NAVIGATION

Navigating the entire menu structure is done with 2 or 3 buttons on the control panel.

The **WARM** and **COOL** buttons are indicated by a single **Temperature** icon throughout this User Guide. Some panels only have one Temperature Button.

Panels that have two Temperature buttons can use both of them to simplify navigation and programming where a single Temperature icon is shown.

The **LIGHT** Button is also used to choose the various menus and navigate each section.

Typical use of the Temperature button(s) allows changing the Set Temperature while the numbers are flashing in the LCD. Pressing the **LIGHT** button while the numbers are flashing will enter the menus.

The menus can be exited with certain button presses. Waiting for 10 seconds will return the panel to normal operation and a display of spa status.

Power-up Screens

Each time the System powers up, a series of numbers is displayed.

After the startup sequence of numbers, LINK will appear if no button has been pressed. Press any button to Link the Panel with the System.
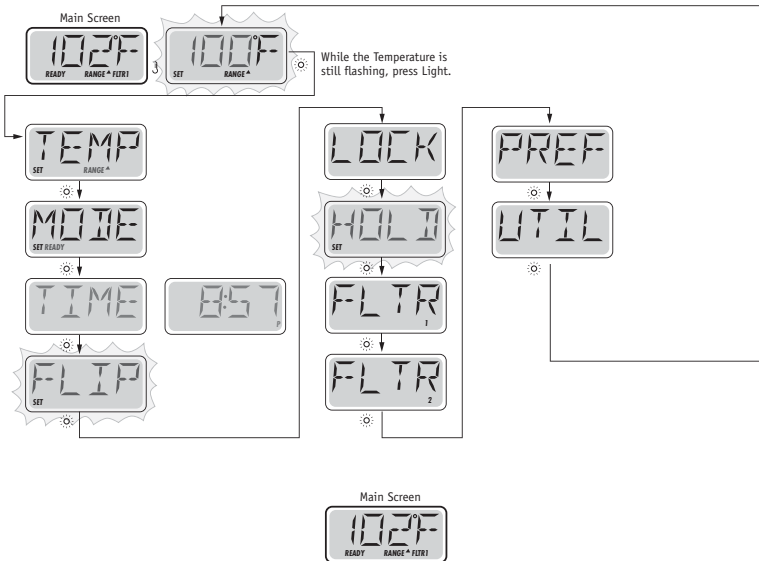
Key

▮ Indicates Flashing or Changing Segment

ʃ A temperature button, used for "Action"

☼ Light or dedicated "Choose" button, depending on control panel configuration

••••• Waiting time - varies depending on function

Main Screen

While the Temperature is still flashing, press Light.

Main Screen

Waiting Approx. 10 Seconds in the Main Menu will allow the display to revert to the Main Screen

•••••

SPA - CONTROLS: FILL IT UP

PREPARATION AND FILLING

Fill the spa to its correct operating level. Be sure to open all valves and jets in the plumbing system before filling to allow as much air as possible to escape from the plumbing and the control system during the filling process.

After turning the power on at the main power panel, the top-side panel display will go through specific sequences. These sequences are normal and display a variety of information regarding the configuration of the hot tub control.

PRIMING MODE

This mode will last for 4-5 minutes or you can manually exit the priming mode after the pump(s) have primed.

$$RUN \quad PMPS \quad PURG \quad AIR \quad -- -- --$$

Regardless of whether the priming mode ends automatically or you manually exit the priming mode, the system will automatically return to normal heating and filtering at the end of the priming mode. During the priming mode, the heater is disabled to allow the priming process to be completed without the possibility of energizing the heater under low-flow or no-flow conditions. Nothing comes on automatically, but the pump(s) can be energized by pushing the "Jet" buttons.

