S-CLASS SPA SYSTEMS
Dealer TechBook
• by Gecko Alliance •

Technical Specifications, Programming,

Installation & User's Instructions!
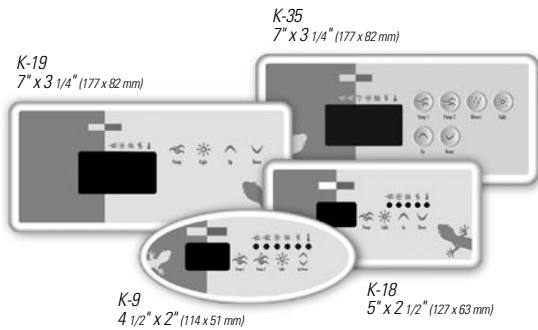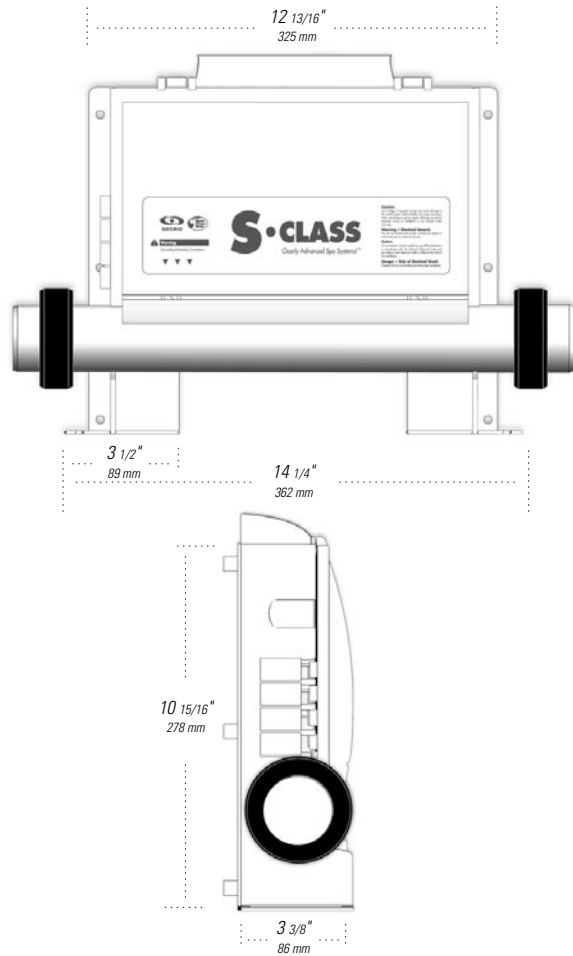
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Description

The SC-CF is one of Gecko's entry-level packs, perfect for spas with one or two pumps, a heater, ozonator and mood light. The SC-MP has the same capacity and, in addition, can also control a dual-pump and blower.

The SC-CF is available with single-pump configurations. The SC-MP is available with dual-pump configurations and a second single-speed pump and blower.

System features

- Automatic time-out on all outputs
- 3-digit LED or LCD display
- Digital temperature display
- Spa side panel High-Limit reset
- High-Limit protection
- Temperature probe failure detection
- Pressure switch failure detection
- Current limiting option
- Smart Winter Mode
- Temperature accuracy within 1°F (0.5°C)
- Filter cycle (programmable)
- Ozone management
- Filter cycle overtemp protection
- Overtemp protection
- Fiber box (optional)
- Power-up dectector

From keypad

K-19, K-18 and K-9 keypads (SC-CF)
- Temperature Set Point
- Temperature display in °F or °C
- Spa light control (on/off)
- Single-speed pump control
- High-limit temperature reset

K-35 keypad (SC-MP)
- Temperature Set Point
- Temperature display in °F or °C
- Spa light intensity control
- Single- or dual-speed pump control
- High-limit temperature reset
- Blower control
- Fiber box light (optional)
- LCD display

