

27957 Diaz Road • Temecula, CA 92590 • Phone: (951) 676-8738 Fax: (951) 676-7292

www.leisure-steam.com

Read all instructions before installing or servicing!

Leave this manual with the homeowner.

What's Inside?

Pre-Installation Instructions

Important: Water pressure should not exceed 50 PSI.

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1. Verify that the correct model of generator, controls and accessories are supplied.
2. Locate the generator in an area that is accessible and will allow for periodic maintenance and future removal. Please refer to Figure 2.
3. Double check that the correct size generator has been selected for the steam room and that the correct incoming line voltage and circuit breaker is provided. Please refer to Figure 3.
4. The 1/2" copper unions, adapters and 3/4" copper unions must be installed to facilitate future removal of the generator.

Materials Needed (Locally Available)

Steam Outlet

- 1/2" copper x FIP copper sweat adapter
- 1/2" copper sweat union
- 1/2" copper pipe and fittings for steam line
- 1/2" C x FIP Hi Ear female adapter
- 1/2" brass nipple

Pressure Relief Valve

- 3/4" C x MIP copper sweat adapter
- 3/4" copper sweat union
- 3/4" copper pipe and fittings for drain line

Water Supply

- 1/4" or 1/2" water shut-off valve and fittings
- 1/4" OD copper tubing

Drain Line (If Plumbed)

- 1/2" Copper x FIP copper sweat adapter
- 1/2" copper sweat unions (2)
- 1/2" ball valve
- 1/2" or 3/4" copper pipe and fittings

Miscellaneous

- 100% silicon caulk
- Pipe compound

Basic safety precautions should be followed when installing and using this electrical equipment, including the following:

IMPORTANT SAFETY INSTRUCTIONS

1. **READ AND FOLLOW ALL INSTRUCTIONS**
2. ***WARNING*** Do not permit children under the age of 16 to use this steam bath.
3. ***WARNING*** To reduce the risk of injury:
 - A. The wet surfaces of steam enclosures may be slippery. Use care when entering or leaving.
 - B. The steam head is hot. Do not touch the steam head and avoid the steam near the steam head.
 - C. Prolonged use of the steam system can raise excessively the internal human body temperature and impair the body's ability to regulate its internal temperature (hyperthermia). Limit your use of steam to 10-15 minutes until you are certain of your body's reaction.
 - D. Excessive temperatures have a high potential for causing fetal damage during the early months of pregnancy. Pregnancy or possibly pregnant women should consult a physician regarding correct exposure.
 - E. Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a steam bath.
 - F. Persons using medication should consult a physician before using a steam bath since some medication may induce drowsiness while other medications may affect heart rate, blood pressure and circulation.

SAVE THESE INSTRUCTIONS

WARNING

REDUCE THE RISK OF OVER HEATING AND SCALDING

1. EXIT IMMEDIATELY IF UNCOMFORTABLE, DIZZY OR SLEEPY. STAYING TOO LONG IN A HEATED AREA IS CAPABLE OF CAUSING OVERHEATING.
2. CHILDREN UNDER THE AGE OF 16 SHOULD NOT USE THE STEAM BATH.
3. CHECK WITH A DOCTOR BEFORE USE IF PREGNANT, IN POOR HEALTH, OR UNDER MEDICAL CARE.
4. BREATHING HEATED AIR IN CONJUNCTION WITH CONSUMPTION OF ALCOHOL, DRUGS, OR MEDICATION IS CAPABLE OF CAUSING UNCONSCIOUSNESS.
5. DO NOT CONTACT STEAM HEAD OR STEAM AT THE STEAM HEAD.

“Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6 degrees F. The symptoms of hyperthermia include an increase in the internal temperature of the body, dizziness, lethargy, drowsiness, and fainting. The effects of hyperthermia include:

- Failure to perceive heat;
- Failure to recognize the need to exit the steam bath;
- Unawareness of impending risk;
- Fetal damage in pregnant women;
- Physical inability to exit the steam bath; and
- Unconsciousness

WARNING – the use of alcohol, drugs, or medication can greatly increase the risk of hyperthermia.”

Locating the Steam Generator

- The Leisure Steam Generator may be located in any convenient area near the shower or tub area. Please refer to Figure 2 for possible locations.
- For best performance, locate the steam generator as close to the shower or tub area as possible, (not more than 40 feet away).
Note: If you are using the One Touch, Digital Control or air switch, it is recommended that you locate the steam generator within 25 feet of the shower or tub area. If this is not possible, contact your local dealer or call the factory so we can provide longer cables.
- Do not install the steam generator inside the steam room, outdoors or in an unheated attic or basement where water could freeze.
- Select a location that is dry and will enable access for future servicing.

Steam Room Design Considerations

- Steam room must be completely enclosed (sides, top and bottom).
- All inside surfaces of the steam room must be covered with a waterproof surface such as ceramic tile, fiberglass, molded acrylic, cultured marble, etc.
- Ceiling and seats inside the steam room should be sloped to allow condensation to run off and prevent dripping on the bather. A ceiling slope of 2" per foot should be adequate.
- Ceiling height should not exceed 8 feet. To minimize the ceiling height, it may be necessary in some installations to slope the ceiling from the center.
- A floor drain should be installed for cleaning and allowing water drainage. For safety, a non-skid flooring should be used.
- Vents inside the steam room are not recommended, but if used, must be positive closing and form a vapor-tight seal. Ducts must be waterproof.
- Skylights and windows must be double pane, and skylights must be closed off and sealed at the ceiling height.
- A vapor tight steam enclosure should be installed. The enclosure should be properly sealed to avoid water damage from escaping steam. It is recommended that 100% silicone caulk be used to seal all pipes and fittings. Steam must be prevented from escaping into the wall cavity.

How to Select the Proper Leisure Steam Generator

Verify that the correct size generator has been selected with particular attention to the size of the room and the specific design features and materials to be used in construction. Compare the cubic foot requirement below with the specification chart of steam generators in Figure 3.

- Calculate the cubic footage of the enclosure, L x W x H (in feet) = Cubic Feet. Ignore deductions for benches as they represent surface area to heat.

L x W x H = _____

Add the following adjustments to the cubic footage calculated in #1 above to account for your specific design features.
(Multiply the #1 total by the percentage indicated below).

A. Ceramic tile thin set, fiberglass, acrylic, cultured marble.

Add 10% _____

B. Ceramic tile mortar bed or cement board backing.

Add 20% _____

C. For each foot exceeding 8ft, glass panel, glass block wall, exterior outside wall.

Add 15% _____

D. Cast iron tub.

Add 10% _____

E. Natural stones (marble, granite, slate, stone, concrete).

Add 100% _____

Total Cubic Feet Required (1+2A+2B+2C+2D+2E) _____

Important: The above guidelines for sizing the steam bath generator are recommendations only. Because of variables in construction, these sizing instructions and specifications should be considered as guidelines only.