If the spa has a Circ Pump, it can be activated by pressing the "Light" button during Priming Mode.
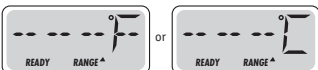
PRIMING THE PUMPS

As soon as the above display appears on the panel, push the "Jet" button once to start Pump 1 in low-speed and then again to switch to high-speed. Also, push the Pump 2 or "Aux" button, if you have a 2nd pump, to turn it on. The pumps will now be running in high-speed to facilitate priming. If the pumps have not primed after 2 minutes, and water is not flowing from the jets in the spa, do not allow the pumps to continue to run. Turn off the pumps and repeat the process. Note: Turning the power off and back on again will initiate a new pump priming session. Sometimes momentarily turning the pump off and on will help it to prime. Do not do this more than 5 times. If the pump(s) will not prime, shut off the power to the spa and refer to page 16.

Important: A pump should not be allowed to run without priming for more than 2 minutes. Under NO circumstances should a pump be allowed to run without priming beyond the end of the 4-5 minute priming mode. Doing so may cause damage to the pump and cause the system to energize the heater and go into an overheat condition.

EXITING PRIMING MODE

ou can manually exit Priming Mode by pressing a "Temp" button (Up or Down). Note that if you do not manually exit the priming mode as described above, the priming mode will be automatically terminated after 4-5 minutes. Be sure that the pump(s) have been primed by this time.

Once the system has exited Priming Mode, the top-side panel will momentarily display the set temperature but the display will not show the temperature yet, as shown below. This is because the system requires approximately 1 minute of water flowing through the heater to determine the water temperature and display it.

$$-- -- --°F \quad or \quad -- -- --°C$$
READY   RANGE▲   READY   RANGE▲

SPA - CONTROLS: SPA BEHAVIOR

PUMPS

Press the "Jets 1" button once to turn pump 1 on or off, and to shift between low- and high-speeds if equipped.

If left running, the pump will turn off after a time-out period. The pump 1 low-speed will time out after 30 minutes. The high-speed will time out after 15 minutes.

On non-circ systems, the low-speed of pump 1 runs when any other pump is on. If the spa is in Ready Mode (See page 36), Pump 1 low may also activate for at least 1 minute every 30 minutes to detect the spa temperature (polling) and then to heat to the set temperature if needed. When the low-speed turns on automatically, it cannot be deactivated from the panel, however the high speed may be started.

FILTRATION AND OZONE

Pump 1 low and the ozone generator (if so equipped) will run during filtration.

The system is factory-programmed with one filter cycle that will run in the evening (assuming the time-of-day is properly set) when energy rates are often lower. The filter time and duration are programmable. (See page 36)

A second filter cycle can be enabled as needed.

At the start of each filter cycle, Pump 2 (if there is one) will run briefly to purge its plumbing to maintain good water quality.

FREEZE PROTECTION

If the temperature sensors within the heater detect a low enough temperature, then the pump(s) activate to provide freeze protection. The pump(s) will run either continuously or periodically depending on conditions.

SPA - CONTROLS: TEMPERATURE AND TEMP RANGE

ADJUSTING THE SET TEMPERATURE

When using a panel with Up and Down buttons (Temperature buttons), pressing Up or Down will cause the temperature to flash. Pressing a temperature button again will adjust the set temperature in the direction indicated on the button. When the LCD stops flashing, the spa will heat to the new set temperature when required.

If the panel has a single temperature button, pressing the button will cause the temperature to flash. Pressing the button again will cause the temperature to change in one direction (e.g. UP). After allowing the display to stop flashing, pressing the Temperature Button will cause the temperature to flash and the next press will change the temperature in the opposite direction (e.g. DOWN).

PRESS-AND-HOLD

If a Temperature button is pressed and held when the temperature is flashing, the temperature will continue to change until the button is released. If only one temperature button is available and the limit of the Temperature Range is reached when the button is being held, the progression will reverse direction.

DUAL TEMPERATURE RANGES

This system incorporates two temperature range settings with independent set temperatures. The High Range designated in the display by an "up" arrow, and the Low Range designated in the display by a "down" arrow.

