FAFCO®

SOLAR WATER HEATING

200 Series
Drainback
Solar Hot Water System

Installation Manual

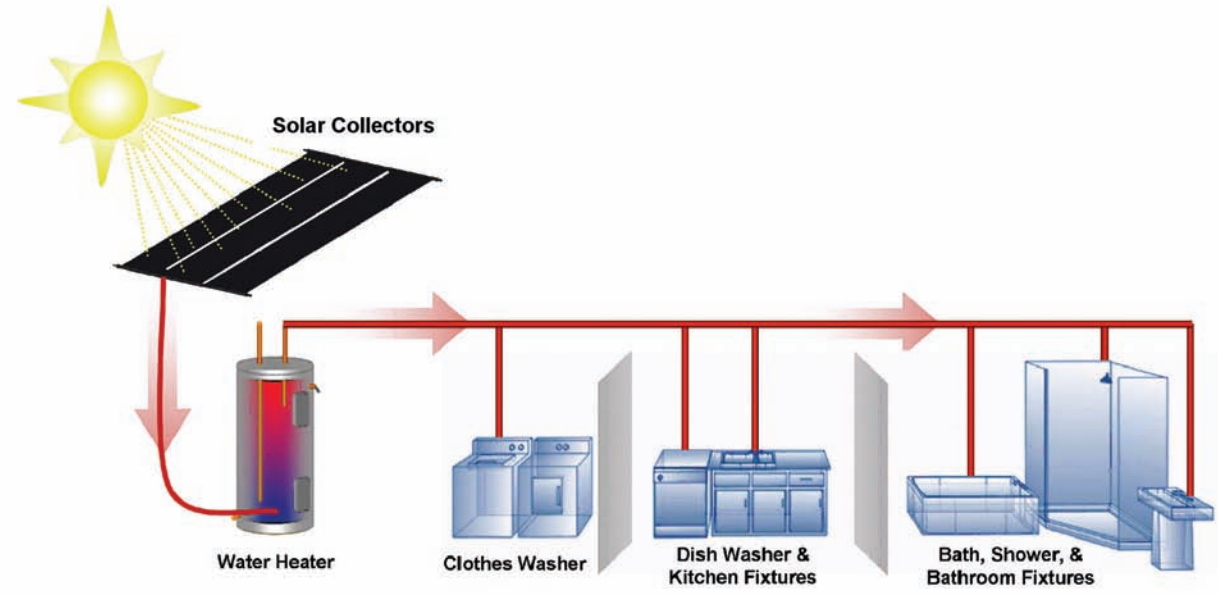
Note: This manual provides a detailed, step-by-step procedure for installing the Solar Water-Heating System. The directions should be followed properly, and only recommended components and hardware should be used. This will ensure a trouble-free system that will maintain the warranty while providing solar energy and savings.

Made in the U.S.A.

Table of Contents

Introduction

The Solar Water Heating System is designed to provide a significant portion of the water-heating energy required in a typical home. Solar energy is absorbed by the solar collectors, and heated water is circulated through the water heater. Heated water is drawn from the water heater by various household fixtures and appliances, such as a clothes washer, dishwasher, bath, shower, and other fixtures.



System performance is affected by available solar energy, the solar collectors' installed pitch and orientation, groundwater and ambient air temperatures, and the daily household hot water demand comprised of bath, kitchen, and laundry use. These conditions, which may vary from home to home even in the same neighborhood, determine how much energy your solar system will save.

⚠ WARNING ⚠

Dangerous Heights
Solar collector(s) are often installed on the roof of a building. Unless you're familiar with working on roofs and have the proper ladders and safety equipment for such work, you should hire someone with the necessary experience to do the installation. Failure to observe safe practices on a roof or other elevated structures may result in falling and serious injury. Working alone increases the chance of an accident happening. Be sure to have help or someone nearby to assist you.

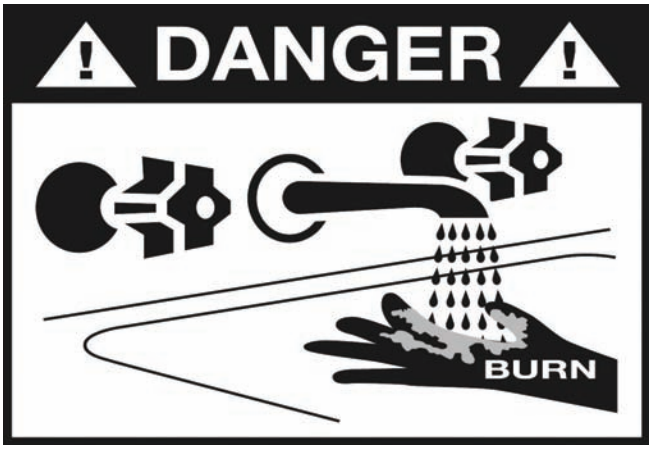
High Voltage
Some aspects of installation involve working around and with high voltage. Electrical connections to the hot water heater (if electric) are typically 240 VAC and CAN KILL YOU. Use precautions and ensure that all electricity is shut off to the area in which you're working. Use the breaker box and remove the breaker if you have to. Check with a voltmeter to verify the voltage is off before contacting any electrical connections. Consult with a licensed electrician if you have any doubts about the process. Check your local building codes.

High Water Pressure and Temperature
Electric and gas water heaters operate at high water pressure and temperature. Be sure to turn off your water supply and open drain valves to depressurize the system before unthreading or cutting into any part of the water heater plumbing. Consult a licensed plumber if you have any doubts. Check your local building codes.

WATER TEMPERATURE REGULATION

Hot water is dangerous. Water temperature to the home can be regulated by adjusting the temperature control valve. The recommended set point is 120° F. There is a scald potential if the temperature control valve is set too high.

Hot water can produce first degree burns within:
- 120° F (49°C) more than 5 minutes
- 130° F (54°C) at 20 seconds
- 140° F (60°C) at 3 seconds
- 150° F (66°C) at 1-1/2 seconds
- 160° F (71°C) at less than 1 second



FREEZE PROTECTION

Extended periods of cold weather, including ambient air temperatures below minus 20°F may cause freezing in exposed parts of the system. For installatins where plumbing cannot completely drainback tank, add 3 gallons of FAFCO HTF (Heat Transfer Fliud) which equates to a 35% mixture. Use of any other heat-transfer fluid will void warranty, and may result in poor performance and/or equipment damage. Freeze protection with 35% FAFCO HTF is conservatively estimated down to -20°F. **Freeze tolerance limits are based upon an assumed set of environmental conditions.** MSDS is available at www.fafco.com for information on disposal and First Aid. FAFCO system is overheat protected and has little metal in contact with fluid. It therefore does not promote deposits, corrosion, or degradation of fluid mixture.

Code and Certification Requirements

Code requirements
Refer to the local authority having jurisdiction, such as the local building department or utility, to ensure all installation work meets applicable requirements. All installation work should be performed by a properly licensed contractor. Backup water heater and/or storage tank must be listed and labeled by an accredited listing organization, meet national standards, be labeled with maximum temperature and pressure, and have minimum R-12 insulation. Do not remove, bypass, or alter temperature pressure relief valve from backup water heater and/or storage tank.

Certification requirements
Refer to the local authority having jurisdiction and incentive providers for certification requirements.

FAFCO solar collectors and systems listed in Specifications, page 25, are certified by the Solar Rating and Certification Corporation (SRCC), a nationally recognized certification for solar water heating collectors and systems.

The solar energy system described in this manual, when properly installed and maintained, meets the minimum standards established by SRCC. This certification does not imply endorsement or warranty of this product by SRCC.

Specific minimum SRCC installation requirements are listed below:
1. Building penetrations do not impair enclosure function.
2. Building penetrations do not allow insect or vermin intrusion.
3. Building penetrations meet applicable codes and National Roofing Contractors Assoc. practices.
4. Structural members penetrated by solar system components meet code.
5. Building materials adjacent to solar components are not exposed to elevated temperatures.
6. Collector mounting is capable of maintaining tilt and azimuth.
7. No excessive shading of collectors.
8. Hangers provide correct tube support.
9. Hangers provide correct tube pitch.
10. Hangers do not compress insulation.
11. Control sensors and wiring are protected.
12. Penetrations through fire-rated assemblies do not reduce fire resistance below code.

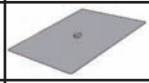
Major Components

COMPONENT	IMAGE	QTY.	DESCRIPTION / FUNCTION
Solar collectors		-	Qty. (2) 2' x 12' (PN 08842) or qty. (3) 2' x 8' (PN 08891) polymer unglazed solar collectors transfers solar energy to the heat transfer fluid.
Controller PN 08238		1	Controls the Solar Water Heating System.
Circulation Module PN 08303 (HH) PN 08302 (MD)		1	Circulates the potable water and the solar loop fluid. Transfers solar heat to solar storage tank. Includes: - Heat exchanger, copper brazed stainless steel, P/N 08782 - Potable loop pump, direct current (DC), P/N 08795 - Solar loop pump, direct current (DC), P/N 08795
Drainback Tank PN 08209		1	Accommodates heat transfer fluid expansion, fluid contraction, vents air, and relieves pressure.

Roof Kit: Two 2' x 12' Collectors PN 08881 or Three 2' x 8' Collectors PN 08911

Mounting bases PN 06918		13 / 18*
Mounting caps PN 06919		13 / 18*
Collet clips PN 08819		20 / 28*
Support liner PN 08520		20 / 24*
Collector connectors 3-1/2" L, PN 08883		2 / 4*

Mounting Strap, 40' roll, PN 08907		1
Elbow fittings PN 08441		6
Panel plug PN 08837		2
Roof Sensor PN 08380		1
Coltector lag screw, st/st, 1/4" x 2", PN XXXXX		1

Wire connector PN 08359		2
Roof jack PN 08211		1
Rubber grommet Roof Jack, PN 08190		2
Roof sealant, 10 oz. tube PN 08229		1

* Quantities in upper left denote 2'x12' collectors and lower right denote 2'x8' collectors

Ground Kit PN XXXXX

Teflon tape roll PN 07581		1
Flexible hoses 3' - PN 08834		2
Plastic tubing, 80 ft. PN 08613		1
Tube support clips PN 08609		20
Drain valve PN XXXXX		2
Sensor PN 08380		2
Sensor cable, 50' PN 08208		1

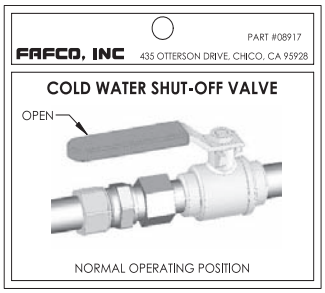
Tee, brass, 3/4" PN 08872		2
Drainback screws, 1/4" x 2", PN XXXXX		18
Nipple, brass, hex, 1/2" PN 08854		2
Nipple, brass, hex, 3/4" PN 08869		1
Reducer, brass, 3/4" x 1/2" PN 08862		2
Nipple, brass, 3/4" x 3" PN 08863		1
Escutcheon PN 08462		2

Support liner PN 08520		8
Fender washer, Drain-back Tank, PN 08884		2
Roofing nails, 1"		8
Circulation module screws, 1/4" x 1-1/2"		2
Dip tube with filter PN XXXXX		1
Screw, self tapping, 2-1/2", PN 08830		2
Collet clips PN 08819		8

Parts list (Continued)

Information Kit

Owner's Manual - PN 08942	1
Cold Water Valve Position Label - PN 08371	1
Freeze Protection And Fluid Safety Label - PN 08904	1
Label attachment zip-ties - PN 08307	2



Parts NOT Provided

Water heater	A.O. Smith Conservationist R-24, Promax Plus R16 with R8 Blanket, or equivalent	1
Solar storage tank	A.O. Smith Conservationist R-24, Promax Plus R16 with R8 Blanket, or equivalent	1

