

**INSTALLATION  
OPERATION  
MAINTENANCE  
MANUAL**  

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**THERMOSIPHON  
“FREE-FLOW”**



Alternate Energy Technologies, LLC  
1345 Energy Cove Ct  
Green Cove Springs, FL 32043  
904-781-8305



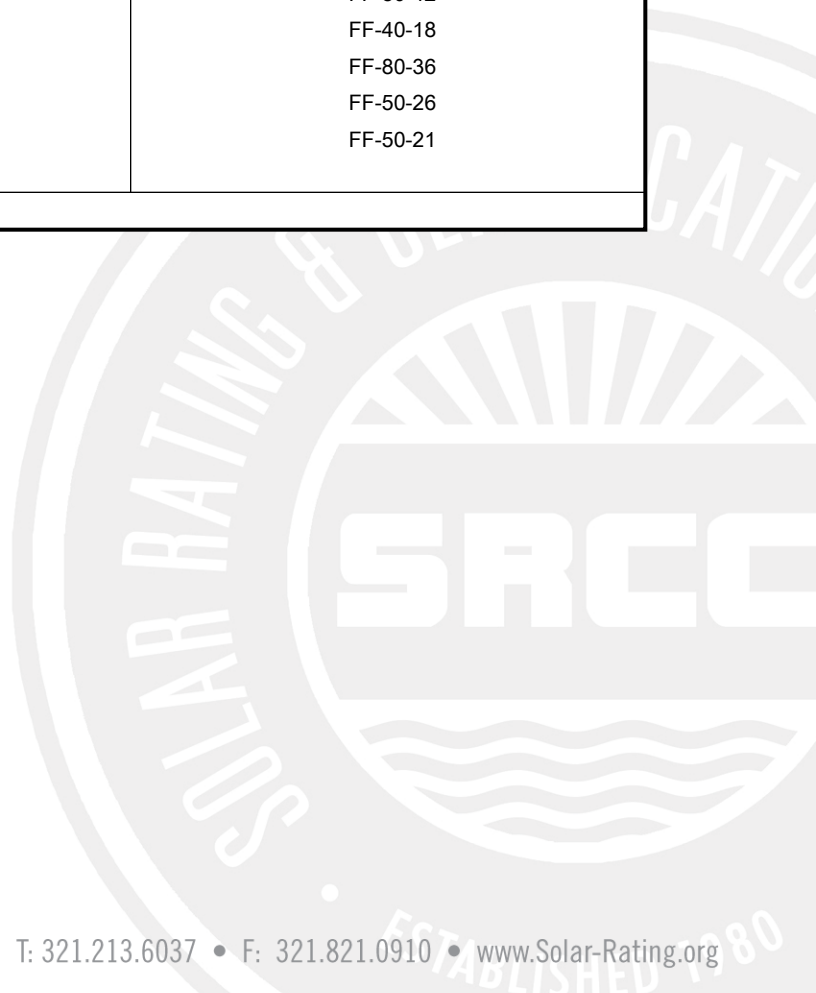
**Solar Rating & Certification Corporation™**  
*The Industry Standard Since 1980.*

**OG-300 Certification Page Artwork**

The Supplier is responsible for having a page in the installation and operation manual(s) with only the following table on it. It can be anywhere in the manual. SRCC will provide the artwork and no changes are allowed.

The solar system installer is to indicate (circle, check, etc.) the system that was actually installed.

	<p>This product certified by:          Solar Rating &amp; Certification Corporation™  <a href="http://www.Solar-Rating.org">www.Solar-Rating.org</a></p>	<p>Alternate Energy Technologies          1345 Energy Cove Court          Green Cove Springs, FL 32043 USA</p>
<p>Solar Energy Factor (SEF<sub>D</sub>)</p> <p>1.80          1.30          1.70          1.40          1.30</p>	<p>SRCC Cert. No.</p> <p>2011052E          2011052A          2011052D          2011052C          2011052B</p>	<p>System Model:</p> <p>FF-80-42          FF-40-18          FF-80-36          FF-50-26          FF-50-21</p>
<p>The installed system is marked above.</p>		



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## Owners Information

As the owner of an EagleSun solar water heater there are some questions you may have about the system and how it operates. The solar collector(s) provided with your EagleSun system has been certified for performance by the SRCC. Your solar water heater model is commonly referred to as a roof mounted, open loop, close coupled, Thermosiphon system and is one of the most efficient solar water heater types available worldwide.

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

### What is an Open Loop System?

An Open Loop System is a system where the water used in the household (hot water) circulates through the solar collector panels transferring solar energy into the storage tank. This system type is used in locations where the ambient temperature never falls below freezing point (42°F) and where the water quality is good – less than 600 ppm Total Dissolved Solids (TDS).

*"Freeze tolerance limits are based upon an assumed set of environmental conditions."*

### What is a Close Coupled System?

A close coupled system is one where the household hot water storage tank and solar collectors are both mounted on the roof. Typically the tank is above but in close proximity to the collectors. The tank and collectors are connected together with ¾" copper tube, which is used to transfer heated water from the collectors to the storage tank.

### What is a Thermosiphon System?

A Thermosiphon system is a system where the heated water in the solar collectors rises up into the storage tank by natural Thermosiphon action. Thermosiphon action occurs when water which is heated in the collectors expands becoming lighter allowing colder heavier water to fall by gravitational force to the bottom of the collector. The cold water falling to the bottom of the collector pushes the hotter lighter water back up into the storage tank. This natural action commonly known as Thermosiphon action occurs without any moving parts or auxiliary electrical energy input to the system.

