CLOSED LOOP DOMESTIC HOT WATER SOLAR SYSTEM
WITH DIFFERENTIAL CONTROL

MODELS SLCR60DC-80HE, SLCR64DC-80HE, SLCR80DC-80HE,
SLCR40DC-80HE & SLCR32DC-80HE

INSTALLATION MANUAL

Solene™

927 Fern St. Suite 1500
Altamonte Springs, FL 32701
(866) 902-0060

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

SOLAR RATING AND CERTIFICATION CORPORATION
Independent Certification of Solar Water and Swimming Pool Heating Collectors and Systems

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.

SLCR-IMHE
5/1/07

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SAFETY PRECAUTIONS

There is no substitute for safety. Always exercise extreme caution, care and good judgment when working on or around a roof.

Always consult the proper authorities or check with your local building department for the permit requirements and codes applicable before you start the job.

Installation should always be in accordance with the National Fire Code and with all local codes.

- When working on the roof, always take care to avoid hazards such as overhead electrical wires or loose shingles. Secure ladders so they will not slip or fall. Wear shoes with proper tread to prevent slipping on the ladder or sloped roof areas.
- Always check that power is turned off before attempting any wiring or electrical hook-ups, especially when water is present. It's always a good idea to shut power off to both the solar storage tank and to the automatic control when there is water leaking at the tank.

DO NOT HOOK UP OR TURN ON ANY ELECTRICITY TO THE SOLAR STORAGE TANK UNTIL IT IS FULL OF WATER. IF THE HEATING ELEMENT IS NOT COVERED IN WATER PRIOR TO BEING TURNED ON, IT WILL BURN OUT.

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. Chromagen 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:

Tank Capacity	# of Collectors Needed	Collector Type	Control Type	System Model Number
80 gallon	1	SLCR32 (4' x 8')	Differential Control	SLCR32DC-80HE
80 gallon	1	SLCR40 (4' x 10')	Differential Control	SLCR40DC-80HE
80 gallon	2	SLCR30 (4' x 6')	Differential Control	SLCR60DC-80HE
80 gallon	2	SLCR32 (4' x 8')	Differential Control	SLCR64DC-80HE
80 gallon	2	SLCR40 (4' x 10')	Differential Control	SLCR80DC-80HE

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 ½" thick insulation, for the same reason.

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.

The recommended angle of the collectors is the angle of the installation location's LATITUDE. This angle is designed to maximize solar absorption during winter months when the sun is low. 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%.

COLLECTOR MOUNTING

There are two basic roof-mounting methods:

Flush Mount Installation - Parallel to the roof line, as illustrated below.

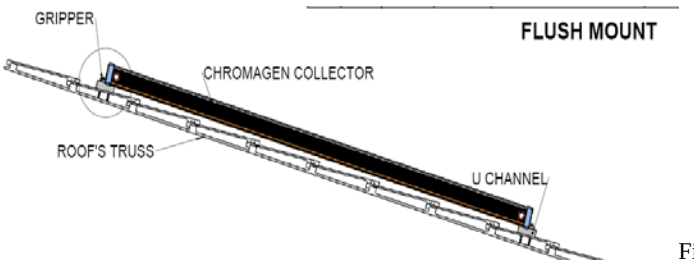


Figure #1 - Flush Mount Installation

Flush Mount Installations are recommended when the roof's slope conforms to the orientation requirements as stated previously. This is the easiest and most aesthetically pleasing installation method. After the collector(s) are installed, it should resemble skylight. The flush mount consists of four (4) U-channels (SL-UC) and four (4) Gripper Sets (SL-GS); two set each for the top and bottom.

