

2005 Owner's Manual

Designer In-Ground Spas

manufactured after December 1, 2004

International Distribution



www.calspas.com

Due to continuous improvement programs, all models, operation, and/or specifications are subject to change without prior notice.



CONTACT INFORMATION

For customer service, please contact your authorized dealer immediately. If you need additional information and/or assistance, please contact:

C.A.I. Customer Service Department
1462 East Ninth Street
Pomona, CA 91766

Toll Free: 1-800-CAL-SPAS

Fax: 1-909-629-3890

www.calspas.com

Copyright 2004, 2005 California Acrylic Industries, Inc. All rights reserved. Duplication without written consent is strictly prohibited.

Cal Spas™, Bio-Clean™, and Fitness Spa Series™ are registered trademarks.

Due to continuous improvement programs, all models, operation, and/or specifications are subject to change without prior notice.



Table of Contents

Read This First!

Important Safety Instructions

Basic Spa Information	2
Quick Reference Information	4

Preparing for Your New Spa

Planning the Best Location For Your Spa	6
Locating an In-Ground Spa Site	7
Connecting the Plumbing to the Equipment Pack	9
Electrical Installation Instructions	13
In-Ground Spa Light Installation Instructions	15
Topside Control Panel and Sensor Installation	17
Filling and Powering Up Your Portable Spa	22

Operating Your Spa

2305 Electronic Control Operation	23
Adjustable Jets	26
Spa Cover	26

Water Quality Maintenance

Chemical Maintenance Schedule	27
Ozonator	29

Cleaning and Maintaining Your Spa

Cleaning and Replacing the Filter	30
Winterizing (Cold Climate Draining)	31
Cleaning the Cover and Shell	31

Appendix

Replacement Parts	33
Cal Spas™ Chemicals	35
2005 Warranty Information	36

This page intentionally left blank.

Read This First!

Important Safety Instructions

When installing and using this electrical equipment, always follow basic safety precautions. Following these instructions will help make your first spa session a pleasurable one.

READ AND FOLLOW ALL INSTRUCTIONS

WARNING: To reduce the risk of injury, do not allow children to use the spa unless they are supervised at all times.

DANGER -- RISK OF ACCIDENTAL DROWNING: Use extreme caution to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use the spa unless they are closely supervised at all times. (Keep the spa cover on and locked when not in use. See instructions enclosed with your cover.)

DANGER -- RISK OF INJURY: The suction fittings in this spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings, or the pump, be sure the flow rates are compatible.

DANGER -- RISK OF INJURY: Never operate the spa if the suction fitting or filter baskets are broken or missing.

DANGER -- RISK OF INJURY: Never replace a suction fitting with one that is rated less than the flow rate marked on the original suction fitting.

DANGER -- RISK OF ELECTRIC SHOCK: Install the spa at least 1.5 meters from all metal surfaces. As an alternative, a spa may be installed within 5 feet of metal surfaces if each metal surface is permanently bonded by a minimum #8 AWG solid copper conductor to the outside of the spa's control box.

DANGER - RISK OF ELECTRIC SHOCK: Do not permit any electrical appliances, such as lights, telephones, radios, televisions, and etc., within 1.5 meters of the spa. Never attempt to operate any electrical device from inside the spa.

WARNING -- RISK OF INJURY

- Before entering a spa, measure the water temperature with an accurate thermometer, since the tolerance of water temperature-regulating devices varies.
- The spa water should never exceed 40°C. Water temperatures between 38°C and 40°C are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.
- Since excessive water temperatures have a high potential for causing fetal damage during pregnancy during early months of pregnancy, women who are pregnant, or who think they are pregnant, should always check with their physician prior to spa usage.
- The use of alcohol, drugs or medication before or during spa use may lead to unconsciousness, with the possibility of drowning.
- Persons suffering from obesity, a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using the spa.

Read This First!

- Persons using medications should consult a physician before using the spa since some medications may induce drowsiness while others may affect heart rate, blood pressure and circulation.

Hyperthermia Danger

Prolonged exposure to hot air or water can induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level 2°C to 4°C above the normal body temperature of 37°C. While hyperthermia has many health benefits, it is important not to allow your body's core temperature to rise above 39.5°C. Symptoms of excessive hyperthermia include dizziness, lethargy, drowsiness and fainting. The effects of excessive hyperthermia may include:

- Failure to perceive heat
- Failure to recognize the need to exit spa or hot tub
- Unawareness of impending hazard
- Fetal damage to pregnant women
- Physical inability to exit the spa
- Unconsciousness

WARNING! The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia.

Basic Spa Information

The following operating and maintenance instructions are very important and must be followed carefully. With the proper care and maintenance, your Cal Spa will provide you with years of satisfaction and performance.

Do not be afraid to push buttons or turn knobs to learn about your new Cal Spa, as it is built with quality materials and excellent craftsmanship.

Your new Cal Spa has been engineered with a high-powered water pump that pushes water through various therapy jets, which will relax even the tightest muscles. In addition to the water pressure, you can add air into the spa water with air venturi handles located seat-side that increase the intensity of your massage.

The filtering of this spa is very important. This alone will cut down on cleaning time and use of excess chemicals. We have pre-programmed two filter cycles of two hours for every twelve hours. This can be increased to six hours every twelve hours through the topside control panel.

Important! Keep the spa covered when not in use!

- Covered spas will use less electricity in maintaining your set temperature.
- Covering your spa will protect your spa's finish from the sun's ultraviolet rays.
- You are required to keep the spa covered to maintain warranty coverage.
- Covering your spa helps prevent children from drowning in the spa.

Your new Cal Spa comes equipped with an electric heater. Following the directions listed below will ensure the most efficient operation:

- Set the spa's operating temperature within 2.8°C of the desired usage temperature and raise the temperature one or two hours prior to usage.

NOTE: This method is only for spa usage under two hours a week.

- If the spa usage exceeds two hours a week, the set temperature should remain at the desired usage temperature.
- The air venturi handles should be used sparingly. When open, water temperature drops quite rapidly and can also dissipate chemicals.

NOTE: Allowing the water temperature to lower more than 5.6°C below the desired usage temperature and reheating it prior to usage will cause the heater to operate longer than it normally would maintaining the desired temperature. Doing this will increase your operating cost and makes your heater work more than necessary.

The filter needs to be cleaned on a regular basis. This is very simple and only takes a few minutes. The result is increased water clarity and equipment longevity.

Water level is very important to the operation of your spa. If the water level is too low or too high, your spa will not operate properly. The water level should be to the middle of the skimmer area when the spa is not being used.

We recommend that your spa water be changed every 4 to 6 months. You may find the need to change your spa water more frequently with heavy use. When empty, your spa should be cleaned with a non-abrasive cleaner, such as Cal Spas™ All Surface Cleaner, and then rinsed thoroughly.

See the section “Cleaning and Maintaining Your Spa” for instructions on draining your spa.

When filling your spa, always fill through the skimmer filter canister. Use only regular tap water.

WARNING: DO NOT USE SOFT WATER.

Quick Reference Information

Setting the Filtration Cycles

2305 Equipment:

Press either UP or DOWN followed by either the JETS 1 or JETS 2. Each additional press of the UP or DOWN button will increase or decrease the filtration time.

General Chemical Maintenance Information (500-Gallon Spa)

Start-up:

1. Add 3 oz. of “Iron Out” or 16 oz. of “Metal Protector”.
2. Add 2 oz. of sodium bromide.
3. Add 2 oz. of “Oxidizer Shock”.
4. Add 3 to 4 Bromine tablets to a mostly closed floater.

NOTE: Do not place bromine tablets in the skimmer basket.

Weekly

1. Test spa water with test strips for the following items twice a week:
 - a. Bromine: Acceptable range without a Cal Zone™ Ozonator is between 3 to 5
 - b. Bromine: Acceptable range with a Cal Zone™ Ozonator is between 1 to 3.
 - c. Chlorine: Acceptable range without a Cal Zone™ Ozonator is between 3 to 5.
 - d. Chlorine: Acceptable range with a Cal Zone™ Ozonator is between 1 to 3.
 - e. pH acceptable range is between 7.2 to 7.8 ppm.
 - f. Alkalinity: Acceptable Range is between 80 to 120 ppm.
2. Add one or two bromine tablets. Usage varies with water temperature and bather loads.
3. Add 2 oz. of “Oxidizer Shock”. Always follow directions on the container. (Do not use chlorinating shock.)
4. Add 2 oz. “Stain & Scale Prevention” or 3 oz. of “Iron Out” as directed on the container.
5. Add “pH Up”, if needed. Always follow directions on the container.
6. Add “Alkalinity Up”, if needed. Always follow directions on the container.
7. Add “pH Down”, if needed. Always follow directions on the container.

Bi-Weekly

In addition to the weekly instructions, perform the following:

1. Clean the filter cartridge.
2. Visually inspect the equipment area for the following:
 - a. Equipment area is clean. (Cabinet vents are unobstructed)

- b. Ozonator operation. (Ozonator only operates during filtration cycles)
- c. Pumps, plumbing, air blowers, unions, gate valves, and ozone (check valves for leakage).

NOTE: Component failure as a result of leaks not promptly reported will void the warranty.

Important Chemical Notice

Before using any chemicals, consult with your physician for possible allergic reactions to the corresponding chemicals. Also, consult with your local Cal Spas™ Dealer for a chemical program that is best suited for your local water condition, climate and usage habits.

Preparing for Your New Spa

Congratulations! You have purchased a Cal Spa. With a little preparation and care, your spa will give you many years of enjoyment. This section has been designed to provide you with all the information you'll need to ensure a safe, speedy and trouble-free spa delivery and set-up.

Most cities and counties require permits for exterior construction and electrical circuits. In addition, some communities have codes requiring residential barriers such as fencing and/or self-closing gates on property to prevent unsupervised access to the property by children under the age of 5. Your dealer can provide information on which permits may be required and how to obtain them prior to the delivery of your Cal Spa.

Planning the Best Location For Your Spa

Here are some of the things that you will need to consider when determining where to place your new spa.