### How does my system work?

EagleSun Thermosiphon Systems are pre-engineered systems. Proper system selection should be performed by an experienced solar professional. A properly sized system will operate free of user intervention and minimize action of the safety valves.

Under normal operating conditions, water in the thermosiphon tank is heated by the thermosiphon process as described above. In the residence, water is supplied to the fixtures directly from the thermosiphon tank or an Auxiliary Energy Support (AES) system.

Plumbing materials in this system are to be constructed of copper, brass, bronze or stainless steel and designed to meet or exceed the expected design temperature and pressure ratings of the system. The thermosiphon tank is used to store the heated water ready for household use. It is constructed using high quality stainless steel to provide long life and is insulated with a high density polyurethane material to ensure minimal heat losses and maximized structural strength. The solar collectors contain a multi-tube copper water way system welded to a solar absorber plate, the combination of which collects solar energy and transfers it to the fluid within the collector loop. The absorber plate system is enclosed in an insulated metal casing covered with a high strength tempered glass sheet that protects the absorber system from physical damage.

### Auxiliary Energy Support (AES) System

For electric AES systems, electricity supplies a secondary storage tank which is automatically controlled by an internal thermostat and which will only allow the electric element to operate if the storage tank water temperature falls below 120°F and will even then, only consume electricity until the water temperature is increased to 120°F then turns off again.

*"Electric Backup water Heater shall be compatible with the solar system output, temperatures, flow rated, and fluid types. Auxiliary equipment shall be listed and labeled by a recognized third party listing agency."*

### System Part Numbers

This manual covers the installation for the following system model numbers:

**FF-40-18, FF-50-21, FF-50-26, FF-80-36, and FF-80-42**

Where, the prefix "FF" signifies and FreeFlow system, the inside numbers 40, 50 and 80 signify the volume of storage and the suffix numbers 18, 21, 26, 36 and 42 represent the gross collector area.

# INSTALLATION INSTRUCTIONS

## Important Note:

***Do not commence an installation until all Occupational Health and Safety issues associated with working on and lifting components onto a roof have been addressed. All work associated with the installation must comply with local authority regulations. Where these installation instructions and local regulations are in conflict, local regulations must prevail.***

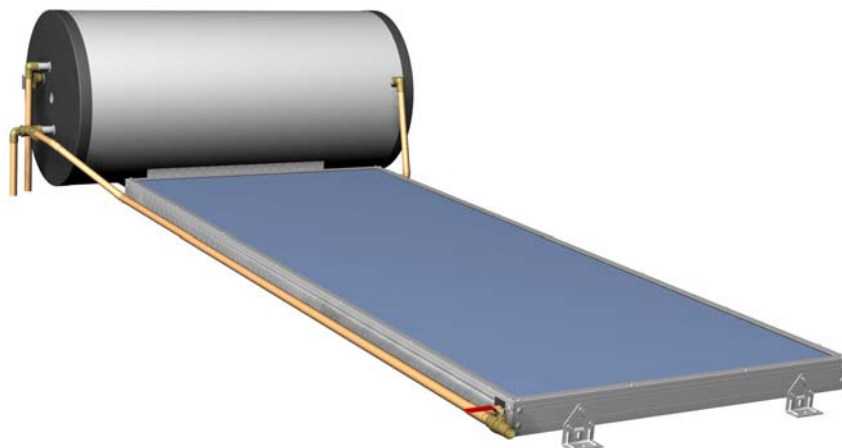
## Mounting and Connection Kits

The mounting procedures to follow will provide a secure method for maintaining proper tilt and collector orientation. There are two parts kits supplied with your Thermosiphon system; a mounting kit containing four flush-mount mounting clips with stainless steel locking bolts and a connection kit containing the parts required to plumb the system. The mounting kit does not include the fasteners required to secure the system to the roof structure. With the exception of the copper tube the connection kit contains all of the plumbing components required to connect the solar collector to the roof-mounted thermosiphon tank.

## Mounting Location

There are five major factors to consider when selecting the solar water heater installation location;

1. For optimum performance the solar collectors need to face the equator (in Southern hemisphere this is north and in the Northern hemisphere this is South). Installation on angles of up to 45° away from the equator do not have a major effect on the annual solar output, consequently roof locations which face less than 45° away from the equator are acceptable. If the collectors are installed with an east facing bias the best solar input is achieved in the morning and if there is a west facing bias the best solar input is in the afternoon.
2. Careful site inspection is required to ensure the selected location is not subjected to shading from adjacent trees or buildings throughout the day but particularly between 9am and 3pm the highest solar input times. Shadows are longer in winter than in summer so a site that is free of shadows from adjacent objects in summer may have some shadows in winter.
3. The solar water heater is to be located a minimum of 3 foot up from the roofs lower edge, 3 foot in from either side of the roof, and 3 foot down from the roofs ridge line and should be located as close as possible to the location which uses the most hot water e.g. bathroom or kitchen. This is to reduce energy losses which may occur if the pipe work between the solar water heater and the point of usage is too long.
4. To achieve optimum performance the solar water heater should be installed on a roof pitch of greater than 8° and less than 30°. Installations on a roof where the roof pitch is greater than 30° will require additional support at the storage tank to prevent it moving downward after installation. If the roof pitch is less than 8° the system will require a mounting frame to increase the pitch above 8°. Installations below 8° do not thermosiphon effectively and the collector glass will not self clean during rainy periods.
5. Careful inspection of the roof truss system is essential to ensure it can support the systems weight once filled with water. Particular care must be taken where the front foot of the storage tank is located. Typically the tank front foot should be located over a tile batten, purlin or similar for maximum strength. If the roof can not support the load additional bracing must be installed before the solar water heater is installed.