1. Start from the bottom. The bottom side of the Chromagen collector is marked by two weep holes placed about 20" apart on the short anodized aluminum edge of the collector. 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-channels to the roof using two (2) stainless steel 2" x 5/8" lag bolts for each U-channel. The U-channels should be spaced approximately 30" apart. The collectors will rest on top of the U-channels. Each bolt should be sealed using an appropriate roof sealant in order to prevent any possible leaks from penetrating the roof members. The U-channels should be spaced approximately 30" apart. The collectors will rest on top of the U-channels. (Picture 1)

Picture #1

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 (Picture 2) 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. (Picture 3)

Picture #2

Picture #3

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. (Picture 4)

Picture #4

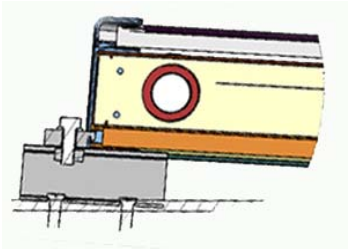


Figure #3

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 and ground mounts, as illustrated below.

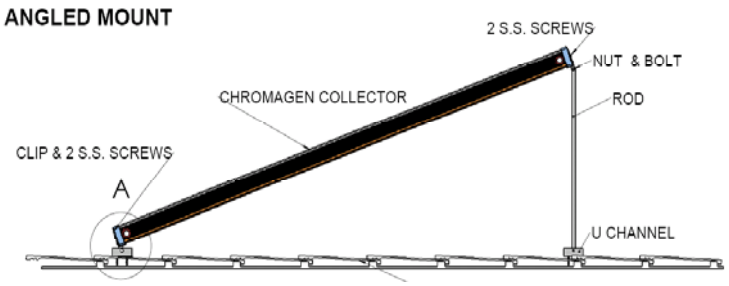


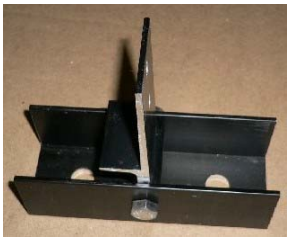
Figure #2, Angle mounted collector

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 ±55 degrees.

1. Use the Angle Mounting kit (SL-MK), see picture 5. 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 (Picture 6).

Picture #5



Picture #6

2. Screw the mounting clips to the BOTTOM part of the collector (the weep hole side) using two (2) stainless steel or aluminum screws, each. (Picture 7)

Picture #7

3. Assemble both rods and top mounting clips (picture 8). Connect the clips to the collector's top by stainless steel or aluminum screws. (Figure 4)

Picture #8

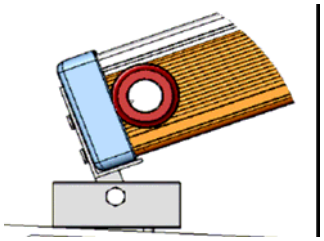


Figure #4

4. Connect to the U-channels to the opposite side of the rod, using the provided nuts and bolts. (Picture #10)

Picture #10

5. Lift the collector's top with the assembled rod kits and anchor the U-channels to the roof, ensuring the proper angle to the collectors. (Picture 11)

Picture #11

Install all components in accordance with local code so that the performance of any structural member or fire rated assembly is not reduced.

PLUMBING

Make sure that all the components are accessible and easy to reach. Provide for clear access to the storage tank, pump, mixing valve, time clock 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, di-electric unions, CPVC, PVC or other plastic 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 ball 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 side of the differential control. Two-way ball valves must be installed on either side of the circulating pump so that the pump can be isolated from the collector loop. 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 Chromagen 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.

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 ½" pipe insulation to a minimum distance of 5′ behind the storage tank, or to the wall if closer than 5′.

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).

PIPE INSULATION

The ½" 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.

DIFFERENTIAL CONTROLLER AND SENSORS

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 Rheem storage tank follow these steps;

1) Remove the round cover located at the bottom front of the tank.
2) Remove the ½" brass plug from the tank.
3) Seal the ½" lug sensor with teflon tape, and screw into ½" threaded hole.
4) 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 screw clamp should be used. The entire outlet should be completely wrapped with insulating tape so that the sensor is isolated from the outside air.

ELECTRICAL AND WIRING REQUIREMENTS

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. The specified differential thermostat is the Goldline model GL-30-LCO.

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.

THERMOMETERS

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.