Safety First

- Do not place your spa within 10' (3m) of overhead power lines.
- Make sure the spa is positioned so that access to the equipment compartment and all side panels will not be blocked. Be certain that your installation will meet all city and local safety codes and requirements.

Consider How You Will Use Your Spa

How you intend to use your spa will help you determine where you should position it. For example, will you use your spa for recreational or therapeutic purposes? If your spa is mainly used for family recreation, be sure to leave plenty of room around it for activity. If you will use it for relaxation and therapy, you'll probably want to create a specific mood around it.

Plan for Your Environment

If you live in a region where it snows in the winter or rains frequently, place the spa near a house entry. By doing this, you will have a place to change clothes and not be uncomfortable.

Consider Your Privacy

In a cold-weather climate, bare trees won't provide much privacy. Think of your spa's surroundings during all seasons to determine your best privacy options. Consider the view of your neighbors as well when you plan the location of your spa.

Provide A View With Your Spa

Think about the direction you will be facing when sitting in your spa. Do you have a special landscaped area in your yard that you find enjoyable? Perhaps there is an area that catches a soothing breeze during the day or a lovely sunset in the evening. Consider these things when you plan your location.

Keep Your Spa Clean

Prevent dirt and contaminants from being tracked into your spa by placing a foot mat at the spa's entrance where the bather's can clean their feet before entering your spa. You may also consider keeping a small water-filled basin nearby for bathers to rinse their feet before enter your spa.

In planning your spa's location, consider a location where the path to and from the house can be kept clean and free of debris.

Allow For Service Access

Many people choose to install a decorative structure around their spa. If you are installing your spa with any type of structure on the outside, such as a gazebo, remember to allow access for service. It is always best to design special installations so that the spa can still be moved, or lifted off the ground.

Locating an In-Ground Spa Site

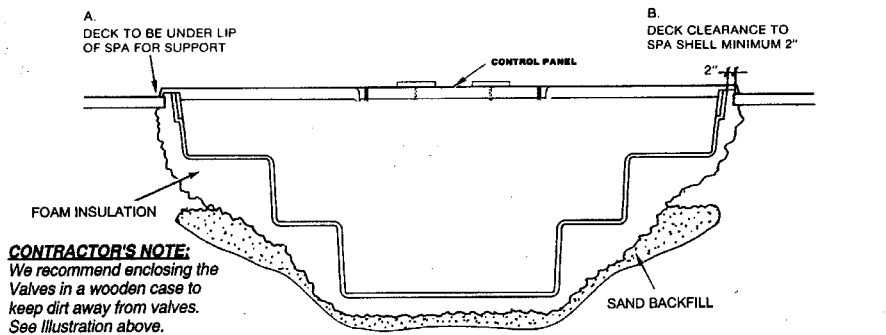
When locating an inground spa site you will want to consider the following:

1. Is there enough room for the spa, decking and equipment?
2. Can the outdoor equipment pack be installed within a maximum of 35 feet from the spa?
3. Can the proper electrical service be supplied to both the equipment area and spa side?
4. Can the required flat, level foundation be constructed in the area chosen?
5. Will the spa be able to be properly backfilled with wet sand, underneath and on all four sides?
6. Will the final architecture include permanent ground coverage within a 10 feet radius of the spa?

Never place any spa in a sealed area. Water must be able either be absorbed into the surrounding area or channeled away. Water build-up under and/or around the spa, will cause the spa to float out of the ground.

To better illustrate a typical inground installation, see Figure 1 below.

NOTE:The actual excavated spa site, wet sand back fill, finished height, and 2" clearance needed for shell movement.



Inground Spa Deck Requirements

- A.** Deck must go under lip of spa uniformly for proper lip support. Lip is not to bear any weight from spa. Deck is only to stop lip from flexing when stepped or sat on.
- B.** Deck must not be poured up against spa, since cement expands and contracts as temperature changes. Leave a gap of 2" from shell for proper structure protection.

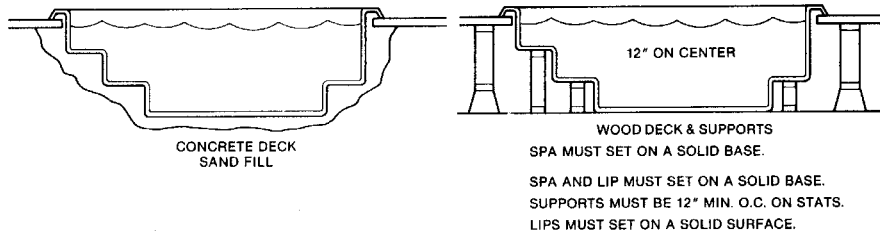


Figure 1. Typical in-ground installation

Locating Outdoor Equipment

When locating outdoor equipment pack, you will want to consider the following:

1. Can the equipment pack be located within a maximum of 35 feet from the spa?
2. Will the equipment running its normal filtration cycles make too much noise for spa owners and/or neighbors?
3. Can the equipment be easily serviced in the location chosen? (i.e. filter cleaning and periodic inspections)
4. The equipment base and heater must be placed on either a 3 1/2" cement slab or 3" paving stones.
5. Make sure the equipment area selected will not be in an area where water could run or stand.
6. If the area receives direct sunlight, you will want to provide some protection for the equipment portion of the equipment pack.
7. The equipment pack and heater are delivered separately. See Figures 2, 3, and 4 for sizes.

Important: Do not cover gas heaters unless properly vented. (See heater owner’s manual for important safety information)

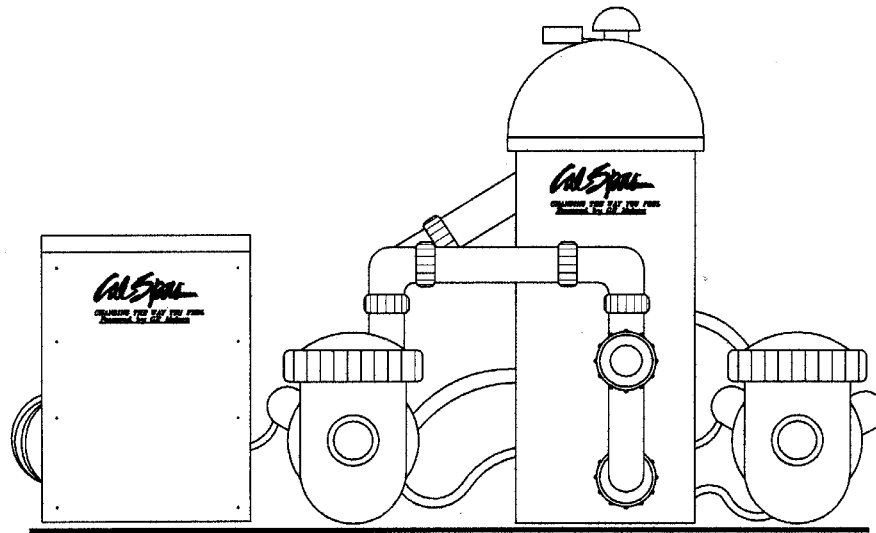


Figure 2. Equipment pack

Connecting the Plumbing to the Equipment Pack

Connecting the plumbing from the spa to the equipment pack must be performed in accordance to local and city codes.

NOTE: Most codes require plumbing to be Ridged PVC schedule 40 or heavier in both above and below ground installations. In most cases, the use of flexible PVC plumbing is acceptable when properly buried in trenches.

IMPORTANT! Always check local codes prior to any inground or portable spa installation.

Most water plumbing lines are 2" or larger and must be schedule 40 or heavier PVC. When plumbing, minimize the use of 90° elbows as much as possible. The use of 45° elbows will increase the amount of jet pressure you will have over the use of 90° elbows.

The plumbing on the spa shell is labeled by the factory in the following manner:

Heat Pump: Pump 1 Suction: 2" Line that connects the spa filter and bottom drain assembly to the front of pump 1.

Pump 1 Return: 2" Line that connects the top of pump 1, through the equipment filter and heater back to selected jets in the spa.

Booster Pump: Pump 2 Suction: 2" Line that connects the spa filter and bottom drain assembly to the front of pump 2.

Pump 2 Return: 2" Line that connects the top of pump 2 back to selected jets in the spa.

Ozone Line: 1" Line that connects to a 1" red flexible line extending off the bottom of the equipment pack filter canister through an ozone injector (If Ozone equipped) and connected to ozone port on the spa.

Chapter Title

Air Blower: 1 1/2" Line that is plumbed out of the air blower (located on the equipment (Air Loop) pack and extended up 18" above the spas water level to prevent water flooding the air blower.

Topside Control Panel and Temp Sensor: 1" line that connects to the bottom of the control box located on the equipment pack.

See Figures 3 and 4 for a typical plumbing layout.

