

U.S. Department of Energy - Energy Efficiency and Renewable Energy Energy Savers

Solar Water Heating System Maintenance and Repair

Solar energy systems require periodic inspections and routine maintenance to keep them operating efficiently. Also, from time to time, components may need repair or replacement.

You might be able to handle some of the inspections and maintenance tasks on your own, but others may require a qualified technician.

For help finding a qualified technician, see the Learn More resources listed on the right side of this page (or below if you've printed out this page). Ask for a cost estimate in writing before having any work done. For some systems, it may be more cost effective to replace, shut off, or remove the solar system than to have it repaired.

Periodic Inspection List

Here are some suggested inspections of solar system components. Also read your owner's manual for a suggested maintenance schedule.

- **Collector shading**
Visually check for shading of the collectors during the day (mid-morning, noon, and mid-afternoon) on an annual basis. Shading can greatly affect the performance of solar collectors. Vegetation growth over time or new construction on your house or your neighbor's property may produce shading that wasn't there when the collectors were installed.
- **Collector soiling**
Dusty or soiled collectors will perform poorly. Periodic cleaning may be necessary in dry, dusty climates.
- **Collector glazing and seals**
Look for cracks in the collector glazing, and check to see if seals are in good condition. Plastic glazing, if excessively yellowed, may need to be replaced.
- **Plumbing, ductwork, and wiring connections**
Look for fluid leaks at pipe connections. Check duct connections and seals. Ducts should be sealed with a mastic compound. All wiring connections should be tight.
- **Piping, duct, and wiring insulation**
Look for damage or degradation of insulation covering pipes, ducts, and wiring.
- **Roof penetrations**
Flashing and sealant around roof penetrations should be in good condition.
- **Support structures**
Check all nuts and bolts attaching the collectors to any support structures for tightness.
- **Pressure relief valve (on liquid solar heating collectors)**
Make sure the valve is not stuck open or closed.
- **Dampers (in solar air heating systems)**
If possible, make sure the dampers open and close properly.
- **Pumps or blowers**
Verify that distribution pumps or blowers (fans) are operating. Listen to see if they come on when the sun is shining on the collectors after mid-morning. If you can't hear a pump or blower operating, then either the controller has malfunctioned or the pump or blower has.
- **Heat transfer fluids**
Antifreeze solutions in liquid (hydronic) solar heating collectors need to be replaced periodically. It's a task best left to a qualified technician. If water with a high

mineral content (i.e., hard water) is circulated in the collectors, mineral buildup in the piping may need to be removed by adding a de-scaling or mild acidic solution to the water every few years.

- **Storage systems**

Check storage tanks, etc., for cracks, leaks, rust, or other signs of corrosion.

More Information

For more information about solar water heating systems, see the following:

- [Solar Water Heating System Freeze Protection](#)
- [Heat Exchangers for Solar Heating Systems](#)
- [Heat-Transfer Fluids for Solar Heating Systems](#)
- [Solar Water Heaters.](#)

Learn More

Evaluation Tools

- [Solar Estimator](#)
Solar-Estimate.org

Financing & Incentives

- [Find Federal Tax Credits for Energy Efficiency](#)
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Product Information

- [Find ENERGY STAR® Solar Water Heaters](#)
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