Electrical specifications

Input
   240 V, 50 A, 60 Hz
   120 V 15/20A, 60 Hz

Output
Pump 1
   120 V, 15 FLA / 80 LRA or
   240 V, 15 FLA / 80 LRA
   Connector: J&J or AMP
Pump 2 or Blower (SSPA-1)
   120 V, 15 FLA / 80 LRA or
   240 V, 15 FLA / 80 LRA
   Connector: J&J or AMP
Pump 2 or Blower (SSPA-MP)
   120 V, 15 FLA / 80 LRA or
   240 V, 15 FLA / 80 LRA
   Connector: J&J or AMP
Heater
   120 V, 23 A or
   240 V, 23 A
Light
   12 V, 1 A
   Connector: Direct lamp socket assembly
Ozonator
   120V. 5A or
   240 V, 5A
Fiber box
   120 V or
   240 V (use external module EXM5)

The total of output current cannot exceed the input rating!

Environmental conditions

Operating temperature
   0 to 122°F (-17 to 50°C)
Storage temperature
   -40 to 160°F (-40 to 70°C)
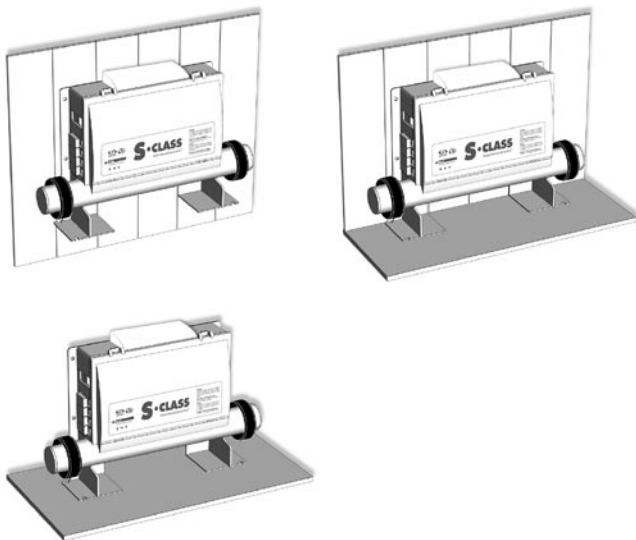*Humidity*
   Up to 80% non-condensing
Set point adjustment
   Adjusted in 1 increments from 60 to 104°F (16 to 40°C)
Temperature accuracy
   Better than 1°F (0.5°C)

12 13/16" 325 mm

3 1/2" 89 mm

14 1/4" 362 mm

10 15/16" 278 mm

3 3/8" 86 mm

K-35
7" x 3 1/4" (177 x 82 mm)

K-19
7" x 3 1/4" (177 x 82 mm)

K-9
4 1/2" x 2" (114 x 51 mm)

K-18
5" x 2 1/2" (127 x 63 mm)

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Power box

The power box must be installed close to the spa side, preferably under the spa, in a location where the risk of water leakage is minimal.

The power box can be wall-mounted or installed directly on the floor (or both at the same time).

The power box cover opens easily to access connection ports. Simply remove two front cover screws and pull cover upwards to access main board, connectors and jumpers.

