Before attempting installation, read these instructions and acquaint yourself with the component names. Great care has been taken to make this an easy-to-follow procedure. A little time spent understanding the system and its parts will assure a successful, trouble-free installation.

**CAUTION: SAFETY COMES FIRST**

When working on or around your roof or system, please take care to avoid hazards such as electrical wires and loose shingles.
Congratulations on investing in one of the most advanced solar water heating systems available. Utilizing the free, environmentally friendly energy from the sun to heat water for your home makes so much sense. Solar energy is safe and reliable and your decision to use solar energy is helping to preserve our environment and to reduce our rapid depletion of non-renewable, fossil fuels.

Your new Solene Solar Hot Water System uses state-of-the-art technology and will provide you with many years of maintenance free and dependable service. If you have any questions, please feel free to contact your local dealer or our home office.

1. Introduction/Table of Contents.

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COMPONENT LIFE EXPECTANCY - Installed and maintained properly, your Solene Solar Hot Water Heating System should provide many years of trouble free, uninterrupted service. The main component of the system, the Aurora Solar Collector, is designed to last 25 to 30 years. Solar Storage Tanks have a life expectancy anywhere from 10 to 20 years depending greatly upon regional water quality. (Replacing the internal sacrificial anode rod from time to time can extend Tank life.) Differential Control and Circulation Pump life expectancies run from 5 to 10 years. As electrical components, they are susceptible to lightning strikes or electrical surges. Valve life expectancy varies greatly depending on water quality and usage.
2. Getting Started.

BEFORE YOU START YOUR INSTALLATION, HERE ARE A FEW IMPORTANT TIPS:

1. **Caution - SAFETY COMES FIRST!**
   There is no substitute for safety. Always exercise extreme caution, care, and good judgment when working on or around a roof.
   
   - Please take care to avoid hazards such as overhead electrical wires or loose shingles.
   - Be sure to secure ladders so they will not slip or fall.
   - Do not allow extension cords to lie in standing water.
   - Wear shoes with proper tread to prevent slipping on the ladder or sloped roof areas.
   - Disconnect all power to any energized equipment when installing differential control system.

2. Check with your local building department to determine permitting and code requirements in your area.

3. While this manual explains how to install Solene solar collectors properly in typical situations, it cannot possibly address all the unique or individual circumstances possible. If you have any installation questions, contact your Solene representative for assistance.

4. Before starting any work, determine the location of your system and prepare a schematic drawing of the installation area. Roof areas often times look bigger than they really are, so be sure to measure the available area before making your schematic.

5. Familiarize yourself with all of the Solene components and plumbing materials that you will need to complete the installation.

6. Don’t take shortcuts. Whenever possible, panels should be installed so they are accessible and away from roof edges.

7. Depending upon your specific job, you will need various plumbing items and materials. Be sure to use quality products that will withstand direct sunlight year after year.

**NOTE:** As the installer, you are responsible for exercising good judgment when installing Solene systems to protect the long term integrity of the collectors as well as the mounting surfaces.

**THE DRAINBACK SYSTEM** - The Solene Drainback system is a non-pressurized closed loop system. When the differential control turns the pump on, water is pulled from the reservoir and circulated up through the solar collectors and back. This circulated water heats the exchanger, which in turn heats the water in the solar storage tank.

When the pump shuts off, all the water in the solar collectors is drained back into the reservoir. Closed loop systems are used in freeze prone areas, to prevent the collectors and/or piping from bursting at low temperatures.
3. Installation Instructions.

SIZING & ORIENTATION: The vast majority of Solar Domestic Hot Water (SDHW) systems are comprised of “Medium Temperature” solar collectors manufactured using tempered glass and some type of metal absorber plate. They differ from “Low Temperature” systems predominantly utilized in swimming pool heating applications. These systems are typically manufactured using plastic resins. “High Temperature” systems are utilized to generate steam for industrial applications. Solene collectors belong to the “Medium Temperature” category.

Normally, only one or two Solene collectors are needed for a SDHW system. The number of collectors is determined not only by the amount of water that is needed, but also by the latitude of the installation and the collector’s orientation.