These ranges can be used for various reasons, with a common use being a "ready to use" setting vs. a "vacation" setting. The Ranges are chosen using the menu structure below. Each range maintains its own set temperature as programmed by the user. This way, when a range is chosen, the spa will heat to the set temperature associated with that range.
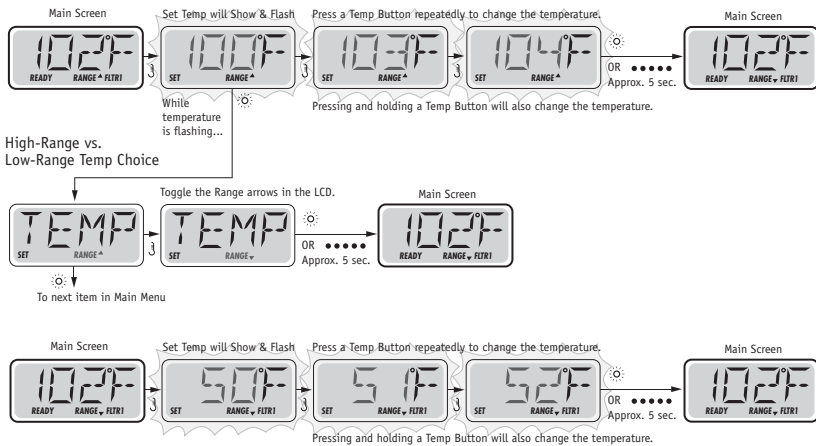
High Range can be set between 80°F and 104°F.

Low Range can be set between 50°F and 80°F.

See Ready and Rest on Page 36 for additional heating control information.

Key

■ Indicates Flashing or Changing Segment
♪ A temperature button, used for "Action"
☼ Light or dedicated "Choose" button, depending on control panel configuration
••••• Waiting time - varies depending on function

SPA - CONTROLS: MODE – READY AND REST

In order for the spa to heat, a pump needs to circulate water through the heater. The pump that performs this function is known as the "heater pump."
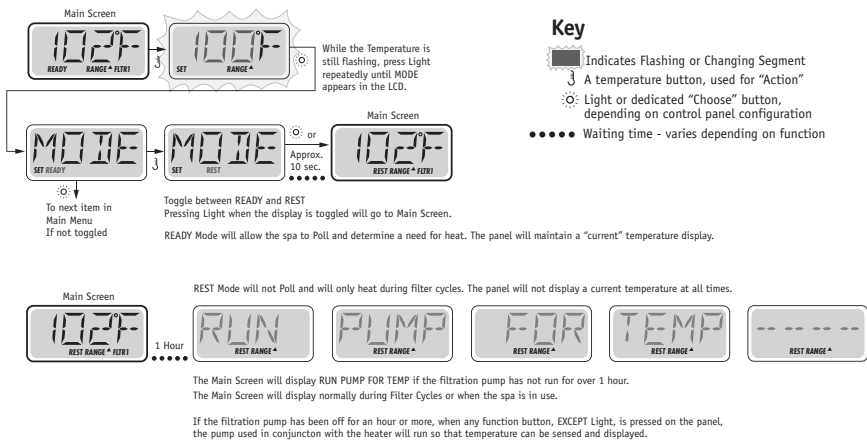
The heater pump can be either a 2-Speed Pump 1 or a circulation pump.

If the heater pump is a 2-Speed Pump 1, READY Mode will circulate water every 1/2 hour, using Pump 1 Low, in order to maintain a constant water temperature, heat as needed, and refresh the temperature display. This is known as "polling."

REST Mode will only allow heating during programmed filter cycles. Since polling does not occur, the temperature display may not show a current temperature until the heater pump has been running for a minute or two.

If the spa is configured for 24HR circulation, the heater pump generally runs continuously. Since the heater pump is always running, the spa will maintain set temperature and heat as needed in Ready Mode, without polling.

In Rest Mode, the spa will only heat to set temperature during programmed filter times, even though the water is being filtered constantly when in Circulation Mode.

Key
▓ Indicates Flashing or Changing Segment
ʃ A temperature button, used for "Action"
☼ Light or dedicated "Choose" button, depending on control panel configuration
••••• Waiting time - varies depending on function

While the Temperature is still flashing, press Light repeatedly until MODE appears in the LCD.

To next item in Main Menu
If not toggled

Toggle between READY and REST
Pressing Light when the display is toggled will go to Main Screen.

READY Mode will allow the spa to Poll and determine a need for heat. The panel will maintain a "current" temperature display.

