

LIMITED WARRANTY

ONE YEAR LIMITED WARRANTY: UNITED SPAS, INC. warrants, to the original purchaser, the Spa Equipment against defects in materials or workmanship for a period of one year from date of purchase. The obligation of this warranty shall be limited to repairing or replacing the part, which in the opinion of the company shall be proved defective in materials or workmanship. This limited warranty does not include the limitations described below.

LIMITATIONS OF COVERAGE: This warranty does not cover failures due to: damage, freezing, power failure, power reduction, unusual atmospheric conditions, rust or corrosion, repairs necessary because of operator negligence improper re-packaging and damage incurred in shipping. This warranty does not cover thermostat calibration, plumbing, expendable items (gaskets, o-rings, filter cartridges).

ACTS INVALIDATING WARRANTY: This warranty shall be invalid if this equipment has been subjected to alterations, misuses or abuse, improper water chemistry maintenance or used for commercial purposes (used in other than single family household purposes). Misuse and abuse shall include application installation or operation outside of the environment and limitations for which it was designed, or other than in accordance with United Spas or the spa manufacturer printed instructions. This warranty shall also be invalid if the spa equipment is damaged by earth or ground fill movement, fire, flood, wind, lightning, by Act of God, accident, or by intentional, reckless, or negligent acts any person.

WARRANTY PERFORMANCE: All warranty service and/or replacement of parts must be performed by an individual or service company that has been authorized by United Spas. The purchaser may obtain the benefits of warranty coverage on a failed part by having the servicing company remove the part and send it for inspection, along with proof of purchase and field service report, freight pre-paid, to: United Spas 2480-A N. Glassell St., Orange, CA 92865 If the failure is covered by the warranty, there will be no charge for the repaired or replacement part. Removal/re-installation charges and freight charges to and from United Spas of the failed part shall be the purchaser's responsibility. Any such warranty replacement or repair shall be subject to the terms and condition of this warranty for the remainder of the original period of coverage. United Spas reserves the right to inspect the malfunction or defect on location.

DISCLAIMERS, LEGAL REMEDIES: United Spas shall not be liable for the loss of use of any equipment. This warranty is in lieu of all other expressed warranties obligations or liabilities, any implied warranty of merchantability, shall be limited in duration to the duration of this written limited warranty. Any action for breach of warranty hereunder, including but not limited to, any applied warranty of merchantability must be brought within a period of 12 months from date of purchase. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. No agent, representative, dealer or employee of the company has the authority to increase or alter the obligations of this warranty. In no case shall the company be liable for any incidental or consequential from state to state. United Spas does not authorize any person or company to assume for it any other obligation or liability in connection with the sale, application, engineering, damages for breach of this of any other warranty, expressed or implied, whatsoever. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary installation use, removal, return, or replacement of it's systems: and no such representations are binding on United Spas.

E-mail: support@unitedspas.com

UNITED SPAS



3E

Spa Control System
OWNER'S MANUAL

www.unitedspas.com

TROUBLESHOOTING

A. CONTROL MODULE WILL NOT OPERATE:

1. Make sure the Spa-Side Control is connected to the Spa- Side Control receptacle.
2. Check the main circuit breaker panel. If the GFCI or circuit breaker has tripped, reset breaker. If the circuit breaker trips repeatedly, contact your spa dealer.
3. Turn the circuit breaker, or switch, supplying power to the Control Module OFF then ON.

B. PUMP WILL RUN BUT THERE IS NO WATER FLOW:

1. Make sure all valves are in the open position.
2. Make sure the filter is clean.
3. Make sure the suction lines are free of debris.
4. Make sure the spa is filled to its proper operation level.
5. Make sure there is no air trapped in the pump. With the pump operating in HIGH speed, loosen the pump inlet union (turn counterclockwise) approximately one turn to release any air trapped in the pump. When there is water flow into the spa, tighten the pump inlet union securely.
6. Check to make sure that all Jet orifices are turned open.