Under the power box cover

A

B

C

Main power line

Light

Pump 2 or Blower →
Pump 1 →
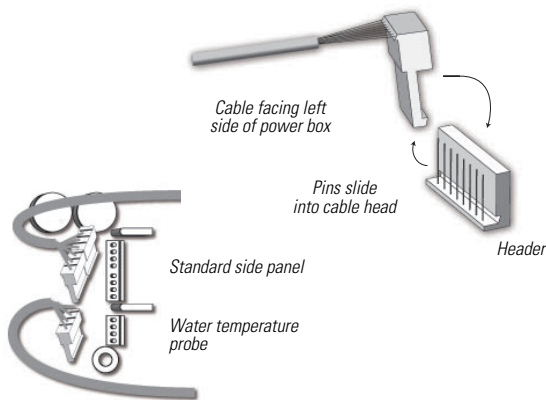Ozonator →
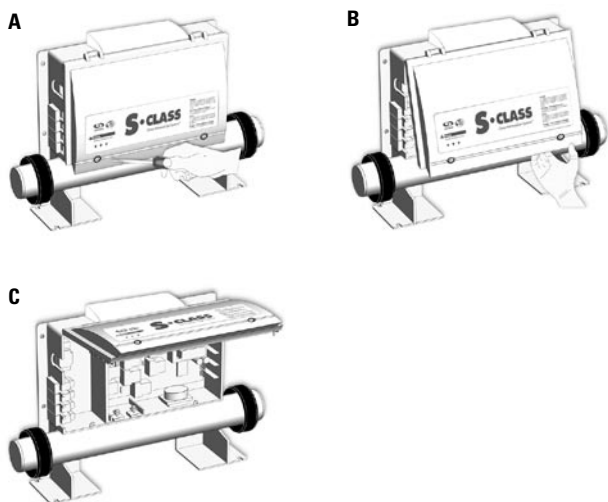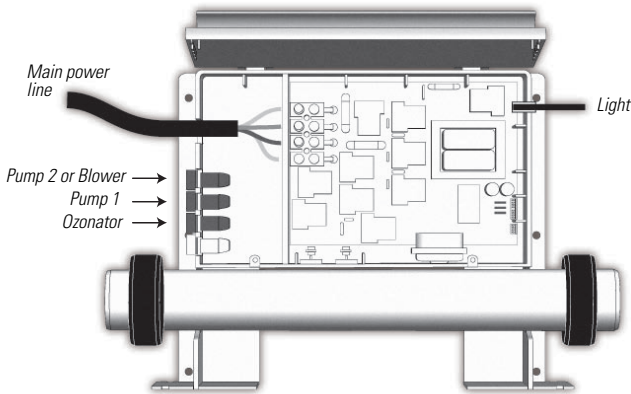
Power input

Connect the input cable to the terminal block (label AC-Input). Make sure alignment is correct and screws are securely tightened.

Pumps, blower, ozonator & light

Simply connect the equipment to the proper connector.

A light cord assembly is attached to the pack.

Proper way to connect keypad to standard side panel port

Cable facing left side of power box

Pins slide into cable head

Standard side panel

Water temperature probe

Header

Connecting keypad to power box

Main spa side control keypads must be connected to the standard side panel port of the control box.

A cable is provided to connect the keypad to the power box. Attach the connector to the power box as shown.

Clearance between low and high voltage conductors must be at least 1/4" (6 mm)!
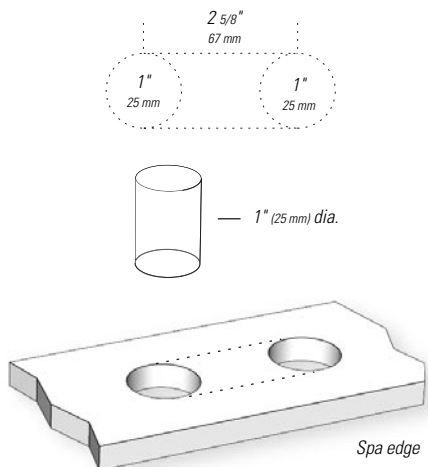
Temperature probe

Water temperature probes must be connected to the power box in a similar manner, with cable following the same route as the main keypad.

Install the temperature probe, making sure that the end of the probe is in contact with water. Through-wall fittings are available from Gecko or other vendors.

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K-18 & K-9

2 5/8"
67 mm

1"
25 mm

1"
25 mm

— 1" *(25 mm) dia.*

Spa edge

K-19 & K-35

6 3/8"
162 mm

2 5/8"
67 mm

Procedure

The keypad should be installed directly onto the spa (or very close to it) so that it is easily accessible to the user.

K-18 & K-9
    The first step in the installation is to drill two 1" (25 mm) diameter holes at 2 5/8" (67 mm) from center to center as illustrated.

    Cut out the material between the two holes.

K-19 & K-35
    The first step in the installation is to cut out an opening directly on the edge of the spa. The opening must be a rectangle measuring 2 5/8" x 6 3/8" (67 mm x 162 mm).
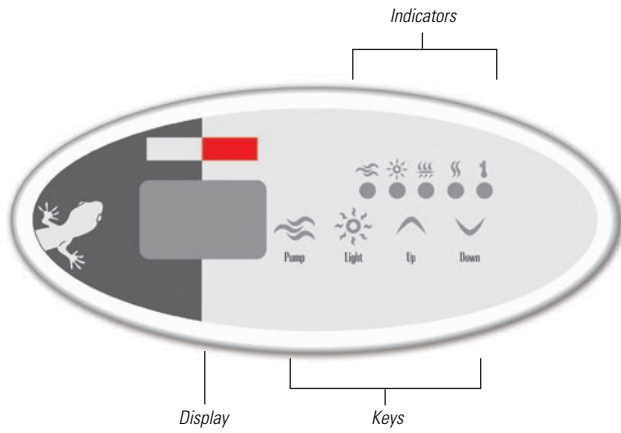
It is in this opening that the keypad will be inserted. Its adhesive strip will keep it in position.

