

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0314249

Insp Area: 2
Thos Bros: 317 B3

Site Address: 1144 THEO WY SAC
Parcel No: 016-0133-001

Sub-Type: RES
Housing (Y/N): N

CONTRACTOR
SOLARROOFS COM INC
5840 GIBBONS DR STE G
CARMICHAEL CA 95608

OWNER
HUNLEY THOMAS E
1144 THEO WY
SACRAMENTO CA 95822

ARCHITECT

Nature of Work: INSTALL SOLAR POOL HEATING COLLECTORS AND AUTO CONTROLLER FOR SWIMMING POOL

CONSTRUCTION LENDING AGENCY: I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name _____ Lender's Address _____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

X License Class 246 License Number 797782 X Date 9-18-2003 Contractor Signature [Signature]

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

PAID
CITY OF SACRAMENTO
SEP 18 2003
NORTH PERMIT CENTER

I am exempt under Sec. _____ B & PC for this reason: _____
Date _____ Owner Signature _____

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

X Date 9-18-2003 Applicant/Agent Signature [Signature]

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:
I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier EXEMPT Policy Number NO EMPLOYEES Exp Date

X (This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

X Date 9-18-2003 Applicant Signature [Signature]

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

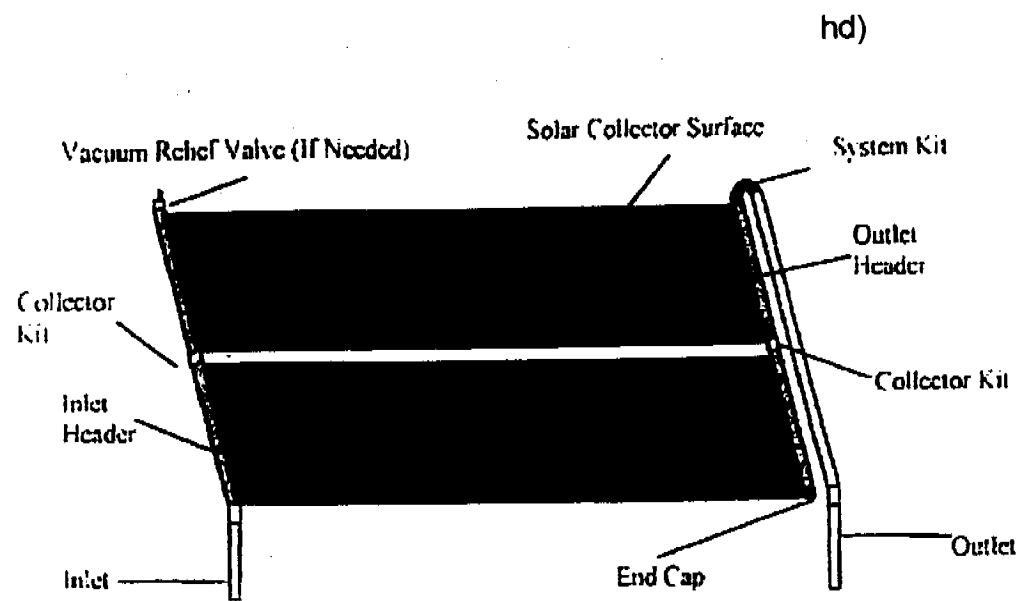


Figure 1

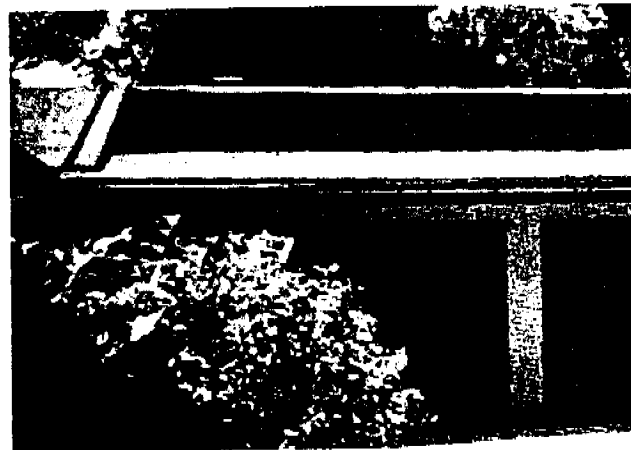
Horizontal Solar Collector Installation. Refer to Figure 1.