Pipe Insulation, R-2.6 min, 3/4" thick min		-
Tube Insulation, R-2.6 min, 3/4" thick min, 5/8" ID		-
Tube Insulation Support		-

Optional Kits

Kit Name	Kit Number	Description
Collector Add-On Kit	758 (Two 2'x12') or 759 (Three 2'x8')	48 square feet of collectors with 1 gallon HTF. See pg. 33
Tile Roof Installation Kit (TRIK)	767 (Two 2'x12') or 769 (Three 2'x8')	Anchors and supports collectors on tile roofs. See pg. 36
Solar Storage Tank Kit (Low lead)	730-1	Connects water heater to solar storage tank, See pg. 19
Temperature Control Valve Kit (Low lead)	733	Valve required by code. See pg. 18
Tubing Extension Kit, 80 ft.	734	80 foot of additional tubing for long runs
Tube Repair Kit	162-1	Rubber plugs for repairing solar collector tubes

Tools Required

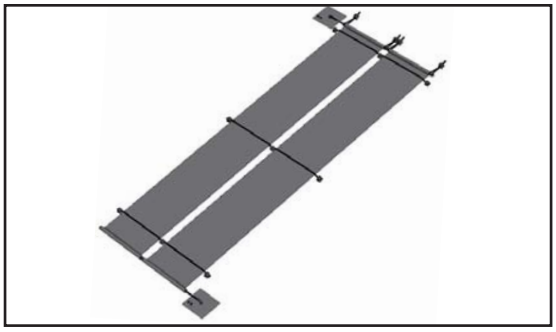
Channel lock pliers	Caulking gun	3/4" masonry bit (For tile roof)
Two or more ladders	1/4" drill bit	3/4" male thread tap
Wire cutters	Tape measure	Adjustable wrench
Cordless power drill	5/16" & 7/16" socket driver	Tubing cutter
Wire strippers	Stud finder	Safety glasses
Hammer	#2 & #3 Phillips screw driver	1/8" flat blade screw driver
3/4" & 1-1/4" paddle bit	Level	

There are three basic solar water heating system configurations:

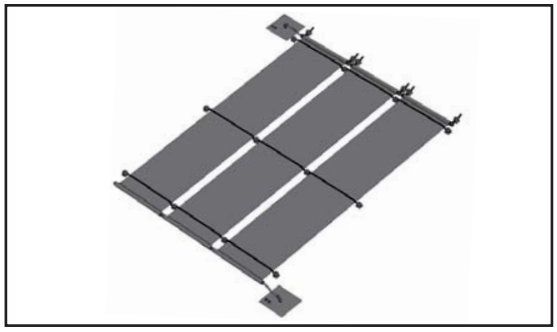
- Dual-tank
- Single-tank
- Single-tank with on-demand heater

These systems can be used with either gas or electric water heaters. Components vary based on configuration. Refer to the schematics on the following pages for further details.

Two 2’ x 12’ Solar Collectors



Three 2’ x 8’ Solar Collectors



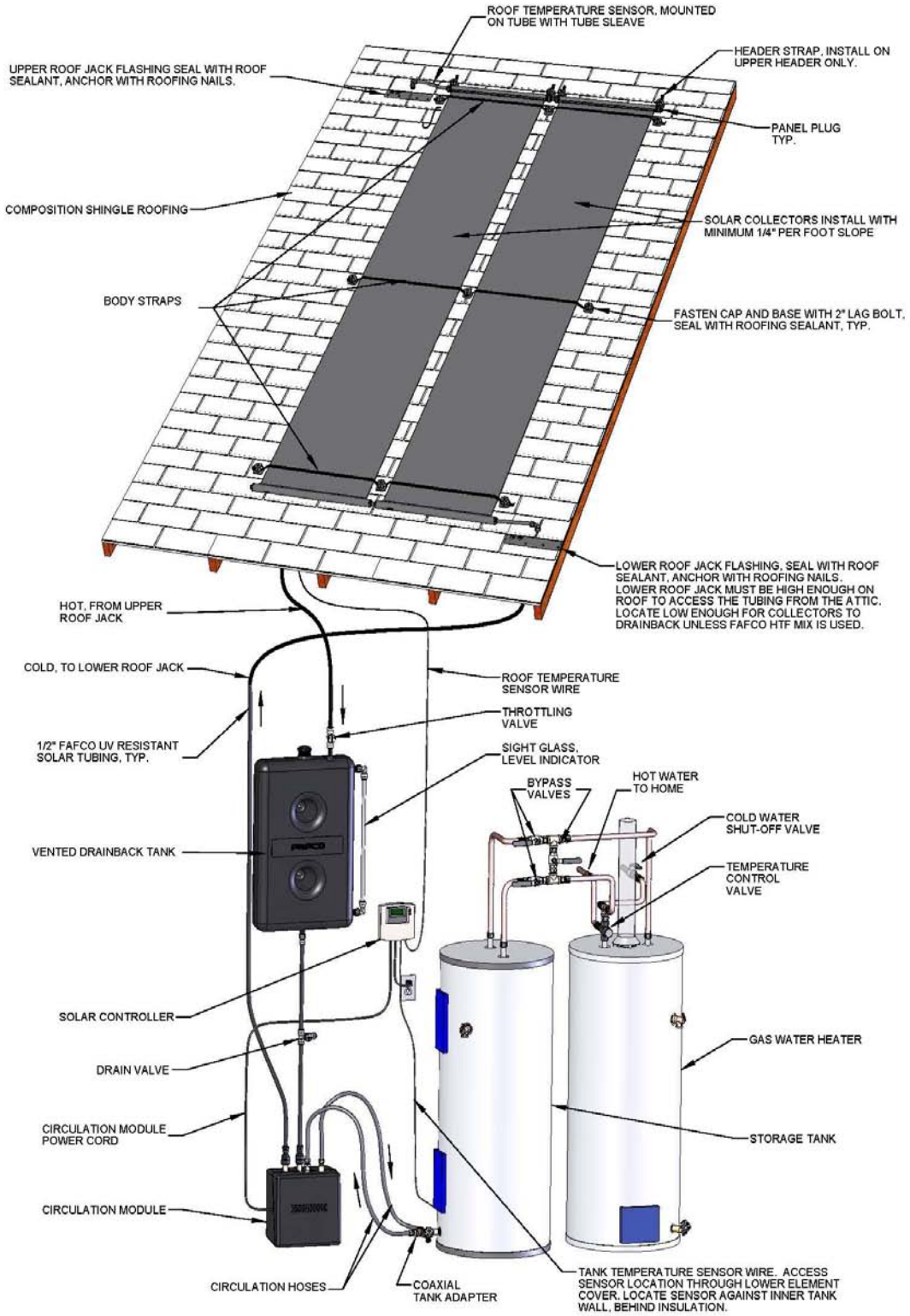
Dual-Tank

Single-Tank

Single-tank with on-demand Heater

DUAL TANK SYSTEM

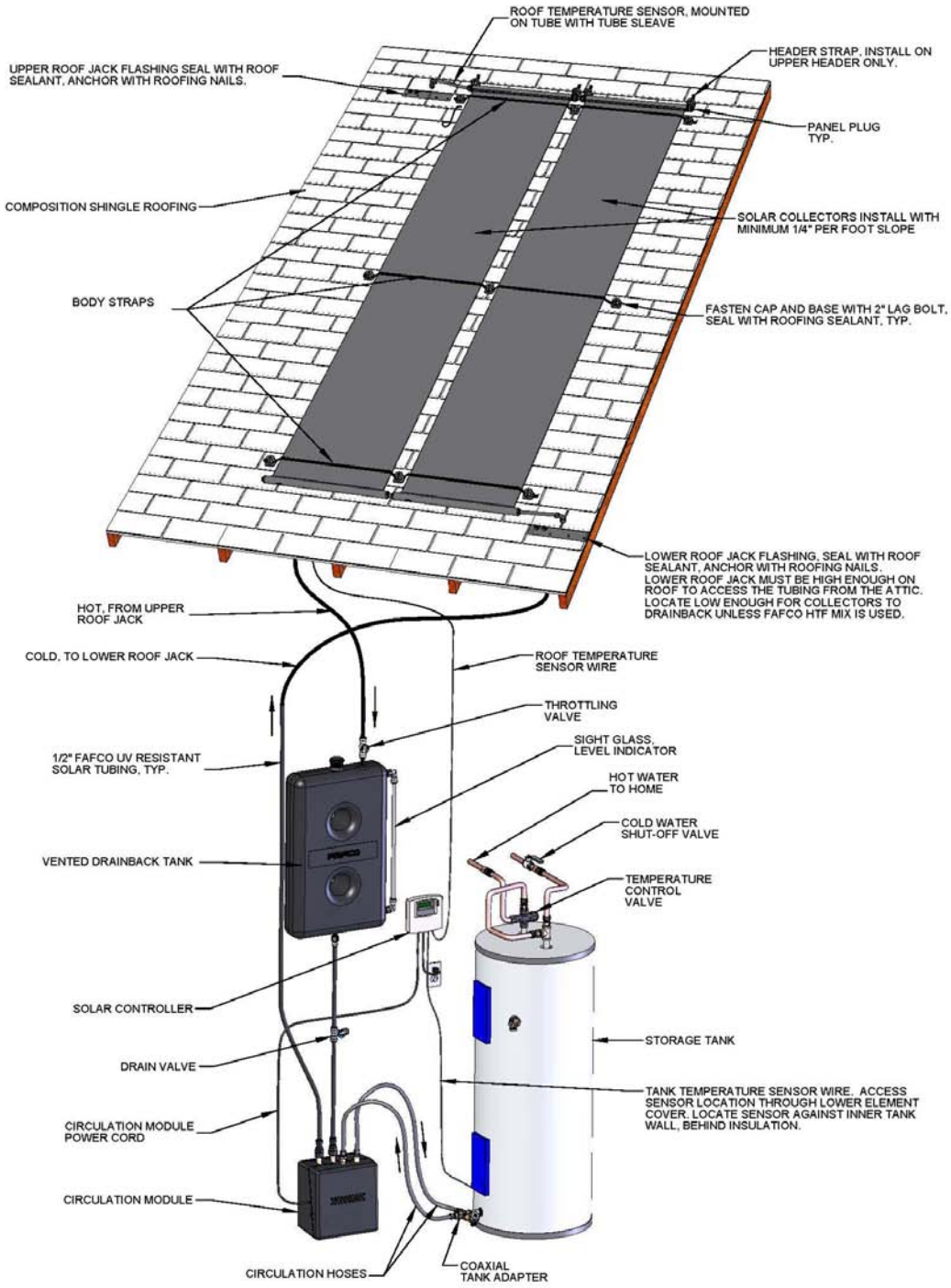
Solar-heated water in the solar storage tank preheats the water to the electric or gas water heater. A solar storage tank connection kit (PN 730-1) is available from your supplier to connect the solar storage tank to the electric or gas water heater.