To do so, peel off the double-sided tape protective layer.

Insert the keypad and secure it in place by firmly pressing on the keypad.

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Indicators

Display   *Keys*
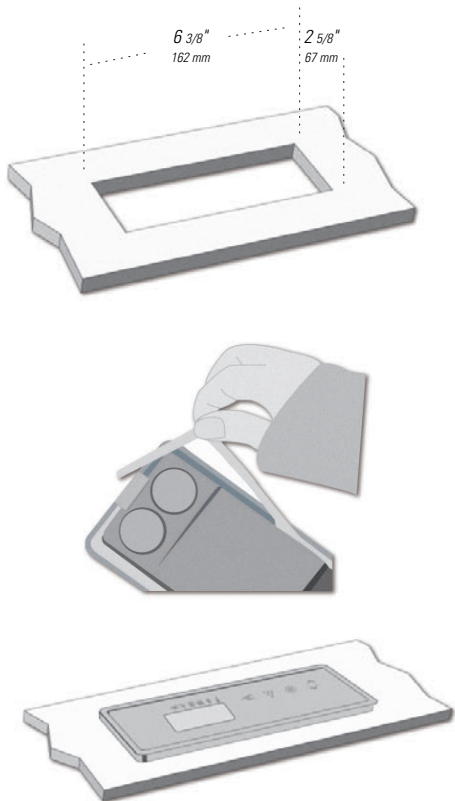
Pump key

Pump key is used to turn the pump on, or to select between off, low and high speeds.

Press **Pump** key to turn pump on. Press a second time to change pump speed. Press a third time to turn pump off.

A built-in timer automatically shuts the pump off 20 minutes after it has been started, unless the user does so manually.

The "Pump" indicator will light up on the function panel when pump is running.

Light key

Light key is used to turn light on or off. Press **Light** key once to turn light on. Simply press a second time to turn light off.

The light will automatically turn off after 2 hours. When the light is on the "Light" indicator will light up on the function panel.

Up & Down arrow keys

Up & **Down** arrow keys are used to set water temperature.

Pressing and holding keys will increase or decrease the current temperature setting.

The new and desired temperature setting ("Set Point" value) will remain for 5 seconds on the LED display as a confirmation of the new value you have selected.

The "Set Point" indicator shows the desired temperature, NOT the actual water temperature.

Water temperature can be adjusted in one-degree increments from 59 to 104°F (15 to 40°C).

Automatic water heater start

When water temperature is 1°F (0.5°C) lower than the Set Point, the heater automatically comes on until the temperature reaches Set Point plus 1°F (0.5°C).

The "Heater On" indicator will flash on the function panel when more heat has been requested, but the heater has not yet been turned on.

Water temperature display

The 3-digit LED display shows the water temperature reading. The reading is updated every second.

Filter Cycle indicator light

Light key

Keys →

Display →

(2 hours)   *(8 hours)*
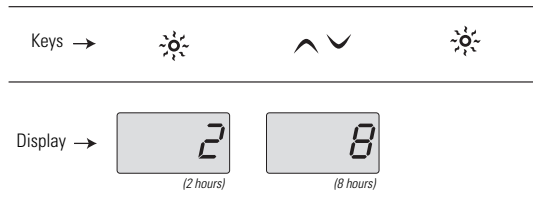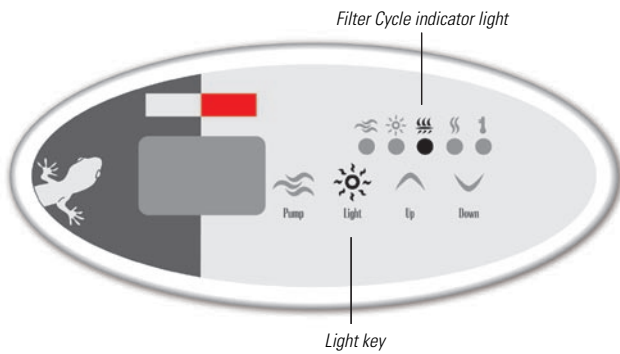
Filter cycle

The system automatically performs two filter cycles per day, at 12-hour intervals. When the filter cycle starts up, the pump will be activated for a predetermined number of hours.