REST Mode will not Poll and will only heat during filter cycles. The panel will not display a current temperature at all times.

The Main Screen will display RUN PUMP FOR TEMP if the filtration pump has not run for over 1 hour.
The Main Screen will display normally during Filter Cycles or when the spa is in use.

If the filtration pump has been off for an hour or more, when any function button, EXCEPT Light, is pressed on the panel, the pump used in conjunction with the heater will run so that temperature can be sensed and displayed.

READY-IN-REST MODE

READY/REST appears in the display if the spa is in Rest Mode and Jet 1 is pressed. It is assumed that the spa is being used and will heat to set temperature. While Pump 1 High can be turned on and off, Pump 1 Low will run until set temperature is reached, or 1 hour has passed. After 1 hour, the System will revert to Rest Mode. This mode can also be reset by entering the Mode Menu and changing the Mode.
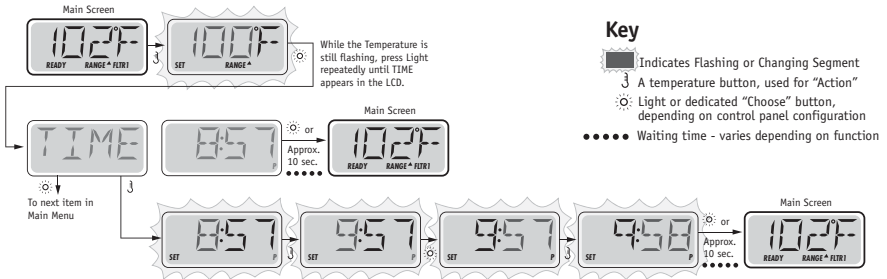
SPA - CONTROLS:
MODE – SHOW AND SET TIME-OF-DAY

BE SURE TO SET THE TIME-OF-DAY

Setting the time-of-day is important for determining filtration times and other background features.
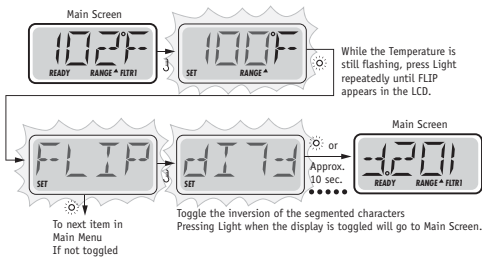
TIME will flash on the display if no time-of-day is set in the memory.

24-hour time display can be set under the PREF menu. (See Page 37)

Main Screen

While the Temperature is still flashing, press Light repeatedly until TIME appears in the LCD.

Key

⬛ Indicates Flashing or Changing Segment
ʒ A temperature button, used for "Action"
☼ Light or dedicated "Choose" button, depending on control panel configuration
●●●●● Waiting time - varies depending on function

To next item in Main Menu

Approx. 10 sec.

Main Screen

NOTE: If power is interrupted to the system, Time-of-Day will need to be reset.

FLIP (INVERT DISPLAY)

Main Screen

While the Temperature is still flashing, press Light repeatedly until FLIP appears in the LCD.

Main Screen

To next item in Main Menu
If not toggled

Toggle the inversion of the segmented characters
Pressing Light when the display is toggled will go to Main Screen.

Approx. 10 sec.

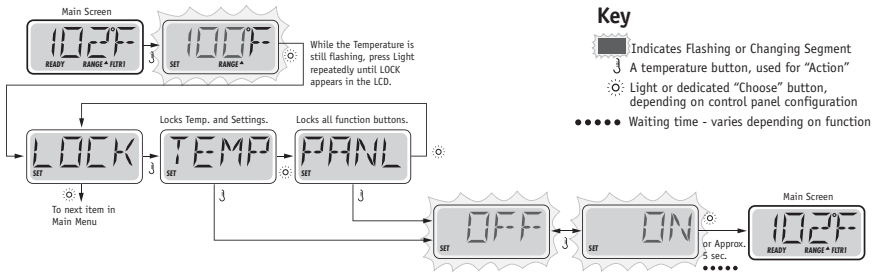# SPA - CONTROLS: RESTRICTING OPERATION

The control can be restricted to prevent unwanted use or temperature adjustments.