SINGLE TANK SYSTEM

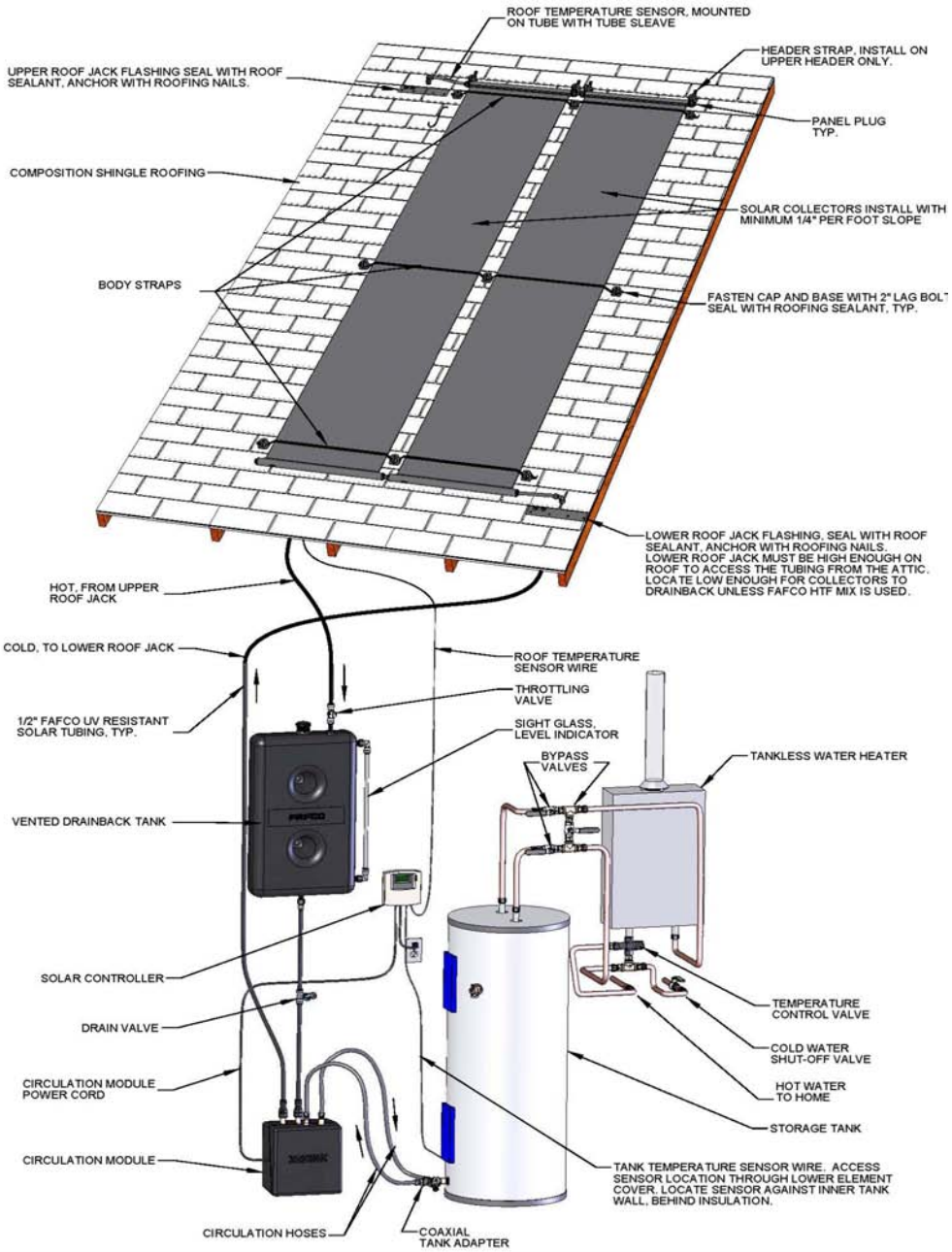
Solar-heated water is stored directly in an electric water heater with a single active upper element

Electric water heater: An electric water heater can be either be one that is manufactured with only one element, or an electric water heater manufactured with two elements with the bottom element disconnected. Single element electric water heaters replenish hot water slower than dual element water heaters. Refer to the local plumbing code for minimum water heater size requirements. Code typically requires that water heaters be sized to meet a minimum "First Hour Rating" based on the number of bedrooms and bathrooms in a home. For single element water heaters that don't have published First Hour Ratings, GAMA/AHRI recommends using 0.75 times the water volume which would require that an 80 gallon tank be used in homes as large as 2 bedroom, 2 bath and that a 120 gallon tank be used in larger homes. It is also recommended to install low flow shower heads which can significantly reduce hot water demand and save water. Raising the thermostat setting on water heater element can also increase hot water capacity, but doing so may decrease realized energy savings.



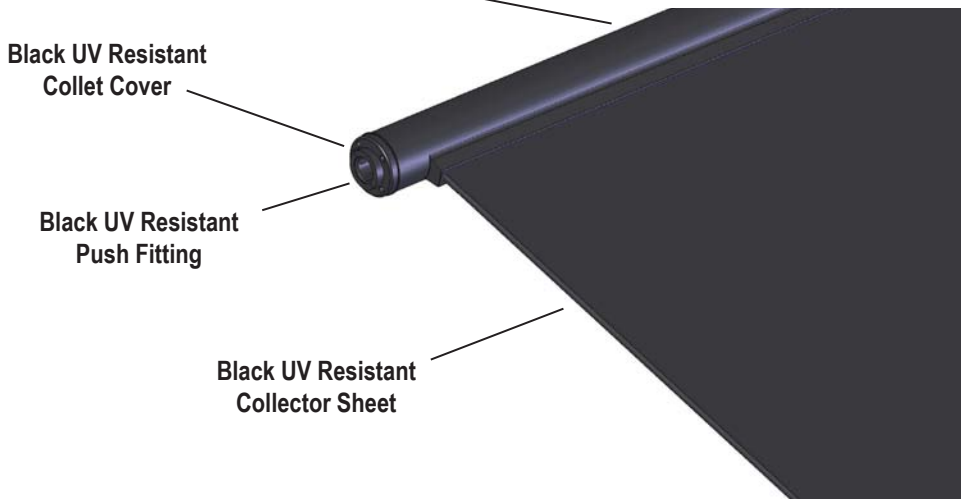
SINGLE TANK WITH ON-DEMAND HEATER

Solar-heated water in the solar storage tank preheats the water to the electric or gas on-demand water heater. A solar storage tank connection kit (PN 730-1) is available from your supplier to connect the solar storage tank to the electric or gas on-demand water heater. For an on-demand water heater to properly work with a solar water heating system, it must have a temperature-modulating gas burner. A temperature control valve is required for this configuration, but depending on the brand and model of on-demand heater, the valve placement may vary. Refer to the manufacturer's instructions for compatibility with solar water heating systems and proper placement of the temperature control valve.



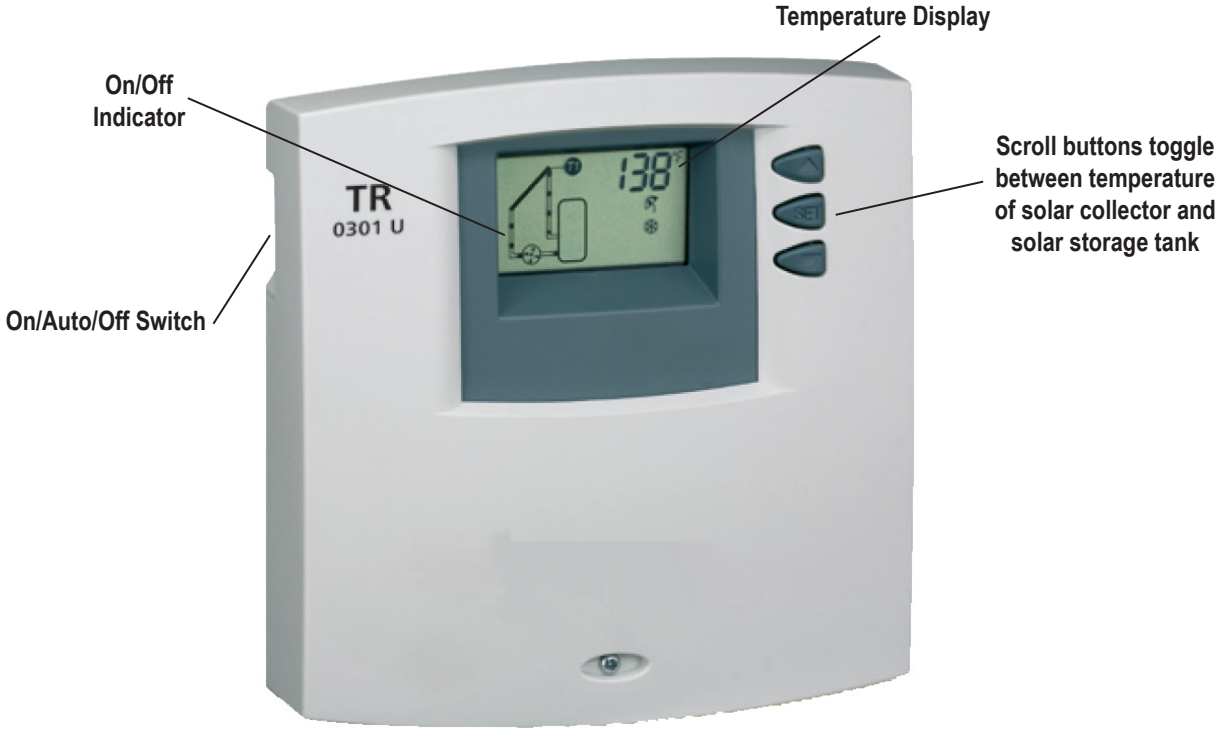
COMPONENT OVERVIEW

Solar Collector

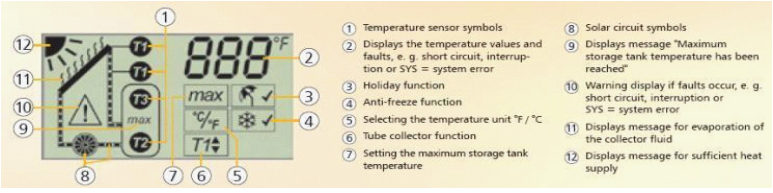


Function: Absorbs the energy from the sun to heat the solar loop fluid. Push fittings allow for quick, leak-free tubing connections sealed with internal rubber o-ring.

Controller

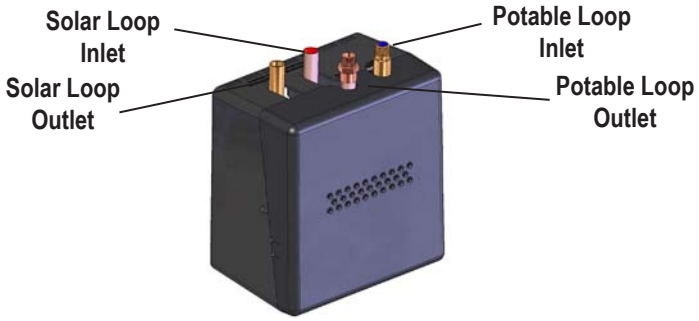


Function: Controls the Solar Water Heating System

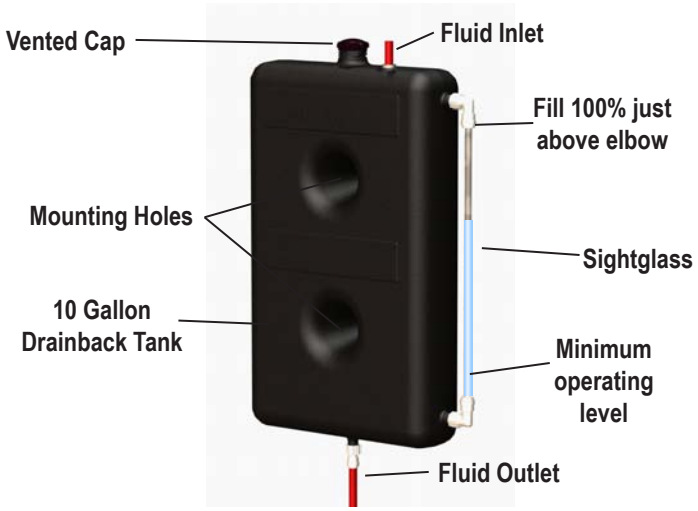


COMPONENT OVERVIEW

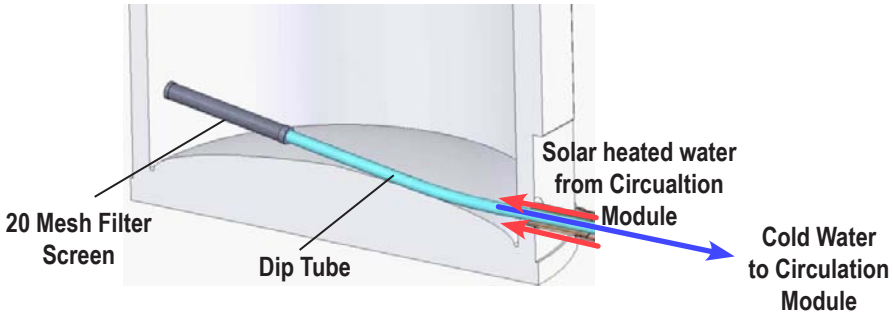
Circulation Module



Drainback Tank



Self-Cleaning Filter



COMPONENT OVERVIEW

Tubing and Fittings

FAILURE TO PROPERLY CONNECT FITTINGS CAN RESULT IN LEAKS.