## System Capacities

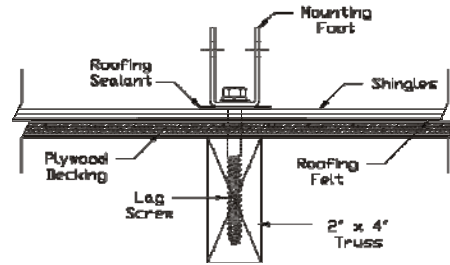
Model No.	Collector(s)	Collector Dry Weight (lbs)	Tank	Tank Dry Weight (lbs)	Total Dry Weight (lbs)	Approx Wet Weight (lbs)
FF-40-18	AE-18	70	FF-40	102	172	514
FF-50-21	AE-21	76	FF-50	124	200	623
FF-50-26	AE-26	90	FF-50	124	214	642
FF-80-36	AE-18 (2)	140	FF-80	191	331	1,014
FF-80-42	AE-21 (2)	152	FF-80	191	343	1,028

## Mounting Methods

There are 3 methods of attaching the system to the roof structure; lag-bolts, J-bolts or spanner mounting.

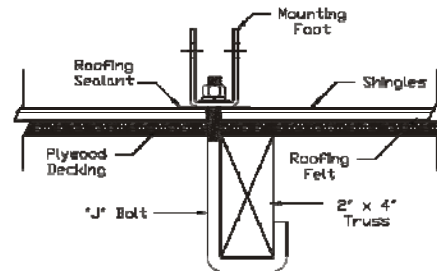
**NOTE:** All mounting bolts, washers, split-lock washers & nuts are to be stainless steel.

**Lag-Bolts** – Lag-bolt mounting is the preferred method of install. The mounting clips are secured directly into the upper chord of the roof truss (the detail below shows an install using a triangular mount bracket). The lag-bolt must penetrate 3" into the structural member. A 2" deep pilot hole must be drilled into the truss with a 1/8" diameter bit before inserting the lag bolt.



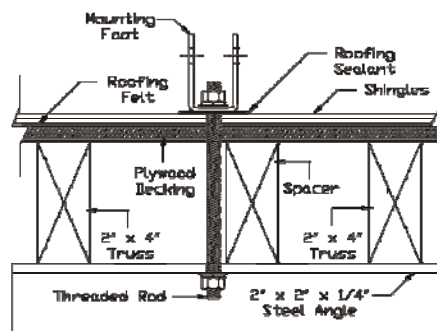
**Lag-bolt Mounting Detail**

**J-Bolts** – J-bolt mounting is preferred in installations where the roof truss members are not easily identified from the outside of the roof. Clearance holes for the J-bolts are typically drilled from inside the attic space. Two install service personnel are typically required, one in the attic space and one on the roof, when installing J-bolts to insure the J-bolt is secured properly.



**J-bolt Mounting Detail**

**Spanner mounting** – Spanner mounting is by far the most common method of installation. Steel angle or wood 2" x 4"s are used to span between the truss members. Two spacer blocks are required when the threaded rod is 2" or more from the truss member. Only one spacer block is required when the threaded rod is within 1" of the truss. Spacer blocks are to be no greater than 1" from the threaded rod.



**Spanner Mounting Detail**

## Building Penetrations

Building penetrations must be made in accordance with the National Roofing Contractors Association or the local Authority Having Jurisdiction. Penetrations shall be sealed properly and designed to prevent the intrusion of vermin. Penetrations shall not compromise the structural design of the building enclosure or framework. Penetrations through fire-rated assemblies shall not reduce the fire resistance below code. Solar components placed near or adjacent to building materials shall be isolated to prevent elevated temperatures which could result in a fire hazard.

## Mounting the Collector

The collector installation procedure is as follows:

1. From the inside of the roof, in the attic crawl space, measure the center-to-center distance between the roof trusses. This distance is required to secure the mount clips to the collector prior to attaching the collector to the roof structure.
2. Position two (2) mount clips along each end of the collector (*ends have no pipes – see the diagram*) a distance apart equal to the center-to-center roof truss spacing. Insure the mounts are centered across the collector ends and secure them with the locking bolts (*multiple collector installations will require the mount clips to be slightly off center, this allows for the spacing between collectors*).
3. Place the collector on the roof in the area selected for install.
4. Starting in the upper left-hand quadrant of the selected install area, locate the position of the nearest roof truss. Measure down from the peak of the roof, a distance of 60" and make a mark on the roof tile. This will be the position of the top left mounting hole of the collector mount clip.
5. Use roofing mastic or roof flashing caulk to coat the underside of a roof mount flashing. Place the flashing into position centered over the proposed mounting hole, insuring that the top of the flashing is under the upper roof tiles and the bottom of the flashing laps over the lower roof tiles. Secure the flashing using a couple of roofing nails under the upper roof tiles.
6. Drill an appropriately sized hole (*as dictated by the method of attachment*) into the roofing structure.
7. Place the collector into position with the upper-left mounting foot centered over the newly drilled hole and align the collector to be square with the roof.
8. Using the installed mount clips as a template, mark the position of the remaining mount holes on the roof tiles then set the collector aside.
9. Secure flashings and drill holes for the remaining mount clips.
10. Using the roof flashing caulk or roofing mastic, apply a liberal amount of sealant around the openings to all of the newly drilled holes then place the collector into position and secure using the stainless steel hardware selected for the install method.
11. Check to insure that all mount connections are tight and prepare to mount the tank.