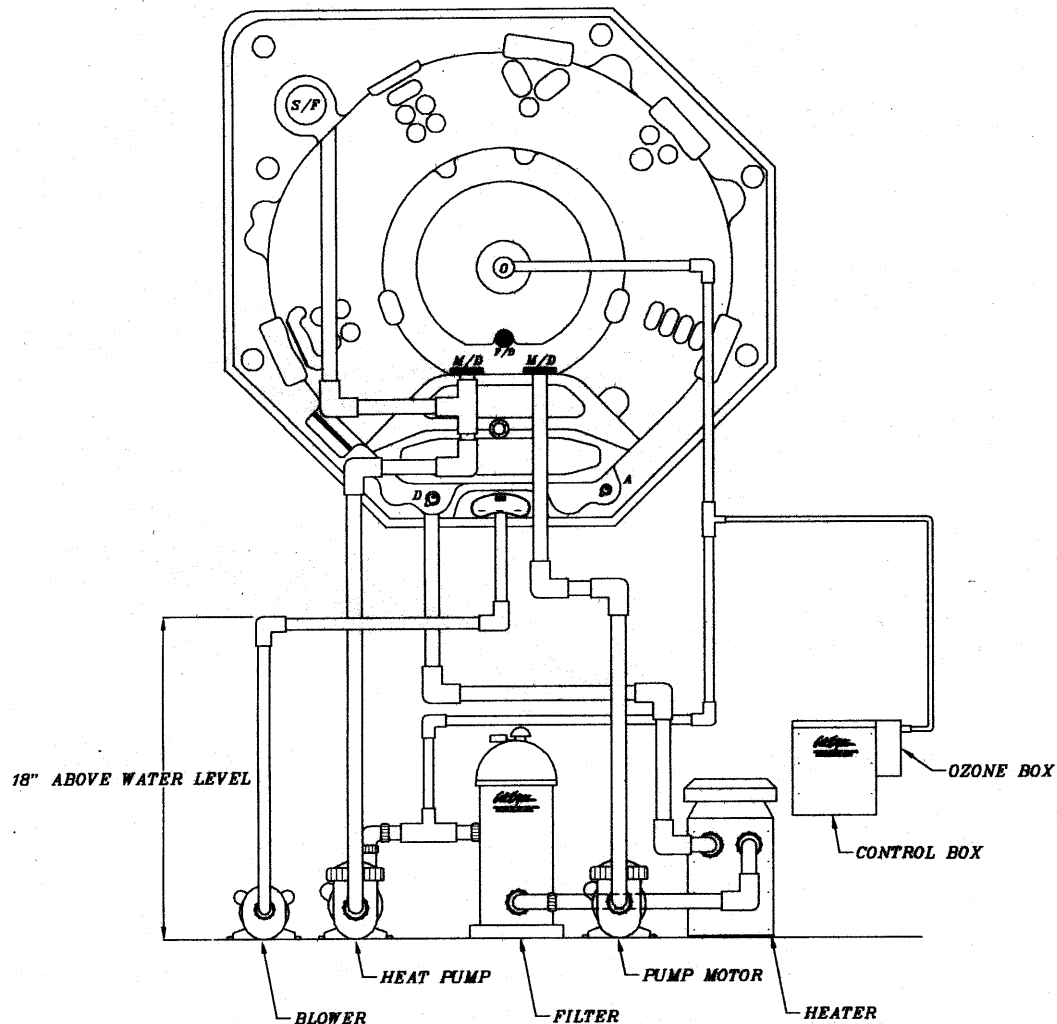


Figure 3. In-ground / pre-plumbed shell installation

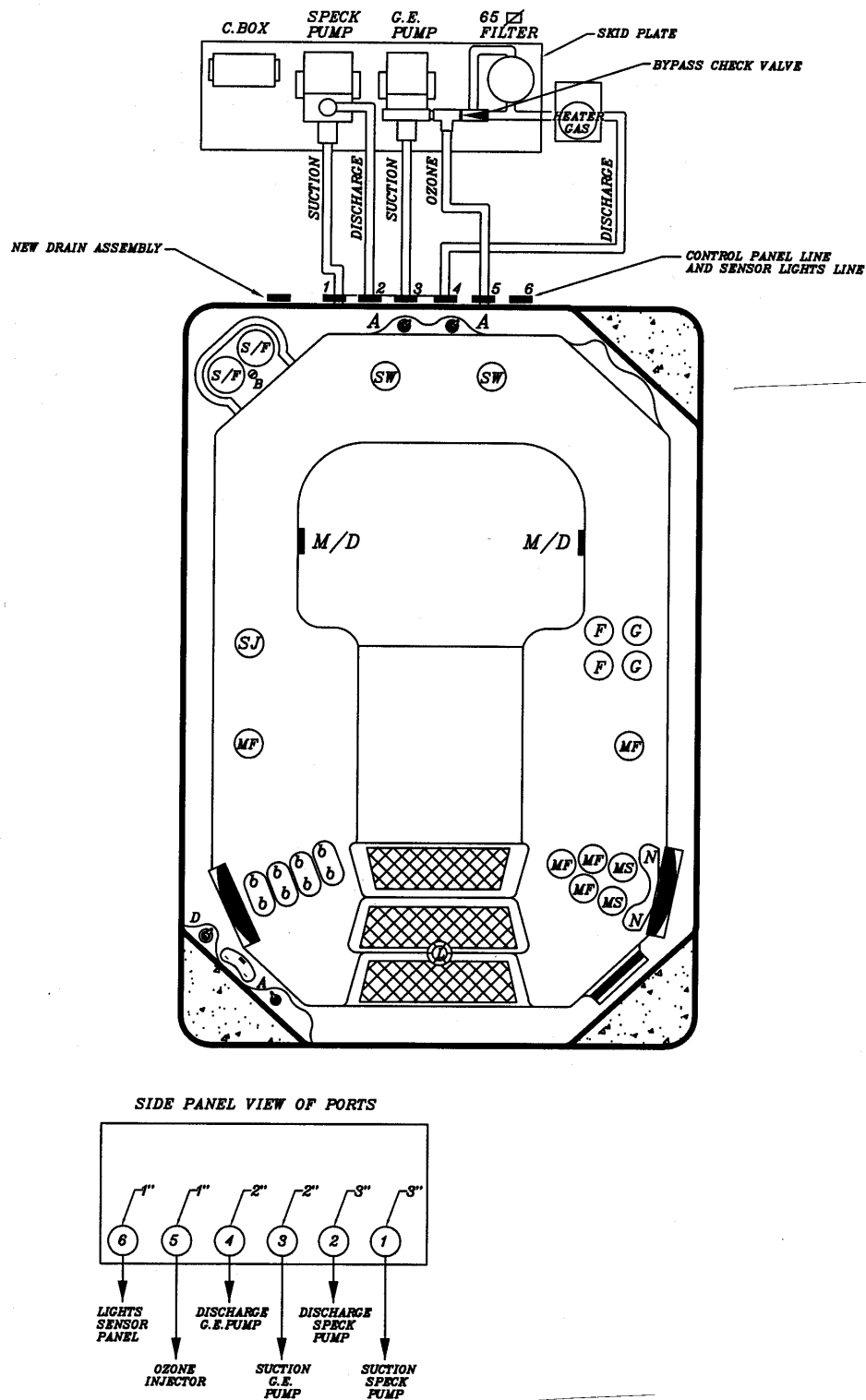


Figure 4. Ported spa installation

Plumbing

Once the spa and equipment are properly located, you will want to layout the plumbing run.

As mentioned previously, the plumbing run should not be any longer than 35 feet to maximize water pressure. Another way to maximize water pressure, is to limit (better yet eliminate) the use of 90° elbows in

Chapter Title

your plumbing run. A more direct plumbing run using 45° elbows is more efficient, and promotes increased water pressure.

Identifying Plumbing Lines

The spas plumbing lines are clearly marked during water testing at the factory. (See page 6 for examples of labeling and descriptions.)

This is done to assist installers in properly identifying the installation. We still recommend that the installers verify plumbing lines prior to gluing. This can be done by using one of the following techniques.

Air Test

The air test is simple to perform and only requires a wet/dry vacuum. Simply locate the plumbing line you wish to identify and secure the vacuum hose to cut open end. (For this example we will use the Pump 1 Suction line.)

Turn on the vacuum, enter the spa and listen for vacuum suction sound from inside the spa side filter canister. If you hear the suction sound in the canister, the line is properly marked and can be connected to the suction side of pump 1 located on the equipment pack.

Water Test

The water test is a little messy but truly effective and only requires a garden hose and water source. Simply locate the plumbing line you wish to identify and secure the outlet side of the garden hose to cut open end. (For this example we will use the Pump 1 Suction line.)

Turn on the water supply to the garden hose, enter the spa and look for water inside the spa side filter canister. If you see water in the canister the line is properly marked and can be connected to the suction side of pump 1 located on the equipment pack.

If any plumbing line is not properly marked or not marked at all, follow either the Air or Water test procedure until all lines are identified prior to gluing.

NOTE: Once complete, water test the plumbing run for at least three days prior to covering any plumbing trenches and backfilling spa cavity completely.

NOTE: Some local inspectors require pressure testing the plumbing lines. Although the spa is pressure tested at the factory, local inspectors may insist on pressure testing the plumbing run between the spa and equipment pack.

Cutting

When cutting any plumbing line you will want to use the proper tool. Using the wrong tool can damage the plumbing lines and/or cause physical injury to the operator.

We recommend that you use a PVC blade cutter rather than a traditional hacksaw when cutting either PVC or flexible plumbing. This tool is a more effective cutting tool and when used correctly, will not leave PVC shavings at the cut ends.

When cutting PVC or flexible plumbing, make sure that all cuts are made square. This will ensure a larger gluing surface and a better glue joint.

Gluing

When gluing any plumbing lines you will want to use the correct glue and follow proper gluing technique to ensure proper adhesion.

You should always use a Medium Bodied, Fast Set PVC glue and Purple Primer or equivalent when gluing spa or equipment pack glue joints.

IMPORTANT: Always read and follow instruction on both glue and primer containers.

When gluing, make sure to perform the following steps to ensure a leak proof glue joint:

1. Make clean, square cuts at PVC or Flexible plumbing.
2. Do Not allow glue or primer to touch any area other than the socket you are gluing.
3. Use primer on both ends of the socket or glue joint.
4. Use proper PVC glue for application on both ends of the socket or glue joint.
5. Hold glue joint in place for an appropriate amount of set time

NOTE: Set time will vary with ambient temperature. (Longer in cold weather and shorter in warmer weather)

6. Do not allow excessive amounts of glue run-off or drip from glue joints.
7. Always wipe excess glue from gluing area without disturbing actual glue joint.

Gate/Slice Valves

The use of gate valves is recommended on all plumbing lines. (Both suction and return lines)

These valves are used to contain the spas water in either the equipment or the spa. This will assist in the pump priming process and future servicing without needing to drain the spa.

NOTE: When draining the spa to perform maintenance, always close the gate valves prior to draining. This will maintain the pumps prime.

Electrical Installation Instructions

230V Installation Information

All 230V spas are required to have an RCD breaker, and should only be wired by a licensed electrician. Always follow applicable local, State and Federal codes and guidelines.

Olympian Spa Packs: (Swim Side Outdoor Pack)

230V Spas requires a DEDICATED 50 AMP RCD SERVICE WITH FOUR # 8 AWG COPPER WIRES. This will include a black and red wire for your incoming power, a white wire used for your neutral and a green wire for your ground.