Plastic Tubing

- Provided FAFCO tubing is weather resistant.
- PEX (Cross-Linked Polyethylene) tubing approved for use with push fittings may be used, but must not be exposed to sunlight.
- Plastic tubing will expand and contract at different temperatures.
- Tubing should be supported at a minimum of 36” to prevent excessive load to the connectors.
- Do not install tubing supports closer than 3” from the connector ends.
- The tube edges must be smooth and free of rough edges and burrs before inserting into push fittings.

Push Fittings Assembly

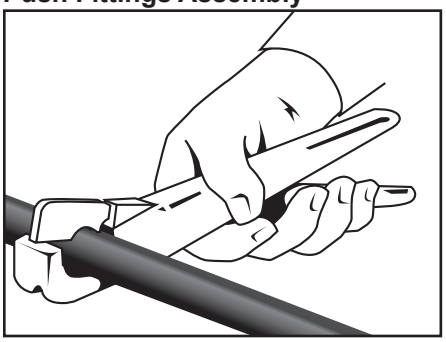


Figure 1 - Tubing Cutter

Cut the tubing to length using a tubing cutter. Inspect the outside diameter of the tubing. It must be free of damage, smooth, and clean. (See Figure 1.) Measure the insertion depth on the tubing end. Push fittings have an insertion depth line molded onto the outside of the connector bodies. Make certain to push the tubing

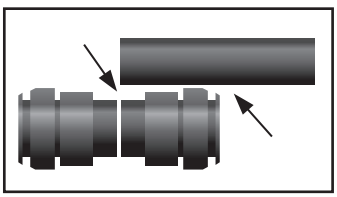


Figure 2 - Insertion Depth

completely into the fitting until it comes into contact with the internal tubing stop. (See Figure 2.) To disconnect, ensure the system is depressurized before removing fittings. Fittings are reusable and easy to connect and disconnect. Push the collet in squarely against the face of the fitting. With the collet held in this position, the tubing can be removed.

Tube Installation

- A support liner and collet clip must be used on every tube fitting to prevent tube disengagement. (See Figure 3.)

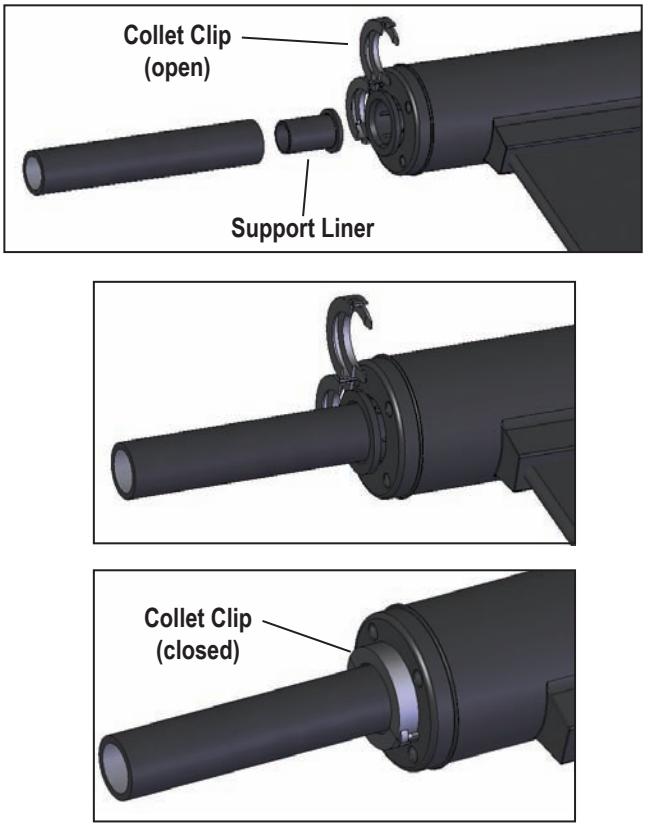


Figure 3 - Tube Installation

Push Fittings Cannot be Exposed to the Following Chemicals:

- Pipe dopes (e.g., liquid thread sealant), leak-check compounds, bug sprays, lubricants, cleaners, paints, bleaches, acids, solder fluxes, plastic piping primers and cements, oxidizing agents, alkaline solutions, thinners, fuels, oil-based caulk, hydrocarbons, spray foam, or foaming agents

Caution: Galvanized piping and fittings are not compatible with heat transfer fluid and cannot be used in collector loop plumbing.

10-STEP INSTALLATION PROCESS

- [ ] 1: SITE SELECTION AND PLANNING
- [ ] 2: ROOF MOUNTING
- [ ] 3: TANK PLUMBING
- [ ] 4: DRAINBACK TANK INSTALLATION
- [ ] 5: CIRCULATION MODULE INSTALLATION
- [ ] 6: CONTROLLER INSTALLATION
- [ ] 7: TUBING & SENSOR INSTALLATION
- [ ] 8: SYSTEM START-UP
- [ ] 9: SYSTEM OPERATION
- [ ] 10: TROUBLESHOOTING

It's important to choose the best roof location to install the solar collectors, based on the considerations below:

Roof Direction
For homes in the northern hemisphere, the best installation site is a roof facing true south. (See Figure 4.) If a south-facing roof isn't available, then choose a site based on the following:

- Second choice, a roof facing between southeast and southwest
- Third choice, a roof facing West or East

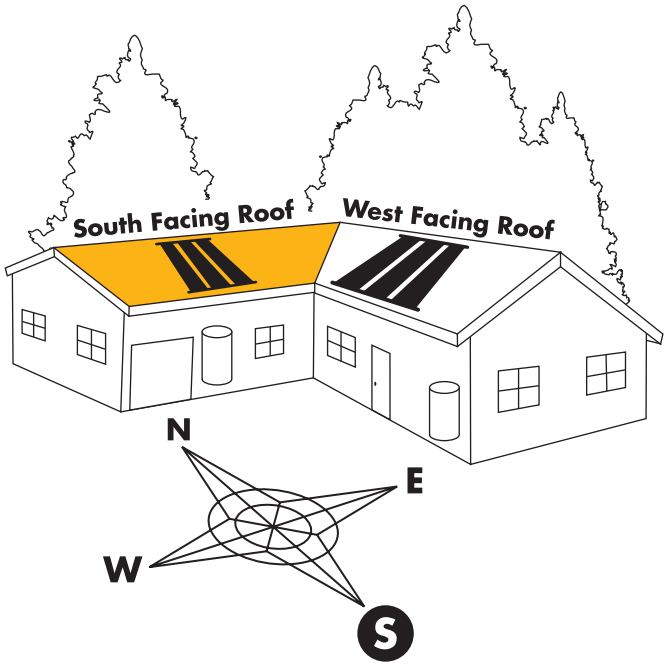


Figure 4 - Roof Direction

Shading from trees or other buildings should be avoided between 10am to 3pm. Keep in mind that as the seasons change, the sun changes its trajectory in the sky. The sun appears higher during the summer months and lower in the southern sky during winter months. Areas that are clear in the summer may be shaded by tree and shrub growth in the winter.

Roof Size
Collectors must be mounted vertically, perpendicular to the shingle rows, as shown in Figure 5.

- One set of (3) 2' x 8' solar collectors will need a clear roof area measuring at least 7.5' wide x 9' tall.
- One set of (2) 2' x 12' solar collectors will need a clear roof area measuring at least 5.5' wide x 13' tall.

Distance From Water Heater
The solar collectors should be as close as possible to the water heater. The closer the collectors are to the water heater, the shorter the tubing run will be. The maximum allowable vertical height of the collectors from the drainback tank is 15 feet with a medium head circulation module and 30' with a high head circulation module. The maximum required tubing length each way to the solar collectors is 100'. The Solar Water Heating System comes with 80' of tubing. Additional tubing may be ordered from your dealer.

Mounting Methods by Roof Type
The following are recommendations for mounting to various roof types. Consult a roofing professional regarding the correct method for installing solar panels on a roof.

Inspect the condition of the roof. Contact a roofing professional to determine the remaining life of the roof before recommended replacement.

Important: The solar collectors are flexible and must be installed on a smooth, flat surface. Any uneven or very rough roof surface will require a flat support surface underneath the solar collectors.

Composition asphalt
This is a common roof type, and solar collectors can be mounted directly to the roof. Refer to the instructions on the following pages detailing mounting on composition asphalt. (See Figure 5.)

Shake
A substrate must be used on shake roofs. Mount solar collectors directly on top of the substrate. Lay substrate on roof and proceed with the standard mounting procedures on the following pages. UV resistant, dark color, 2' wide by

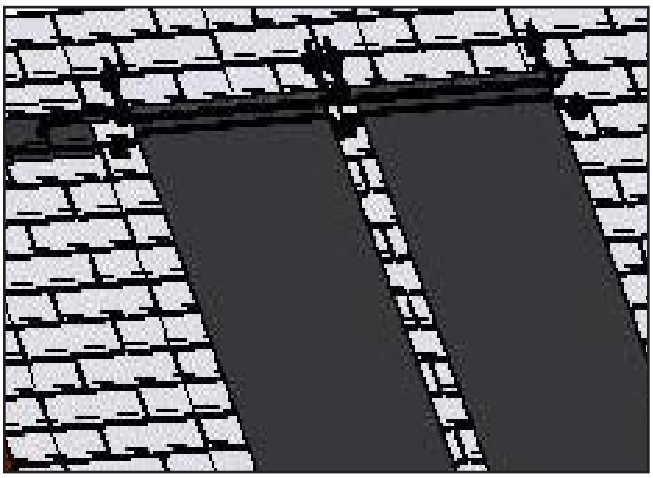


Figure 5 - Composition Asphalt Roof

1: Site Selection and Planning (Continued)

8’ or 12’ long, corrugated (wavy) sheet with ribs no more than 2″ apart and 1″ high, fiberglass or polycarbonate sheets are available from a FAFCO distributor or local home improvement store.

Tile

A Tile Roof Installation Kit (TRIK) should be used on tile roofs. TRIK is available from your supplier. The kit includes specialized tile roof mounting hardware, substrate, and complete installation instructions. (See Figure 6.)

Metal roofs

A substrate with structural rack must be used on metal roofs. UV resistant, dark color, 2’ wide by 8’ or 12’ long, corrugated (wavy) sheet with ribs no more than 2″ apart and 1″ high, fiberglass or polycarbonate sheets are available from a FAFCO distributor or local home improvement store. Standing seam roofs have commercially available clips, referred to as “S5 clips,” to fasten to the seams . These can be purchased through S5 distributors. Alternatively, drive lag screws through the roof to a truss and use roof sealant at the penetration to ensure a good seal in a manner acceptable to the metal roof manufacturer. Fasten down stringers and substrate to support the collectors.

Other roof types (e.g., membrane, foam, tar-and-gravel, slate):

For any roofing material not covered here, check with a roofing contractor for the best method to attach the solar collectors.