## Mounting the Thermosiphon Tank

The procedure for mounting the Thermosiphon tank is as follows:

1. Using the collector mounts as a reference, measure from the center of the upper mount bolts a distance of four (4) inches. Pop a chalk line connecting the two points and extending outward approximately one (1) foot on either side of the collector.
2. Position the Thermosiphon tank into place above and centered to the collector. Line up the mounting holes (*on the tank mount rail closest to the collector*) centered on the marked chalk line. Mark the position of the mount holes and set the tank aside.
3. As with the collectors, secure flashings and drill holes for each of the mount locations. Apply a liberal amount of sealant around the newly drilled holes.
4. Position the tank into place over the mount holes and secure using the appropriate stainless steel hardware.
5. Check to insure that all mount connections are tight. Apply a liberal amount of sealant over all of the mount hardware heads/threads (*tank and collectors*).

The storage tank is equipped with a temperature and pressure relief valve to handle over-temperature and/or over-pressure conditions. By default, temperature relief occurs at 210°F and pressure relief at 150 psi. The water storage tank used in this system hosts an approximate R-Factor of 17.3.

## Plumbing Connections

Assemble the hot/cold interface plumbing to the collector as shown in the detail on page 5. Various lengths of ¾" copper tubing is required and should be soldered together using lead-free solder. Service connections to the Thermosiphon system should include isolation, mixing and drain valves (*provided by installer*) internal to the residence. All hot water pipe and the last 5-feet of cold water pipe should be insulated and coated or covered to protect from UV radiation and moisture where exposed to sunlight. Refer to the insulation manufacturer's installation instructions for approved methods.

*"All components shall be accessible for maintenance and servicing. Components exposed to public traffic are to be maintained below 140°F or insulated / isolated. The location of components should not impair accessibility needed to maintain the building or site."*

Drain Valves shall be installed at readily accessible locations as to allow for filling, draining and flushing the solar system. Ensure that the drain line from the Temperature and Pressure relief is plumbed to a safe location. Remember this pipe can discharge very hot water carefully consider its location. In-roof piping hangers shall provide adequate support and correct pitch of pipes. All pipe work connecting the Thermosiphon system to the AES system should be sloped a minimum of ¼" per linear foot to allow for gravity draining of the Thermosiphon system. Supports for insulated pipes should avoid compressing or damaging the insulation material.

For AES tanks requiring electricity, an electrician is required to install a domestic electrical outlet socket adjacent the auxiliary water heater location. The auxiliary water heater typically requires a 220-240 volt 60 Hz power supply. Be sure to check the water heater specification prior to the installation of the electrical circuit.

NOTE: Use only lead-free solder. Use of 50/50 lead solder is expressly prohibited. Use of galvanized steel, CPVC, PVC, PEX or any other type of plastic pipe is prohibited. Service connections to the Thermosiphon tank are to be made using dielectric nipples. WARNING: Dielectric unions are expressly prohibited in these system installations.

## ELECTRIC (AES) INSTALLATION INSTRUCTIONS

### Note:

1. All electrical work must comply with local regulations
2. All electrical work must be conducted by a suitably licensed electrician.
3. **Installation of the Electric Water Heater must be installed in accordance with the Installation supplied with the Electric Water Heater.**

### **Important**

Do not turn on the power supply until the water heater has been filled with water and pressurized.

## Commissioning

When all connections have been completed the solar water heater can be filled with water. Before turning on the cold water supply open one hot tap within the household to release air from the system during the filling process. Do not leave the open tap unattended during the filling process.

Turn on the cold water supply and wait for the system to fill. When water flows without air bursts from the open hot tap it can be closed which will pressurize the solar water heater system. Once the system is pressurized all connections on the water heater must be checked for leaks and repaired if necessary.

When the system is proven water tight, power can be applied to the AES system. To test that the element is operational turn the circuit breaker in the switch board on and off, you should see the power meters speed change during this action. The solar water heater is now fully operational.

### Customer Hand Over

Once the solar water heater is commissioned and you are confident it is operating correctly, complete the installation details in the Owners Instructions section of this manual and pass this manual and the Auxiliary heater manual (if used) to the customer.

Before leaving the installation, insure that the customer is fully aware of the systems operation and whom to contact should there be any questions in the future.



# OPERATING INSTRUCTIONS

## How do I operate the system?

An EagleSun solar water heater is designed for fully automatic operation, so there is nothing you need to do for day to day system operation. The system operates at service (city) water pressure and is thermally protected against temperatures in excess of 210°F. If the AES System has been fitted with a remote isolator switch or time-clock, you may make the decision when and if Auxiliary Energy Support is permitted. As a guide you may like to isolate the AES System during the summer months, you may use a time clock to permit boosting after sunset or any other combination, which suits your usage pattern. Careful use of these options can further reduce your energy needs for hot water supply to the household.

## Words of CAUTION

All water heaters have the ability to produce hot water very quickly. To reduce the risk of scald injury it is recommended that a temperature control valve be fitted to the hot water supply pipe work. This valve should be checked at regular intervals to ensure its operation and settings remain correct. Please check that the pressure & temperature relief valve relief pipe is not located where it can cause damage if hot water is discharged.

