there is still no heat, the element should be checked for continuity. If the element is open, it needs to be replaced.

- If the pilot light still does not turn on, then the pressure switch may need to be adjusted. The pressure switch is located on the heater body and has a small wheel on it. This wheel should be turned counter clockwise to allow the heater to run on less water flow / pressure.This pressure switch is a protection switch that is meant to turn the heater off if the pump fails to operate or if there is not enough pump pressure. A test to see if the pressure switch has been adjusted correctly is to unplug the circulation pump and see if the heater shuts off. It should operate again when the pump is plugged back in. The heater should not be allowed to operate under static (gravitational) pressure when the pump is not on as it will cause an instant overheat.

Overheat

- If the water is too hot and the high limit has tripped, the water must be allowed to drop to less than 112F before it will reset. Reset by pressing the heat key at the topside control.
- The circulation of the water may be too low, allowing the heater body to overheat. Be sure that all valves are fully open to allow maximum water flow over the heater element.

  The friction and radiant heat from the pump motor can cause an extremely high ambient temperature around the spa and the equipment causing an overheat condition. If this condition is suspect, try running the spa with the equipment door off to see if it still overheats.

Pump(s), Blower or light does not shut off

- Try new topside control
- Replace main board

Circulation pump does not work

- Check the fuse and power connections.

Light does not work

- Press Light Key at top side
- Check bulb
- Check 12V out to light at J4 & J5

Ground Fault Interrupter Trips

- Check if it does it only when heat turns on, if so check element by removing the power to the element terminal and turn the heat on. If it only faults when the element is connected with power, the element has a ground fault and must be replaced.
- This can be done with the pump(s), blower, ozonator, or any other peripheral equipment as a process of elimination to see where the fault may be.
- Be sure that the neutral on the GFCI has been wired properly in the main panel.

Improper Temperature Measurement

- Remove temperature sensor from it's current location and submerge directly into the spa / hot tub water. Compare it to another accurate digital thermometer. This will tell you if it is the sensor or the application. (See temperature sensor in the description and use of controls section of this manual.

The maintenance and care of a spa is simple and easy to carry out and if performed regularly as scheduled, problems will be minimal. It is important that the following procedures be read thoroughly and carried out on a regular basis for best long-term overall performance of your spa.

The filtering cycle of your spa should be operated AT LEAST eight hours or more a day whether or not the water is heated, to remove impurities from, and to prevent deposition of contaminants in your spa. The filtering system works automatically during the heating cycle of the spa water and during the time the filtration timer is on (low speed pump on) or when the high-speed pump is on.

Keep the spa covered when not in use to reduce the loss of heat and to keep out leaves, dirt and other foreign materials from settling in the water.

Maintaining the spa's proper water chemical balance is essential to the comfort and safety of the user. Water mineral content varies constantly and is directly affected by evaporation and the use of cleansing and maintenance chemicals which will increase mineral content when added. If the mineral content deviates from prescribed pH level (7.2 to 7.8), the condition and operation of your spa and equipment may be adversely affected by deposits on spa walls, filter, **electric heating element** (or gas heating internal manifold) and piping.

Since the water capacity of your spa IS FAR LESS THAN THAT OF A SWIMMING POOL, THE CHEMICAL REACTION CAUSED BY THE PRESENCE OF ONE OR MORE PERSONS IN THE SPA IS MORE RAPID AND PRONOUNCED -- IN OTHER WORDS, IT IS MUCH MORE DIFFICULT TO MAINTAIN THE PROPER PH BALANCE IN A SPA THAN A SWIMMING POOL. For these reasons, it is important to check FREQUENTLY the chlorine level, the pH level and total alkalinity of the water then add the prescribed chemicals as necessary to maintain the proper chemical balances. FAILURE TO MAINTAIN A PROPER BALANCE OF CHEMICALS IN YOUR SPA WILL RESULT IN AN EARLY, PREMATURE FAILURE OF YOUR SPA PARTS INCLUDING, BUT NOT LIMITED TO, PIPING AND CERTAIN ELECTRICAL COMPONENTS IN THE HEATER MODULE BOX, THUS VOIDING YOUR WARRANTY.

ESSENTIAL CHEMICALS AND THEIR USE

CAUTION

The following information on chemical use for spa maintenance is provided strictly as a guide for the spa owner and may or may not be appropriate to maintain your spa correctly and may, under certain conditions, be harmful to your spa and/or persons using the spa. Always check with your spa dealer to determine which chemicals and/or procedures he recommends to maintain your spa correctly.