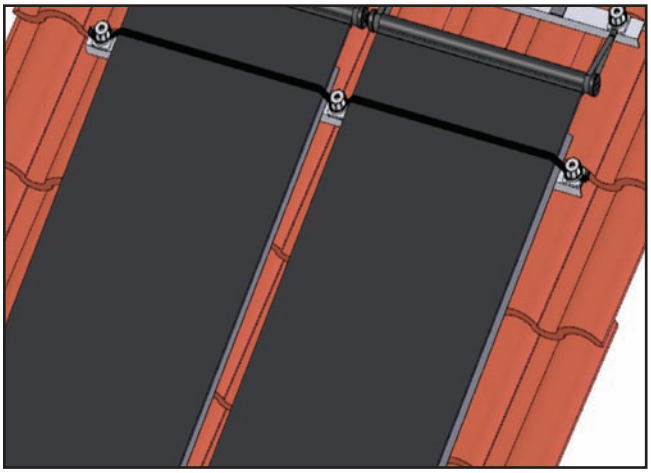
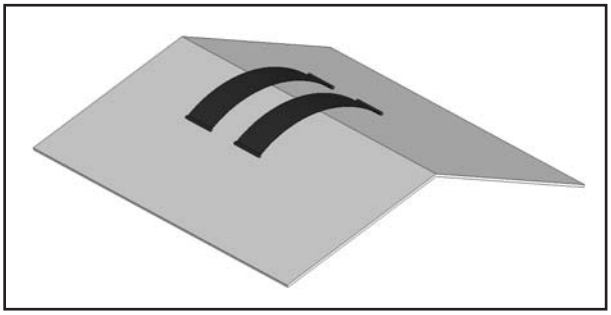


Figure 6 - Tile Roof With TRIK

2: Roof Mounting

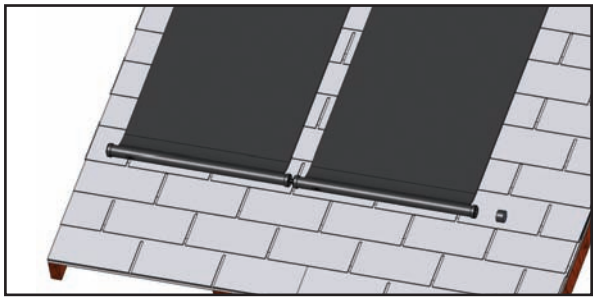
STEP 1: UNROLL SOLAR COLLECTORS

Carry the rolled up solar collectors onto the roof. Carry additional collectors onto the roof if using a collector add-on kit. Do not drag solar collectors over a surface that could damage them. Unroll the collectors over the ridge of the roof allowing them to relax and flatten out. On windy days, be careful during this step! Hold the collectors down if necessary.



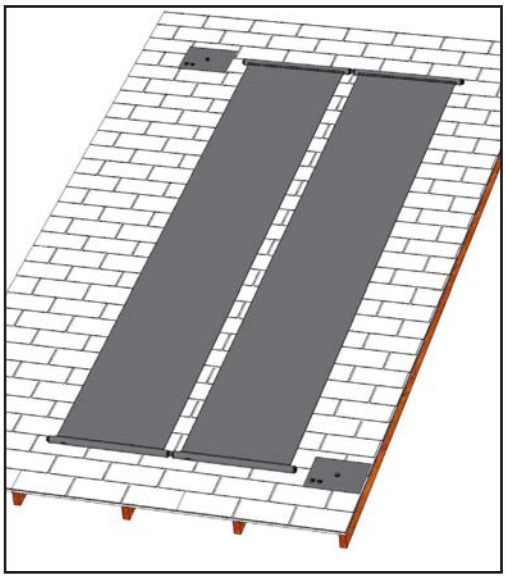
STEP 2: REMOVE PROTECTIVE COVERS AND CONNECT COLLECTORS

Remove protective caps and discard. Connect the collectors together with the provided 3-1/2” connectors, using support liners, and collet clips.



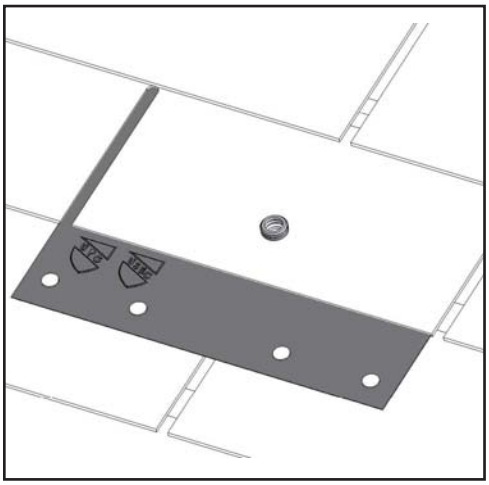
STEP 3: CHOOSE MOUNTING LOCATION AND LAYOUT

Collectors must be installed vertically, side-by-side, allowing at least 6 inches above the top headers for mounting hardware. Place the collectors and upper roof jack in chosen location as shown. Roof jack installs black side up, with hole located near the bottom edge of a shingle. Mark the four collector corners with chalk and temporarily move the collectors out of the way.



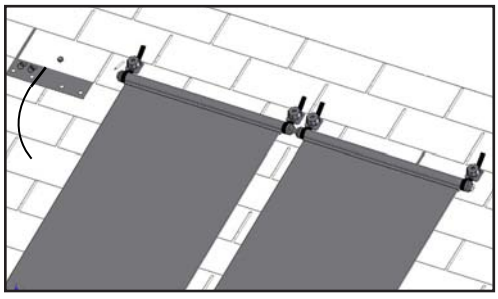
STEP 4: INSTALL UPPER ROOF JACK

Chalk mark the location of the upper roof jack hole. Break the glue line between the shingles by sliding a large putty knife between the shingles. Loosen just enough to fit the roof jack underneath. Insert rubber grommet into roof jack from underside and slide roof jack into place to check the fit and the chalk mark. At the mark, drill a 1-1/4" roof penetration. Attach the provided wire connector to the roof sensor lead wire and feed the lead through the hole. Leave enough lead for the sensor to reach 1' outside the roof jack. Lift shingle and apply a large bead of roof sealant completely around the hole and the lead wire. Slide roof jack into place under the shingle, with lead wire protruding out under lower edge of jack. Press down into sealant to ensure a good seal. Secure roof jack using galvanized roofing nails. Be careful not to put nails through the roof sensor wire. Apply roof sealant to the nail heads. Apply roof sealant under the overlapping shingle and press flat.



STEP 5: INSTALL COLLECTOR HEADER STRAPS

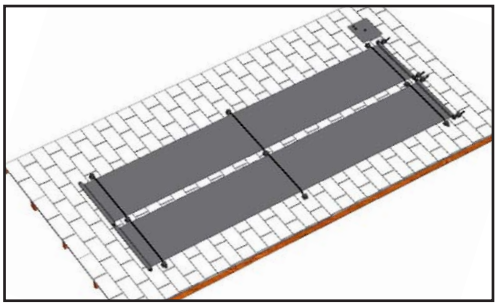
Replace the collectors in the chalk marked location. String the sensor lead wire underneath the collectors with the sensor protruding at upper collector outlet end. Apply a quarter-sized dab of roof sealant 3" above the end of one of the top headers. Place mounting base over sealant and drive a 2" lag screw (not provided) through the base, securing so that strap can run vertically through the slot. Wrap a short header strap around header and lay into the slot in the base. Screw on a cap until tight. Be careful not to cross thread. Continue with the installation of remaining header straps at both ends of each header.



2: Roof Mounting (Continued)

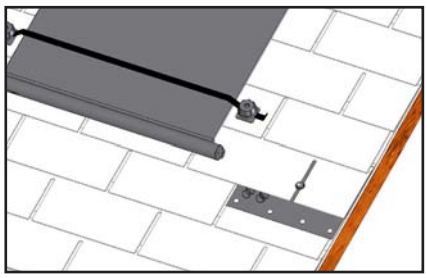
STEP 6: INSTALL BODY STRAPS

Apply roof sealant at lag screw location, 1” from collector edge, 4” down from the top header. Drive a lag screw through the base.
Orient the slot for the strap horizontally and tighten lag screw. Lay the strap in the slot of the base and screw down the cap until tight. Install base on opposite side of the three panels 1” from the collector edge. Stretch strap across panels and screw down with cap until tight. Install another base and cap between panels. Measure to center of collectors and install a center body strap following previous procedure. Install the third collector body strap 4” above the bottom header. Straps will allow for expansion and contraction of the solar collectors.



STEP 7: INSTALL LOWER ROOF JACK

At the lower header end, diagonally opposite the upper outlet header end, install the lower inlet header roof jack 4-6 inches out from the header, as detailed in Steps 4 & 5 above. Note: This jack does not get a sensor.

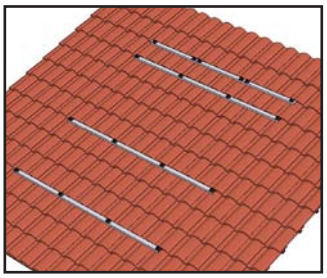


Tile Roof Installation Kit (TRIK)

Step 1: Attach bases to channels

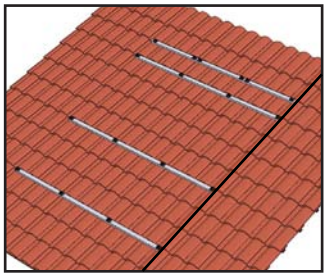
The configurations depicted in the installation sequence show 8-Foot Collectors. Attach bases to channels using the large #14 screws. The upper header channel gets bases with slots aligned vertically for the header straps. All body channels get bases with slots aligned horizontally for the body straps.

Step 2: Determine layout



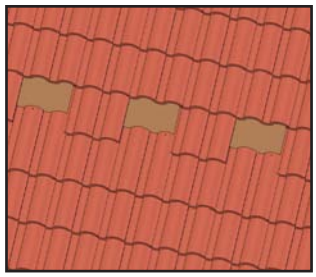
A. Place upper header channel against the lip of the second tile row down from the ridge. Note; If installing a PV Panel Kit above solar collectors, place upper channel against fourth tile.
B. Place the first body channel against the lip of the next tile row down.
C. Measure down the roof from the first body channel and place the bottom body channel against the lip of a tile row at approximately 7’ for 8-foot long or 11’ for 12-foot long collectors. (Measurement will vary with tile spacing)
D. Place remaining channel(s) in between, spaced as evenly as possible.

Step 3: Snap chalk line



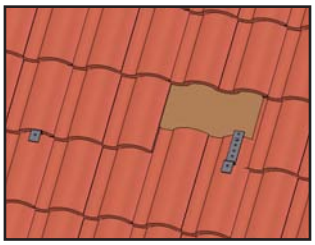
Snap a vertical chalk line down the roof for aligning the channel ends. Each channel gets 3 tile clips for the 8-foot collectors; 2 clips for the 12-footers. If working with curved tiles, the clips go on the tile high points. Temporarily move the channels aside.

Step 4: Remove tiles and drill holes



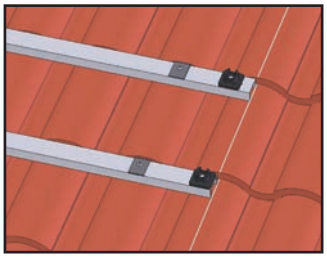
A. Start with the clips at the bottom channel, remove the tile directly above each clip. If the tile has a short nail into batten strip, a nail bar may be helpful.
B. Using a 1/4" masonry bit, drill out the existing high point nail holes. (not the holes in the tile valleys)

Step 5: Attach tile clips



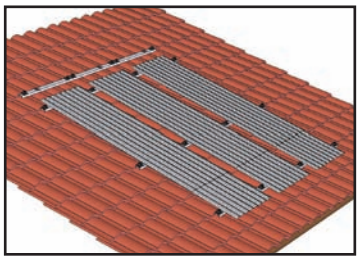
A. Choose the tile clip hole that will allow the channel to be mounted closest to the tile lip.
B. Secure the clips using the appropriate length ¼" lag screws.
C. Lag through the drilled tile hole, batten strip, underlayment, and sheathing. Note: Snug only or tile will crack.