**What should I do during holidays?** - If you are going to be away for a period of a week or more during the summer months it is advisable to turn off the electricity supply to the booster and if practical cover the solar collectors. If the solar collectors are not covered there is a possibility that the high temperature valve in the storage tank may open for a short period to reduce the storage tank temperature while you are away. This is a normal function and does not harm the system. *Warning: If the hot water system is not used for two weeks or more, a quantity of hydrogen gas, which is highly flammable, may accumulate in the water heater. To dissipate this gas safely, it is recommended that a hot tap be turned on for several minutes at a sink, basin or bath but not a dishwasher, clothes washer, or other appliance. During this procedure there must be no smoking, open flame or any other electrical appliance operating nearby. If hydrogen is discharged through the tap, it will probably make an unusual noise as with air escaping. Do not place hands or any part of your body beneath the tap during this procedure.*

**Why is there water discharge for the pressure valve?** - All EagleSun solar water heaters have either one or two pressure valves in the water pipe work. For solar water heaters that only have a Pressure & Temperature valve located on the storage tank it is normal for a small water discharge to occur during the heating cycle of the system. The water discharge is water expanding due to the heating process. Normally the discharge will be less than 2.5 gallons per day.

**What should I check before making a service call?** - If there is not enough hot water it is recommended that the following points are considered before making a service call.

To determine whether the solar system is working, observe the thermometer when hot water is being used in the house. The water returning from the solar system on a sunny day should be at least 90°F during the early part of the day. Temperatures of 120°F "plus" may be observed during the later part of the day.

**Low Solar Energy Input** - If there have been prolonged periods of cloud or winter is approaching, it may be necessary to reconsider the permitted boosting time for time-clock controlled systems or to turn on the booster for systems with a booster isolation switch.

**Solar collector shading** - Often trees or other buildings can shade the solar collectors or there can be a dirt build-up on the glass cover. Trees should be cut back if possible or the system relocated if removal of the shading is not possible in the present location. If the glass is dirty this should be cleaned with any normal domestic glass cleaner.

**AES System not operating** - For electric systems, the fuse, circuit breaker supplying the AES System should be checked. If the time clock (where fitted) and the fuse or circuit breaker are operational and the water is cold, you can turn the booster isolator on and off to see if the electricity meter speed changes. If there is no change in speed, it indicates there may be a booster problem and a service call will be necessary. It is important to remember – **Do not open or adjust any electrical covers or devices yourself.**

**Is there excessive water discharge for the Valves?** - If there is a discharge of more than 2.5 gallons per day from any of the systems valves, it indicates there is a problem that requires a service call.

**Are you using more hot water than you think?** - Often the hot water usage of showers, washing machines and dishwashers is under estimated. Review these appliances to determine if your daily usage is greater than the storage volume of your water heater. If the system contains 50 gallons of hot water and your usage is greater than 50 gallons there may be periods where the water temperature is slightly lower than normal. It is also advisable to inspect tap washers etc. for leakage and replace if necessary.

# MAINTENANCE

## System Maintenance

The EagleSun system is designed such that there is little to do regarding system maintenance. Personally inspecting or servicing the system is not recommended. Should you decide to personally inspect the roof mounted system it is essential that you use all safety devices required to ensure your safety. Glass cleaning usually occurs by natural rainfall, however if the installation is in an industrial (or similar) area with high levels of airborne particles then a qualified person can clean the collector glass with normal window cleaning chemicals and equipment.

Each five years you should contact the local service agent to replace all safety valves to ensure continued life and operational safety of the system. In locations where the potable water has a Total Dissolved Solids (TDS) of greater than 600 ppm this service is recommended every 3 years.

## Bypassing / Draining the Solar System

If the thermosiphon tank has an in-tank electric element, turn off the power to the tank at the circuit breaker. Do not allow the element to operate in an empty tank as this will damage the element.

To bypass and drain the system;

- 1> Turn the two isolation valves to the closed position.
- 2> Connect a garden hose to the drain valve on the cold feed to the tank and place the opposite end near a floor drain or place outside.
- 3> Connect a washing machine hose to the hot-side from the tank and place the opposite end in a five gallon bucket.
- 4> Open the cold feed drain valve fully, then slowly open the drain valve on the hot-side. This will allow air to bleed in through the hot-side as the water is draw from the tank through the cold line.
- 5> Once the tank has completely drained, at the collector, open the valve at the bottom of the collector inlet to drain onto the roof (approximately 1 gallon of fluid) or connect a water hose to the drain valve, placing the opposite end on the ground, and drain.

For an AES installations;

- 1> Turn the isolation valve on the hot-side to the closed position.
- 2> Turn the 3-way isolation valve (cold-side) to divert the cold water supply to the AES water storage tank.
- 3> Connect the hoses to the drain valves as described above and drain the system accordingly.

## Fluid Quality

This system uses water as a heat transfer fluid media in the solar loop.

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

## System Parts Listing

AET P/N	Description
varies	AET solar collector(s); AET AE-18 / AE-21 / AE-26 or MSC-21 / MSC-26
varies	AET solar storage tank; FF-40, FF-50, or FF-80
BD-75	Boiler drain, drain valve (Webstone, 5061 Series or equivalent)
BV-75	Ball valve, isolation (Conbraco Series 70-200 or equivalent, 2-way)
BV-75TW	Ball valve, isolation (Conbraco Series 70-900 or equivalent, 3-way)
TPRV	Pressure relief valve (Watts Model 100XL-4 Z9 or equivalent)
T-60	Thermometer, 35-250°F (Wika Model TI.30 or equivalent)
*AM101T	Thermostatic Mixing Valve (Honeywell AM-1 Series or equivalent)

*\* parts provided by others*

## Estimated Component Life

When installed and maintained as directed in this manual, one can expect many years of trouble-free service from this system. All components in this system are subject to the conditions of the installation. In locations where hard water is present, mineral deposits can prematurely foul-out the design life of these components. Periodic maintenance is required to insure that these components are well protected from such damage.

