



**DIRECTORY
OF SRCC
CERTIFIED
SOLAR
WATER HEATING
SYSTEM RATINGS**

March 17, 2004

www.solar-rating.org

**Solar Rating & Certification Corporation
c/o FSEC, 1679 Clearlake Road
Cocoa, FL 32922-5703
(321) 638-1537 (321) 638-1010 Fax**

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INTRODUCTION

The Solar Rating and Certification Corporation (SRCC) is an independent third-party certification organization that administers national certification and rating programs for solar energy equipment. The SRCC was incorporated in October 1980 as a non-profit corporation. It is governed by a twelve-member board of Directors with representation from the public, private, and generalist Sectors.

The SRCC currently operates three major solar programs: collector certification (OG-100), water heating system certification (OG-300) and a swimming pool heating system certification (OG-400). The OG-100 collector certification program applies to that part of a solar energy system that is exposed to the sun and collects the sun's heat. The collectors can be used to heat water, air or other heat transfer media. The OG-300 rating and certification program for solar hot water systems integrates results of collector tests with a performance model for the entire systems and determines whether systems meet minimum standards for system durability, reliability, safety and operation. Factors affecting total system design, installation, maintenance and service are also evaluated. The OG-400 certification program provides minimum requirements for solar swimming pool heating system design and installation procedures.

A direct comparison of an SRCC rated collector to an SRCC rated solar water heating system is not possible. The reason for this is two-fold. First, the collector rating shows the performance of one component in the solar package while the system rating shows the performance of an entire solar package. Second, each rating, whether a collector rating or a system rating, is developed using a separate set of assumed conditions.

This directory contains information about solar heating systems that have been certified and rated by SRCC.

The information in this directory will provide you with reliable and comparable data for solar water heating systems you may be considering buying. The rating information is a helpful tool for comparing the efficiency of the various solar systems on the market. Remember, though, that not all solar energy systems are tested and rated as a "package" or a system. Many systems you consider may have only the collectors rated by SRCC. While you can, and should, compare collector ratings, you cannot compare collector ratings with system ratings. All systems which have been certified by SRCC will bear the SRCC label, which is your assurance that an independent party has verified the performance and basic durability of the solar product you are considering. Copies of SRCC labels are shown in this directory.

The directory contains descriptive information about the solar systems and also "performance" information about them. "Performance" data relates to the energy output of the system. The SRCC performance information contained in this directory provides a way to compare the **relative** performance of different solar water heating systems, not the **actual** performance you can expect from a given system. This is because the collectors and systems are tested under standard laboratory conditions which are certain to be different from those in your home. **Think of the SRCC ratings as you do the MPG ratings for cars -- a benchmark, but not necessarily the same performance you will experience.** Remember, too, that performance (or energy output) is only one criteria in choosing a solar energy system. Quality of installation, cost, availability of service and parts, and the expected life of the equipment are also important points to consider. Equipment which is well-designed and well-built, but poorly installed, cannot perform according to the manufacturer's specifications.

Directory of Solar Water Heating Systems Meeting Minimum Operating and Performance Requirements

OG 300

Certified By

The Solar Rating & Certification Corporation

**c/o FSEC, 1679 Clearlake Road
Cocoa, FL 32922**

(321) 638-1537 Fax: (321) 638-1010

This directory lists all solar water heating systems certified and rated under the OG 300 protocol by the SRCC. All ratings published in this edition supersede any previously published ratings. Systems models appearing in previous editions or supplements of this directory but which are not listed herein are no longer certified by the Corporation. Separate pages and/or sections may be updated from time to time.

SRCC OG300 PARTICIPANTS

ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608 USA
916 481-7200 888 801-9060
916 481-7230 Fax
info@solarroofs.com
www.solarroofs.com

Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804 USA
510 237-9614
510 237-7018 Fax
info@heliodyne.com
www.heliodyne.com

Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455 USA
805 928-1881 800 927-2326
805 928-5587 Fax
radcoproducts@utech.net

Solahart Industries
101 Bell Road
Montgomery, AL 36117 USA
334 260-1500
334 260-1562 Fax
jmahoney@rheem.com
www.solahart.com.au

SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335 USA
909 434-3100 800 776-5270
909 434-3101 Fax
info@sunearthinc.com
www.sunearthinc.com

Thermomax Industries Ltd.
3181 Kingsley St.
Victoria, BC V8P4J5 Canada
250 721-4360
250 721-4329 Fax
patrick@solarthermal.com
www.solarthermal.com

Bobcat & Sun, Inc.
65548 76th St.
Bend, OR 97701 USA
541 389-7365
541 317-9265 Fax
bobcat@empnet.com

Morley Manufacturing
P.O. Box 1540
Cedar Ridge, CA 95924 USA
530 477-6527
530 477-0194/0195 Fax
pelsol@inreach.com

Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501 USA
707 443-5652
707 442-0110 Fax
mr.sun@sixriverssolar.com
www.sixriverssolar.com

Sun Systems, Inc.
2030 W. Pinnacle Peak Road
Phoenix, AZ 85027 USA
623 869-7652
623 869-0891 Fax
tbohner@sunsystemsinc.com

Thermal Conversion Technology
101 Copeland Street
Jacksonville, FL 32204 USA
904 358-3720
904 358-3728 Fax
sgorman@micropowerusa.com
www.tctsolar.com

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- Radco Products
- Six Rivers Solar, Inc
- Solahart Industries
- SunEarth, Inc
- Sun Systems, Inc
- Thermal Conversion Technology
- Thermomax Industries Ltd.

SRCC CERTIFIED SYSTEMS AND RATINGS: GAS AUXILIARY

- Comparing System Costs
- Heliodyne, Inc
- Radco Products
- Six Rivers Solar, Inc
- SunEarth, Inc
- Sun Systems, Inc.
- Thermal Conversion Technology

OG-300 CERTIFICATION OF SOLAR WATER HEATING SYSTEMS

Experience has proven that product certification by a “third party” is essential to both the industry and the consumers. Third party certification gives four major advantages to its participants.

First and foremost, product certification helps sell products by creating customer confidence in products that are certified; certification acceptance by code officials reduces installation costs; and financing is facilitated when the product is certified.

Second, certification extends a company’s engineering capabilities by helping to build products with improved safety; field installation problems are identified and resolved during the certification process.

Third, certification minimizes the number of inferior products competing in the market place.

Fourth, certification gives consumers an unbiased appraisal of available products, which allows for comparison shopping.

In response to its industry participants, SRCC has developed a new solar water heating system rating and certification program, short-titled OG 300. The purpose of this new solar water heating system certification and rating program is to improve performance and reliability of solar products. It integrates results of collector tests and system tests with evaluations against minimum standards of system durability, reliability, safety and operation; as well as factors affecting total system design, installation, maintenance and service. Giving suppliers the opportunity to submit their solar domestic hot water (SDHW) system designs to an open-ended review encourages them to produce the best products possible.

HOW SYSTEMS ARE CERTIFIED UNDER THE OG 300 PROTOCOL

Under the OG 300 system rating and certification program:

- Systems must meet or exceed all criteria required to meet HUD Minimum Property Standards.
- Rating includes a simple way for consumers to compare expected annual performance and energy savings.

Unique features of this certification program include:

- Evaluation of system design, safety, installation procedures, operations and maintenance materials and system performance.
- Rating label that is comparable to the Energy Guide Label required by the Federal Trade Commission for most gas and electric hot water heaters.

The process for rating and certifying solar water heating systems under the OG 300 protocol includes five steps for each system being rated. The process is described below and illustrated in Figure 1.

1. The collectors which are part of the system must be tested and rated under the OG 100 protocol.
2. Passive systems in which the collector can not be tested separately must be rated and certified under a system test protocol.
3. The complete specified system of collectors, tanks, pumps, motors, valves, piping, etc., is evaluated for essential elements related to:
 - system design;

- projected durability and reliability;
- safety;
- operation and service procedures;
- installation guidelines;
- operation and maintenance manuals.

During this evaluative process, SRCC reviews the components, assemblies and materials in the system for compatibility, drawing on nationally recognized resources such as the *Recommended Requirements to Code Officials for Solar Heating, Cooling and Hot Water Systems*, jointly prepared by the Council of American Building Officials, Building Officials and Code Administrators International, Inc., International Conference of Building Officials, National Conference of States on Building Codes and Standards, Inc., and Southern Building Code Congress International, Inc.

4. Data from the OG 100 collector test, the system test, and review of design and installation guidelines are input to a computer program called *TRNSYS*. That program projects system performance.
5. Numerical results of the design and installation review (step 3) and the *TRNSYS* evaluation are integrated and entered on a certification to the supplier. Data pertinent to solar distributors, retailers, installers and homeowners is specified for printing on the rating pages. The rating pages which follow are a good means by which to compare systems and select the best one for your needs.

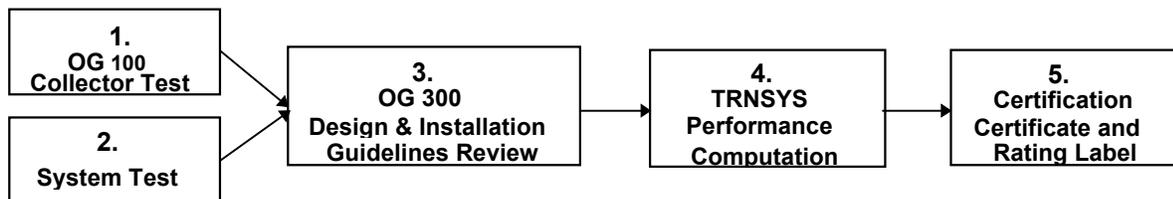


Figure 1 SRCC OG 300 Test and Certification Process

CERTIFICATION CRITERIA

Major system components, the contents of the manual delivered with the system, and the supplier's instructions for system installation must be approved by SRCC. Certification is based upon the determination by SRCC that the system successfully meets its minimum criteria for design, reliability and durability, safety, operation and servicing, installation, and operation and maintenance manuals.

Tables 1-6 summarize the features evaluated for each of the six major criteria during system certification under the OG 300 protocol. Most of those features are self-explanatory. Obviously, some of the features will not be applicable to certain systems. Systems conforming with the applicable criteria will be in compliance with HUD Use of Material Bulletin 100.

Table 1 Features Evaluated During the SDHW System Design Review

Operating Limits Solar Loop Isolation Thermal Expansion Auxiliary Water Heating Equipment Back Thermosyphon Prevention Fluid System Sizing	Vacuum Induced Pressure Protection Thermal Shock Protection Different Metallic Materials Airborne Pollutants Effects of Decomposition Products	Manual Control Override Wiring Identification Temperature Control Code Compliance
Collector UV Radiation Protection Collector Flow Distribution Collector Circulation Control	Storage Tank Tank Insulation Expansion Tanks Heat Exchanger	Insulation Piping Filters Joints Materials

Table 2 Features Evaluated for Durability and Reliability Criteria

Stagnation Solar Degradation Operation Conditions Incompatible Materials Freeze Protection Protection From Leaks Fluid Compatibility	Deterioration of Fluids Thermal Storage System Buried Components Deterioration Protection Water Hammer Sound and Vibration Control
--	---

Table 3 Features Evaluated for Safety Criteria

Protection of Electrical Components System Failure Prevention High Temperature Control Protection Against Auto-Ignition of Combustibles Fluid Safety Labeling Contamination of Potable Water Entrapped Air	Backflow Toxicity Combustible Liquids Liquid Flash Point Pressure Relief Heated Components
--	---

Table 4 Features Evaluated for Operation and Service Criteria

Operating Indicators Tanks Waste Disposal	Dirt Retention and Staining Maintenance and Servicing Permanent Maintenance Accessories
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Table 5 Features Evaluated for Installation Criteria

Firestopping Auxiliary System Space Use Accessibility Building Penetrations Water Damage Structural Supports Expansion and Contraction of Supports Penetration of Structural Members	Protection from Thermal Deterioration Tilt and Azimuth Shading of Collector Pipe and Component Supports Pitch or Angle of Piping Installation Underground Piping Control Sensor Installation Penetrations Through Fire-Rated Assemblies Emergency Egress and Access
--	---

Table 6 Features Evaluated for O & M Manuals

Provision for Manuals Installation Instructions Operation Instructions Maintenance Plan	Fluid Quality Service and Replacement Parts Hazards Warranty Coverage
--	--

ON-SITE INSPECTION

Compliance with many of the installation requirements of OG 300 can be verified only by an on-site inspection made after installation. SRCC may randomly inspect installed systems to verify that: (1) approved components have been installed; (2) an approved O&M manual has been provided; and (3) the installation conforms to the approved installation guidelines.

FOUR TYPES OF SOLAR WATER HEATING SYSTEMS

As you shop for solar water heating systems, you will probably see several different types. In general, all solar water heating systems fall into one of these four categories:

1. **Forced Circulation** or “active systems” are those that use a pump to circulate the water or other fluid from the collector where it is heated by the sun to the storage tank where it is kept until you need it.
2. **Integral Collector Storage (ICS)** systems, or “batch” water heaters, combine the collector and the storage tank into one. That is, the sun shines into the collector and strikes the storage tank directly, heating the water.
3. **Thermosyphon** systems have a separate storage tank, located above the collector. Liquid (which could be water or an antifreeze solution) warmed in the collector rises naturally to the storage tank where it is kept until needed.
4. **Self-Pumping** systems are those that use a phase change (liquid-vapor) or other passive means to cause the fluid in the collector to circulate and transport heat from the collector to the storage.

The ICS, thermosyphon and self-pumping systems are often called “passive” solar systems because they do not use mechanical energy to move the heated water. All four types of solar systems work well, and you should compare the performance of one type with the others.

THERMAL PERFORMANCE RATING

The thermal performance rating is based on the system design and performance projections derived from testing of the collector components used in the system, or from testing and evaluation of the system as a whole, as shown schematically in Figure 1.

Most rating programs require the equipment to be tested in accordance to a standard test with specified test conditions. This provides a repeatable performance within an accepted uncertainty band. There are, however, some rating programs which combine a standard test and a calculation procedure to produce a performance rating. Such is the case for the energy guide label for electric and gas residential hot water heaters. SRCC has used a similar method to develop a consumer friendly, practical rating system. The intent is to present to consumers an easily understood comparison between SDHW systems and conventional hot water systems. Note that the performance any individual consumer will experience may differ due to location and hot water usage.

The thermal performance rating is based on the system design and performance projections derived from testing of the collector components used in the system, or from testing and evaluation of the system as a whole. The type of auxiliary system (e.g. gas or electric) utilized will have a large impact on the overall performance of the system. These differences arise because different types of auxiliary systems have varying standby losses and fuel conversion efficiencies. Although the auxiliary system may affect the solar system's performance, in many cases, the solar output is mostly independent of the auxiliary system used. Because gas backup systems have lower efficiencies and higher standby losses than do electric systems, it should be expected that the entire system's (including backup) performance will be lower, even if the solar output from both system types is equal.

SRCC uses the Solar Energy Factor (SEF) as its performance rating for solar domestic water heating systems. The SEF is defined as the energy delivered by the system divided by the electrical or gas energy put into the system. The SEF is presented as a number similar to the Energy Factor (EF) given to conventional water heaters by the Gas Appliance Manufacturers Association (GAMA)¹, but with the exceptions noted in the Rating Parameters Section.

$$SEF = \frac{Q_{DEL}}{Q_{AUX} + Q_{PAR}}$$

Where:

- Q_{DEL} = Energy delivered to the hot water load: Using the SRCC rating conditions, this value is 43,302 kJ/day (41,045 Btu/day).
- Q_{AUX} = Daily amount of energy used by the auxiliary water heater or backup element with a solar system operating, kJ/day (Btu/day). To convert to kWh, divide this value by 3,600 (3,412). To convert to therms, divide this value by 105,000 (100,000).
- Q_{PAR} = Parasitic energy: Daily amounts of AC electrical energy used to power pumps, controllers, shutters, trackers, or any other item needed to operate the SDHW system, kJ/day (Btu/day). To convert to kWh, divide this value by 3,600 (3,412).

The Solar Energy Factor can be converted to an equivalent Solar Fraction (SF) as follows:

$$SF = 1 - \frac{EF}{SEF}$$

The EF for the SRCC standard electric auxiliary tank is 0.9 and for the gas tank is 0.6.

In this context, the Solar Fraction is the portion of the total conventional hot water heating load (delivered energy and tank standby losses) provided by solar energy. Note that an alternate definition for Solar Fraction is often used. In this alternate definition, solar fraction is the portion of the total water heating load (losses are NOT included) provided by solar energy. The alternate method of calculating solar fraction will yield higher solar fractions. Therefore, use caution when comparing the solar fraction for specific systems, inputs into energy codes (such as California's Title 24), or outputs from software (such as F-Chart) to ensure that the same calculation procedure for solar fraction has been used.

The Solar Energy Factor can be converted to an equivalent Solar Savings (Q_{SOLAR}) as follows:

$$Q_{SOLAR} = Q_{DEL} \left(\frac{1}{EF} - \frac{1}{SEF} \right) = SF * Q_{CONV}$$

Where:

- Q_{CONV} = Daily amount of energy used by the auxiliary water heater or backup element without a solar system. The SRCC standard electric auxiliary tank has an energy usage of 47,865 kJ/day (45,369 Btu/day). The SRCC standard gas auxiliary tank has an energy usage of 72203 kJ/day (68,439 Btu/day).

¹ Gas Appliance Manufacturers Association, "Consumer's Directory of Certified Efficiency Ratings for Residential Water Heating and Water Heating Equipment", 1994, pp. 138-218

EF = The Energy Factor is the ratio of delivered energy to input energy for the reference electric auxiliary tank without a solar contribution. The balance of the energy is lost to the surroundings due to standby losses and conversion efficiency.

Q_{SOLAR} = The Solar Savings is the amount of the total conventional water heating load (delivered energy and tank standby losses) provided by solar energy minus any parasitic energy use. To convert to kWh, divide this value by 3,600 (3,412).

In this context, the Solar Savings is the amount of the total conventional hot water heating load (delivered energy and tank standby losses) provided by solar energy minus any parasitic energy use.

RATING PARAMETERS

The following parameters are used for calculating the daily energy savings and the solar energy factor. These conditions are the same as those used in the U.S. Department of Energy test for water heaters (Federal Register volume 55 number 201 pages 42161 - 42177, October 17, 1990) except for the following:

- Since the DOE test does not cover solar water heaters, it specifies no solar radiation. Therefore, a 4,733 Wh/m² - day (1500 Btu/ft² - day) solar radiation profile has been added as specified in SRCC document RM-1 "Methodology for Determining the Thermal Performance Rating for Solar Collectors".
- The draw profile has been set to begin at 9:30 AM solar time.
- An outdoor ambient temperature profile has been added as specified in SRCC document OG-300. The average air temperature is 14.4°C (58°F).
- The amount of energy to be drawn from the system was obtained from the April 1994 GAMA Consumers' Directory of Certified Efficiency Ratings for Residential Heating and Water Heating Equipment (page 134). This amount of energy is drawn rather than the volume draw specified in the DOE test since the DOE test results are eventually normalized to an energy type draw.
- The performance of the systems is determined from a computer simulation as specified in Section 7.1 above rather than by the actual test specified by the DOE procedure.

RATING PARAMETER	(SI Units)	(I-P Units)
Environmental Temperature	19.7 °C	67.5 °F
Auxiliary Set Temperature*	57.2 °C	135 °F
Water Mains Temperature	14.4 °C	58 °F
Total Energy Draw (Q _{DEL})	43,302 kJ	41,045 Btu
Approximate Volume Draw	243 l	64.3 gal
Draw Rate	0.189 l/s	3.0 gpm

Draw Type: Energy

Number Of Draws: 6 - One at the beginning of each hour starting at 9:30 am

* This set temperature was chosen to be compatible with the U.S. Department of Energy test method for water heaters. Most plumbing codes, however, are moving toward lower set temperatures. SRCC will continue to monitor standard practice and requirements and adjust the parameter as needed to be consistent.

FLUID CLASS

The American Water Works Association (AWWA) has created a classification system for heat transfer fluids that are used in heat exchangers. This classification system is intended to indicate the potential for contamination of the water supply during a heat exchanger failure and as a basis for the types of heat exchangers which should be used with these fluids. The rating system consists of the following three categories:

1. Fluid Class I: Potable Heat Transfer Fluid (e.g. Water)
2. Fluid Class II: Non-Toxic Heat Transfer Fluid (e.g. Propylene Glycol)
3. Fluid Class III: Toxic Heat Transfer Fluid (e.g. Ethanol)

FREEZE TOLERANCE

Each system has a freeze tolerance temperature specified by the system Supplier. If the air temperature falls below this temperature, a fluid in the system is likely to freeze. Unless a system is installed in a non-freezing climate, every system must have an automatic mechanism to at least partially protect it from freezing (eg. automatic draining, antifreeze fluids, or thermal mass). For systems using water in portions of the system exposed to outdoor air conditions, the mass of the water itself, along with insulation can provide limited protection from freezing, after which manual intervention may be required. For systems using water in the collector, the freeze tolerance temperature may actually exceed the freezing temperature of water because of radiative cooling by the sky. All systems are required to have the capability to be manually drained to protect them from extreme freezing conditions.

As a consumer, you should be aware of the freeze tolerance temperature of the system you plan to purchase. The system may protect itself under all conditions occurring at your site or you may be required to interact with the system to protect it from freezing.

SRCC CERTIFICATION LABELS

All solar products certified by SRCC are required to be labeled with an approved SRCC certification label within sixty (60) days of receipt of certification. The label shown below should be on each system certified under SRCC's OG 300 protocol.

 <p>The logo features a circular design with 'SOLAR' at the top and 'CERTIFICATION' at the bottom. In the center, the letters 'SRCC' are prominently displayed in a bold, sans-serif font.</p>	<p>This product certified by Solar Rating & Certification Corporation c/o FSEC, 1679 Clearlake Road Cocoa, FL 32922 (321)638-1537 www.solar-rating.org Solar System Standard OG-300</p>	<p>ACME Solar Corporation P.O. Box 12345 Dallas, TX 23456 System Model HelioMite 100</p>	<p>Performance Rating: Solar Energy Factor 2.0</p>
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Table 7 Symbols Shown in the System Schematics

These symbols define elements in the system schematics found on the following rating pages.

	Plumbing *		Heat Exchanger
	Ball Valve		Coiled Heat Exchanger *
	Three-Way Ball Valve *		Wrap Around Heat Exchanger *
	Gate Valve		Pressure Gauge/Cock *
	Three-Way Gate Valve		Pump
	Tempering Valve *		Drain Back Tank *
	Check Valve		Expansion Tank *
	Pressure Regulator Valve		Liquid Storage Tank *
	Pressure Relief Valve *		Thermometer
	Temperature Relief Valve *		Thermometer Well
	P/T Relief Valve *		Electrical Controller *
	Expansion Valve		Temperature Sensor *
	Freeze Valve		Dip Tube *
	Automatic Air Vent		Electric Heating Coil *
	Vacuum Breaker		Shut-Off and By-Pass Valve Assembly *
	Flow Meter		Strainer
	Drain Down Valve		

NOTE: The symbols shown above, except those denoted with an asterisk, reference the 1989 American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) *Fundamentals Manual*. Those symbols indicated by an asterisk are either modifications of the ASHRAE standard or are diagrams of the actual part.

**SRCC
CERTIFIED
SYSTEMS
AND
RATINGS:**

ELECTRIC AUXILIARY

COMPARING SYSTEM COSTS

The Energy Factor (EF) and the Solar Energy Factor (SEF) can be used to compare different water heating systems with one another and to estimate typical yearly operating costs for the specified rating conditions. The SEF includes all of the specified conditions for the DOE EF test, plus several solar specific conditions. The EF and SEF can be used to compare solar and electric system's energy use on a one-to-one basis. A higher SEF or EF indicates less conventional energy use, and consequently, lower operating cost. For electric systems, the following calculation can be used:

$$\text{Yearly Cost (\$)} = 365 \text{ days} * 12.03 \text{ kWh/EF} * \$x/\text{kWh}$$

Examples:

Assume that electricity costs \$0.08/kWh

1. TYPICAL ELECTRIC WATER HEATER (EF = 0.86)

$$\text{YEARLY COST} = 365 * 12.03 / 0.86 * 0.08 = \$408.46$$

2. TYPICAL SOLAR SYSTEM (SEF = 2.0)

$$\text{YEARLY COST} = 365 * 12.03 / 2.0 * 0.08 = \$175.64$$

Note that the solar system saves \$232.82 (\$408.46 - \$175.64) per year. This figure can be used as the energy cost savings basis for an economic analysis of a solar hot water system based on the assumptions for the standard DOE (EF) and SRCC-OG 300 rating conditions (SEF). Other factors such as initial cost, maintenance, inflation, interest rate, and replacement costs also need to be considered when making an economic analysis.

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

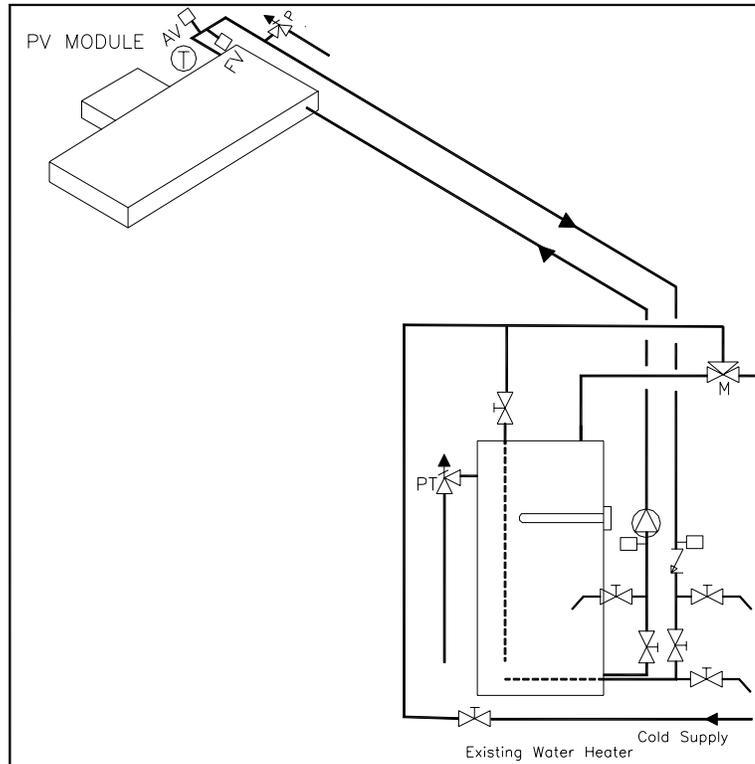
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 3
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -1.11 C (30 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200131C50	1999003A	5/24/2000	ACR Solar International	Fireball 2001	1.9	20.1			189	50	1.4



OG300 System Reference: 1999003A

March 2004

Certification must be renewed annually. For current status contact:
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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

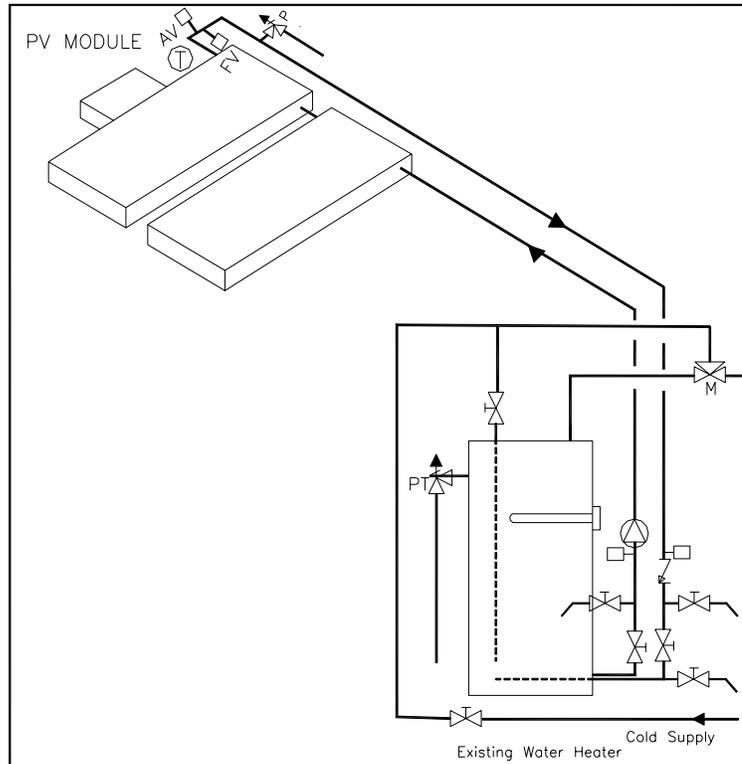
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 3
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -1.11 C (30 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200132C50	1999003B	5/24/2000	ACR Solar International	Fireball 2001	3.7	40.1			189	50	2.0



OG300 System Reference: 1999003B

March 2004

Certification must be renewed annually. For current status contact:
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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

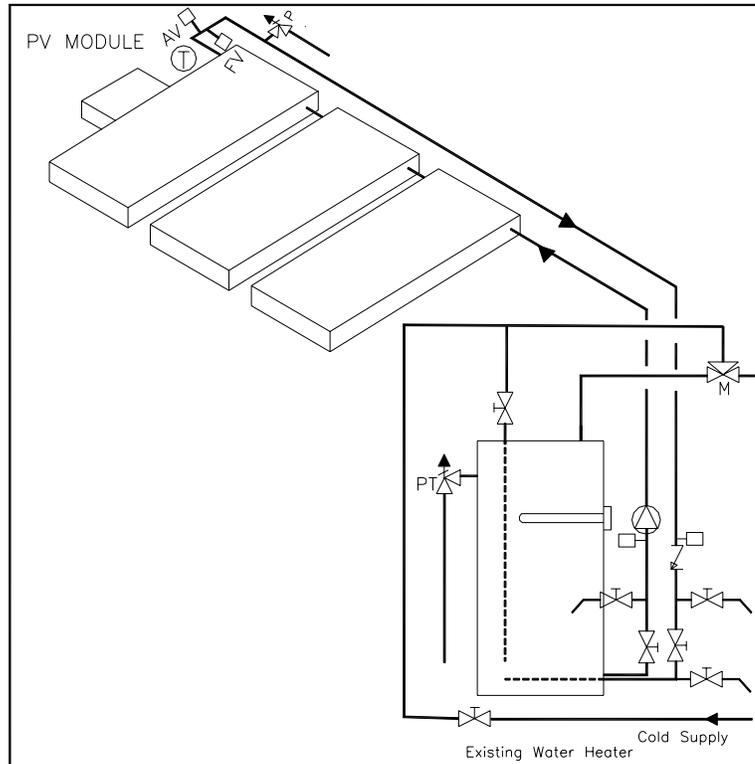
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 3
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -1.11 C (30 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200133C50	1999003D	5/24/2000	ACR Solar International	Fireball 2001	5.6	60.2			189	50	2.9
200133C80	1999003C	5/24/2000	ACR Solar International	Fireball 2001	5.6	60.2			303	80	2.9



OG300 System Reference: 1999003C

March 2004

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SYSTEMS CERTIFICATION AND
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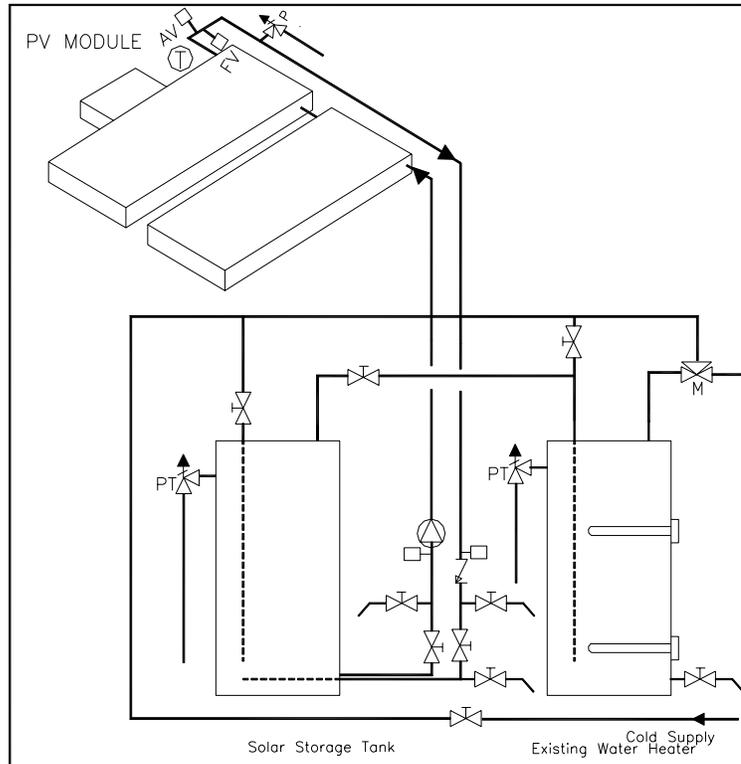
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 3
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -1.11 C (30 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200132C502TE	2002002A	12/9/2002	ACR Solar International	Fireball 2001	3.7	40.1	189	50	189	50	1.7



OG300 System Reference: 2002002A

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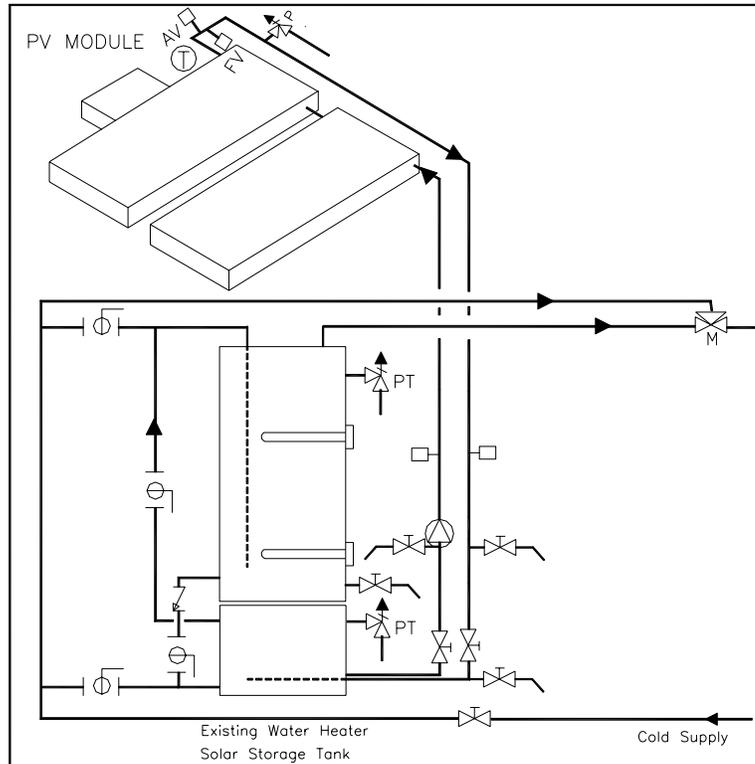
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 3
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -6.66 C (20 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200132C50T20E	2002004A	12/9/2002	ACR Solar International	Fireball 2001	3.7	40.1	76	20	189	50	1.7



OG300 System Reference: 2002004A

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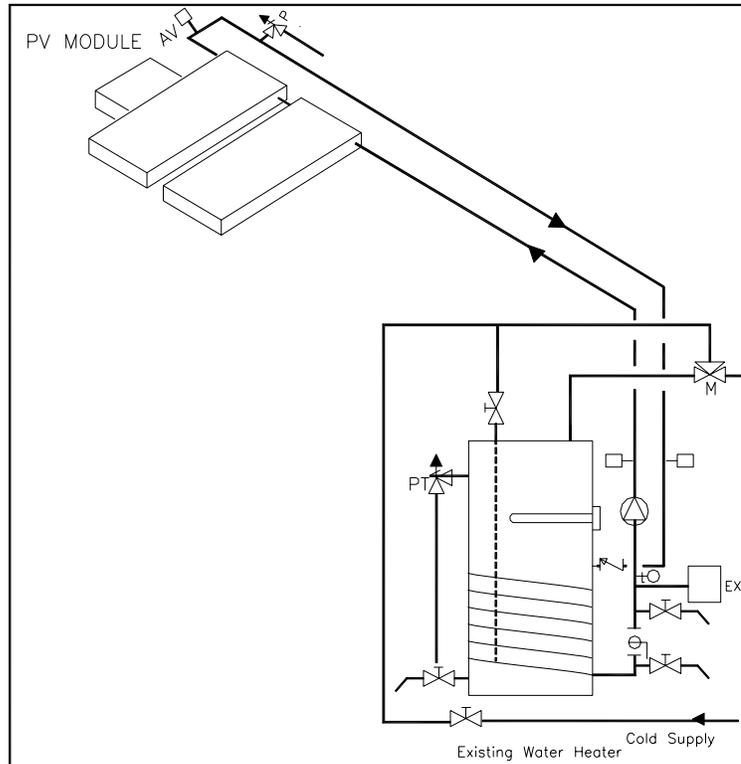
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 5
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -47.7 C (-54 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200152C80EX	2000007A	2/15/2001	ACR Solar International	Fireball 2001	3.7	40.1	303	80			1.7



OG300 System Reference: 2000007A

March 2004

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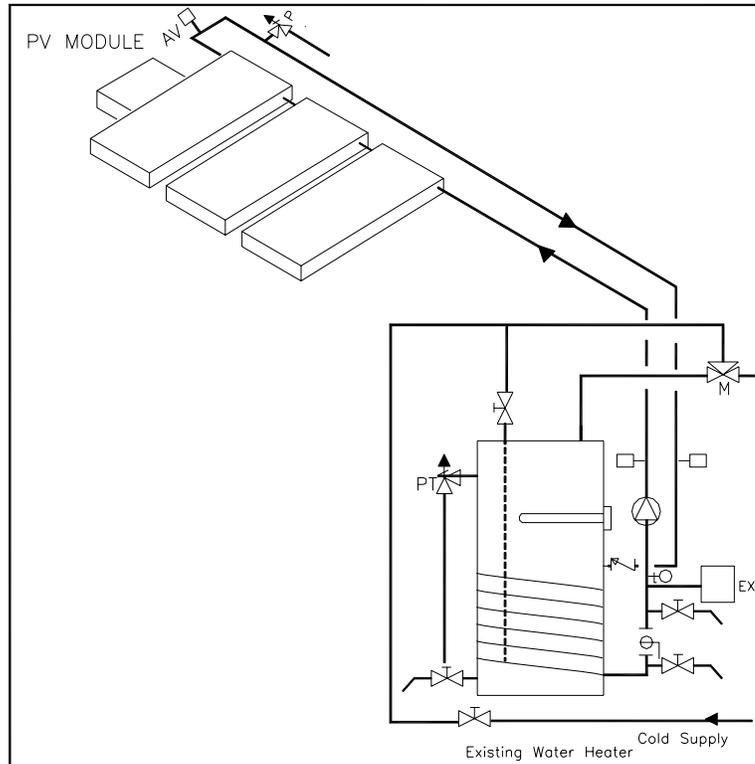
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 5
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -47.7 C (-54 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200153C80EX	2000007B	2/15/2001	ACR Solar International	Fireball 2001	5.6	60.2	303	80			2.0



OG300 System Reference: 2000007B

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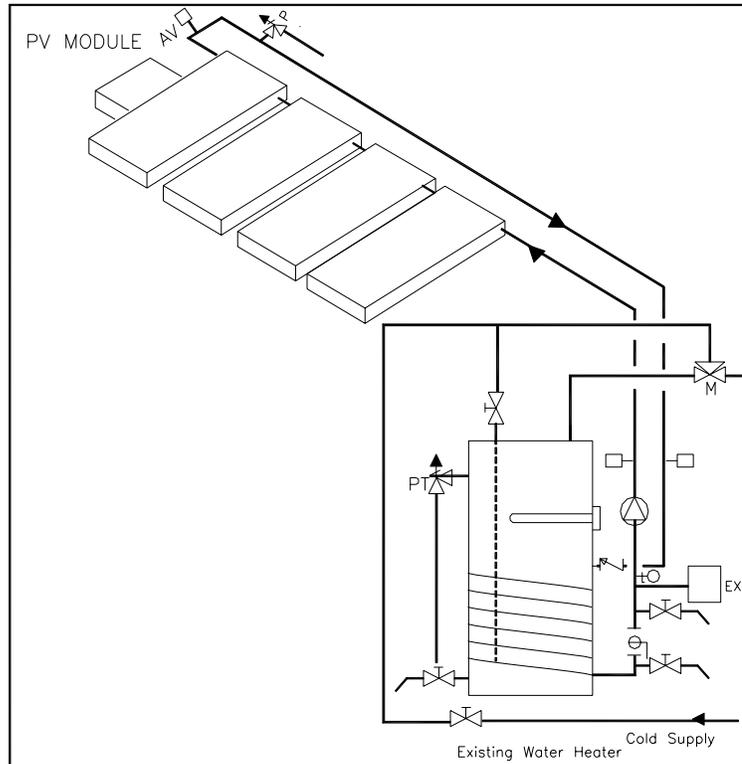
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 5
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -47.7 C (-54 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200154C80EX	2000007C	2/15/2001	ACR Solar International	Fireball 2001	7.5	80.3	303	80			2.5



OG300 System Reference: 2000007C

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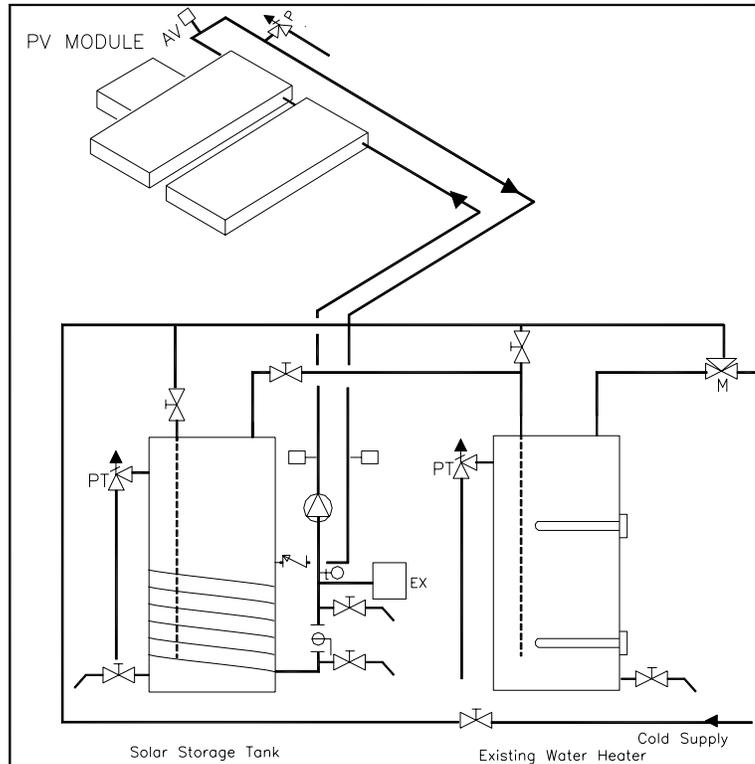
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 5
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -47.7 C (-54 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200152C80EX2TE	2002003A	12/9/2002	ACR Solar International	Fireball 2001	3.7	40.1	303	80	189	50	1.5
200153C80EX2TE	2002003B	12/9/2007	ACR Solar International	Fireball 2001	5.6	60.2	303	80	189	50	1.8