Leisure Steam Generator Technical Information

Model	LS100	LS160	LS240	LS300	LS400
Maximum Enclosure Size*	100 cu ft	160 cu ft	240 cu ft	350 cu ft	600 cu ft
Supply Wire Size**	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG
A.C. VOLTS	240	240	240	240	240
Phase	1	1	1	1	1
Amperes	17	25	34	41	48
Watts	4kw	6kw	8kw	9.7kw	11.4kw
Dimensions L x W x H	20x8x8	20x8x8	20x8x8	20x8x8	20x8x8



Figure 3

* Two steam units can be placed in tandem next to each other to increase the cubic foot capacity up to 1200 cubic feet.

** Local codes must be met regardless of this specification.

WARNING!

Never shut off the water to a steam generator that is in use. All plumbing should be installed by a licensed plumber and must comply with all local and national codes.

Place the steam generator in the location selected for installation. Make sure that the unit is level and in an upright position.

Steam Outlet

1. Inside the steam room, select the best position for the steam head as far away from any seating area as possible and drill a 7/8" diameter hole. It is recommended that the hole be drilled 12" above the shower floor or 6" above the rim of the tub. Please refer to Figure 4. When used in a shower stall with acrylic, fiberglass or other non-heat resistant floors, please consult with the manufacturer of the product for the best location of the steam head.
2. At the steam generator, connect the 1/2" copper adapter and 1/2" copper union to the steam line on the top of the steam generator. Please refer to Figure 5A.

Important: The 1/2" copper union must be installed to facilitate future removal of the generator.

3. Run a 1/2" copper steam line from the steam generator to the steam room. Terminate the steam line with a 1/2" C x FIP Hi Ear female adapter and secure to a structural member. Stub out into the steam room with a 1/2" brass nipple.

Do not use black iron or galvanized pipe. They will rust and discolor the wall of the steam room. The steam line should be sloped slightly toward the steam generator paying close attention not to allow any kinks or dips where steam may collect and condense, blocking the flow of steam. The steam line can run up, down, or horizontally, but it cannot run down and then up.

4. Insulate the steam line for best results.
5. Inside the steam room, seal around the brass nipple with 100% silicone caulk. Slip the escutcheon over the brass nipple and connect the steam head with the slots facing down. Care must be taken not to scratch the steam head or escutcheon with a wrench.

Pressure Relief Valve

1. Install the pressure relief valve in the fitting on the top of the steam generator. Please refer to Figure 5A. The pressure relief valve outlet must drain in accordance with local and national codes.

Important: The 3/4" copper union must be installed to facilitate future removal of the generator. To ensure proper and automatic safety valve operation, do not connect a shut-off valve or plug the safety valve outlet.

Drain

1. A 1/2" brass nipple and cap is provided on the back end of the steam generator to facilitate servicing. The cap can be removed and the nipple can be used as a drain or flush.

- A. **Manual Flush.** Attach a 1/2" copper adapter and 1/2" copper union to the 1/2" brass nipple. Attach a ball valve and run a 1/2" copper water line to the cold water supply. Tee off the elbow of the water line and attach a second ball valve and run 1/2" or 3/4" copper drain line. Please refer to Figure 5A.

The ball valve on the water supply can be manually opened allowing water to flow into the steam generator. any loose particles inside the steam generator will be flushed out the steam head and into the steam room..

After the steam generator has been flushed, close the ball valve on the water supply side and open the ball valve for the drain. All water and any loose particles inside the tank will be drained. After the water has drained out, close the ball valve and the tank will remain dry until the next steam bath.

A bucket will suffice, however, if a floor drain is used, the drain must be connected in accordance with local and national codes, paying close attention to the codes for receptor, trap and vent required.

- B. **Auto Drain.** Attach the Leisure Steam auto drain to the steam generator following the instructions on page 8. Run a 1/2" or 3/4" copper drain line to a gravity flow drain. The auto drain opens automatically after each steam bath allowing the water and any loose particles from inside the steam generator to be drained. The drain must be connected in accordance with local and national codes, paying close attention to the codes for receptor, trap and vent required. See Figure 5B.

Important: The manual and auto drains drain by gravity. Avoid any upward slope of the drain line, otherwise, sediment will collect and prevent proper draining and will damage the steam generator.

Water Supply - Important: Water pressure should not exceed 50 PSI.

1. Connect a tee to the cold water supply and run a 1/4" copper water line to the steam generator. Install a water shut-off valve near the point of termination. do not use a saddle valve or piercing type of valve for the water shut-off valve.
2. Where hard water is a problem, the Leisure Steam filter, LS-FILTER, is recommended. This filter will help remove the calcium and magnesium, the main components in hard water that cause scale buildup. This will prolong the life of your steam generator, allowing you to enjoy many years of trouble free use.
3. Flush the water line thoroughly to remove any debris that may be in the line.
4. Connect the 1/4" copper water supply line to the 1/4" compression fitting on the water inlet fitting on the top of the steam generator. When tightening this fitting, always use two wrenches so there will be no strain on the water inlet valve.
5. Turn on the water slowly and check all connections for leaks.

IMPORTANT!

If you are using the One Touch, Digital Control, or Wall Timer in conjunction with an Air Switch, it is recommended that you locate the steam generator within 25 feet of the shower or tub area. If this is not possible, please contact your local dealer or call the factory so we can provide longer cables.

One Touch

1. The One Touch control panel can be installed either inside or outside the steam room. It is recommended that the panel be located approximately 5 feet above the floor, but not directly over the steam head. Drill a 1-1/4" diameter hole at this location.
2. From inside the steam room, slip the telephone style cable through the hole drilled above.
3. Remove the protective backing on the One Touch control panel exposing the adhesive foam. Carefully position the control panel on the wall making sure the gray, half moon shape design is on the top. The foam backing creates a water tight seal and is not designed to be placed into position and then taken off and re-positioned.

Note: If you must re-position the control panel, it may be necessary to apply a small amount of 100% silicone caulk to secure the panel to the wall. This will be needed if you think the foam adhesive is no longer making an adequate seal because the foam adhesive is not sticky enough. Wipe any excess silicone off with denatured alcohol. Tape the control panel in place while the silicone hardens.

4. String the control cable from this location through 1/2" holes drilled in the wall studs or ceiling joists to the location of the steam generator. Note: Do not staple through or damage the control cable. Use the factory supplied control cable only.
5. Plug the telephone style cable into the coupler module located on the lid to the steam generator. Please refer to Figure 1.

- D. String the control cable from this location through 1/2" holes drilled in the wall studs or ceiling joists to the location of the steam generator. Note: Do not staple through or damage the control cable. Use the factory supplied control cable only.
- E. Plug the telephone style cable into the coupler module located on the lid to the steam generator. Please refer to Figure 1.