Olympian Spa Packs: (Spa Side Pack with 2.5kW Electrical Heater)

230V Spas requires a DEDICATED 40 AMP RCD SERVICE WITH FOUR # 8 AWG COPPER WIRES. This will include a black and red wire for your incoming power, a white wire used for your neutral and a green wire for your ground.

Champion Spa Packs:

230V Spas requires a DEDICATED 50 AMP RCD SERVICE WITH THREE # 8 AWG COPPER WIRES. This will include a brown wire for your incoming power, a blue wire used for your neutral and a green wire for your ground.

Two Pump Equipment Pack:

230V Spas requires a DEDICATED 40 AMP RCD SERVICE WITH FOUR # 8 AWG COPPER WIRES. This will include a black and red wire for your incoming power, a white wire used for your neutral and a green wire for your ground.

One Pump Equipment Pack:

230V Spas requires a DEDICATED 30 AMP RCD SERVICE WITH FOUR # 10 AWG COPPER WIRES. This will include a black and red wire for your incoming power, a white wire used for your neutral and a green wire for your ground.

NOTE: Wire runs over 100' must increase wire gauge to the next lower number.

Example: A normal 50 Amp GFCI with 3 # 8 AWG Copper wires, run over 100 feet would require you to go to the next size larger wire, 3 # 4 AWG Copper wires.

Note that these are the only acceptable electrical wiring procedures. Spas wired in any other way will void your warranty.

230V 5.5kW Heater Information

When installing a 5.5 kW heater, an additional dedicated 230V 30 amp RCD circuit breaker is required for just the heater.

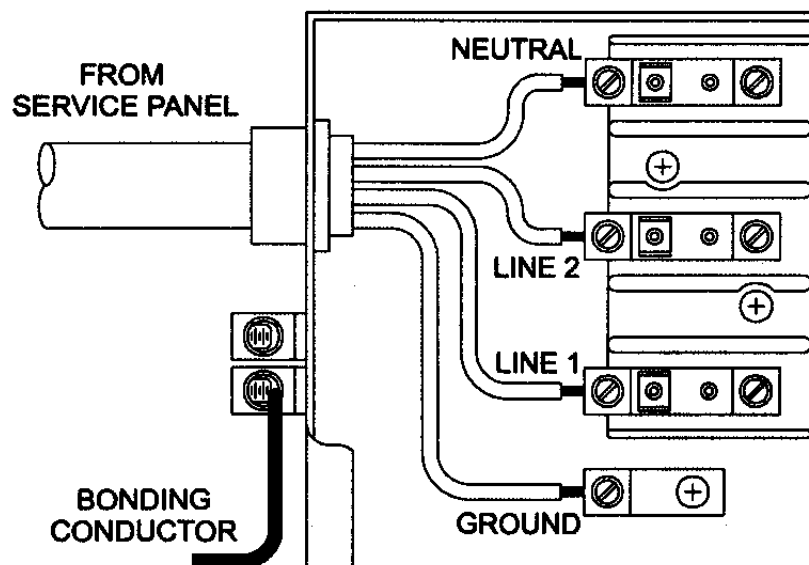


Figure 5. 5.5 kW electrical heater

In-Ground Spa Light Installation Instructions

Inground Spa Light (12V)

Spas ordered with inground lights, the factory installs the light niche for you. The next steps of installation should be performed by a qualified licensed electrician.

Important: Always read and follow light manufactures Safety and Installation instructions prior to installation and operation. Incorrect installation may damage the light and void its warranty.

1. The light circuit must be on a RCD protected service. (Alone or through spa control box)
2. The water resistant junction box must be located a minimal 8" above water level and 48" away from the spa. (See Figure 6)
3. Light niche and any metallic items in a 5' radius must be properly bonded with #8 AWG grounding wire.
4. A step-down transformer (supplied by the spa owner) is required for 230V/12V 100 Watt lights.
5. Connect conduit to 3/4" hub located at the back of the light niche and run to a water resistant junction box no further than 25'. Remember this is a water cooled light, so conduit and all connections must be leakproof. (See Figure 7)
6. Feed light cord through conduit to junction box, leaving at least 4 inches of cord at the end of the light fixture. This slack in the light cord will allow servicing without draining the spa in the future. (See Figure 6)
7. Wrap light cord slack around back of light housing and attach light to niche with mounting screw. (See Figure 8)
8. Run light supply wires in conduit from spa control box (on equipment skid) to water resistant junction box.
9. Connect power supply wires to terminal block labeled 230V inside spa control box.
10. Move jumper. (See wiring diagram on the inside cover of the control box for jumper location) for 230V light operation.)
11. Connect light wire assembly to power supply wires from spas control box in the water resistant junction box as mentioned in Step 2.
12. Test circuit by turning on the RCD circuit breaker and pressing the light button on the topside control panel located on the spa. (Make sure spa light is submerged in at least 18" of water prior to testing.)

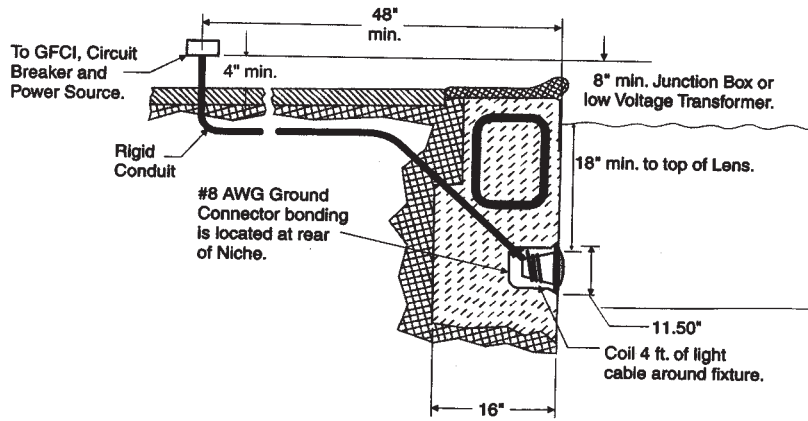
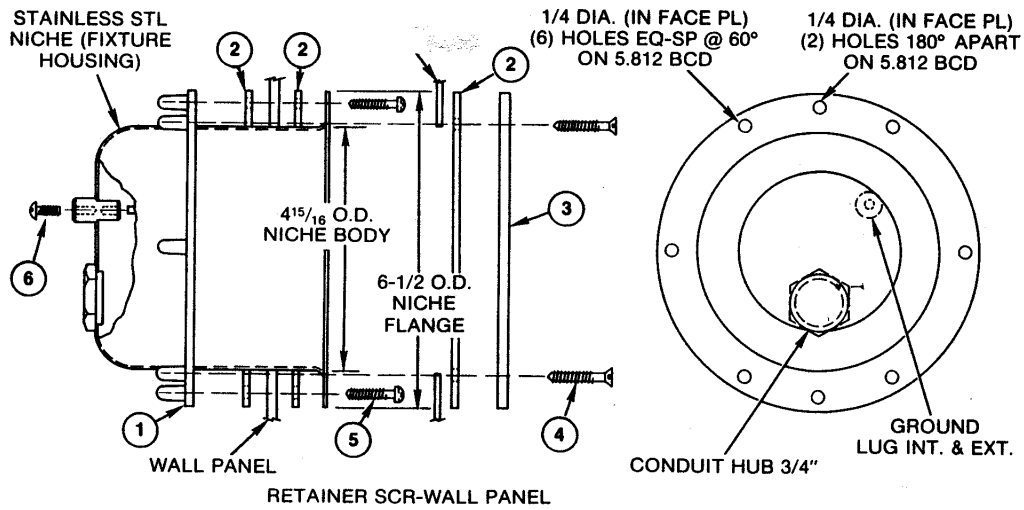


Figure 6. Water resistant junction box location

INGROUND SPA LIGHT NICHE



1. Back-up ring, brass, for niche
2. Gasket, each for niche (3 required)
3. Sealing ring, brass-chrome for niche
4. Sealing screw, each 10- 24" x 1-1/8" flat head stainless steel for niche (6 required) mounting ring, brass
5. Screw, retainer, fillister head, 12-24" x 3/4"
6. Screw, grounding 10-24" x 1/2"

Figure 7. Conduit hub

INGROUND SPA LIGHT UNIT

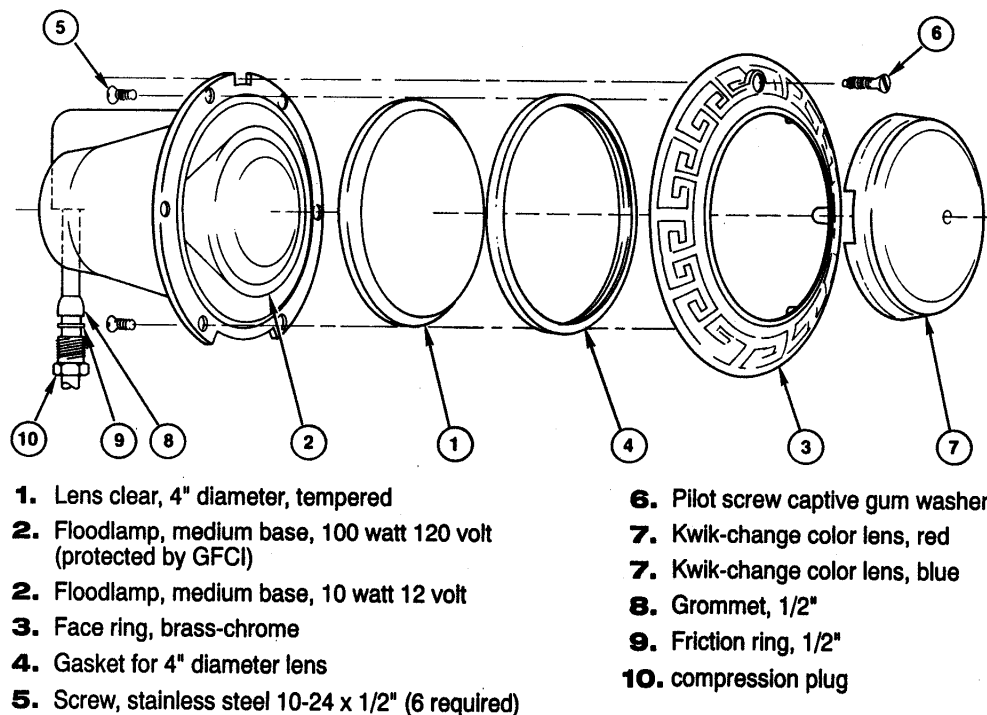


Figure 8. Light mounting steps

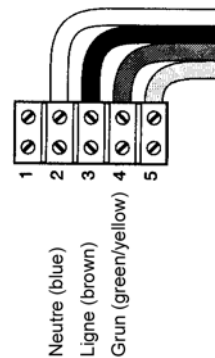


Figure 9. Routing instructions

Topside Control Panel and Sensor Installation

Topside Control Panel

Topside control panels are factory installed on the spa shell. The next few steps to complete the installation should be performed along with installation of the temperature sensor and 12V spa light wiring (if applicable). All of these components are generally installed using the same conduit.