The following table details Solene’s recommended minimum system sizing guide for a typical installation:

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<th>Tank Capacity (Gallons)</th>
<th>Number of Collectors</th>
<th>Collector Type</th>
<th>Control Type</th>
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To comply with SRCC certification the storage tank shall have an additional insulation jacket.

Normally, collectors are installed on roofs, as close as possible to the tank, to minimize heat loss through the pipe. The pipes between the tank and the collectors MUST be insulated with at least ¾” thick insulation, for the same reason. Check local codes for well thickness in your area.

The solar collectors must be located in a structurally sound area of the roof that will be exposed to the sun for the majority of the day, all year round. A solar pathfinder can be used for solar site analysis.

The recommended angle of the collectors is equal to the location’s LATITUDE. This angle is designed to maximize solar absorption annually. For increased energy production in winter months, the collector angle can be increased up to +15 degrees from latitude. For increased summer energy production, decrease collector angle up to -15 degrees from latitude. A variation of +/- 15 degrees is acceptable. The orientation of the collectors must be due south ± 55 degrees. Flush mounts on available roof slopes are recommended to allow convenience and cost effectiveness, since these variations from the exact angle and orientation will affect the system’s performance only by about 5%.

There are three basic roof-mounting methods:

**FLUSH MOUNT INSTALLATION** - Parallel to the roof line, as illustrated below.

Flush Mount Installations are recommended when the roof’s slope conforms to the orientation and slope requirements as stated previously. This is the easiest and most aesthetically pleasing installation method. After the collector(s) are installed, it should resemble a skylight. The flush mount (1-5060-031) consists of four (4) mounting brackets, four (4) carriage bolts, four (4) nuts, and associated hardware. There are two sets each for the top and bottom.

1. **Start from the bottom.** When elevating the collector to the roof, make sure that the “weep holes” are facing down. It is recommended to install the collectors vertically (length up the roof’s slope), but the collectors may be installed horizontally as well.

2. **Once the collector’s location is determined,** anchor two (2) flush mount brackets to the roof using two (2) stainless steel 3/8” lag bolts for each bracket. Each bolt should be sealed using an appropriate roof sealant in order to prevent any possible leaks from penetrating the roof members. The flush mount brackets should be spaced so the lag bolts penetrate the roof trusses. To ensure that the drainback system will drain properly the whole collector must be canted toward the inlet. The collectors will rest on top of the flush mount brackets. (Fig. 2)

3. **Verify a secure connection to the trusses.** If lagging directly into the roof trusses is not possible, secure a 2’ x 4’ wood beam perpendicular to the trusses, inside the attic, and anchor the bolts to this member. Again, verify a secure connection into the new member.

4. **Connect the flush mount brackets to the collector’s frame by stainless steel self-drilling screws or bolt mounting bracket into frame slot using (1) 5/16” carriage bolt, nut, and washer.**

5. **Repeat steps 1-4 for the top.** That’s it. The collector is anchored.
Flush Mount Installations are recommended when the roof’s slope conforms to the orientation and slope requirements as stated previously. This is the easiest and most aesthetically pleasing installation method. After the collector(s) are installed, it should resemble a skylight. The flush mount gripper (1-5060-030) consists of four (4) U-channels four (4) grippers, four (4) strut nuts with springs, and associated hardware. There are two sets each for the top and bottom.

1. Start from the bottom. When elevating the collector to the roof, make sure that the “weep holes” are facing down. It is recommended to install the collectors vertically (length up the roof’s slope), but the collectors may be installed horizontally as well.

2. Once the collector’s location is determined, anchor two (2) U-channel to the roof using two (2) stainless steel 3/8” lag bolts for each U-channel. Each bolt should be sealed using an appropriate roof sealant in order to prevent any possible leaks from penetrating the roof members. The U-channel should be spaced so the lag bolts penetrate the roof trusses, and the U-channel should run parallel to the truss. To ensure that the drainback system will drain properly the whole collector must be canted toward the inlet. The collectors will rest on top of the U-channel. (Fig. 2)
4. **Collector Mounting. - Cont.**

3. Verify a secure connection to the trusses. If lagging directly into the roof trusses is not possible, secure a 2’ x 4’ wood beam perpendicular to the trusses, inside the attic, and anchor the bolts to this member. Again, verify a secure connection into the new member.