OG300 System Reference: 2002003A

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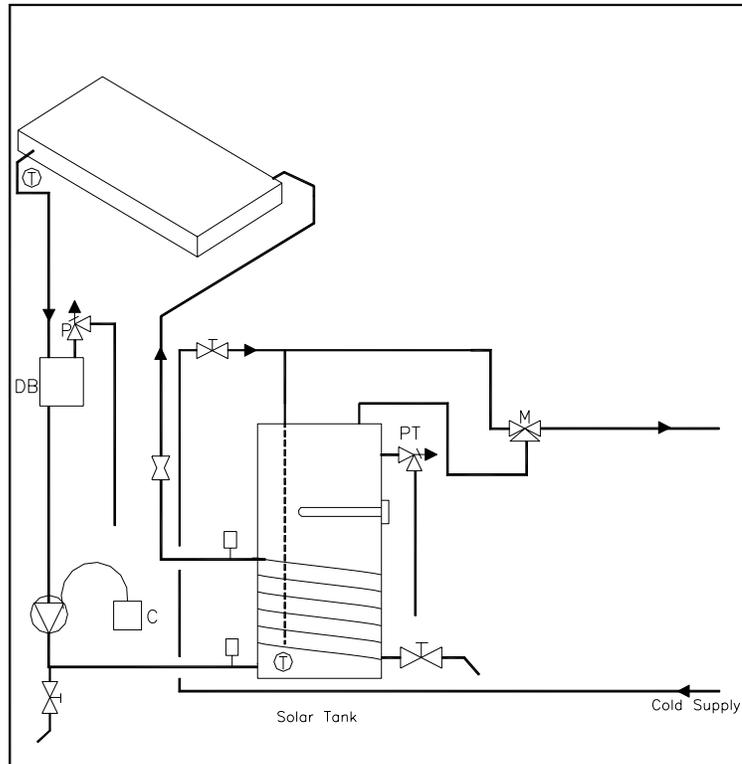
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Bobcat & Sun, Inc.
65548 76th St.
Bend, OR 97701
(541) 389-7365
(541) 317-9265 Fax

SYSTEM NAME: Sun-Pak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SP32CHE-1	1994004E	9/8/1994	Heliodyne, Inc.	Gobi 408	3.0	32.2	303	80			1.4
SP40CHE-1	1994004G	9/8/1994	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80			1.6



OG300 System Reference: 1994004A

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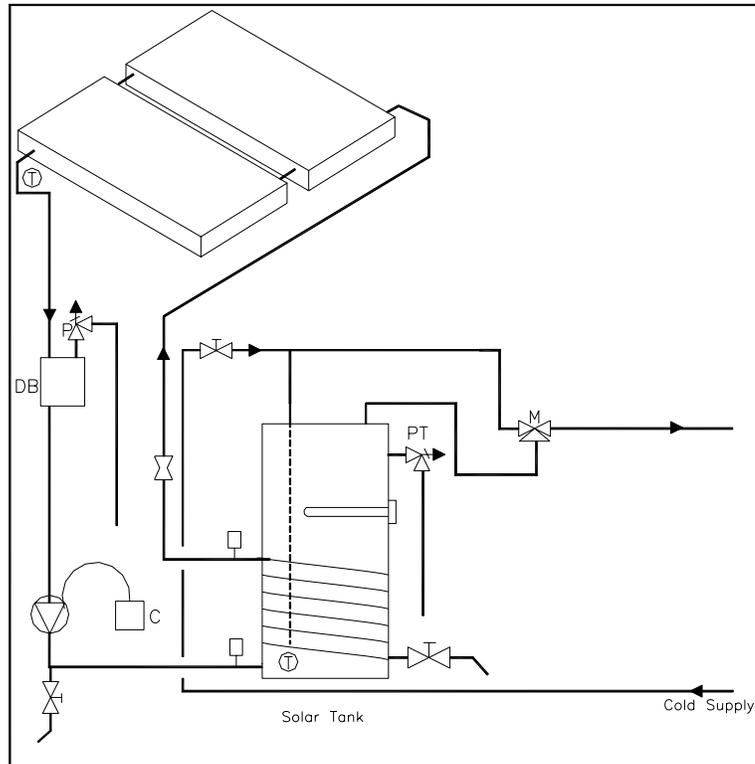
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Bobcat & Sun, Inc.
65548 76th St.
Bend, OR 97701
(541) 389-7365
(541) 317-9265 Fax

SYSTEM NAME: Sun-Pak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SP64CHE-1	1994004F	9/8/1994	Heliodyne, Inc.	Gobi 408	6.0	64.5	303	80			2.4
SP80CHE-1	1994004H	9/8/1994	Heliodyne, Inc.	Gobi 410	7.5	80.6	303	80			3.5



OG300 System Reference: 1994004B

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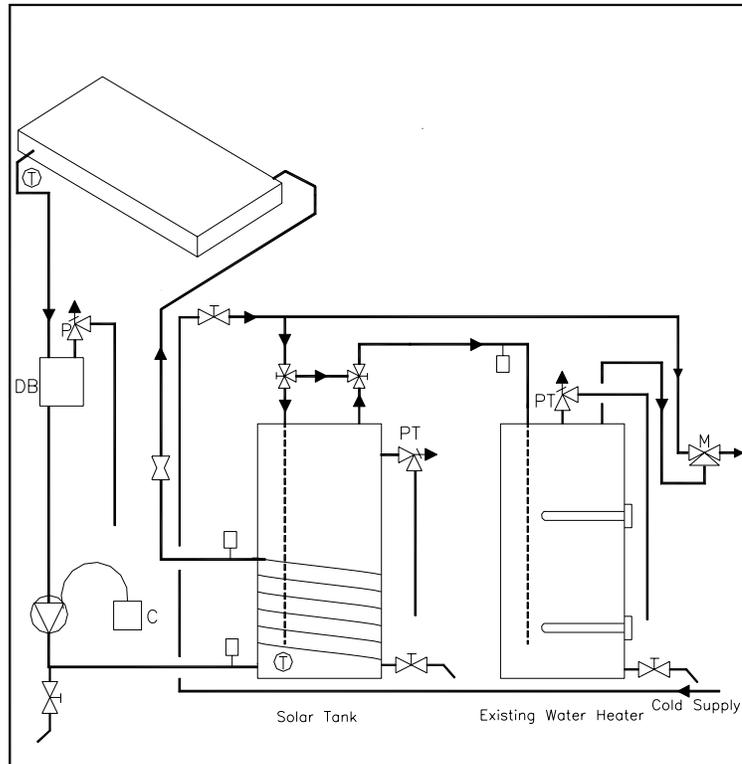
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Bobcat & Sun, Inc.
65548 76th St.
Bend, OR 97701
(541) 389-7365
(541) 317-9265 Fax

SYSTEM NAME: Sun-Pak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SP32CHE	1994005E	9/8/1994	Heliodyne, Inc.	Gobi 408	3.0	32.2	303	80	189	50	1.3
SP40CHE	1994005G	9/8/1994	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80	189	50	1.4



OG300 System Reference: 1994005A

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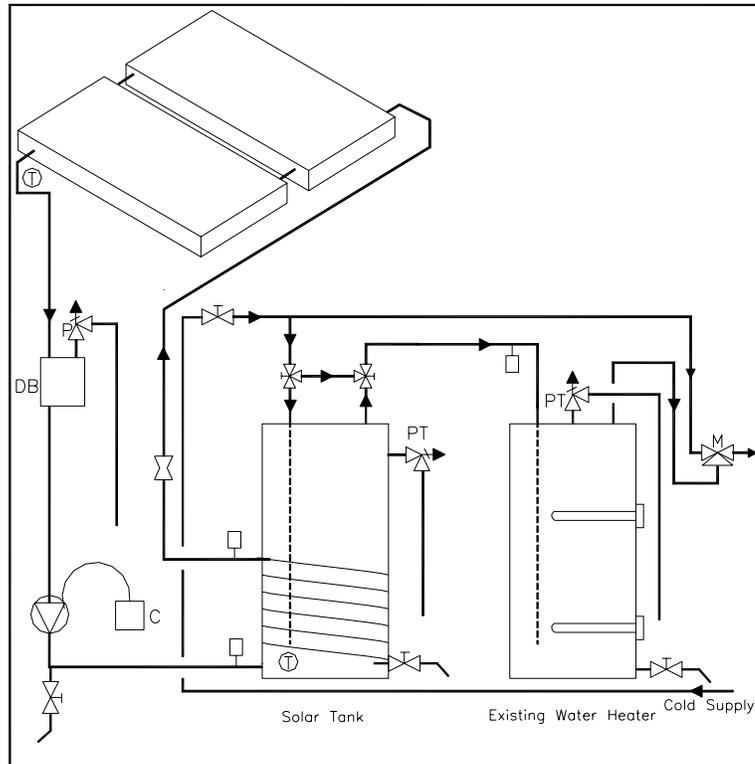
CERTIFIED SOLAR WATER HEATING SYSTEM

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Bend, OR 97701
(541) 389-7365
(541) 317-9265 Fax

SYSTEM NAME: Sun-Pak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SP64CHE	1994005F	9/8/1994	Heliodyne, Inc.	Gobi 408	6.0	64.5	303	80	189	50	1.9
SP80CHE	1994005H	9/8/1994	Heliodyne, Inc.	Gobi 410	7.5	80.6	303	80	189	50	2.4



OG300 System Reference: 1994005B

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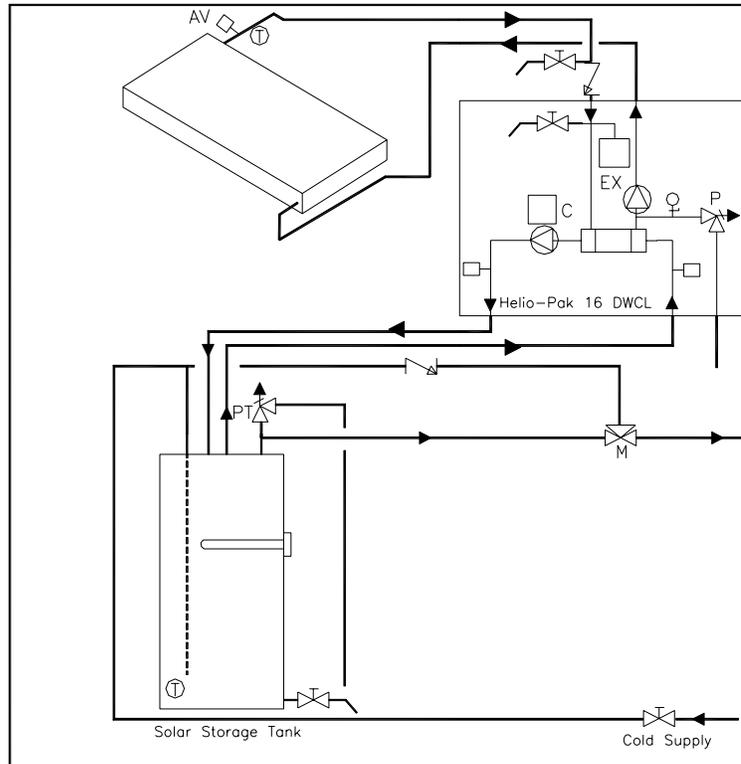
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 1 3366 G 50 ACS	1992010J	7/9/2001	Heliodyne, Inc.	Gobi 3366	2.5	26.8	189	50			1.6
16 DWCL HP 1 3366 G 80 ACS	1992010K	7/9/2001	Heliodyne, Inc.	Gobi 3366	2.5	26.8	303	80			1.5
16 DWCL HP 1 408 G 65 ACS	1992010A	10/1/1992	Heliodyne, Inc.	Gobi 408	3.0	32.2	246	65			1.7
16 DWCL HP 1 408 G 80 ACS	1992010N	7/9/2001	Heliodyne, Inc.	Gobi 408	3.0	32.2	303	80			1.7
16 DWCL HP 1 410 G 80 ACS	1992010B	10/1/1992	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80			2.0



OG300 System Reference: 1992010A

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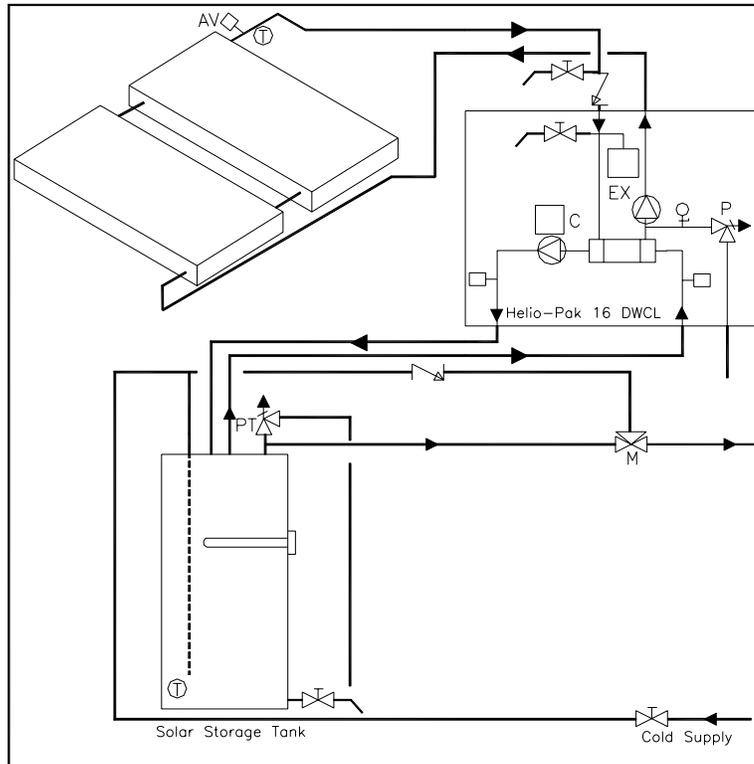
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 2 3366 G 120 ACS	1992010M	7/9/2001	Heliodyne, Inc.	Gobi 3366	5.0	53.6	454	120			2.3
16 DWCL HP 2 3366 G 80 ACS	1992010L	7/9/2001	Heliodyne, Inc.	Gobi 3366	5.0	53.6	303	80			2.6
16 DWCL HP 2 408 G 120 ACS	1992010C	10/1/1992	Heliodyne, Inc.	Gobi 408	6.0	64.5	454	120			3.7
16 DWCL HP 2 410 G 120 ACS	1992010O	7/9/2001	Heliodyne, Inc.	Gobi 410	7.5	80.6	454	120			11.5



OG300 System Reference: 1992010C

March 2004

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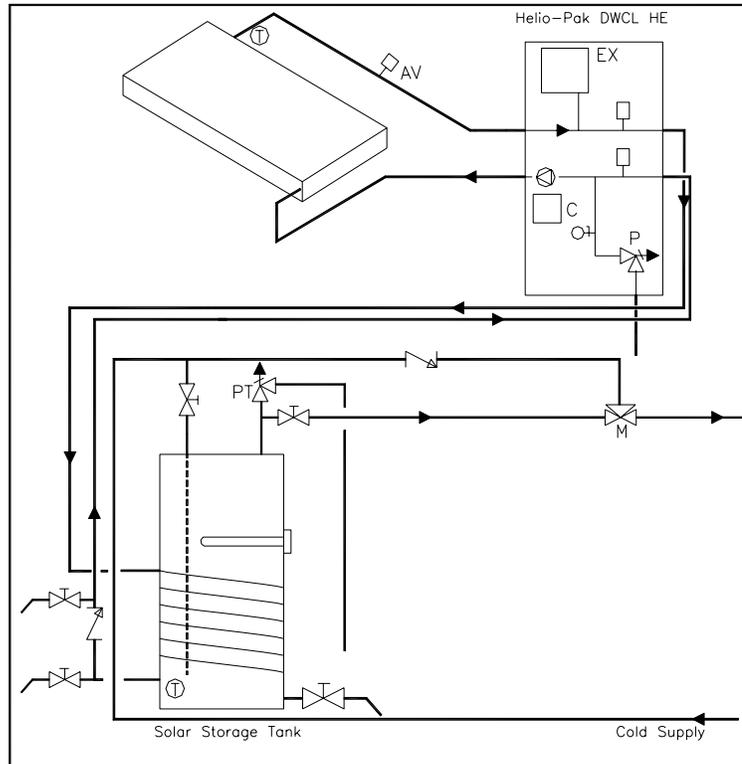
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
DWCL HE HP 1 308 G 80 ACS	1992010H	4/16/1998	Heliodyne, Inc.	Gobi 308	2.2	24.1	303	80			1.4
DWCL HE HP 1 3366 G 80 ACS	1992010I	7/9/2001	Heliodyne, Inc.	Gobi 3366	2.5	26.8	303	80			1.5
DWCL HE HP 1 408 G 80 ACS	1992010D	10/1/1992	Heliodyne, Inc.	Gobi 408	3.0	32.2	303	80			1.7
DWCL HE HP 1 410 G 80 ACS	1992010E	10/1/1992	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80			2.0



OG300 System Reference: 1992010D

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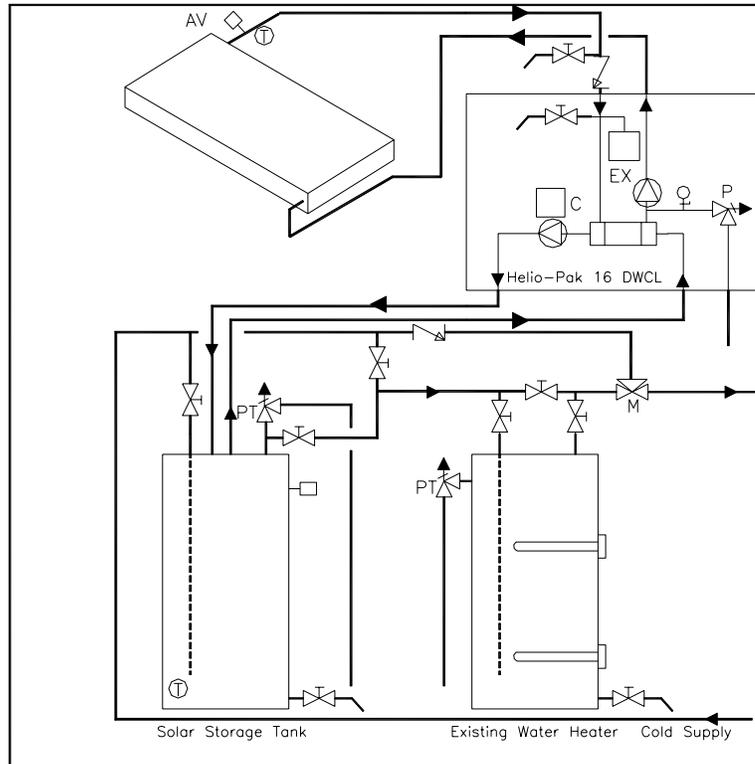
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 1 308 G 65 ACD	1992013E	4/16/1998	Heliodyne, Inc.	Gobi 308	2.2	24.1	246	65	189	50	1.3
16 DWCL HP 1 3366 G 80 ACD	1992013G	7/9/2001	Heliodyne, Inc.	Gobi 3366	2.5	26.8	303	80	189	50	1.3
16 DWCL HP 1 408 G 65 ACD	1992013F	4/16/1998	Heliodyne, Inc.	Gobi 408	3.0	32.2	246	65	189	50	1.5
16 DWCL HP 1 408 G 80 ACD	1992013I	7/9/2001	Heliodyne, Inc.	Gobi 408	3.0	32.2	303	80	189	50	1.5
16 DWCL HP 1 410 G 65 ACD	1992013A	10/1/1992	Heliodyne, Inc.	Gobi 410	3.7	40.3	246	65	189	50	1.7
16 DWCL HP 1 410 G 80 ACD	1992013J	7/9/2001	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80	189	50	1.7



OG300 System Reference: 1992013A

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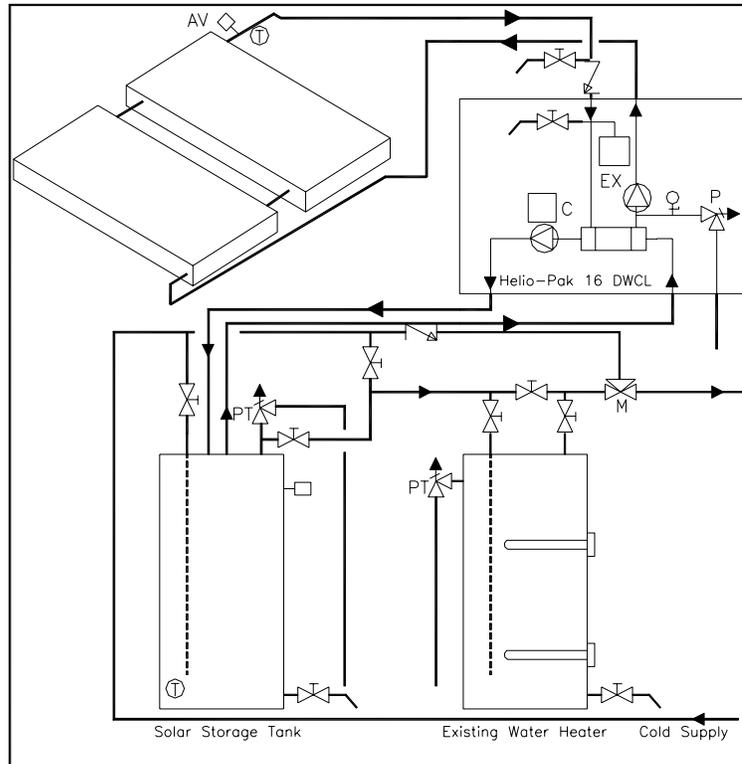
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 2 3366 G 80 ACD	1992013H	7/9/2001	Heliodyne, Inc.	Gobi 3366	5.0	53.6	303	80	189	50	2.0
16 DWCL HP 2 408 G 120 ACD	1992013C	10/1/1992	Heliodyne, Inc.	Gobi 408	6.0	64.5	454	120	189	50	2.4
16 DWCL HP 2 408 G 80 ACD	1992013B	10/1/1992	Heliodyne, Inc.	Gobi 408	6.0	64.5	303	80	189	50	2.5
16 DWCL HP 2 410 G 120 ACD	1992013D	10/1/1992	Heliodyne, Inc.	Gobi 410	7.5	80.6	454	120	189	50	3.3



OG300 System Reference: 1992013B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

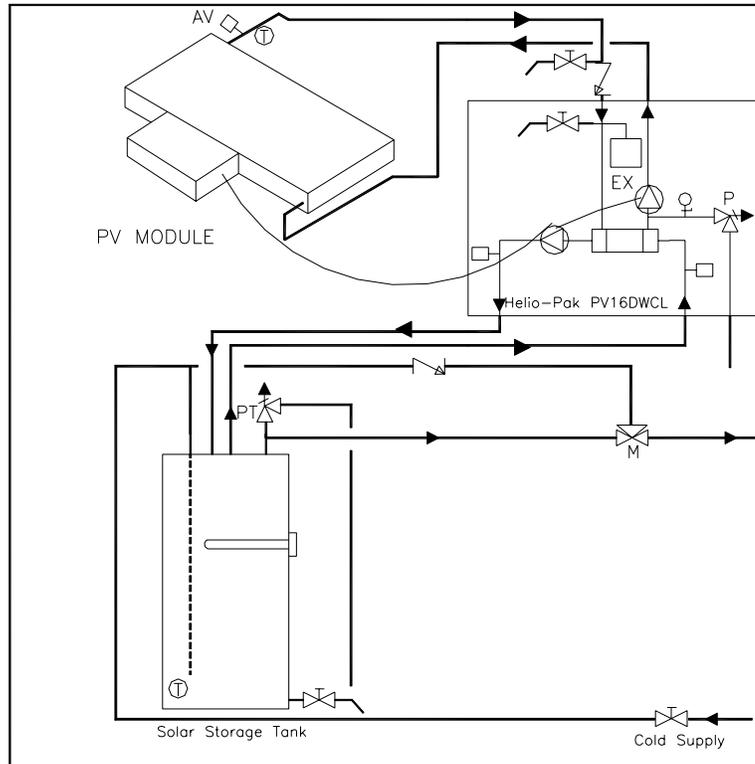
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 1 408 G 65 PVS	1996003C	7/15/1998	Heliodyne, Inc.	Gobi 408	3.0	32.2	246	65			1.8
16 DWCL HP 1 410 G 80 PVS	1996003A	12/10/1996	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80			2.1



OG300 System Reference: 1996003A

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SOLAR WATER HEATING
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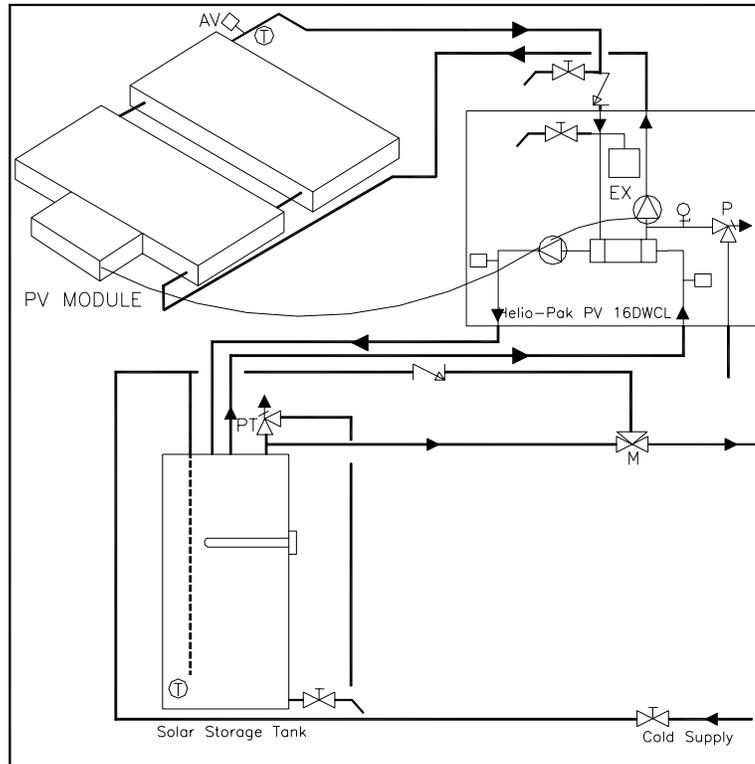
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 2 308 G 80 PVS	1996003B	12/10/1996	Heliodyne, Inc.	Gobi 308	4.5	48.2	303	80			2.4



OG300 System Reference: 1996003B

March 2004

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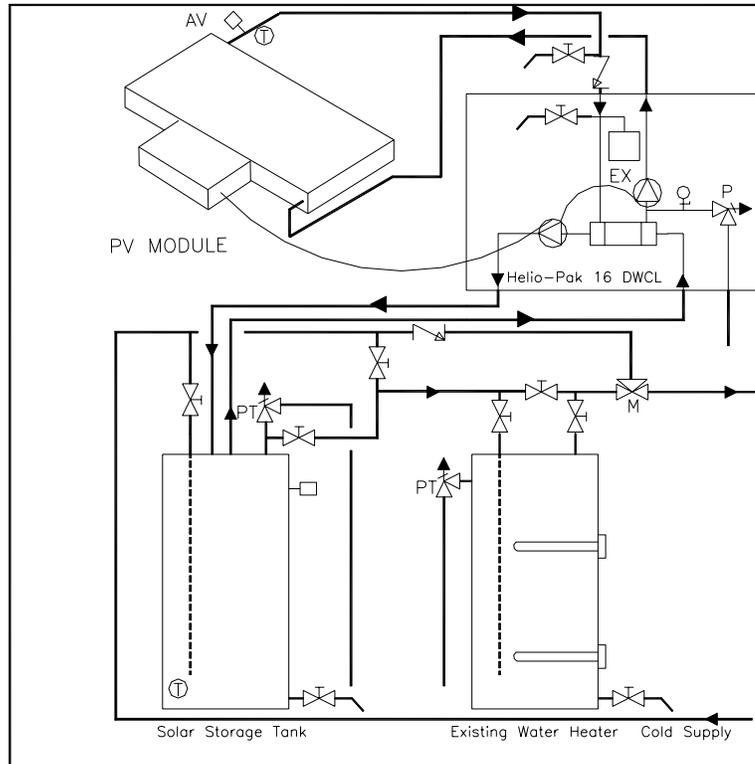
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 1 408 G 65 PVD	1996004C	7/15/1998	Heliodyne, Inc.	Gobi 408	3.0	32.2	246	65	189	50	1.5
16 DWCL HP 1 410 G 80 PVD	1996004A	12/10/1996	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80	189	50	1.7



OG300 System Reference: 1996004A

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SOLAR WATER HEATING
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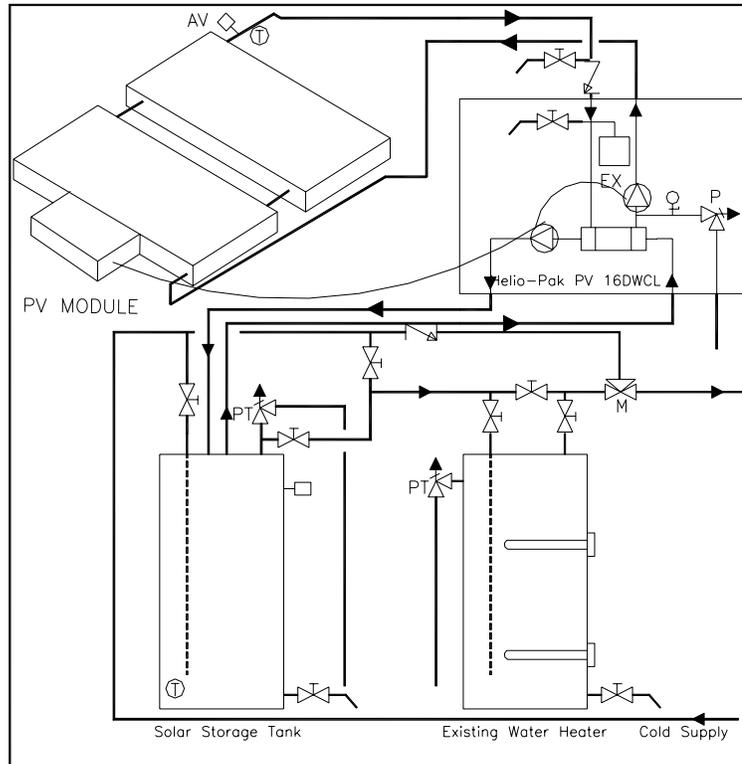
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 2 308 G 80 PVD	1996004B	12/10/1996	Heliodyne, Inc.	Gobi 308	4.5	48.2	303	80	189	50	1.9



OG300 System Reference: 1996004B

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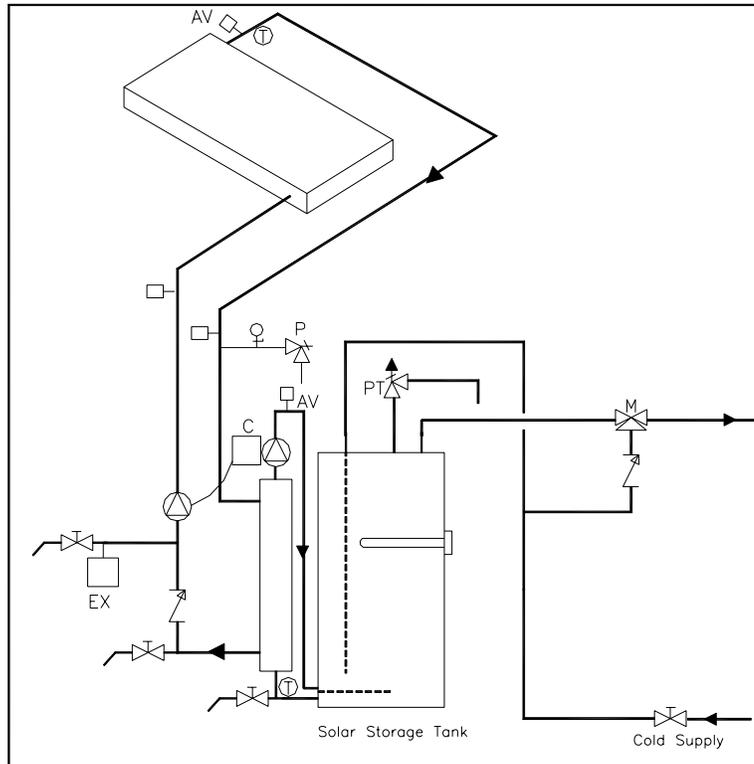
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: HP HELIX AC
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Shell and Tube Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
HP 1 408 GAC WAC 50 S	1999004A	2/18/2000	Heliodyne, Inc.	Gobi 408	3.0	32.2	189	50			1.8
HP 1 410 GAC WAC 80 S	1999004B	2/9/2000	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80			1.9



OG300 System Reference: 1999004A

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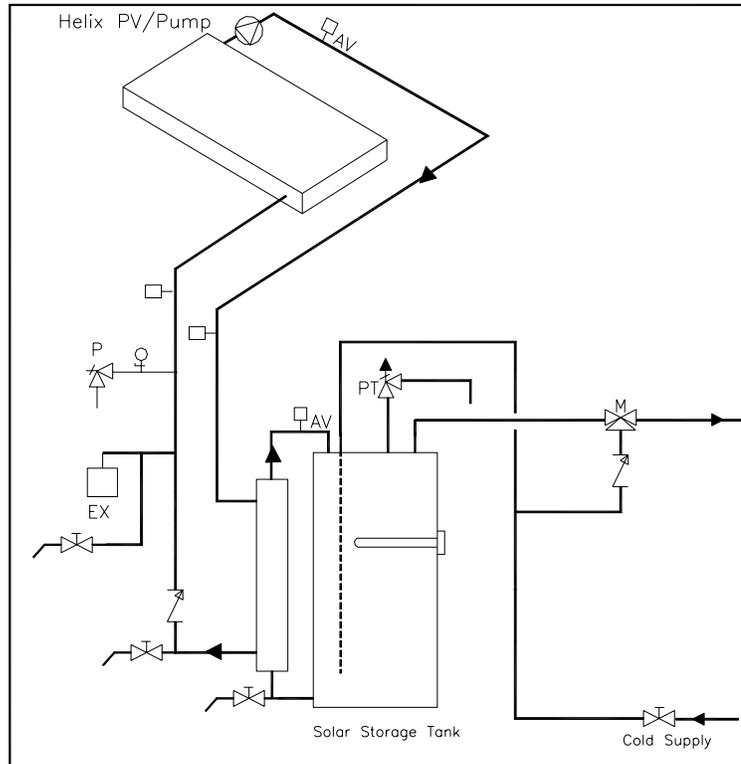
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: HP HELIX PV
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
HP HX 1 3366 G PV 50 S	1999005F	7/9/2001	Heliodyne, Inc.	Gobi 3366	2.5	26.8	189	50			1.4
HP HX 1 3366 G PV 80 S	1999005G	7/9/2001	Heliodyne, Inc.	Gobi 3366	2.5	26.8	303	80			1.3
HP HX 1 408 G PV 50 S	1999005A	3/1/2000	Heliodyne, Inc.	Gobi 408	3.0	32.2	189	50			1.5
HP HX 1 410 G PV 80 S	1999005B	3/1/2000	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80			1.5



OG300 System Reference: 1999005A

March 2004

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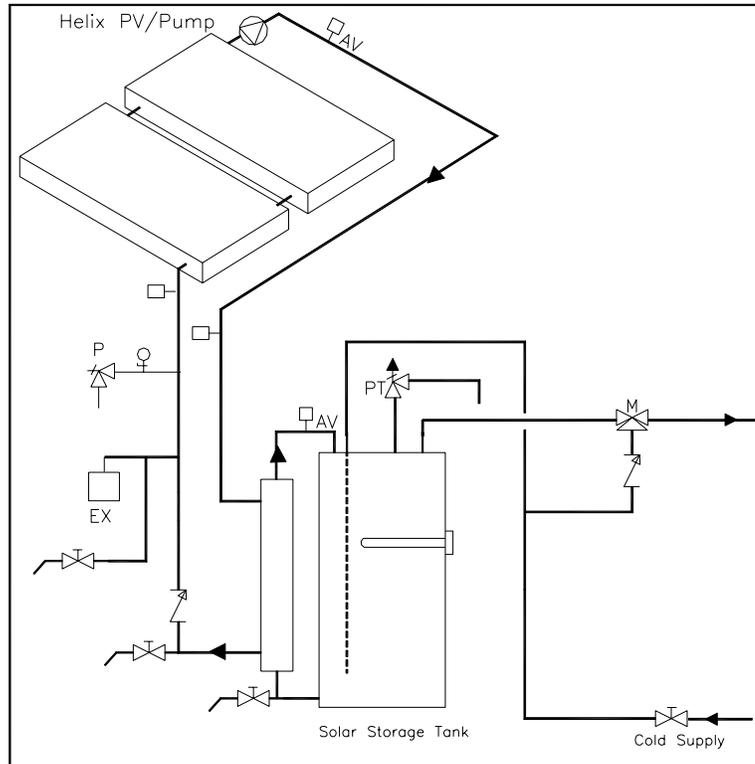
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: HP HELIX PV
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
HP HX 2 3366 G PV 120 S	1999005H	7/9/2001	Heliodyne, Inc.	Gobi 3366	5.0	53.6	454	120			1.8
HP HX 2 3366 G PV 80 S	1999005C	3/1/2000	Heliodyne, Inc.	Gobi 3366	5.0	53.6	303	80			1.8
HP HX 2 408 G PV 120 S	1999005D	3/1/2000	Heliodyne, Inc.	Gobi 408	6.0	64.5	454	120			2.1
HP HX 2 410 G PV 120 S	1999005E	3/1/2000	Heliodyne, Inc.	Gobi 410	7.5	80.6	454	120			2.8



OG300 System Reference: 1999005C

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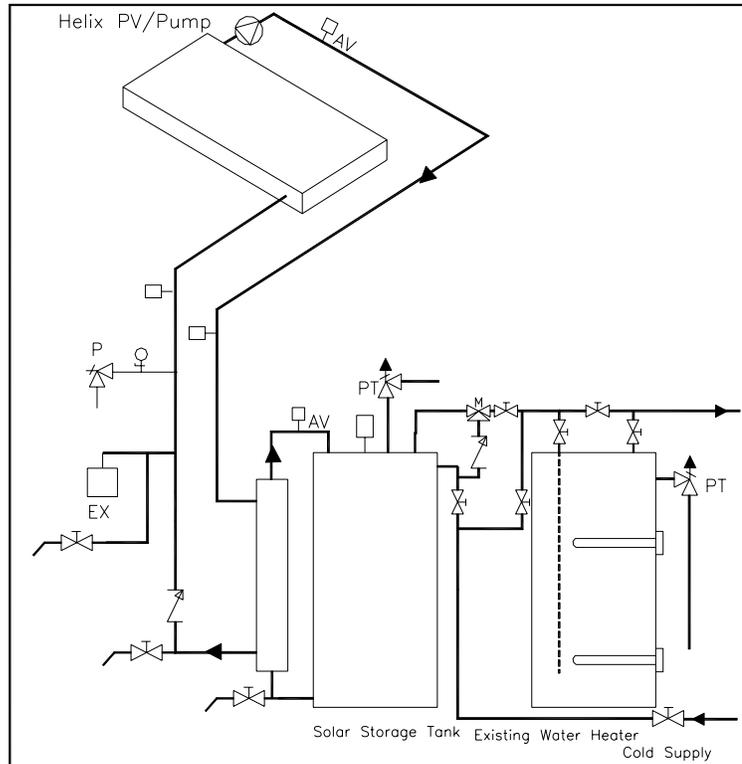
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: HP HELIX PV
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
HP HX 1 408 G PV 50 D	2000001A	3/1/2000	Heliodyne, Inc.	Gobi 408	3.0	32.2	189	50			1.6
HP HX 1 410 G PV 80 D	2000001B	3/1/2000	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80			1.9



OG300 System Reference: 2000001A

March 2004

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SOLAR WATER HEATING
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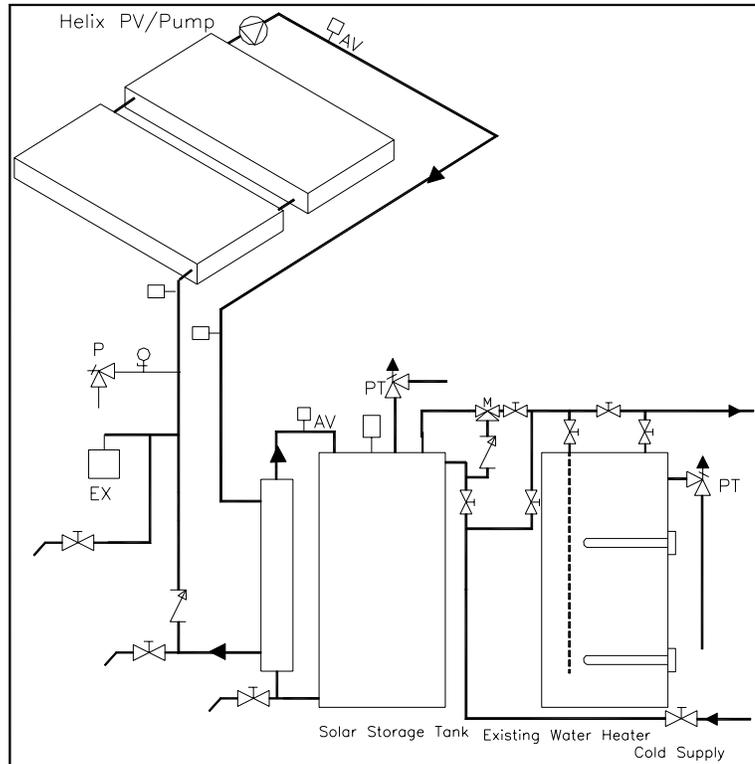
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: HP HELIX PV
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
HP HX 2 3366 G PV 80 D	2000001C	3/1/2000	Heliodyne, Inc.	Gobi 3366	5.0	53.6	303	80			2.2
HP HX 2 408 G PV 120 D	2000001D	3/1/2000	Heliodyne, Inc.	Gobi 408	6.0	64.5	454	120			2.6
HP HX 2 410 G PV 120 D	2000001E	3/1/2000	Heliodyne, Inc.	Gobi 410	7.5	80.6	454	120			3.4



OG300 System Reference: 2000001C

March 2004

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SOLAR WATER HEATING
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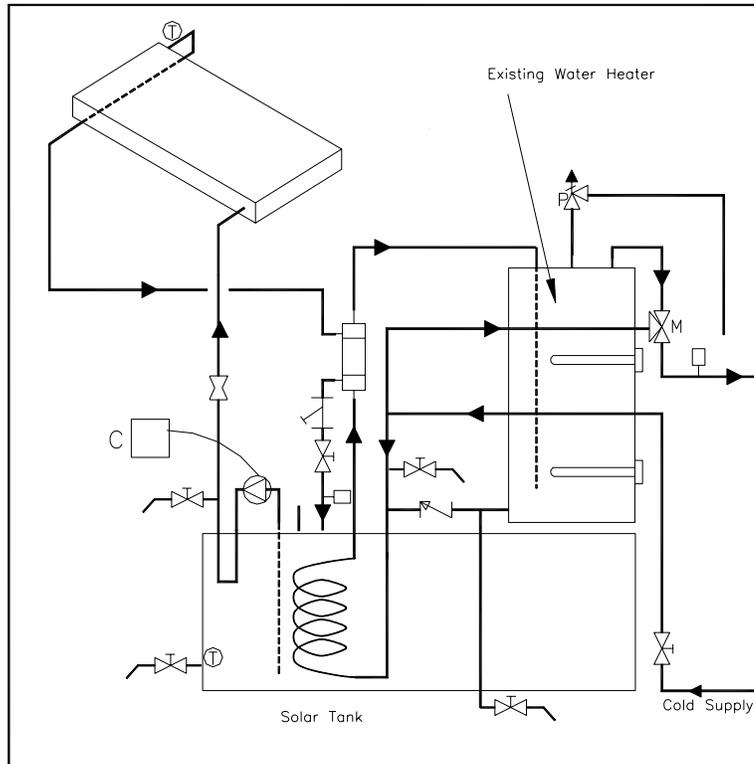
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Morley Manufacturing
P.O. Box 1540
Cedar Ridge, CA 95924
(530) 477-6527
(530) 477-0194/0195 Fax

SYSTEM NAME: High Sierra Drainback
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Shell and Tube Heat Exchanger with a Single Wall, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
HS60B/40	1992014A	12/9/1994	Heliodyne, Inc.	Gobi 410	3.7	40.3	227	60	189	50	1.6
HS60B/40	1992014A	12/9/1994	Radco Products, Inc.	410P-HP	3.7	39.9	227	60	189	50	1.6
HS60B/40	1992014A	12/9/1994	SunEarth, Inc.	EC-40	3.8	40.9	227	60	189	50	1.6