Locking the panel prevents the controller from being used, but all automatic functions are still active.

Locking the Temperature allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted.

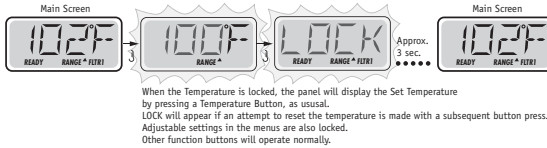Temperature Lock allows access to a reduced selection of menu items.

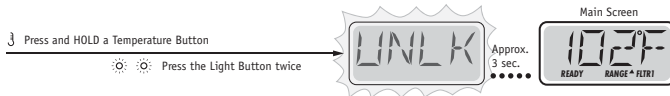These include Set Temperature, FLIP, LOCK, UTIL, INFO and FALT LOG.

Key

⬛ Indicates Flashing or Changing Segment
ʒ A temperature button, used for "Action"
☼ Light or dedicated "Choose" button, depending on control panel configuration
●●●●● Waiting time - varies depending on function

While the Temperature is still flashing, press Light repeatedly until LOCK appears in the LCD.

Locks Temp. and Settings.

Locks all function buttons.

To next item in Main Menu

Panel Locked

LOCK will remain on the display for 3 seconds and then revert to the normal display.

Temperature Locked

When the Temperature is locked, the panel will display the Set Temperature by pressing a Temperature Button, as usual.
LOCK will appear if an attempt to reset the temperature is made with a subsequent button press.
Adjustable settings in the menus are also locked.
Other function buttons will operate normally.

UNLOCKING

This Unlock sequence may be used from any screen that may be displayed on a restricted panel.

ʒ Press and HOLD a Temperature Button
☼ ☼ Press the Light Button twice

SPA - CONTROLS: HOLD (STANDBY)

HOLD MODE

Hold Mode is used to disable the pumps during service functions like cleaning or replacing the filter. Hold Mode will last for 1 hour unless the mode is exited manually.

Main Screen

102°F
READY   RANGE▲ FLTR1

100°F
SET   RANGE▲

While the Temperature is still flashing, press Light repeatedly until HOLD appears in the LCD.

Key

Indicates Flashing or Changing Segment

↻ A temperature button, used for "Action"