Before Beginning: You will need screws to fasten the collector headers to the mounting surface. We recommend stainless steel ¼-inch diameter sheet metal screws or lag screws. The minimum length should be equal to the thickness of the mounting surface plus ¼-inch. If stainless steel is not available, use screws with heavy hot dip galvanized plating. You will need two screws for each collector plus two, for each row of collectors. In addition you will need a top grade silicone or polyurethane sealer to seal the screw holes. The tools you will need are an electric drill with 3/16-inch drill and a driver to fit your hold down screws. In addition you will need a 5/16-inch hand hex driver or a screw driver for coupling clamps.

If you are using Solarbond to fasten the absorber surface to the roof you will also need a "quart" size caulking gun. If the slope is shallow enough and if you prefer, you may use a Strap Hold-Down Kit. Follow the instructions in the Vertical Solar Collector Installation section.

Position the solar collectors: Multiply 49 1/2 inches by the number of solar collectors and measure up the roof that distance. Measure back down the roof 1 1/4 inches and mark the closest shingle-or tile edge. That shingle or tile line will be the top edge of the uppermost solar collector absorber surface. Measure along that line the length of the solar collector. Make sure you have room at the end for header hold-down clamps and piping.

Now decide which end of the collector array will be the inlet end and which end will be the outlet end. The water from the pool pump must enter the collectors at the lowest point at one end and leave the collectors to return to the pool from the highest point at the other end. See Figure 1. Try to have the outlet at the



end closest to the pool pump. The inlet end must always be slightly lower on the roof than the outlet end. That allows water to drain from both headers to prevent damage from freezing. If this is not possible, provide a drain at the lowest end of the outlet header and open it before freezing weather occurs.

Attaching to the Roof: If the solar collector was shipped in a carton remove it from the carton, leaving the inner wrapping in place.

Attach a coupling hose to each end of the outside header. If this is to be the outlet header, use a 3_1/2-inch coupling from the system kit at the upper end. If not, use a 2_1/2-inch coupling from the collector Kit at both ends. Tighten the hose clamp. Tighten only until you see the hose bulging into the slots in the clamp. Do not over-tighten.

Slide a Header Hold-Down Clamp over each coupling and tighten only enough to hold it in place. See Figure 2.

Lift the collector to the roof and align the upper edge of the rolled up collector with the shingle or tile line you marked. Be sure the collector is at a right angle to that line so that it will roll out parallel with it. Remove the wrapping. Next, you should fasten the header to the roof. Figure 2 shows the Header Hold Down Clamp Part #2022 between two Coupling Clamps Part # 10 12. You have one Coupling Clamp and one Hold-Down Clamp at each end of the first header and your collector is positioned to roll out horizontally along the roof. Drill through the hole in each Hold-Down Clamp and through the roof with a 3/16 diameter drill. Fill the holes with a top grade silicone or polyurethane sealer, let some build up on the roof surface and drive a hold-down screw through the clamp into each hole.

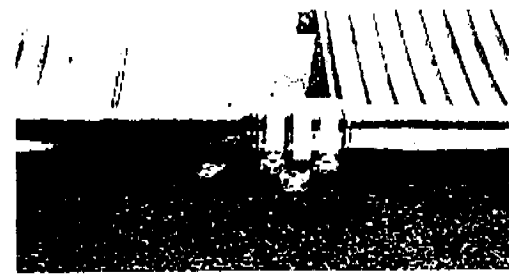


Figure 2

Next, you will be unrolling the solar collector absorber surface and attaching it to the roof as it unrolls.

Insert a Solarbond mastic cartridge in the caulking gun and cut off the nozzle at a point that will give you a 1/2-inch diameter bead of mastic. Lay down the first bead of mastic 24 inches from the first header. After that put a bead every 18 inches as you unroll the absorber. After you roll over a bead press down the absorber surface firmly into it. Press between the tubes, not on them. The mastic will spread out to a width of approximately 2 inches if you do it properly. **Important:** all mastic beads must run vertically up and down the roof. If you run the beads horizontally they will create dams for rainwater that may cause roof leaks. Hint: If you end the mastic beads 2 inches from the edge of the absorber at the top and bottom the mastic will not squeeze out and the job will look much neater.