4. Connect the latch to the gripper (Fig 3) utilizing the provided nut and bolt. Slide the latch into the top of the U channel so that the gripper remains on top of the opening. Place them at the middle of the U-channel’s top and tighten. (Fig 4)

5. Loosen the gripper providing space to insert the slot at the collector’s edge between the Gripper’s hook and the U-channel’s top. Once both grippers are grabbing the collector’s edge slot, tighten both grippers. (Fig 5)

6. Repeat steps 2-5 for the top. That’s it. The collector is anchored.

**ANGLE MOUNT INSTALLATION** - Not parallel to the roofline, normally used on flat roofs, east/west, and ground mounts, as illustrated below.

Angle Mount Installations involve positioning the collector(s) at an angle so that the upper part of the collector is higher than the lower in reference to the mounting surface. The “angle mounting” is used on horizontal surfaces or on roofs that slope in directions other than south at 55 degrees.

1. Use the angle mounting kit (1-5060-039), see figure 8. Connect the U-channels to the roof just like in the Flush Mounting method. Assemble the mounting clips to both U-channels utilizing the provided bolts (Fig. 7).

2. Screw the mounting clips to the BOTTOM part of the collector (the weep hole side) using two (2) stainless steel self-drilling screws, each. (Fig. 10). Mounting clips may also bolt into collector frame slot using (1) 5/16 carriage bolt, nut, and washer.

3. Assemble both tilt legs and top mounting clips Fig. 11. Connect the clips to the collector’s top by stainless steel self-drilling screws. Mounting clips may also bolt into collector frame slot using (1) 5/16 carriage bolt, nut, and washer.

4. Connect the U-channels to the opposite side of the tilt leg, using the provided nuts and bolts. (Fig. 13).

5. Lift the collector’s top with the assembled tilt leg kits and anchor the U-channels to the roof, ensuring the proper angle to the collectors. (Fig. 14). Use compatible sealant and roof flashing as required.

INSTALL ALL COMPONENTS IN ACCORDANCE WITH LOCAL CODE SO THAT THE PERFORMANCE OF ANY STRUCTURAL MEMBER OR FIRE RATED ASSEMBLY IS NOT REDUCED.
5. Plumbing

Make sure that all the components are accessible and easy to reach. Provide for clear access to the storage tank, pump, mixing valve, differential control and other key components. If a component in the potable waterside of the system may require future service or maintenance, make the connections with brass unions. Use only brass nipples and unions and copper and brass fittings in plumbing the solar storage tank and expansion tank. The use of galvanized fittings or nipples, PVC pipe is prohibited.

Hard copper connections to the city cold water supply line and the home hot water feed lines are recommended. The gaskets in standard water heater flex hose connectors can become brittle and compressed over time and begin leaking on the water heater. If not detected in a timely manner even a small drip or leak may cause serious damage to the tank’s electrical components or, in extreme cases, may cause the tank to leak from the outside in.

Tank plumbing is required to provide for the isolation of the solar storage tank from the city cold water supply line by means of an isolating valve.

The circulation pump shall be pre-wired with a 6” line cord so that it can be plugged directly into the 115-volt receptacle on the differential control. Repairs or routine system maintenance can be completed without introducing air into the system or draining the HTF.

A high quality thermostatic mixing valve is a required component in all OG-300 certified systems and should be plumbed in line with brass union connections for ease of future repair or replacement. The specified mixing valve shall be the Watts model 70A-075 or equal. It should have an operating range between 95°F and 140°F. The mixing valve should be set to 120°F.