2. Temperature Sensor and Cable Rough-in.

- A. Locate the temperature sensor 6 feet above the floor, but not directly over the steam head. Drill a 1-5/16" diameter hole at this location.
- B. From inside the steam room, push the metal probe end of the sensor cable into the temperature sensor housing securing it firmly with the nut and o-ring supplied. Slip the rest of the sensor cable through the hole drilled above.
- C. Apply 100% silicone caulk around the threads and back side of the temperature sensor housing. Insert the temperature sensor housing into the hole drilled above and push it against the wall. Wipe any excess silicone off with denatured alcohol. Tape the sensor in place while the silicone hardens.
- D. String the sensor cable from this location through 1/2" holes drilled in the wall studs or ceiling joists to the location of the steam generator. Note: Do not staple through or damage the sensor cable. Use the factory supplied sensor cable only.
- E. Plug the sensor cable into the temperature sensor plug-in located on the lid to the steam generator. Please refer to Figure 1.

Digital Control

1. Digital Control Panel and Cable Rough-in.
 - A. The Digital Control panel can be mounted either inside or outside the steam room. It is recommended that the control panel be located approximately 5 feet above the floor, but not directly over the steam head. Drill a 3-1/2" x 1-1/4" rectangular hole at this location.
 - B. From inside the steam room, slip the telephone style cable through the hole drilled above.
 - C. Remove the protective backing on the Digital Control panel exposing the adhesive foam. Carefully position the control panel on the wall making sure the control panel is level and completely covers the rectangular hole drilled above. The foam backing creates a water tight seal and is not designed to be placed into position and then taken off and re-positioned.

Note: If you must re-position the control panel, it may be necessary to apply a small amount of 100% silicone caulk to secure the panel to the wall. This will be needed if you think the foam adhesive is no longer making an adequate seal because the foam adhesive is not sticky enough. Wipe any excess silicone off with denatured alcohol. Tape the control panel in place while the silicone hardens.

Air Switch

1. Locate the position for the air switch and drill a 1-1/4" diameter hole.
2. From inside the steam room, push the flexible tubing over the stem on the back of the air switch housing. Slip the rest of the tubing through the hole drilled above.
3. Apply 100% silicone caulk around the threads and back side of the air switch housing. Insert the air switch housing into the hole drilled above and push it against the wall. Wipe any excess silicone off with denatured alcohol. Tape the air switch housing in place while the silicone hardens.
4. String the flexible tubing through 1/2" holes drilled in the wall studs or ceiling joists to the location of the steam generator. Note: Do not staple through or damage the flexible tubing. Use the factory supplied flexible tubing only.
5. Push the flexible tubing over the black plastic stem protruding from the top of the electrical junction box. Please refer to Figure 1.

WARNING!

- **ELECTRIC SHOCK HAZARD: HIGH VOLTAGE EXISTS WITHIN THIS EQUIPMENT. THERE ARE NO USER SERVICEABLE PARTS IN THIS EQUIPMENT.**
- **ALL INSTALLATION AND SERVICE TO THIS EQUIPMENT SHOULD BE PERFORMED BY A QUALIFIED LICENSED PERSONNEL.**
- **ELECTRICAL GROUNDING IS REQUIRED ON ALL LEISURE STEAM GENERATORS.**
- **ALL ELECTRICAL SUPPLIES SHOULD BE DISCONNECTED WHEN SERVICING THE GENERATOR.**
- **ALL ELECTRICAL WIRING SHOULD BE INSTALLED BY A LICENSED ELECTRICIAN AND MUST COMPLY WITH ALL LOCAL AND NATIONAL CODES.**

General Instructions.

1. Install a 240 Volt electrical line from the power panel to the steam generator location. Size the wire for the steam generator using the chart in Figure 3.
2. A dedicated circuit breaker is required. The proper circuit breaker must be sized using the chart in Figure 3. A GFI, Ground Fault Interrupter, is not required by UL. This will avoid nuisance tripping as heating elements age.
3. Remove the cover from the electrical junction box on the steam generator.
4. Locate the appropriate knockout on the junction box.

One Touch and Digital Control Instructions.

1. Strip back the three (3) incoming wires (two power and one ground) from the power supply.
2. Connect the two black wires in the junction box to the two power supply wires using approved insulated wire connectors.
3. Connect the ground wire from the junction box to the ground wire from the power supply using approved insulated wire connectors.
4. Re-install the junction box cover plate.

Timer Instructions.

1. Install a single-gang electrical box for the wall timer at a convenient location outside of the steam room. Refer to local electrical codes for minimum distance and safety requirements. Provide a 3 wire #14 AWG timer run between the timer wall box and the steam generator. Strip back the wires at both ends.
2. Strip back the three (3) incoming wires (two power and one ground) from the power supply.
3. Connect the two red wires located in the junction box to two of the wires from the timer run using approved insulated wire connectors.
4. Connect the two black wires in the junction box to the two power supply wires using approved insulated wire connectors.
5. Connect the ground wire from the timer run and the ground wire from the power supply to the ground wire provided in the junction box using approved insulated wire connectors.
6. Re-install the junction box cover plate.
7. Install the timer in the electrical box outside of the bathing area. Connect the two wires from the timer run to the timer and the ground wire to the metal box.
8. Install the timer cover plate, large lock nut and the timer knob onto the timer using the hardware provided in the parts bag.

Final Installation Checklist

Please verify that the following are true.

- The correct model of generator, controls and accessories are supplied.
 - The correct size generator has been selected for the steam room and the correct incoming line voltage and circuit breaker are provided. Please refer to Figure 3.
 - The steam generator is level and in an upright position.
 - The generator is located in an area that is accessible and will allow for periodic maintenance and future removal. Please refer to Figure 2.
 - The 3/4" copper union and 1/2" copper union are installed to facilitate future removal of the generator.
 - The steam generator is properly grounded.
 - The circuit breaker power is turned on.
 - The water supply shut-off valve is turned to the open position.
- The steam generator is now ready for operation.

Operating Instructions



One Touch - Figure 6A



Digital Control - Figure 6B



Wall Timer - Figure 6C

One Touch

1. Push the center of the button to turn the steam generator on. Please refer to Figure 6A.
 - A. The red LED is lit when the unit is on and heating the room.
 - B. The One Touch has a built-in 20 minute timer that automatically turns the steam generator off.
 - C. Push the on/off button any time during the steam bath to turn the steam generator on or off.
- G. The steam generator will automatically turn off after 45 minutes.
- H. Push the on/off button any time during the steam bath to turn the steam generator on or off.

Digital Control

1. Push the on/off button to turn the steam generator on. Please refer to Figure 6B.
2. The Digital Control is designed to automatically heat the room to the set temperature when the power is turned on. (Minimum temperature = 95, Maximum temperature = 130).
 - A. The red LED is lit when the unit is on and heating the room.
 - B. Adjust the room temperature by pushing the set temperature button to the desired temperature. The set temperature is indicated by a flashing display.
 - C. To reverse the temperature direction, wait a few seconds until the temperature no longer flashes and then push the set temperature button until your desired temperature is shown flashing on the panel.
 - D. The display will automatically revert to show the actual room temperature within a few seconds.
 - E. The temperature sensor will monitor the room temperature and when the room heats up to 1 degree above the set temperature, the steam generator will turn off.
 - F. The temperature sensor will continue to monitor the room temperature and when the room cools down to 1 degree below the set temperature, the steam generator will turn on.