Step 6: Attach channels



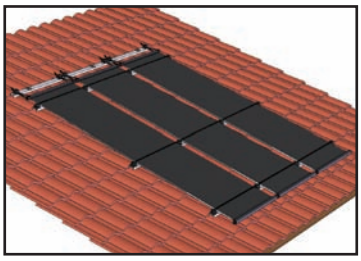
A. Align the channel end with the chalk line and slide into place under the tile clips.
B. Secure channel to clips with provided #14 self-tapping screws.
C. Repeat procedure for next channel up, working up the roof. Note: Install the upper roof jack before the top channel.

Step 7: Lay corrugated sheet



A. Lay two pieces of the corrugated sheet on the channels with overlapped ends. Adjust to a total length of 94" for 8' collectors or 142" for 12' collectors and secure together with a #6 screw. Slide sheet until the ends hang over equally above and below the channels.
B. Center sheet equally side–to-side between the bases. Drive a #6 screw into the channels at every other valley. Clean away all metal shavings.

Step 8: Mount Collectors



Lay collectors on substrate with top headers hanging over substrate. Install and adjust header straps so that top headers remain hanging over and touching the end of the sheet. Install the body straps. When installing additional collectors, the additional channel ends should be aligned flush against the others.

3: Tank Plumbing - Single Tank

Note: Install a new water heater at this point if the existing water heater will not be used. Follow the water heater manufacturer's installation instructions. A drip pan with a drain line to the outside of the building is required whenever water storage tanks are located above living space.

STEP 1: TURN OFF WATER HEATER

For electric water heaters: turn off the circuit breaker and verify with a volt meter at the top of the water heater.
For gas water heaters: shut off the gas supply valve.

STEP 2: SHUT OFF WATER SUPPLY

Shut the cold water inlet valve to the water heater. This is usually a ball or gate valve located near the top of the water heater. Shut off water to the home at the main water shutoff.

STEP 3: CONNECT HOSE TO DRAIN BIBB

Connect a garden hose to the drain connection at the bottom of your water heater. Make sure discharge end of the hose is in a safe place for hot water to flow. Open the drain bibb.

STEP 4: OPEN PRESSURE-RELIEF VALVE

As water heater is draining, open the pressure-relief valve on the side or top of the heater. When heater is empty, remove hose, close drain bibb and relief valve.

STEP 1: DISCONNECT WATER HEATER PIPING

Remove heater vent and vent cap from the water heater (gas only). Disconnect the water heater hoses. Replace if needed. Check that the water heater has dielectric nipples.

STEP 2: CONNECT TEMPERATURE CONTROL VALVE

Apply thread sealant and connect temperature control valve to the water heater port labeled “H” for hot. Connect a flexible hose to the temperature control valve port labeled “MIX” and connect the other end to the hot water pipe to the house.

STEP 3: CONNECT 3/4” TEE

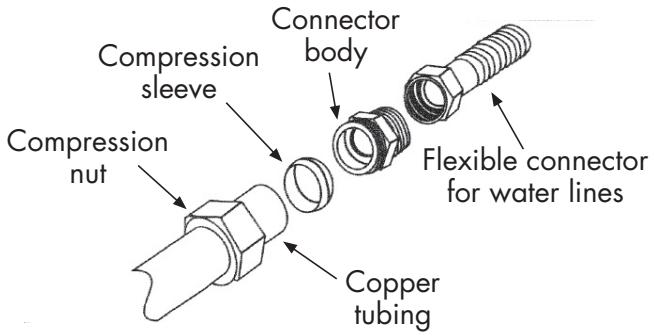
Apply thread sealant and connect a 3/4” tee in the upright position to the cold water inlet of the tank. Connect tee to cold water valve and temperature control valve port labeled “C” using flexible hoses and nipples as shown.

STEP 4: INSULATE PIPES AND ATTACH LABEL

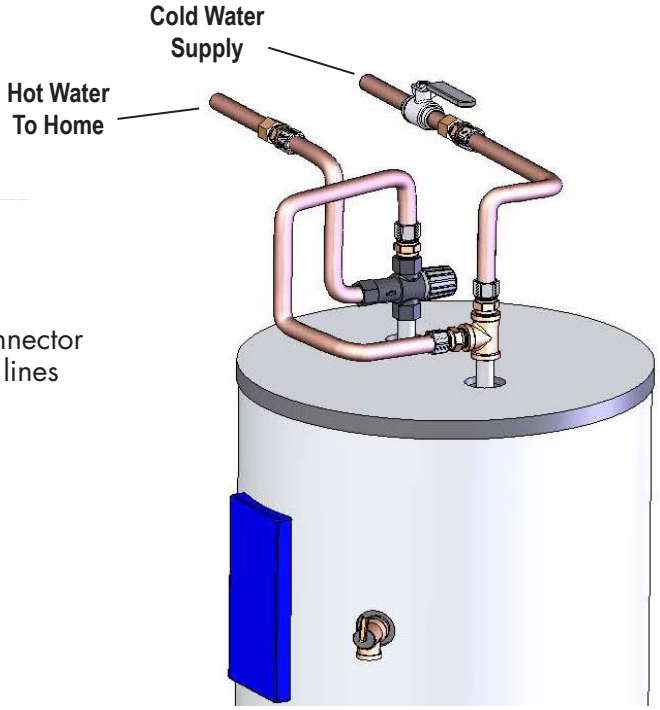
All interconnecting hot water piping and the final 5 feet of cold water supply pipe shall be insulated with R-2.6 or greater insulation. Attach provided Cold Water Shut-Off Valve label to the cold water shut off valve.

STEP 5: REPLACE HEATER VENT (GAS ONLY)

Replace heater vent and vent cap.



Copper Pipe Adaptor



Single Tank Plumbing

3: Tank Plumbing—Dual Tank

Note: A Solar Storage Tank Add-On Kit can be used for this installation configuration. This kit is available through your distributor. The tank is plumbed as shown.

STEP 1: RE-DIRECT WATER SUPPLY

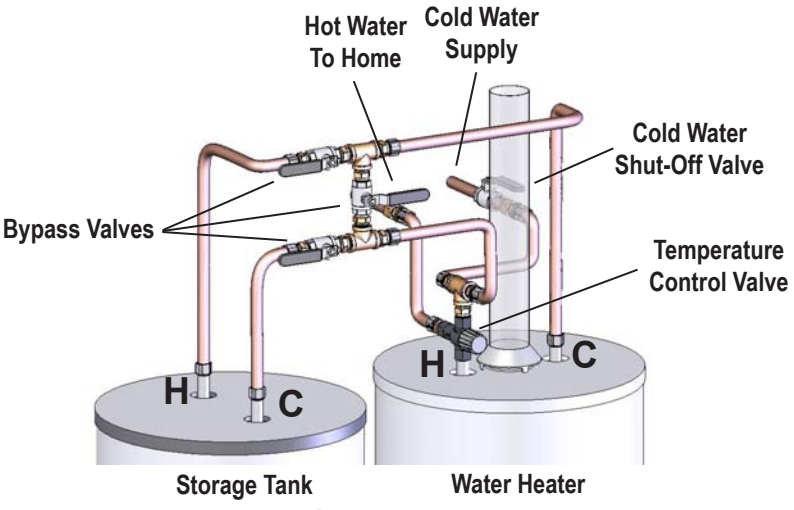
Re-direct the cold water supply line from the water heater cold inlet, to the tee above the temperature control valve as shown. Use one of the new flexible hoses unless you prefer to use the existing hose. When attaching to the cold water supply line, connect directly to threads. If no threads are present use the provided adapter, 3/4" compression X 3/4" MPT. For 1" copper tubing, purchase a 1" compression adapter.

STEP 2: INSTALL BYPASS VALVES

Apply thread sealant and assemble the 2-way valves, fittings and tees as shown. Connect using 4 provided flexible hoses. Do not use thread sealant on flexible hose connections. Important: Before turning on the electricity or gas supply, be certain that the tank is full of water.

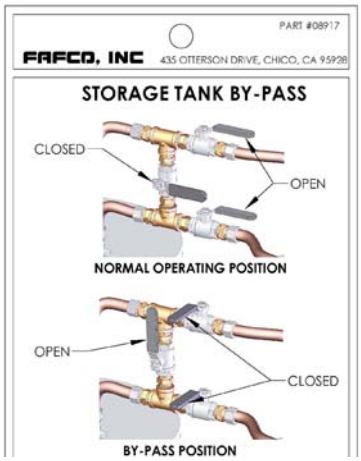
STEP 3: FILL TANK & ACTIVATE ELECTRICAL/GAS SUPPLY

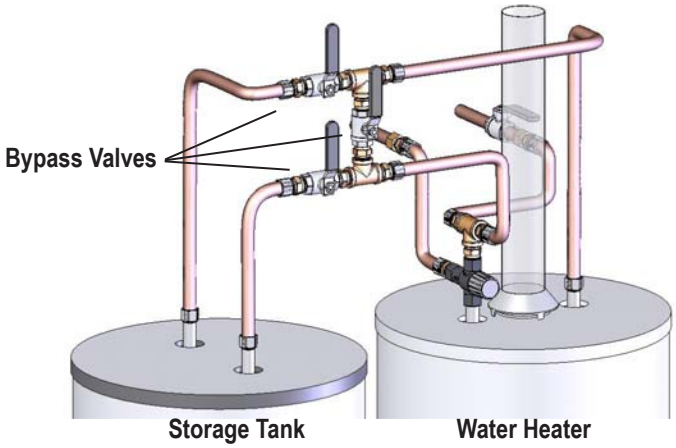
With the system in normal operating position, and a hot water faucet still open, turn the cold water shut off valve on to allow water to enter the tanks. The open hot water faucet will permit air to be purged from the tank. Close the faucet when the water becomes a constant flow and all air is purged. Inspect for leaks and tighten connections where necessary. Reconnect and activate electrical or gas supply. Open or close the isolation valves as shown to switch between normal operating position and bypass position. All interconnecting hot water piping and the final 5 feet of cold water supply pipe shall be insulated with R-2.6 or greater insulation. Attach provided valve position label to the cold water shut off valve. Attach Storage Tank Bypass label to one of the 2-way valves. Attach Cold Water Shut-Off Valve label to cold water shut-off valve.



Normal Operating Position

Storage Tank Bypass Label

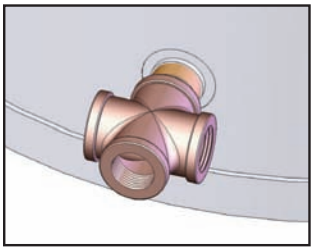




Bypass Position

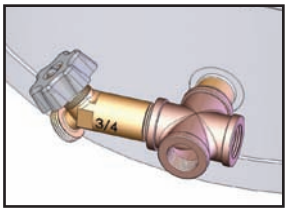
3: Tank Plumbing—Storage Tank Drain Port Adapter

STEP 1: INSTALL BRASS CROSS



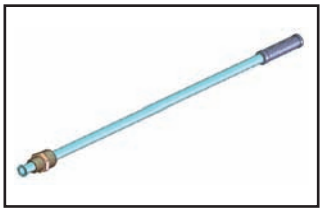
Apply thread sealant to the 3” nipple and install finger tight into one port of 3/4” brass cross. Install nipple and cross assembly into drain port at the bottom of the solar storage tank, stopping with cross oriented horizontally. Note: Do not over tighten and crack the brass cross.

STEP 2: INSTALL DRAIN BIBB



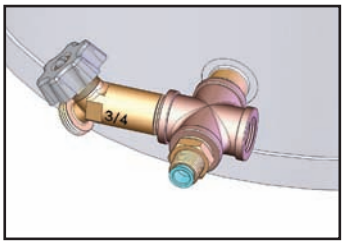
Apply fresh thread sealant to the water heater drain bibb and install into cross on a side port most convenient for future water heater flushing. Do not install drain bibb on the front port of the cross.

STEP 3: DIP TUBE ASSEMBLY



Apply thread sealant to the 3/4” side of the reducer.

STEP 4: INSERT DIP TUBE



Insert dip tube assembly, filter first, into the solar storage tank and tighten reducer.