☼ Light or dedicated "Choose" button, depending on control panel configuration

••••• Waiting time - varies depending on function

HOLD
SET

Approx. 10 sec.
•••••

Main Screen

102°F
READY   RANGE▲ FLTR1

☼
To next item in Main Menu

HOLD   ING   FOR   0:57

☼ OR ↻

DONE

☼ or
Approx. 3 sec.
•••••

Main Screen

102°F
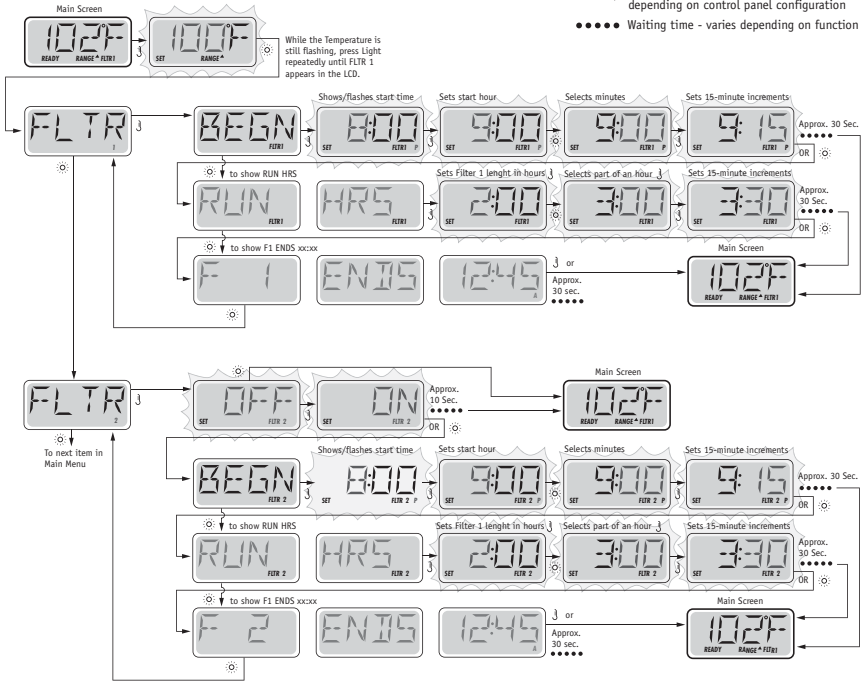READY   RANGE▲ FLTR1

MAIN FILTRATION

Filter cycles are set using a start time and a duration. Start time is indicated by an "A" or "P" in the bottom right corner of the display. Duration has no "A" or "P" indication. Each setting can be adjusted in 15-minute increments. The panel calculates the end time and displays it automatically.

FILTER CYCLE 2 - OPTIONAL FILTRATION
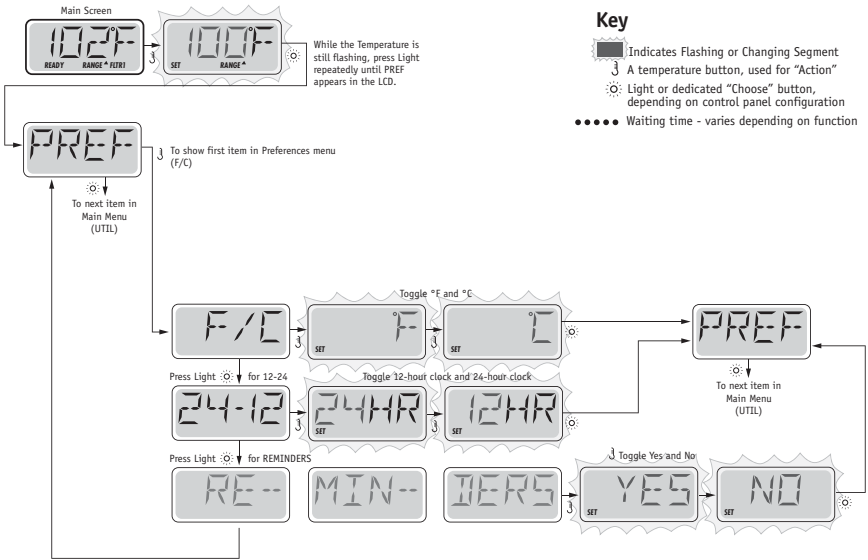
Filter Cycle 2 is OFF by default.

It is possible to overlap Filter Cycle 1 and Filter Cycle 2, which will shorten overall filtration by the overlap amount.

PURGE CYCLES

In order to maintain sanitary conditions, secondary Pumps will purge water from their respective plumbing by running briefly at the beginning of each filter cycle.

If Filter Cycle 1 is set for 24 hours, enabling Filter Cycle 2 will initiate a purge when Filter Cycle 2 is programmed to begin.

SPA - CONTROLS: PREFERENCES

Main Screen

Key

Indicates Flashing or Changing Segment

𝄡 A temperature button, used for "Action"

☼ Light or dedicated "Choose" button, depending on control panel configuration

••••• Waiting time - varies depending on function

While the Temperature is still flashing, press Light repeatedly until PREF appears in the LCD.

PREF

𝄡 To show first item in Preferences menu (F/C)

☼ To next item in Main Menu (UTIL)

F/C   F   C   PREF

Toggle °F and °C

☼ To next item in Main Menu (UTIL)

Press Light ☼ for 12-24

24-12   24HR   12HR

Toggle 12-hour clock and 24-hour clock

Press Light ☼ for REMINDERS

RE--   MIN--   DERS   YES   NO

𝄡 Toggle Yes and No

UTILITY MENU

The utility menu is available for trouble shooting purposes only and should not be accessed. Testing modes that are used in this menu can affect the operation of the system and cause it not to function correctly.