To set filter cycle duration (the amount of time the pump will be on), follow this procedure:
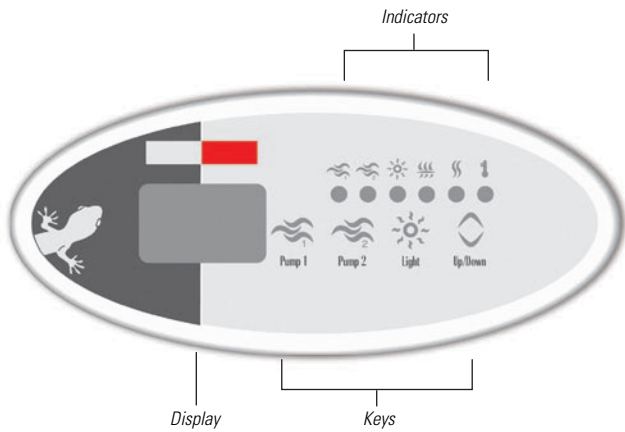
• Press and hold **Light** key for seconds.

• The display will show "x", with "x" representing the length of the filter cycle in hours.

• Use **Up** or **Down** key to change number of hours.
  0 = no filtration,
  12 = continuous filtration.

• When the setting you want is displayed, press **Light** key again. The filter cycle will start.

This process also sets the start times for filter cycles. They are repeated at 12-hour intervals from the time the initial cycle has been programmed.

When the "Filter Cycle" indicator light flashes, it means that the system has stopped filtering after 3 hours (of a cycle longer than 3 hours) because water temperature is 2°F (1°C) above Set Point. If the temperature cools down to 1°F (0.5°C) above Set Point before the scheduled end of cycle, filtering will resume for the remainder of the programmed duration.

Note: Following a power failure, the filter cycle duration will return to its default value (6 hours). In this case, the first filter cycle will start 12 hours after power has been restored.

Indicators

Display   *Keys*

Pump 1 key

Dual-speed pump

Use **Pump 1** key to turn it on and to select between off, low and high speeds.

A built-in timer will shut the pump off 20 minutes after it was turned on, unless the user turns it off manually first.

The "Pump 1" indicator will light up on the function panel when Pump 1 is running.

Pump 2 key

Single-speed pump

Use **Pump 2** key to turn it on or off.

A built-in timer will shut the pump off 20 minutes after it was turned on, unless the user turns it off manually first.

The "Pump 2" indicator will light up on the function panel when Pump 2 is running.

Light key

Light key is used to turn the light on or off.

Press **Light** key once to turn the light on. Pressing a second time will turn the light off. A built-in timer automatically turns the light off after 2 hours, unless turned off manually first.

The "Light" indicator will light up on the function panel when light is on.

Up/Down arrow key

Up/Down arrow key is used to set water temperature.

Press once on the key to display the Set Point temperature. Press and hold key to increase the Set Point value. To decrease the value of the desired water temperature, press and hold **Up/Down** key again until the desired value is reached. The new temperature setting you have selected will remain on the LED display for 5 seconds.

The "Set Point" indicator on the function panel tells the user that the temperature shown is the desired, NOT the actual water temperature.

Water temperature can be adjusted in 1-degree increments from 59 to 104°F (15 to 40°C).

Automatic water heater start

When water temperature is 1°F (0.5°C) lower than the Set Point, the heater automatically comes on until the temperature reaches Set Point plus 1°F (0.5°C).

The "Heater On" indicator will light up on the function panel when heater is on. The "Heater On" indicator will flash on the function panel when there is a request for more heat, but the heater is not yet turned on.