1. Locate the topside control panel extension loom in the control box mounted with the equipment pack. This extension loom and attached black terminal connector will be used to connect the topside control panel to the control box.

Chapter Title

2. Connect one end of the black terminal connector to the topside control panel cable.
3. Connect the other end of the terminal connector to the extension loom (See Figure 10)

NOTE: This connection must be kept dry. We recommend that a water proof junction box be used in installations where moisture could penetrate this terminal connector.

4. Layout the extension loom to verify that you have enough length to reach the control box. Remember that conduit runs are not generally run in a straight line. Every bend, and up and down run consumes line length. Take this into consideration when verifying electrical and plumbing runs.
5. Connect the extension loom to the control panel location on the circuit board located inside the control box. You will also need to connect both the temperature and high limit sensors to the circuit board prior to testing. (See the temperature and high limit installation instruction on the next page for proper identification and See the wiring diagram on the inside cover of the control box for proper placement.)
6. Turn on the power supply to the spa equipment and briefly test all functions on the topside control panel to verify that both connections and extension loom are in working order before proceeding with the installation.

NOTE: Circuit board programming will not allow spa operation without both the temperature and high limit sensors being properly connected to the circuit board. See Temperature and High Limit installation instructions on the following pages to ensure proper connection prior to applying power and performing function testing.

7. Once topside panel operation is verified. Turn off power, disconnect the extension loom from the circuit board and GENTLY route through conduit to complete installation.

NOTE: This loom and its connector are not ment to withstand heavy pulling. Make sure, when routing the extension loom and temperature sensor lines through conduit, you exercise extreme caution.

8. Once properly run through the conduit repeat Steps 5 and 6 above.

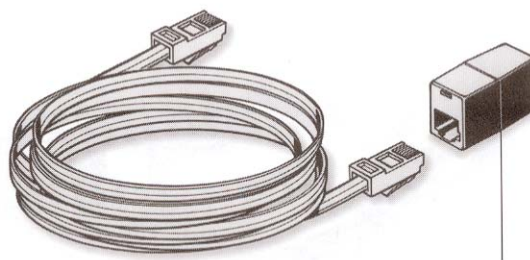


Figure 10. Terminal connector

Temperature and High Limit Sensors

The temperature sensor housing is a factory installed wall fitting generally located 18" below water level on the front wall of the spa shell. (Near the spa light.) While the high limit sensor housing is located inside the plumbing fitting above the heat pump.

Both of these sensors are delivered inside the control box with the extension loom. Identifying and connecting the two sensors in the correct location on the circuit board is very important. Sensors located incorrectly, will cause the spa to operate incorrectly and could result in spa damage.

Identifying and Installation

The temperature sensor has a 3/8" bulb with 50" of wire length, while the the high limit sensor has a 1/4" bulb with 48" of wire length. Both of these sensors must be properly installed prior to spa operation.

Temperature Sensor Installation (See Figure 11)

1. Locate the temperature sensor wall fitting on the spa shell.
2. Layout the temperature sensor from the sensor wall fitting to the control box to verify that the length of the sensor wire is adequate for conduit run.
3. Loosen (clockwise) the small black finger nut at the end of the temperature sensor wall fitting. Do not remove. Removal will cause the water sealing o-ring to fall out, causing damage or loss.
4. Firmly press the temperature sensor into the opening at the end of the temperature sensor wall fitting.
5. Tighten the small black finger nut until snug.
6. Using spray insulating foam (Polyurethane), spray at least 6" of foam thickness covering the entire back side (installation side) of sensor and sensor wall fitting.
7. Secure sensor to topside control panel and 12V light wires (if applicable) and GENTLY route through conduit to complete installation.

NOTE: The sensor wires and extension loom and its connector are not ment to withstand heavy pulling. Make sure, when routing these wires through conduit, you exercise extreme caution.

8. Plug the temperature sensor into the temperature sensor location on the circuit board located inside the control box. (See the wiring diagram on the inside cover of the control box for proper placement.)
9. Follow the high limit sensor installation instructions prior to testing operation. Circuit board programming will not allow spa operation without both sensors being connected to the circuit board.

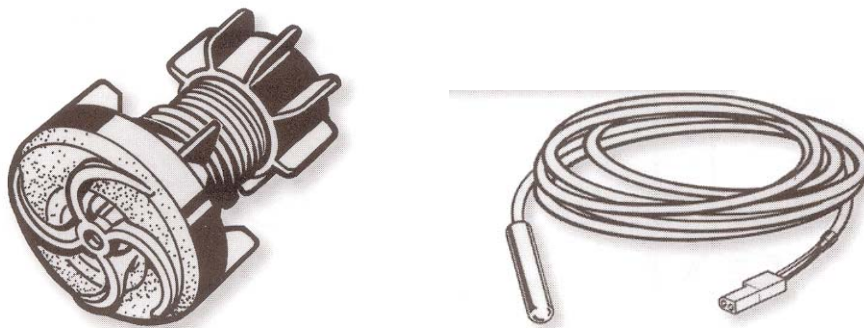


Figure 11. Temperature sensor and sensor wall fitting

High Limit Sensors

The high limit sensor housing is a factory installed plumbing fitting located on the discharge side of pump #1 (Heat Pump). Most equipment packs will have this sensor already installed for you.

Visually inspect the circuit board and plumbing fitting to verify the high limit sensor is already installed. If not, follow the installation steps below.

This sensor is delivered inside the control box with temperature sensor, and topside extension loom. Identifying and connecting the temperature and high limit sensors in the correct location on the circuit board is very important. Sensors located incorrectly, will cause the spa to operate incorrectly and could result in spa damage.

Identifying and Installation

The temperature sensor has a 3/8" bulb with 50" of wire length, while the the high limit sensor has a 1/4" bulb with 48" of wire length. Both of these sensors must be properly installed prior to spa operation.

High Limit Sensor Installation

1. Locate the high limit sensor plumbing fitting located on the discharge side of pump #1(Heat Pump).

NOTE: The small section of flexible conduit connecting the high limit sensor plumbing fitting to th control box.

2. Locate the high limit sensor inside the control box.
3. Firmly press the high limit sensor into the opening inside the control box through the flexible conduit into the high limit sensor plumbing fitting.
4. Plug the high limit sensor into the high limit sensor location on the circuit board located inside the control box. (See the wiring diagram on the inside cover of the control box for proper placement.)
5. Make sure that both the temperature and high limit sensor are installed correctly according to the wiring diagram listed on the inside cover of the control box.

NOTE: Circuit board programming will not allow spa operation without both sensors being connected to the circuit board. Verify connections prior to applying power and performing function testing.

Remote Freeze Sensor: (Optional)

If you are installing outdoor equipment in cold climate, you should install a Remote Freeze Sensor. This sensor will protect remote equipment like booster pumps or heater from possible freeze damage.

Sensor Function

When this sensor reaches 40°F it will automatically turn on every pump and blower to circulate water to prevent freezing. During "Freeze Mode", the spas functions cannot be controlled. Once the sensor reaches 45°F, the spa will regain normal operation.

Remote Freeze Sensor Installation

1. Using a large wire tie strap or zip tie, secure the sensing disk to the booster pump or heater manifold at the lowest metallic point possible.(See Figure 12 for part identification and installation location)

2. Plug the other end of the freeze sensor to the "AUX FREEZE" location on the circuit board.
(Location may vary by model. See wiring diagram on the inside cover of the control box)
3. Using wire tie straps, secure the "AUX FREEZE" sensor wire to the equipment to prevent damage during maintenance or servicing.