`RUN`   `PMPS`   `PURG`   `AIR`   `-- -- -- --`

PRIMING MODE

Each time the spa is powered up, it will enter Priming Mode. The purpose of Priming Mode is to allow the user to run each pump and manually verify that the pumps are primed (air is purged) and water is flowing. This typically requires observing the output of each pump separately, and is generally not possible in normal operation. Priming Mode lasts 4 minutes, but you can exit it earlier by pressing any Temp button. The heater is not allowed to run during Priming Mode.

NOTE: If your spa has a Circ Pump, it will turn on with Jets 1 in Priming Mode. The Circ Pump will run by itself when Priming Mode is exited.

`-- -- -- °F`   or   `-- -- -- °C`
READY   RANGE▲   READY   RANGE▲
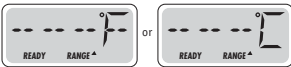
WATER TEMPERATURE IS UNKNOWN

After the pump has been running for 1 minute, the temperature will be displayed.

`42°F`   `TOO`   `COLD`
READY   RANGE▲ FLTR1

TOO COLD - FREEZE PROTECTION

A potential freeze condition has been detected, or the Aux Freeze Switch has closed, and all pumps are activated. All pumps are ON for at least 4 minutes after the potential freeze condition has ended, or when the aux freeze switch opens.

In some cases, pumps may turn on and off and the heater may operate during Freeze Protection.

This is an operational message, not an error indication.

`WATR`   `TOO`   `HOT`   `-- -- -- --`

WATER IS TOO HOT - (OHS)

One of the water temp sensors has detected spa water temp 110°F (43.3°C) and spa functions are disabled. System will auto reset when the spa water temp is below 108°F (42.2°C). Check for extended pump operation or high ambient temp.

SPA - CONTROLS: HEATER-RELATED MESSAGES

| HTR | FLOW | LOSS | ------ |

HEATER FLOW IS REDUCED (HFL)

There may not be enough water flow through the heater to carry the heat away from the heating element. Heater start up will begin again after about 1 min. See "Flow Related Checks" below.

| HTR | FLOW | FAIL | ------ |

HEATER FLOW IS REDUCED (LF)*

There is not enough water flow through the heater to carry the heat away from the heating element and the heater has been disabled. See "Flow Related Checks" below. After the problem has been resolved, you must press any button to reset and begin heater start up.

| HTR | MAY | BE | DRY | ------ | WAIT | ------ |

HEATER MAY BE DRY (DR)*

Possible dry heater, or not enough water in the heater to start it. The spa is shut down for 15 min. Press any button to reset the heater start-up. See "Flow Related Checks" below.

| HTR | DRY | ------ |

HEATER IS DRY*

There is not enough water in the heater to start it. The spa is shut down. After the problem has been resolved, you must press any button to reset and restart heater start up. See "Flow Related Checks" below.

| HTR | TOO | HOT | ------ |

HEATER IS TOO HOT (OHH)*

One of the water temp sensors has detected 118°f (47.8°C) in the heater and the spa is shut down. You must press any button to reset when water is below 108°f (42.2°C). See "Flow Related Checks" below.

| PRES | BTTN | TO | RSET | ------ |

A RESET MESSAGE MAY APPEAR WITH OTHER MESSAGES.

Some errors may require power to be removed and restored.

FLOW-RELATED CHECKS

Check for low water level, suction flow restrictions, closed valves, trapped air, too many closed jets, pump and dirty filters.

On some systems even when spa is shut down, some equipment may occasionally turn on to continue monitoring temperature or if freeze protection is needed.

* This message can be reset from the topside panel with any button press.

SPA - CONTROLS: SENSOR-RELATED MESSAGES

| `102F` | `SNSR` | `BAL--` | `ANCE` |

READY   RANGE * FLTR1

SENSOR BALANCE IS POOR

The temperature sensors MAY be out of sync by 2°F or 3°F. Call for Service.

| `SNSR` | `SYNC` | `------` | `CALL` | `FOR` | `SRVC` | `------` |

SENSOR BALANCE IS POOR*

The temperature sensors ARE out of sync. The Sensor Balance is Poor fault has been established for at least 1 hour. Call for Service.

| `SNSR` | `A` | `------` | `CALL` | `FOR` | `SRVC` | `------` |

| `B` |

SENSOR FAILURE

A temperature sensor or sensor circuit has failed. Call for Service.