4: Drainback Tank Installation

STEP 1: LOCATE WALL STUD

Locate a wall stud near the desired drainback tank mounting position. Mark the location.

STEP 2: MEASURE THE LOCATION

Hold the drainback tank in place near the mounting site. The top of the drainback tank should be between 6”–12” from the ceiling. The bottom of the drainback tank should be a minimum of 3’ to the top of the circulation module.

STEP 3: LOCATE THE CEILING HOLE

Hold the drainback tank in place over the mark. Raise the drainback tank straight up until the tubing (at the top) touches the ceiling. Mark the location where the tubing touches the ceiling. Make a second mark directly above the sight glass tube.

STEP 4: CONNECT THROTTLING VALVE

Support the drainback tank so that the bottom fitting is off the floor. Pull tubing out about 6” and push on throttling valve.

STEP 5: PUSH TUBE BACK INTO TANK

Push tubing back into drainback tank until end of the tube touches the bottom of the tank.

STEP 6: DRIVE TOP SCREW

Move the drainback tank back to the correct mounting location. Drive the top bolt into the wall stud. Do not tighten all the way. If you miss the wall stud, repeat your measurements.

STEP 7: LEVEL TANK

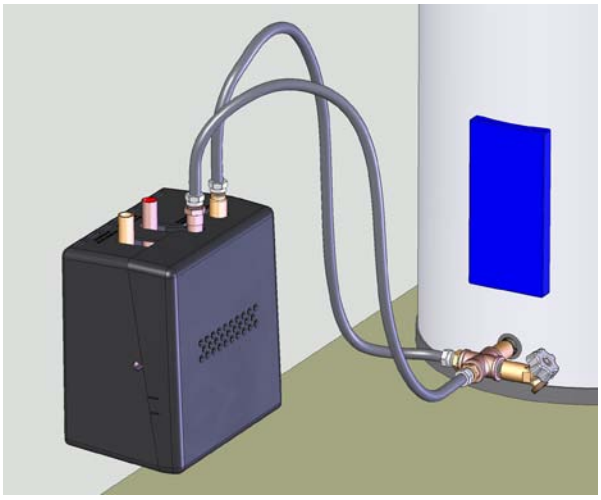
Use a level to set the drainback tank straight.

STEP 8: DRIVE BOTTOM SCREW

Drive the bottom bolt into the wall stud. Do not tighten all the way. If you miss the wall stud, repeat your measurements. Recheck that the tank is level. Finish mounting the drainback tank by tightening the mounting bolts (top and bottom).

Optional Mounting: If a stud isn’t conveniently located, mount the drainback tank to two (2) 1” x 4” stringers between studs.

5: Circulation Module Installation



STEP 1: DRIVE TWO MOUNTING SCREWS

Mark two hole locations 6-3/4” apart on the wall along the stud at least 4” off the floor. Check for level and drive two 5/16” x 1-5/8” lag screws with a 7/16” socket, leaving about a 1/4“ gap to the wall.

STEP 2: REMOVE PROTECTIVE COVERS

Set the circulation module onto the mounting bolts. Make sure the mounting is sturdy. If necessary, adjust the mounting bolts for a tight fit.

STEP 3: CONNECT FLEXIBLE HOSES

Connect the flexible braided hoses to the threaded pipes on top of the circulation module. The flexible hoses only fit one way (small to small and large to large). Do not use teflon tape or pipe-thread compound on these connectors.

STEP 4: CONNECT TO COAXIAL ADAPTER

Screw the return side (i.e., larger) flexible hose onto the coaxial tank adapter opposite the drain valve. Do not over-tighten this connection. Do not use teflon tape on this connection.

STEP 5: CONNECT TO COAXIAL ADAPTER

Screw the suction side (i.e., smaller) flexible hose onto the coaxial tank adapter. Do not over-tighten this connection. Do not use teflon tape on this connection.

STEP 6: INSTALL PUSH FITTINGS

Push the 3/4” to 1/2” reducer push fittings over the smooth pipes on top of the circulation module as shown.

STEP 7: ENSURE PROPER INSERTION

The pipe must be inserted to the indicated depth to ensure a good seal.

STEP 8: INSTALL TUBE TO DRAINBACK TANK

Cut 6”–8” of tubing and install on circulation module to connection marked “FROM BOTTOM OF DRAINBACK TANK.” Install drain valve. Cut length of tubing to install between drain valve and bottom of drainback tank and install.

6: Tubing & Sensor Installation

STEP 1: DRILL TWO HOLES IN CEILING

Drill two 1” diameter holes through the ceiling at the previously marked locations above the drainback tank.

STEP 2: PUSH TUBING THROUGH RIGHT HOLE

Push tubing up through hole on right.

STEP 3: PULL TUBING THROUGH ATTIC

In attic, pull enough tubing through hole to reach the lower roof jack.

STEP 4: PUSH TUBING THROUGH ROOF

With helper on roof, push approximately 1’ of tubing through the lower roof jack penetration. Tubing may be lubricated with silicon grease or water.

STEP 5: INSTALL TUBE-MOUNTING CLIPS

Install tube-mounting clips up by the roof jack and clip tubing in place. Continue installing clips every 3’ to 4’, maintaining a minimum slope toward the ceiling penetration of 1/4” per foot.

STEP 6: CUT TUBING

Cut tubing to correct length to connect to the circulation module at outlet marked “TO SOLAR COLLECTOR AT CLOSEST BOTTOM HEADER.”

STEP 7: SLIDE ON CEILING FLANGE

Slide tubing flange over tubing up to ceiling.

STEP 8: CONNECT TUBING TO MODULE

Connect tubing to the circulation module.

STEP 9: PUSH TUBING THROUGH LEFT HOLE

Push tubing through ceiling hole on left and repeat steps 3–6 for the right ceiling hole to upper roof jack tubing run.

STEP 10: CONNECT TO THROTTLING VALVE

Cut tubing to correct length, push tubing flange on tube, and connect to throttle valve. Remember to measure against valve to the indicated mark before cutting.

STEP 11: DRILL CEILING HOLE FOR ROOF SENSOR

Drill a 1/4” hole about 1-1/2” –2” from the right ceiling hole. Push the two-lead roof sensor wire through. For single-tank setups, this wire is attached to the solar controller.

STEP 12: PULL WIRE INTO ATTIC

Pull wire into attic. Splice wire with roof sensor, using provided wire connector. Do not strip wires. Make sure wires are fully inserted before clamping closed.

STEP 13: TIE SENSOR WIRE TO TUBING

Zip-tie the sensor cable to the tubing every 3’ to 4’ for support.

STEP 14: CONNECT REDUCERS

Cut about 4’ of tubing and take it to the roof. Install 3/4” to 1/2” reducers on the collector headers at roof penetrations.

STEP 15: INSTALL TUBING INSERTS

Install tubing inserts into all tubing connections. Simply push the inserts into the tubing prior to each connection with a fitting. Be certain to firmly push the tubing (with insert) all the way into the fitting past the O-ring and stop against the seat. With the insert in place, the tubing can’t collapse and will remain in tight contact with the O-ring inside the fitting.

STEP 16: INSTALL RETAINER CLIPS

Install retainer clips on all fitting connections. The retainer clips are provided in two sizes, 1/2” and 3/4”. The clips snap in place at each end of a fitting with the tab facing away from the fitting. These clips prevent the fitting collar from depressing, which can release the tubing.

STEP 17: CONNECT TUBING AND ELBOWS

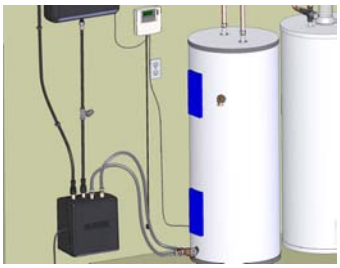
Insert a length of tubing into reducer fitting and cut to appropriate length. Install elbow fitting. Cut tubing penetrating through roof to approximately 4” and install elbow fitting. Push down until flush with roof jack.

STEP 18: SECURE ROOF SENSOR

Use roof sealant to fix roof sensor to roof. Position the roof sensor out of any potential shadow. If desired, the roof jack can be painted to match the roof.

7) Solar Controller Installation

Note: Instructions for operating the controller are in the controller box!



STEP 1: REMOVE CONTROLLER COVER PLATE

Remove cover plate from the controller and mount the solar controller onto the wall or on the solar storage tank.

STEP 2: REMOVE LOWER TANK COVER

Remove the lower access cover plate from the storage tank. Remove insulation and plastic cover.

STEP 3: LOCATE THE TANK SENSOR

Locate the tank sensor in the controller box.

STEP 4: INSTALL SENSOR AGAINST TANK

Insert in the water heater underneath the insulation to allow good contact with the tank wall. Run the end of the sensor wire out the bottom or side of the access opening.

STEP 5: SPLICE ROOF SENSOR WIRE

Strip jacket on sensor wire back about 1". Cut off stripped ends of sensor leads and splice to sensor wire. Insert wires as far as they will go into splice before clamping closed.

STEP 6: STRIP TANK WIRE

Cut both the roof sensor and tank sensor wires to length such that they can enter through the bottom of the controller. Strip off about 1" of jacket exposing the individual wires. Strip about 1/4 " of the insulation off each wire.

STEP 7: INSERT ROOF SENSOR INTO T1

Attach the ROOF SENSOR wires in the terminal block connectors for T1. Use a small screwdriver to push the white tab up, then insert the wire into the terminal and release the tab. It does not matter which side is red and which is black.

STEP 8: INSERT TANK SENSOR INTO T2

Repeat the process to connect the storage tank sensor to the "T2" terminal.

STEP 9: REPLACE CONTROLLER COVER PLATE

Replace the controller cover plate and plug the controller into a 120-volt outlet.

STEP 10: VERIFY CONTROLLER READINGS

The display shows the temperatures at the roof or at the tank. Use the arrow buttons to toggle between the two. If the display does not show a temperature when T1 is selected, check the connections to the roof sensor. Likewise, when T2 is selected and not temperature is displayed, check the tank sensor connections.

8: System Startup

STEP 1: OPEN HOT WATER FAUCET

Remove the aerator screen from a faucet in the home and turn on the hot water. Alternatively, open the hot water on a bathtub faucet,

STEP 2: OPEN MAIN WATER VALVE

Open main water valve to house.

STEP 3: OPEN COLD WATER INLET VALVE

Open valve to water heater

STEP 4: CHECK PLUMBING FOR LEAKS

Check plumbing for leaks and repair where necessary.

STEP 5: TURN ON WATER HEATER

Turn on water heater. For electric water heater, turn circuit breaker on. For gas water heater, turn on gas and follow the instructions on your water heater to light pilot.

STEP 6: FILL DRAINBACK TANK

Fill drainback tank with water to the top of the sight glass using a garden hose. For additional freeze protection, add three gallons of non-toxic propylene glycol to each drainback tank prior to filling with water.

STEP 7: INPECT FOR LEAKS

Inspect tank fittings for leaks and tighten if needed.

STEP 8: ACTIVATE CIRCULATION MODULE

Plug circulation module directly into a 120VAC outlet and check for audible operation of circulation module pumps. Within 5 minutes, the water level in the drainback tank will stabilize.

STEP 9: INSPECT FOR LEAKS

Inspect tank fittings for leaks and tighten if needed.

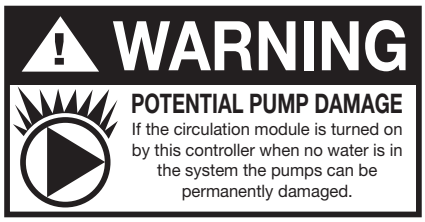
STEP 10: ADJUST THROTTLING VALVE

Adjust throttling valve above drainback tank to reduce noise, if necessary. Be sure not to turn valve handle more than 45 degrees....this can completely stop flow!

STEP 11: PLUG MODULE INTO CONTROLLER

Plug circulation module into the solar controller and ensure the controller switch is set to Auto..