CTI does hereby claim no responsibility or liability for the use of and quantities of the chemicals listed below:

CONCENTRATED CHLORINATING GRANULES. The minimum chlorine level in the spa should be at least 2.0 PPM (parts per million). Chlorine level should be tested frequently and the chemical added to maintain a safe level in excess of 2.0 PPM. This type of chemical can be added in quantity of 1/2 ounce per 500 gallons of spa water. Check the chlorine level at least seven hours or more after adding to determine the full effect of the added chemical. Liquid chlorine is not recommended.

ORGANIC POLYMERS are used in various forms. These chemicals clear up cloudy or dirty water appearance and prevent calcium deposits on the inside spa finish, plumbing and heating equipment. Use as recommended by the manufacturer.

"METAL GON" or equivalent is a chemical that will prevent iron in the spa water from staining the spa finish. This chemical is added to the spa water when the spa is filled for the first time or when re-filled. Use as directed.

SILICONE EMULSION quickly and effectively disperses foam and is completely compatible with the other chemicals listed. Use as required. If foaming persists, it may indicate water should be changed.

SEALER AND OTHER POLISHES are usually silicone compounds that provide effective protection and a glossy finish to the inside surfaces of the spa. It should be applied after the surfaces have been cleaned with a mild, non-abrasive cleaner. Rinse well with clean water then apply polish using a soft cloth following directions. This procedure should be done every time the spa water is changed.

Spa water should be changed periodically depending upon the frequency of usage and other conditions that may effect water usability. Typically 60 to 90 days is a satisfactory interval under normal spa usage conditions. If a spa gets heavy use with a large number of people, this interval between water changing times should, of course, be less. This is the logical time to apply sealer and polish compound to protect and beautify the spa surface. At this time the filter should be soaked in a mild detergent or filter cleaner specifically made for this purpose to remove accumulation of oils and other contaminants which will ensure good, sanitary water and extend equipment life.

The spa filter should be cleaned every 1 to 2 weeks depending upon frequency of use. Rinse the filter with clear water and re-install cartridge in the filter housing.

When adding chemicals to your spa water add to the center of the spa with the pump on high speed. Never add chemicals directly into the skimmer and make sure the water is heated. Never add chemicals to cold water as this will effect chemical action.

Store all chemicals in a cool, dry place and in such a manner to prevent contact by children and pets.

REMEMBER THESE IMPORTANT SAFETY INSTRUCTIONS AT ALL TIMES

DANGER - RISK OF ELECTRICAL SHOCK. Install at least five feet from all metal surfaces. A spa may be installed within five feet of a metal surface if, in accordance with the Local Electrical Codes, each metal surface is permanently connected by a No. 8 AWG (8.4) solid copper connector attached to the wire connector on the control box that is provided for this purpose.

GROUND FAULT CIRCUIT INTERRUPTER INFORMATION AND TESTING INSTRUCTIONS

WHAT THE GFCI DOES FOR YOU:

The GFCI helps protect you against hazardous electrical shock that may be caused if your body becomes a path through which electricity travels to reach ground. This could happen when you touch an appliance that is "live" through a faulty mechanism, damp or worn insulation on the power cord, etc. You don't even have to be on the ground yourself. You could be touching plumbing or other material that leads to the ground. When using a GFCI devise you may still feel a shock , but the GFCI is designed to cut off power quickly enough so that a normal, healthy adult will not experience serious electrical injury.

WARNING: GFCI's will NOT protect against :
(1) Line-to-line shocks (of the type received when touching metal inserted into the slots of a receptacle).

(2) Current overloads or line-to-neutral short circuit. THE FUSE OR CIRCUIT BREAKER AT THE DISTRIBUTION BOX OR PANEL MUST PROVIDE SUCH OVER- CURRENT PROTECTION!

CAUTION: If the GFCI trips on it's own accord, this indicates a possible ground fault condition, which is potentially hazardous. Carry out the test procedure outlined below to ensure that your GFCI is operating properly. If the GFCI does not reset, this indicates a ground fault still exists, and must be corrected. Have a qualified electrician investigate the ground fault condition and correct the defect at once. **TEST THE GFCI UNIT BEFORE EACH USE! - AT LEAST ONCE PER MONTH. DO NOT BYPASS THE GFCI TO USE POTENTIALLY FAULTY EQUIPMENT.**

TEST PROCEDURE

YOUR GFCI SHOULD BE CHECKED BEFORE EACH USE.