Closed loop systems are used in freeze prone areas, to prevent the collectors and/or piping from bursting at low temperatures. The tank contains a heat exchanger that is plumbed to the collectors. This plumbing loop is filled with antifreeze liquid that transfers the heat from the collector to the tank without mixing with the tank's potable water.

CHARGING THE SYSTEM

Once the components are plumbed you are ready to fill the solar storage tank with water and to charge the collector loop with a mixture of heat transfer fluid (HTF) and distilled or de-ionized water. The use of regular tap water as a mixing agent is prohibited.

Proceed as follows:

1. Begin by filling the solar tank with water. Do this by opening the cold-water isolation ball valve to the solar tank. When the tank is filled, inspect all threaded fittings and solder joints for leaks.

2. Fill and pressurize the solar collector loop with water. Begin by connecting a washing machine hose to the upper charge valve and fill the collector loop with water. The isolation ball valve remains closed at this point. While the hose is still connected to the upper charge valve and the water is running, open the lower purge/drain valve and let the water run out until it is free of impurities or debris that might have entered the piping as the components were plumbed. Run the water long enough to eliminate any air bubbles that may be trapped in the system.

3. Close the lower purge/drain valve. The collector loop now has been subjected to city pressure and the pressure gauge should read somewhere in the range of 50 – 75 psi in most cases. Make a final inspection of the collector plumbing connections to ensure that there are no leaks anywhere in the collector loop piping.

4. After you have determined the integrity of the entire piping system turn on the circulating pump. Do this by setting the manual switch within the controller to the "on" position. Run the pump for a full five minutes and carefully check to ensure there is proper fluid flow and that all the air has been purged from the solar collector glycol loop. An inexpensive flow meter such as manufactured by Blue White Industries or Letro is recommended as an optional system component. A flow meter allows you to monitor and adjust the flow rate through the piping and also to visually inspect the HTF fluid quality.

5. Set the controller to the "off" position and proceed to the next step.

6. Mix the propylene glycol and distilled water mixture in accordance with Table 4 and Table 5 in a large clean bucket. You will need a second empty bucket as well. The charging process also will require a low flow diaphragm pump (Flojet or equal) to fill and pressurize the collector loop.

7. Connect the discharge side of the pressure pump to the upper charge faucet. Place the pump suction side hose in the glycol solution. Close the isolation ball valve and connect a second hose to the lower charge faucet. Place the other end of the hose in the empty bucket. Open the upper charge faucet and allow the pressure from the expansion tank to push the water in the glycol loop back to prime the pressure pump. When the hose in the

bucket containing the glycol mixture stops bubbling you may begin charging the collector loop with glycol.

Temperature °F	Required Percent (Volume) Glycol Concentration For Freeze Protection	For Burst Protection
20	18%	12%
10	29%	20%
0	36%	24%
10	42%	28%
-20	46%	30%
-30	50%	33%
-40	54%	35%
-50	57%	35%
-60	60%	35%

Table 2

Collector Loop Fluid Capacity in Gallons*

1 Collector System	4 gallons
2 Collector System	5 gallons

Table 3

*****THE RHEEM/RUUD HEAT EXCHANGER HAS A 2.2 GALLON FLUID CAPACITY. THIS TABLE ASSUMES A TOTAL 100′ PIPE RUN USING 3/4″ TYPE M HARD COPPER TUBING.

8. With both charge faucets now open, run the Flojet pressure pump until the pinkish glycol mixture begins flowing into the empty bucket. Quickly switch the hose from the empty/return bucket to the bucket containing the glycol mixture. Continue to circulate the fluid using the pressure pump until the bubbling has stopped and the air has been purged.

9. After charging the collector loop, shut the lower charge faucet and let the pressure pump drive up the loop pressure to the appropriate level (Generally in the range of 25 psi). To more accurately calculate the proper pressure measure the height of the solar collector above the solar storage tank and divide this number by 2.31. Then add 20 psi to this number. As a word of caution, the pressure in the glycol loop should not exceed 45 psi when the system is operational on a good sunny day. Contact your solar contractor if the charged collector loop pressure exceeds this threshold.