Water temperature display

The 3-digit LED display shows the water temperature reading. The reading is updated every second.

Filter Cycle indicator light

Light key

Keys →

Display →

(2 hours)   *(8 hours)*
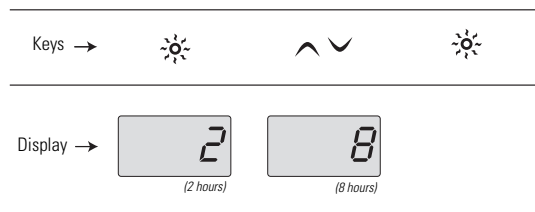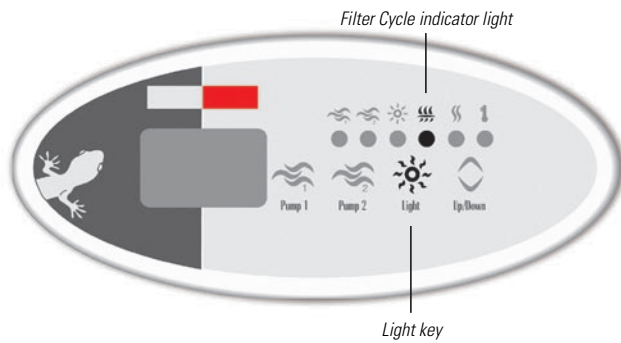
Filter cycle

The system automatically performs two filter cycles per day, at 12-hour intervals. When the filter cycle starts up, Pump 2 will run for one minute and then Pump 1 will be activated for a predetermined number of hours.

To set filter cycle duration (the amount of time the pump will be on), follow this procedure:
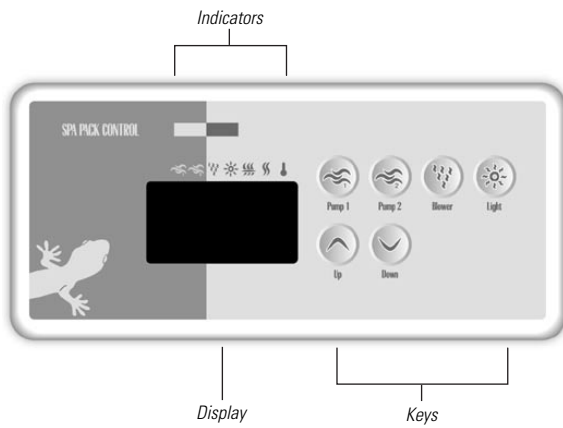
• Press and hold **Light** key for 5 seconds.

• The display will show "x", with "x" representing the length of the filter cycle in hours.

• Use **Up/Down** key to change number of hours.
0 = no filtration,
12 = continuous filtration.

• When the setting you want is displayed, press **Light** key again. The filter cycle will start.

This process also sets the start times for filter cycles. They are repeated at 12-hour intervals from the time the initial cycle has been programmed.

When the "Filter Cycle" indicator light flashes, it means that the system has stopped filtering after 3 hours (of a cycle longer than 3 hours) because water temperature is 2°F (1°C) above Set Point. If the temperature cools down to 1°F (0.5°C) above Set Point before the scheduled end of cycle, filtering will resume for the remainder of the programmed duration.

Note: Following a power failure, the filter cycle duration will return to its default value (6 hours). In this case, the first filter cycle will start 12 hours after power has been restored.

Indicators

SPA PACK CONTROL

Display

Keys

Pump 1 | Pump 2 | Blower | Light

Up | Down

Pump 1 key

Dual-speed pump

Use **Pump 1** key to turn it on and to select between off, low and high speeds.

A built-in timer will shut the pump off 20 minutes after it was turned on, unless the user turns it off manually first.

The "Pump 1" indicator will light up on the function panel when Pump 1 is running.

Pump 2 key

Single-speed pump

Use **Pump 2** key to turn it on or off.

A built-in timer will shut the pump off 20 minutes after it was turned on, unless the user turns it off manually first.

The "Pump 2" indicator will light up on the function panel when Pump 2 is running.

Light key

Light key is used to turn light on or off. Press **Light** key once to turn light on. Simply press a second time to turn light off.

The light will automatically shut off after 2 hours. When the light is on, the "Light" indicator will be displayed.