When you get to the end install the correct coupling on each end of the header, clamp it and add a Hold-Down Clamp Part #2202. Remember, short couplings connect headers together and attach End Caps and Vacuum Relief Valves. Long couplings connect to the pool system and to Split Row Kits. Refer to Figure 1 for location. Drill the holes, seal them and drive in hold-down screws.

Now bring the second collector to the roof. Connect the outside header to the matching header on the first collector header as shown in Figure 2. Add a Coupling, Coupling Clamp and Hold-down Clamp at the opposite end. Drill, seal and fasten that end of the header to the roof as before. Follow the same steps as with the first collector to unroll the absorber, fasten it down and connect and fasten down the header at the other end. Finish off the system with the connecting components as shown in Figure 1.

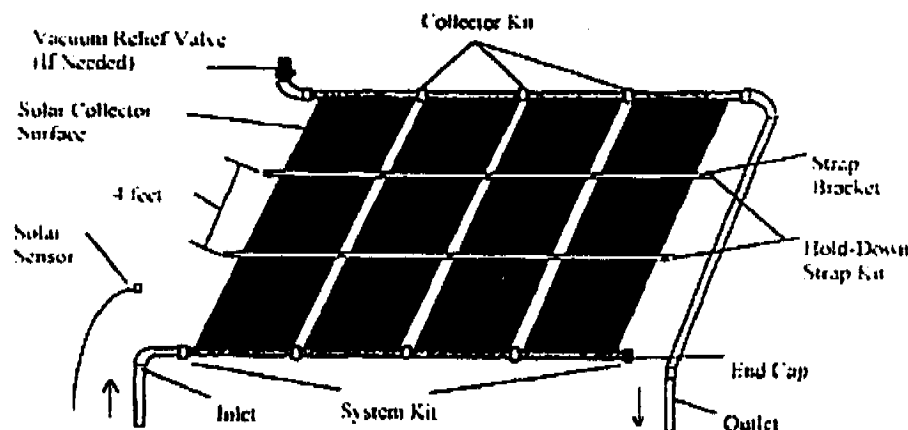


Figure 3

Vertical Solar Collector Installation

Before Beginning: You will need screws to fasten the collector headers to the mounting surface. We recommend stainless steel 1/4-inch diameter sheet metal screws or lag screws. The minimum length should be equal to the thickness of the mounting surface plus 1/4-inch. If stainless steel is not available, use screws with heavy hot dip galvanized plating. You will need two screws for each collector plus two, for each row of collectors. In addition you will need a top grade silicone or polyurethane sealer to seal the screw holes. The tools you will need are an electric drill with 3/16-inch drill and a driver to fit your hold down screws. In addition you will need a 5/16-inch hand hex driver or a screw driver for coupling clamps.

If you are using Solarbond to fasten the absorber surface to the roof you will also need a "quart" size caulking gun. If the slope is shallow enough and if you prefer, you may use a Strap Hold-Down Kit. Follow the instructions in the Vertical Solar Collector Installation section.

Positioning the Solar Collectors: Note from Figure 3 that the inlet headers ran along the lower part of the roof parallel with the eave and the outlet headers are at the top near the ridge. Determine where on the roof you want to position the solar system and how far up from the eave you want the lower edge of the solar collectors to be. Mark that point and measure up the roof a distance equal to the length of the solar collectors plus 3/4 inch. That is the starting point. It will be the centerline of the screw that fastens down the first Hold-Down Clamp Part #2022 (see Figure 2). Mark that point. Multiply the number of collectors by 49 1/2 inches, measure along the roof that distance and mark the end point. That will be the opposite end of the collector array. Be sure you have allowed 8 inches for connecting piping at both ends.