10. Your Chromagen solar water heating system must be charged and the fluid quality maintained by an experienced contractor. If the system is drained during the winter, or

you notice a significant drop in collector loop pressure, contact your installation contractor immediately for service. The glycol HTF provides the freeze protection for your system and must be properly maintained. An experienced contractor should periodically check the HTF fluid quality.

DOWFROST HD HTF

TO ENSURE MAXIMUM EFFECTIVENESS FOR CORROSION PROTECTION, THE GLYCOL INHIBITOR PACKAGE IS DESIGNED FOR A MINIMUM 25-30 PERCENT CONCENTRATION OF GLYCOL IN WATER.

Table 4 shows the concentrations of Dowfrost HD required to provide freeze and burst protection at various temperatures. Use the mixture most appropriate for your climate. Do not use a higher glycol to water concentration than necessary, as this will adversely impact the relative heat transfer efficiency of the solution. Generally, for an extended margin of protection, you should select a temperature that is at least 5°F lower than the expected lowest ambient temperature. These figures are examples only and should not be regarded as specifications. As use conditions are not within our control, neither Chromagen nor Dow Chemical guarantees that freeze damage may not occur at temperatures other than shown.

Water used to dilute the HTF must meet certain minimum standards for purity. Impurities in the dilution water can increase metal corrosion, reduce the effectiveness of corrosion inhibitors, increase inhibitor depletion rate, and cause the formation of scale and other deposits on the heat exchanger's internal heat transfer surfaces. **DISTILLED OR DE-IONIZED WATER IS REQUIRED.**

THE HTF PH LEVEL MUST BE MAINTAINED BETWEEN 8 AND 10 TO MINIMIZE CORROSION AND GLYCOL OXIDATION IN THE PIPING SYSTEM.

DOWFROST CHARACTERISTICS		
Service Temperature Range	-45°C to 160°C	-50°F to 325° F
Freezing Point	<= -51°C	<=-60°F
Boiling Point	162° C	323°F
Flash Point Closed Cup	102°C	216°F
Autoignition Temperature	416°C	780°F
Vapor Pressure over Range	0.7 mmHg	20°C

EMERGENCY FIRST AID PROCEDURES

INHALATION – Move person to fresh air; if effects occur, consult a physician
EYE CONTACT – Flush eyes thoroughly with water for a few minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
SKIN CONTACT – Wash skin with plenty of water.
SWALLOWING – No emergency medical treatment necessary.

SYSTEM START-UP PROCEDURES

Throughout the installation procedures outlined above, emphasis has been placed on the correct procedures for plumbing and wiring the components, checking for plumbing leaks, pressurizing the collector glycol loop, 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.

When the glycol loop has been fully charged and the pressure is around 25 psi (check the pressure gauge), set the differential controller to the "Automatic" setting. This will activate your circulating pump. The Goldline controller allows you to set the "on" differential. Turn the red rotary switch inside the control housing to 12.

The controller also allows you to limit the finished solar storage tank temperature if desired. Turn the red rotary switch inside the controller marked "Hi Limit" to the 160° setting. Chromagen does not recommend that the Hi Limit be set any lower than 160°.

Adjust the valve settings in accordance with the following section:

SYSTEM OPERATION

Solene systems are designed to accommodate three separate modes of operation. Your solar water heating system can (1) provide 100% solar operation during good weather, or (2) serve as a pre-heater to your electric water heater adding solar energy when and as available, or (3) 100 % on utility power during inclement weather.

TOTAL SOLAR OPERATION

Set the water heater time switch to the "off" position. If you have a mechanical timer remove the trippers from the face of the switch.

TOTAL PREHEAT

Pre-set the heater timer to turn the heating element on and off at specified times throughout the day if desired.

TOTAL UTILITY POWER

In this mode of operation you **must turn off the circulation pump.** To turn the pump off, open the controller and change the operational setting from "automatic" to "off". Failure to turn off the pump can quickly damage the pump motor, shaft, bearings or impeller.