The temperatures generated by your Solene system will vary throughout the year. In the Northern Hemisphere the water temperature will be hottest in the spring and summer months while cooler temperatures are to be expected from November through March. On sunny days system temperatures may range from 110°F to 180°F depending upon the season and hot water demand. The mixing valve described above blends the hot and cold water supplies to deliver hot water to your fixtures at a safe, controlled temperature. A pressure relief valve is required on the collector loop portion of the system. The drainback tank contains a port specifically for its installation.

**WARNING:** SCALDING CAN OCCUR WITHIN FIVE SECONDS WHEN WATER TEMPERATURES APPROACH 140°F. THE MIXING VALVE SHOULD BE ADJUSTED BY THE INSTALLATION CONTRACTOR TO PROVIDE WATER TO DWELLING FIXTURES AT NO MORE THAN 120°F.
The ¾” cold water supply line to the solar storage tank must be insulated with minimum 7/8” x ¾” pipe insulation to a minimum distance of 5 feet behind the storage tank, or to the wall if closer than 5 feet.

The storage tank should not be placed directly on an un-insulated floor or concrete slab. The tank should be placed on a well-insulated pad with a minimum R-value of 10. An R-20 insulated tank is recommended for all Solene systems. If your tank needs additional insulation, an “Insulation Jacket” is recommended. (Frost King or equal).
6. Pipe Insulation.

The minimum ¾” collector loop cold supply and hot return lines must be well insulated with a high quality flexible closed cell insulation to minimize heat loss. The wall thickness of the pipe insulation should not be less than ¾”. A 1” wall thickness is required in all areas prone to annual hard freeze conditions. When it comes to pipe insulation the rule is simple: thicker is better. The specified insulation material is Armaflex or equal.

To the extent possible, slide the insulation material over the pipe without cutting or taping. All butt joints must be sealed with contact adhesive. The use of rigid polyethylene pipe insulation is prohibited.

All outdoor insulation should be protected from moisture and ultraviolet deterioration by either paint or foil tape. All copper piping should be properly supported, approximately every 6’. The support clamps should be installed in a way as to not compress the pipe insulation.


The Differential Control has a high limit storage setting that can be adjusted from 110°F to 200°F and is typically preset to 140°F. It is very important to verify that the high limit is set and engaged per manufacturer’s instructions. This will prevent “overheating” in cases of high solar irradiation and low water usage. Please refer to the installation instructions of the controller manufacturer for all items relating to controller connections, settings, sensor location and sensor wiring.

In order to properly mount the heat sensor on the solar storage tank follow these steps:

1. Remove the round cover located at the bottom front of the tank.
2. Attach sensor to storage tank.
3. Attach a length of sensor wire to sensor leads and the other end to the controller terminals marked tank or water.

The roof sensor should be mounted to the outlet of the collector. A stainless steel hose clamp should be used. The entire outlet should be completely wrapped with insulating tape so that the sensor is insulated from the outside air.
8. Electrical & Wiring Requirements.

A properly licensed contractor must make the 230-volt electrical connection to the water heater or solar storage tank and the electronic time switch (Optional). If your solar contractor is not allowed by law to make these connections consult a licensed electrician. NEVER ACTIVATE THE CIRCUIT BREAKER CONTROLLING THE ELECTRICAL HEATING ELEMENT UNTIL THE SOLAR STORAGE TANK IS COMPLETELY FILLED WITH WATER. This will prevent “dry firing” of the heating element. The electrical heating element will be destroyed almost instantaneously if not completely submerged in water when activated. Make sure the water heater circuit breaker is off until the solar storage tank is completely filled.

We recommend the use of a 115-volt differential control with a factory installed six-foot line cord. The installation requires one 115-volt outlet to be installed near the solar storage tank. Plug the control into the outlet. The circulation pump line cord is plugged into the receptacle on the side of the controller. A 230-volt control and circulation pump may be substituted, but troubleshooting the components in the future becomes more difficult.

The specified differential thermostat is the Goldline model GL-30-LCO or Steca model TR0301-US.

9. Thermometers. (Optional)

Locate two thermometers; one at the supply line and one on the return line of the solar loop so that the temperature rise across the collector can be determined.