HOW HI-TEMP WORKS

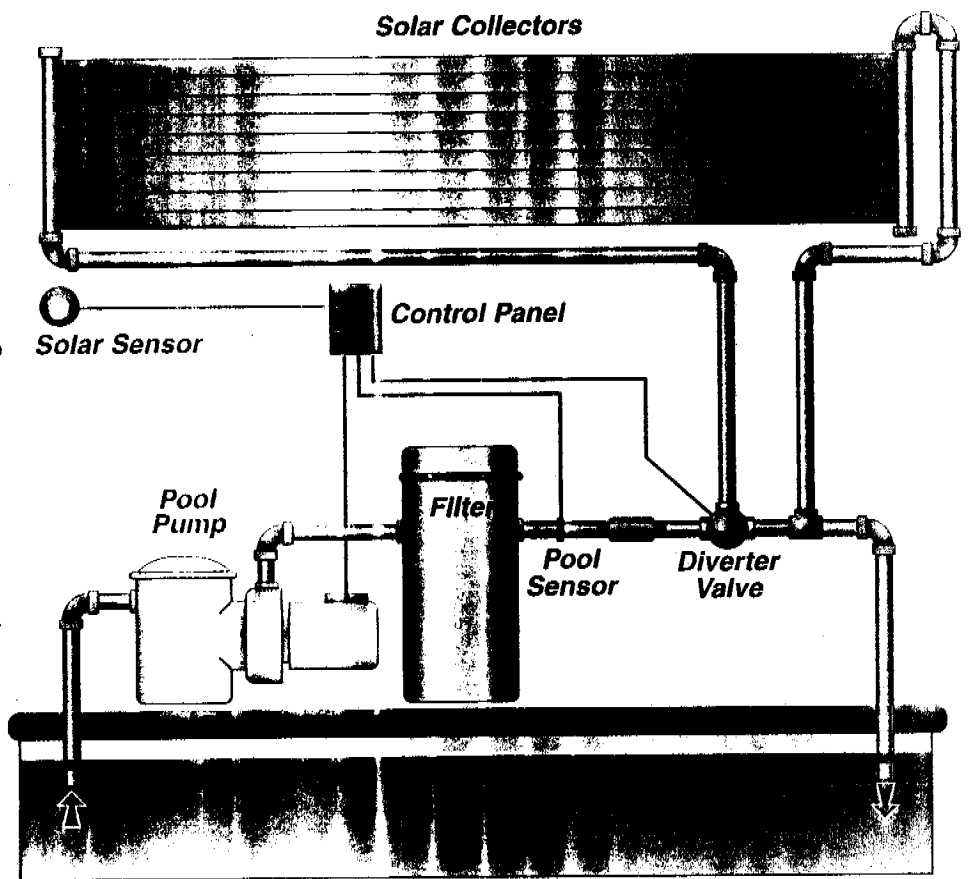
All you do is set the desired pool temperature on your control panel and Hi-Temp does the rest.

When your electronic controller senses that there is enough sunlight to heat your pool and that your pool is colder than you desire, water is automatically diverted to your solar system.

Your pool pump sends pool water to the solar collectors. As the water flows through the tubes in each collector, the sun's energy heats it. The solar-heated water then flows back to your pool. This simple cycle continues until the pool reaches your desired temperature.

You can also cool your pool during warmer months by simply running your pool pump at night. Your control system will automatically switch to cooling your pool.

Note: In warm climates, with infrequent rain during the swimming season, your solar system may be controlled with a manual control valve.



WARRANTY

Hi-Temp 15-Year manufacturer's warranty expresses our confidence that your Hi-Temp pool heater will provide years of superior, trouble-free performance. (See actual warranty for limitations and details.)

Your Authorized Hi-Temp Distributor:

Hi-Temp
solar pool heating systems

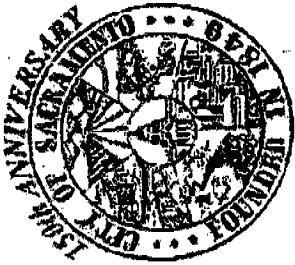
Harter Industries, Inc.
P.O. Box 502
Holmdel, NJ 07733

www.harterindustries.com



Cover photo courtesy of Guiton's Pool Center, Redding, California.
Installers of Hi-Temp Solar Pool Heaters.