C. PUMP RUNS AND WATER FLOW BUT NO HEAT:

1. Refer to SETTING THE TEMPERATURE page 9 and increase the temperature setting. Do NOT expect to feel hot water coming from the jets.
2. Check if high limit shut off has tripped. If so, press **TEMP** to reset.
3. Make sure that all valves are open, to allow a full flow of water through the system. Limited water flow will NOT build up enough pressure to allow the heater to come on.
4. Clean the filter to assure maximum water flow.
5. The system is equipped with a heater delay switch that will prevent heater operation from occurring for approximately 15 seconds after pump starts. Make sure the pump has been operating for at least 20 seconds.

D. PULSATING WATER FLOW IN HIGH SPEED MODE:

1. Make sure water level of the spa is above the highest jet or skimmer.
2. Make sure that all valves are open.
3. Make sure the filter is full of water.
4. Make sure the filter is clean.
5. Make sure the suction lines are free of debris.

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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

- 1 TO REDUCE THE RISK OF ELECTRIC SHOCK.**
A ground lug marked "GROUND" is provided within the spa electrical control box. Connect this lug to the grounding terminal of the electric service or supply panel with a continuous copper wire equivalent in size to the circuit conductors supplying this equipment.
- 2 TO REDUCE THE RISK OF ELECTRIC SHOCK.** Bonding lugs marked "BONDING LUGS" are provided on the right side of the spa electrical control box to permit connection of a minimum No. 8 AWG solid copper bonding conductor between this point and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within 5 feet (1.5 m) of the unit.
- 3 DANGER - RISK OF ELECTRIC SHOCK.**
Install at least 5 feet (1.5 m) from all metal surfaces.
- 4 Install to provide drainage of compartment for electrical components.

FOR CORD AND PLUG CONNECTED SPAS

- 5 Connect to a grounded, grounding type receptacle only. Never, for any reason, modify the attachment plug to fit other than a grounded, 120 V., 20 A. receptacle.
- 6 **WARNING** - To reduce the risk of electric shock, replace a frayed or damaged power cord immediately.
- 7 Do not use an extension cord. Use of an extension cord will seriously degrade the performance of the spa, and can create a serious electrical hazard.

SPA-SIDE CONTROL ERROR MESSAGES:

The 3E Series incorporates a variety of diagnostic and protection features. In the event of a system error an error message will be displayed on the Temperature display (LED) as follows:

OH The system water temperature has exceeded 118 F (48°C), causing the heater to automatically shut OFF. When the water temperature has dropped below 104°F (40°C), press the **TEMP** touch button to reset the heater. If this error message continues to occur, discontinue use of the spa and contact a qualified service technician to correct the problem.

Fr The system water temperature has dropped below the minimum set point of 40 F (4°C). An automatic freeze protection will activate the pump(s) and heater \bar{n} protecting the system from freeze damage. The heater and pump(s) will operate until the water has reached 43°F (6°C).

FLo The flow switch is not measuring adequate water flow to permit heater operation. Check the spa for closed valves, low water level, or a dirty filter cartridge. If this error message continues, discontinue use and contact a qualified service technician to correct the problem.

Er0
Er1 The water temperature regulating sensor has malfunctioned or is not properly connected. IF either **Er0** or **Er1** error message is displayed, discontinue use and contact a qualified service technician to correct the problem.

Er2
Er3 The water temperature high limit sensor has malfunctioned or is not properly connected. IF either **Er2** or **Er3** error messages displayed, discontinue use and contact a qualified service technician to correct the problem.

Er4 The heater flow switch has malfunctioned. If this error message is displayed, discontinue use and contact a qualified service technician to correct the problem.

NORMAL OPERATING MESSAGES:

Whenever a timed filtration cycle is in operation, the **Fc** message and the current water temperature are alternately displayed on the LED. Whenever in a System Disable mode (for Maintenance), **diS** And the remaining System Disable time is alternately displayed on the LED.

To set the filtration cycles, press and hold (6 seconds) the **LIGHT** touch button. A number between 02 and 24 will be displayed, this is the total hours of programmed daily filtration. To change the current setting, press **TEMP** to increase the hours. To decrease the hours, press and hold the **TEMP** touch button until 24 appears, release **TEMP** and press again, the display will start at again at 00, press **TEMP** until the desired setting appears.