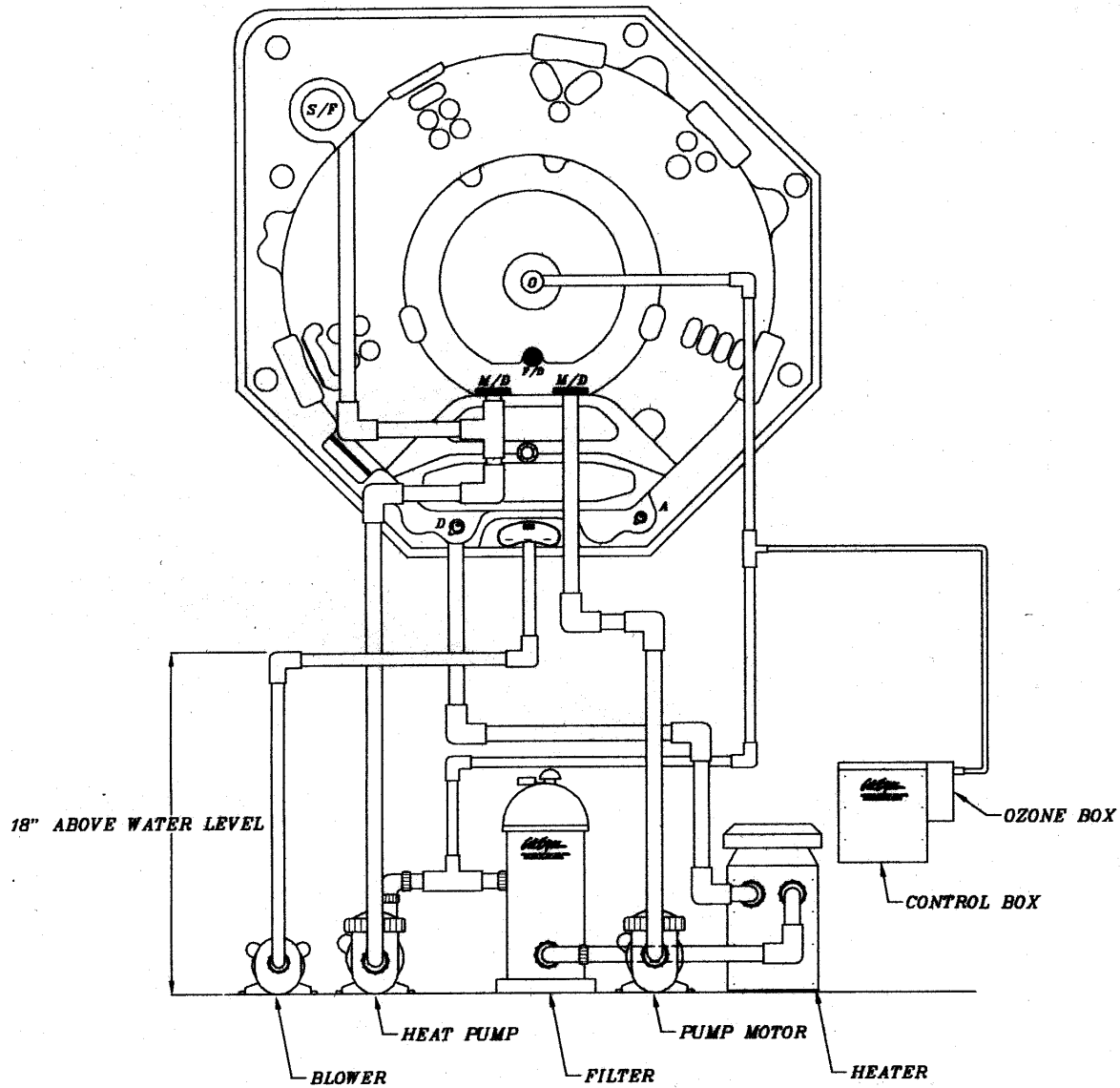


Figure 12. AUX freeze sensor locations

Filling and Powering Up Your Portable Spa

NOTE: Be careful not to over-tighten the plumbing fittings.

NOTE: Never run the spa with the gate valves closed or without water circulating for long periods of time.

NOTE: Never fill your spa with soft water. Soft water makes it impossible to maintain the proper water chemistry and may cause the water to foam, which will ultimately harm the finish of the spa and void your warranty.

Filling and Powering-up Your Cal Spa

1. Once your spa is installed in-ground or placed on an approved surface and connected to the correct electrical service, you can proceed with these instructions.
2. If equipped, open all gate valves or slice valves.

NOTE: Before operating the spa, these valves must be in the up or “open” position.

3. Place a garden hose in the skimmer basket and continue filling spa with Regular Tap Water up to the “Water Level” line or half way up the skimmer area.
4. Remove lid(s) from pump basket(s) and filter canister.
5. Fill the pump basket(s) and external filter canister with a garden hose until full and replace the lids snugly.
6. Once the water is at the correct level and the pump baskets and external filter canister is full of water, turn on the spas power at the RCD breaker.
7. The spa will perform a diagnostic check for 30 seconds. Once complete, the spa will automatically operate at filter speed and continue heating until the spa water temperature reaches 100°F. (This is every electronically controlled spas default temperature).
9. The spa is now ready for use.

For complete Installation instructions, please see the 2005 In-ground and Ported Installation Guide. If you purchased an in-ground or ported spa and did not receive a copy with this manual, please contact your selling dealer or the C.A.I Customer Service Department at (909) 623-8781.

IMPORTANT: Be careful not to over tighten plumbing fittings, filters, and pump basket lids. Never run spa with gate valves closed or without water circulating for long periods of time. Never fill your spa with soft water. Soft water makes it impossible to maintain the proper water chemistry and may cause the water to foam and ultimately harm your spas finish and void your warranty.

Operating Your Spa

2305 Electronic Control Operation

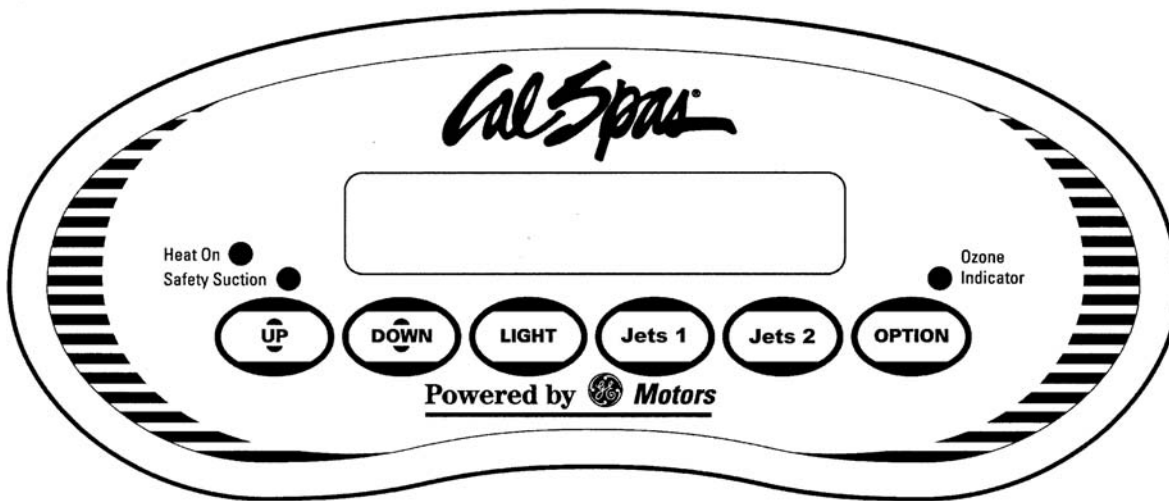


Figure 13. 2305 Electronic Control Panel

Initial Start up

When first powered up, the system will perform a self-diagnostic check, then it will automatically heat to and maintain 37.7°C until you change the set temperature as described in the “Temperature Adjustment” section below.

Temperature Adjustment (Range 26.6°C to 40°C)



The 2305 electronic control panel (Figure 13) displays the actual water temperature in Fahrenheit.

To display the temperature that the spa is set to:

- Press either the UP or DOWN button. The temperature setting will flash.
- While the display is flashing, each time you press either the UP or DOWN button, the set temperature will change up or down one degree.

Standard and Economy Modes

Your new spa is equipped with a heating feature that gives you complete control of the heating system. When the spa is powered up, it will automatically start in standard heating mode. This is displayed by STANDARD on the left side of the control panel. In this mode, the heating system will automatically activate whenever the water temperature drops more than one degree below the set temperature. In the economy heating mode, the heating system will only activate during filtration times.

Chapter Title

NOTE: There is no control panel message displayed while in the standard heating mode, only the actual water temperature is displayed.

To switch from the standard to the economy heating mode:



- Press either the UP or DOWN button followed by the LIGHT button.
- Press the same sequence to switch back to the standard heating mode.

Once in the economy heating mode, ECONOMY will display on the left side of the control panel.

Jets 1



Pump 1 Option or Spa Cal™ Filtration Option:

Press the JETS 1 button:

- Once to activate low speed
- Twice to activate high speed
- Three times to return to low speed

Jets 2



One Speed Pumps:

Press the JETS 2 button:

- Once to activate the high-speed pump
- Twice to turn off the high-speed pump

Two Speed Pump Option:

Press the JETS 2 button:

- Once to activate low speed
- Twice to activate high-speed
- Three times to turn off high-speed

Light



Press the LIGHT button to turn on the light. Press it once again to turn the light off. All optional lighting such as the control panel light and cabinet perimeter lighting is controlled by the LIGHT button and will turn on and off with the spa light.

Turbo (Optional)

Press the OPTION button to turn on the turbo system. Press it once again to turn off the turbo system.

Setting the Temperature Lock



This feature allows you to lock a temperature into the system. When engaged, the set temperature will blink on and off when either the UP or DOWN button is pressed. However, you will not be able to change it until you unlock the set temperature:

- Press either the UP or DOWN button.
- Press the OPTION button to unlock the set temperature.
- Select a temperature with the UP and DOWN buttons.
- Press the OPTION button to set and lock the temperature.

Automatic Time outs

These features will automatically turn themselves off during periods of continuous use:

- | | |
|--------------------|------------------|
| • Low speed pump | After 30 minutes |
| • High speed pumps | After 15 minutes |
| • Optional turbo | After 15 minutes |
| • Spa light | After 15 minutes |

Setting Filtration Cycles:



Your spa will automatically filter itself twice a day. To set filtration time, turn off the power to the spa at the time of day you would like to start filtration. The first cycle will start after the spa is powered up. The second filter cycle will begin twelve hours later. Filter cycle duration is preset for 2 hours (F2).

To change duration of filtration time, press either the UP or DOWN button, then press either the JETS 1 or JETS 2 pad. Press the OPTION button again to choose from 2, 4, 6, 8, or 12 hours twice a day. After selecting the desired filtering duration, press the JETS button to exit the filter program. The circulating pump and ozone generator (optional) will run during filter cycles. (Note: The filter cycles settings of F8 and **FC** are only intended for use with the optional Spa Cal™ Filtration System.)

Adjustable Jets

Almost all of the jets in your spa are adjustable. Rotating the face of an adjustable jet to the left (counter-clockwise) will decrease the amount of water flow through the jet. Rotating the face of an adjustable jet to the right (clockwise) will increase the amount of water flow through the jet. (See example shown in Figure 14 below.)