Wall Timer

1. Set the timer to 20 minutes. Please refer to Figure 6C.
2. If you are using the Air Switch and no steam appears after 5 minutes, push the actuator button once and release. To manually shut off the steam generator, push the actuator button once.
3. After the room has been pre-heated, re-set the timer for the length of time desired for the steam bath.
4. The steam generator will automatically turn off after the desired time has expired.

Enjoy Your Steam Bath

1. The steam generator will begin to produce steam in 3-5 minutes.
2. The steam room will reach a comfortable temperature in 10-15 minutes.
3. Enter the steam room and close the door tightly.
 - A. We suggest entering the steam room when the temperature is around 95 degrees. This will allow your body to adjust to the temperature as the temperature rises in the steam room.
4. Relax and enjoy your new Leisure Steam bath.
5. Add one of our Aromatherapy Oils for an extra sensual feeling. A couple of pumps from our spray bottle will allow the aroma to flow and be dispersed into the steam. Breathe in the aroma of eucalyptus or lavender or any one of the scents available and transform your steam bath into an extraordinary experience.
6. Take a periodic shower during the steam bath to cool and refresh your self. A lukewarm shower followed by a cold shower will leave you feeling refreshed, relaxed and invigorated.

Maintenance

Leisure Steam generators are designed and manufactured for unattended operation and require little maintenance. Other than periodic draining, maintenance procedures are not required. Every couple of months, or more often depending on local water conditions, the drain valve should be opened to flush out any loose particles and mineral deposits. In areas where hard water is a problem, the Leisure Steam filter, LS-FILTER, and the Leisure Steam auto drain, LS-AUTO DRAIN, are recommended. These will help remove the calcium and magnesium, the main components in hard water that cause scale build-up. They will help prolong the life of your steam generator, allowing you to enjoy many years of trouble free use.

Read all instructions before installing or servicing!

IMPORTANT

1. All plumbing and electrical installation instructions for installing an individual steam generator are to be used.
2. The only difference is in a tandem installation, the electrician must run a conduit between the two steam generators to wire the color-coded wires together. This will allow one Digital Control panel to operate both steam generators.
3. The plumbing and electrical should be installed by a trained, licensed technician and must comply with all local and national codes.
4. If the optional auto drain is used, then two (2) auto drains are required, one for each steam generator.

General Installation instructions for tandem generators.

1. Each steam generator must have installed a 240 Volt electrical line from the power panel to the steam generator location. A dedicated circuit breaker is required for each steam generator. Please refer to the Leisure Steam Generator Technical Information Chart for amperes, kilowatts and supply wire size. Please refer to Figure 3.
2. Connect the color-coded wires between the steam generators together. White to White, Blue to Blue, Orange to Orange, etc. The two (2) black wires located in the junction box housing are for the 240 Volt power run and the green wire for the ground wire.
3. Two (2) steam line runs should be installed, one for each steam generator. We provide two steam heads with these models. If at all possible, position the steam heads at opposite ends of the steam room, this will allow for the steam to fill the room faster.
4. Two (2) drain line runs should be installed, one for each steam generator/auto drain.
5. Make sure unions are used on all steam and drain lines to facilitate future removal and servicing of the generators.

**Read all instructions before installing or servicing!
Failure to follow them could damage the product or cause a hazardous condition. Leave this manual with the homeowner.**

CAUTION:

1. **Disconnect power supply before connecting wiring to prevent electrical shock or equipment damage.**
2. **Normally it is not necessary to remove the power head from the valve body during installation. If the valve must be disassembled, be certain that it is reassembled with the water flow in the direction of the arrow. reversal of the power head will result in damage to the gear train.**
3. **To prevent damage to the home, do not operate the steam generator until the auto drain is fully plumbed to the floor drain. The drain opens automatically after the steam generator is turned off and the water draining from the steam generator may damage the home if not properly plumbed.**
4. **The plumbing and electrical should be installed by a trained, licensed technician and must comply with all local and national codes.**

1. Installing the auto drain valve to the steam generator. Please refer to Figure 5B.

A. Remove the cap from the 1/2" brass nipple that is on the back end of the steam generator.

Important: Hold the 1/2" brass nipple securely with a wrench when removing the cap and installing the 1/2" copper adapter and 1/2" copper unions. These parts must be installed to facilitate future removal of the auto drain and steam generator.

B. Install the auto drain valve making sure the flow through the valve is in the direction indicated by the arrow stamped on the valve body. The valve must be installed in the proper direction with the arrow pointing away from the steam generator. The power head must be even with or above the center line of the copper piping. Make sure that enough room is provided above the power head to remove the cover for servicing.

C. Have the electrician connect the two wires from the auto drain valve to the two (2) red wires located inside the junction box.

2. Connecting the drain line to the auto drain valve.

A. Run a 1/2" or 3/4" copper drain line to a gravity flow floor drain. The copper drain line must be pitched down, away from the steam generator.

Important: The auto drain drains by gravity. Avoid any upward slope of the drain line, otherwise, sediment will collect and prevent proper draining and will damage the steam generator. The drain must be connected in accordance with local and national codes, paying close attention to the codes for receptor, trap and vent required.

3. Operation of the auto drain.

A. The auto drain valve is a normally closed valve that stays closed for the entire steam bath. The valve remains closed for 20 minutes after the steam bath and then is automatically opened allowing the water and any loose particles from inside the steam generator to be drained.

Note: In addition to the above operation, all Digital Control steam generators are programmed to flush the inside of the steam generator tank for 3 minutes after the initial drain period. After the 3-minute flushing period has elapsed, the drain will stay open to completely drain any residual water in the tank.

B. The valve is then closed on all models and the tank remains dry until the next steam bath.

4. Testing the auto drain.

A. After all of the plumbing and electrical connections are made, turn the steam generator on and listen for the water filling the tank. When the water stops flowing, turn the steam generator off.

B. Automatic Test. Wait the 20 minute period to see that the valve opens as designed.

Manual Test. Move the manual opening lever on the auto drain over the stop and push it slowly and firmly to the "MANUAL OPEN" position. The stop permits the valve to be locked in the open position.

C. The water should now drain out. Make sure that the water does not back up or splash out of the floor drain. Correct as necessary.