The solar collectors used in this system have a design life of 30+ years. Water storage tanks are designed for 12-20 years of use. The lesser components, such as pumps and valves are designed for 5+ years, however, are more likely to foul, as described above, if not maintained properly.

## Hazards

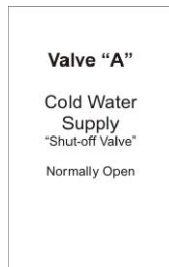
Solar collectors become very hot when in direct sun with no fluid being circulated through them. Extreme caution should be taken when standing near, or handling solar collectors in this state. Relief valves may discharge fluids at high temperature and/or pressure.

## Fluid Safety Labeling

Included with your solar system is a set of labels which describe the component function. These labels are necessary to alert the owner of potential hazards. These labels are affixed by string/wire tie (on valves) and/or “peel-and-stick” (on pipe insulation). All labeling must be in place at final inspection. Label examples are as shown on the following page.

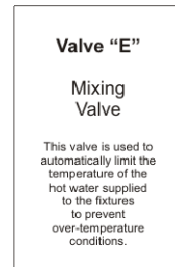
**Valve “A”** - this label is affixed to the cold water supply, “shut-off” valve.

This valve is normally open and should **only** be closed when maintenance is performed on the system. Power should be disconnected, at the circuit breaker, prior to service.



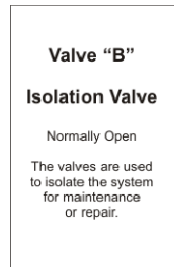
**Valve “E”** - this label is affixed to the mixing valve.

This valve is used to limit the temperature of the water to the fixtures in the dwelling to prevent over-temperature conditions.



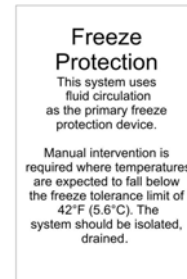
**Valve “B”** – this label is affixed to the isolation valves located at the inlet/outlet ports of the solar loop on the storage tank.

Isolation valves are used to manually isolate the various subsystems (i.e., the solar loop from the storage tank).



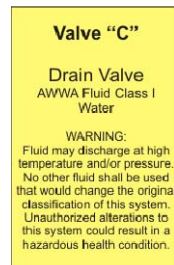
**Freeze Protection** – this label is affixed to the collector feed or return line at the isolation valves.

Manual intervention is required as a secondary precaution to protect components from freeze damage, when air temperatures fall below 42° F (5.6°C).



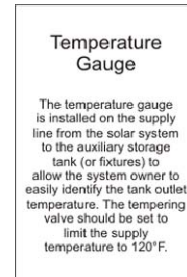
**Valve “C”** – this label is affixed to the drain valves on the solar loop.

The valves are used during the drain operation of the system.



**Temperature Gauge** – this label is affixed to the temperature gauge on the supply line from the solar system.

The gauge will display the temperature of the fluid feeding the auxiliary storage tank (or fixtures). When water is being used in the building, the water feed from the solar system on a sunny day should be at least 90°F.



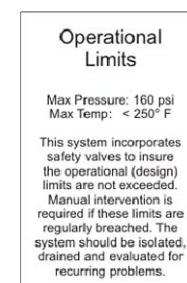
**Valve “D”** – this label is affixed to the temperature and pressure relief valve at the thermosiphon tank.

The temperature and pressure relief valve protects system components from excessive pressures and temperatures.



**Operational Limits** – this label is affixed to the supply line from the solar system.

Manual intervention is required if the solar system exceeds the limits defined by the label. Safety valves should be tested and replaced if found to be faulty.



**WARNING / HOT** – labels are affixed to the collector return line, the hot water supply line from the water storage tank and on all system components that could present a safety hazard due to high temperatures.



**Warranties and Disclaimers**

Please note that we specifically exclude any warranty for, or liability from, acts of nature, including freeze damage and shading of the collectors by future growth.

Warranty periods for all the major components are given below:

<u>Item</u>	<u>Part#</u>	<u>Period</u>
Collector	AE-18, AE-21, AE-26, MSC-21 or MSC-26	10 years
Storage Tank	FF-40, FF-50 or FF-80	5 years
Valves	BD-75, BV-75, BV-75 TW, TPRV, AM101T	1 year
Gauge (thermometer)	T-60	1 year

All parts are available from your authorized agent or from AET direct.

**RETURNS POLICY**

All returns are subject to return authorization. No returned merchandise will be accepted without prior authorization from AET. If the return is authorized, the buyer will be issued a return authorization (“RA”) number, which must be clearly marked on the package. AET will credit the purchase price of all normally stocked merchandise returned in good condition, in original packaging, within 30 days of purchase. There will be a 15% restocking charge on merchandise returned after 30 days. Items not in saleable condition, not normally stocked, and special-order items, may not be returned for credit. All items must be returned freight-prepaid. Replacements will be invoiced to the customer at normal price, and credit issued upon receipt of the failed item.