Fiber Box Option: If your spa is equipped with an optional fiber box, pressing the **Light** key once turns the fiber box (motor and light) on. Pressing a second time turns the fiber box motor off, but leaves the light on. A third time turns both fiber box motor and light off. A built-in timer will turn the fiber box off after 2 hours unless manually deactivated first.

The "Light" indicator will be displayed when the fiber box light is on. It will flash when fiber box motor and light are on at the same time.

Blower key

Blower key is used to turn light on or off. Press **Blower** key once to turn blower on. Simply press a second time to turn blower off.

The blower will automatically shut off after 20 minutes, unless manually deactivated.

When the blower is on, the "Blower" indicator will be displayed.

Up or Down arrow key

Up & **Down** arrow keys are used to set water temperature.

Pressing and holding keys will increase or decrease the current temperature setting.

The new and desired temperature setting ("Set Point" value) will remain for 5 seconds on the LCD display as a confirmation of the new value you have selected.

The "Set Point" indicator shows the desired temperature, NOT the actual water temperature.

Water temperature can be adjusted in one-degree increments from 59 to 104°F (15 to 40°C).

Automatic water heater start

When water temperature is 1°F (0.5°C) lower than the Set Point, the heater automatically comes on until the temperature reaches Set Point plus 1°F (0.5°C).

The "Heater On" indicator will light up on the function panel when heater is on. The "Heater On" indicator will flash on the function panel when there is a request for more heat, but the heater is not functioning.

Water temperature display

The LCD display shows the water temperature reading. The reading is updated every second.
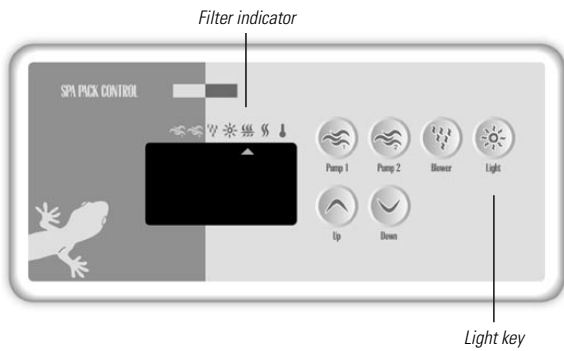
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Filter indicator

SPA PACK CONTROL

Pump 1   Pump 2   Blower   Light

Up   Down

Light key

Filter cycle

The system automatically performs two filter cycles per day, at 12-hour intervals. When the filter cycle starts up, Pump 2 and blower will run for one minute and then Pump 1 will be activated for a predetermined number of hours. The ozonator is also activated.

To set filter cycle duration (the amount of time the pump will be on), follow this procedure:

• Press and hold **Light** key for 5 seconds.

• The display will show "xx", with "xx" representing the length of the filter cycle in hours.

• Use **Up** or **Down** key to change number of hours.
  0 = no filtration,
  12 = continuous filtration.

• When the setting you want is displayed, press **Light** key again. The filter cycle will start.

This process also sets the start times for filter cycles. They are repeated at 12-hour intervals from the time the initial cycle has been programmed.

Note: Following a power failure, the filter cycle duration will return to its default value (6 hours). In this case, the first filter cycle will start 12 hours after power has been restored.

Filter cycle overtemp protection

To prevent excessive water temperature build-up during filter cycle in hot weather, if water temperature exceeds Set Point by over 2°F (1°C) for more than 3 hours, the system will shut down the filter cycle and "Filter" indicator will flash for the remainder of the cycle repeatedly as follows: 3 short flashes followed by a longer flash. If water temperature cools to 1°F (0.5°C) above Set Point before scheduled end of cycle, filter cycle will resume for remaining time.

During filter cycle if a pump, blower and/or light are turned on, the cycle will be suspended until 40 minutes after the last accessory has been turned off. During this time the "Filter" indicator will flash.

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Smart Winter Mode

SC-CF and SC-MP spa packs are equipped with a special sensor that measures the air temperature in the spa's plumbing area. If air cold enough to freeze water in the pipes is detected, the system automatically activates **Smart Winter Mode** for 24 hours. In this mode, if a pump or blower is not turned on within 2 hours, the system automatically turns it on for one minute to prevent freezing.