10. Drain/Fill Valves.

Install a ½” fill/drain valve (BD-050) on the inlet to the exchanger and a second fill/drain valve at the top of the drainback reservoir. The appropriate labels should be placed at each of the drain/fill valves.

11. Drainback Reservoir.

The drainback reservoir and the recirculating pump should be installed as illustrated in the system schematic located on page 16. The Solene Drainback system can be installed with either 10 or 15 gallon drainback reservoir which includes a pre-installed sight glass. If you choose not use the reservoir tank we recommend the installation of a clear flow meter as a sight glass. It should be installed on the feed line directly opposite of the reservoir at exactly the same height. Since water will seek its own level after the pump turns off, the water level in the flow meter should stay at the top ¼” of the flow meter. Blue-White (1-5010-018) or Letro (1-5010-027) flow meters are recommended. The Solar Heat Exchange Storage Tank is usually located in the garage utility room, or in a closet inside your home. It should always be located in a non-freezing room. Its freeze tolerance limit is -10°F. This is where hot water is both stored and heated for use in your home. The Storage Tank has a 4500 Watt heating element that can maintain your hot water at desired temperatures for times when there is not enough solar energy available. Since the solar loop can be closed off from the atmosphere, it must be protected by the installation a pressure relief valve as illustrated in the system schematics located on pages 15-18.

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Throughout the installation procedures outlined above, emphasis has been placed on the correct procedures for plumbing and wiring the components, checking for plumbing leaks, and eliminating any trapped air that can impact fluid quality and pump performance. Having completed these tasks it is time to start up your Solene solar water heating system.

1. Connect a hose to the fill/drain valve located at the inlet to the heat exchanger.
2. Open both fill/drain valves.
3. Fill the system with HTF (heat transfer fluid) very slowly until the water level reaches the top of the site glass.
4. Close both fill/drain valves and shut off the water.
5. Disconnect the hose.
6. Turn on the recirculating pump and let run for 3-5 minutes.
7. Check for any leaks along the pipes, pipe connections, or collector connections.

**IT IS IMPORTANT THAT THE SYSTEM BE FILLED IN THIS MANNER TO PREVENT THE HEAT EXCHANGER FROM BECOMING AIR LOCKED.** It is also important to slope the lines going to and coming back form the collectors so water is able to drain. It is recommended to maintain a ¼” slope per foot. The pipe should never form a trap. To ensure that the drainback system will drain properly the whole collector must be canted toward the inlet.

While specific products are mentioned below, there are many components that can be substituted with like or equal products. For instance there are several different mixing valves or isolation valves that can be utilized, not just the one specifically listed. Sometimes sweat or threaded connections or varying fitting sizes are dealer preference. All of the components listed below are available from Solene at 950 Sunshine Lane, Altamonte Springs, FL 32714 (866) 902-0060.

See the schematics on pages 15-18 for the location of the following list of components.

1. Solar Collector – Aurora SLAR40 4 x 10, SLAR32 4 x 8, SLAR 24 4 x 6, or SLSG 40 4 x 10
2. Solar Storage Tank – AO SMITH SUN - 80 or SUN-120 SOLAR Storage tank with single 4500 watt backup element or equal.
3. Differential Control – Goldline Differential Control, or Steca Differential Control with adjustable high limit control which tells controller when to turn on and off.
4. Circulation Pump – Wilo Star 21, Grundfos UPS2699BFC or Taco 009BF5 sized properly to accommodate head requirements.
5. Drain Back Reservoir Tank – Heat Transfer Products SSU 10DB or SSU 10DBX or equal. 6, 10 or 15-gallon tank sized properly to accommodate volume of water in solar loop.
6. Drain/Fill Valve – 1-5115-017 or 1-5115-020 Boiler Drain used to drain and fill the solar loop with tap water.
7. Line Thermometers, if used – Letro 1-5020-028 In-Line Thermometer w/ temperature range of 50°F to 220°F.
8. Hot Water Thermometer, if used – Letro 1-5020-028 In-Line Thermometer w/ temperature range of 50°F to 220°F.
10. Pressure & Temperature Relief – Watts 100XL-4 P&T Relief Valve located on the solar storage tank opens at 150psi or 210°F.
11. Tank and Collector Sensors – Goldline SB Tank and Collector Temperature Sensor or equal, but must be type of sensor compatible with type of #3 Differential Control used.
12. Cold Water Inlet Valve – 1-5115-034 ¾” Gate Valve gives ability to turn off the cold feed to the Solar Storage Tank.
13. Pipe Insulation – ACT05834 Armaflex Copper Pipe Insulation to prevent heat loss through pipes. Any Pipe Insulation that is exposed to sunlight must be wrapped with foil tape or coated with a water-based acrylic resin coating as specified by the insulation manufacturer.
14. Roof Penetration Flashing – All Copper Roof Flashing. Gooseneck type flashing is recommended for feed line to accommodate sensor wire.
15. Sight Glass – Pre-installed on DB Reservoir Tank allows monitoring of solar loop water level.
16. Pressure Relief Valve – Watts 530C Adjustable Pressure Relief Valve protects system from excessive pressure. Adjusts from 50 to 120 psi.
17. Expansion tank – Backstop TNK1001 expansion tank or equal.
18. Existing Hot Water Tank – Serves as a storage tank for hot water produced by solar system.