OG300 System Reference: 1992014A

March 2004

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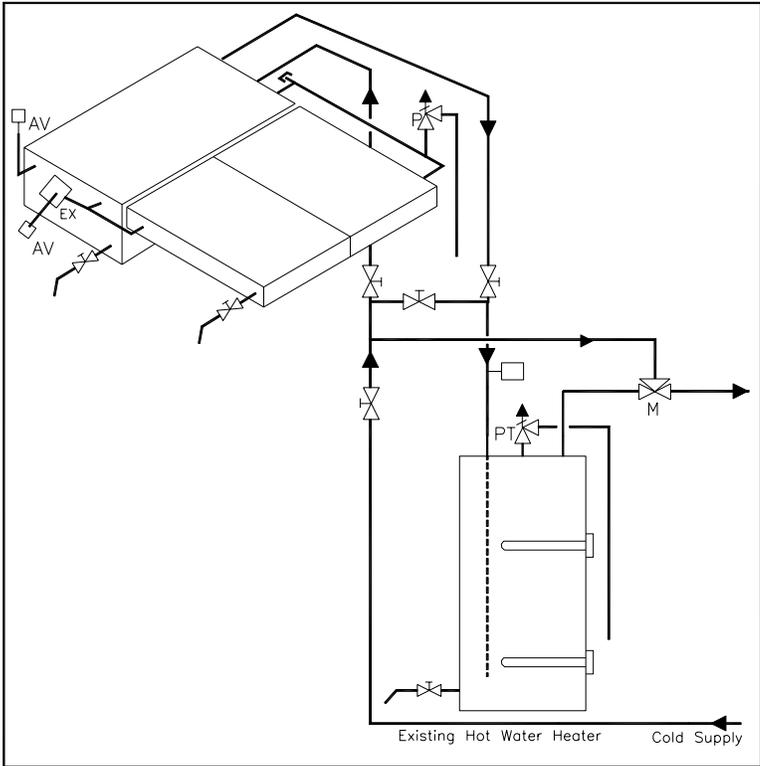
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Copper Santsation
SYSTEM TYPE: Indirect Thermosyphon

Description: Glazed Flat-Plate Collector, No Controller, Immersed Coil Heat Exchanger with a Single Wall, Immersed Coil Heat Exchanger, Fluid Class II, Freeze Tolerance: -8.33 C (17 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CSHX60	1994006A	2/27/1996	Radco Products, Inc.	308P-HP	4.4	47.4	227	60	189	50	1.3
CSHX80	1994006B	2/27/1996	Radco Products, Inc.	408P-HP	6.0	64.6	303	80	189	50	1.4



OG300 System Reference: 1994006A

March 2004

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SOLAR WATER HEATING
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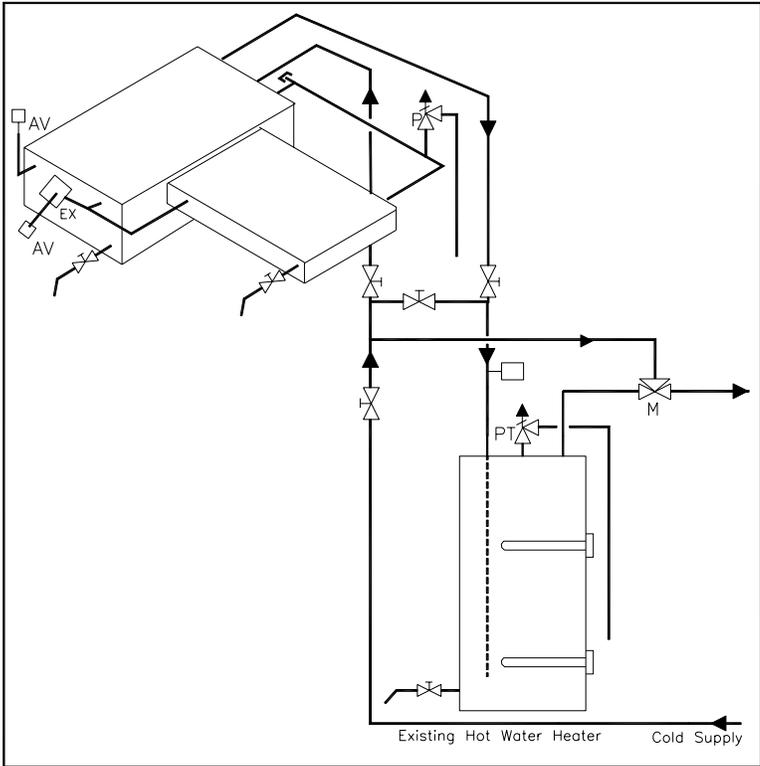
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Copper Satsation
SYSTEM TYPE: Indirect Thermosyphon

Description: Glazed Flat-Plate Collector, No Controller, Immersed Coil Heat Exchanger with a Single Wall, Immersed Coil Heat Exchanger, Fluid Class II, Freeze Tolerance: -8.33 C (17 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CSHX40	1994006D	3/4/1996	Radco Products, Inc.	408P-HP	3.0	32.3	151	40	189	50	1.2



OG300 System Reference: 1994006D

March 2004

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SOLAR WATER HEATING
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RATING



SRCC OG-300

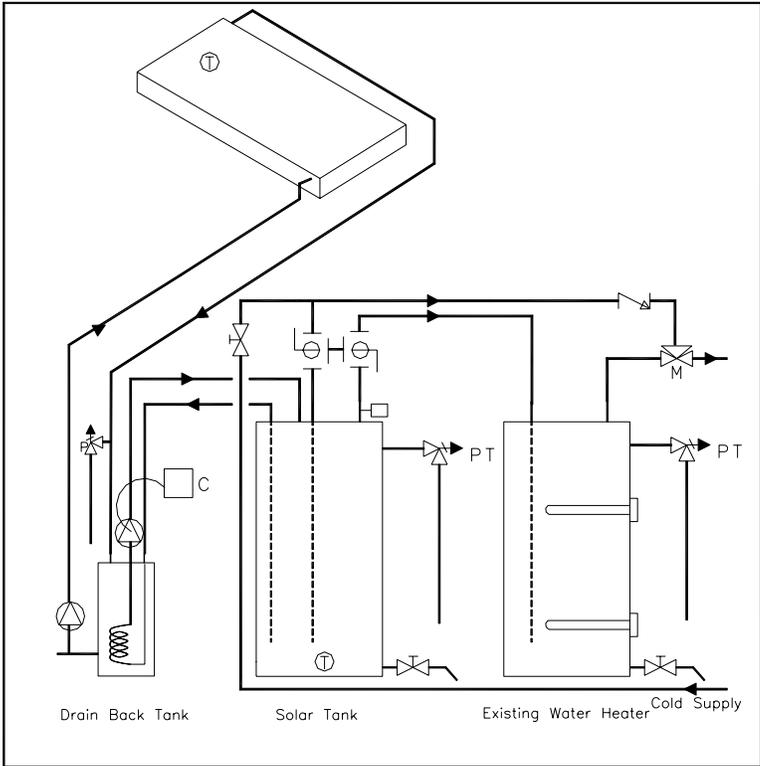
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Drainback Heat Exchanger
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Immersed Coil Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
R-DBHX-8-65-D-40P	1992007A	12/9/1994	Radco Products, Inc.	410P-HP	3.7	39.9	246	65	189	50	1.4



OG300 System Reference: 1992007A

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

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SOLAR WATER HEATING SYSTEMS CERTIFICATION AND RATING



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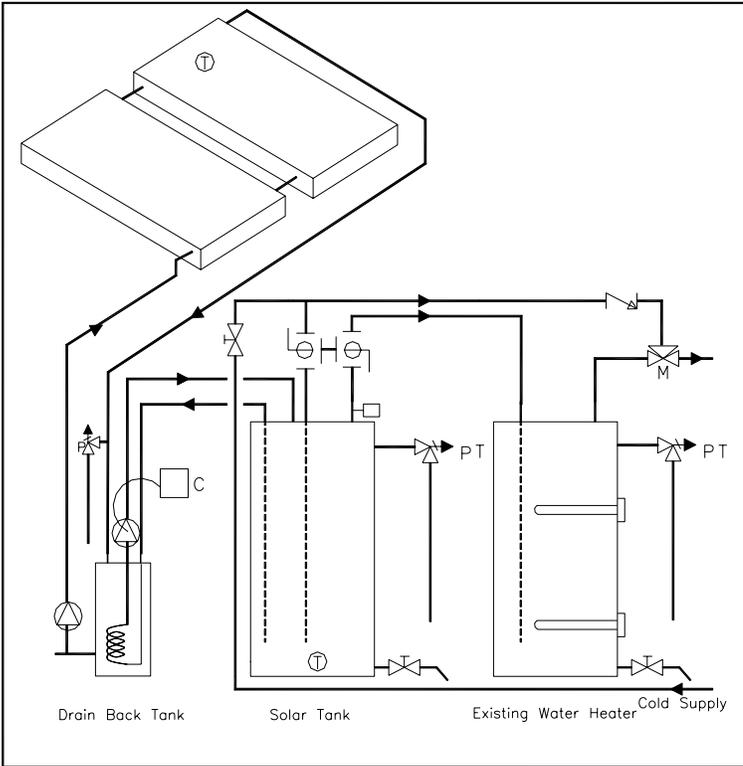
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
 2877 Industrial Parkway
 Santa Maria, CA 93455
 (805) 928-1881
 (805) 928-5587 Fax
 (800) 927-2326

SYSTEM NAME: Drainback Heat Exchanger
 SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Immersed Coil Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
R-DBHX-12-120-D-80P	1992007I	12/28/1994	Radco Products, Inc.	410P-HP	7.4	79.8	454	120	189	50	1.9
R-DBHX-8-80-D-64P	1992007C	12/9/1994	Radco Products, Inc.	408P-HP	6.0	64.6	303	80	189	50	1.7



OG300 System Reference: 1992007C

March 2004

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RATING



SRCC OG-300

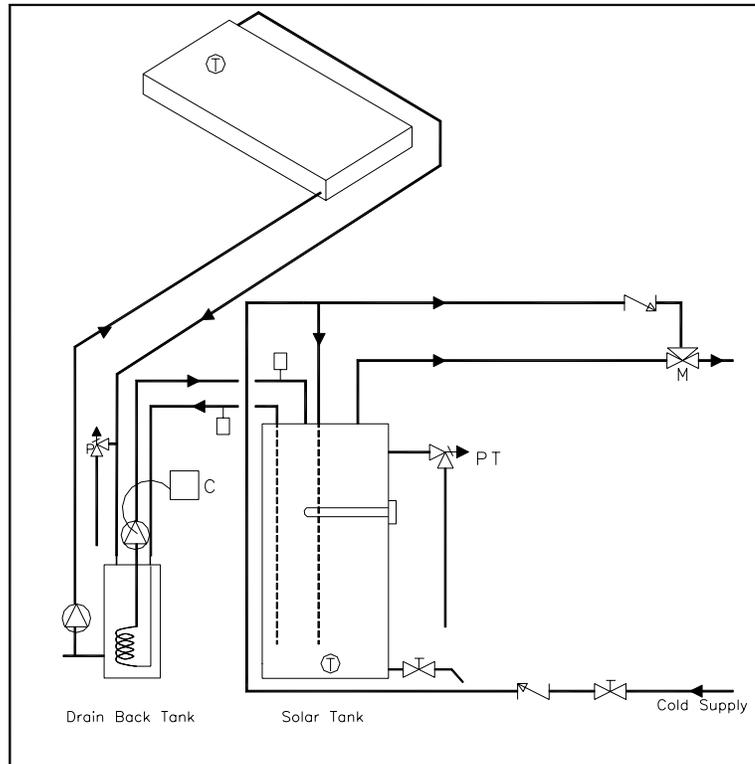
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Drainback Heat Exchanger
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Immersed Coil Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
R-DBHX-8-65S-40P	1994007A	12/28/1994	Radco Products, Inc.	410P-HP	3.7	39.9	246	65			1.6



OG300 System Reference: 1994007A

March 2004

Certification must be renewed annually. For current status contact:
SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

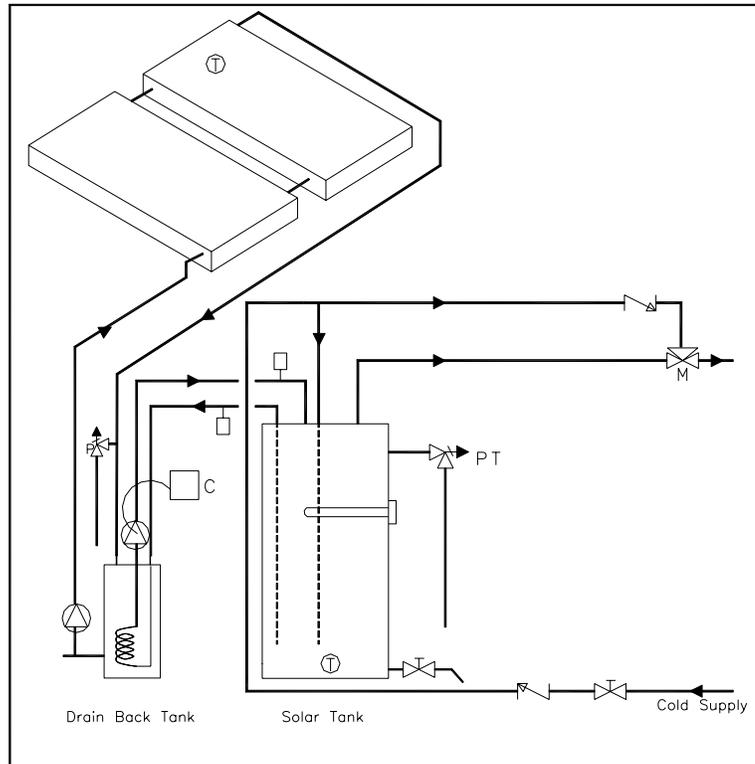
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Drainback Heat Exchanger
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Immersed Coil Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
R-DBHX-8-120S-80P	1994007C	12/28/1994	Radco Products, Inc.	410P-HP	7.4	79.8	454	120			2.2
R-DBHX-8-80S-64P	1994007B	12/28/1994	Radco Products, Inc.	408P-HP	6.0	64.6	303	80			2.1



OG300 System Reference: 1994007B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

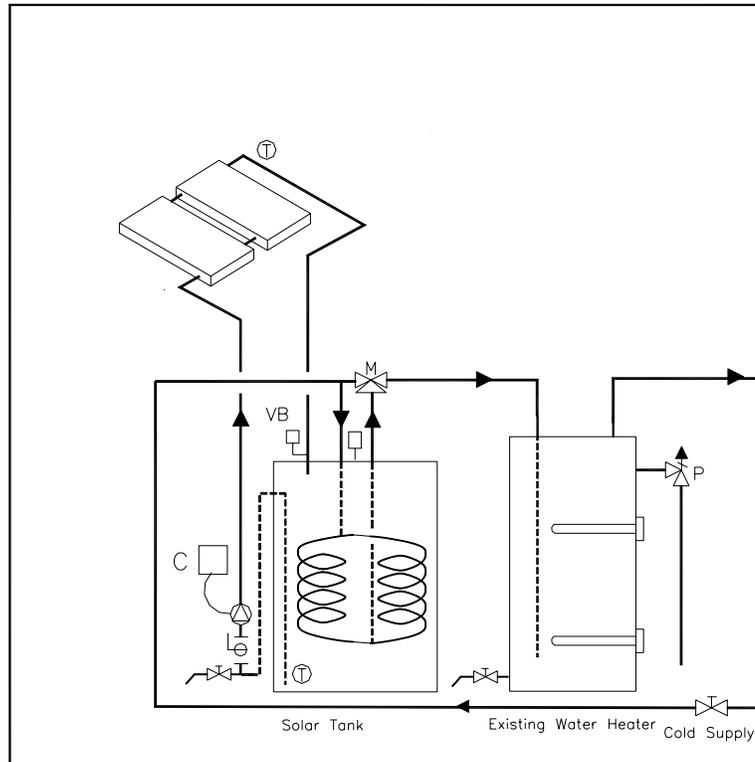
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-120-DHW-AC-ELEC	2001007A	7/2/2001	SunEarth, Inc.	SP-40	7.6	81.7	454	120	189	50	2.0



OG300 System Reference: 2001007A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

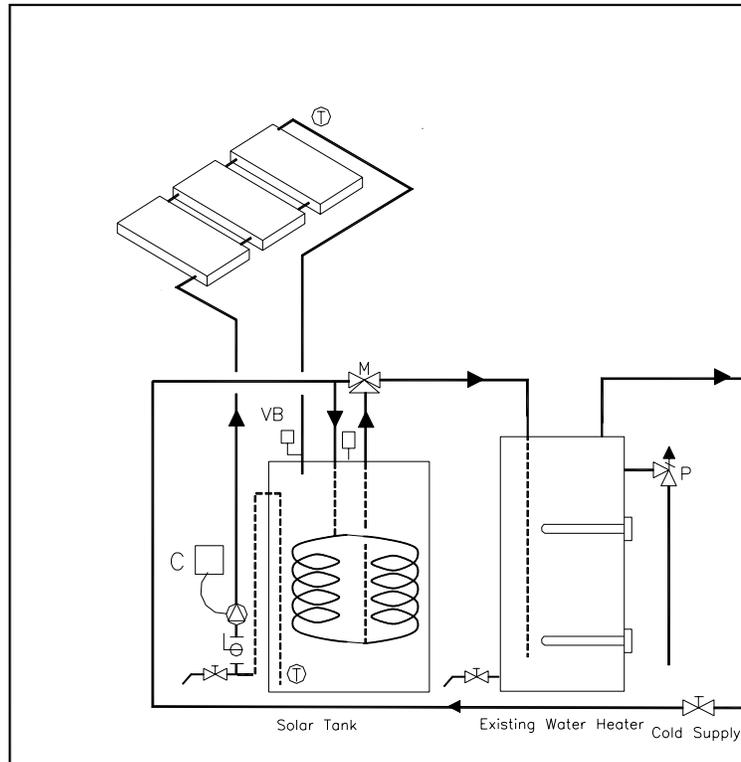
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-210-DHW-AC-ELEC	2001007B	7/2/2001	SunEarth, Inc.	SP-40	11.4	122.6	794	210	189	50	2.6



OG300 System Reference: 2001007B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

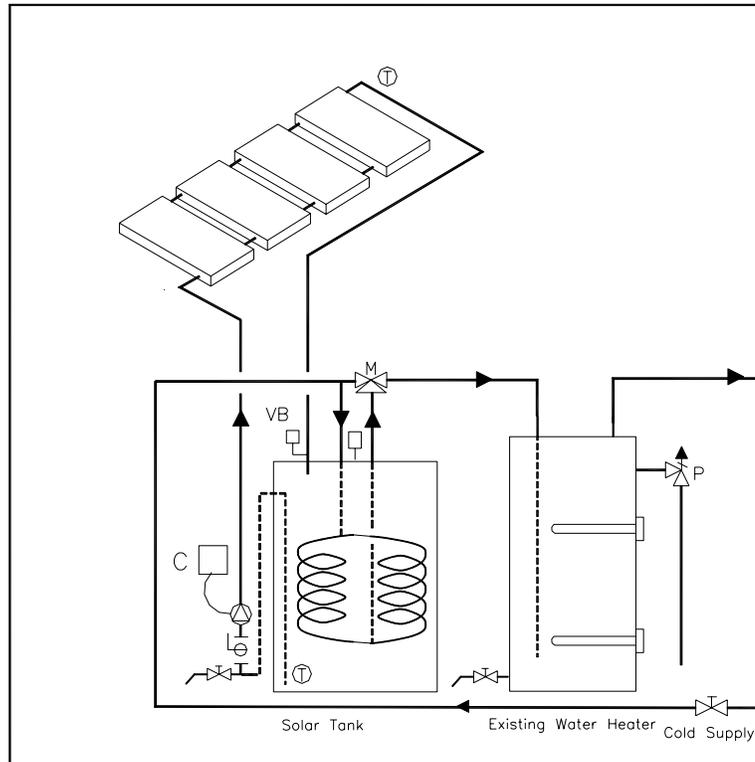
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-210-DHW-AC-SPA-ELEC	2001007C	7/2/2001	SunEarth, Inc.	SP-40	15.2	163.4	794	210	189	50	4.1



OG300 System Reference: 2001007C

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



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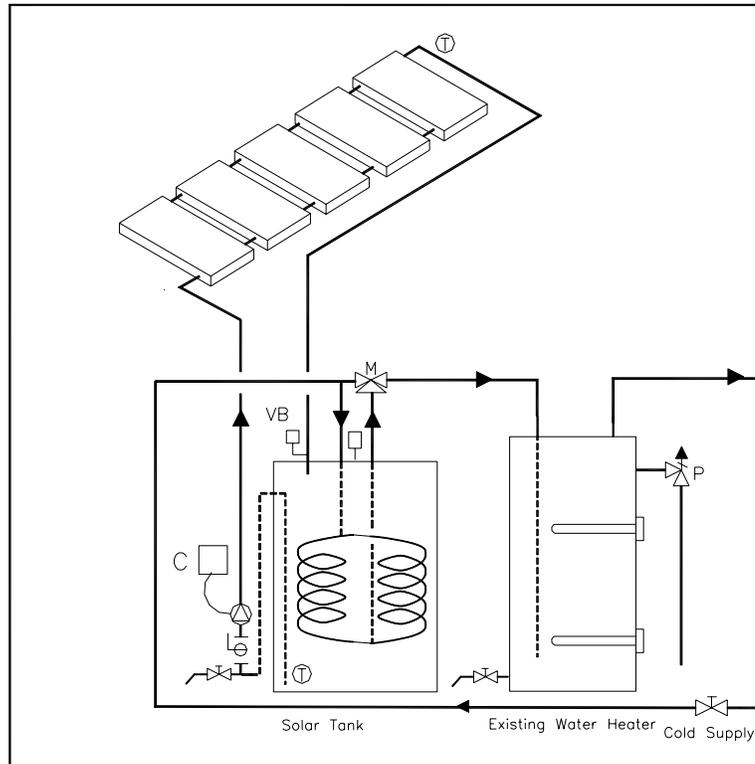
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-320-DHW-AC-ELEC	2001007D	7/2/2001	SunEarth, Inc.	SP-40	19.0	204.3	1211	320	189	50	5.1



OG300 System Reference: 2001007D

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
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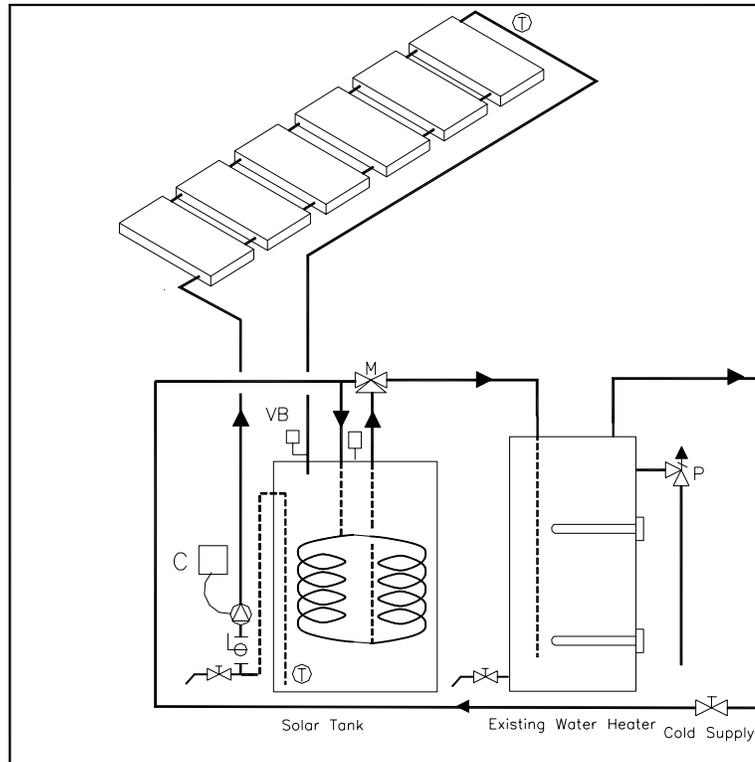
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-320-DHW-AC-SPA-ELEC	2001007E	7/2/2001	SunEarth, Inc.	SP-40	22.8	245.1	1211	320	189	50	5.8



OG300 System Reference: 2001007E

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
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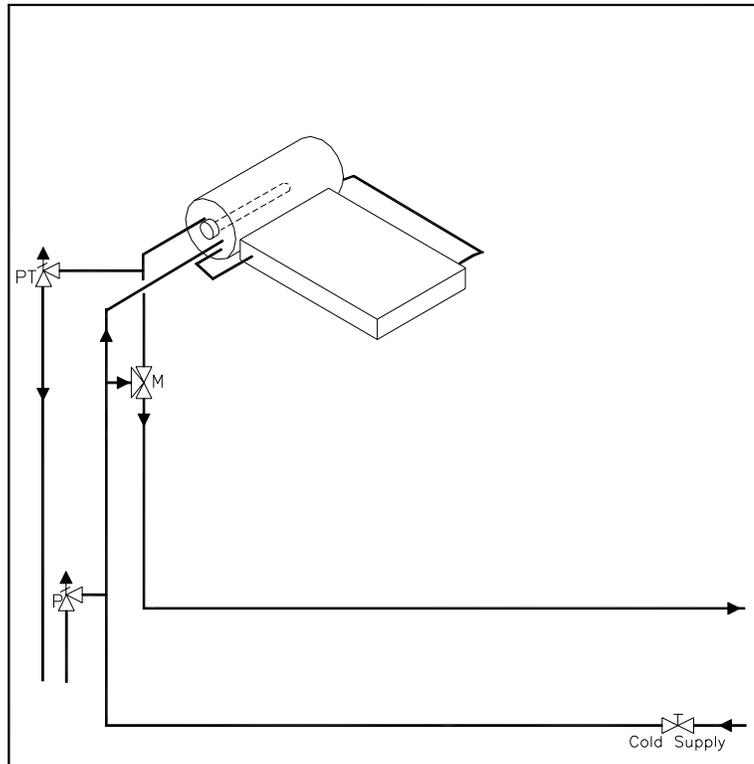
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: 5 C (41 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
181L	2001009A	3/28/2003	Solahart Industries	L	2.0	21.3	174	46			1.4



OG300 System Reference: 2001009A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
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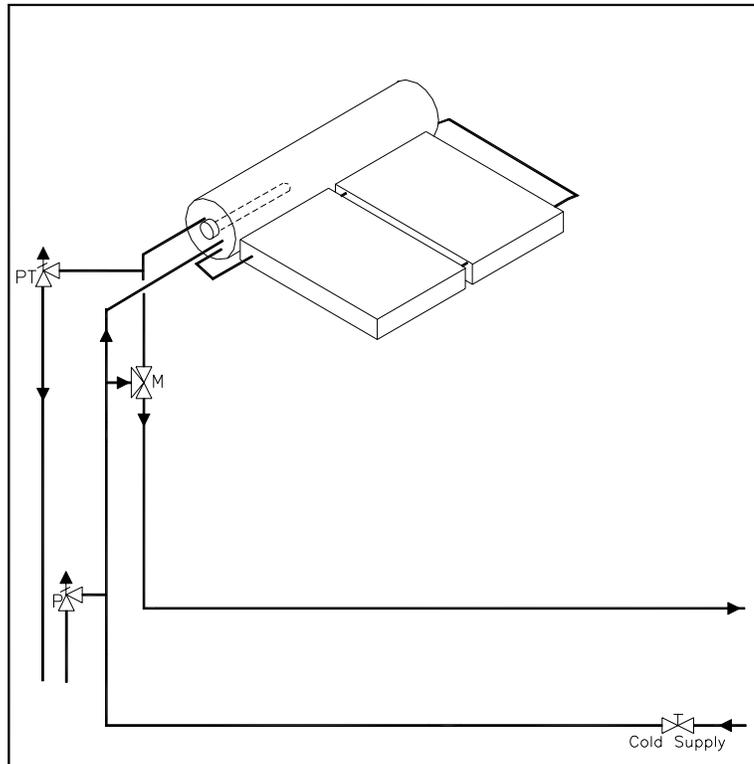
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: 5 C (41 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
302L	2001009B	3/28/2003	Solahart Industries	L	4.0	42.7	291	77			1.6



OG300 System Reference: 2001009B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



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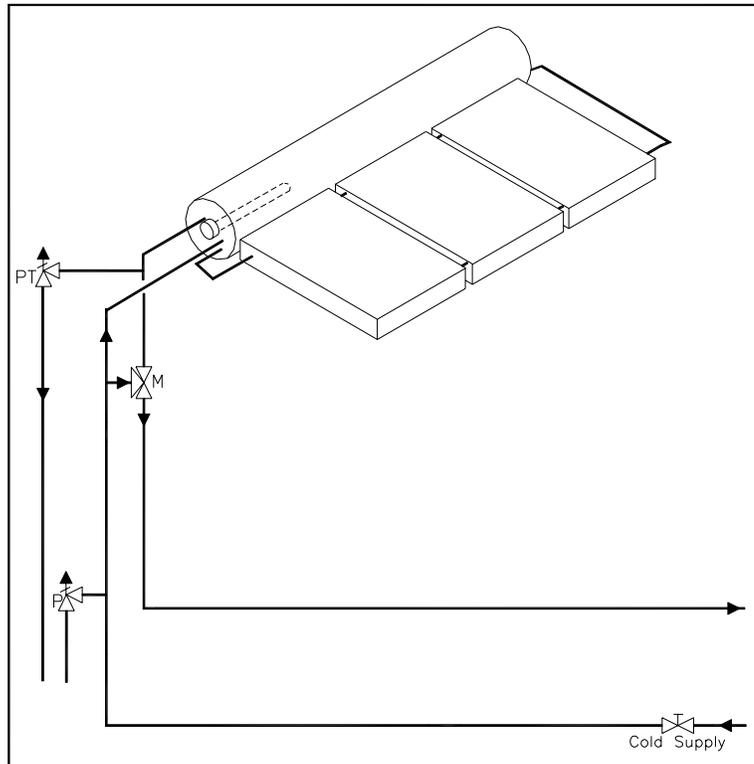
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: 5 C (41 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
303L	2001009C	3/28/2003	Solahart Industries	L	5.9	64.0	291	77			2.1
443L	2001009D	3/28/2003	Solahart Industries	L	5.9	64.0	427	113			1.8



OG300 System Reference: 2001009C

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

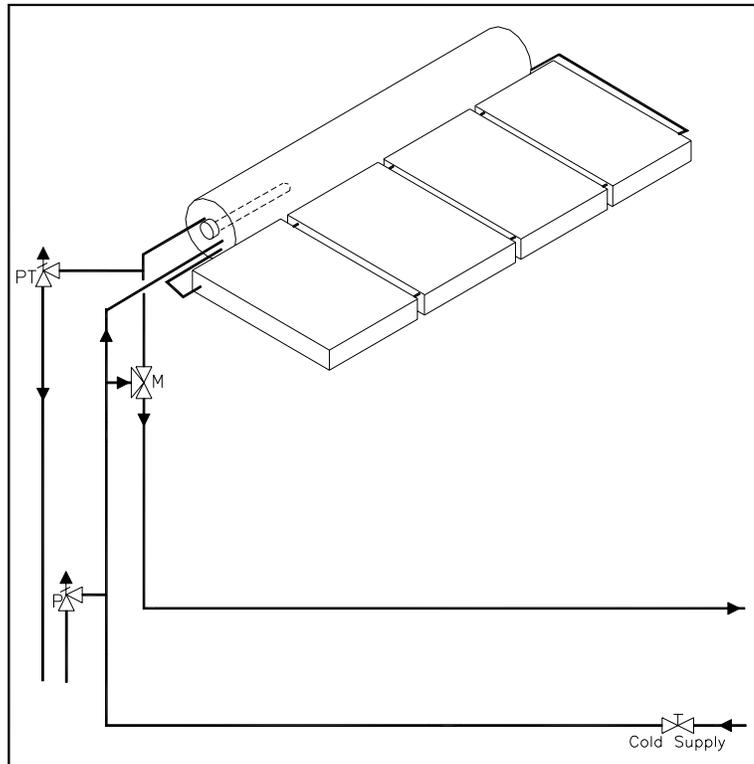
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: 5 C (41 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
444L	2001009E	3/28/2003	Solahart Industries	L	7.9	85.4	427	113			2.3



OG300 System Reference: 2001009E

March 2004

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SOLAR WATER HEATING
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RATING



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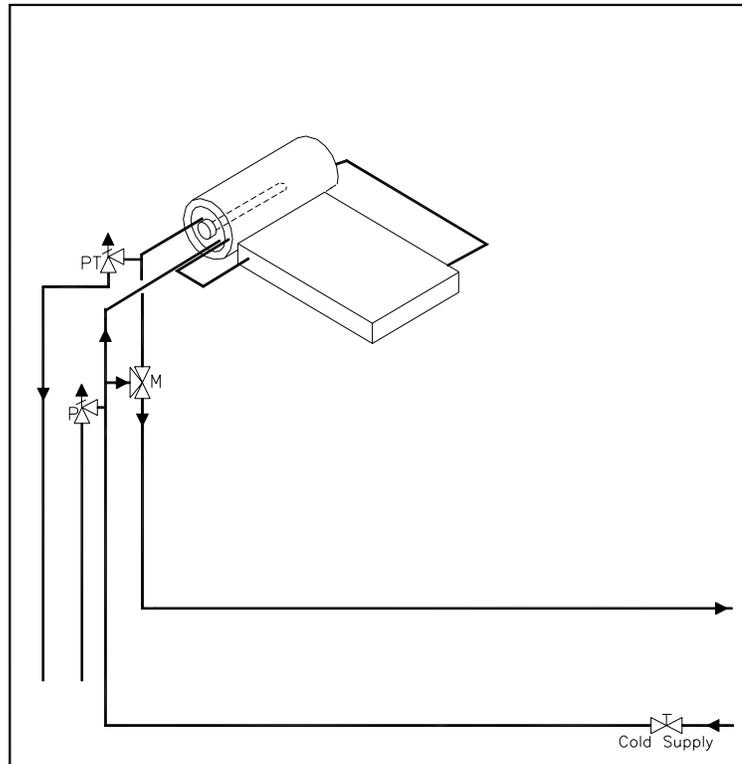
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
181J & 181J Free Heat	2001010A	3/28/2003	Solahart Industries	J	2.0	21.3	174	46			1.3



OG300 System Reference: 2001010A

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

SOLAR WATER HEATING
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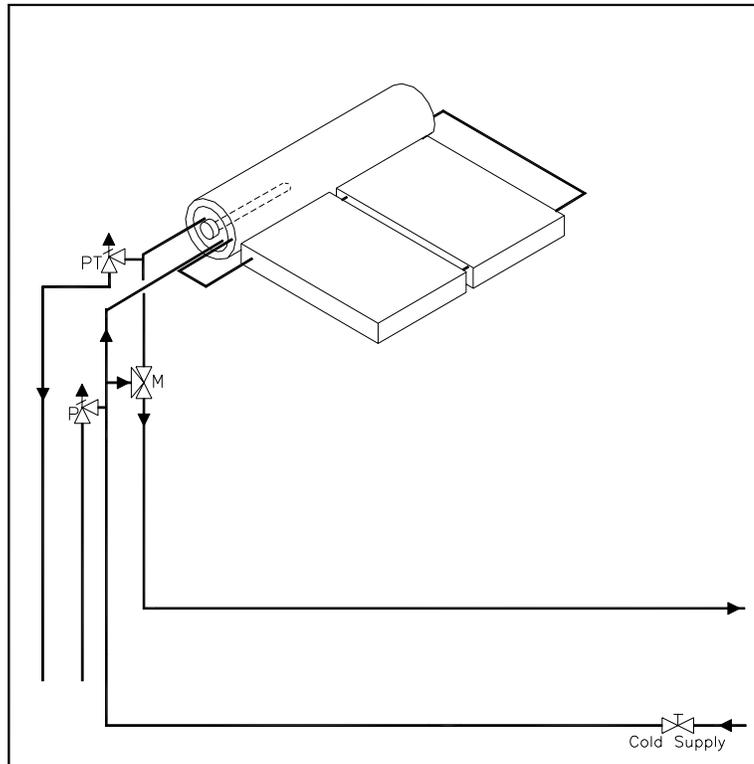
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
182J & 182J Free Heat	2001010B	3/28/2003	Solahart Industries	J	4.0	42.7	174	46			1.7
302J & 302J Free Heat	2001010C	3/28/2003	Solahart Industries	J	4.0	42.7	291	77			1.5
302JXII	2001010D	3/28/2003	Solahart Industries	J	4.0	42.7	291	77			1.5



OG300 System Reference: 2001010B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

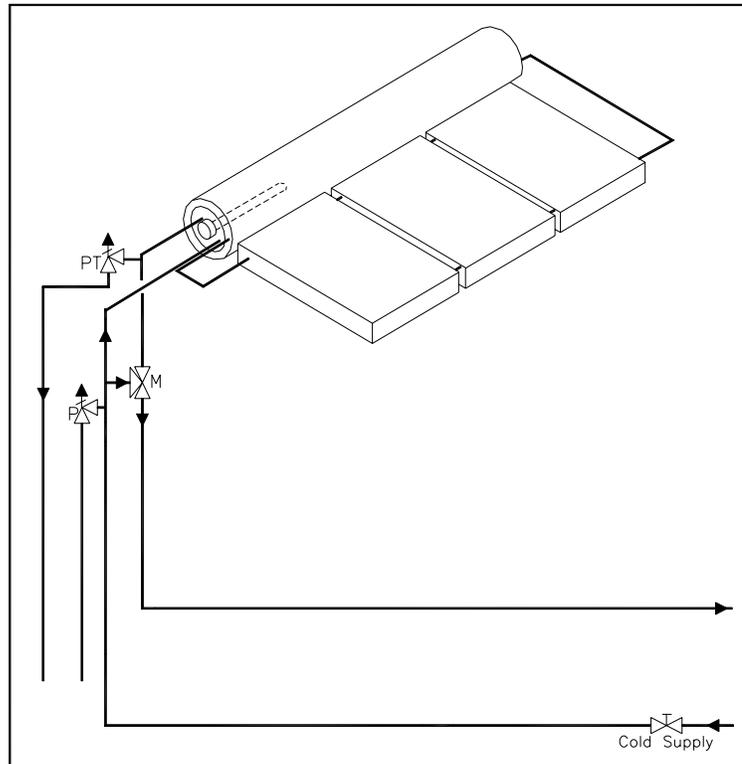
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
303J & 303J Free Heat	2001010E	3/28/2003	Solahart Industries	J	5.9	64.0	291	77			1.8
303JXII	2001010F	3/28/2003	Solahart Industries	J	5.9	64.0	291	77			1.8
443J & 443J Free Heat	2001010G	3/28/2003	Solahart Industries	J	5.9	64.0	427	113			1.6
443JXII	2001010H	3/28/2003	Solahart Industries	J	5.9	64.0	427	113			1.6



OG300 System Reference: 2001010E

March 2004

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SOLAR WATER HEATING
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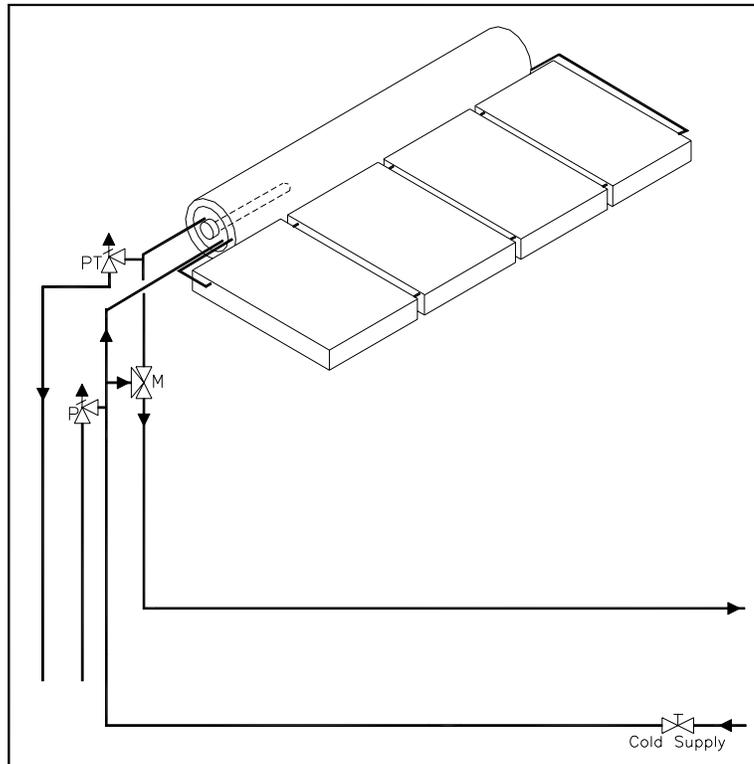
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
444JXII	2001010J	3/28/2009	Solahart Industries	J	7.9	85.4	427	113			1.8



OG300 System Reference: 2001010I

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

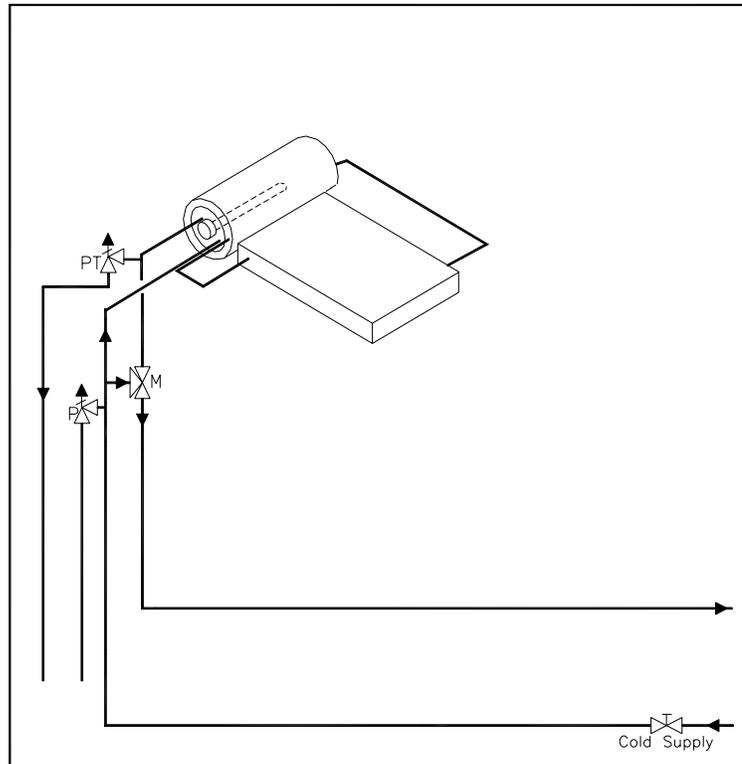
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
181KF & 181KF Free Heat	2001011A	3/28/2003	Solahart Industries	KF	2.0	21.3	174	46			1.3