D. Return the opening lever to the "AUTO" position.

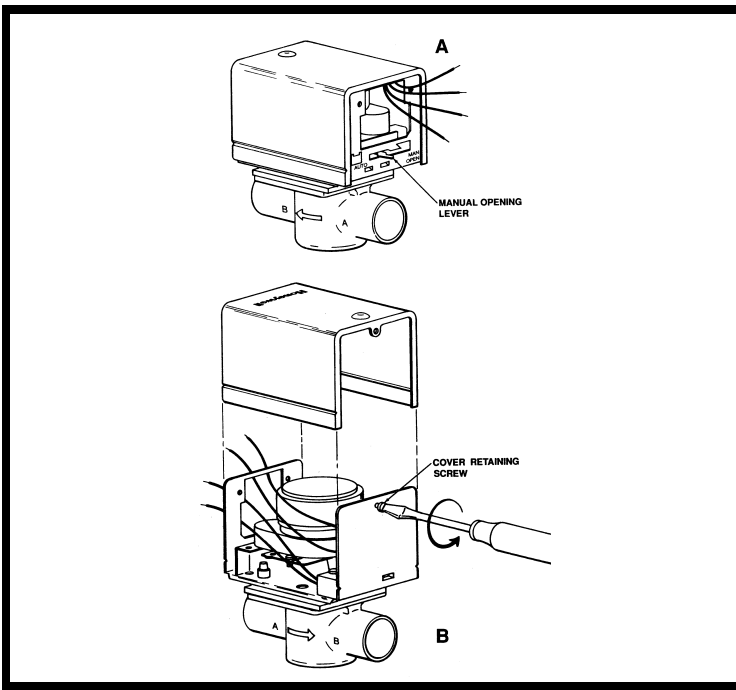


Figure 1: Remove old power head

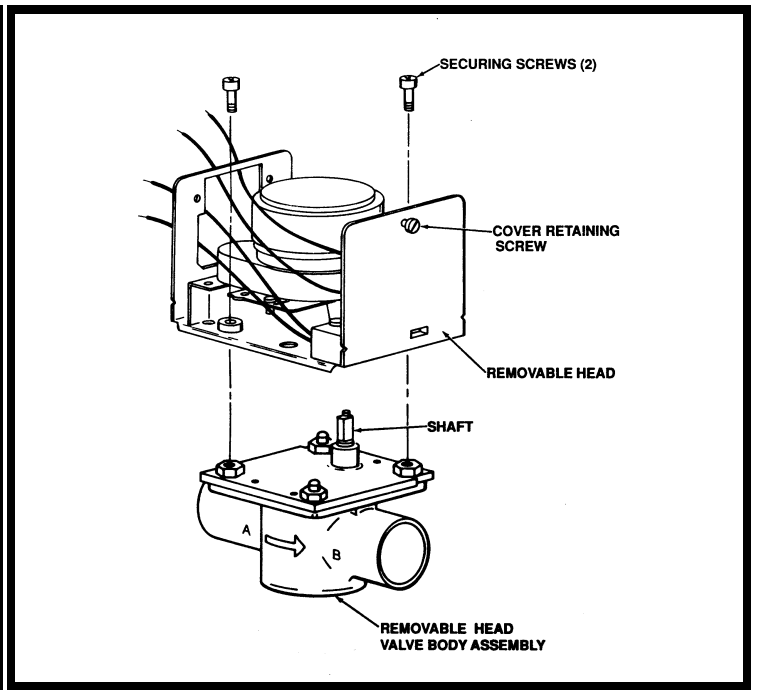


Figure 2: Install new power head

This valve should be serviced by a trained, experienced service technician.

1. If the valve is leaking, drain the system and check to see if the o-ring needs to be replaced.
2. If the gear train is damaged, replace the entire power head assembly. See installation. If the motor is burned out, replace motor.

Installation of replacement power head.

1. Disconnect the power supply before connecting wiring to prevent electrical shock or equipment damage.
2. Disconnect the lead wires to the power head at the junction box. Remove conduit or cable connector, if fitted. Label each wire for rewiring later.
3. Remove the old power head, Please refer to Figure 1 above.
 - A. Place the manual opening lever on the old power head in the "MANUAL OPEN" position. Please refer to Figure 1A above.
 - B. Remove the screw securing the cover to the power head. Please refer to Figure 1B above.
 - C. Lift the power head cover off.
 - D. Remove the two (2) screws securing the power head to the valve body. Please refer to Figure 2 above.
 - E. Lift the power head off the valve body.
4. Install the new power head. Please refer to Figure 2 above.
 - A. Place the manual opening lever on the new power head to the "MANUAL OPEN" position.
 - B. Fit the power head onto the valve body, ensuring that the shaft seats correctly. The power head should be aligned with the manual opening lever or slot for the lever at the port end of the valve body closest to the steam generator.
 - C. Secure the power head to the valve body with the two (2) screws provided.
 - D. If fitted, reconnect the conduit or cable.
 - E. Reconnect the lead wires to the power head.
 - F. Replace the power head cover.
 - G. Return the opening lever to the "AUTO" position.
5. Turn on the power and test.

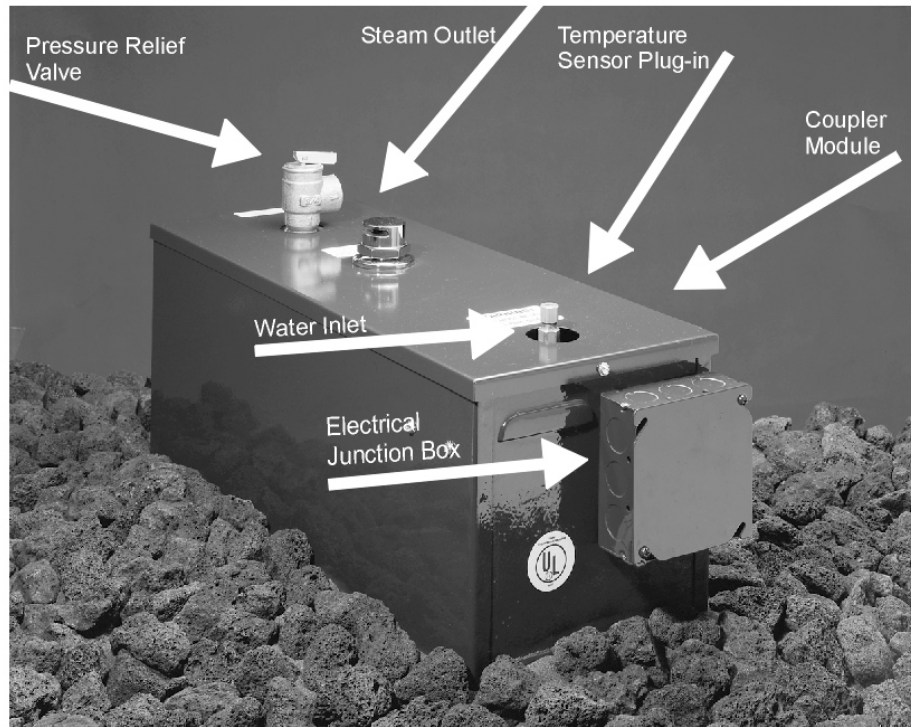


Figure 1



Figure 2

Leisure Steam Generator Technical Information

Model	LS100	LS160	LS240	LS300	LS400
Maximum Enclosure Size*	100 cu ft	160 cu ft	240 cu ft	350 cu ft	600 cu ft
Supply Wire Size **	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG
A.C. VOLTS	240	240	240	240	240
Phase	1	1	1	1	1
Amperes	17	25	34	41	48
Watts	4kw	6kw	8kw	9.7kw	11.4kw
Dimensions L x W x H	20x8x8	20x8x8	20x8x8	20x8x8	20x8x8



* Two steam units can be placed in tandem next to each other to increase the cubic foot capacity up to 1200 cubic feet.