To set filtration start times, press and hold **LIGHT** (6 seconds) the filtration cycle setting will appear, press **LIGHT** again, a number between 00 and 24 will be displayed, this is the number of hours until the start of the first filtration cycle. To increase the current setting, press **TEMP** until the desired setting is displayed. To decrease the setting, press and hold **TEMP** until 24 appears, release **TEMP** and press again, the display will start again at 00, press **TEMP** until the desired setting is displayed. Press and release **LIGHT** to resume normal operation.

Example - Two filtration cycles per day: If the Spa -Side Control has been set for 2 hrs. filtration time (02) followed by 1 hr. start time (01), the first filter cycle of 1 hr. will start 1 hr. after programmed. 12 Hrs. later the second 1 hr. filter cycle will start.

If the filter cycle **Fc** is ON, the second push of the **LIGHT** touch button advises the time left on the filter cycle. If the filter cycle is OFF, the second push of the **LIGHT** touch button advises the time until the next filter cycle starts.



Note: Some models utilize “one” filtration cycle per day, instead of two filtration cycles per day. On these models the setting procedures are the same as two cycles per day.

Example - One filtration cycle per day: If the Spa-Side Control has been set for 2 hrs. filtration time (02) followed by 1 hr. start time (01), the filter cycle will start 1 hr. after programmed and continue to operate for 2 hrs.

OZONE GENERATOR ELECTRICAL CONNECTION:

All Control Modules include OZONE receptacle for field connection of an ozone generator.

Note: Power is available at the OZONE receptacle whenever the pump is operating in low speed or during a programmed filtration cycle. Therefore, and ozone generator plugged into this receptacle will operate automatically whenever the pump is operating in low speed.

- 8 This spa may be equipped with a ground-fault circuit-interrupter (GFCI) mounted on the front of the electrical control box or at the electrical power supply panel. Before each use, with the plug connected to the power supply and with the unit operating, push the test button. The unit should stop operating and the reset button should appear. Push the reset button. The unit should now operate normally. If the interrupter fails to operate in this manner, there is a ground current flowing indicating the possibility of an electric shock. Disconnect the plug from the receptacle until the fault has been identified.



FOR PERMANENTLY CONNECTED SPAS

- 9 The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with Section 422-20 of the National Electrical Code, ANSI/NFPA 70-1987. The disconnecting means must be readily accessible to the tub occupant but installed at least 5 feet (1.5 m) from tub water.

OPERATING PRECAUTIONS.

- 10 **DANGER** - To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
- 11 **WARNING - RISK OF CHILD DROWNING.** Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use a spa or hot tub unless they are supervised at all times.
- 12 **DANGER** - To reduce the risk of injury to persons, do not remove suction fittings.
- 13 **DANGER-RISK OF ELECTRIC SHOCK.** Do not permit any electric appliance, such as a light, telephone, radio, or television, within 5 feet (1.5 m) of the spa.
- 14 **TO REDUCE THE RISK OF INJURY:**
 - A. The water in a spa or hot tub should never exceed 40° C (104° F). Water temperatures between 38° C (100° F) and 40° C (104° F) are considered safe for a healthy adult. Lower water temperatures are recommended for extended use (exceeding 10-15 minutes) and for young children.

- B. 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 or hot tub water temperatures to 38° C (100° F).
 - C. Before entering a spa or hot tub, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices may vary as much as plus minus 3° C (5° F).
 - D. The use of alcohol, drugs, or medication before or during spa or hot tub use may lead to unconsciousness with the possibility of drowning.
 - E. Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa or hot tub.
 - F. Persons using medication should consult a physician before using a spa or hot tub since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.
- 15 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 drowsiness, lethargy, and an increase in the internal temperature of the body.
- Effects:
- 1- Unawareness of impending hazard.
 - 2- Fetal damage in pregnant women.
 - 3- Failure to recognize the need to exit spa.
 - 4- Physical inability to exit spa.
 - 5- Unconsciousness and danger of drowning.
 - 6- Failure to perceive heat.
- 16 **WARNING.** The use of alcohol or drugs can greatly increase the risk of fatal hyperthermia in spas.
- 17 **CAUTION:** Water temperature in excess of 38° C (100° F) may be injurious to your health.