OG300 System Reference: 2001011A

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

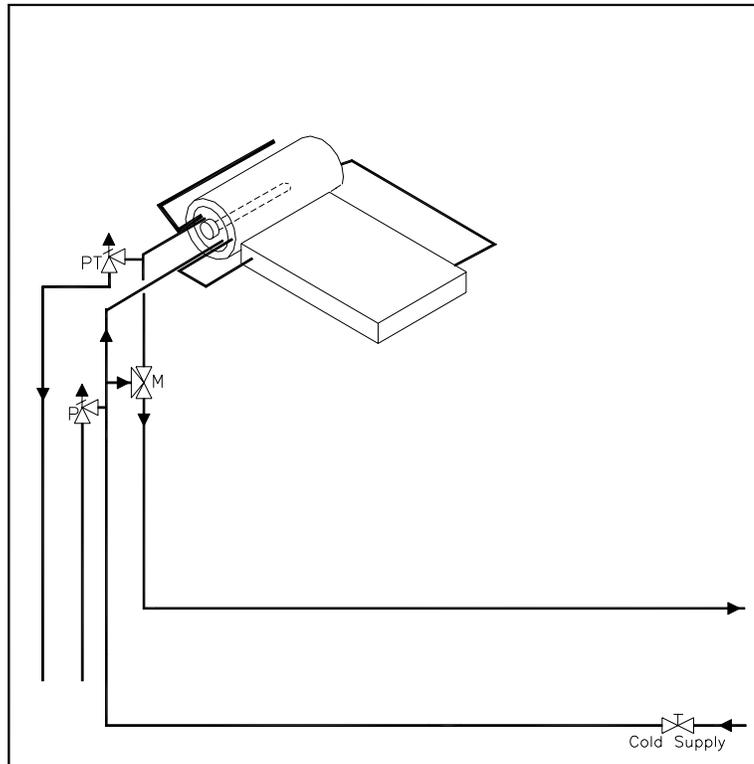
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
181BCXII	2001011B	3/28/2003	Solahart Industries	KF	2.0	21.3	174	46			1.3



OG300 System Reference: 2001011B

March 2004

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RATING



SRCC OG-300

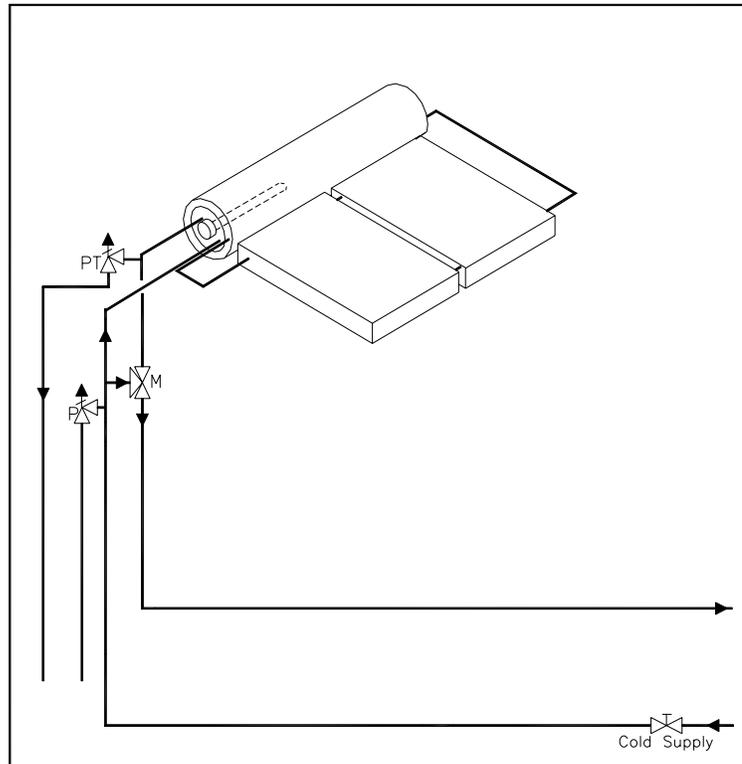
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
182KF & 182KF Free Heat	2001011C	3/28/2003	Solahart Industries	KF	4.0	42.7	174	46			1.9
302KF & 302KF Free Heat	2001011E	3/28/2003	Solahart Industries	KF	4.0	42.7	291	77			1.6



OG300 System Reference: 2001011C

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

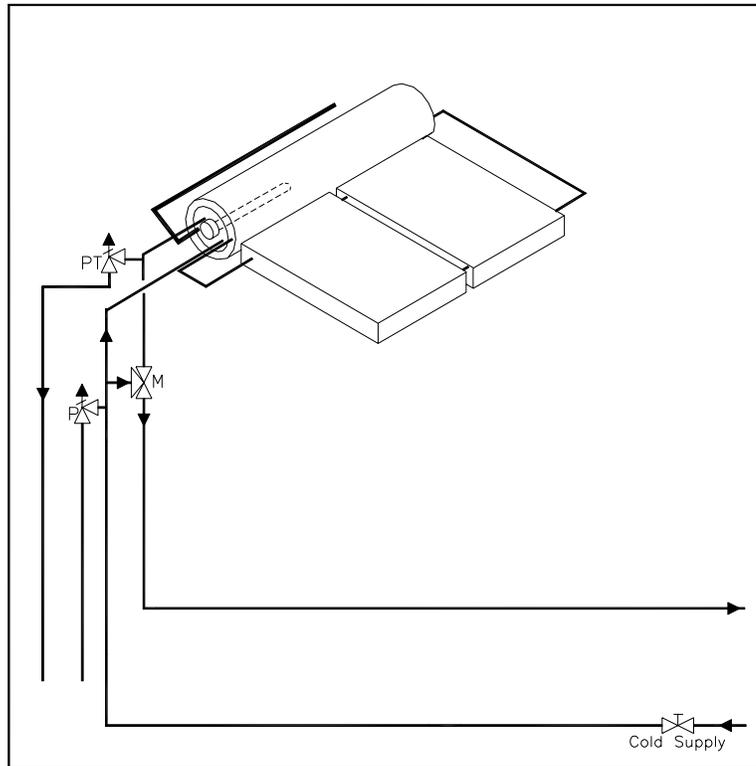
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
182BCXII	2001011D	3/28/2003	Solahart Industries	KF	4.0	42.7	174	46			1.8
302BCXII	2001011F	3/28/2003	Solahart Industries	KF	4.0	42.7	291	77			1.6



OG300 System Reference: 2001011D

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

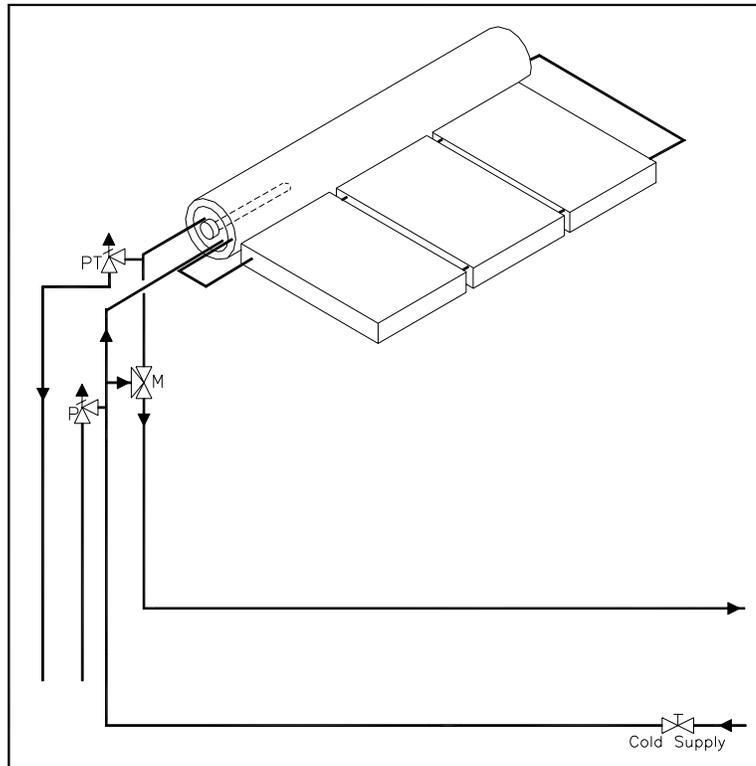
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
303KF & 303KF Free Heat	2001011G	3/28/2003	Solahart Industries	KF	5.9	64.0	291	77			2.2
443KF & 443KF Free Heat	2001011I	3/28/2003	Solahart Industries	KF	5.9	64.0	427	113			1.9



OG300 System Reference: 2001011G

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

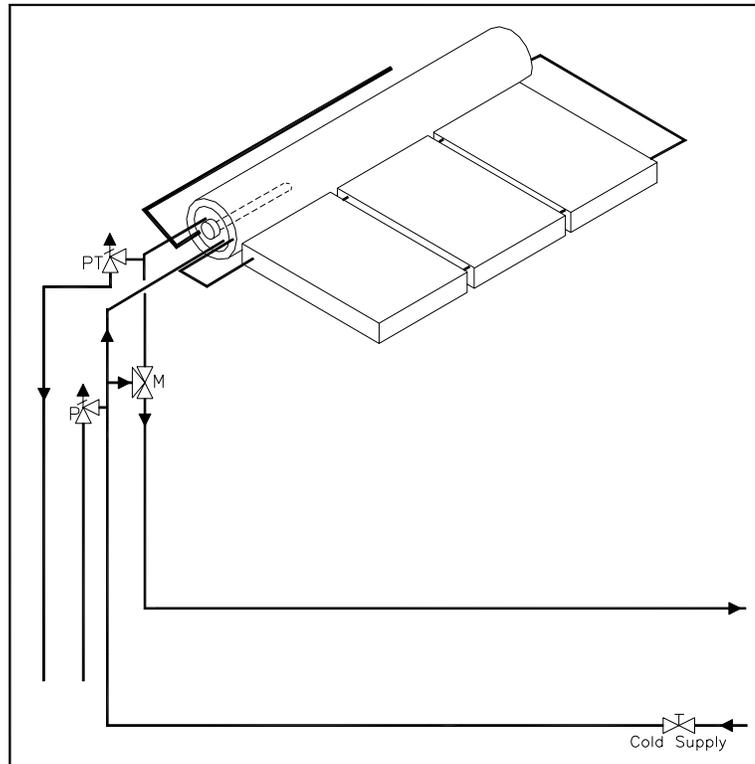
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
303BCXII	2001011H	3/28/2003	Solahart Industries	KF	5.9	64.0	291	77			2.2
443BCXII	2001011J	3/28/2003	Solahart Industries	KF	5.9	64.0	427	113			1.9



OG300 System Reference: 2001011H

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

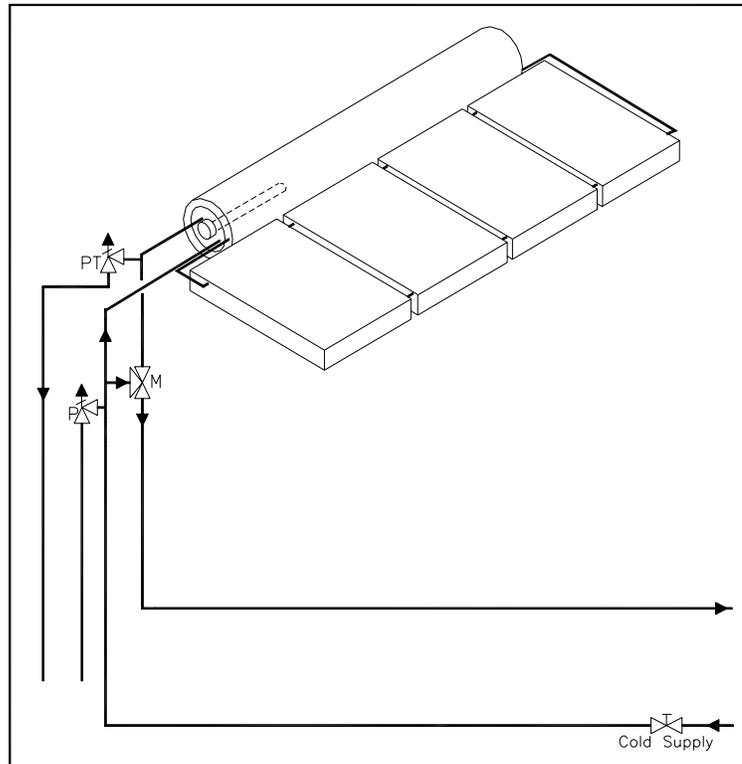
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
444KF & 444KF Free Heat	2001011K	3/28/2003	Solahart Industries	KF	7.9	85.4	427	113			2.9



OG300 System Reference: 2001011K

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

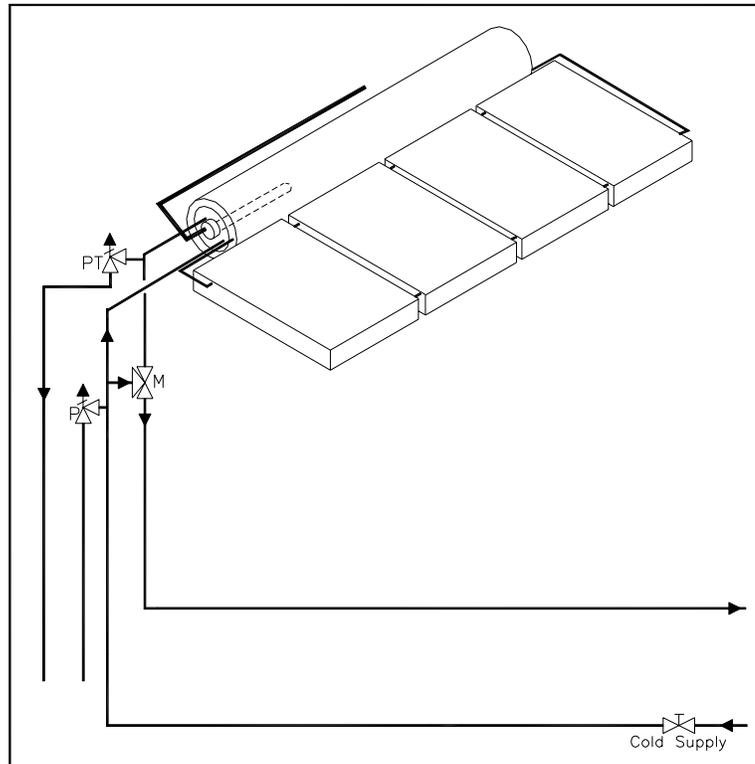
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
444BCXII	2001011L	3/28/2003	Solahart Industries	KF	7.9	85.4	427	113			2.9



OG300 System Reference: 2001011L

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

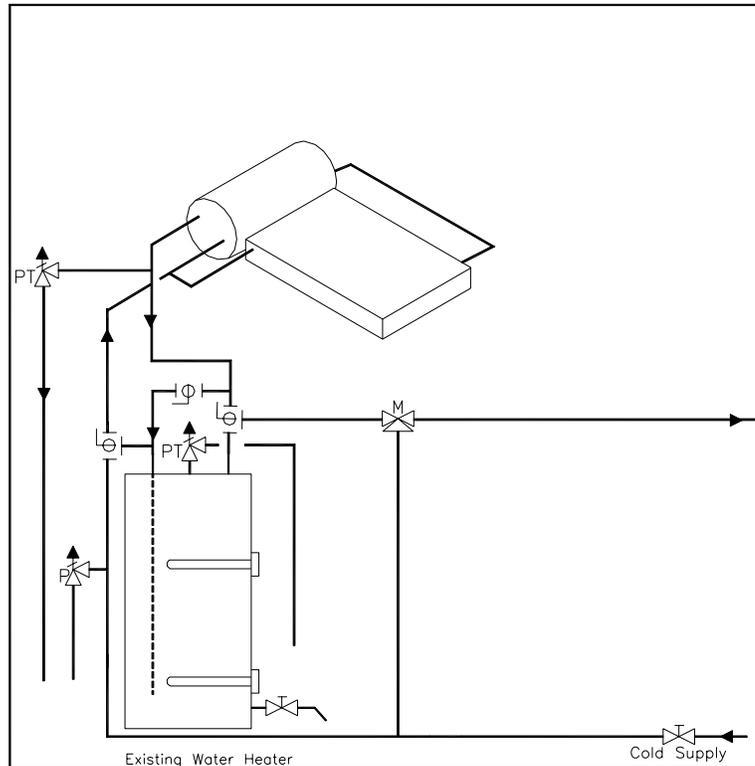
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 181L	2001012A	3/28/2003	Solahart Industries	L	2.0	21.3	174	46			1.3



OG300 System Reference: 2001012A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

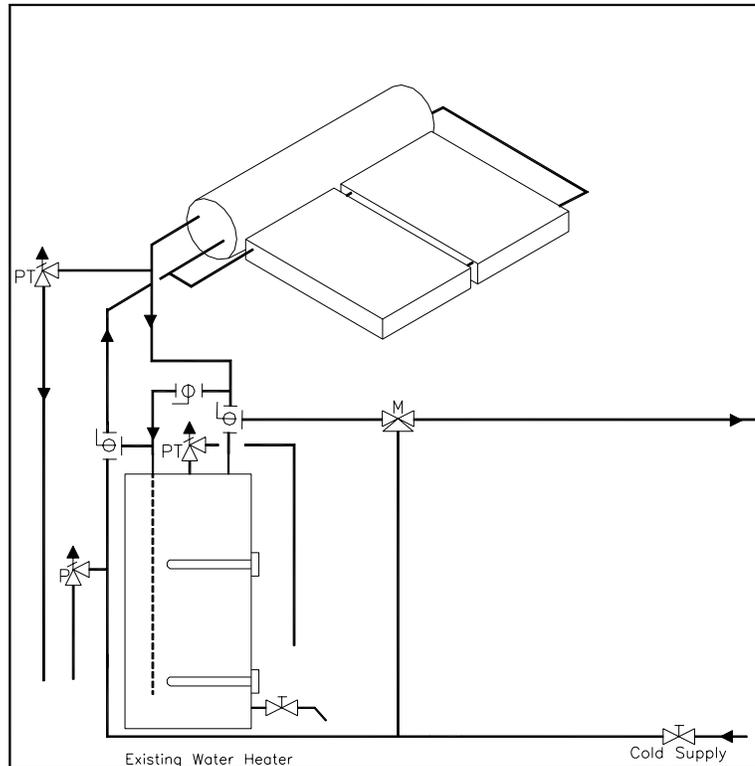
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 302L	2001012B	3/28/2003	Solahart Industries	L	4.0	42.7	291	77			1.6



OG300 System Reference: 2001012B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

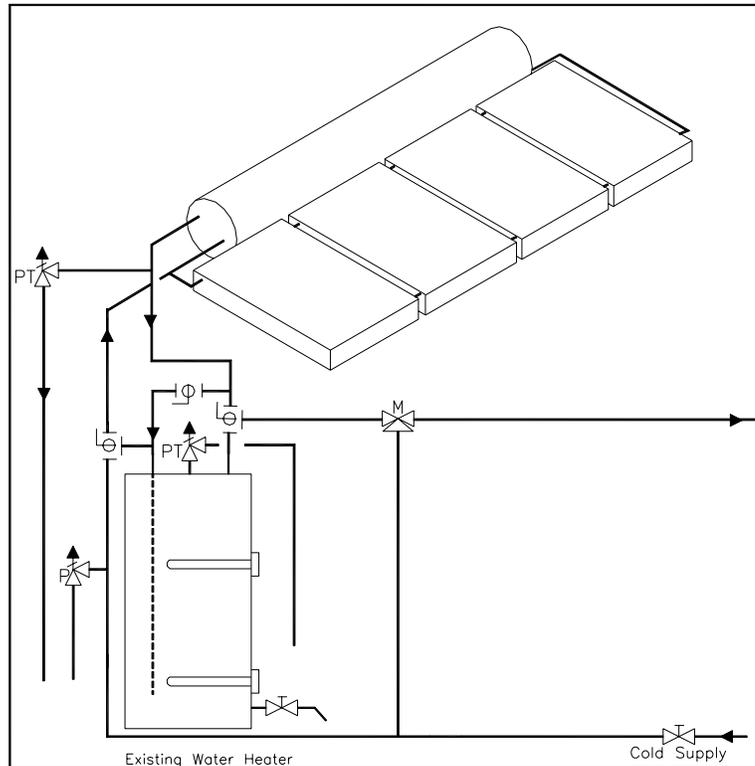
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 303L	2001012C	3/28/2003	Solahart Industries	L	5.9	64.0	291	77			2.0
ASE 443L	2001012D	3/28/2003	Solahart Industries	L	5.9	64.0	427	113			1.9



OG300 System Reference: 2001012C

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

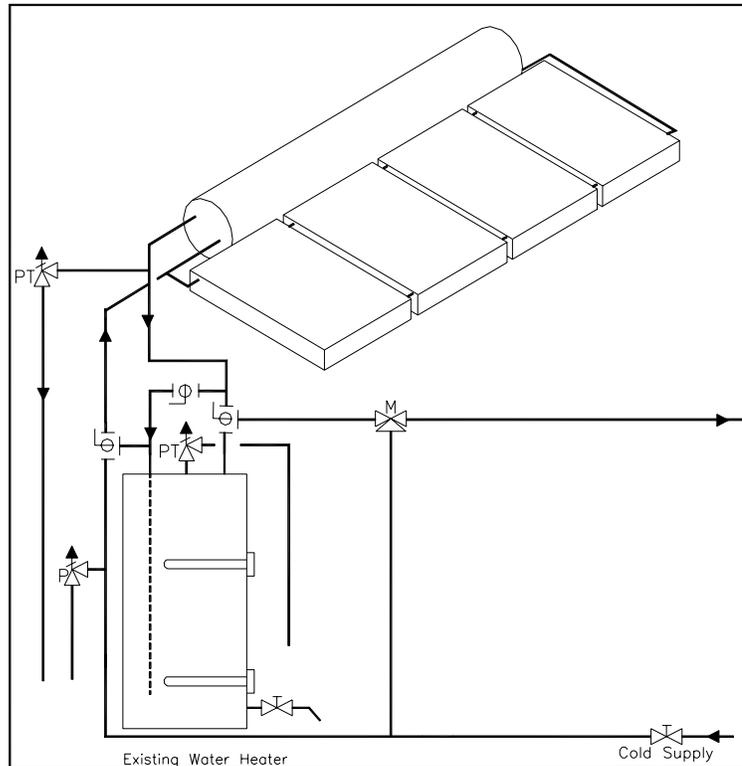
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 444L	2001012E	3/28/2003	Solahart Industries	L	7.9	85.4	427	113			2.2



OG300 System Reference: 2001012E

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

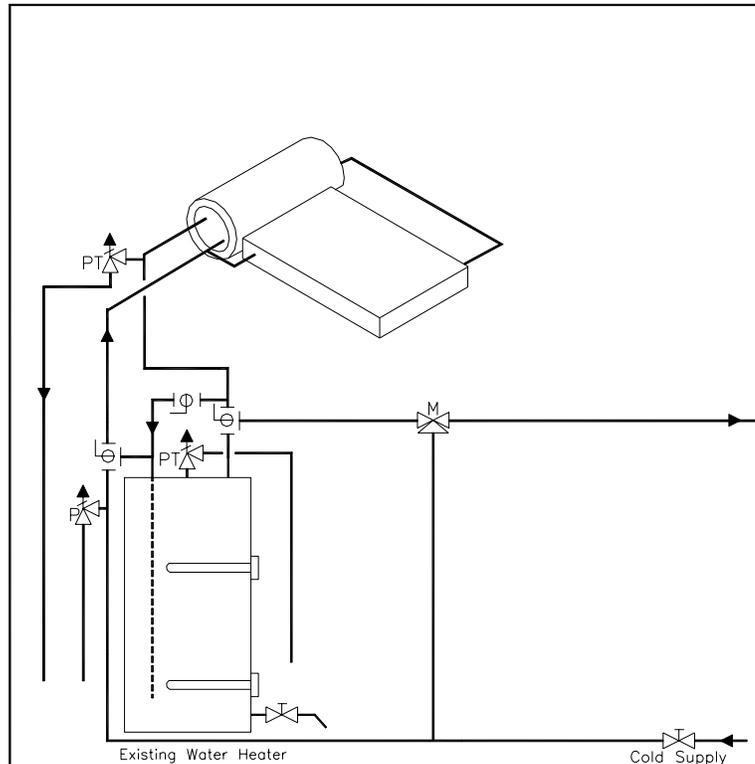
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 181J & ASE 181J Free Heat	2001013A	3/28/2003	Solahart Industries	J	2.0	21.3	174	46			1.3



OG300 System Reference: 2001013A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

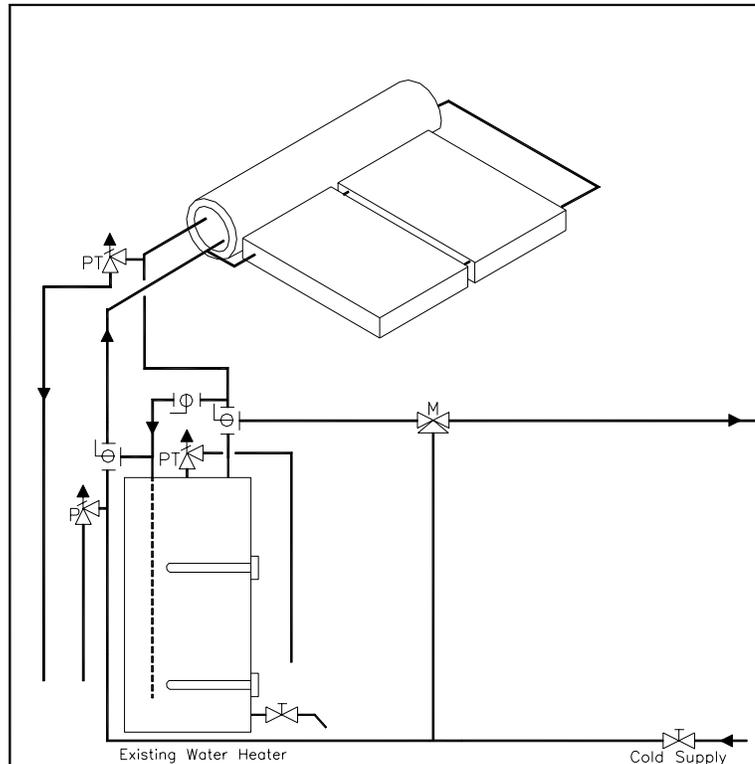
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 182J & ASE 182J Free Heat	2001013B	3/28/2003	Solahart Industries	J	4.0	42.7	174	46			1.6
ASE 302J & ASE 302J Free Heat	2001013C	3/28/2003	Solahart Industries	J	4.0	42.7	291	77			1.6
ASE 302JXII	2001013D	3/28/2003	Solahart Industries	J	4.0	42.7	291	77			1.6



OG300 System Reference: 2001013B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

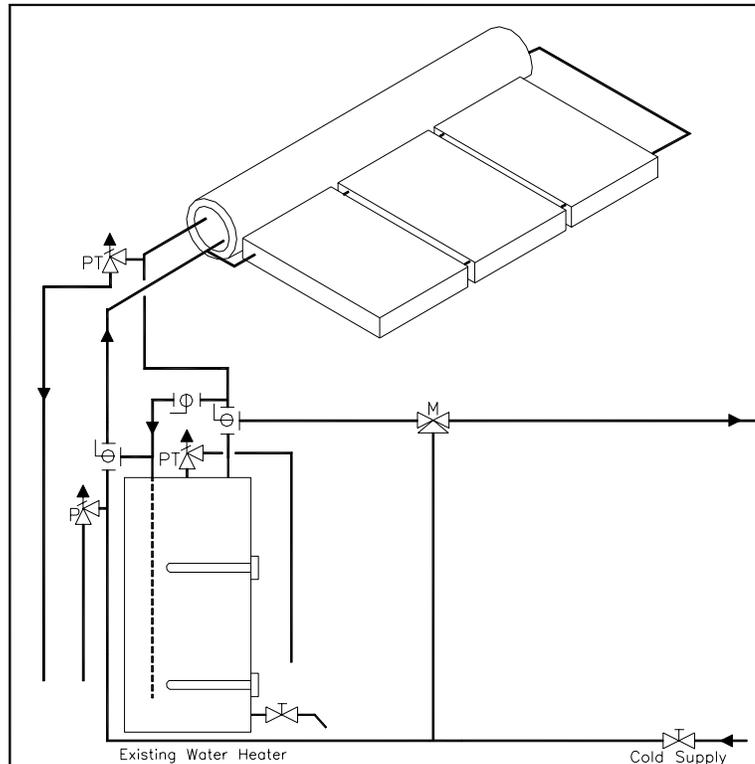
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 303J & ASE 303J Free Heat	2001013E	3/28/2003	Solahart Industries	J	5.9	64.0	291	77			1.8
ASE 303JXII	2001013F	3/28/2003	Solahart Industries	J	5.9	64.0	291	77			1.8
ASE 443J & ASE 443J Free Heat	2001013G	3/28/2003	Solahart Industries	J	5.9	64.0	427	113			1.8
ASE 443JXII	2001013H	3/28/2003	Solahart Industries	J	5.9	64.0	427	113			1.8



OG300 System Reference: 2001013E

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

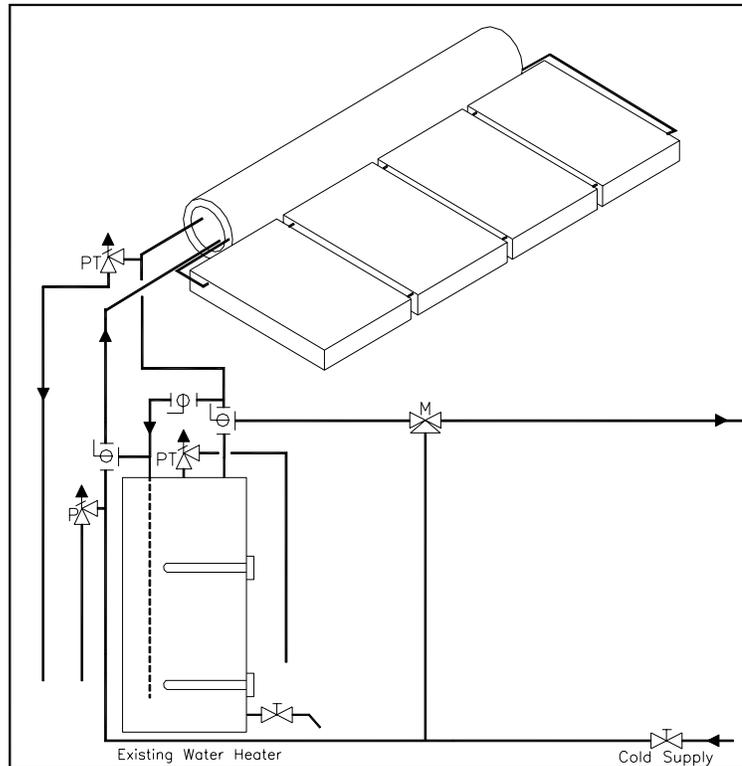
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 444J & ASE 444J Free Heat	2001013I	3/28/2003	Solahart Industries	J	7.9	85.4	427	113			2.0
ASE 444JXII	2001013J	3/28/2003	Solahart Industries	J	7.9	85.4	427	113			2.0



OG300 System Reference: 2001013I

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

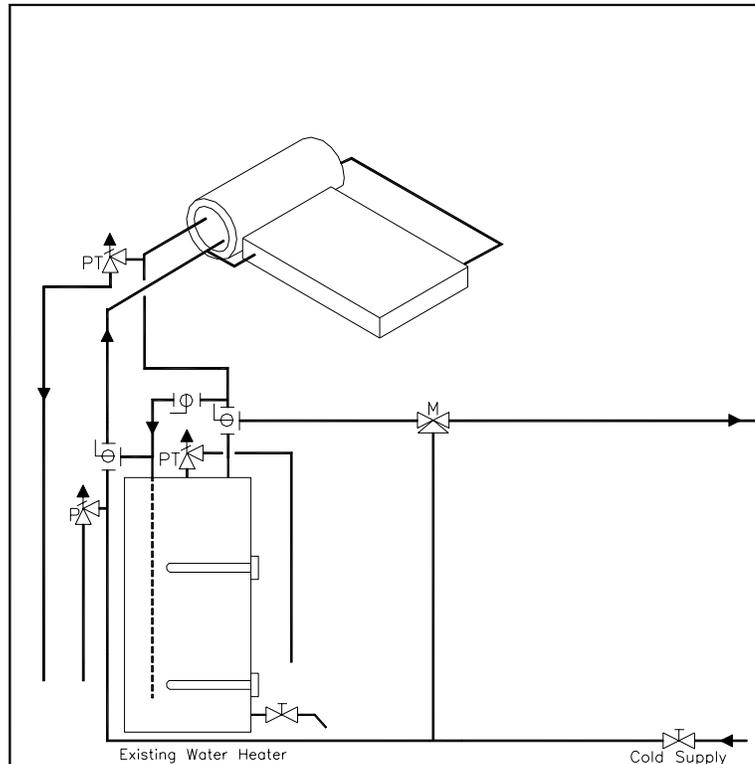
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 181KF & ASE 181KF Free Heat	2001014A	3/28/2003	Solahart Industries	KF	2.0	21.3	174	46			1.3



OG300 System Reference: 2001014A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

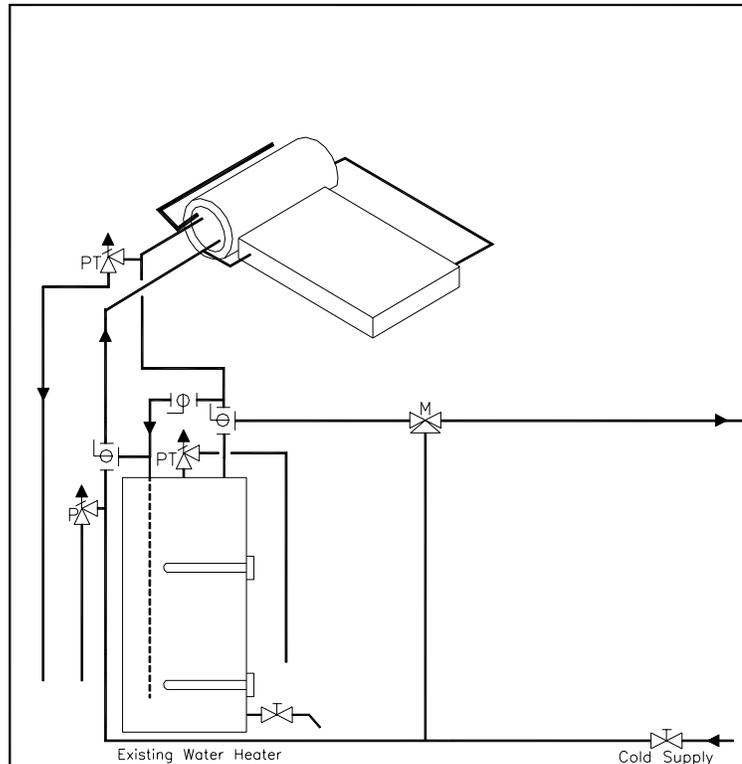
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 181BCXII	2001014B	3/28/2003	Solahart Industries	KF	2.0	21.3	174	46			1.3



OG300 System Reference: 2001014B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

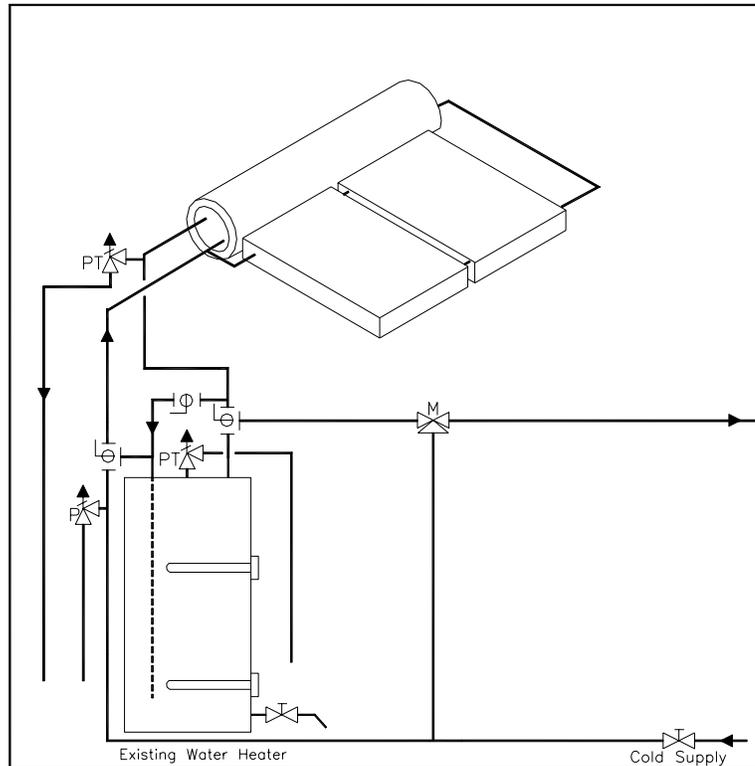
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 182KF & ASE 182KF Free Heat	2001014C	3/28/2003	Solahart Industries	KF	4.0	42.7	174	46			1.8
ASE 302KF & ASE 302KF Free Heat	2001014E	3/28/2003	Solahart Industries	KF	4.0	42.7	291	77			1.8



OG300 System Reference: 2001014C

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

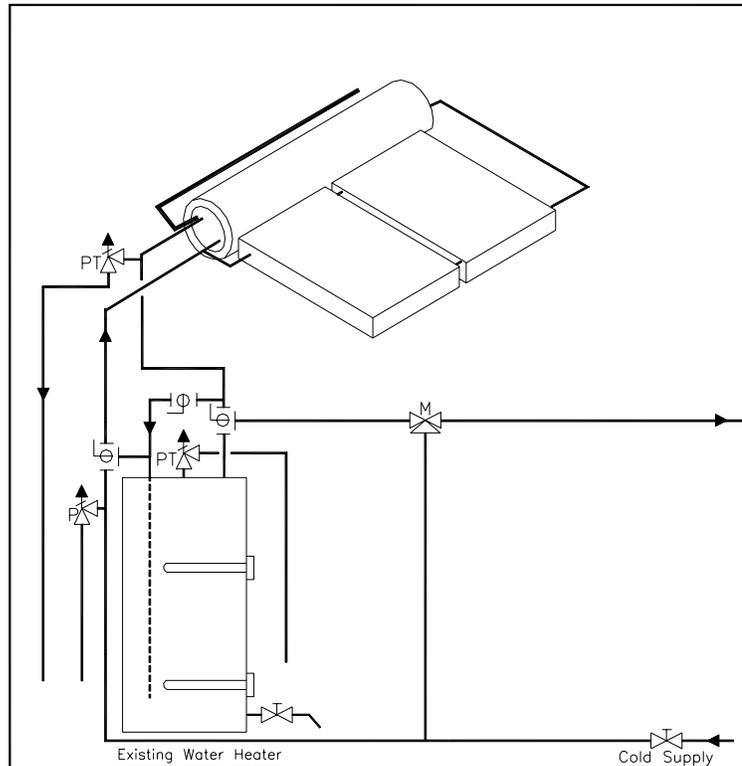
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 182BCXII	2001014D	3/28/2003	Solahart Industries	KF	4.0	42.7	174	46			1.8
ASE 302BCXII	2001014F	3/28/2003	Solahart Industries	KF	4.0	42.7	291	77			1.8



OG300 System Reference: 2001014D

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

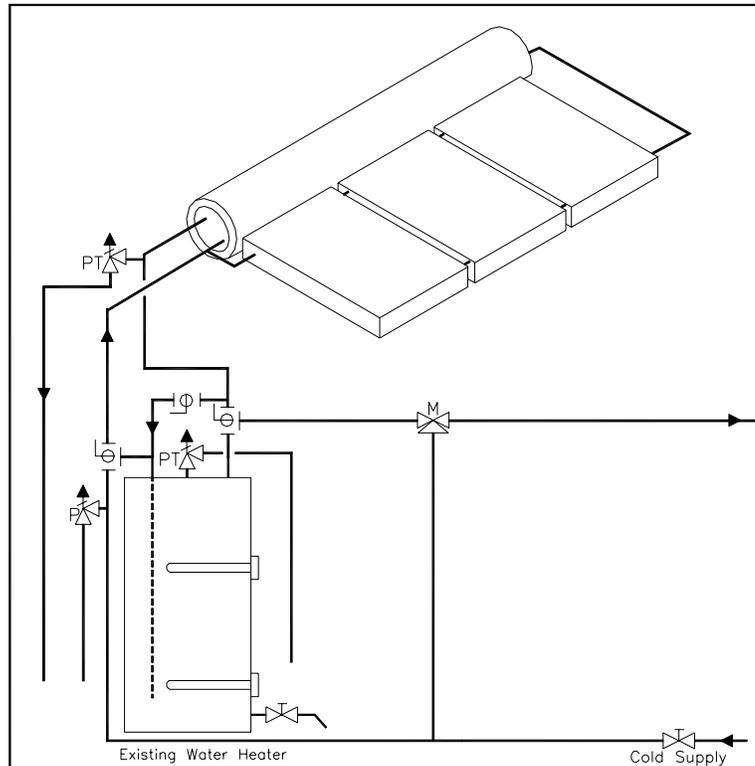
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 303KF & ASE 303KF Free Heat	2001014G	3/28/2003	Solahart Industries	KF	5.9	64.0	291	77			2.3
ASE 443KF & ASE 443KF Free Heat	2001014I	3/28/2003	Solahart Industries	KF	5.9	64.0	427	113			2.2



OG300 System Reference: 2001014G

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
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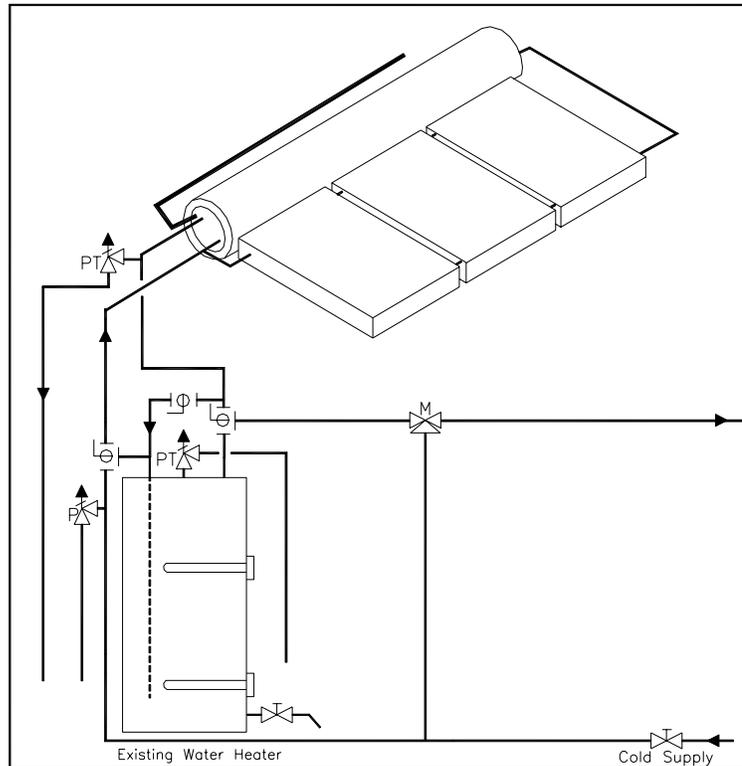
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 303BCXII	2001014H	3/28/2003	Solahart Industries	KF	5.9	64.0	291	77			2.3
ASE 443BCXII	2001014J	3/28/2003	Solahart Industries	KF	5.9	64.0	427	113			2.2



OG300 System Reference: 2001014H

March 2004

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SOLAR WATER HEATING
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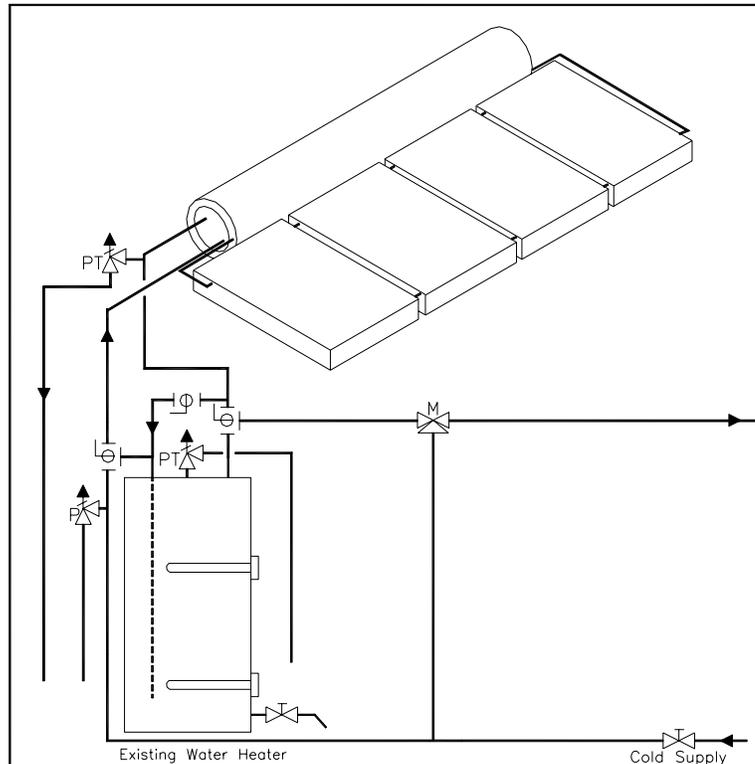
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 444KF & ASE 444KF Free Heat	2001014K	3/28/2003	Solahart Industries	KF	7.9	85.4	427	113			2.7