The control component of your FAFCO solar water heating system features state-of-the-art microprocessor technology and many flexible features to maximize the effectiveness and utility of your solar water heating system, with special emphasis on “user friendliness” and reliability for years to come.



Controller Operation:
The system will activate whenever the roof temperature is at least 10 hotter than the lower tank temperature. The system will continue to operate automatically until the tank reaches the selected MAX WATER TEMP or the roof temperature is only 4 degrees hotter than the lower tank temperature. At that time, the system will shut-off automatically, the green SOLAR ON light will go off, and the WATER TEMPERATURE will continue to be displayed. The system will reactivate whenever the roof temperature is at least 10 hotter than the lower tank temperature.

Solar Setting:
The SOLAR switch is normally set in the AUTO position, and should remain set this way for automatic operation. The ON position is normally for installation and maintenance purposes only and should only be used to test the system. The OFF position is for maintenance only.

Maximum Tank Temp Setting:
This switch permits the user to set a maximum storage tank water temperature. This will depend on household requirements or safety concerns. If the water reaches the set maximum temperature during solar operation, the solar system will shut off automatically. .

Operating Indicators
To determine if the system is operating properly and providing solar heated water, verify the top tank water temperature is warm. For single tank systems, verify the top tank water temperature is higher than lower tank water temperature when the system is activated.

10: Troubleshooting

The Solar Water Heating System is designed to operate trouble-free for many years. Use the table below to troubleshoot unexpected problems.

PROBLEM	WHAT TO DO
System Doesn't Turn On	1) Confirm that the system is not activating: • Place your hand on the ICM. You should feel a slight vibration and hear a slight hum. Caution! Some surfaces may be hot! 2) If the system is not activating: • Confirm that the power cord is plugged into a working 120 VAC outlet. • Confirm that the power cord is firmly plugged into the controller power jack. Display should show water temperature in water heater/water storage tank. • Verify all sensor wires are firmly attached and functioning properly, if not the controller display flashes SE-U, SE-L, SE-r for upper tank, lower tank or roof sensor respectively. • Verify pumps are turning on by placing your hand on each of the pumps. You should feel heat, feel a slight vibration and/or hear a slight hum. • Verify heat transfer fluid is flowing. The controller continuously monitors for water temperature increase in the water heater while the pumps are operating. If after 4 hours of operation, the controller senses the water in the water heater is not heating, the controller display flashes FLO. After system repair, system operation is restored by moving solar switch to OFF, then back to AUTO. • Verify that the roof temperature is at least 10 hotter than the lower tank temperature. • Verify that the upper tank temperature is less than the selected Max Water Temp.
Leaks	• If the leak is coming from a fitting, tighten the fitting or push the tube fully into the fitting. Refer to the section in this manual on the proper procedure for installing tube fittings. • If the leak is coming from inside the ICM, contact FAFCO for further instruction. • If the leak is coming from the solar collector panel body, a tube repair kit may be used to plug one or more tubes. • If the leak is coming from the solar collector header, contact FAFCO for further instruction. • If the leak is coming from the reservoir, other than the reservoir's relief valve, contact FAFCO for further instruction..
Low on Hot Water	1) If the system has two tanks or an on-demand heater, refer to the water heater manufacturer's operation manual to troubleshoot. 2) If the system has one electric water heater tank: • Suggest to the homeowner reducing or spacing out their hot water usage. • Consider installing low flow shower heads and other low flow hot water fixtures. • Consider upgrading to a larger water heater tank. • Raise water heater thermostat setting, although this may decrease energy savings.

If the problem persists, visit www.*FAFCO.com* for further information.

Maintenance

Ensure that the homeowner is provided with an Owner's Manual. Refer to the Owner's Manual for system maintenance. System components are designed to be low maintenance with estimated replacement life beyond 20 years. FAFCO HTF is designed to last for the life of the system. It is advised to check the fluid of the drainback tank twice a year as follows:

ADD FLUID

1. Activate the system.
2. Wait for the fluid level in the drainback tank sightglass to lower to a point where the level stops dropping.
3. If the fluid is below the minimum operating level on the sightglass, then deactivate the system, and add fluid just above the sightglass elbow.

SYSTEM:

SRCC OG-300 SYSTEM MODEL NUMBERS:

Up to date certification numbers can be found at SRCC's website, *www.solar-rating.org*.

	2'x12' Collectors					2'x8' Collectors				
	Electric Water Heater		Gas Water Heater			Electric Water Heater		Gas Water Heater		
	Single Tank	Dual Tank	Dual Tank	Instantaneous Heater with Tank	Single Tank	Single Tank	Dual Tank	Dual Tank	Instantaneous Heater with Tank	Single Tank
	A/C - Drainback							A/C - Drainback		
Two Collectors, 50 gallon solar tank	VDB-24UX2-50E	VDB-24UX2-50E-50S	VDB-24UX2-50G-50S	VDB-24UX2-TG-50S		VDB-16UX3-50E	VDB-16UX3-50E-50S	VDB-16UX3-50G-50S	VDB-16UX3-TG-50S	
Two Collectors, 80 gallon solar tank	VDB-24UX2-80E	VDB-24UX2-50E-80S	VDB-24UX2-50G-80S	VDB-24UX2-TG-80S		VDB-16UX3-80E	VDB-16UX3-50E-80S	VDB-16UX3-50G-80S	VDB-16UX3-TG-80S	
Two Collectors, 120 gallon solar tank	VDB-24UX2-120E			VDB-24UX2-TG-		VDB-16UX3-120E			VDB-16UX3-TG-120S	
Four Collectors, 50 gallon solar tank	VDB-24UX4-50E	VDB-24UX4-50E-50S	VDB-24UX4-50G-50S	VDB-24UX4-TG-50S		VDB-16UX6-50E	VDB-16UX6-50E-50S	VDB-16UX6-50G-50S	VDB-16UX6-TG-50S	
Four Collectors, 80 gallon solar tank	VDB-24UX4-80E	VDB-24UX4-50E-80S	VDB-24UX4-50G-80S	VDB-24UX4-TG-80S		VDB-16UX6-80E	VDB-16UX6-50E-80S	VDB-16UX6-50G-80S	VDB-16UX6-TG-80S	
Four Collectors, 120 gallon solar tank	VDB-24UX4-120E			VDB-24UX4-TG-		VDB-16UX6-120E			VDB-16UX6-TG-120S	
Six Collectors, 50 gallon solar tank	VDB-24UX6-50E	VDB-24UX6-50E-50S	VDB-24UX6-50G-50S	VDB-24UX6-TG-50S		VDB-16UX9-50E	VDB-16UX9-50E-50S	VDB-16UX9-50G-50S	VDB-16UX9-TG-50S	
Six Collectors, 80 gallon solar tank	VDB-24UX6-80E	VDB-24UX6-50E-80S	VDB-24UX6-50G-80S	VDB-24UX6-TG-80S		VDB-16UX9-80E	VDB-16UX9-50E-80S	VDB-16UX9-50G-80S	VDB-16UX9-TG-80S	
Six Collectors, 120 gallon solar tank	VDB-24UX6-120E			VDB-24UX6-TG-		VDB-16UX9-120E			VDB-16UX9-TG-120S	
	Glycol AC							Glycol AC		
Two Collectors, 50 gallon solar tank	AC24UX2-50E	AC24UX2-50E-50S	AC24UX2-50G-50S	AC24UX2-TG-50S		AC16UX3-50E	AC16UX3-50E-50S	AC16UX3-50G-50S	AC16UX3-TG-50S	
Two Collectors, 80 gallon solar tank	AC24UX2-80E	AC24UX2-50E-80S	AC24UX2-50G-80S	AC24UX2-TG-80S		AC16UX3-80E	AC16UX3-50E-80S	AC16UX3-50G-80S	AC16UX3-TG-80S	
Two Collectors, 120 gallon solar tank	AC24UX2-120E			AC24UX2-TG-120S		AC16UX3-120E			AC16UX3-TG-120S	
Four Collectors, 50 gallon solar tank	AC24UX4-50E	AC24UX4-50E-50S	AC24UX4-50G-50S	AC24UX4-TG-50S		AC16UX6-50E	AC16UX6-50E-50S	AC16UX6-50G-50S	AC16UX6-TG-50S	
Four Collectors, 80 gallon solar tank	AC24UX4-80E	AC24UX4-50E-80S	AC24UX4-50G-80S	AC24UX4-TG-80S		AC16UX6-80E	AC16UX6-50E-80S	AC16UX6-50G-80S	AC16UX6-TG-80S	
Four Collectors, 120 gallon solar tank	AC24UX4-120E			AC24UX4-TG-120S		AC16UX6-120E			AC16UX6-TG-120S	
Six Collectors, 50 gallon solar tank	AC24UX6-50E	AC24UX6-50E-50S	AC24UX6-50G-50S	AC24UX6-TG-50S		AC16UX9-50E	AC16UX9-50E-50S	AC16UX9-50G-50S	AC16UX9-TG-50S	
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Six Collectors, 120 gallon solar tank	AC24UX6-120E			AC24UX6-TG-120S		AC16UX9-120E			AC16UX9-TG-120S	
	Glycol PV							Glycol PV		
Two Collectors, 50 gallon solar tank	PV-24UX2-50E	PV-24UX2-50E-50S	PV-24UX2-50G-50S	PV-24UX2-TG-50S	PV-24UX2-50G	PV-16UX3-50E	PV-16UX3-50E-50S	PV-16UX3-50G-50S	PV-16UX3-TG-50S	PV-16UX3-50G
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Six Collectors, 120 gallon solar tank	PV-24UX6-120E			PV-24UX6-TG-120S	PV-24UX6-120G	PV-16UX9-120E			PV-16UX9-TG-120S	PV-16UX9-120G

COLLECTOR, SRCC MODEL 2007030A:

Two 2' x 12' Solar Collectors
24" x 144"

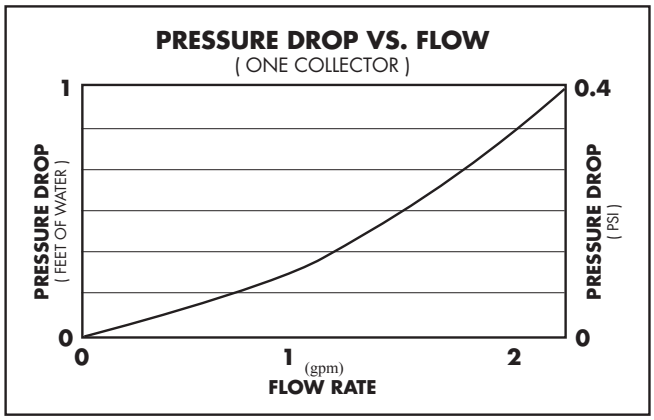
ROOF MOUNTING SPACE:
6' x 13' (basic kit with two collectors)

1. Material: Black UV resistant copolymer
2. Collector Dimensions: 24"x144" or 48"x144" or 24"x 96"
3. Weight: Dry 0.5 Lbs./Ft²
   Full of fluid 1 lbs./Ft²
4. Chemical Resistance: Compatible with common collector fluids, chemical, and corrosion resistant
5. Weatherability: Weatherometer, accelerated outdoor exposure, and other extensive laboratory testing demonstrates long-term weatherability of solar collectors (refer to warranty)
6. Maximum Operating Pressure: 30 psi
7. Maximum Operating Temperature: 200˚ F
8. Maximum Stagnation Temperature: 235˚ F
9. Absorptivity: 0.96
10. Emissivity: 0.90
11. Collector flowrate is within +/- 10% up to 144 square feet.

COLLECTOR, SRCC MODEL 2007030B:

Three 2' x 8' Solar Collectors
24" x 96"

ROOF MOUNTING SPACE:
7.5' x 9' (basic kit with three collectors)



Note: This graph applies to both solar collector lengths, 96" and 144".

Visit www.FAFCO.com
for current technical bulletins and other updates

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