SAVE THESE INSTRUCTIONS

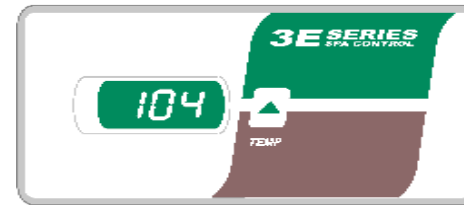
READ ALL INSTRUCTIONS CONTAINED IN THIS OWNER'S MANUAL BEFORE BEGINNING INSTALLATION

SETTING THE TEMPERATURE:

The temperature may be set to maintain the spa water between 40 F (4 C) and 104 F (40 C).

To set the temperature press the **TEMP** touch button and the current temperature setting will be displayed for approximately 4 seconds.

To increase temperature setting, press the **TEMP** touch button until the desired temperature is displayed.



To decrease temperature setting, press and hold the **TEMP** touch button, the display will continue to increase and stop at 104, release **TEMP** and press again, the display will start again at 40, press **TEMP** until desired temperature is displayed.

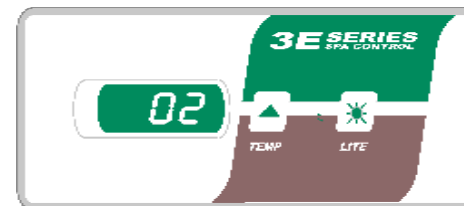
Whenever the heater is operating to maintain preset temperature, the spa water temperature and heat icon (**HET**) will alternately appear on the temperature Display.



Note: Press and hold the **TEMP** touch button to cause the temperature setting to change slowly, then rapidly.

SETTING FILTRATION CYCLES:

There are two equal filtration cycles a day. They may be programmed in 2 hour increments, to operate from 2 to 24 hours a day.



Note: Some models utilize the **AUX** touch button to operate a secondary pump (no air system). The operating procedures are the same except, **JET** will momentarily appear on the Temperature display instead of **AIR** and there is no air channel purge feature.

OPERATING THE SPA LIGHT:

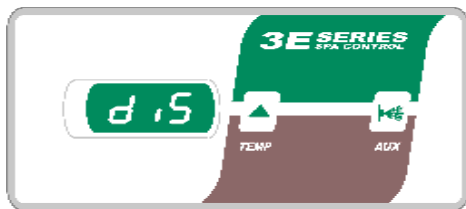
The **LIGHT** touch button controls the spa light. Press the **LIGHT** touch button to turn the light on (**LIT** will momentarily appear on the Temperature Display), press again for off (**OFF** will appear momentarily on the temperature display).



A safety shut-off timer circuit automatically turns the spa light off after four hours of operation.

SYSTEM DISABLE FEATURE-MAINTENANCE

The System Disable feature allows the system to be shut-off for up to 30 minutes, when performing maintenance procedures. To disable the system, press and hold the **LIGHT** touch button and press the **AIR** touch button.



The system will be disabled for 30 minutes, the Temperature Display will alternate between dis (disable) and the disable time remaining. The system will be enabled again after 30 minutes, or if you desire to end the System Disable sooner, press and hold **LIGHT** and press **AIR**.

Note: The System Disable does not shut off the power within the Control Module.

INSTALLATION INSTRUCTIONS

120 V. INSTALLATION

(Cord And plug Connected Units)

Equipment Modules provided with a factory installed power cord are to be plugged into a grounding type, 120 volt, 20 ampere receptacle. The use of any other receptacle, or the connection of the plug to a 240 volt service will cause the Equipment Module to operate improperly, create the potential for an electrical hazard, and will void the warranty.



20A "YES"

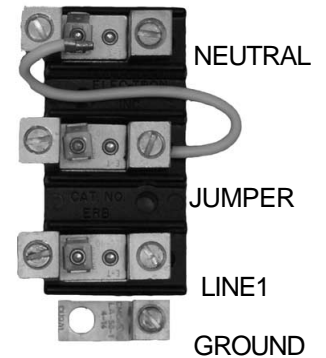


15A "NO"

120 V. INSTALLATION

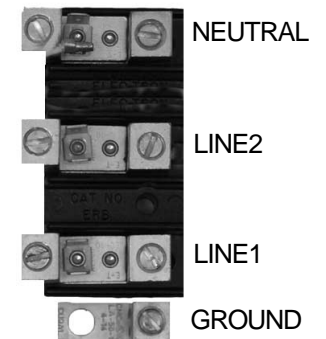
(Permanently Connected Units)

Units to be operated at 120 volt must be properly wired for 120 volt, 20 amps. all electrical connections accomplished by a qualified electrician in accordance with the National Electrical Code or the Canadian Electrical Code, and other electrical codes at the time of installation. Equipment modules installed for 120 volt operation require a two wire electrical service, plus ground. (line 1, black), (neutral, white), and (ground, green). Refer to terminal block diagram.