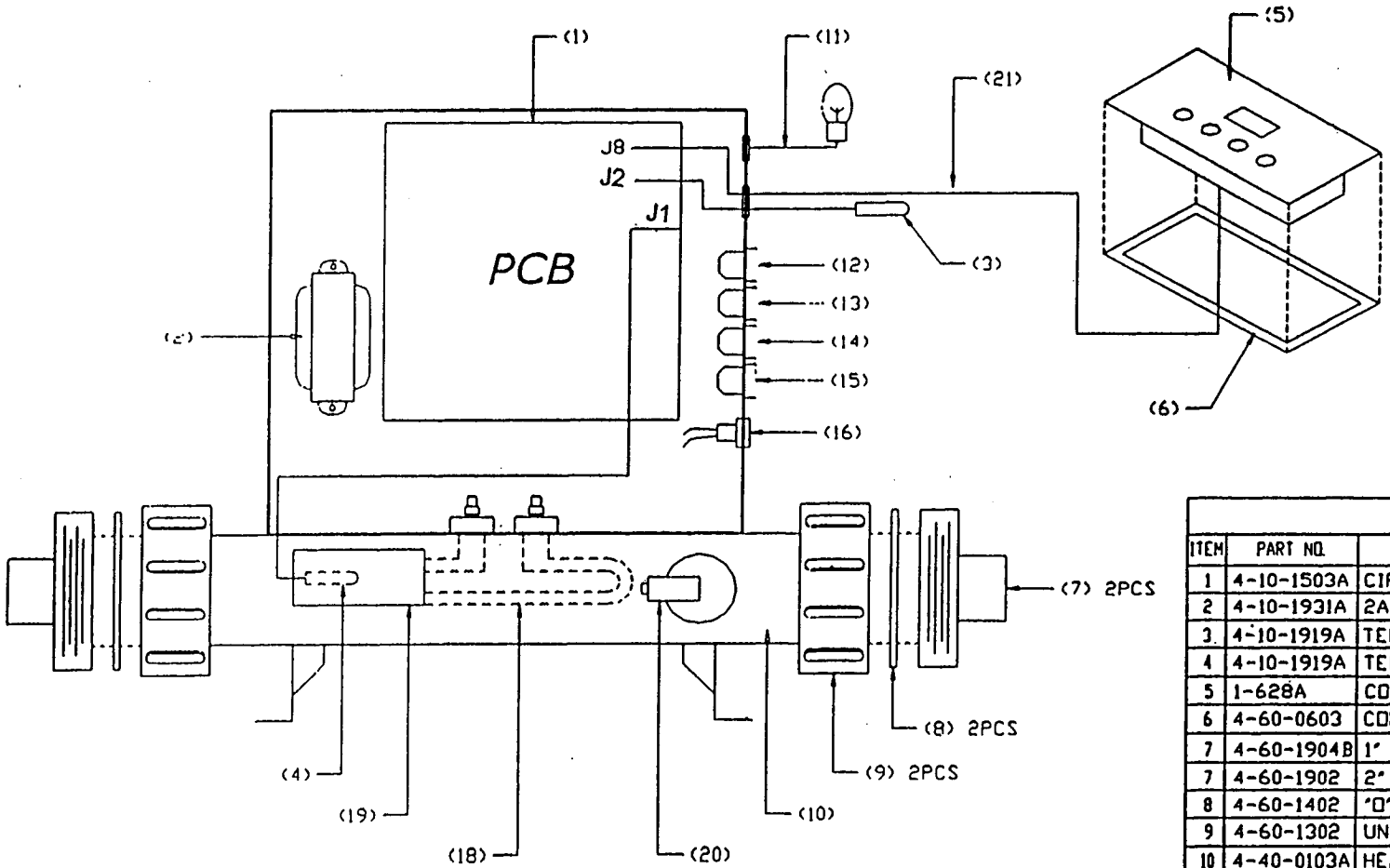
1. Turn your equipment ON to the lowest setting . PUSH THE TEST BUTTON. This should result in the motor or lamp going OFF. (**NOTE:** Be sure you are turning off all applicable motors. Some equipment, such as Spas, have blower motors, jet motors, and heater motors.)

CAUTION: If the motor keeps running or lamp remains lit, DO NOT USE YOUR EQUIPMENT. UNPLUG EQUIPMENT OR TURN OFF POWER AT CIRCUIT BREAKER OR FUSE. CONSULT A CERTIFIED ELECTRICIAN.

2. If the GFCI tests okay, restore power by pushing the RESET button and releasing it. The motors or lamps should go ON again. If the GFCI fails to reset properly, DO NOT USE YOUR EQUIPMENT. UNPLUG EQUIPMENT OR TURN OFF POWER AT CIRCUIT BREAKER OR FUSE. CONSULT A QUALIFIED ELECTRICIAN.