OG300 System Reference: 2001014K

March 2004

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SOLAR WATER HEATING
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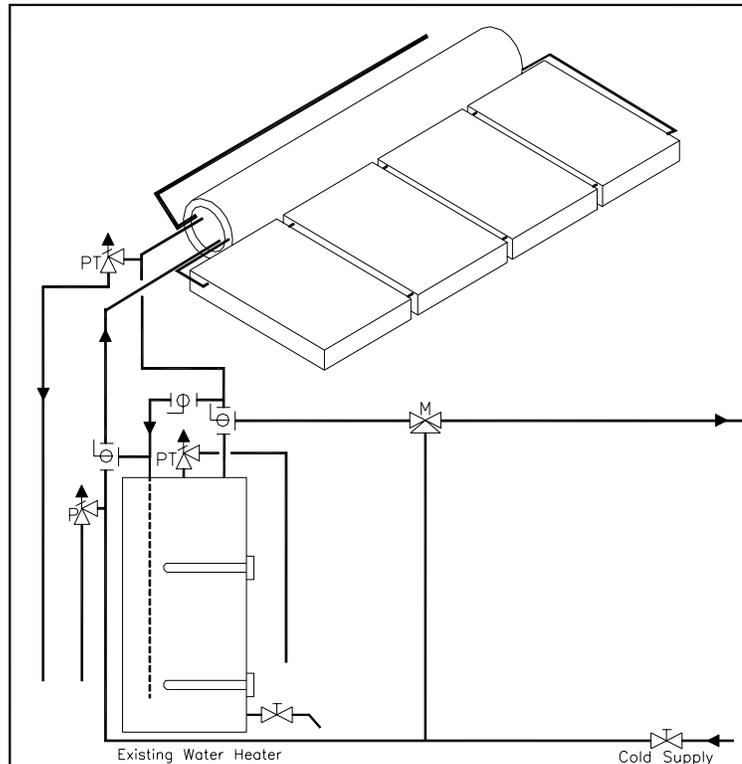
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASE 444BCXII	2001014L	3/28/2003	Solahart Industries	KF	7.9	85.4	427	113			2.7



OG300 System Reference: 2001014L

March 2004

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SOLAR WATER HEATING
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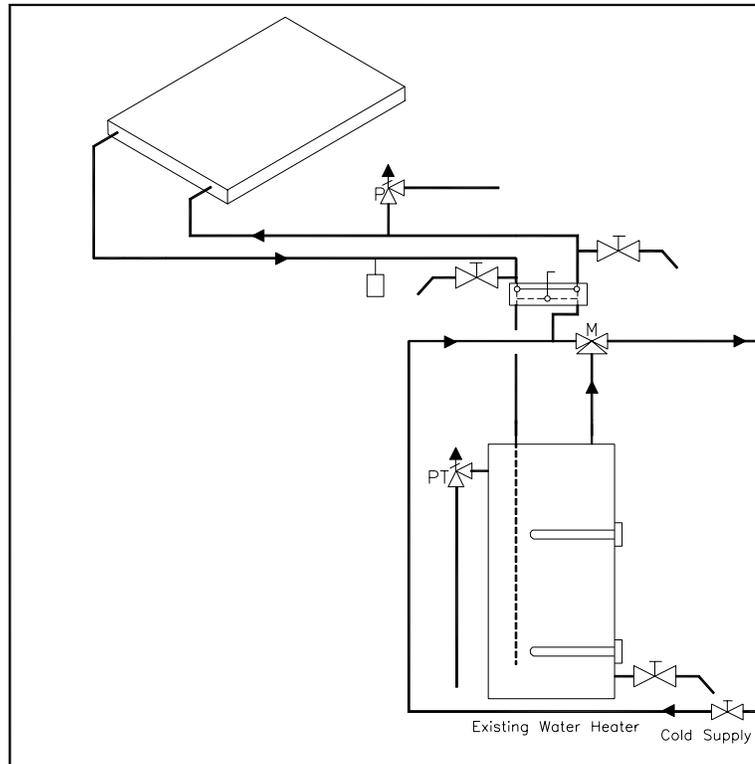
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Sun Systems, Inc.
2030 W. Pinnacle Peak Road
Phoenix, AZ 85027
(623) 869-7652
(623) 869-0891 Fax

SYSTEM NAME: CopperSun
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -6.66 C (20 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CS330-E	1997001B	4/24/2000	Sun Systems, Inc.	CS 330	2.3	25.0	113	30	189	50	1.3
CS330SV-E	2002007A	5/22/2003	Sun Systems, Inc.	CS 330	2.3	25.0	113	30	189	50	1.2
CS340-E	1997001C	4/24/2000	Sun Systems, Inc.	CS 340	2.3	25.0	151	40	189	50	1.3
CS340SV-E	2002007B	5/22/2003	Sun Systems, Inc.	CS 340	2.3	25.0	151	40	189	50	1.2
CS440-E	1997001A	4/29/1998	Sun Systems, Inc.	CS 440	3.1	33.2	148	39	189	50	1.4
CS450-E	1997001D	4/24/2000	Sun Systems, Inc.	CS 450	3.1	33.2	189	50	189	50	1.4



OG300 System Reference: 1997001A

March 2004

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SOLAR WATER HEATING
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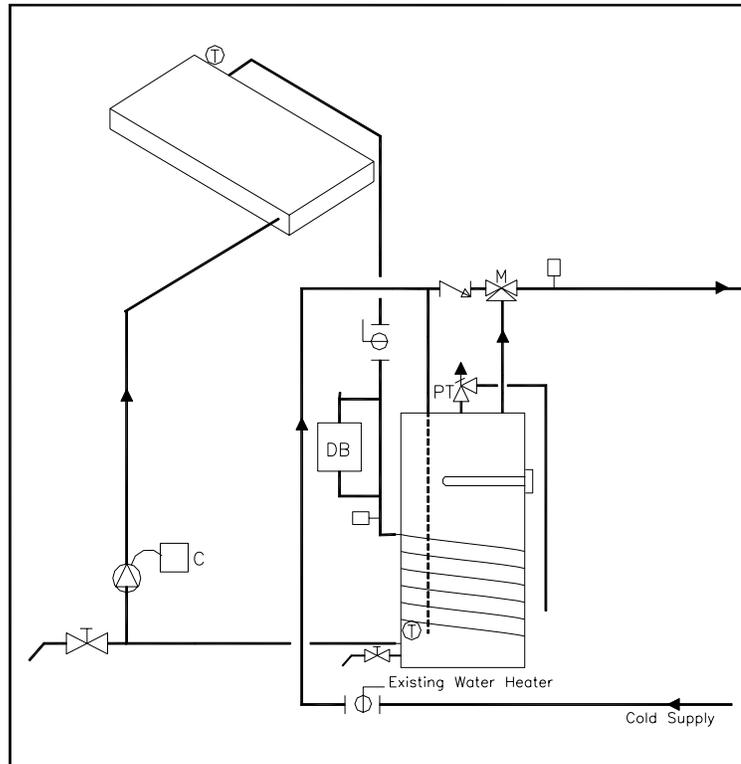
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: Cascade
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -45.5 C (-50 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ECRD-40-80	2001026B	6/10/2003	SunEarth, Inc.	EC-40	3.8	40.9	303	80			1.9
EPRD-40-80	2001026A	6/10/2003	SunEarth, Inc.	EP-40	3.8	40.9	303	80			1.8



OG300 System Reference: 2001026A

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

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SOLAR WATER HEATING
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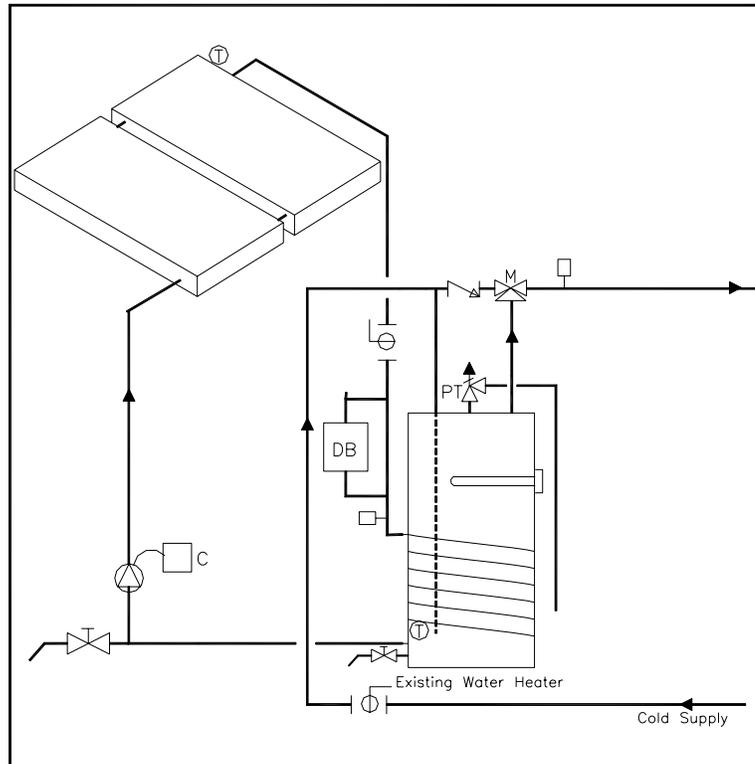
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: Cascade
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -45.5 C (-50 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ECRD-42-80	2001026D	6/10/2003	SunEarth, Inc.	EC-21	3.9	42.4	303	80			1.9
ECRD-48-80	2001026F	6/10/2003	SunEarth, Inc.	EC-24	4.6	49.3	303	80			2.2
ECRD-64-80	2001026H	6/10/2003	SunEarth, Inc.	EC-32	6.1	65.7	303	80			3.2
EPRD-42-80	2001026C	6/10/2003	SunEarth, Inc.	EP-21	3.9	42.4	303	80			1.8
EPRD-48-80	2001026E	6/10/2003	SunEarth, Inc.	EP-24	4.6	49.3	303	80			2.0
EPRD-64-80	2001026G	6/10/2003	SunEarth, Inc.	EP-32	6.1	65.7	303	80			2.8



OG300 System Reference: 2001026C

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



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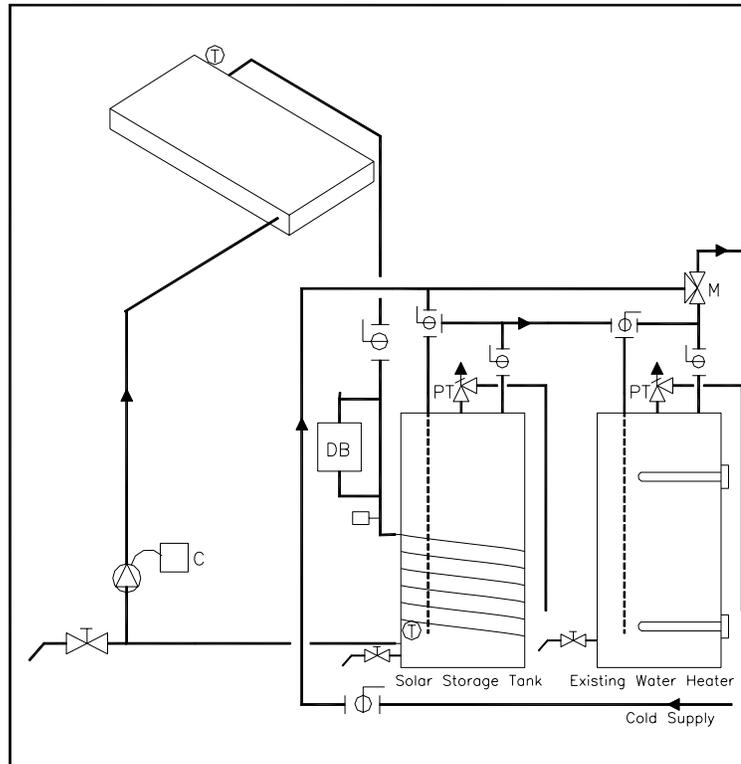
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: Cascade
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -45.5 C (-50 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ECRD-40-80-2	2001027B	6/10/2003	SunEarth, Inc.	EC-40	3.8	40.9	303	80	189	50	1.6
EPRD-40-80-2	2001027A	6/10/2003	SunEarth, Inc.	EP-40	3.8	40.9	303	80	189	50	1.5



OG300 System Reference: 2001027A

March 2004

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SOLAR WATER HEATING
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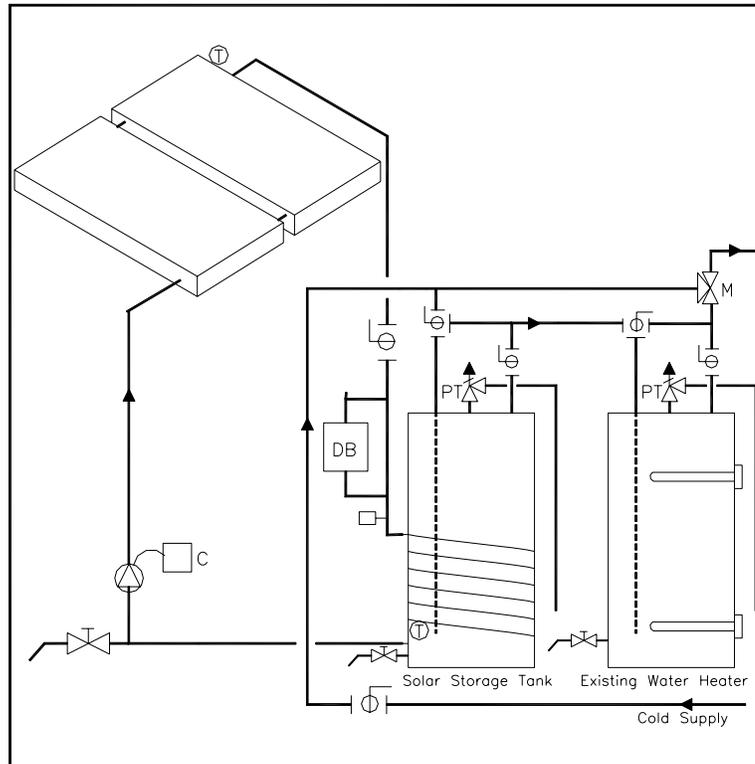
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: Cascade
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -45.5 C (-50 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ECRD-42-80-2	2001027D	6/10/2003	SunEarth, Inc.	EC-21	3.9	42.4	303	80	189	50	1.6
ECRD-48-80-2	2001027F	6/10/2003	SunEarth, Inc.	EC-24	4.6	49.3	303	80	189	50	1.7
ECRD-64-80-2	2001027H	6/10/2003	SunEarth, Inc.	EC-32	6.1	65.7	303	80	189	50	2.3
EPRD-42-80-2	2001027C	6/10/2003	SunEarth, Inc.	EP-21	3.9	42.4	303	80	189	50	1.5
EPRD-48-80-2	2001027E	6/10/2003	SunEarth, Inc.	EP-24	4.6	49.3	303	80	189	50	1.7
EPRD-64-80-2	2001027G	6/10/2003	SunEarth, Inc.	EP-32	6.1	65.7	303	80	189	50	2.1



OG300 System Reference: 2001027C

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SOLAR WATER HEATING
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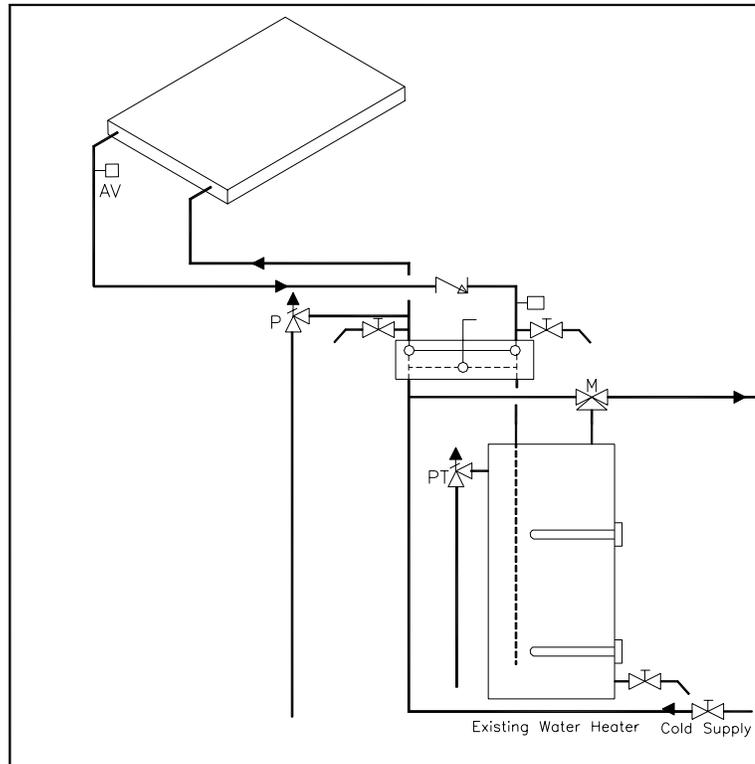
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: CopperHeart
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -6.66 C (20 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CP-20	1992011I	10/11/1999	SunEarth, Inc.	CP-20	1.2	12.7	76	20	189	50	1.2
CP-30	1992011E	10/1/1992	SunEarth, Inc.	CP-30	1.8	19.8	121	32	189	50	1.4
CP-40	1992011F	10/1/1992	SunEarth, Inc.	CP-40	2.3	24.9	159	42	189	50	1.5



OG300 System Reference: 1992011A

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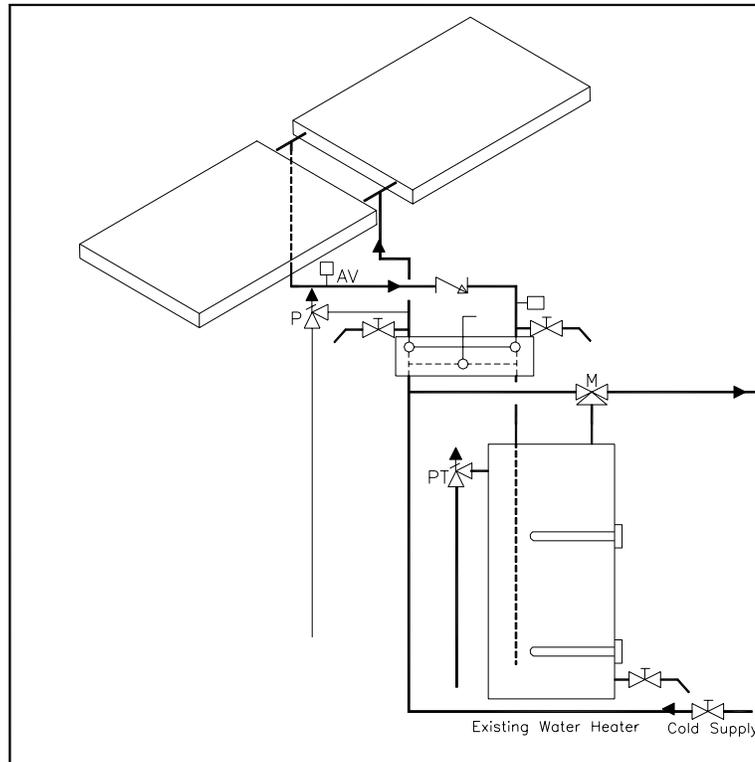
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: CopperHeart
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -6.66 C (20 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CP-60P	1992011G	10/1/1992	SunEarth, Inc.	CP-30	3.7	39.7	242	64	189	50	1.7
CP-80P	1992011J	10/11/1999	SunEarth, Inc.	CP-40	4.6	49.8	318	84	189	50	1.9



OG300 System Reference: 1992011C

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SOLAR WATER HEATING
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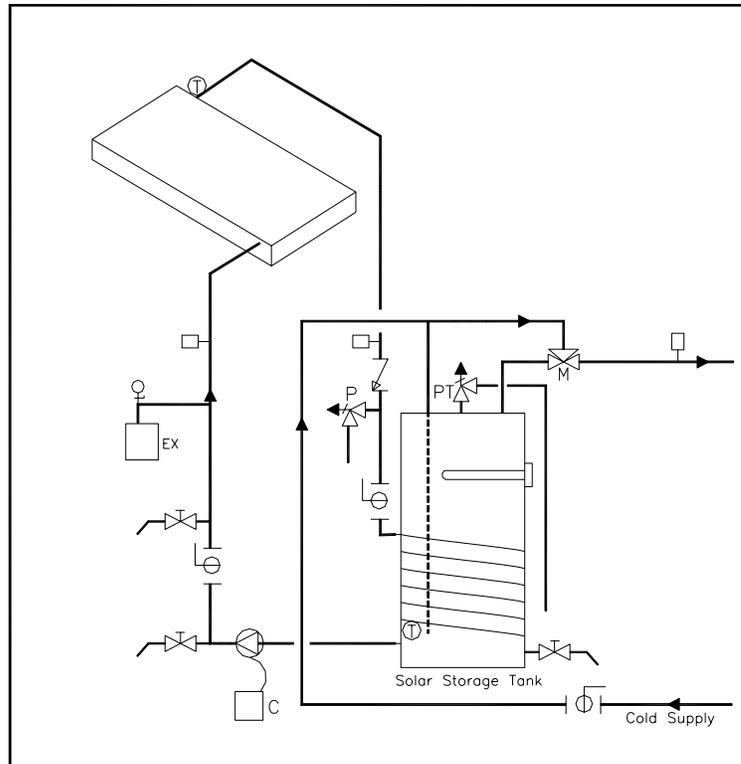
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE32C-80-1	1993001B	3/23/1993	SunEarth, Inc.	EC-32	3.1	32.8	303	80			1.8
TE32P-80-1	1993001A	3/23/1993	SunEarth, Inc.	EP-32	3.1	32.8	303	80			1.7
TE40C-80-1	1993001D	3/23/1993	SunEarth, Inc.	EC-40	3.8	40.9	303	80			2.1
TE40P-80-1	1993001C	3/23/1993	SunEarth, Inc.	EP-40	3.8	40.9	303	80			2.0



OG300 System Reference: 1993001A

March 2004

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SOLAR WATER HEATING
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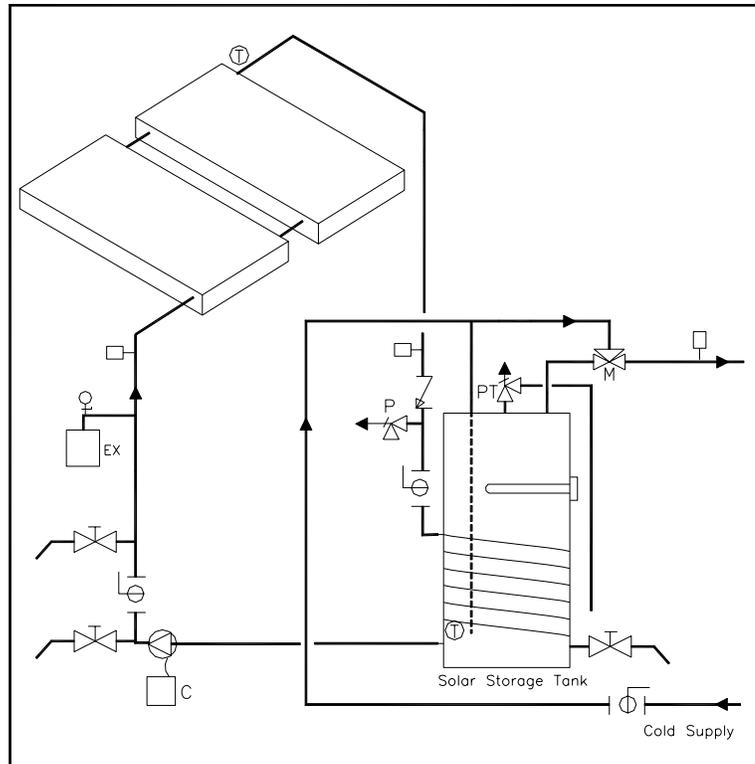
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE48C-80-1	1993001L	4/10/2001	SunEarth, Inc.	EC-24	4.6	49.3	303	80			2.5
TE48P-80-1	1993001K	4/10/2001	SunEarth, Inc.	EP-24	4.6	49.3	303	80			2.3
TE64C-80-1	1993001H	3/18/1995	SunEarth, Inc.	EC-32	6.1	65.7	303	80			3.9
TE64P-80-1	1993001G	3/18/1995	SunEarth, Inc.	EP-32	6.1	65.7	303	80			3.3



OG300 System Reference: 1993001G

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SOLAR WATER HEATING
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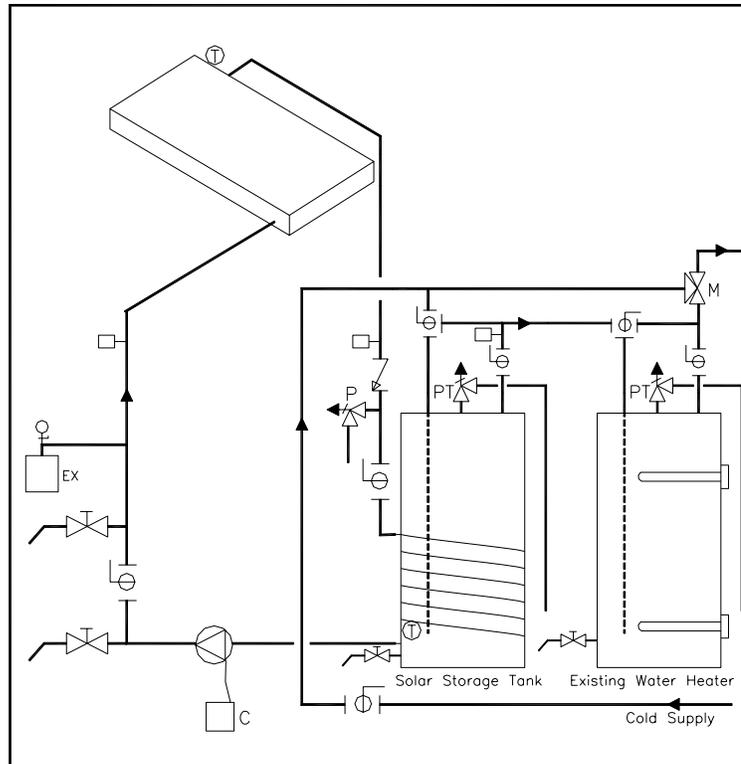
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE32C-80-2	1996001B	1/30/1996	SunEarth, Inc.	EC-32	3.1	32.8	303	80	189	50	1.6
TE32P-80-2	1996001A	1/30/1996	SunEarth, Inc.	EP-32	3.1	32.8	303	80	189	50	1.5
TE40C-80-2	1996001D	1/30/1996	SunEarth, Inc.	EC-40	3.8	40.9	303	80	189	50	1.8
TE40P-80-2	1996001C	1/30/1996	SunEarth, Inc.	EP-40	3.8	40.9	303	80	189	50	1.8



OG300 System Reference: 1996001A

March 2004

Certification must be renewed annually. For current status contact:
SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

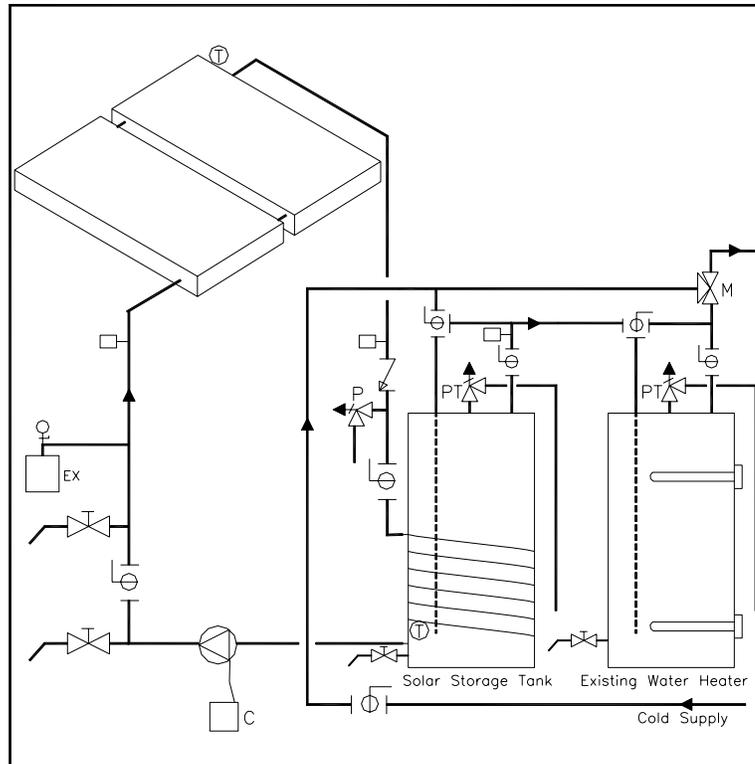
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE48C-80-2	1996001J	4/10/2001	SunEarth, Inc.	EC-24	4.6	49.3	303	80	189	50	2.1
TE48P-80-2	1996001I	4/10/2001	SunEarth, Inc.	EP-24	4.6	49.3	303	80	189	50	2.0
TE64C-80-2	1996001F	1/30/1996	SunEarth, Inc.	EC-32	6.1	65.7	303	80	189	50	3.0
TE64P-80-2	1996001E	1/30/1996	SunEarth, Inc.	EP-32	6.1	65.7	303	80	189	50	2.6



OG300 System Reference: 1996001E

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
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SRCC OG-300

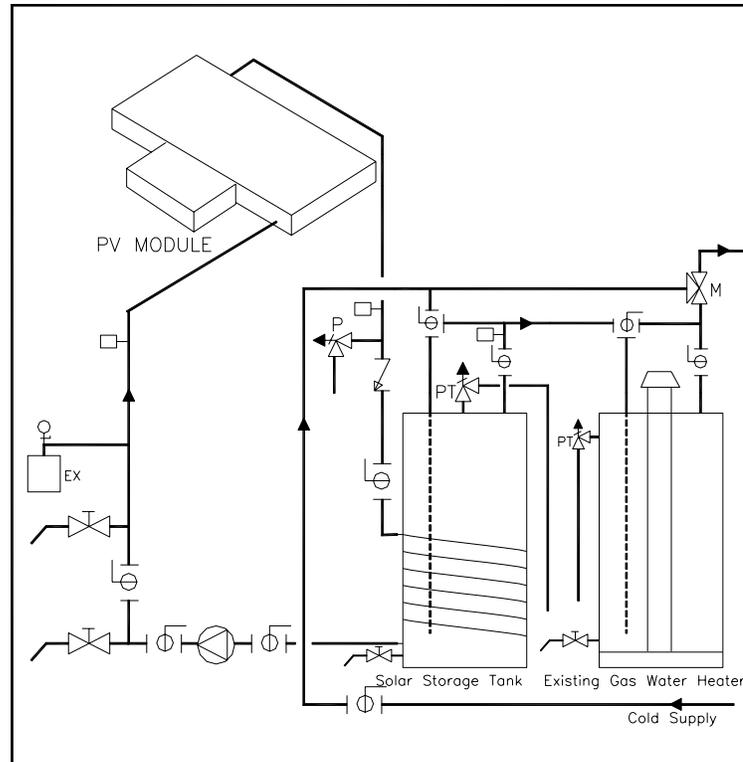
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE40C-80-2-PV	2000003A	2/26/2001	SunEarth, Inc.	EC-40	3.8	40.9	303	80	189	50	1.8
TE40P-80-2-PV	2000003D	2/26/2001	SunEarth, Inc.	EP-40	3.8	40.9	303	80	189	50	1.7



OG300 System Reference: 2000003A

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

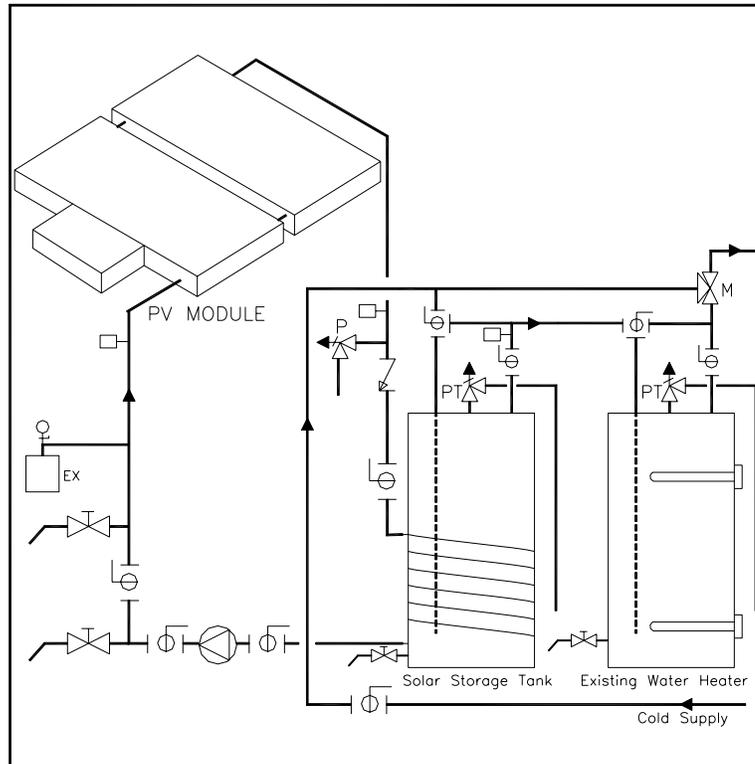
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE48C-80-2-PV	2000003H	4/10/2001	SunEarth, Inc.	EC-24	4.6	49.3	303	80	189	50	2.0
TE48P-80-2-PV	2000003G	4/10/2001	SunEarth, Inc.	EP-24	4.6	49.3	303	80	189	50	1.9
TE64C-80-2-PV	2000003B	2/26/2001	SunEarth, Inc.	EC-32	6.1	65.7	303	80	189	50	2.6
TE64P-80-2-PV	2000003E	2/26/2001	SunEarth, Inc.	EP-32	6.1	65.7	303	80	189	50	2.4



OG300 System Reference: 2000003B

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

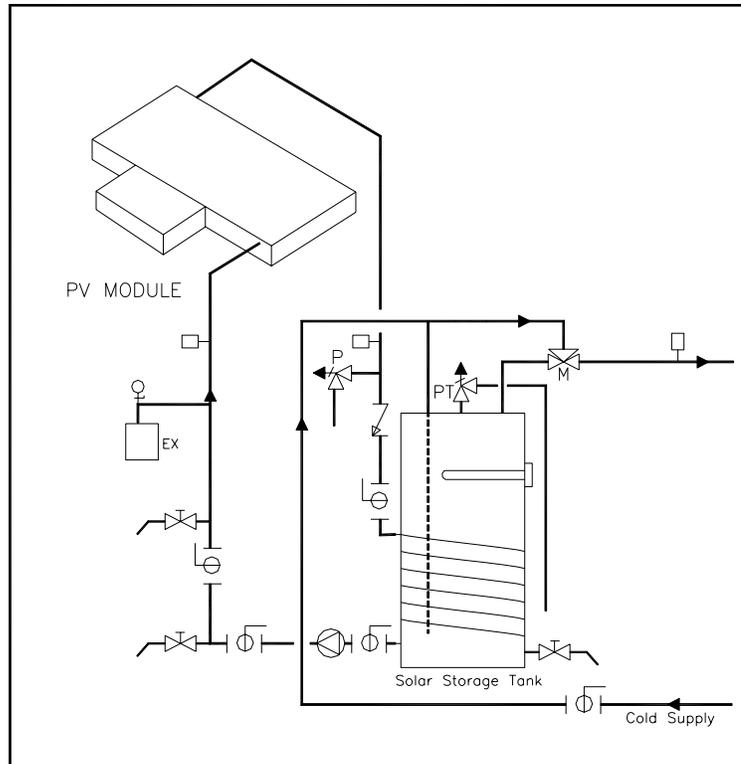
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE40C-80-PV	2000004A	2/26/2001	SunEarth, Inc.	EC-40	3.8	40.9	303	80			2.0
TE40P-80-PV	2000004D	2/26/2001	SunEarth, Inc.	EP-40	3.8	40.9	303	80			1.9



OG300 System Reference: 2000004A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

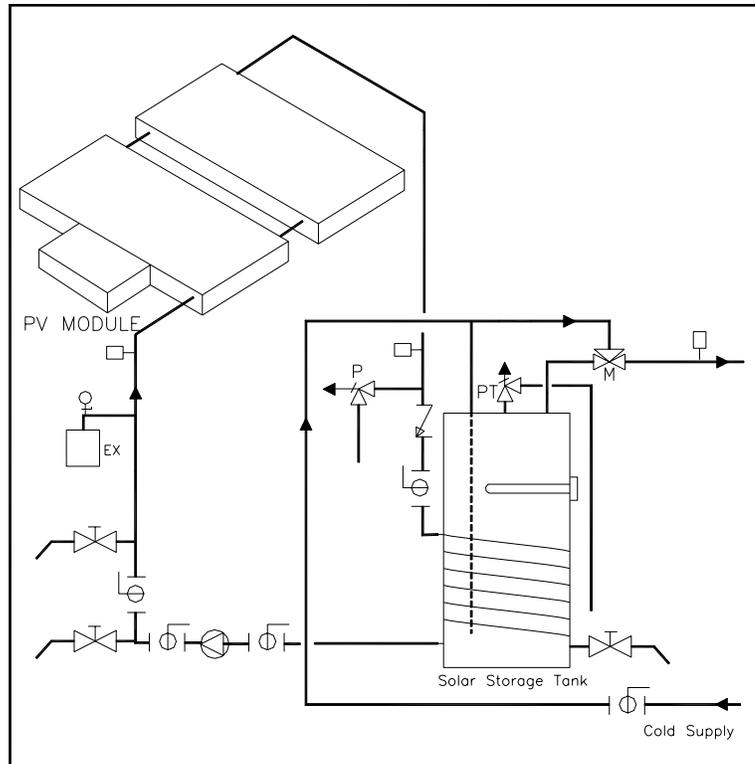
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE48C-80-PV	2000004H	4/10/2001	SunEarth, Inc.	EC-24	4.6	49.3	303	80			3.9
TE48P-80-PV	2000004G	4/10/2001	SunEarth, Inc.	EP-24	4.6	49.3	303	80			2.2
TE64C-80-PV	2000004B	2/26/2001	SunEarth, Inc.	EC-32	6.1	65.7	303	80			3.3
TE64P-80-PV	2000004E	2/26/2001	SunEarth, Inc.	EC-32	6.1	65.7	303	80			2.9



OG300 System Reference: 2000004B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

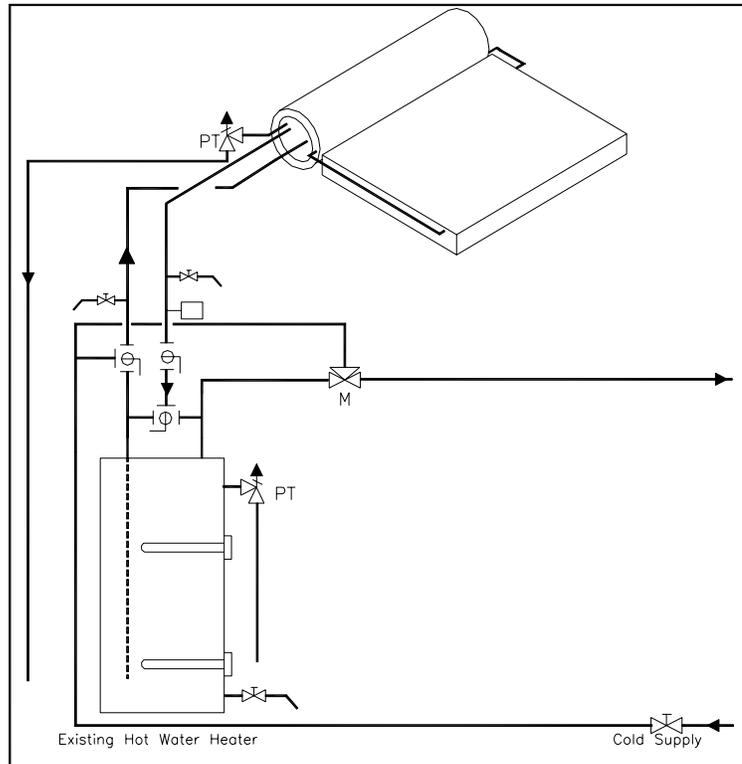
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SunSiphon
SYSTEM TYPE: Indirect Thermosiphon

Description: Glazed Flat-Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -9.44 C (15 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
EPGX48-21-2	2001004A	5/20/2001	SunEarth, Inc.	EP-21	2.0	21.2	182	48	189	50	1.2
EPGX48-24-2	2001004B	5/20/2001	SunEarth, Inc.	EP-24	2.3	24.6	182	48	189	50	1.3
EPGX48-32-2	2001004C	5/20/2001	SunEarth, Inc.	EP-32	3.1	32.8	182	48	189	50	1.4
EPGX80-40-2	2001004D	5/20/2001	SunEarth, Inc.	EP-40	3.8	40.9	303	80	189	50	1.5



OG300 System Reference: 2001004A

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

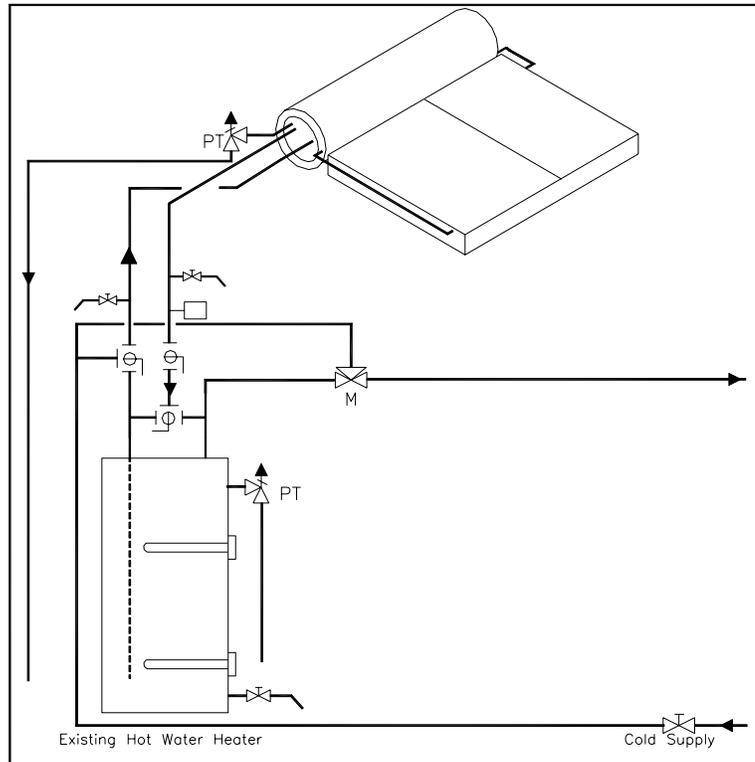
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SunSiphon
SYSTEM TYPE: Indirect Thermosiphon