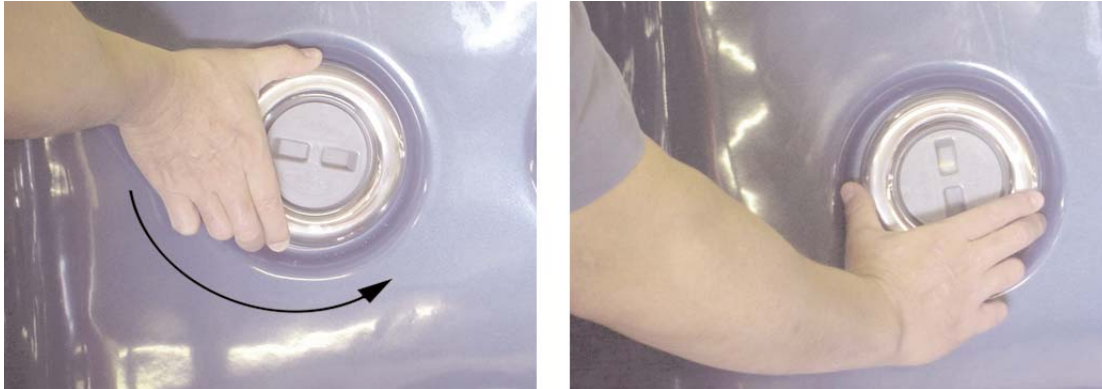


Figure 14. Rotating an adjustable jet

NOTE: Neck jets will be reversed when adjusting pressure.

Spa Cover

Important! Keep the spa covered when not in use!

- Covered spas will use less electricity in maintaining your set temperature.
- Covering your spa will protect your spa's finish from the sun's ultraviolet rays.
- You are required to keep the spa covered to maintain warranty coverage.
- Covering your spa helps prevent children from drowning in the spa.

See the manual enclosed with your cover for instructions on mounting the locks and how to lock and unlock the cover.

In addition, while the spa cover is rigid, it is not designed to support any weight. Therefore, as a safety precaution and to preserve the life of your cover, you must not sit, stand, or lie on it; nor should you place objects of any kind on top of it.

Water Quality Maintenance

Chemical Maintenance Schedule

Great spa water is easily achieved when the right chemicals are used and a Clear Water Plan is implemented. The key to clean, clear, and safe water is to fully understand how spa water reacts to users, operation and chemical use. The Clear Water Plan will help give you that understanding.

Prior to filling a spa for the first time, or after a routine draining, you will want to follow this start-up plan to extend water life and performance. If you are following either bromine or chlorine Clear Water plans, you will notice that both start-up processes are the same with the exception of Step 4. As with all chemical dosages listed in the Clear Water Plan, start-up dosages are intended for 500 gallon spas. Please adjust the chemical dosages to the capacity of your particular spa.

Start-Up

1. Clean spa thoroughly with Cal Spas™ Multi-Purpose Cleaner.
2. Apply a protective coat of Cal Spas™ Fast Sheen to the acrylic surface.
3. Fill spa to proper water level with normal tap water. (Do not use soft water.)
- 4a. Bromine Plan: Add 2oz. of Cal Spas™ Go Brom to establish a bromine base level.
- 4b. Chlorine Plan: Add two tablespoons of Cal Spas™ Granular Chlorine to the spa water.
5. Pour in 3oz. of Cal Spas™ Metal Protector to the center of the spa.
6. Sprinkle 2oz. of Cal Spas™ Oxidizer Shock in the center of the spa and leave spa uncovered and turn on the jets for 30 minutes prior to recovering.
7. Allow 24 hours prior to testing and implementing the bromine or chlorine Clear Water Plans.

Bromine Users

This plan and its chemical dosages are intended for Cal Spas™ chemicals only. Most chemical manufacturers use different chemical formulas and strengths. Only Cal Spas™ chemicals are specially formulated to provide chemical balance at lower dosages. Compare labels and dosages and see for yourself. You will get greater protection and performance with Cal Spas™ chemicals.

Always read and follow all printed instructions on chemical bottles and packages.

Day One (Monday)

1. Test spa water using test strips. (Check for valid expiration date.)
2. Add two bromine tablets to floater. (Amount of tablets needed will vary with water temperature.)
3. Adjust Total Alkalinity, then the pH if needed. (See pH and Alkalinity sections for more information.)
4. Add 2oz. of Stan and Scale Defense.
5. Pull the dirty filter from the spa and place into liquid filter cleaner solution.
6. Place your extra, cleaned, fully dried filter cartridge in the spa.
7. Vacuum your spa with the Cal Spas™ vacuum.

Day Two (Wednesday)

1. Test spa water using test strips. (Check for valid expiration date.)

Chapter Title

2. Adjust total alkalinity, the pH if needed. (See pH and alkalinity sections for more information.)
3. Pull the filter from Liquid Filter Cleaner solution, hose it off and allow to dry.

Day Three (Friday)

1. Test spa water using test strips. (Check for valid expiration date.)
2. Check bromine floater for sufficient amount of bromine tablets. (Add one, if necessary.)
3. Adjust Total Alkalinity, then the pH if needed. (See pH and Alkalinity sections for more information.)
4. Add 1oz. of Oxidizer Shock.

Every Month

Check equipment area for leaks, rodents and insects.

Every 3 to 4 months

1. Drain and clean your spa with Multi-Purpose Cleaner.
2. Polish the acrylic surface with Fast Sheen.
3. Clean and treat spa cover and Ultra Spa Cabinets with Cover Protector.

Every 6 Months

Clean and treat redwood spa cabinets and gazebos with Nu-Spa redwood stain renewer & brightener.

Cal Spas™ Clear Water Plan (Chlorine)

This plan and its chemical dosages are intended for Cal Spas™ chemicals only. Most chemical manufacturers use different chemical formulas and strengths. Only Cal Spas™ chemicals are specially formulated to provide chemical balance at lower dosages. Compare labels and dosages and see for yourself. You will get greater protection and performance with Cal Spas™ chemicals.

Always read and follow all printed instructions on chemical bottles and packages.

Day One (Monday)

1. Test spa water using test strips. (Check for valid expiration date.)
2. Add two tablespoons of Granular Chlorine. (Chlorine dissipation will vary with water temperature.)
3. Adjust Total Alkalinity, then the pH if needed. (See pH and Alkalinity sections for more information.)
4. Add 2oz. of Stan and Scale Defense.
5. Pull the dirty filter from the spa and place into liquid filter cleaner solution.
6. Place your extra, cleaned, fully dried filter cartridge in the spa.
7. Vacuum your spa with the Cal Spas™ vacuum.

Day Two (Wednesday)

1. Test spa water using test strips. (Check for valid expiration date.)
2. Adjust Total Alkalinity, then the pH if needed. (See pH and Alkalinity sections for more information.)
3. Pull the filter from the Liquid Filter Cleaner solution and hose it off and allow it to dry.

Day Three (Friday)

1. Test spa water using test strips. (Check for valid expiration date.)
2. Add two tablespoons of Granular Chlorine. (Chlorine dissipation will vary with water temperature.)
3. Adjust Total Alkalinity, then the pH if needed. (See pH and Alkalinity sections for more information.)
4. Add 1oz. of Oxidizer Shock.

Every Month

Check equipment area for leaks, rodents and insects.

Every 3 to 4 months

1. Drain and clean your spa with Multi-Purpose Cleaner.
2. Polish the acrylic surface with Fast Sheen.
3. Clean and treat spa cover and Ultra Spa Cabinets with Cover Protector.

Every 6 Months

Clean and treat redwood spa cabinets and gazebos with Nu-Spa redwood stain renewer & brightener

Ozonator

Your new ozonator (Figure 15) is a state-of-the-art bacteria killing machine. This unit will assist you in maintaining clean and clear water, while saving you time and expense with spa chemicals.

Your ozonator will automatically operate during the filter cycles and any other time the spa is running on low speed. The ozone indicator light on the ozonator will glow letting you know that the system is operational.



Figure 15. Ozonator

Cleaning and Maintaining Your Spa

Cleaning and Replacing the Filter

Filtration

Filtration is one of the most important steps you can take to ensure clean, clear water. Regardless of what some people may think, it is far less expensive to fix water clarity problems by filtering your spa than by using excessive amounts of chemicals, excessive filtration times, or by water replacement.

Cal Spas™ filtration system simply draws contaminated water through the exclusive Bio-Clean™ filter removing debris from the water. It then pumps the newly cleaned water back into the spa through various jets. Spas equipped with the ozonator will also receive ozone injection into the filtered water for further protection against contaminants during filtration cycles. Filtration also ensures that chemicals are mixed thoroughly through the water, increasing performance.

Filtration starts on electronically-controlled spas as soon as the pumps are primed and water flow is steady. As the flow of water goes through the filter, dirt and debris is removed and accumulated in the filter cartridge. As the filter cartridge accumulates dirt and debris, water flow is restricted and jet production is reduced. This can cause your spa to not run or heat effectively.

Clean your filter regularly and replace it as needed.

Exclusive Bio-Clean™ Filter Cartridge

The filter cartridge is designed to remove dirt, sand, minerals, phosphates, bather waste and other solids from the spa. Unfortunately, some spa owners fail to include filter cleaning as part of their chemical maintenance plan. Filters accumulate debris and become prime areas for bacteria growth.

The Cal Spas™ exclusive Bio-Clean™ Filter is the only antibacterial filter cartridge on the market today. Having a filter cartridge that prevents bacteria growth is simply added protection for those times you forget to clean the filter. We recommend that you only replace your spa's filter cartridge with a Bio-Clean™ filter cartridge for ensured protection and peace of mind.

Skimmer Cleaning



Figure 16. Weir skimmer basket

The weir skimmer basket (Figure 16) helps collect debris in your spa by trapping floating contaminants. The buoyant skimmer door opens and closes as needed. A suction pump pulls water into the weir skimmer

and collects debris in the skimmer basket inside. You will need to clean this basket periodically to help keep your water clean.

Winterizing (Cold Climate Draining)

In many areas of the country, the temperature drops below 0°C. We recommend that you always have your spa full of water and running at normal spa temperatures (26.6°C to 37.7°C). This will help reduce the risk of freezing in your spa and your spa's equipment.

WARNING: IF YOU FIND THE NEED TO DRAIN YOUR SPA, PLEASE BE AWARE OF THE POTENTIAL OF FREEZING IN YOUR SPAS EQUIPMENT AND PLUMBING. EVEN IF THE DIRECTIONS BELOW ARE FOLLOWED PERFECTLY, THERE IS NO GUARANTEE THAT YOUR SPA WILL NOT SUFFER FREEZE DAMAGE AND THEREBY VOID THE WARRANTY COVERAGE.