COMPONENT PARTS LIST AND FUNCTION

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 927 Fern St. Suite 1500, Altamonte Springs, FL 32701 (866) 902-0060.

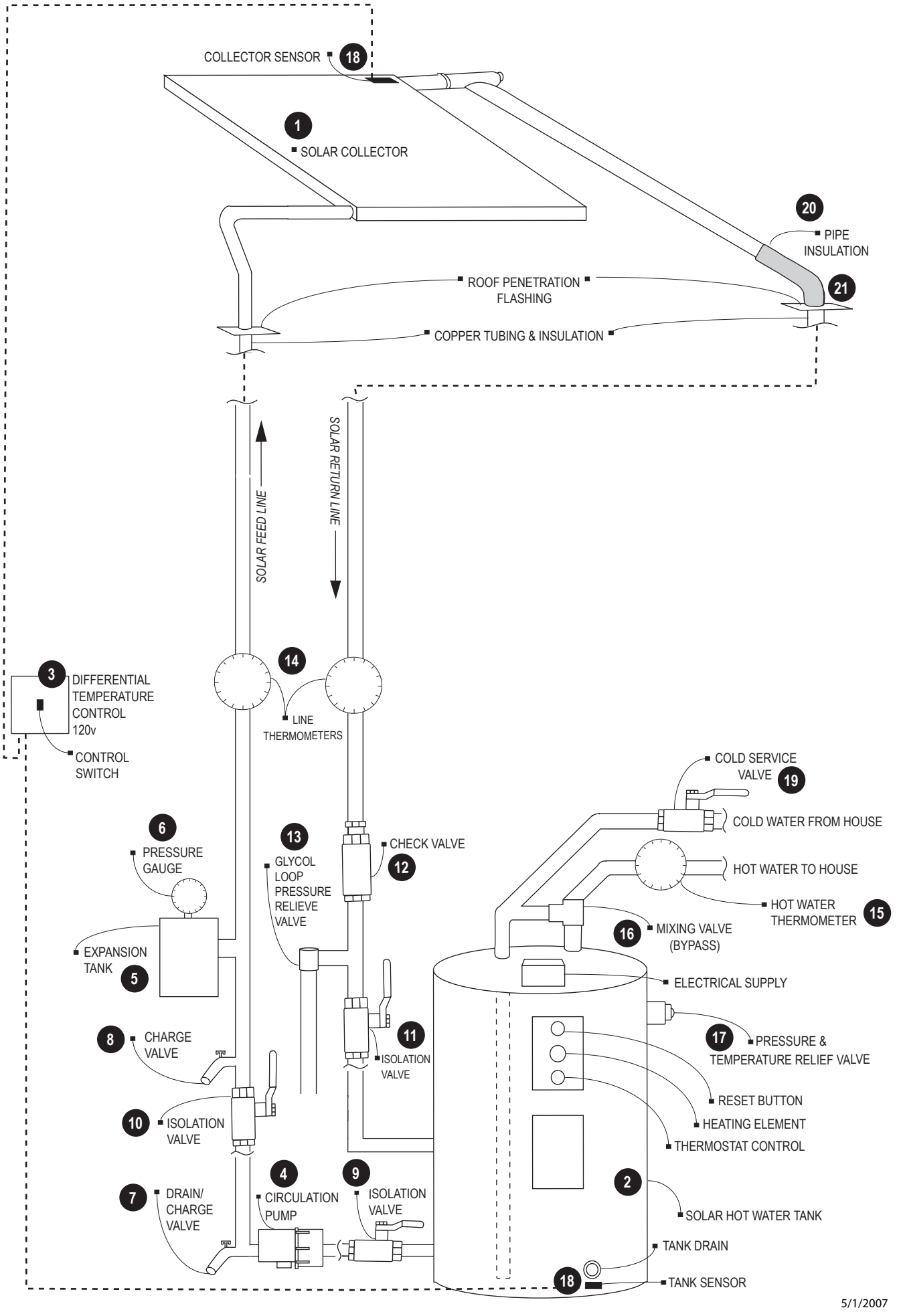
See the schematics on pages #17 & 18 for the location of the following list of components.