** Local codes must be met regardless of this specification.

Figure 3

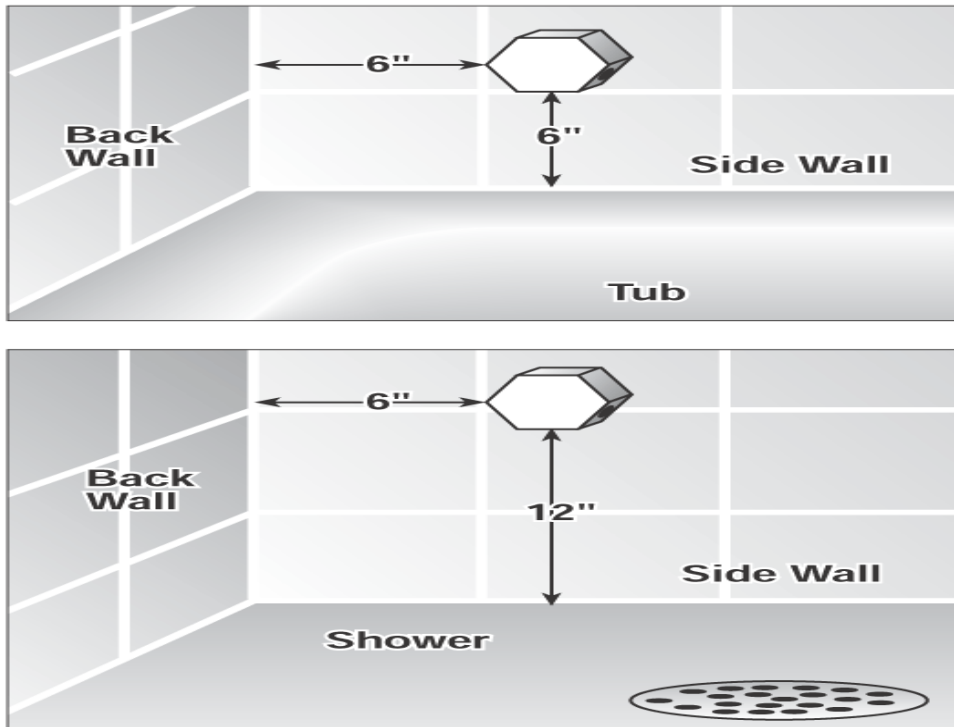


Figure 4

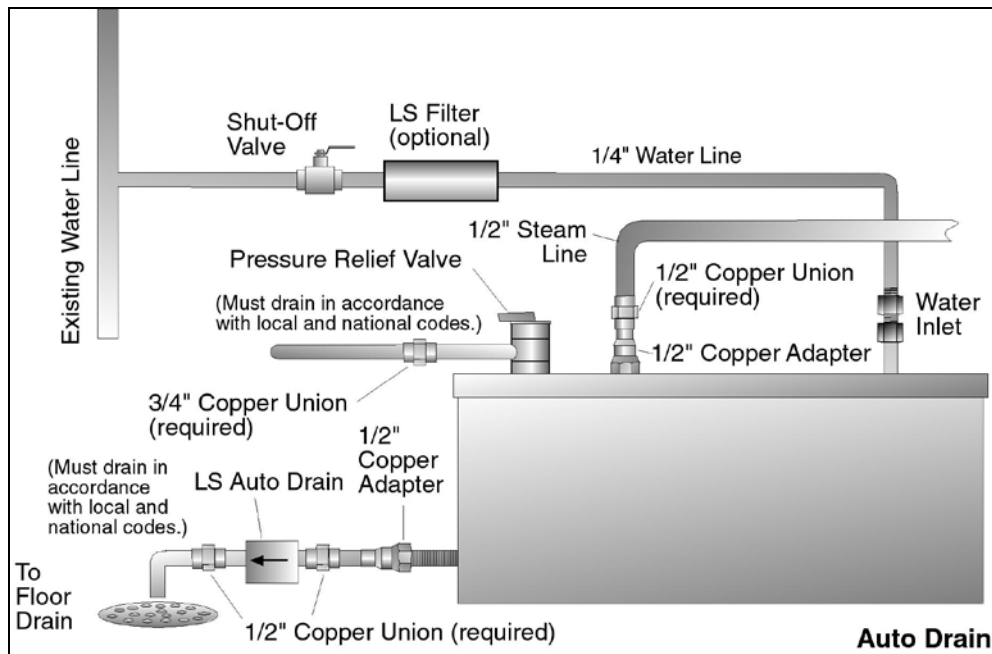
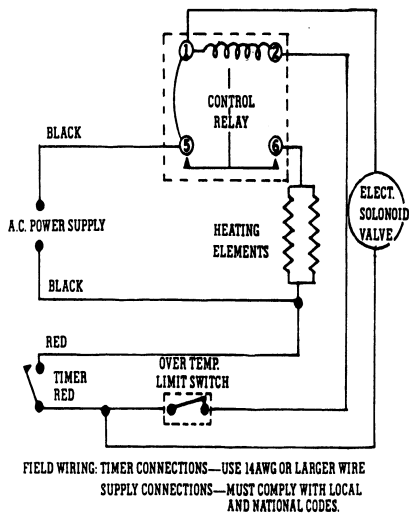
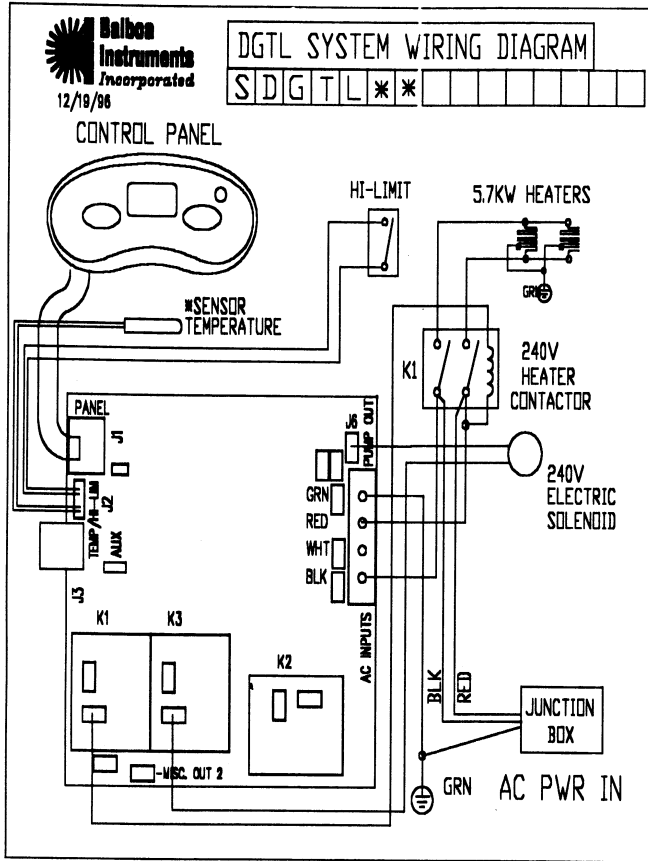