1. Open all filter covers..
2. Remove the filter baskets and filters.
3. Drain your spa completely as described in the instructions above.
4. Remove drain plugs from the front of the pumps.
5. Disconnect the unions from both sides of the pump.
6. Use a wet/dry vacuum to blow any remaining water out of the jets and equipment area.
7. Cover your spa with a good spa cover and an all-weather tarp to ensure that neither rain nor snow enter the spa.

Cleaning the Cover and Shell

Due to the constant punishment your spa cover receives, you should protect it by applying Vinyl and Leather Cleaner as part of your monthly maintenance plan. Cal Spas™ Vinyl and Leather Cleaner is specifically designed to protect spa covers from chemical and ultraviolet light damage. It accomplishes this without leaving an oily residue behind that is normally associated with common automotive vinyl protectants.

Multi-Purpose Cleaner (Spa finish cleaning)



Cal Spas™ Multi-Purpose Cleaner is an essential part of maintaining your spas finish. Through normal use, the spa's finish can accumulate dirt, oil, and calcium causing a rough feel and unsightly scum lines. Cal Spas™ Multi-Purpose Cleaner is a low detergent, non-abrasive cleaner specifically formulated to clean the spa without damaging its acrylic finish. The most effective solution to minimize cleaning time is prevention. When the following steps are followed, the spa's finish will actually start to resist most of the elements that cause calcium build-up and make scum line clean-up easier.

Prior to Spa Start-Up and Refilling

1. Spray Cal Spas™ Multi-Purpose Cleaner directly on to the spa's finish.
2. Wipe clean with a clean soft cloth.
3. Repeat on heavily calcified areas.
4. Wipe spa thoroughly with a wet sponge, rinsing often with a bucket of clean water.

Chapter Title

5. Allow spa to dry completely.
6. Apply a coat of Cal Spas™ Fast Sheen to the spa's entire finish with a soft towel or sponge.
7. Allow Fast Sheen to dry until white and powdery.
8. Buff clean with a soft cloth, rotating frequently.

Periodic Maintenance

1. Spray Cal Spas™ Multi-Purpose Cleaner directly to the spa's finish.
2. Wipe clean with a clean soft cloth.
3. Wipe spa thoroughly with a wet sponge, rinsing often in a bucket of clean water.

Cal Spas™ Multi-Purpose Cleaner should not be sprayed directly into the spa water. Incorrect usage of this product will cause water clarity issues.

Fast Sheen (Spa finish protecting wax)



Cal Spas™ Fast Sheen is an essential part of maintaining your spa's finish. Through normal use, the spa's finish can accumulate dirt, oil, and calcium, causing a rough feel and unsightly scum lines. Cal Spas™ Fast Sheen is a non-oil based wax that is specifically formulated to protect the spa's finish from the chemicals and minerals associated with normal spa use. The most effective solution to minimize cleaning time is prevention. When the following steps are followed, the spa's finish will actually start to resist most of the elements that cause calcium build-up and make scum line clean-up easier.

Prior to Spa Start-Up and Refilling

1. Spray Cal Spas™ Multi-Purpose Cleaner directly to the spa's finish.
2. Wipe clean with a soft cloth.
3. Repeat on heavily calcified areas.
4. Wipe spa thoroughly with a wet sponge, rinsing often in a bucket of clean water.
5. Allow the spa to dry completely.
6. Apply a coat of Cal Spas™ Fast Sheen to the spa's entire finish with a soft cloth or sponge.
7. Allow Fast Sheen to dry until white and powdery.
8. Buff clean with a soft cloth, rotating frequently.

IMPORTANT: Cal Spas™ Fast Sheen should not be used on spas full of water. Only apply to clean, cool, dry surfaces. Incorrect product usage may cause water clarity issues.

Appendix

Replacement Parts

Adjustable and Nonadjustable Jets Power Series



Description: CXW 5.5"
Insert: PLU21703404
Body: PLU21703010
Gasket: PLU21703012
Nut: PLU21703013

Micro Series



Description: MFP 3.25"
Insert: PLU21703409
Body: PLU21702420
Gasket: PLU21702410
Nut: PLU21702415

Swim Jets



Description: SW SWIM JET SPECK BADU STREAM
Part #: PLU21700565

Drain



Description: 2" super high flow suction
Insert: PLU21400132

Light

LIGHT INGROUND 100W 120V 30'
 LENS COVER CAL SPAS INGROUND

LIT16000100
 LIT16200030

Filters

FILTER RAINBOW 75SQ FT COMPLETE 160315	FIL11000035
USED ON OUTDOOR PACKS 2002-2003	
FILTER CARTRIDGE CAL 75 SQ" 10 1/16 X 15 1/6	FIL11100125
SKIMMER WEIR SMALL	PLU21600210
SKIMMER WEIR BASKET	PLU21600080

Hardware

LIP GUARD GENESIS CHROME 7/16	HAR13000060
TRIM LOCK FACEPLATE, CAL	HAR13000011

Ozone

ECLIPSE DEL 230V - 40W - 50 Hz
OZONATOR, INGROUND, PORTED

Heaters

5.5 kW - 230V - 50 Hz OUTDOOR USE

Pumps

TWO SPEED AQUAGLOW PUMP WITH BASKETS

Cal Spas™ Chemicals



Bromine/Chlorine Starter Kit

#CHE07000290/#CHE07000295

When used as directed, this product is effective as a spa and hot tub sanitizer/disinfectant. Treats 250 gallons for up to three weeks.



Vinyl & Leather Cleaner

#CHE07000620

Specifically designed to protect spa covers and pillows from chemical and ultraviolet damage.



Fast Sheen

#CHE07000610

Unique water-based, chemically reactive silicone sealant and polish. Seals, shines, and protects spa surfaces.



Brominating Tablets

#CHE07000760/#CHE07000770

Sanitizer, disinfectant for spas and hot tubs.



Chlorinating Granules

#CHE07000865/#CHE07000880

When used as directed, this product is effective as a spa and hot tub water disinfecting agent.



Go Brom

#CHE07000830

Establishes a bromide bank in spas and hot tubs.



Filter Cartridge Cleaner

#CHE07000690

Breaks down organic and inorganic material. Removes calcium scale and mineral deposits.



Liquid Hardness Increaser

#CHE07000250

Increases water hardness to reduce corrosion. Helps reduce foaming.



Spa Brite

#CHE07000580/#CHE07000590

Clears up cloudy water in spas and hot tubs. Effective at all spa and hot tub temperatures.



Foam Gone

#CHE07000800/#CHE07000810

Breaks up existing foam in spa water. Effective at all spa and hot tub temperatures.



pH-Alkalinity Up

#CHE07000720/#CHE07000730

Helps maintain pH in spas and hot tubs.



pH-Alkalinity Down

#CHE07000750

Lowers pH in spas and hot tubs.



Enzyme Formula

#CHE07000600/#CHE07000605

Emulsifies and biodegrades bodily oils, suntan lotion, and other contaminants in spas and hot tubs.



Metal Protector

#CHE07000630/#CHE07000640

Controls water discoloration caused by minerals. Special Extra Strength formula for spas and hot tubs.



Stain & Scale Prevention

#CHE07000650/#CHE07000660

Prevents minerals from damaging spa components and affecting performance.



Oxidizer Shock

#CHE07000680/#CHE07000710

Destroys organic contaminants and odor-causing wastes.

2005 Warranty Information

See your Cal Spas™ dealer for a copy of the applicable warranty, details, and any questions you may have regarding the warranty coverage on your spa.

Warranty Limitations

The 2005 Limited Warranty is void if the spa has been subject to negligence, alteration, misuse, abuse, repairs by non-C.A.I. authorized representatives, incorrect electrical installation, acts of God and any other cases beyond the control of C.A.I. Examples of common acts invalidating this warranty include, but are not limited to:

- Use of spa in a non-residential application.
- Scratches caused by normal use.
- Operation of spas water temperature out of the normal operating range of 0°C to 47.7°C.
- Damage caused by incorrect water level (low, overflow, etc.).
- Damage caused by extreme weather conditions (hot, cold, etc.).
- Damage caused by dirt, sand and calcium.
- Damage caused by clogged filter cartridges. See filter cleaning recommendations in this Owner's Manual.
- Damage caused by continued operation of this spa with either a known or an unknown problem.
- Damage caused by tri-chlor, acids, chlorine tablets, and any other spa chemicals not authorized by C.A.I.
- Damage caused by improper water chemistry. (High levels of chlorine, bromine, calcium, pH and other excessive chemical levels.)
- Damage caused by direct sunlight. Spas should always be covered when not in use.
- Damage caused as a result of failure to follow operating instructions as defined within this Owner's Manual.
- Damage caused by incorrect electrical installation, electrical brownout, voltage spikes, or operation of spa out of voltage range by more than $\pm 10\%$.
- Spas improperly installed in-ground or placed on non-approved surfaces.

The Limited Warranty applies only to spas normally used for personal, family or household purposes.

Warranty Exclusions

Replaceable service items such as filters, pump seals, light bulbs, ozonator cartridge, jet inserts, spa covers, and filter covers are specifically excluded for the limited warranty.

Spa covers and stereo systems are delivered with their own manufacturer's warranty. For more info, please see their warranties in the owner's information package that was delivered with your spa for more information.

Customer Service

For customer service, contact the authorized selling dealer immediately. If you need additional information and assistance, please contact the C.A.I. Customer Relations Department at 1462 East Ninth Street, Pomona, CA. 91766, or call 909-623-8781.

Please make a record of the following. It will be valuable if service is required.

Cal Spa Model: _____

Cal Spa Serial Number: _____

Date Purchased: _____

Date Installed: _____

Cal Spa Dealer's Phone Number: _____

Cal Spa Dealer's Address: _____



C.A.I. Customer Service Department
1462 East Ninth Street
Pomona, CA 91766

Toll Free: 1-800-CAL-SPAS
Fax: 1-909-629-3890

www.calspas.com