1. **Solar Collector** – Chromagen SLCR40 4 x 10, SLCR32 4 x 8 SLCR30 4 x 6 with all copper chrome plated absorber plate.
2. **Solar Storage Tank –** Rheem 81V80HE-1 or (80) Gallon Solar Storage Tank with Single 4500W Backup Element.
3. **Differential Control –** Goldline Differential Control with Adjustable High Limit determines when system is on or off.
4. **Circulation Pump –** Taco 006BC4 Circulation Pump circulates water through system.
5. **Expansion Tank –** TX-12 Sparco 4.4 Gallon Expansion Tank or equal with 150 PSIG working pressure and 40PSI pre-charge.
6. **Pressure Gauge - ¼"** Pressure Gauge for Expansion Tank ranging from 0-60 PSI.
7. **Drain/Charge Valve –** BD-050 or BD-075 Boiler Drain used to charge, drain and purge air from the Glycol loop.
8. **Charge Valve -** BD-050 or BD-075 Boiler Drain used to charge and purge air from the Glycol loop.
9. **Isolation Ball Valve –** BV-050 ½", or BV-075 ¾" Ball Valve used in conjunction with #10 and #11 to isolate Circulation Pump and/or solar loop.
10. **Isolation Ball Valve –** BV-050 ½", or BV-075 ¾" Ball Valve used in conjunction with #9 to isolate Circulation Pump.
11. **Isolation Ball Valve –** BV-050 ½", or BV-075 ¾" Ball Valve used in conjunction with #9 to isolate solar loop.
12. **Check Valve –** Watts 600 Check Valve or equal to prevent thermo-siphoning from storage tank through solar collectors.
13. **Pressure Relief Valve –** Watts 530C Pressure Relief Valve or equal used to relieve excess pressure from Glycol loop. If fluid is expelled call your dealer immediately.
14. **Line Thermometers –** Letro SL-2D In-Line Thermometer w/ temperature range of 50°F to 220°F.
15. **Hot Water Thermometer –** Letro SL-2D In-Line Thermometer w/ temperature range of 50°F to 220°F.
16. **Mixing Valve –** Watts 70A-075 ¾" Mixing Valve tempers temperature of hot feed line to home.
17. **Pressure & Temperature Relief –** Watts 100XL-4 P&T Relief Valve located on the solar storage tank opens at 150psi or 210°F.

18. **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.
19. **Cold Water Inlet Valve –** GV-075 ¾" Gate Valve gives ability to turn off the cold feed to the Solar Storage Tank.
20. **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.
21. **Roof Penetration Flashing –** All Copper Roof Flashing. Gooseneck type flashing is recommended for feed line to accommodate sensor wire.