When pump is running, "Filter Cycle" indicator will flash on the display.

High limit temperature

The High Limit temperature sensor will cause the system to shut down the heater because the water temperature AT THE HEATER has reached 119°F (48°C).

3 flashing dots will appear on keypad display and a LED will light up on the board.

Overtemp mode protection

If water temperature IN THE SPA reaches 112°F (44°C), the display will start flashing and all pumps and accessories will be shut down until the water reaches 109°F (43°C).

During Overtemp Mode only **Smart Winter Mode** and keys that don't start accessories will be functional.

Note: In the case of both Overtemp and High limit protection, DO NOT ENTER the water. Allow water to cool down to109°F (43°C), then power down to reset the error.

Pressure switch

To prevent a "dry fire" in the heater, a pressure switch is installed in the pipes. The unit constantly verifies the status of the pressure switch.

If the pump used to circulate water through the heater is off and the pressure switch is closed, the system will display 3 flashing dots. This happens when the pressure switch adjustment is too low and the weight of the water is sufficient enough to close the switch.

If circulation pump is on and the pressure switch is open, the system will display 3 flashing dots, and the heater will not be allowed to run. This happens if the pressure switch adjustment is too high or if there is a bad connection between the board and switch.

Note that a dirty filter limiting water flow may cause a message to appear even if the system has been working well.

When the pump is turned on, there is a 5-second delay before the system starts to auto-check the status of the switch.

Temperature probe

If system detects a problem with the water temperature probe, the wrong temperature will be displayed and the heater will not be allowed to heat. Check the connection to the board.

Power failure

If a power failure occurs, the system will be able to retain the time of day for 48 hours. If the power failure lasts longer, the clock setting will be lost and must be reprogrammed. The display will flash when power is restored. Press any key to stop display from flashing.

Location of jumpers

Position 1   Position 2
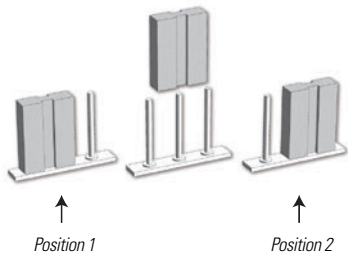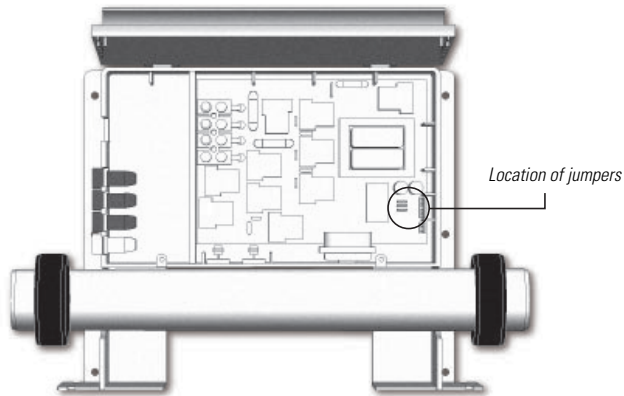
Jumper selection

Certain parameters on the SC-CF and SC-MP spa packs can be changed by reconfiguring the jumpers on the board.

To access jumpers, first pull up the front cover of the power box.

The jumpers are located in the lower right section of the board. To change a setting, simply pull the jumper cover off and replace it in the desired position.

Jumper 1

Current limiting option
The function of Jumper 1 is to restrict the electrical current drawn when 2 pumps run at the same time.

Position 1 (HC): No restrictions.
Position 2 (LC): The system won't allow the heater to turn on if any pump is on at high speed. The "Heater" indicator will flash indicating you have requested more heat, but the heater is not allowed to start.

Jumper 2

Temperature unit
The function of Jumper 2 is to select the unit of temperature.

Position 1: Temperature will be displayed in Fahrenheit.
Position 2: Temperature will be displayed in Celsius.

Jumper 3*

Pump 2

Position 1: Single-speed pump
Position 2: Dual-pump (or blower)

* Not used on the SC-MP

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For more information about our spa packs
and all our other products and services,
visit our web site at
www.geckoalliance.com

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