Description: Glazed Flat-Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -9.44 C (15 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
EPGX116-64-2	2001004J	5/20/2001	SunEarth, Inc.	EP-32	6.1	65.7	439	116	189	50	1.9
EPGX116-80-2	2001004L	5/20/2001	SunEarth, Inc.	EP-40	7.6	81.7	439	116	189	50	2.1
EPGX80-42-2	2001004E	5/20/2001	SunEarth, Inc.	EP-21	3.9	42.4	303	80	189	50	1.5
EPGX80-48-2	2001004F	5/20/2001	SunEarth, Inc.	EP-24	4.6	49.3	303	80	189	50	1.6
EPGX80-64-2	2001004H	5/20/2001	SunEarth, Inc.	EP-32	6.1	65.7	303	80	189	50	1.8



OG300 System Reference: 2001004E

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

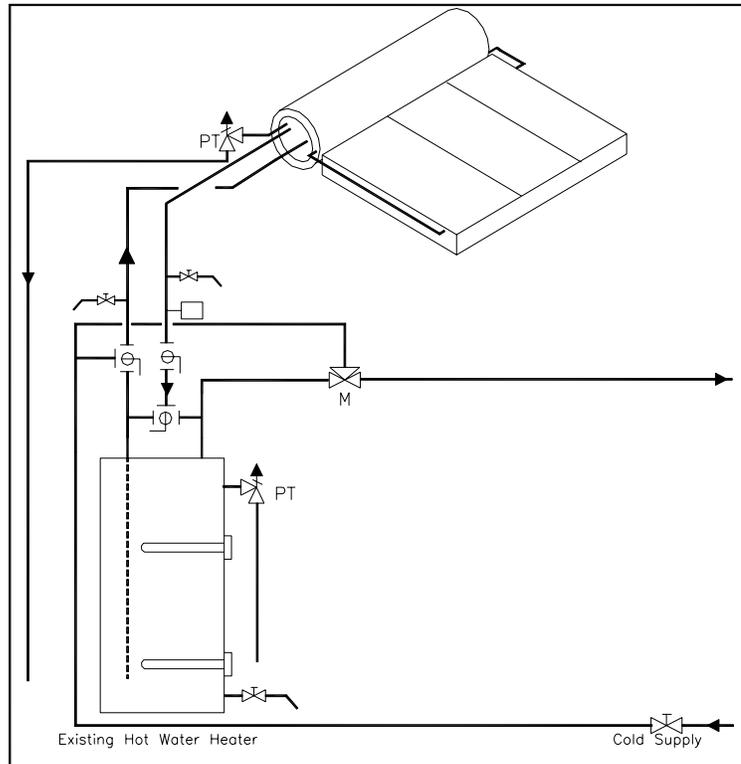
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SunSiphon
SYSTEM TYPE: Indirect Thermosiphon

Description: Glazed Flat-Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -9.44 C (15 F), Electric Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
EPGX116-63-2	2001004I	5/20/2001	SunEarth, Inc.	EP-24	6.9	73.9	439	116	189	50	1.8
EPGX80-63-2	2001004G	5/20/2001	SunEarth, Inc.	EP-24	6.9	73.9	303	80	189	50	1.8



OG300 System Reference: 2001004G

March 2004

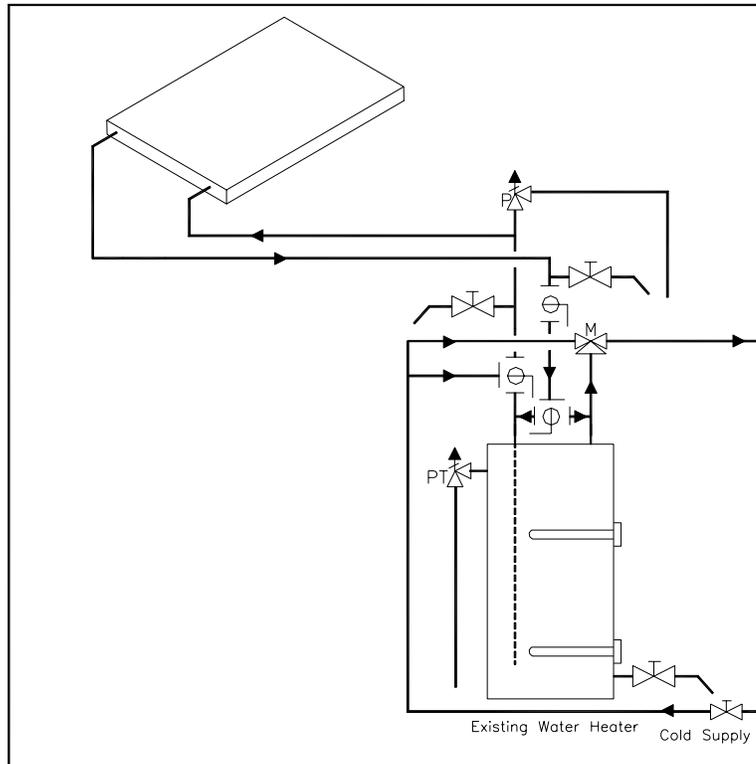
Certification must be renewed annually. For current status contact:
SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

<p>SOLAR WATER HEATING SYSTEMS CERTIFICATION AND RATING</p>  <p>SRCC OG-300</p>	<p><u>CERTIFIED SOLAR WATER HEATING SYSTEM</u> SUPPLIER: Thermal Conversion Technology 101 Copeland Street Jacksonville, FL 32204 (904) 358-3720 (904) 358-3728 Fax</p> <p>SYSTEM NAME: ProgressivTube Passive Solar Water Heater SYSTEM TYPE: Direct Integral Collector Storage</p>
--	--

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -12.2 C (10 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
PT-30-CN	1995002A	4/9/1997	Thermal Conversion Technology	PT-30-CN	2.2	24.0	113	30	189	50	1.4
PT-35-CN	1995002B	4/9/1997	Thermal Conversion Technology	PT-35-CN	2.2	24.0	132	35	189	50	1.4
PT-40-CN	1995002C	4/9/1997	Thermal Conversion Technology	PT-40-CN	3.0	32.1	151	40	189	50	1.6
PT-50-CN	1995002D	4/9/1997	Thermal Conversion Technology	PT-50-CN	3.0	32.1	189	50	189	50	1.6



OG300 System Reference: 1995002A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

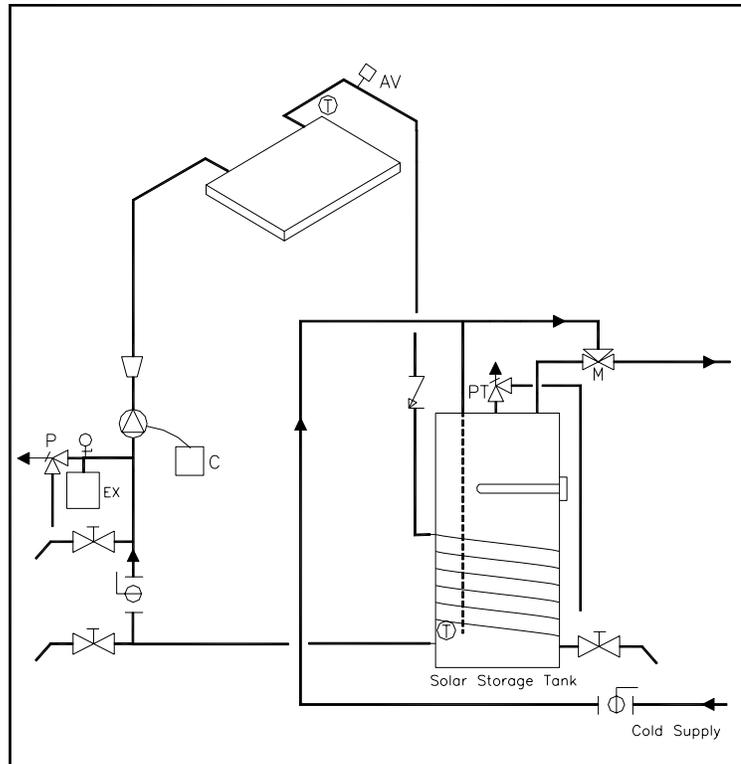
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Thermomax Industries Ltd.
3181 Kingsley St.
Victoria, BC V8P4J5
(250) 721-4360
(250) 721-4329 Fax

SYSTEM NAME: Thermomax Mazdon
SYSTEM TYPE: Indirect Forced Circulation

Description: Tubular Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
Mazdon 30	2001029A	2/21/2002	Thermo Technologies	TMA-600-30	4.6	49.3	303	80			2.1



OG300 System Reference: 2001029A

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

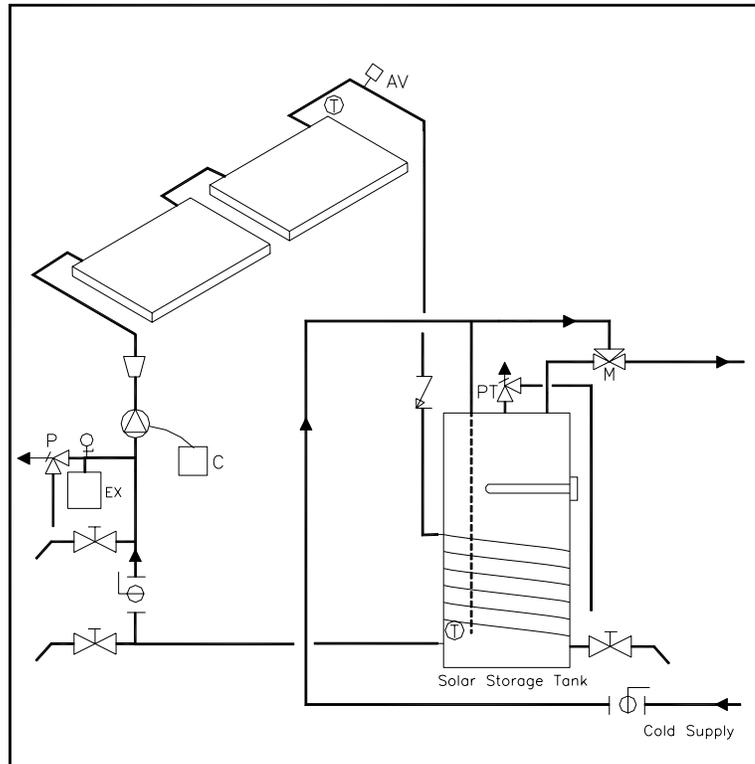
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Thermomax Industries Ltd.
3181 Kingsley St.
Victoria, BC V8P4J5
(250) 721-4360
(250) 721-4329 Fax

SYSTEM NAME: Thermomax Mazdon
SYSTEM TYPE: Indirect Forced Circulation

Description: Tubular Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Electric Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
Mazdon 40	2001029B	2/21/2002	Thermo Technologies	TMA-600-20	6.1	65.9	303	80			3.3



OG300 System Reference: 2001029B

March 2004

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**SRCC
CERTIFIED
SYSTEMS
AND
RATINGS:**

GAS AUXILIARY

COMPARING SYSTEM COSTS

The Energy Factor (EF) and the Solar Energy Factor (SEF) can be used to compare different water heating systems with one another and to estimate typical yearly operating costs for the specified rating conditions. The SEF includes all of the specified conditions for the DOE EF test, plus several solar specific conditions. The EF and SEF can be used to compare solar and gas system's energy use on a one-to-one basis. A higher SEF or EF indicates less conventional energy use, and consequently, lower operating cost. For gas systems, the following calculation can be used:

$$\text{Yearly Cost (\$)} = 365 \text{ days} * 0.4105 / \text{EF} * \$x / \text{therm}$$

Examples:

Assume that gas costs \$0.61/therm

1. TYPICAL GAS WATER HEATER (EF = 0.6)

$$\text{YEARLY COST} = 365 * 0.4105 / 0.6 * 0.61 = \$152.33$$

2. TYPICAL SOLAR SYSTEM (SEF = 1.1)

$$\text{YEARLY COST} = 365 * 0.4105 / 1.1 * 0.61 = \$83.09$$

Note that the solar system saves \$69.24 (\$152.33 - \$83.09) per year. This figure can be used as the energy cost savings basis for an economic analysis of a solar hot water system based on the assumptions for the standard DOE (EF) and SRCC-OG 300 rating conditions (SEF). Other factors such as initial cost, maintenance, inflation, interest rate, and replacement costs also need to be considered when making an economic analysis.

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

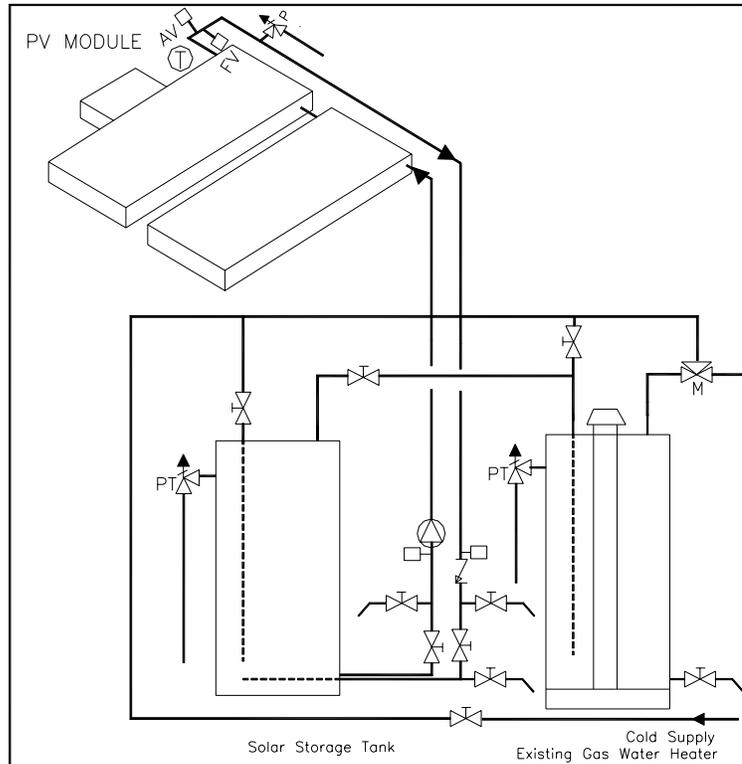
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 3
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -1.11 C (30 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200132C502TG	2001018B	12/9/2002	ACR Solar International	Fireball 2001	3.7	40.1	189	50	189	50	1.0



OG300 System Reference: 2001018B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



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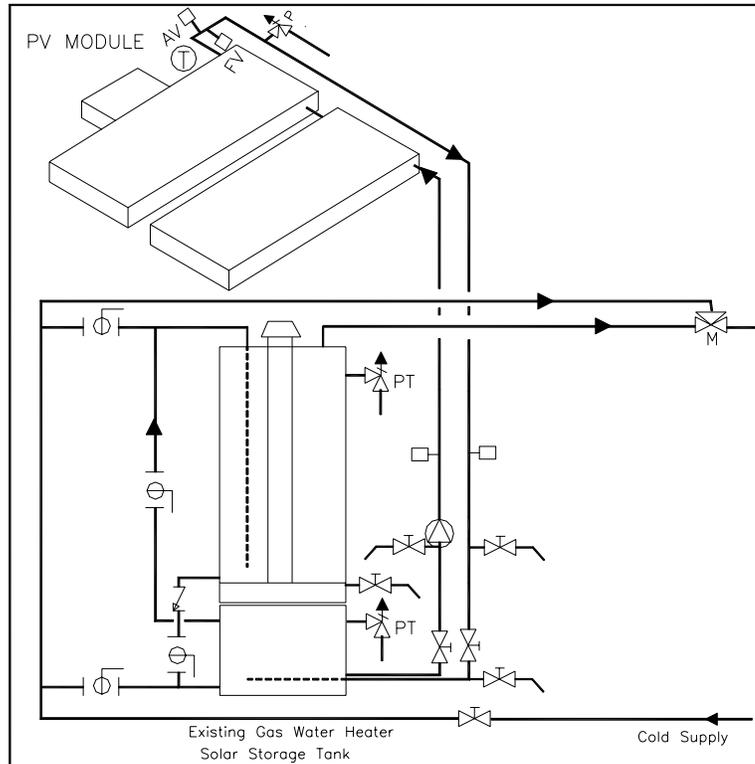
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 3
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -6.66 C (20 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200132C50T20G	2002005A	12/9/2002	ACR Solar International	Fireball 2001	3.7	40.1	76	20	189	50	0.8



OG300 System Reference: 2002005A

March 2004

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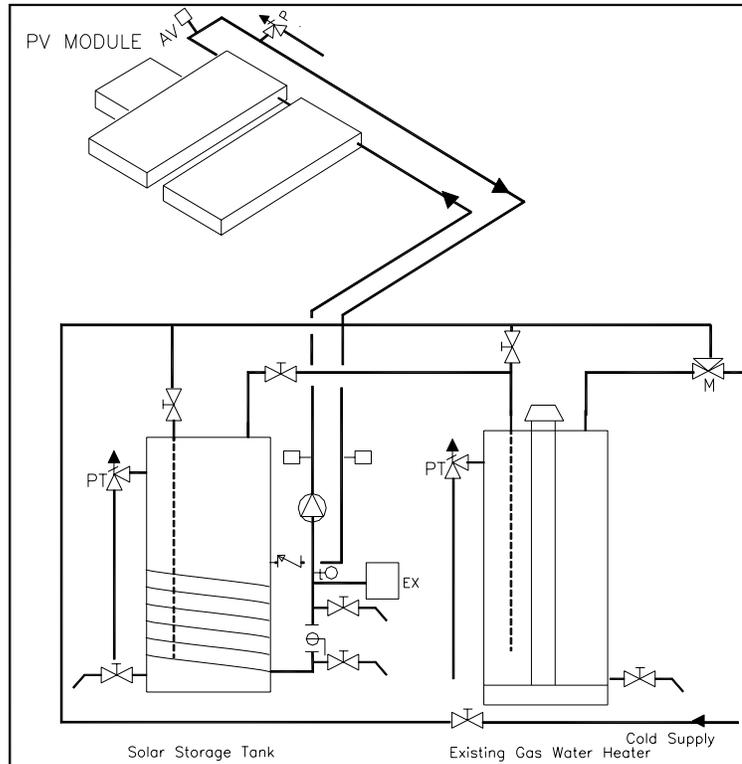
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 5
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -47.7 C (-54 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200152C80EX2TG	2001019A	12/9/2002	ACR Solar International	Fireball 2001	3.7	40.1	303	80	189	50	0.9



OG300 System Reference: 2001019A

March 2004

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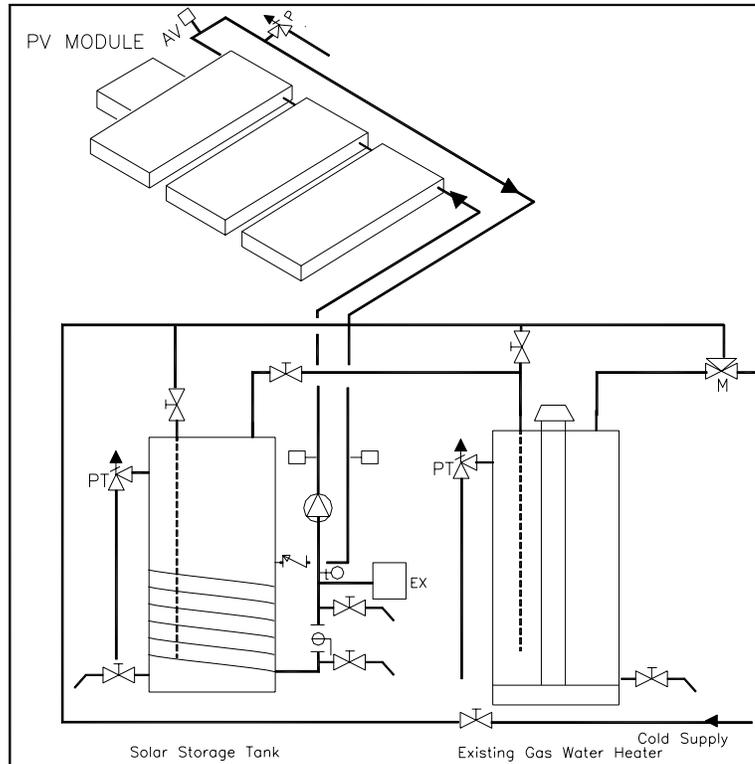
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: ACR Solar International
5840 Gibbons Dr.
Suite G
Carmichael, CA 95608
(916) 481-7200
(916) 481-7230 Fax
(888) 801-9060

SYSTEM NAME: Fireball 2001 System 5
SYSTEM TYPE: Direct Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -47.7 C (-54 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
200153C80EX2TG	2001019B	12/9/2007	ACR Solar International	Fireball 2001	5.6	60.2	303	80	189	50	1.0



OG300 System Reference: 2001019B

March 2004

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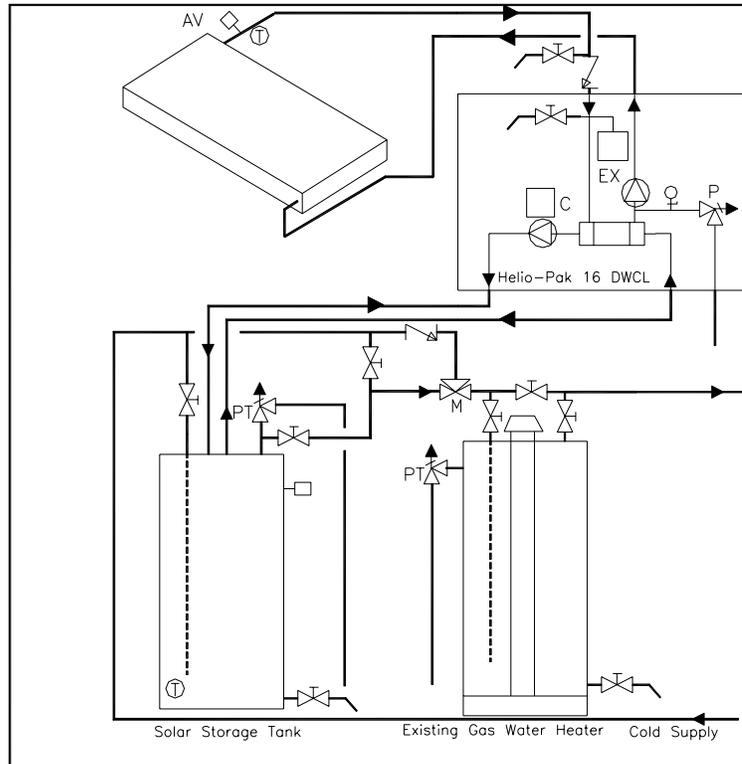
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 1 308 G 65 ACD Z	1998001E	4/16/1998	Heliodyne, Inc.	Gobi 308	2.2	24.1	246	65	189	50	0.8
16 DWCL HP 1 3366 G 80 ACD Z	1998001G	7/9/2001	Heliodyne, Inc.	Gobi 3366	2.5	26.8	303	80	189	50	0.9
16 DWCL HP 1 408 G 65 ACD Z	1998001F	4/16/1998	Heliodyne, Inc.	Gobi 408	3.0	32.2	246	65	189	50	0.9
16 DWCL HP 1 408 G 80 ACD Z	1998001I	7/9/2001	Heliodyne, Inc.	Gobi 408	3.0	32.2	303	80	189	50	0.9
16 DWCL HP 1 410 G 65 ACD Z	1998001A	4/16/1998	Heliodyne, Inc.	Gobi 410	3.7	40.3	246	65	189	50	1.0
16 DWCL HP 1 410 G 80 ACD Z	1998001J	7/9/2001	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80	189	50	1.0



OG300 System Reference: 1998001A

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SOLAR WATER HEATING
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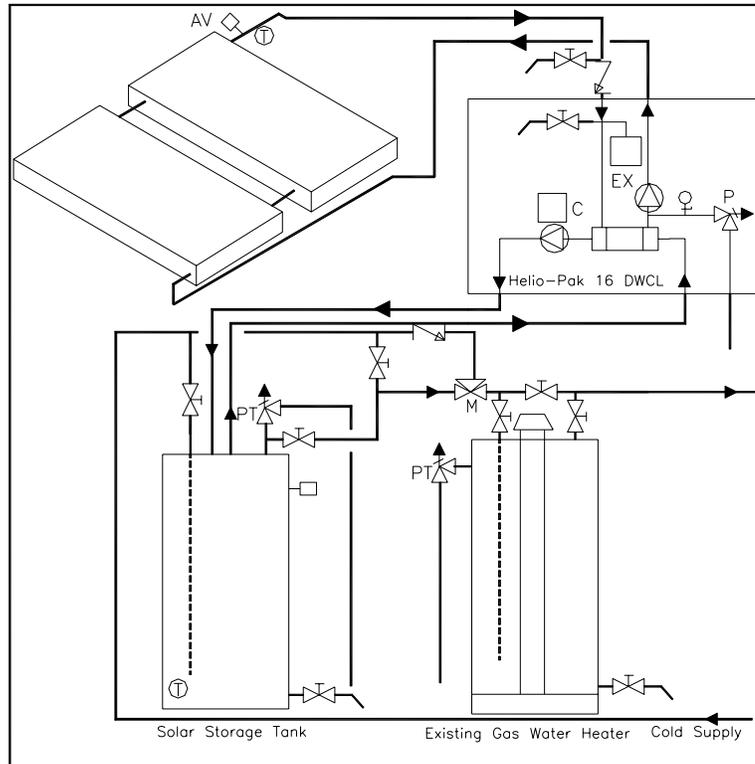
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 2 3366 G 80 ACD Z	1998001H	7/9/2001	Heliodyne, Inc.	Gobi 3366	5.0	53.6	303	80	189	50	1.2
16 DWCL HP 2 408 G 120 ACD Z	1998001C	4/16/1998	Heliodyne, Inc.	Gobi 408	6.0	64.5	454	120	189	50	1.4
16 DWCL HP 2 408 G 80 ACD Z	1998001B	4/16/1998	Heliodyne, Inc.	Gobi 408	6.0	64.5	303	80	189	50	1.4
16 DWCL HP 2 410 G 120 ACD Z	1998001D	4/16/1998	Heliodyne, Inc.	Gobi 410	7.5	80.6	454	120	189	50	1.7



OG300 System Reference: 1998001B

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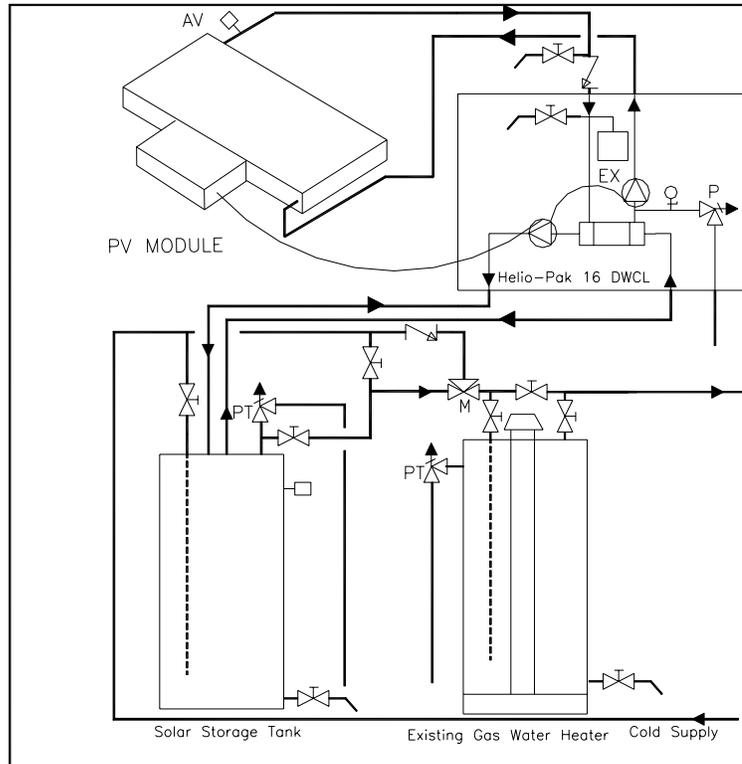
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 1 408 G 65 PVD Z	1998002C	7/15/1998	Heliodyne, Inc.	Gobi 408	3.0	32.2	246	65	189	50	0.9
16 DWCL HP 1 410 G 80 PVD Z	1998002A	4/16/1998	Heliodyne, Inc.	Gobi 410	3.7	40.3	303	80	189	50	1.0



OG300 System Reference: 1998002A

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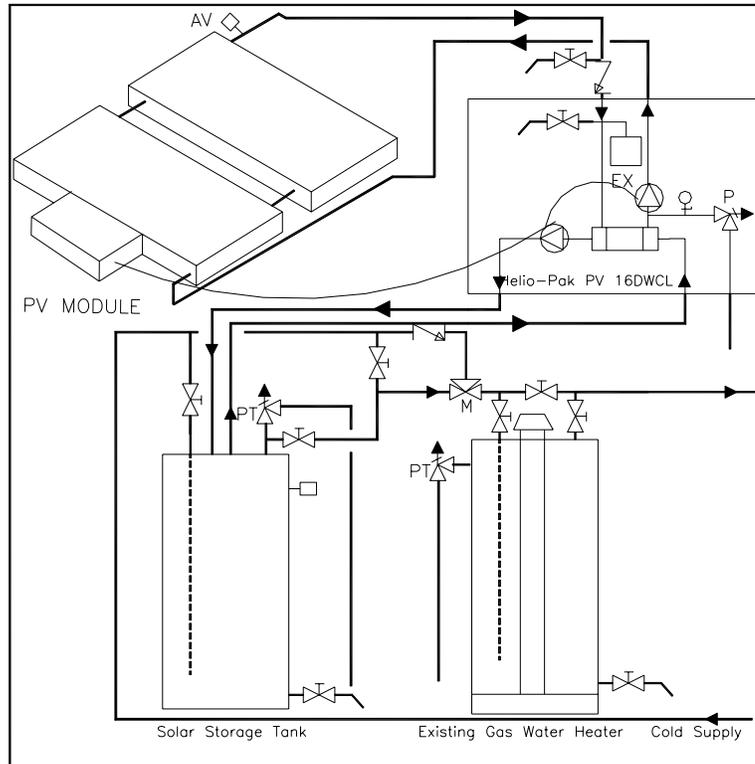
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: Heliopak
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
16 DWCL HP 2 308 G 80 PVD Z	1998002B	4/16/1998	Heliodyne, Inc.	Gobi 308	4.5	48.2	303	80	189	50	1.1



OG300 System Reference: 1998002B

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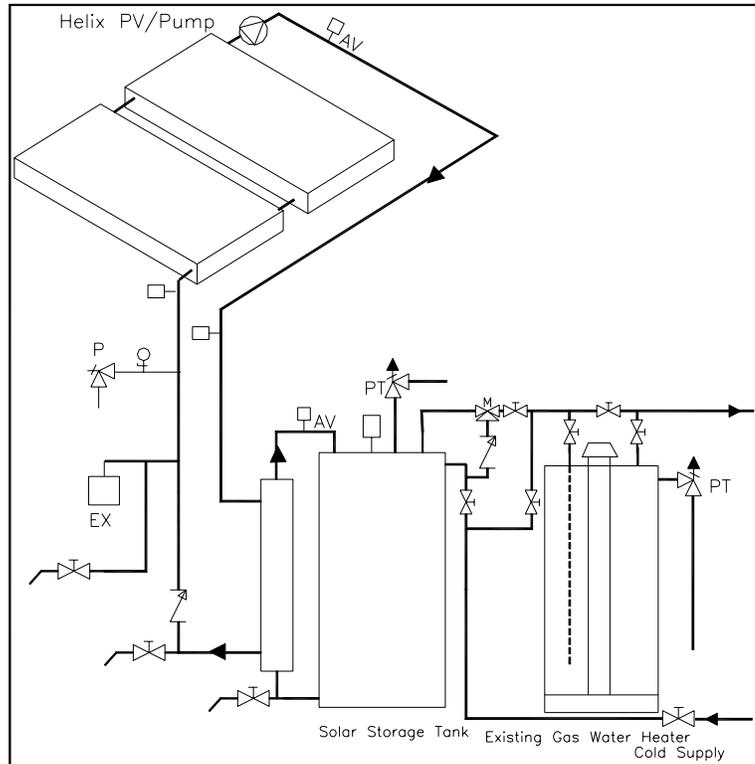
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Heliodyne, Inc.
4910 Seaport Avenue
Richmond, CA 94804
(510) 237-9614
(510) 237-7018 Fax

SYSTEM NAME: HP HELIX PV
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Shell and Tube Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
HP HX 2 408 G PV 80 DZ	1999006A	3/1/2000	Heliodyne, Inc.	Gobi 408	6.0	64.5	303	80	189	50	1.4



OG300 System Reference: 1999006A

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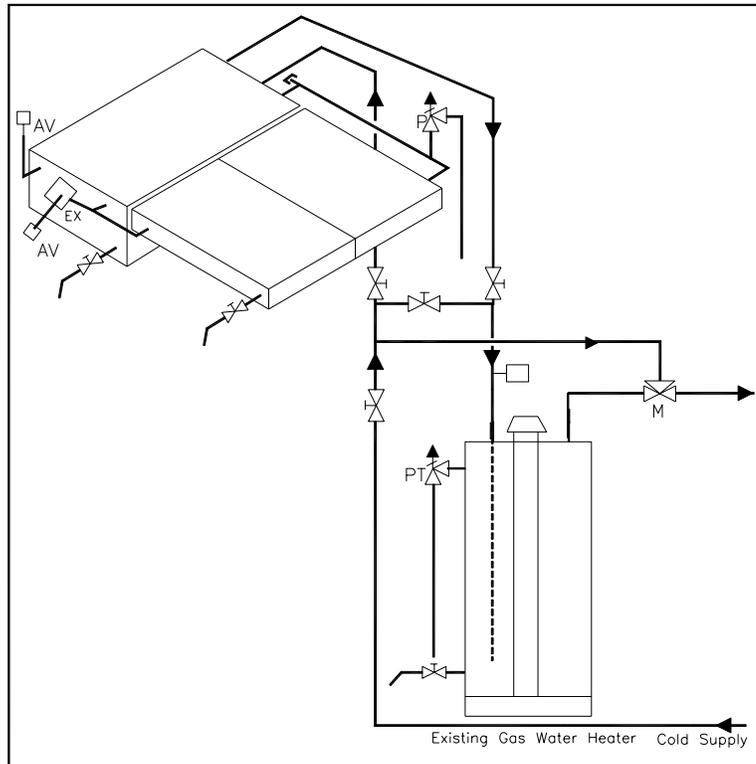
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Copper Satsation
SYSTEM TYPE: Indirect Thermosyphon

Description: Glazed Flat-Plate Collector, No Controller, Immersed Coil Heat Exchanger with a Single Wall, Immersed Coil Heat Exchanger, Fluid Class II, Freeze Tolerance: -8.33 C (17 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CSHX60GB	1998005A	7/13/1998	Radco Products, Inc.	308P-HP	4.4	47.4	227	60	189	50	0.8
CSHX80GB	1998005B	7/13/1998	Radco Products, Inc.	408P-HP	6.0	64.6	303	80	189	50	0.9



OG300 System Reference: 1998005A

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SOLAR WATER HEATING
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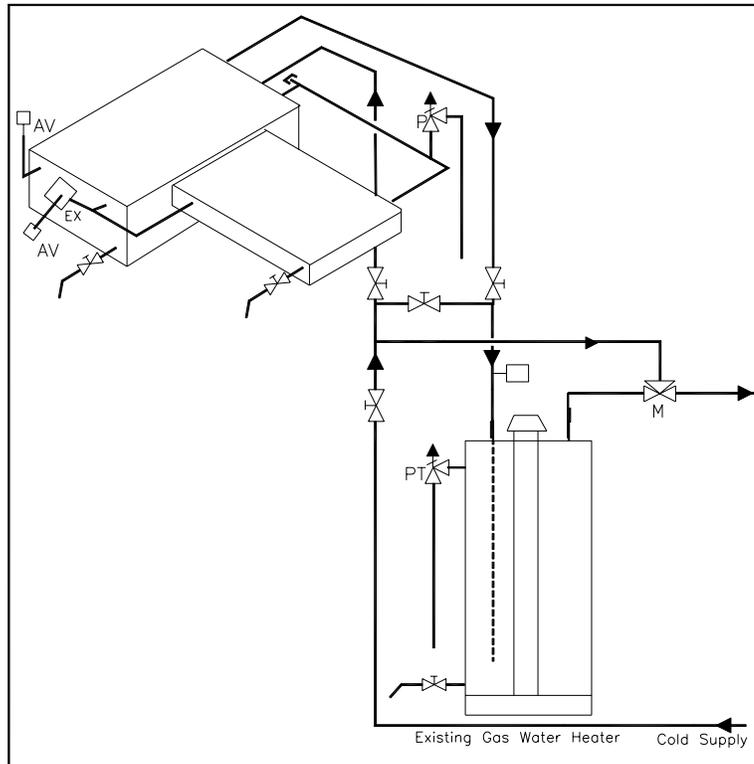
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Copper Satsation
SYSTEM TYPE: Indirect Thermosyphon

Description: Glazed Flat-Plate Collector, No Controller, Immersed Coil Heat Exchanger with a Single Wall, Immersed Coil Heat Exchanger, Fluid Class II, Freeze Tolerance: -8.33 C (17 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CSHX40GB	1998005D	7/13/1998	Radco Products, Inc.	408P-HP	3.0	32.3	151	40	189	50	0.8



OG300 System Reference: 1998005D

March 2004

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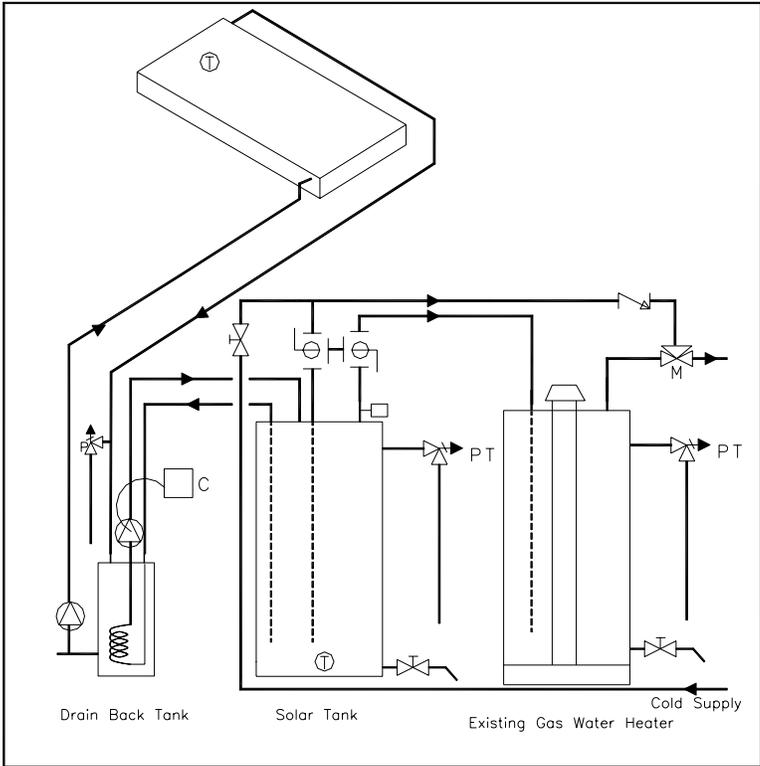
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Drainback Heat Exchanger
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Immersed Coil Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
R-DBHX-8-65-GD-40P	1998004A	7/13/1998	Radco Products, Inc.	410P-HP	3.7	39.9	246	65	189	50	0.9



OG300 System Reference: 1998004A

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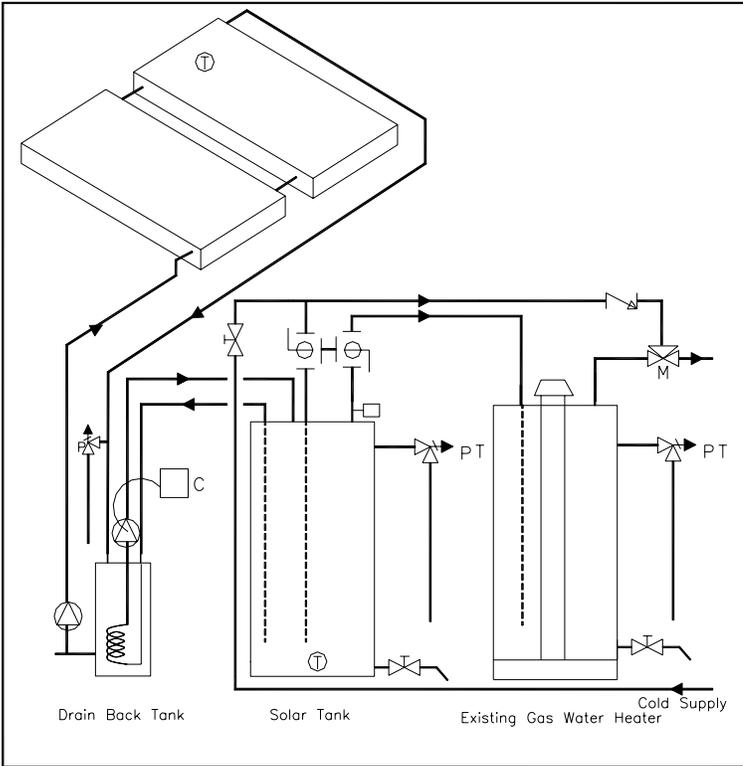
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Drainback Heat Exchanger
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Immersed Coil Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
R-DBHX-12-120-GD-80P	1998004C	7/13/1998	Radco Products, Inc.	410P-HP	7.4	79.8	454	120	189	50	1.1
R-DBHX-8-80-GD-64P	1998004B	7/13/1998	Radco Products, Inc.	408P-HP	6.0	64.6	303	80	189	50	1.1



OG300 System Reference: 1998004B

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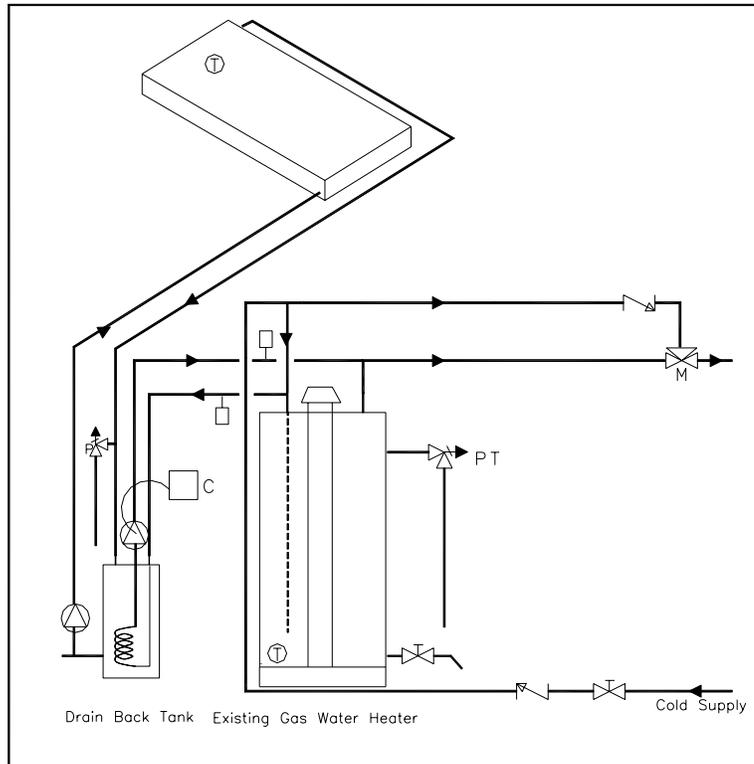
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Radco Products, Inc.
2877 Industrial Parkway
Santa Maria, CA 93455
(805) 928-1881
(805) 928-5587 Fax
(800) 927-2326

SYSTEM NAME: Drainback Heat Exchanger
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Immersed Coil Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
R-DBHX-8-40-GS-32P	2002001A	4/4/2002	Radco Products, Inc.	408P-HP	3.0	32.3	151	40			0.6