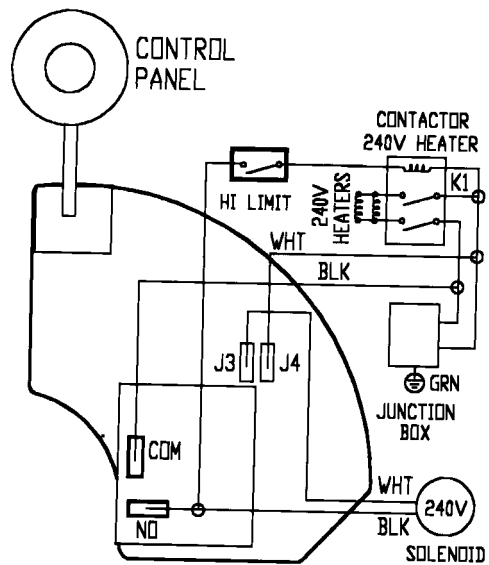
Figure 5B – Auto Drain

Electrical Diagrams

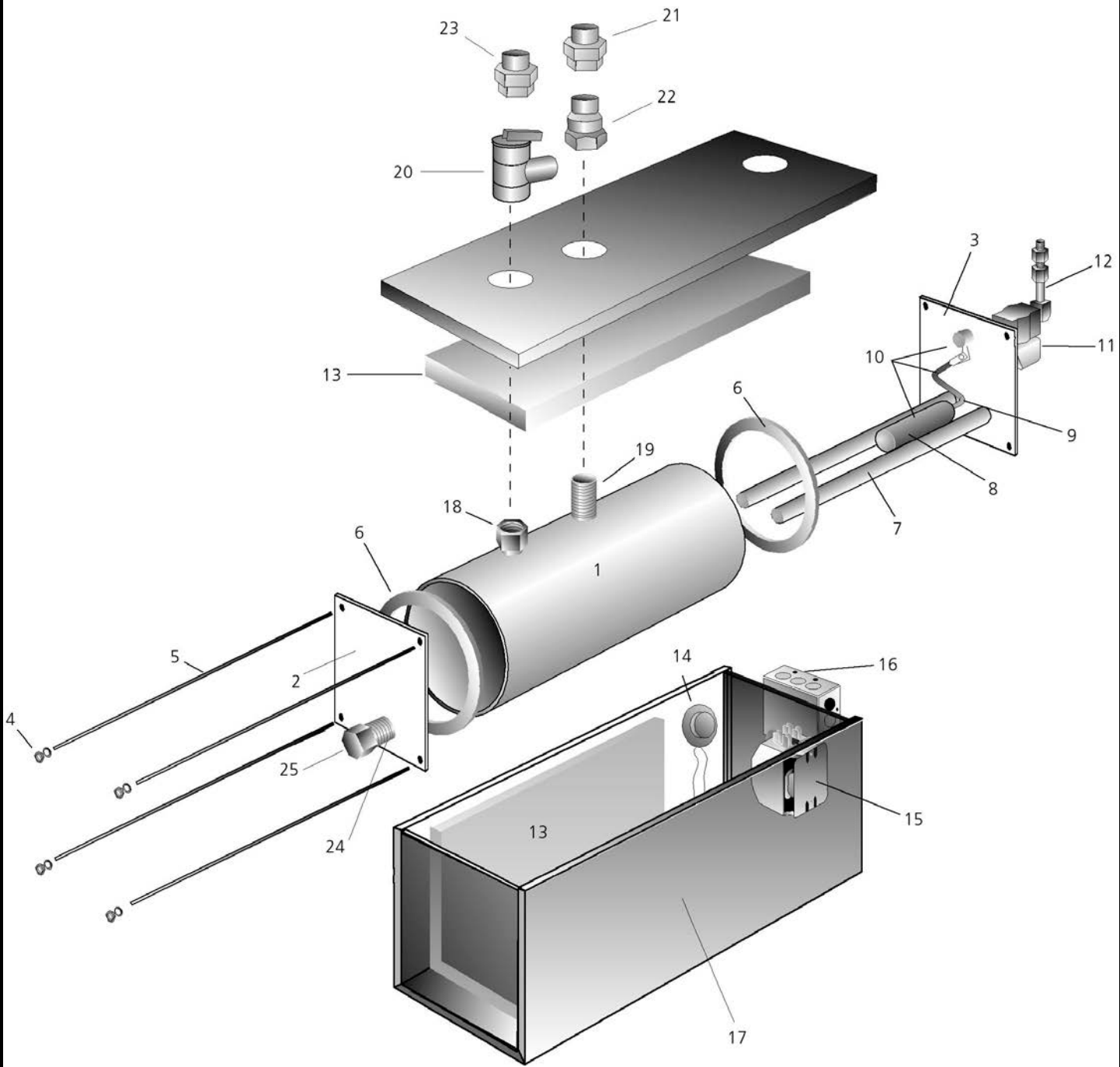
Digital Control



Wall Timer



One Touch



Exploded Parts Breakdown

LEISURE STEAM PARTS LIST

Part #	Description
1-S	Tank – Small (LS100, aluminum)
1-L-SS	Tank – Large (LS160, LS240, LS300, LS400, stainless steel)
1-L-A	Tank – Large (LS160, LS240, LS300, LS400, pre 2004 - aluminum)
2	Back Plate (aluminum)
3-A	Front Plate (aluminum)
3-SS	Front Plate (stainless steel)
4	Hex Nut & Washer
5-S	Bolt – Small (LS100, pre 2004 aluminum tank)
5-L	Bolt - Large (LS160, LS240, LS300, LS400, pre 2004 – aluminum tank)
6-A	Tank Gasket, (pre 2004, green for aluminum tanks)
6-SS	Tank Gasket, (stainless steel tanks)
7-A	Heating Element – 2kw, (LS100, LS160)
7-B	Heating Element – 4kw, (LS160, LS240)
7-C	Heating Element – 5.7kw (LS300, LS400)
8	Float – Stainless Steel
9	Float Arm
10	Float Assembly complete
11	Solenoid Valve
12	Water Inlet (Elbow, Nipple, Female Coupling)
13	Insulation Material
14	Over Temp Switch
15	Relay
16	Electrical Junction Box
17-S	Metal Box - Small (LS100, 15x8x8)
17-L	Metal Box – Large (LS160, LS240, LS300, LS400, 20x8x8)
18	$\frac{3}{4}$ " x $\frac{1}{2}$ " Reducer
19	Steam Outlet
20	Pressure Relief Valve
21	$\frac{1}{2}$ " Copper Union
22	$\frac{1}{2}$ " Copper Adapter
23	$\frac{3}{4}$ " Copper Union
24	Drain Outlet
25	Drain Cap
26	One Touch Circuit Board
27	One Touch Control Panel (specify finish)
28	Digital Circuit Board
29	Digital Control Panel (specify finish)
30	Digital 25' Sensor Cable
31	Digital Black Sensor Mount
32	Digital/One Touch 18' phone cable
33	Digital/One Touch 1:1 phone cable adapter
34	Timer Control (specify finish)

Trouble Shooting Guide (Models LS100, LS160, LS240, LS300, LS400)

Note: The information contained in this section is intended as a general aid only to assist qualified service personnel in the testing and repair of our generators. There are no user serviceable parts in the generator. All repairs should be performed by qualified service personnel only.

Problem	Probable Cause	Action to be Taken
No Steam	Electric power is off	Check circuit breaker Check wiring instructions
No water entering steam generator	Refer to water supply instructions Shutoff valve in closed position Clogged water line Solenoid malfunction	Verify water shutoff valve is turned to open position Open Water shutoff valve Flush water inlet to remove any debris Replace LS-Filter *Check solenoid valve
Water flows continuously Out of steam head	Check Water Pressure (psi) Float assembly malfunction	*Call factory, pressure should not exceed 50psi *Check float assembly
Too much water in steam	There is a kink or dip in steam line Steam line is over 20 feet	Check plumbing Insulate steam line
Limited amount of steam	Larger generator needed Voltage is insufficient Heating element malfunction	Verify sizing Check power supply *Check heating element
Pressure relief valve is leaking	Clogged steam line Clogged steam outlet	Check steam line Check steam outlet
Too much steam or too hot	Unit is oversized	Verify that the proper size generator has been selected Add Air Switch (timer models only)
Circuit breaker trips	Circuit breaker undersized Short circuit Heating element malfunction	Check specifications Check wiring *Check heating element
No LED display for ambient Temperature on Digital Control panel No LED display on One Touch panel	Loose sensor cable Loose control panel cable Dirt/dust in cable connections or one-to-one adapter	Secure sensor cable on lid Secure to coupler module on generator lid Make sure all connections are free of dirt & dust
Digital display reads "SN"	Temperature sensor cable is unplugged	Secure sensor cable on generator lid
Digital display reads "OH"	"Over-temp" warning, no water entering steam generator Dirt/dust in cable connections or one-to-one adapter Low voltage	Flush water inlet to remove any debris *Check solenoid valve *Make sure water pressure is above 20 lbs. Make sure all connections are free of dirt & dust Check voltage input
Digital Control panel failure One Touch Control panel failure	Circuit board malfunction	*Check circuit board
Air Switch not operable	Vinyl tubing loose Vinyl tubing crimped Actuator button stuck in down position	Secure tubing to junction box and actuator button Make sure vinyl tubing is free of any obstruction Vinyl tubing crimped, remove any obstructions