Part No. 9059



DATE: 12 Aug 03

CITY OF SACRAMENTO
DEVELOPMENT SERVICES DIVISION
FAXED PERMIT APPLICATION (certain restrictions apply)
Fax # 916-264-1901

Faxed request must be received in this office by 3:00 p.m. to be processed the following work day.
Note: Contractors must have a current certificate of Worker's Compensation Insurance.

Note: Work started before a Building Permit is issued will be subject to grand fee

IN ORDER TO PROCESS THIS REQUEST, ALL THE FOLLOWING INFORMATION MUST BE PROVIDED:

RESIDENTIAL APARTMENTS (4+ units per building) COMMERCIAL (limited)
JOB ADDRESS: 1144 THEO WAY UNIT # _____ CONTRACT PRICE \$ 2975.00
 CONTACT PERSON: AL RICH OR MARK ZICKEL CONTACT PHONE: 481.7444

Property Owner: TOM HANLEY License # 797782
Address: 1144 THEO WAY Contractor: SOLARROOFS.COM
City/State/Zip: SACRAMENTO CA City/State/Zip: 95608
Phone: 444 8672 Phone: 481-7444 FAX: 481-7203

NATURE OF REQUEST: Indicate from the selections below & provide details under description of work.

<input type="checkbox"/> REROOF (excluding tile) <input type="checkbox"/> TEAR-OFF <input type="checkbox"/> RESHEET <input type="checkbox"/> HOUSE <input type="checkbox"/> GARAGE # SQUARES: _____ Material: <input type="checkbox"/> SIDING <input type="checkbox"/> wood <input type="checkbox"/> T-111 <input type="checkbox"/> Horiz <input type="checkbox"/> vinyl <input type="checkbox"/> stucco Note: Design Review approval may be required in certain areas.	<input type="checkbox"/> HVAC INSTALLATIONS (residential ONLY) <input type="checkbox"/> CHANGE-OUT <input type="checkbox"/> NEW <input type="checkbox"/> Heat Pump <input type="checkbox"/> Package <input type="checkbox"/> Split system <input type="checkbox"/> Roof mount <input type="checkbox"/> Cut-in <input type="checkbox"/> Heat pump or elect. unit to gas. <input type="checkbox"/> Wall furnace <input type="checkbox"/> Other (describe below) Value of duct work: \$ _____ Equipment: \$ _____ Cut-in: \$ _____ Note: Design Review approval may be required for rooftop units.	<input type="checkbox"/> WATER HEATER (residential ONLY) <input type="checkbox"/> GAS <input type="checkbox"/> ELECTRIC <input type="checkbox"/> Change-out <input type="checkbox"/> Electric to Gas <input type="checkbox"/> Relocate <input type="checkbox"/> New <input type="checkbox"/> DRY ROT OR TERMITES DAMAGE REPAIR (Describe locations below) Note: Design Review approval may be required in certain areas.	<input checked="" type="checkbox"/> MINOR ELECTRIC and/or MINOR PLUMBING (residential ONLY) <input type="checkbox"/> Electric Service Change # amps <input type="checkbox"/> New electric circuits <input type="checkbox"/> Re-wire <input type="checkbox"/> Water Service Replacement <input type="checkbox"/> Sewer Service Replacement <input type="checkbox"/> Gas Line Replacement <input type="checkbox"/> Re-plumb <input type="checkbox"/> Water <input type="checkbox"/> Waste	<input type="checkbox"/> PUBLIC UTILITIES SAFETY INSPECTION* (Residential and single apartment units ONLY) <input type="checkbox"/> SMUD <input type="checkbox"/> PGE *NOTE: Correction Notice items will require an additional building permit
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DESCRIPTION OF WORK:
INSTALL SOLAR POOL HEATING COLLECTORS AND AUTO CONTROLLER

FOR SWIMMING POOL
fax permit firm (rev online 3/10/00)

0314249

7/21/05

pool
equip
corner of
lot

customer did trenching -
made sure @ least
1 ft deep



rear of house

patio cover
rear of house



front of house
1144 Theo way SACTO