MODEL SLCR40DC-80HE
MODEL SLCR32DC-80HE

SOLENE DHW SYSTEM SCHEMATIC



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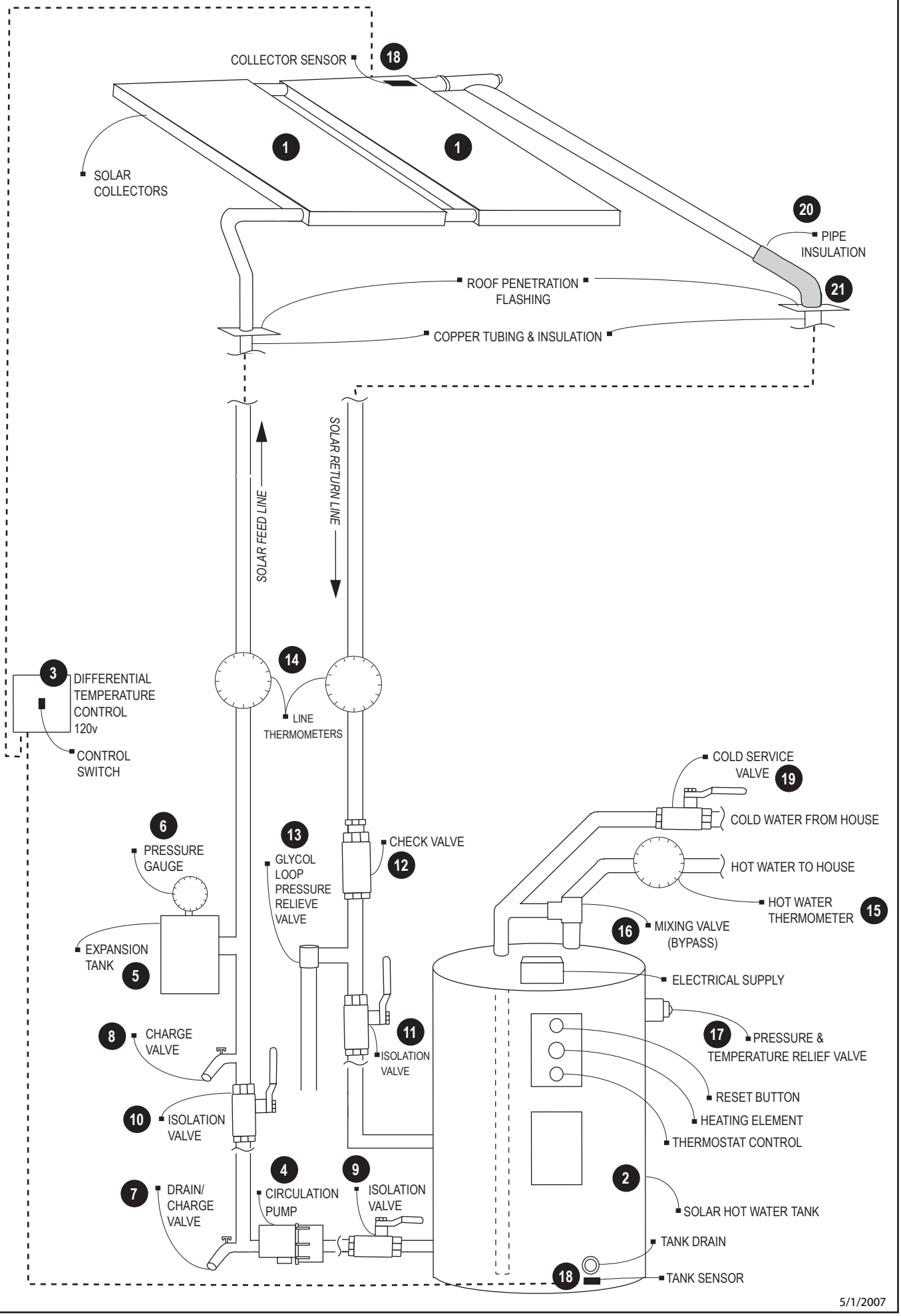
MODELSLCR 80DC-80HE
MODELSLCR 64DC-80HE
MODELSLCR 60DC-80HE

SOLENE DHW SYSTEM SCHEMATIC



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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 Chromagen 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. (Tank life can be extended by replacing the internal sacrificial anode rod from time to time.) 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 water quality and usage.

FOR MORE INFORMATION

Detailed information regarding System Operation, Routine Maintenance, Freeze Protection, and Start-Up and Shut-Down procedures can be found in the Solene Closed Loop Domestic Hot Water Solar System Homeowner's Manual (SLCR-HMHE).

CONTACT INFORMATION

If you have any questions regarding the operation of your system, please contact your Installing Solene Dealer.

Solene Dealer Contact Information

Solene™
927 Fern St. Suite 1500
Altamonte Springs, FL 32701
(866) 902-0060

SOLENE DRAIN BACK OG-300 SYSTEM LABELS

(Whole page will be embossed foil)

The following labels provide the system 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 Solene DHW System Schematic in this manual for reference numbers.