To comply with SRCC certification the storage tank shall have an additional insulation jacket.
15. System Schematics.
15. System Schematics. - Cont.

SOLENE DHW SYSTEM SCHEMATIC

1. DIFFERENTIAL TEMPERATURE CONTROL 120v
2. CONTROL SWITCH
3. COLD WATER SHUTOFF VALVE
4. PRESSURE & TEMPERATURE RELIEF VALVE
5. ISOLATION VALVES - SOLAR BYPASS
6. DRAIN FILL VALVE
7. DRAIN FILL VALVE
8. IN-LINE THERMOMETERS
9. IN-LINE THERMOMETERS
10. MIXING VALVE
11. EXISTING HOT WATER TANK
12. SOLAR STORAGE TANK
13. ROOF INSULATION FLASHING
14. COPPER TUBING & INSULATION
15. PIPE INSULATION
16. ROOF PENETRATION FLASHING
17. PRESSURE RELIEF VALVE
18. ISOLATION TANK
19. CIRCULATION PUMP
20. TANK DRAIN
21. TANK SENSOR
22. COLD WATER FROM HOUSE
23. HOT WATER TO HOUSE

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SLAR40DC-80DB-XG
SLAR32DC-80DB-XG
SLSA40DC-80DB-XG

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INSTALLATION MANUAL SOLENE® HOT WATER SYSTEMS

COMPONENTS PARTS LIST & FUNCTIONS. - 16
15. System Schematics. - Cont.

- Verify Blackflow Prevention Device
- COOL DOWN VALVE
- PRESSURE RELIEF VALVE
- COLLECTOR SENSOR
- DIFFERENTIAL TEMPERATURE CONTROL 120v
- CONTROL SWITCH
- COLD WATER SHUTOFF VALVE
- COLD WATER FROM HOUSE
- HOT WATER TO HOUSE
- PRESSURE & TEMPERATURE RELIEF VALVE
- EXISTING HOT WATER TANK
- DRAIN FILL VALVE
- CIRCULATION PUMP
- SOLAR STORAGE TANK
- TANK DRAIN
- TANK SENSOR
- IN-LINE THERMOMETERS
- SIGHT GLASS
- IN-LINE THERMOMETER
- MIXING VALVE
- IN-LINE VALVES - SOLAR BYPASS
- DRAIN BACK RESERVOIR TANK
- ROOF PENETRATION FLASHING
- COPPER TUBING & INSULATION
- PIPE INSULATION
- SOLAR COLLECTORS
- SOLAR SYSTEM SCHEMATIC

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15. System Schematics. - Cont.
15. System Schematics. - Cont.
15. System Schematics. - Cont.