***No credit will be given for any returned component without proper Return Authorization.***

**Collector Warranty Claim**

***THE COLLECTOR REPORT FORM IS REQUIRED FOR ALL COLLECTOR WARRANTY CLAIMS  
No Claim will be processed without Collector Serial Number***

- o 10 year Warranty on collector as a whole
- o Determine must be made as to the cause of the failure. Therefore, the following are required for warranty processing:
  - Request Collector Report Form
  - Pictures
  - Returned Absorber Plate (if applicable)
- o Determine most feasible course of action. It is in the best interest of AET, and our distributors and dealers to get the customer’s system operational as efficiently as possible. The two most common options are repairing the defect, or replacement of components.
  - Repair
    - For a leaking collector, the most efficient way to get the system returned to operational is to facilitate a repair. This requires detailed pictures of the active leak, taken from under the glass and header shield, and forwarded to AET via email. Upon review and determination of manufacturing defect, credit will be given to the distributor or dealer from whom the collector was purchased, for cost of repair up to \$100

- Replace
  - If a repair is not feasible, and replacement of the absorber plate may be the most viable option. Upon receipt of a Return Authorization, the installer/contractor shall obtain an absorber plate from the distributor or dealer where the collector was purchased, and arrange for the absorber plate to be returned to AET. AET may ship a replacement absorber plate to the distributor/dealer in good faith, in anticipation of the returned plate, for failure determination.
- Glass is not covered under this warranty, however, if a customer calls for broken glass, they should replace it with tempered stippled/patterned glass from a dealer/distributor nearest them.

□ **Return Authorization**

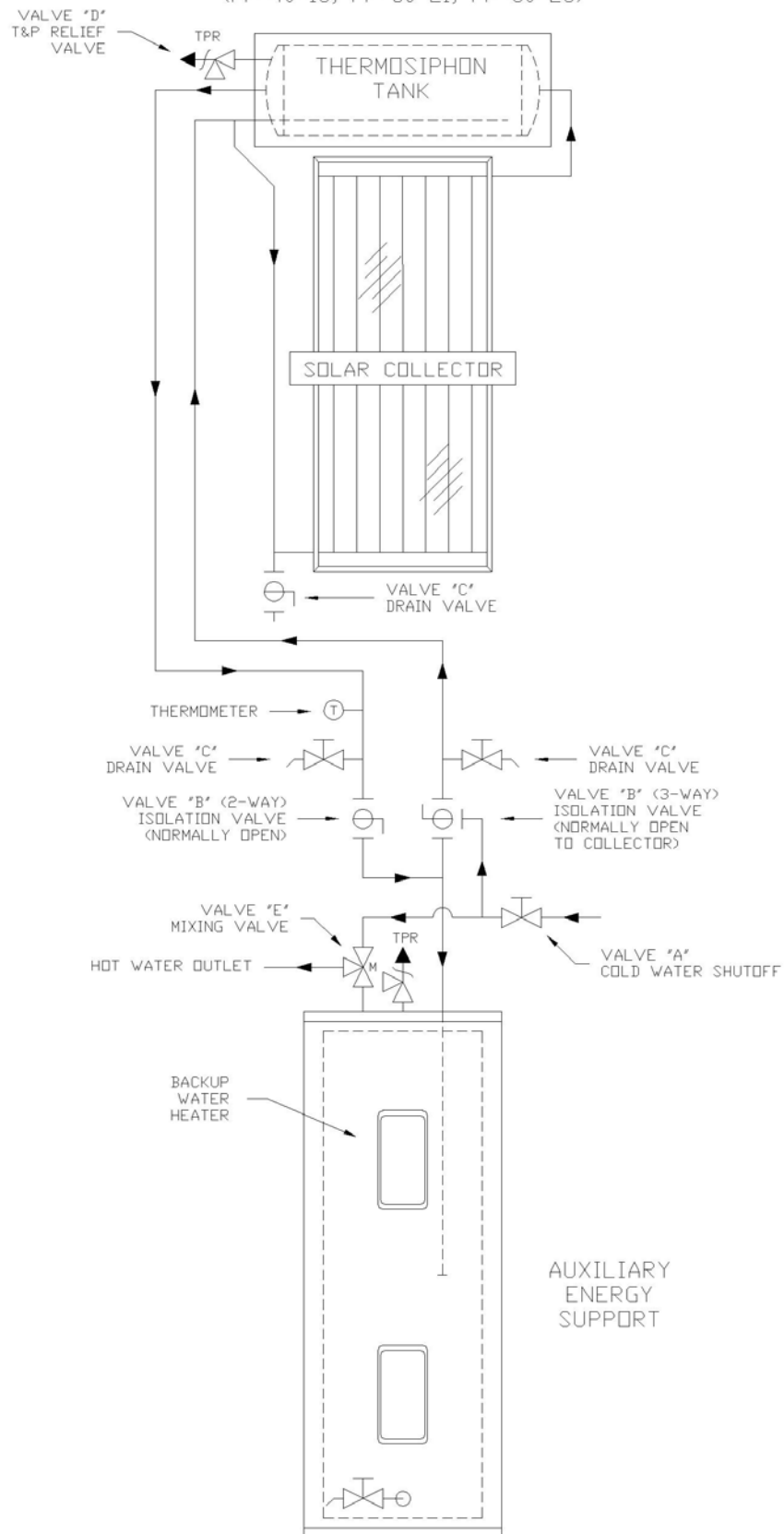
- Required Information
  - Customer
  - Invoice #
  - Reason for return
  - Date failed
  - Return Carrier
  - Customer requirement (Credit or Replacement)
  - Serial Number