OG300 System Reference: 2002001A

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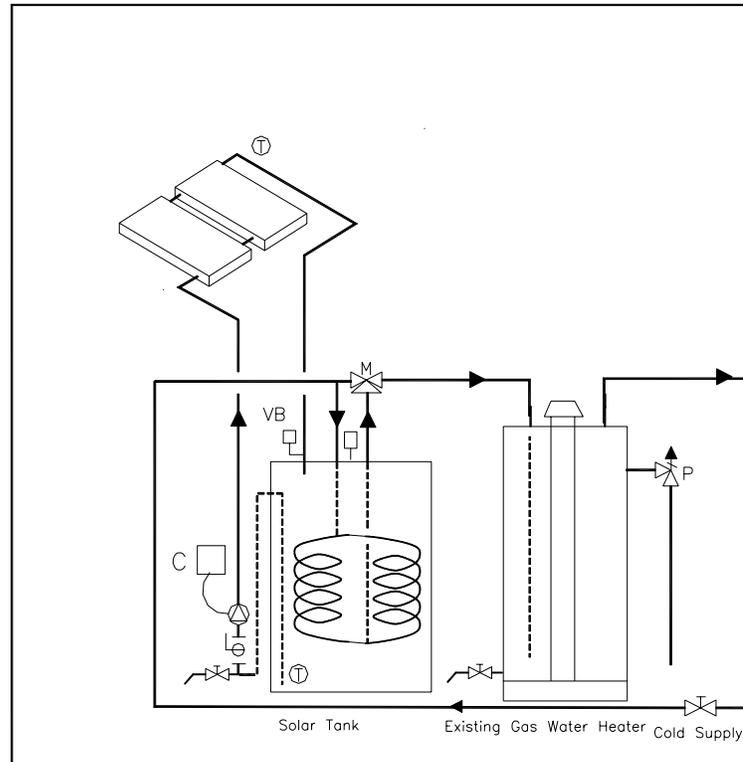
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-100S-DHW-AC-32	2001006H	3/7/2002	SunEarth, Inc.	SP-32	6.1	65.7	378	100	189	50	1.1
SRS-120-DHW-AC	2001006A	7/2/2001	SunEarth, Inc.	SP-40	7.6	81.7	454	120	189	50	1.2



OG300 System Reference: 2001006A

March 2004

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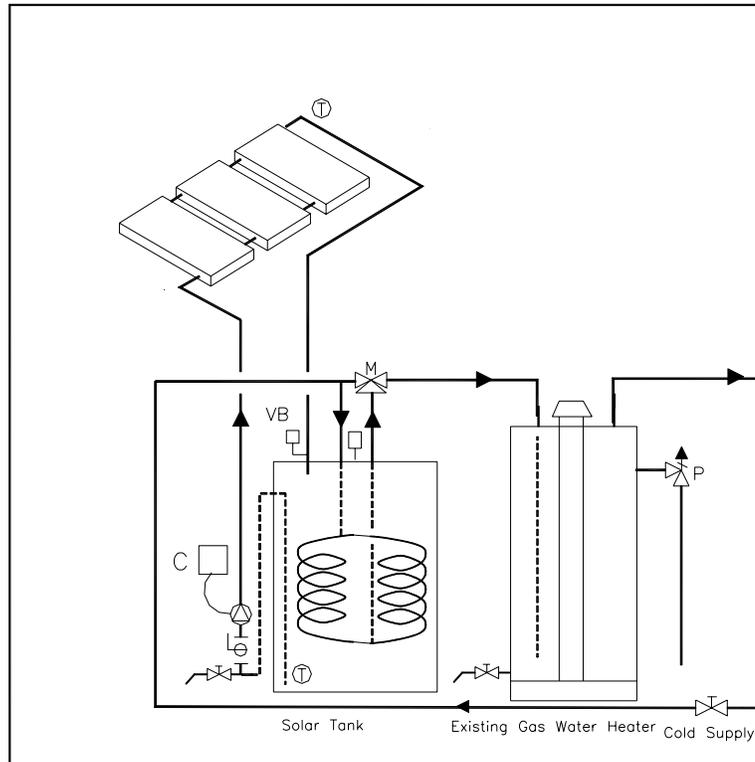
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-210-DHW-AC	2001006B	7/2/2001	SunEarth, Inc.	SP-40	11.4	122.6	794	210	189	50	1.4



OG300 System Reference: 2001006B

March 2004

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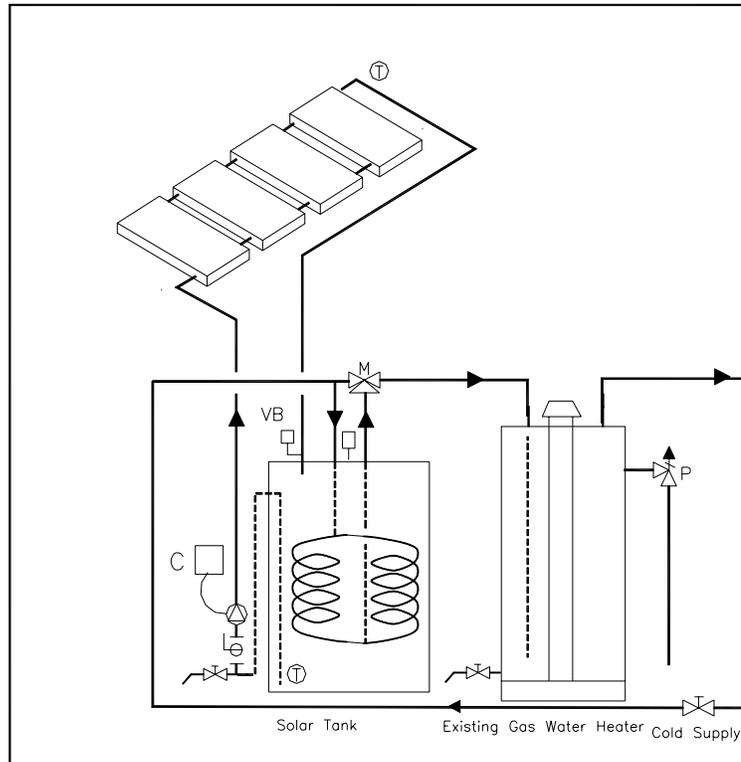
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-210-DHW-AC-SPA	2001006C	7/2/2001	SunEarth, Inc.	SP-40	15.2	163.4	794	210	189	50	1.9



OG300 System Reference: 2001006C

March 2004

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SYSTEMS CERTIFICATION AND
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SRCC OG-300

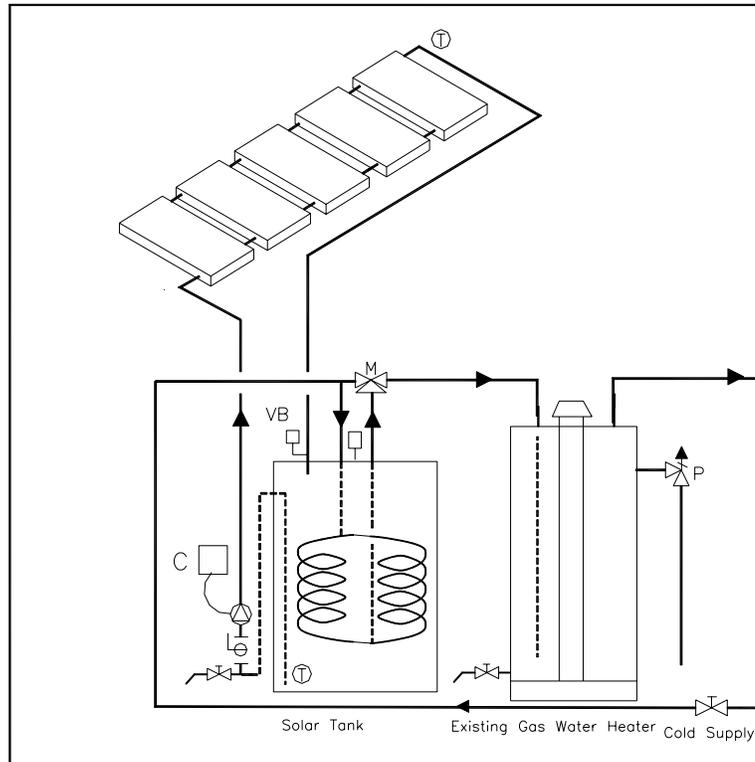
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-320-DHW-AC	2001006D	7/2/2001	SunEarth, Inc.	SP-40	19.0	204.3	1211	320	189	50	2.1



OG300 System Reference: 2001006D

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

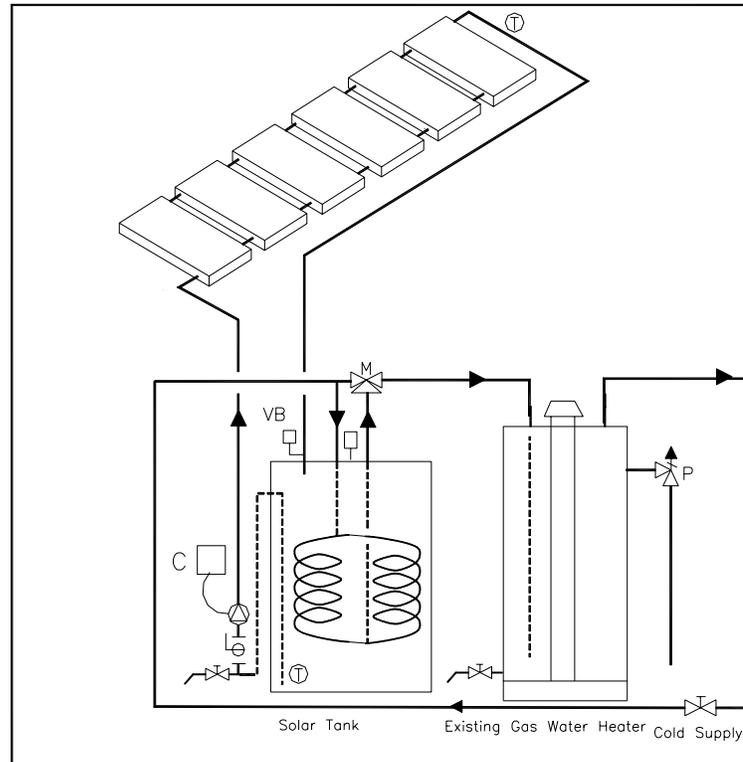
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-320-DHW-AC-SPA	2001006E	7/2/2001	SunEarth, Inc.	SP-40	22.8	245.1	1211	320	189	50	2.3



OG300 System Reference: 2001006E

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

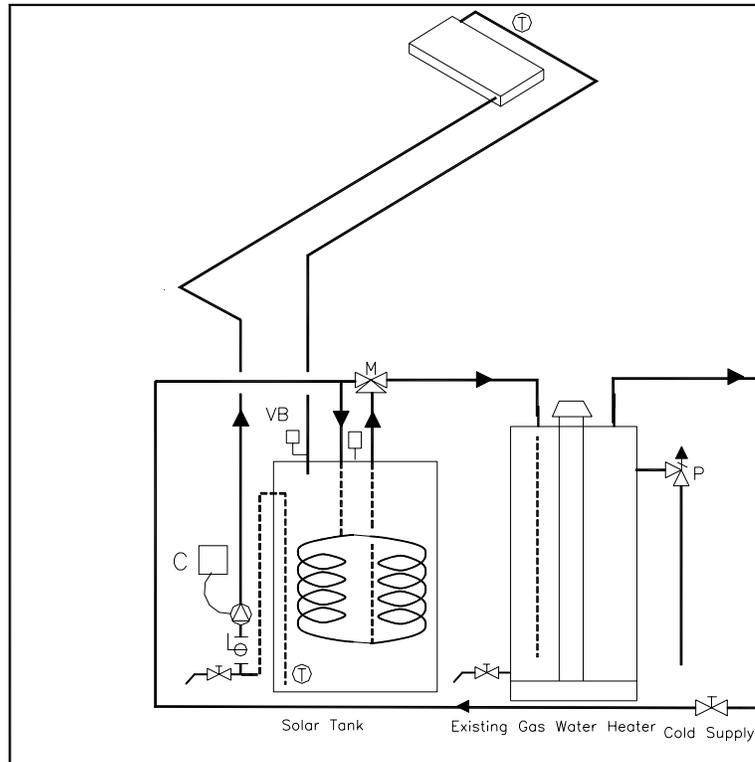
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Six Rivers Solar, Inc.
818 Broadway
Eureka, CA 95501
(707) 443-5652
(707) 442-0110 Fax

SYSTEM NAME: Six Rivers Solar
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, No Supply Side Heat Exchanger, Immersed Coil Heat Exchanger, Fluid Class I, Freeze Tolerance: -28.8 C (-20 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
SRS-55S-DHW-AC-32	2001006F	11/20/2001	SunEarth, Inc.	SP-32	3.1	32.8	208	55	189	50	0.8
SRS-55S-DHW-AC-40	2001006G	11/20/2001	SunEarth, Inc.	SP-40	3.8	40.9	208	55	189	50	0.9



OG300 System Reference: 2001006F

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

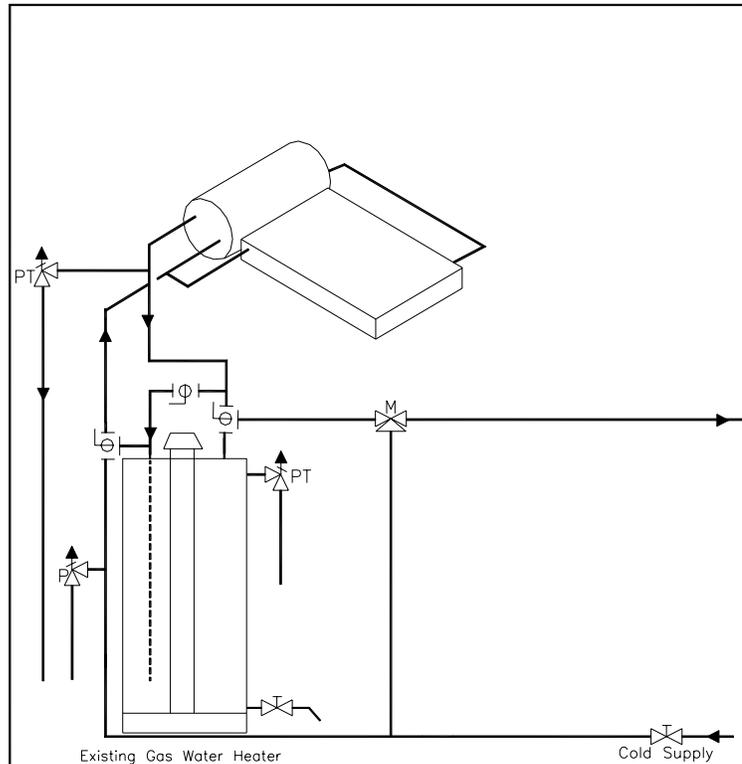
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 181L	2001015A	3/28/2003	Solahart Industries	L	2.0	21.3	174	46			0.8



OG300 System Reference: 2001015A

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

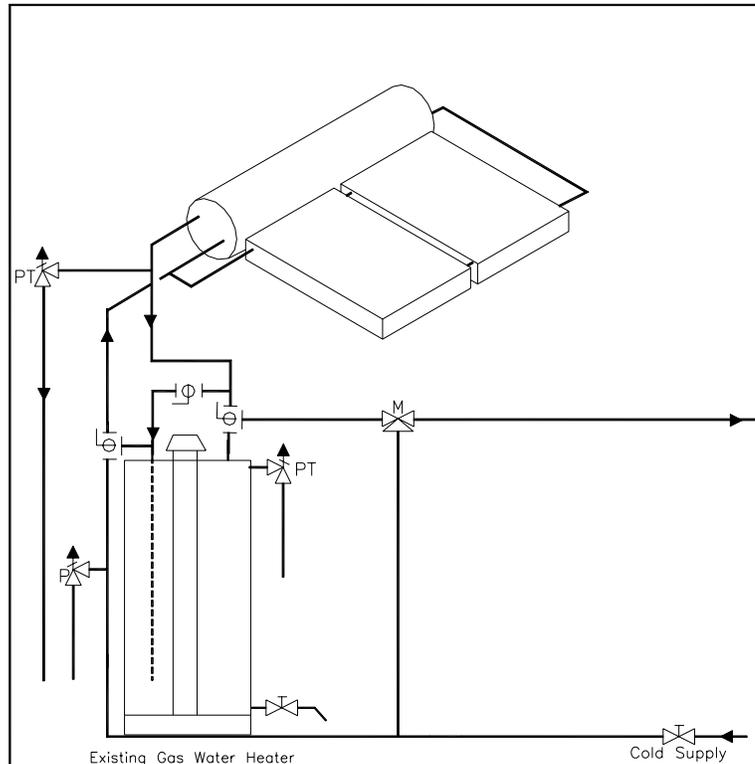
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 302L	2001015B	3/28/2003	Solahart Industries	L	4.0	42.7	291	77			1.0



OG300 System Reference: 2001015B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

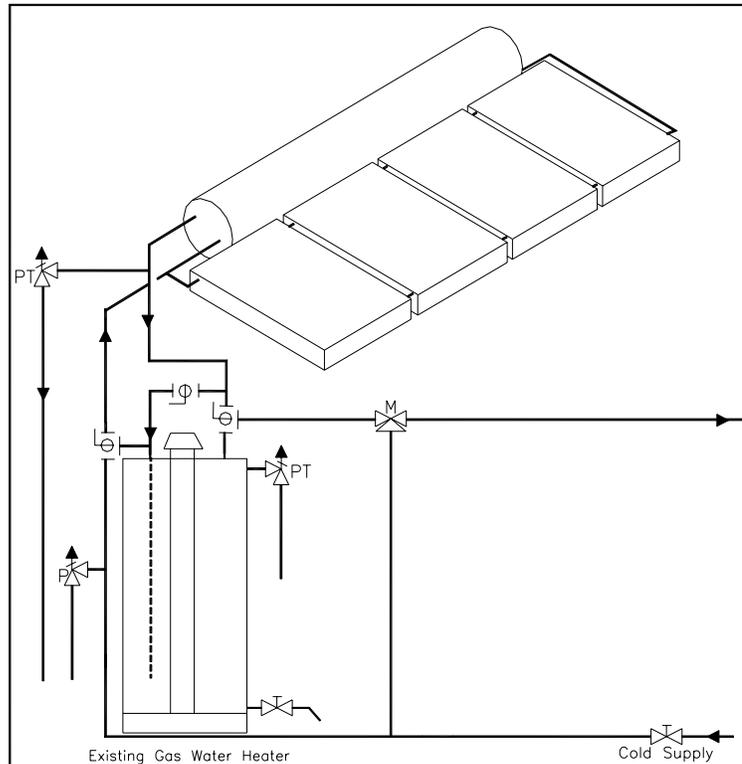
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 303L	2001015C	3/28/2003	Solahart Industries	L	5.9	64.0	291	77			1.1
ASG 443L	2001015D	3/28/2003	Solahart Industries	L	5.9	64.0	427	113			1.1



OG300 System Reference: 2001015C

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

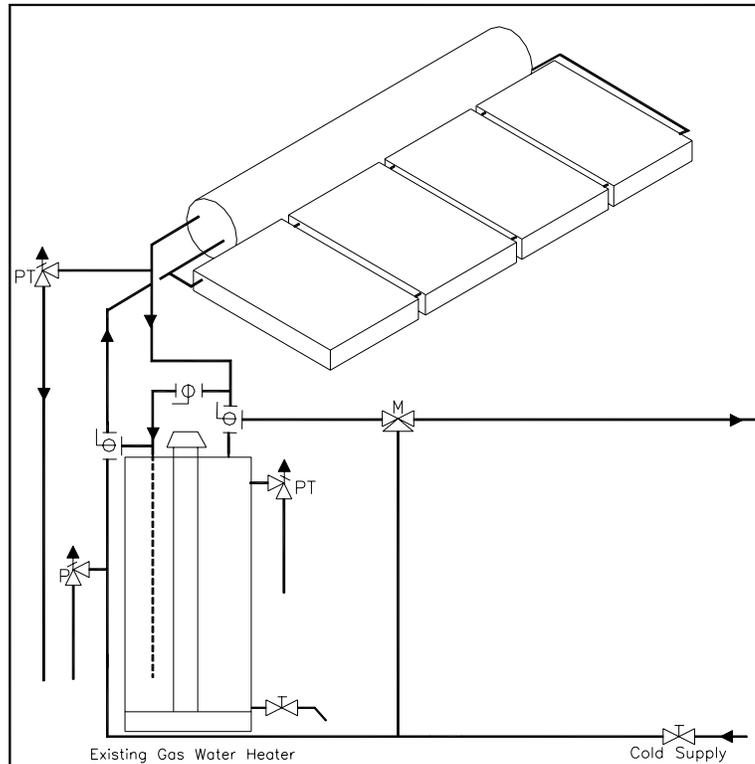
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 444L	2001015E	3/28/2003	Solahart Industries	L	7.9	85.4	427	113			1.2



OG300 System Reference: 2001015E

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

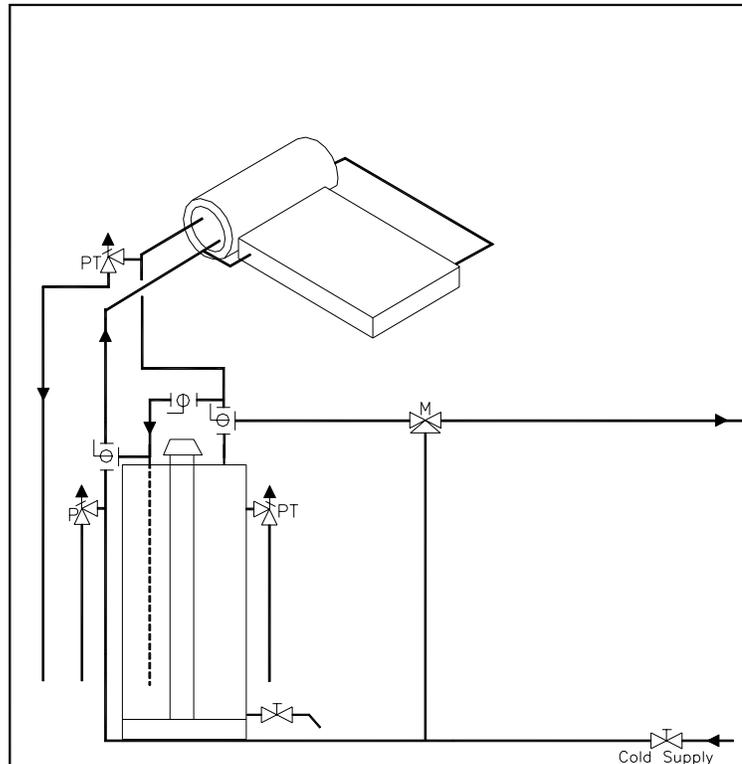
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 181J & ASG 181J Free Heat	2001016A	3/28/2003	Solahart Industries	J	2.0	21.3	174	46			0.8



OG300 System Reference: 2001016A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

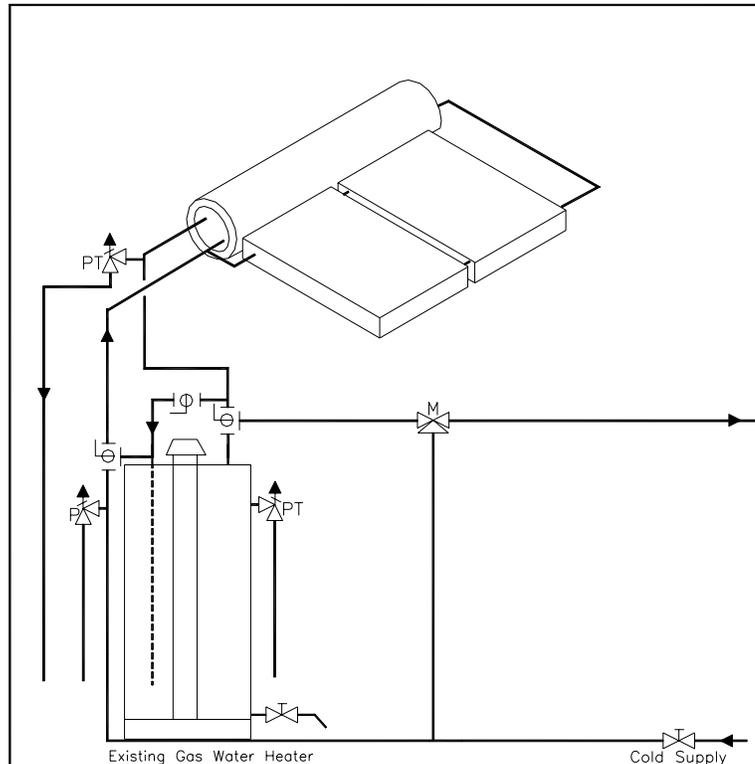
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 182J & ASG 182J Free Heat	2001016B	3/28/2003	Solahart Industries	J	4.0	42.7	174	46			1.0
ASG 302J & ASG 302J Free Heat	2001016C	3/28/2003	Solahart Industries	J	4.0	42.7	291	77			1.0
ASG 302JXII	2001016D	3/28/2003	Solahart Industries	J	4.0	42.7	291	77			1.0



OG300 System Reference: 2001016B

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

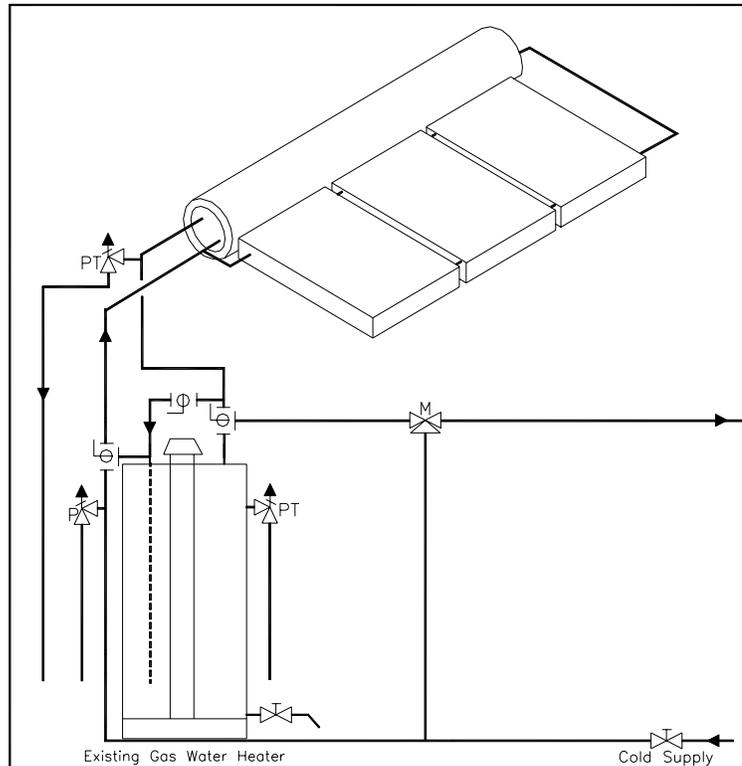
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 303J & ASG 302J Free Heat	2001016E	3/28/2003	Solahart Industries	J	5.9	64.0	291	77			1.1
ASG 303JXII	2001016F	3/28/2003	Solahart Industries	J	5.9	64.0	291	77			1.1
ASG 443J & ASG 443J Free Heat	2001016G	3/28/2003	Solahart Industries	J	5.9	64.0	427	113			1.1
ASG 443JXII	2001016H	3/28/2003	Solahart Industries	J	5.9	64.0	427	113			1.1



OG300 System Reference: 2001016E

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

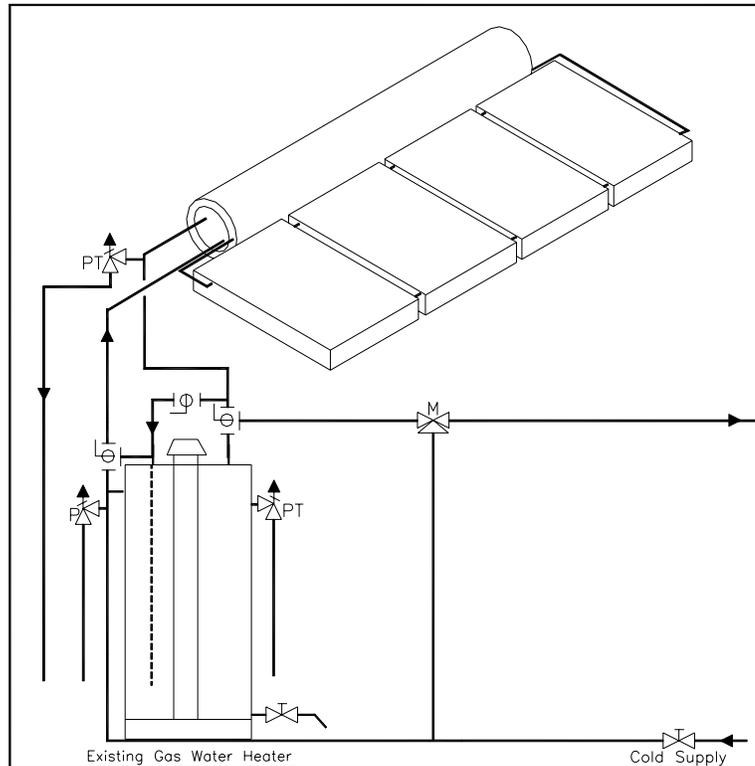
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 444J & ASG 444J Free Heat	2001016I	3/28/2003	Solahart Industries	J	7.9	85.4	427	113			1.1
ASG 444JXII	2001016J	3/28/2003	Solahart Industries	J	7.9	85.4	427	113			1.1



OG300 System Reference: 2001016I

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

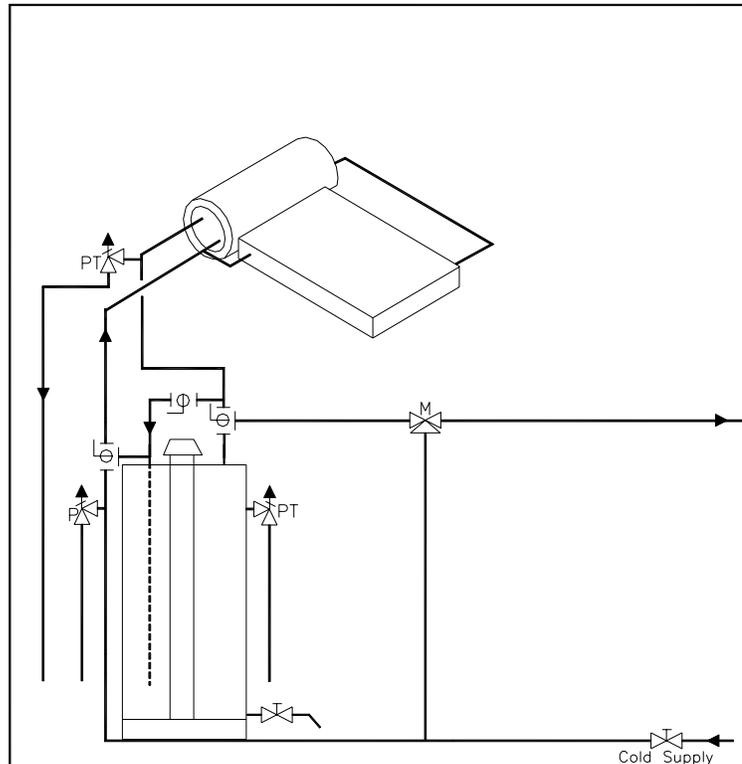
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 181KF & ASG 181KF Free Heat	2001017A	3/28/2003	Solahart Industries	KF	2.0	21.3	174	46			0.8



OG300 System Reference: 2001017A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

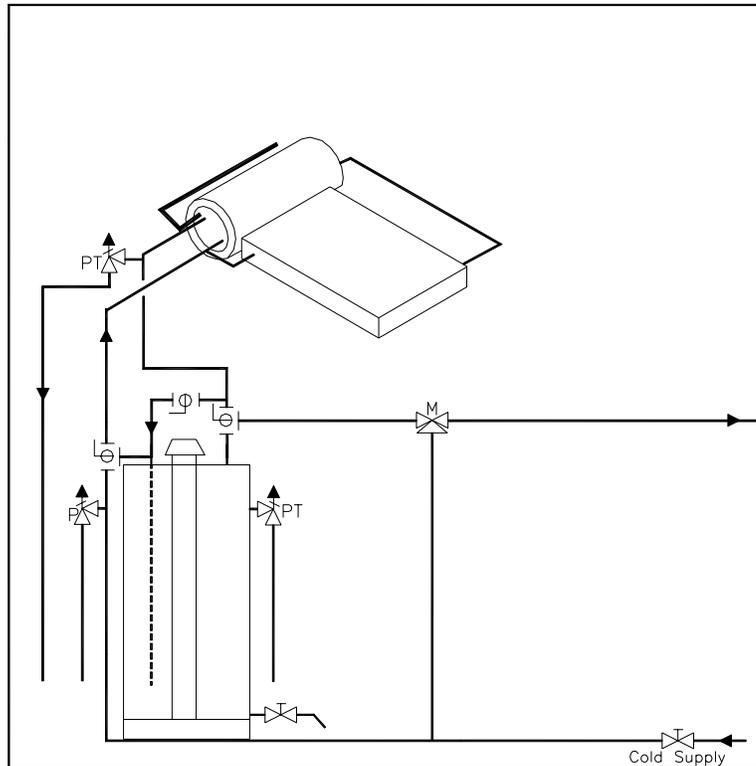
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 181BCXII	2001017B	3/28/2003	Solahart Industries	KF	2.0	21.3	174	46			0.8



OG300 System Reference: 2001017B

March 2004

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SOLAR WATER HEATING
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RATING



SRCC OG-300

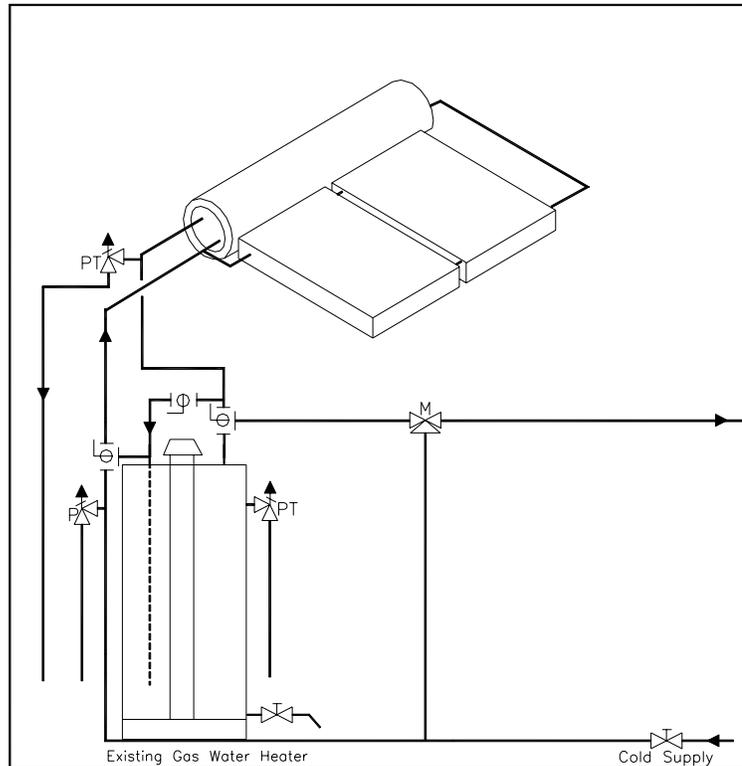
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 182KF & ASG 182KF Free Heat	2001017C	3/28/2003	Solahart Industries	KF	4.0	42.7	174	46			1.1
ASG 302KF & ASG 302KF Free Heat	2001017E	3/28/2003	Solahart Industries	KF	4.0	42.7	291	77			1.0



OG300 System Reference: 2001017C

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

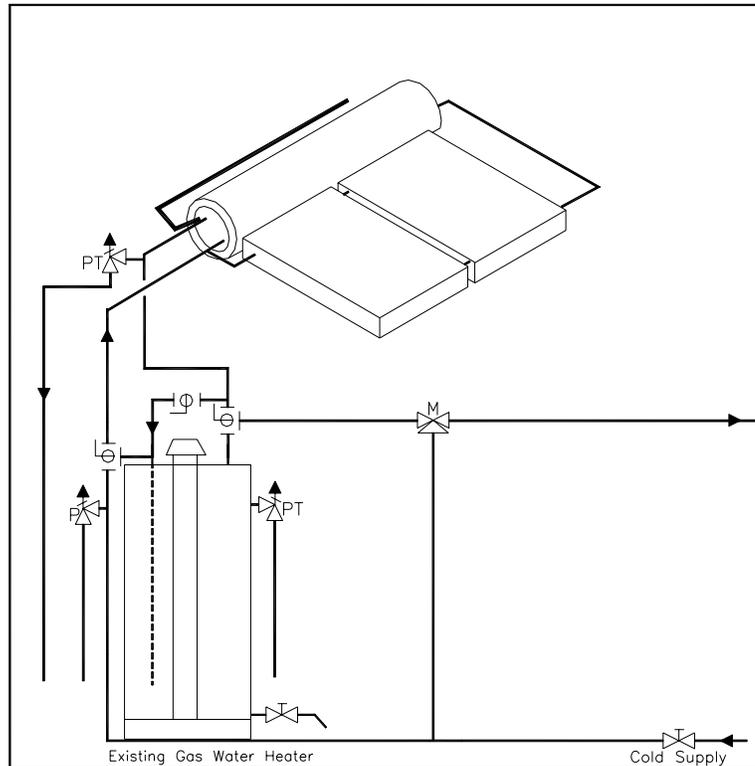
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 182BCXII	2001017D	3/28/2003	Solahart Industries	KF	4.0	42.7	174	46			1.1
ASG 302BCXII	2001017F	3/28/2003	Solahart Industries	KF	4.0	42.7	291	77			1.0



OG300 System Reference: 2001017D

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

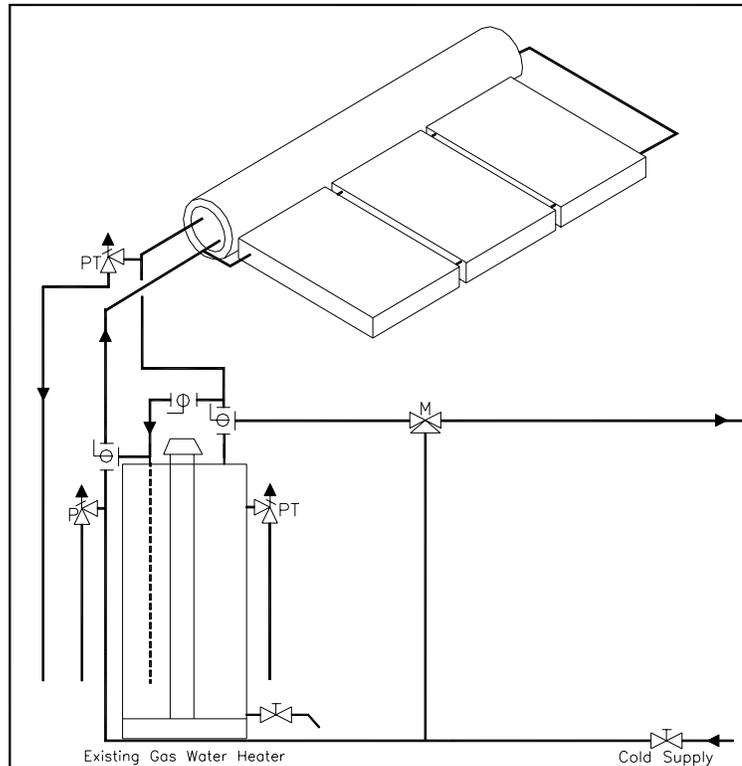
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 303KF & ASG 303KF Free Heat	2001017G	3/28/2003	Solahart Industries	KF	5.9	64.0	291	77			1.3
ASG 443KF & ASG 443KF Free Heat	2001017I	3/28/2003	Solahart Industries	KF	5.9	64.0	427	113			1.2



OG300 System Reference: 2001017G

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

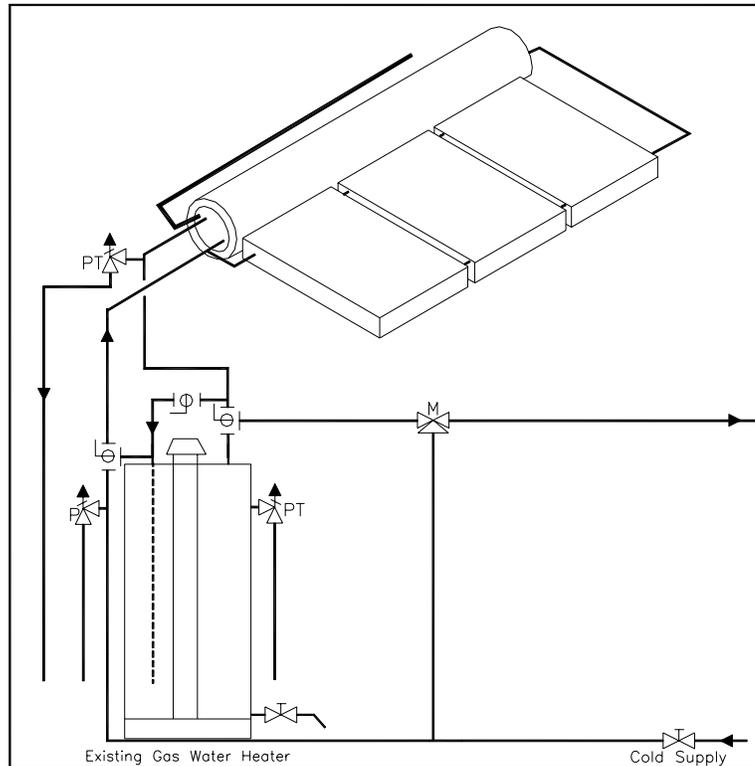
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 303BCXII	2001017H	3/28/2003	Solahart Industries	KF	5.9	64.0	291	77			1.3
ASG 443BCXII	2001017J	3/28/2003	Solahart Industries	KF	5.9	64.0	427	113			1.2



OG300 System Reference: 2001017H

March 2004

Certification must be renewed annually. For current status contact:
SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

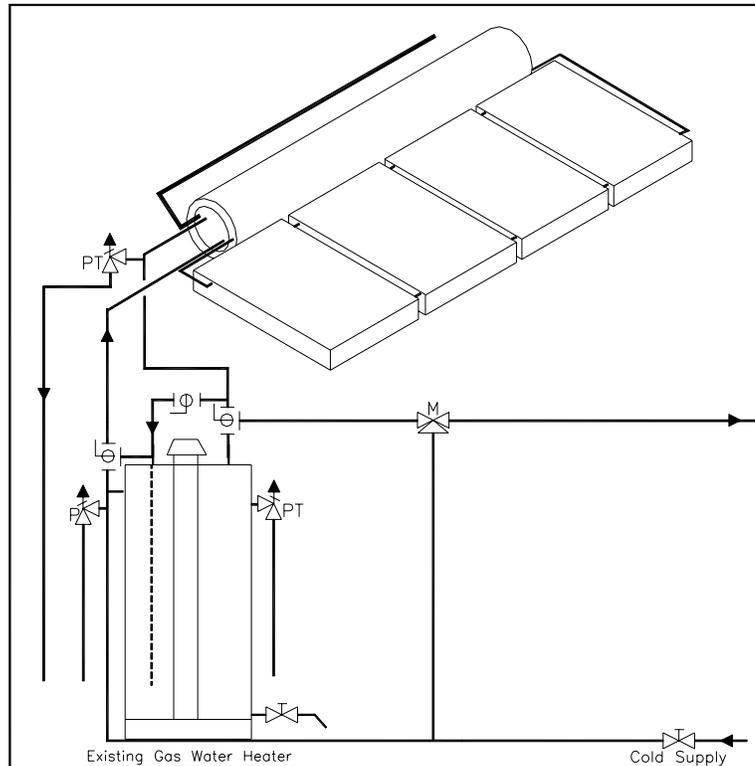
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Solahart Industries
101 Bell Road
Montgomery, AL 36117
(334) 260-1500
(334) 260-1562 Fax