CTI MINI MAX DIGITAL SPA PACK COMPONENTS DESCRIPTION DWG. NO. 4-30-1204A

1832 BONHILL RD MISSISSAUAGA, ONTARIO L5T 1C4 PHONE 1-888-772-7208



COMPONENTS		
ITEM	PART NO.	DESCRIPTION
1	4-10-1503A	CIRCUIT BOARD
2	4-10-1931A	2A TRANSFORMER
3	4-10-1919A	TEMP. SENSOR
4	4-10-1919A	TEMP. SENSOR
5	1-628A	CONTROL
6	4-60-0603	CONTROL GASKET
7	4-60-1904B	1" TAIL PIECE
7	4-60-1902	2" TAIL PIECE
8	4-60-1402	"O" RING 2" FLAT
9	4-60-1302	UNION NUT
10	4-40-0103A	HEATER BODY
11	4-10-0208	LIGHT CORD
12	4-10-1702	OZONE REC.
13	4-10-1704	PUMP 1 REC.
14	4-10-1705	AUX. REC.
15	4-10-1703	CIRC. PUMP REC.
16	4-10-1511	PILOT LIGHT
17	4-10-0501A	1.5A FUSE
18	4-10-0707A	4kW ELEMENT
19	4-40-0201	CAPILLARY COVER
20	4-10-1812	PRESSURE SWITCH
21	4-10-1508D	CONTROL CABLE

LIMITED WARRANTY

CTI CORRECT-TECH INC. warrants that all the parts of this product will be free from defects or materials and workmanship under normal use and service for a period of ONE YEAR FROM DATE PURCHASED. In accordance with the terms of this warranty, we will furnish an unrepaired portion of the original warranty. Labour costs for removal or installation of parts not covered by the warranty, nor are shipping charges to or from CTI's designated repair center. This warranty does not cover rusting or corrosion on closures that does not affect heater & operation. Electronic components (printed circuit boards) are guaranteed to be free from defect for a period of three years and are subject to the above noted conditions. Heater elements are guaranteed for a period of three years (see heater warranty details for limitations).

WARRANTY CONDITIONS

This warranty applies only to the spa pak at its original place of installation. This warranty will be void if the spa pak is installed in violation of applicable local codes and ordinances or if the rating plate or serial number is altered or removed. This spa pak warranty is void if installed by an end user and if not wired by a certified electrician.

WARRANTY EXCLUSION

This warranty does not cover defects or malfunctions resulting from:

1. Failure to properly install, operate or maintain the heater in accordance with our printed instructions.
2. Abuse, alteration, accident, fire, flood, freeze and the like.
3. Misuse and neglect, including but not limited to freeze-ups, having flow restrictions or abstractions between the heater outlet and the spa, or not maintaining a proper chemical balance (PH level between 7.4 and 7.8 and the total alkalinity between 100 and 150 PPM.) Total dissolved solids (TDS) must be no greater than 3000 PPM.

HOW TO MAKE A CLAIM

Immediately notify the dealer from whom the heater was purchased. Supply **model and serial number** of the unit, date of purchase and a description of the problem. The dealer should then promptly contact their supplier regarding a warranty claim for the location of CTI's nearest designated repair center. If the dealer or spa manufacturer for any reason is not available, contact CTI directly at the address shown below. Attention to Warranty Service. After such notification has been given and CTI has advised the location of it's designated repair center (which may be the dealer), bring or ship, transportation prepaid, the defective part for replacement or repair to the designated repair center. However CTI reserves the right to inspect the claimed defect and verify warranty coverage at its factory.

MISCELLANEOUS

No one is authorized to make any other warranties on our behalf. ANY IMPLIED WARRANTIES, INCLUDING MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL NOT EXTEND BEYOND APPLICABLE WARRANTY PERIODS SPECIFIED ABOVE CBM SOLE LIABILITY WITH RESPECT TO ANY DEFECT SHALL BE AS SET FORTH IN THIS WARRANTY AND FOR ANY CLAIMS FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGES FROM WATER LEAKAGE) ARE EXCLUDED. Some states and provinces do not allow limitations on how long an applied warranty lasts or for the exclusion of incidental and consequential damages to the above limitations or exclusion may not apply to you.

We suggest you immediately register your product online at our website: http://correct-tech.com/registration.php

If you can not register online, complete the information below and send this Warranty Certificate to CORRECT-TECH INC.

---------- cut along this line ----------cut along this line ----------

Name of Owner	Name of Dealer
Address	Address
Model No.	Serial No.
Date of Purchase	

Mail or fax to: Correct-Tech Inc. 1832 Bonhill Rd. Mississauga, Ontario, Canada L5T 1C4 Fax: 905-795-8888

Customer Care 1-905-795-0241 or www.correct-tech.com