□ **Storage Tanks**

- Warranty through Alternate Energy Technologies, LLC
- Determine cause of failure
- Provide Storage Tank Report:
- AET will Issue Return Authorization
  - Request Customer Pull off Original Serial # Label, stick it to a piece of paper, and mail it "Attention Warranty"
  - Date of Install
  - Date of Failure
  - Nature of Failure

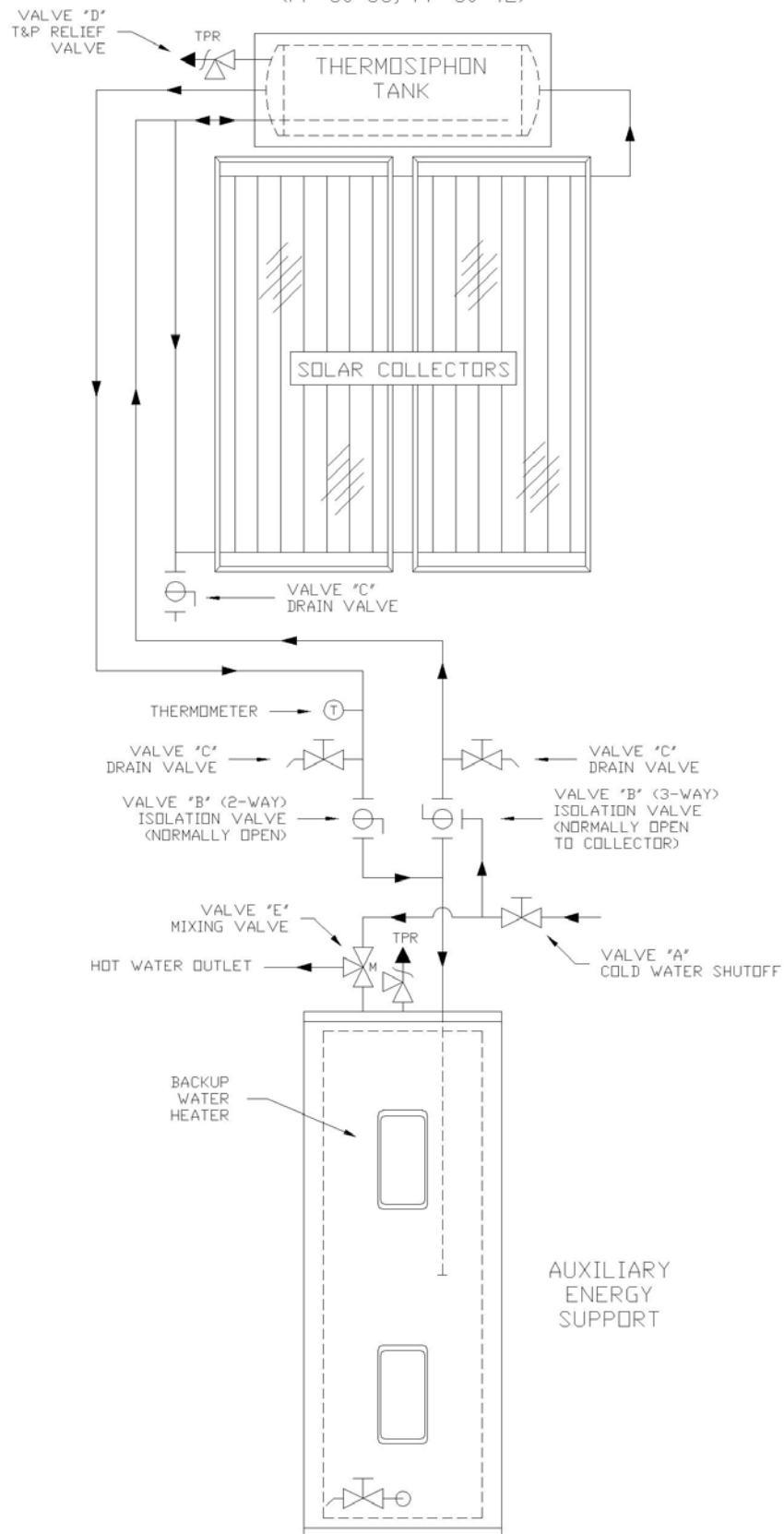
# FREE FLOW (THERMOSIPHON) SYSTEM

(FF-40-18, FF-50-21, FF-50-26)



# FREE FLOW (THERMOSIPHON) SYSTEM

(FF-80-36, FF-80-42)



## Installation Record

Please complete this page as a record of the installation details for your reference to determine when the system is due for service or if a warrant matter should arise. Please copy this record and fax or mail to the manufacturer as listed below;

**Alternate Energy Technologies, LLC**  
**1345 Energy Cove Ct**  
**Green Cove Springs, FL 32043**  
**USA**  
**FAX: (904) 781-1911**

Owners Name		
Installation Address		
Suburb		
State		
Telephone	(H)	(W)
Email Address		
EAGLESUN™ Dealership		
Installation Date		
System Model Number		
Tank Serial Number		
Collector Serial Number		
Collector Serial Number		
Collector Serial Number		
Pump Module Serial Number (if applicable)		
Heat Exchanger Module Serial Number (if applicable)		
Installers Name		
Installers Address		
Installers Telephone		
Comments		
Customer Signature		
Installers Signature		
Date		

**Notes:**



**Alternate Energy Technologies, LLC.**

1345 Energy Cove Ct · Green Cove Springs, FL 32043

PH 800-874-2190 · FAX 904-781-1911

[www.aetsolar.com](http://www.aetsolar.com) · [info@aetsolar.com](mailto:info@aetsolar.com)

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