MISCELLANEOUS MESSAGES

| `NO` | `COMM` |

NO COMMUNICATIONS

The control panel is not receiving communication from the System. Call for Service.

* This message can be reset from the topside panel with any button press.

SPA - CONTROLS: SYSTEM-RELATED MESSAGES

`MEM` `FAIL` `-- -- -- --`

MEMORY FAILURE - CHECKSUM ERROR*

At Power-Up, the system has failed the Program Checksum Test. This indicates a problem with the firmware (operation program) and requires a service call.

`MEM` `RSET` `-- -- -- --`
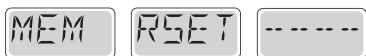
MEMORY FAILURE - PERSISTENT MEMORY ERROR*

Contact your dealer or service organization if this message appears on more than one power-up.

`CLOK` `FAIL` `-- -- -- --`

MEMORY FAILURE - CLOCK ERROR*

Contact your dealer or service organization.

`CNFG` `FAIL` `-- -- -- --`

CONFIGURATION ERROR – SPA WILL NOT START UP

Contact your dealer or service organization.

`STUK` `PUMP` `-- -- -- --`

A PUMP APPEARS TO BE STUCK ON

Water may be overheated. POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

`HOT` `FALT` `-- -- -- --` `CALL` `FOR` `SRVC` `-- -- -- --`

A PUMP APPEARS TO HAVE BEEN STUCK ON WHEN SPA WAS LAST POWERED

POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

* This message can be reset from the topside panel with any button press.

SPA - CONTROLS: REMINDER MESSAGES

GENERAL MAINTENANCE HELPS.

Reminder Messages can be suppressed by using the PREF Menu. See Page 37.

Reminder Messages can be chosen individually by the Manufacturer. They may be disabled entirely, or there may be a limited number of reminders on a specific model.

The frequency of each reminder (i.e. 7 days) can be specified by the Manufacturer.

Press a Temperature button to reset a displayed reminder message.

| CHEK | PH | Alternates with temperature or normal display. |

APPEARS ON A REGULAR SCHEDULE, I.E. EVERY 7 DAYS.

Check pH with a test kit and adjust pH with the appropriate chemicals.

| CHEK | CHEM | Alternates with temperature or normal display. |

APPEARS ON A REGULAR SCHEDULE, I.E. EVERY 7 DAYS.

Check sanitizer level and other water chemistry with a test kit and adjust with the appropriate chemicals.

| CLN | FLTR | Alternates with temperature or normal display. |

APPEARS ON A REGULAR SCHEDULE, I.E. EVERY 30 DAYS.

Clean the filter media as instructed by the manufacturer. See HOLD on page 36.

| TEST | GFCI | Alternates with temperature or normal display. |

APPEARS ON A REGULAR SCHEDULE, I.E. EVERY 30 DAYS.

The GFCI is an important safety device and must be tested on a regular basis to verify its reliability.

Every user should be trained to safely test the GFCI associated with the hot tub installation.

A GFCI will have a TEST and RESET button on it that allows a user to verify proper GFCI function.

* This message can be reset from the topside panel with any button press.

CHNG WATR   Alternates with temperature or normal display.

APPEARS ON A REGULAR SCHEDULE, I.E. EVERY 90 DAYS.

Change the water in the spa on regular basis to maintain proper chemical balance and sanitary conditions.

CLN COVR   Alternates with temperature or normal display.

APPEARS ON A REGULAR SCHEDULE, I.E. EVERY 180 DAYS.

Vinyl covers should be cleaned and conditioned for maximum life.

TRT WOOD   Alternates with temperature or normal display.

APPEARS ON A REGULAR SCHEDULE, I.E. EVERY 180 DAYS.

Wood skirting and furniture should be cleaned and conditioned per the manufacturers instructions for maximum life.

CHNG FLTR   Alternates with temperature or normal display.

APPEARS ON A REGULAR SCHEDULE, I.E. EVERY 365 DAYS.

Filters should be replaced occasionally to maintain proper spa function and sanitary conditions.

CHNG CART   Alternates with temperature or normal display.

AS NEEDED.

Install new mineral cartridge