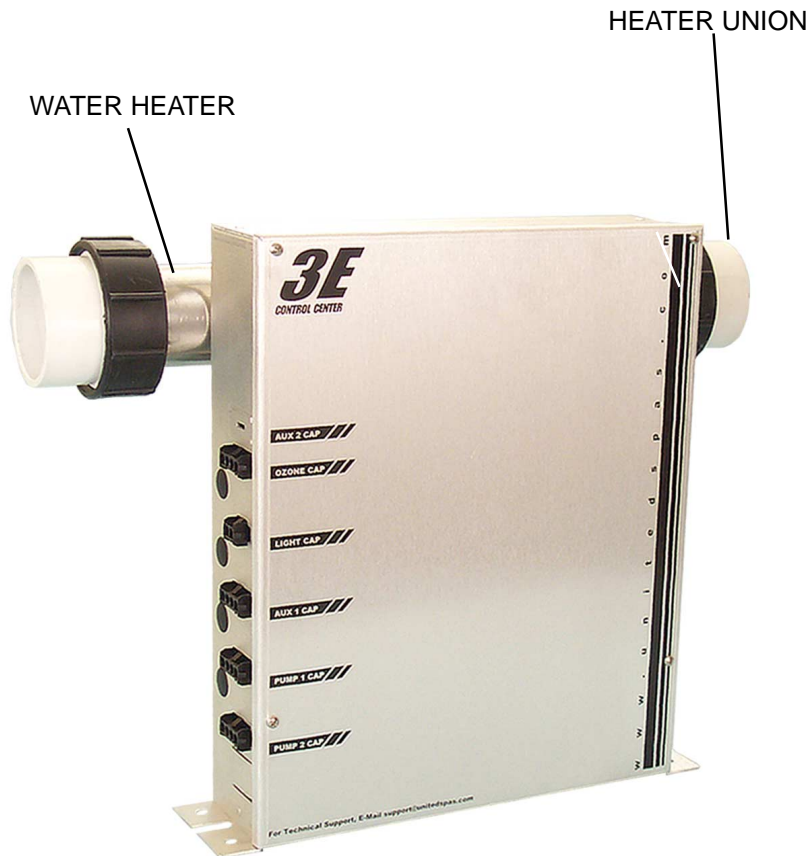


240 V. INSTALLATION

Units to be operated at 240 volt must have all electrical connections accomplished by a qualified electrician in accordance with the National Electrical Code or the Canadian Electrical Code, and other electrical codes at the time of installation. All connections must be made with copper conductors. The conductors and circuit breaker or fuses must be sized to accommodate the total amperage load as specified on the Equipment Module data label. Equipment Modules installed for 240 volt operation require a three wire electrical service, plus ground. (line 1, black), (line 2, red), (neutral, white), and (ground, green).



CONTROL SYSTEM OVERVIEW



OPERATING INSTRUCTIONS

OPERATING THE PRIMARY PUMP:

To activate the jets, press the **JET** touch button once for low speed, press again for high speed (**JET** will appear momentarily on the Temperature Display), press again for off (**OFF** will appear momentarily on the temperature display).



A safety shut-off timer circuit automatically turns off the jets after 30 minutes of operation. Press the **JET** touch button to continue using the jets.

NOTE: When operating in a filtration cycle, pressing the **JET** touch button will change between low speed and high speed operation only. The pump will not turn off until the end of the filtration cycle.

OPERATING THE AIR SYSTEM:

The **AUX** touch button controls the air system. Press the **AUX** touch button to activate the air (**AIR** will momentarily appear on the Temperature Display), press again for off (**OFF** will appear momentarily on the temperature display).



A safety shut-off timer circuit automatically turns off the air after 30 minutes operation. Press **AUX** again to continue using the air system.

Air channel purge feature: The air system will automatically operate for 1 minute every day to clear the water from the air channel for filtration.