*Call Leisure Steam service department.

LIMITED 5-YEAR WARRANTY

Limited 5-year Warranty: Limited Warranty for defects in materials and workmanship.

Except as indicated below, all Leisure Steam Residential Steam bath Generators are warranted to the original consumer purchaser to be free from defects in material and workmanship for a period of five (5) years. The Digital Control and One Touch Control are warranted against defects in material and workmanship for two (2) years. The Auto Drain control is warranted against defects in material and workmanship for one (1) year. No warranty is given on the finish of steam heads.

This warranty is made to the original consumer purchaser and shall be effective from the date of purchase as shown on the purchaser's receipt. Warranty must be validated by owner completing and returning the warranty card within ten (10) days after installation. This warranty is not transferable.

This warranty will not be valid if these products have not been installed, operated and maintained in accordance with the applicable Leisure Steam Installation and Operating Instructions supplied with the steam generator. This warranty shall be limited to the repair or replacement of defective parts by Leisure Steam after the steam generator has been disconnected and returned to the Leisure Steam factory or authorized service center, freight prepaid.

Repair or replacement of defective parts is the exclusive remedy available from Leisure Steam under this warranty. Labor charges and/or costs or damages incurred in the installation, repair or replacement of the Leisure Steam generator, as well as any incidental or consequential damages or economic loss, are excluded from this warranty and will not be paid by Leisure Steam.

Leisure Steam generators are intended for **residential use only**. Commercial use voids this warranty. This warranty shall not be valid if the serial number has been altered or removed.

Disclaimer, Exclusions and Limitations of all Other Warranties:

This warranty is the exclusive warranty granted by Leisure Steam and is in lieu of all other warranties expressed or implied, written or oral. There are no implied warranties of merchantability, quality or fitness for a particular purpose. Any implied warranties are limited to the terms of the limited warranty described and provided herein.

Leisure Steam is not liable to the purchaser, user or any other person for any incidental or consequential damages for any defect, malfunction or failure of any Leisure Steam product.

Any misuse, abuse, neglect, accident, improper installation, improper service, improper maintenance, any use in violation of the instructions furnished by us, any use of replacement parts other than genuine Leisure Steam parts or any repairs attempted by any person other than one authorized by Leisure Steam will void this warranty.

No person, agent, distributor, dealer, seller, employee or company is authorized to change, modify, amend or enlarge the terms of this limited warranty and disclaimer in any manner whatsoever.

This warranty gives you specific legal rights and you may also have other legal rights that vary from state to state. Some states may not allow the exclusion or limitation of incidental or consequential damages or economic loss so the above limitation or exclusions may not apply to you.

To Obtain Service Under Warranty:

Please write or call the Leisure Steam factory to obtain a Return Goods Authorization (RGA) before shipping the steam generator. Please have the model and serial number available when requesting an RGA.

Leisure Steam
27957 Diaz Road • Temecula, CA 92562
Phone: 951-676-8738 • Fax: 951-676-7292

Include a letter with the following information: Name, address, day time phone number, place of purchase, proof of purchase, model number, serial number and description of problem.

REGISTRATION OF WARRANTY

**Detach and mail to:
Leisure Steam
27957 Diaz Road
Temecula, CA 92562**

Model # _____ Serial# _____

Purchaser _____ Date of Purchase _____

Address _____

City _____ State _____ Zip _____

Dealer _____ Date of Installation _____

Dealers Address _____

City _____ State _____ Zip _____