SOLENE DHW SYSTEM SCHEMATIC

COLLECTOR SENSOR

PRESSURE RELIEF VALVE

SOLAR COLLECTOR

ROOF PENETRATION FLASHING

COPPER PIPING & INSULATION

SOLAR FEED LINE

SOLAR RETURN LINE

IN-LINE THERMOMETERS

DRAIN/FILL VALVE

120V CONTROL SWITCH

DIFFERENTIAL TEMPERATURE CONTROL

DRAIN BACK RESERVOIR TANK W/ INTERNAL HEAT EXCHANGER

SIGHT GLASS

VERIFICATION BACKFLOW PREVENTION DEVICE

COLD WATER SHUTOFF VALVE

COLD WATER FROM HOUSE

CHECK VALVE

MIXING VALVE

HOT WATER TO HOUSE

ELECTRIC SUPPLY

PRESSURE & TEMPERATURE RELIEF VALVE

SOLAR STORAGE TANK

TANK DRAIN

TANK SENSOR

DRAIN/FILL VALVE

SOLAR STORAGE TANK DRAIN

TANK SENSOR

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15. System Schematics. - Cont.
15. System Schematics. - Cont.

SOLENE DHW SYSTEM SCHEMATIC

INSTALLATION MANUAL SOLENE® HOT WATER SYSTEMS

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17. System Labels.

**SOLENE DRAIN BACK OG-300 SYSTEM LABELS**

(Whole page will be embossed foil)

The following labels provide the owner with important safety and operating information. Be sure to cut out the labels below and apply them to the proper system components as described below. Refer to the DHW Solene system schematic in this manual for reference numbers.

**WARNING**
Fluid may be discharged at high temperature and/or pressure.

*No other fluid shall be used that would change the original classification of this system. Unauthorized alterations to this system could result in hazardous health situations.*

**WARNING**
Fluid may be discharged at high temperature and/or pressure.

*No other fluid shall be used that would change the original classification of this system. Unauthorized alterations to this system could result in hazardous health situations.*

Place these labels on solar feed and solar return lines.

**WARNING HOT**

Underground piping
Stay clear during any thunderstorm activity.

警告

**WARNING**

Underground piping
Stay clear during any thunderstorm activity.

Place these labels on circulation pump (#4), drain back tank (#5), mixing valve (#10).

**WARNING HOT**

Fluid may be discharged at high temperature and/or pressure.

*No other fluid shall be used that would change the original classification of this system. Unauthorized alterations to this system could result in hazardous health situations.*

**WARNING HOT**

 Fluid may be discharged at high temperature and/or pressure.

*No other fluid shall be used that would change the original classification of this system. Unauthorized alterations to this system could result in hazardous health situations.*

Place the labels on manual drains (#6, #7).
17. System Labels. - Cont.

Place these labels on Solar Bypass Valves as detailed in schematics on page 10.

**SOLENE FREEZE PROTECTION INSTRUCTIONS**

Your Solene solar system has a solar loop filled with normal tap water gravity drains to a drain back tank reservoir whenever the Circulation Pump is off. This protects your system from freezing during normal winter conditions in your area. Should you experience prolonged extreme cold conditions your system can be manually drained. It is important that the drainback tank be located in a non-freezing room.

**MANUAL DRAIN DOWN FREEZE PROTECTION** - Follow these steps.

- Turn the automatic control switch to “OFF”
- Connect a garden or drain hose to the drain valve adjacent to the circulation pump.
- Open the drain valve adjacent the circulation pump and the drain valve on the drain back tank.
- Allow the water in the solar loop to drain into a sink or a location outside.  
  (CAUTION - WATER MAY BE EXTREMELY HOT)

Maximum Operation

Temperature: 200 °F  Pressure: 130 PSI  Freeze Tolerance Limit: -10 °F
The solar energy system described by this manual, when properly installed and maintained, meets the minimum standards established by the SRCC. This certification does not imply endorsement or warranty of this product by SRCC.

SRCC OG-300 Certified Solar Water Heating System

The solar energy system described by this manual, when properly installed and maintained, meets the minimum standards established by the Florida Solar Energy Center, in accordance with Section 377.705, Florida Statutes. This certification does not imply or endorse warranty of the product by the Florida Solar Energy Center of the State of Florida.