WARNING

Fluid may be discharged at high temperatures 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 conditions. Refer to glycol handling instructions in the manual

AWWA Class II - Heat Exchanger Type DWP

WARNING

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

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AWWA Class II - Heat Exchanger Type DWP

Place these labels on Manual Drains (#6, #7)

WARNING HOT

WARNING HOT

WARNING HOT

Place these labels on Circulation Pump (#4), Drain Back Tank (#5), and Mixing Valve (#10)

WARNING

Ungrounded Piping

Stay clear during any thunderstorm activity.

WARNING

Ungrounded Piping

Stay clear during any thunderstorm activity.

Place these labels on Solar Feed and Solar Return Lines

(5 X 7 Freeze Protection Label)

SOLENE FREEZE PROTECTION INSTRUCTIONS

(Models SLCR30DC-80HE, SLCR40DC-80HE, SLCR64DC-80HE, SLCR80DC-80HE,)

Your Solene Solar System has a solar loop that is charged with a Propylene Glycol Anti-Freeze Heat Transfer Fluid that 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.

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 the Circulation Pump.**
- **Place the open end of the hose in a container large enough to capture the Propylene Glycol. (At least 5 gallons.)**
- **Open the Drain Valve and let the Glycol drain into the container. (CAUTION – GLYCOL MAY BE EXTREMELY HOT)**
- **A qualified technician must dispose of the Propylene Glycol properly.** ***Do not dump Glycol to the ground, storm sewer or any body of water.***
- **Leave the Drain Valve open while your system is turned off.**

Maximum Operating;

Temperature: 200° F **Pressure: 130 PSI** **Freeze Tolerance Limit: -10°F**

Ten (10) Year Warranty
Plus Lifetime Limited Warranty

Warranty
This warranty is issued by SOLENE LLC, and CHROMAGEN, 927 Fern Street, Suite1500, Altamonte Springs, Florida 32701, and applies to all new CHROMAGEN collectors manufactured by CHROMAGEN when purchased for use on residential or commercial water heating applications. SOLENE LLC, warrants to the original purchaser only that the CHROMAGEN collector will be free from defect in materials and workmanship in the manufacturing process under normal use and service for a period of **ten (10)** years from the date of initial installation when purchased from and properly installed by an **AUTHORIZED DEALER** within that dealer's authorized territory. During that time, should a CHROMAGEN collector exhibit a manufacturing defect, the defective collector will be repaired or replaced, without charge for the equipment by SOLENE LLC, or its authorized dealer or distributor. This warranty does not cover freight, removal or re-installation costs.

Your dealer is _____, _____
Authorized Dealer Phone

Bonus Lifetime Limited Warranty
CHROMAGEN collectors carry a Lifetime Limited Warranty. Any CHROMAGEN Collector found to be defective in material or workmanship subsequent to the initial **Full Ten Year (10)** Warranty will be replaced, so long as the purchaser pays fifty percent (50%) of the published collector list price at the time the replacement is required.

Exceptions
Neither SOLENE LLC, its dealers, nor its distributors shall be liable for incidental or consequential damages, damage of any sort or nature resulting from abuse, misuse, neglect, abnormal weather conditions, acts of God, or damage caused by improper installation. This warranty does not apply to installation components not manufactured by CHROMAGEN or to solar collectors which have not been installed and maintained in strict compliance with SOLENE's installation and operation manuals and instructions and/or applicable ordinances or codes or to systems not installed by an authorized dealer within its authorized territory. In no event shall the liability exceed the purchase price of the product. There are no implied warranties of merchantability or implied warranty of fitness which extends beyond the description of the face hereof.

Proof of Purchase
It is the responsibility of the consumer to establish the original purchase date for warranty purposes. We recommend that a bill of sale, canceled check, or some other appropriate payment record be kept for that purpose. If the system is registered within 10 days of installation at www.solene-usa.com, the electronic registration confirmation is the only future proof of purchase necessary. The completion of the Online System Registration Form is a condition precedent to coverage under this warranty.

Note
This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.