SYSTEM NAME: SOLAHART
SYSTEM TYPE: Direct Thermosyphon

Description: Glazed Flat Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -7.22 C (19 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ASG 444BCXII	2001017L	3/28/2003	Solahart Industries	KF	7.9	85.4	427	113			1.4



OG300 System Reference: 2001017L

March 2004

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SOLAR RATING & CERTIFICATION CORPORATION
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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



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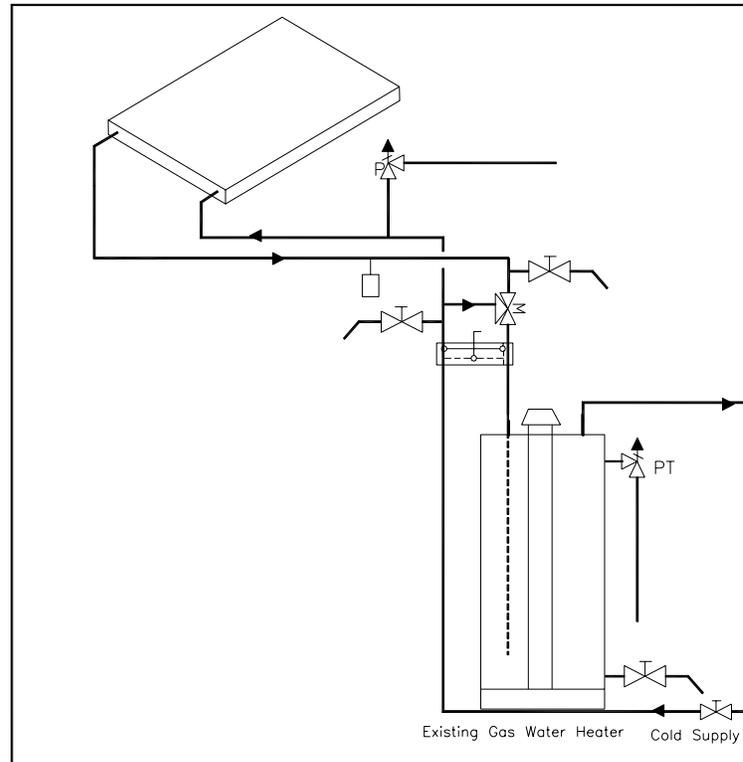
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Sun Systems, Inc.
2030 W. Pinnacle Peak Road
Phoenix, AZ 85027
(623) 869-7652
(623) 869-0891 Fax

SYSTEM NAME: CopperSun
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -6.66 C (20 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CS330-G	1999001B	4/24/2000	Sun Systems, Inc.	CS 330	2.3	25.0	113	30	189	50	0.8
CS330SV-G	2002008A	5/22/2003	Sun Systems, Inc.	CS 330	2.3	25.0	113	30	189	50	0.8
CS340-G	1999001C	4/24/2000	Sun Systems, Inc.	CS 340	2.3	25.0	151	40	189	50	0.8
CS340SV-G	2002008B	5/22/2003	Sun Systems, Inc.	CS 340	2.3	25.0	151	40	189	50	0.8
CS440-G	1999001A	1/19/1999	Sun Systems, Inc.	CS 440	3.1	33.2	148	39	189	50	0.9
CS450-G	1999001D	4/24/2000	Sun Systems, Inc.	CS 450	3.1	33.2	189	50	189	50	0.9



OG300 System Reference: 1999001A

March 2004

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SOLAR WATER HEATING
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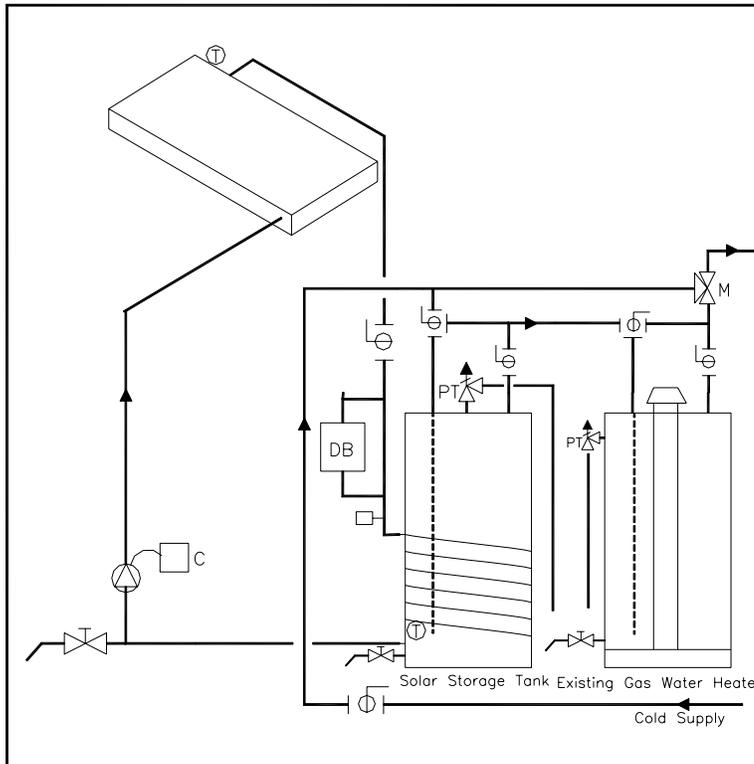
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: Cascade
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -45.5 C (-50 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ECRD-40-80-2G	2001028B	6/10/2003	SunEarth, Inc.	EC-40	3.8	40.9	303	80	189	50	1.0
EPRD-40-80-2G	2001028A	6/10/2003	SunEarth, Inc.	EP-40	3.8	40.9	303	80	189	50	0.9



OG300 System Reference: 2001028A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

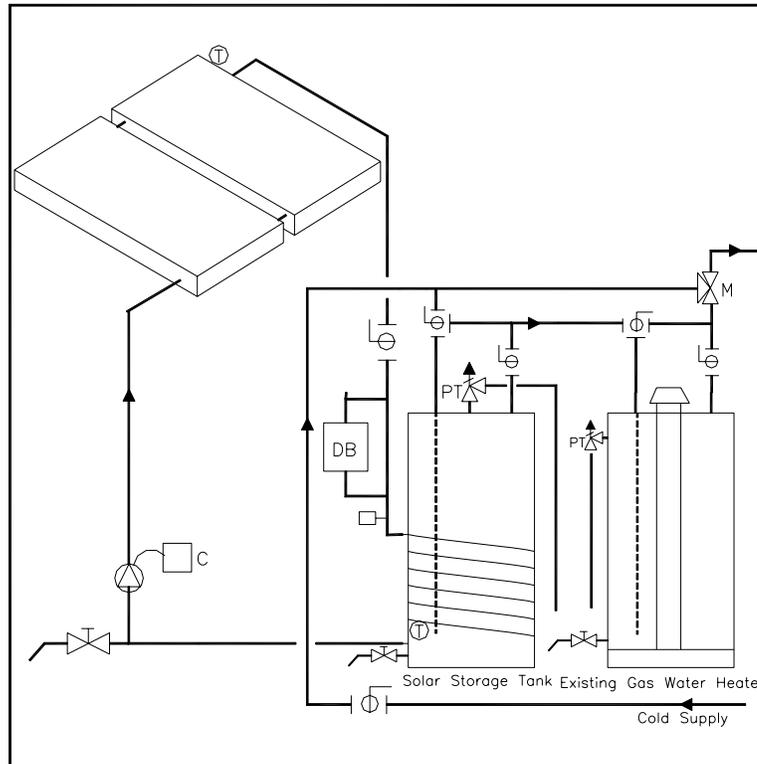
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: Cascade
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -45.5 C (-50 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
ECRD-42-80-2G	2001028D	6/10/2003	SunEarth, Inc.	EC-21	3.9	42.4	303	80	189	50	1.0
ECRD-48-80-2G	2001028F	6/10/2003	SunEarth, Inc.	EC-24	4.6	49.3	303	80	189	50	1.1
ECRD-64-80-2G	2001028H	6/10/2003	SunEarth, Inc.	EC-32	6.1	65.7	303	80	189	50	1.3
EPRD-42-80-2G	2001028C	6/10/2003	SunEarth, Inc.	EP-21	3.9	42.4	303	80	189	50	0.9
EPRD-48-80-2G	2001028E	6/10/2003	SunEarth, Inc.	EP-24	4.6	49.3	303	80	189	50	1.0
EPRD-64-80-100G	2001028J	8/13/2003	SunEarth, Inc.	EP-32	6.1	65.7	303	80	378	100	0.9
EPRD-64-80-2G	2001028G	6/10/2003	SunEarth, Inc.	EP-32	6.1	65.7	303	80	189	50	1.2
EPRD-64-80-75G	2001028I	8/13/2003	SunEarth, Inc.	EP-32	6.1	65.7	303	80	284	75	0.9



OG300 System Reference: 2001028C

March 2004

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SOLAR WATER HEATING
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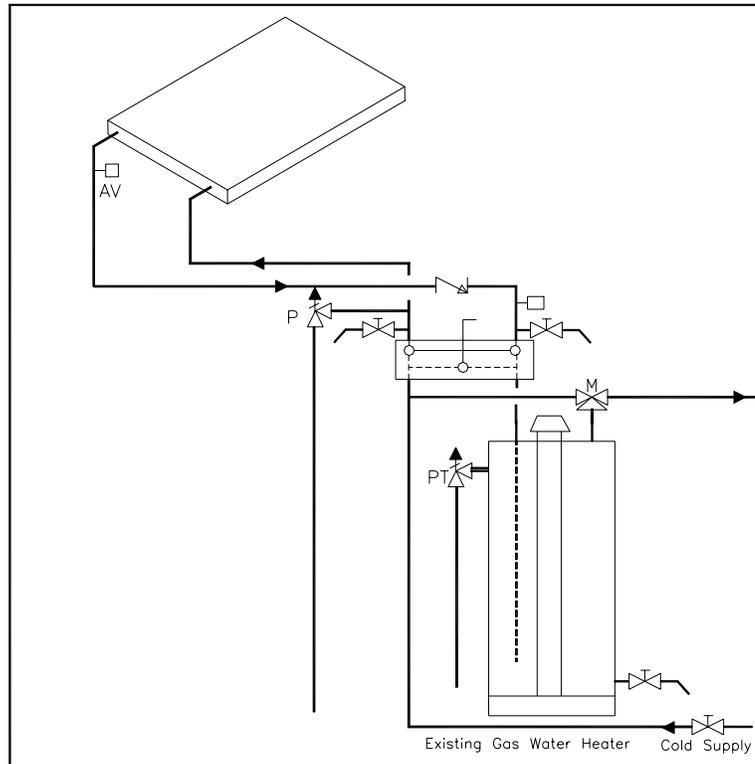
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: CopperHeart
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -6.66 C (20 F), Gas Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CP-20G	2001002A	4/10/2001	SunEarth, Inc.	CP-20	1.2	12.7	76	20	189	50	0.8
CP-30G	2001002B	4/10/2001	SunEarth, Inc.	CP-30	1.8	19.8	121	32	189	50	0.8
CP-40G	2001002C	4/10/2001	SunEarth, Inc.	CP-40	2.3	24.9	159	42	189	50	0.9



OG300 System Reference: 2001002A

March 2004

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SOLAR WATER HEATING
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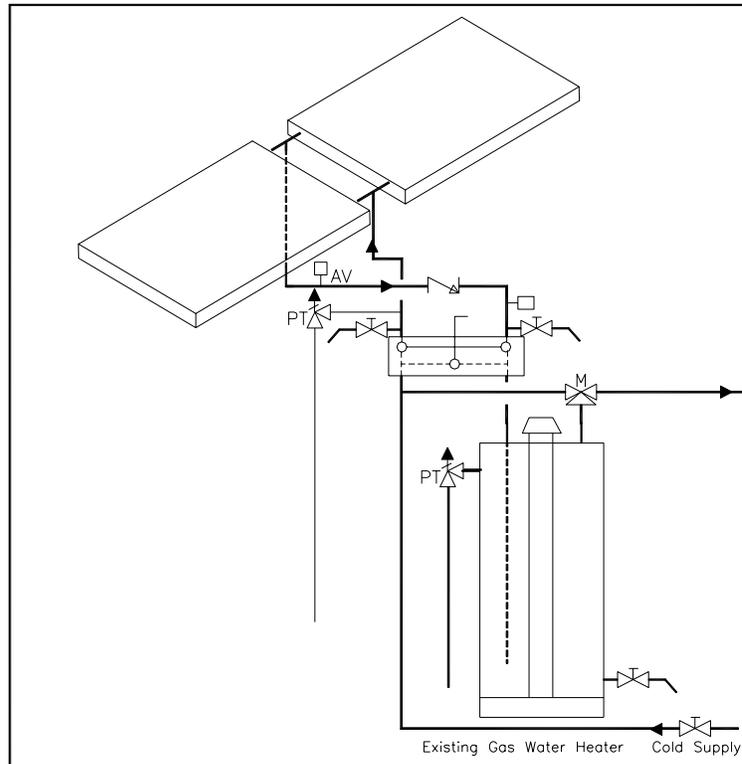
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: CopperHeart
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -6.66 C (20 F), Gas Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CP-60PG	2001002D	4/10/2001	SunEarth, Inc.	CP-30	3.7	39.7	242	64	189	50	1.0
CP-80PG	2001002E	4/10/2001	SunEarth, Inc.	CP-40	4.6	49.8	318	84	189	50	1.1



OG300 System Reference: 2001002D

March 2004

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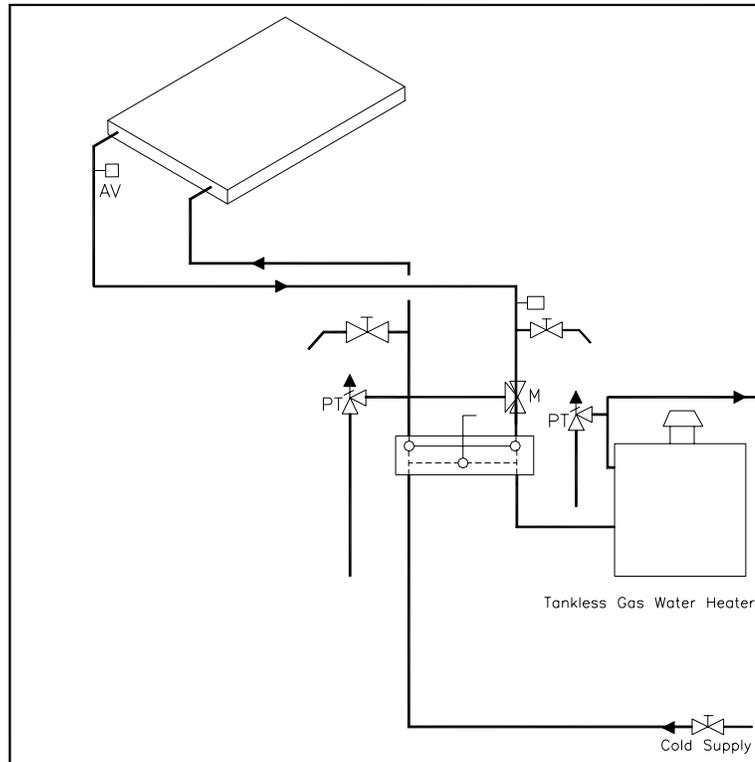
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: CopperHeart
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -6.66 C (20 F), Tankless Gas Water Heater

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
CP-20-TLG	2002006A	8/19/2002	SunEarth, Inc.	CP-20	1.2	12.7	76	20	4	1	1.1
CP-30-TLG	2002006B	8/19/2002	SunEarth, Inc.	CP-30	1.8	19.8	121	32	4	1	1.3
CP-40-TLG	2002006C	8/19/2002	SunEarth, Inc.	CP-40	2.3	24.9	159	42	4	1	1.4



OG300 System Reference: 2002006A

March 2004

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SOLAR WATER HEATING
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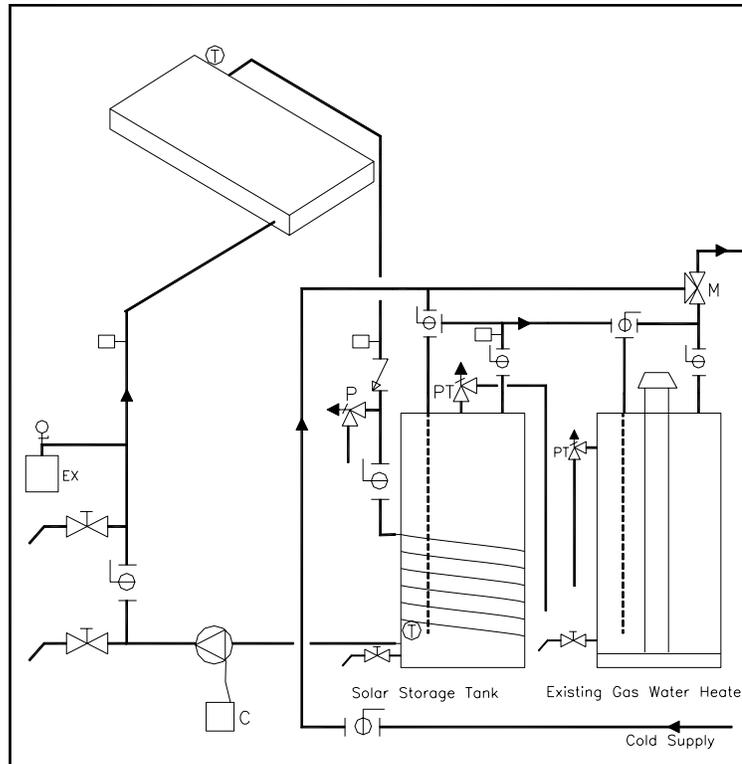
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE40C-80-2G	2001001B	4/10/2001	SunEarth, Inc.	EC-40	3.8	40.9	303	80	189	50	1.1
TE40P-80-2G	2001001A	4/10/2001	SunEarth, Inc.	EP-40	3.8	40.9	303	80	189	50	1.0



OG300 System Reference: 2001001A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
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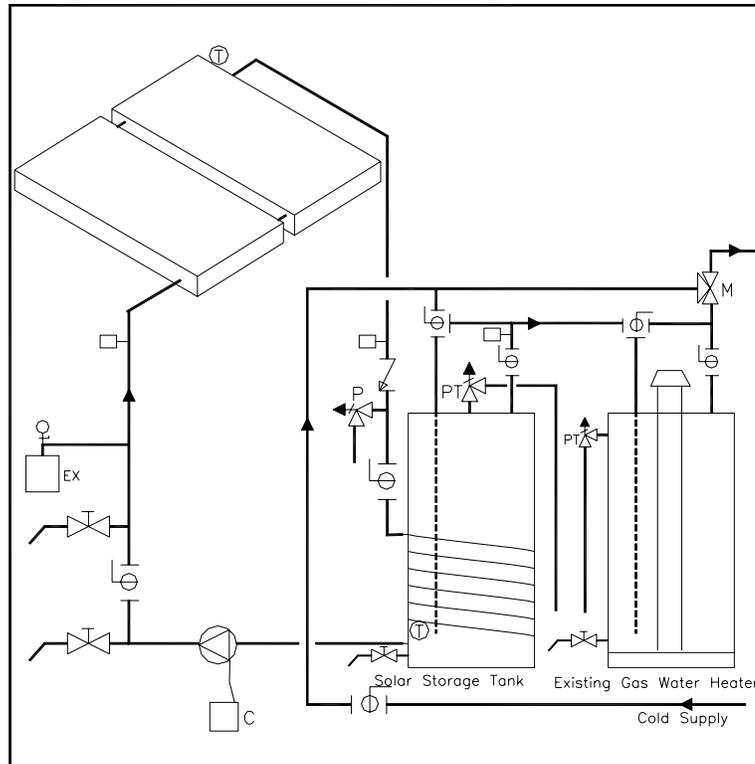
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE48C-80-2G	2001001D	4/10/2001	SunEarth, Inc.	EC-24	4.6	49.3	303	80	189	50	1.2
TE48P-80-2G	2001001C	4/10/2001	SunEarth, Inc.	EP-24	4.6	49.3	303	80	189	50	1.1
TE48P-80-75G	2001001G	7/21/2002	SunEarth, Inc.	EP-24	4.6	49.3	303	80	284	75	0.9
TE64C-80-2G	2001001F	4/10/2001	SunEarth, Inc.	EC-32	6.1	65.7	303	80	189	50	1.5
TE64P-80-2G	2001001E	4/10/2001	SunEarth, Inc.	EP-32	6.1	65.7	303	80	189	50	1.4



OG300 System Reference: 2001001C

March 2004

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SOLAR WATER HEATING
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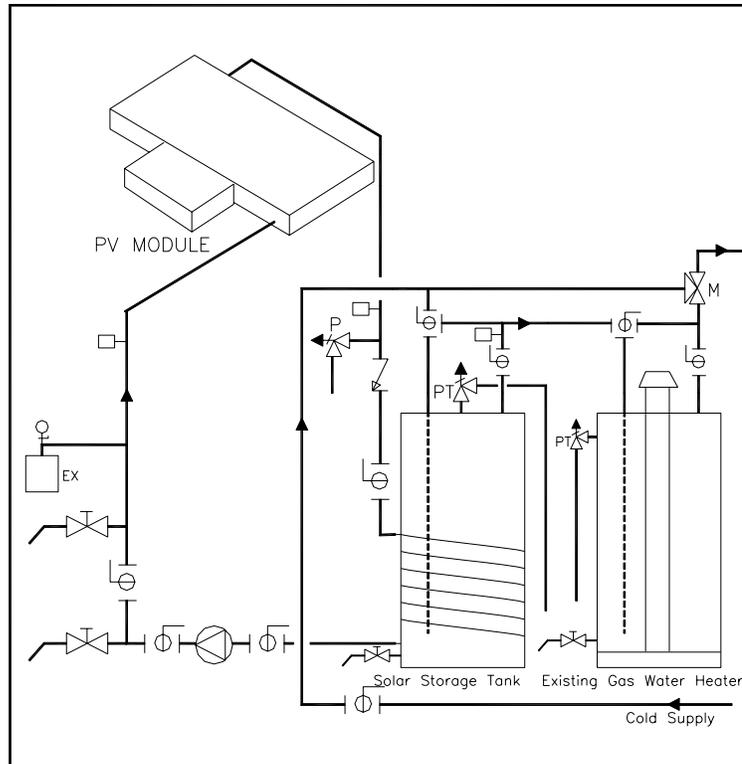
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE40C-80-2G-PV	2001003B	4/10/2001	SunEarth, Inc.	EC-40	3.8	40.9	303	80	189	50	1.0
TE40P-80-2G-PV	2001003A	4/10/2001	SunEarth, Inc.	EP-40	3.8	40.9	303	80	189	50	1.0



OG300 System Reference: 2001003A

March 2004

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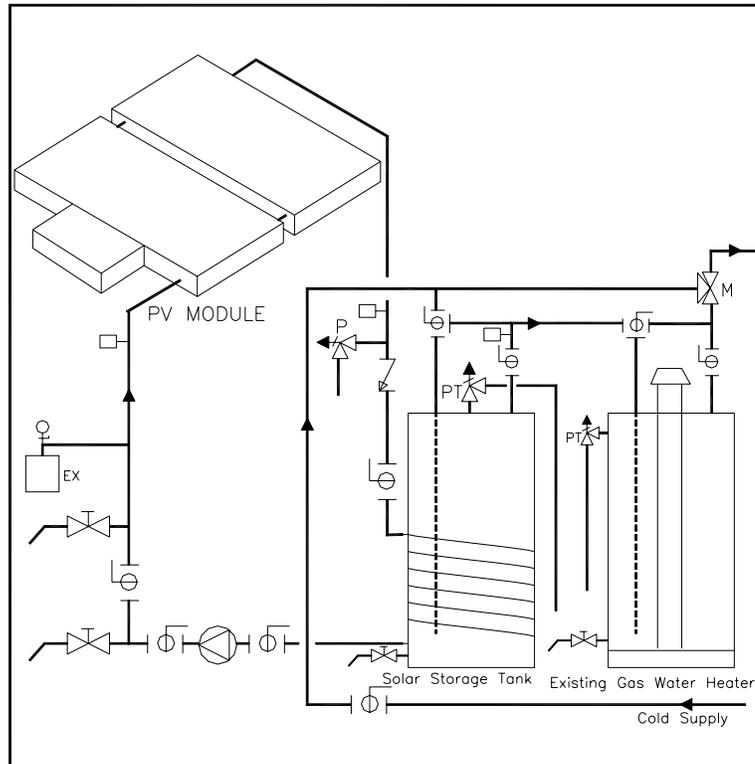
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SOLARAY
SYSTEM TYPE: Indirect Forced Circulation

Description: Glazed Flat-Plate Collector, Photovoltaic Panel Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -51.1 C (-60 F), Gas Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
TE48C-80-2G-PV	2001003D	4/10/2001	SunEarth, Inc.	EC-24	4.6	49.3	303	80	189	50	1.1
TE48P-80-2G-PV	2001003C	4/10/2001	SunEarth, Inc.	EP-24	4.6	49.3	303	80	189	50	1.1
TE64C-80-2G-PV	2001003F	4/10/2001	SunEarth, Inc.	EC-32	6.1	65.7	303	80	189	50	1.4
TE64P-80-2G-PV	2001003E	4/10/2001	SunEarth, Inc.	EC-32	6.1	65.7	303	80	189	50	1.3



OG300 System Reference: 2001003C

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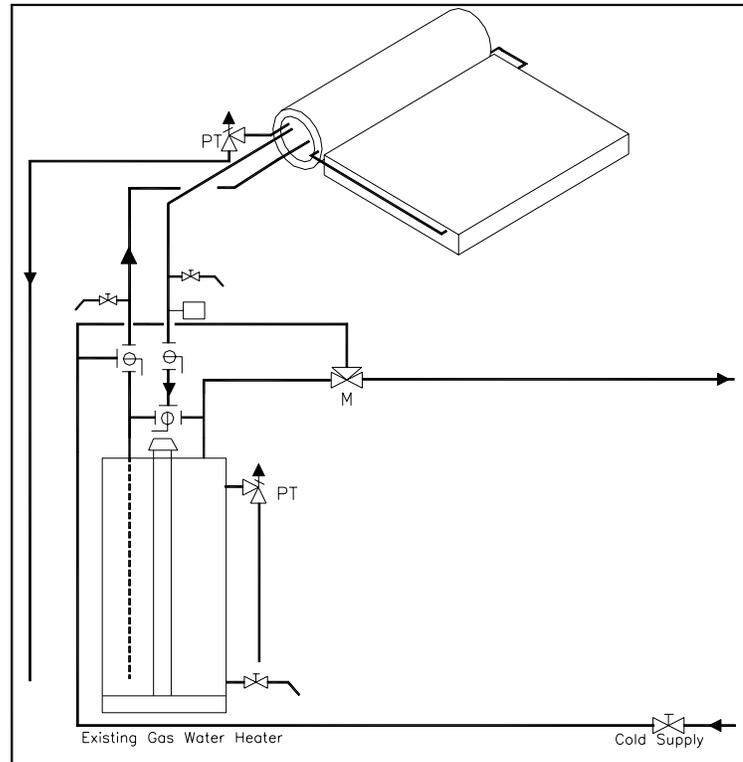
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SunSiphon
SYSTEM TYPE: Indirect Thermosiphon

Description: Glazed Flat-Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -9.44 C (15 F), Gas Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
EPGX48-21-2G	2001005A	5/20/2001	SunEarth, Inc.	EP-21	2.0	21.2	182	48	189	50	0.8
EPGX48-24-2G	2001005B	5/20/2001	SunEarth, Inc.	EP-24	2.3	24.6	182	48	189	50	0.8
EPGX48-32-2G	2001005C	5/20/2001	SunEarth, Inc.	EP-32	3.1	32.8	182	48	189	50	0.8
EPGX80-40-2G	2001005D	5/20/2001	SunEarth, Inc.	EP-40	3.8	40.9	303	80	189	50	0.9



OG300 System Reference: 2001005A

March 2004

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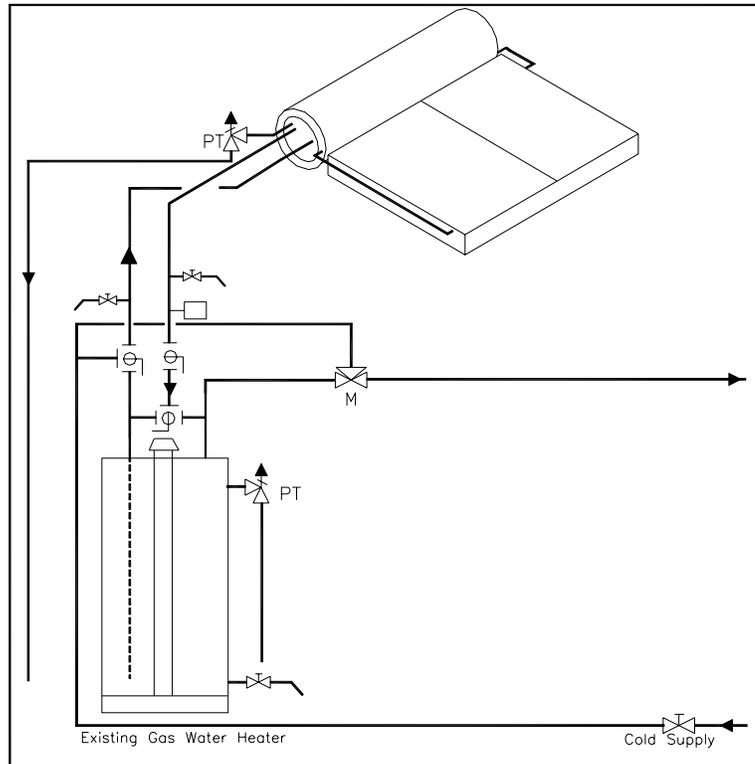
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SunSiphon
SYSTEM TYPE: Indirect Thermosiphon

Description: Glazed Flat-Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -9.44 C (15 F), Gas Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
EPGX116-64-2G	2001005J	5/20/2001	SunEarth, Inc.	EP-32	6.1	65.7	439	116	189	50	1.1
EPGX116-80-2G	2001005L	5/20/2001	SunEarth, Inc.	EP-40	7.6	81.7	439	116	189	50	1.2
EPGX80-42-2G	2001005E	5/20/2001	SunEarth, Inc.	EP-21	3.9	42.4	303	80	189	50	0.9
EPGX80-48-2G	2001005F	5/20/2001	SunEarth, Inc.	EP-24	4.6	49.3	303	80	189	50	1.0
EPGX80-64-2G	2001005H	5/20/2001	SunEarth, Inc.	EP-32	6.1	65.7	303	80	189	50	1.1



OG300 System Reference: 2001005E

March 2004

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RATING



SRCC OG-300

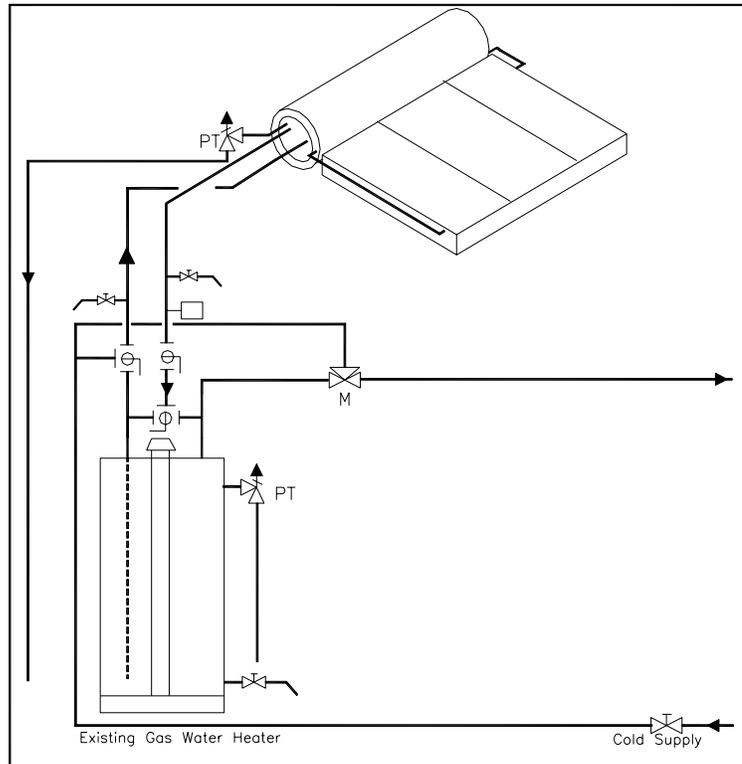
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: SunEarth, Inc.
8425 Almeria Avenue
Fontana, CA 92335
(909) 434-3100
(909) 434-3101 Fax
(800) 776-5270

SYSTEM NAME: SunSiphon
SYSTEM TYPE: Indirect Thermosiphon

Description: Glazed Flat-Plate Collector, No Controller, Mantle Heat Exchanger with a Single Wall, No Load Side Heat Exchanger, Fluid Class II, Freeze Tolerance: -9.44 C (15 F), Gas Auxiliary Tank with Reflective 5/16" (0.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
EPGX116-63-2G	2001005I	5/20/2001	SunEarth, Inc.	EP-24	6.9	73.9	439	116	189	50	1.1
EPGX80-63-2G	2001005G	5/20/2001	SunEarth, Inc.	EP-24	6.9	73.9	303	80	189	50	1.0



OG300 System Reference: 2001005G

March 2004

Certification must be renewed annually. For current status contact:
SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010

SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



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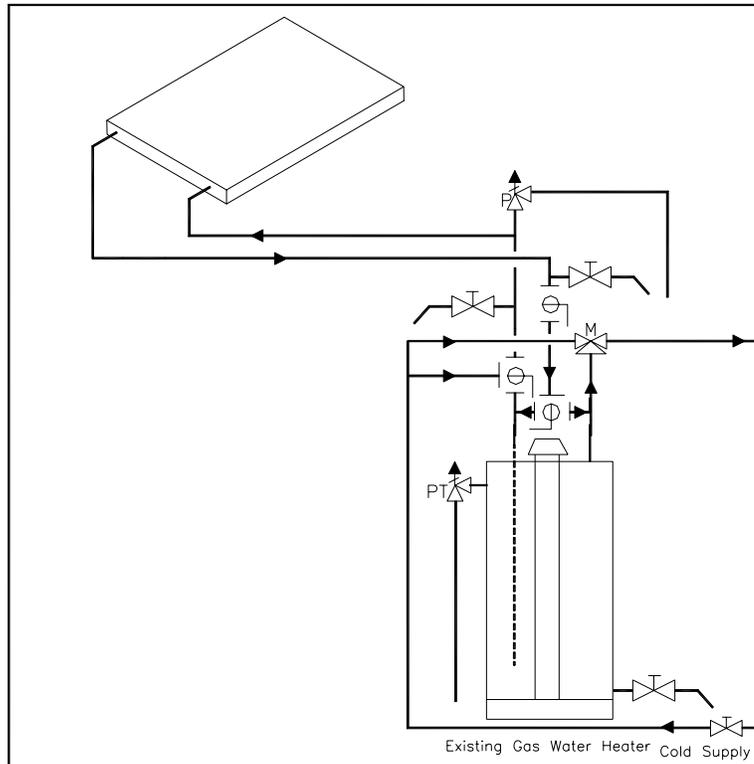
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Thermal Conversion Technology
101 Copeland Street
Jacksonville, FL 32204
(904) 358-3720
(904) 358-3728 Fax

SYSTEM NAME: ProgressivTube Passive Solar Water Heater
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -12.2 C (10 F), Gas Auxiliary Tank

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
PT-30-CN-G	1998006A	8/24/1998	Thermal Conversion Technology	PT-30-CN	2.2	24.0	113	30	189	50	0.9
PT-35-CN-G	1998006B	8/24/1998	Thermal Conversion Technology	PT-35-CN	2.2	24.0	132	35	189	50	0.9
PT-40-CN-G	1998006C	8/24/1998	Thermal Conversion Technology	PT-40-CN	3.0	32.1	151	40	189	50	1.0
PT-50-CN-G	1998006D	8/24/1998	Thermal Conversion Technology	PT-50-CN	3.0	32.1	189	50	189	50	1.0



OG300 System Reference: 1998006A

March 2004

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SOLAR WATER HEATING
SYSTEMS CERTIFICATION AND
RATING



SRCC OG-300

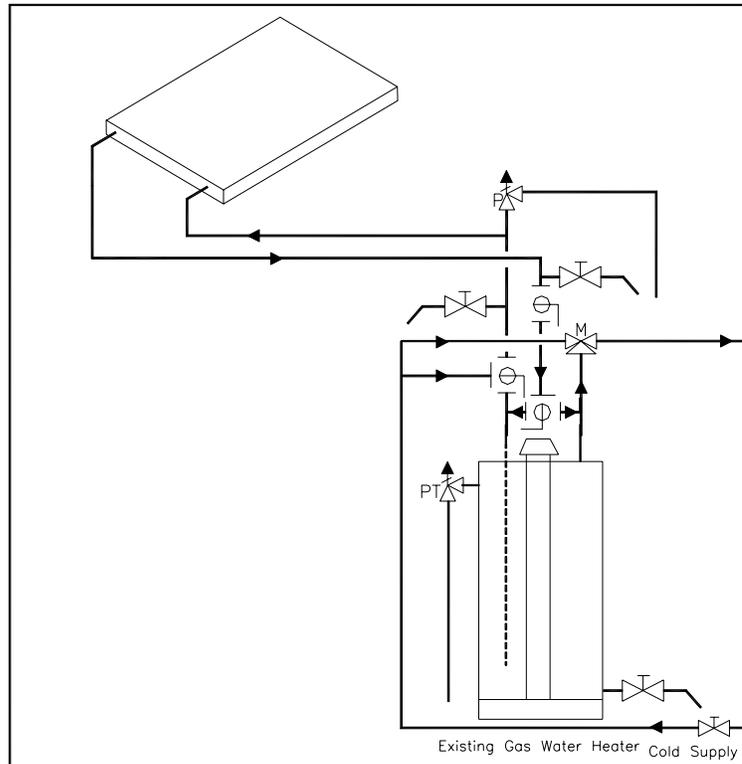
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Thermal Conversion Technology
101 Copeland Street
Jacksonville, FL 32204
(904) 358-3720
(904) 358-3728 Fax

SYSTEM NAME: ProgressivTube Passive Solar Water Heater
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -12.2 C (10 F), Gas Auxiliary Tank with 1.5" (3.8 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
PT-40-CN-GX	1998006E	9/15/1998	Thermal Conversion Technology	PT-40-CN	3.0	32.1	151	40	189	50	1.0
PT-50-CN-GX	1998006F	9/15/1998	Thermal Conversion Technology	PT-50-CN	3.0	32.1	189	50	189	50	1.0



OG300 System Reference: 1998006E

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SOLAR WATER HEATING
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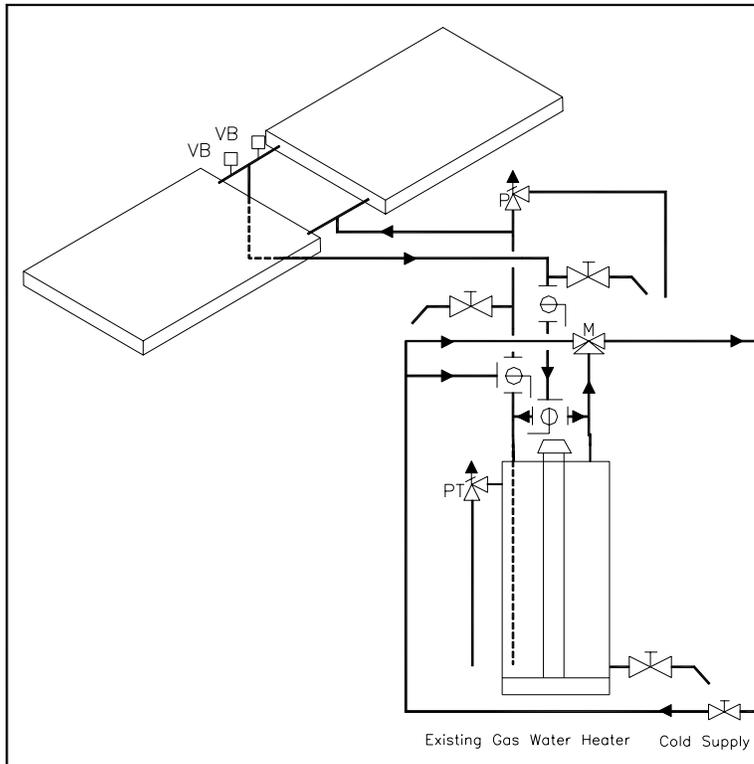
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Thermal Conversion Technology
101 Copeland Street
Jacksonville, FL 32204
(904) 358-3720
(904) 358-3728 Fax

SYSTEM NAME: ProgressivTube Passive Solar Water Heater
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -12.2 C (10 F), Gas Auxiliary Tank with 1.6" (4.1 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
PT-40-CN2-GX75	1998007A	1/15/1999	Thermal Conversion Technology	PT-40-CN	6.0	64.2	303	80	284	75	1.0



OG300 System Reference: 1998007A

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SOLAR WATER HEATING
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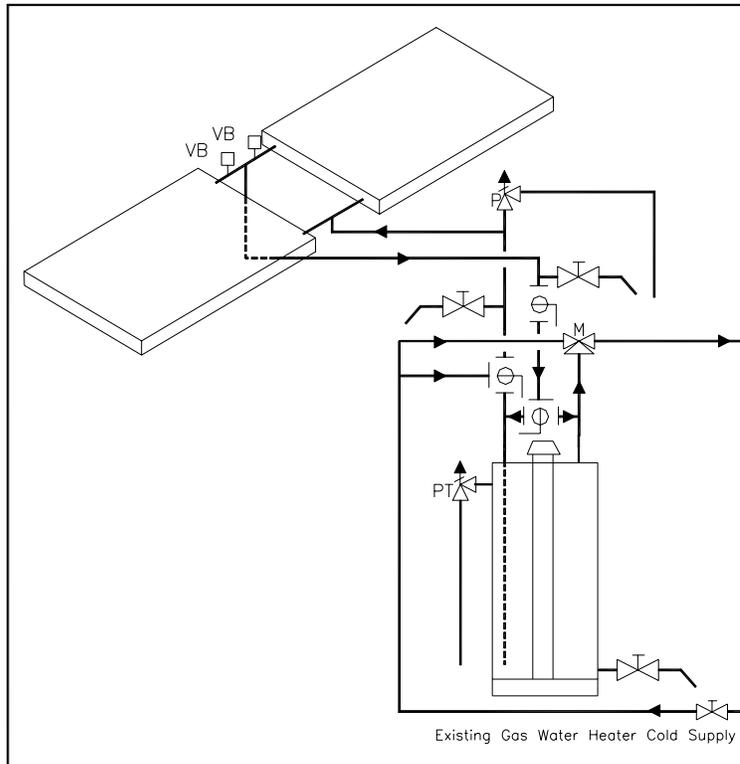
CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: Thermal Conversion Technology
101 Copeland Street
Jacksonville, FL 32204
(904) 358-3720
(904) 358-3728 Fax

SYSTEM NAME: ProgressivTube Passive Solar Water Heater
SYSTEM TYPE: Direct Integral Collector Storage

Description: Glazed Integral Storage Collector, No Controller, No Supply Side Heat Exchanger, No Load Side Heat Exchanger, Fluid Class I, Freeze Tolerance: -12.2 C (10 F), Gas Auxiliary Tank with 5" (12 cm) Insulation Blanket

System Model Name	Cert 300-#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel Area (Sq-m)	Total Panel Area (Sq-ft)	Solar Tank Vol (l)	Solar Tank Vol (gal)	Aux Tank Vol (l)	Aux Tank Vol (gal)	SEF
PT-40-CN2-GX100	1999002A	6/14/1999	Thermal Conversion Technology	PT-40-CN	6.0	64.2	303	80	378	100	1.0



OG300 System Reference: 1999002A

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SOLAR RATING & CERTIFICATION CORPORATION

c/o FSEC ♦ 1679 Clearlake Road ♦ Cocoa, FL 32922 ♦ (321) 638-1537 ♦ Fax (321) 638-1010