

Congratulations on your decision to install a Solar Pool Heater manufactured by industry-leader Aquatherm Industries, Inc. For more than 40 years, hundreds-of-thousands of pool owners worldwide trust Aquatherm to give them a warm comfort of a longer heated swimming season. Your new solar pool heater is clean, non-polluting, environmentally safe, and an investment in your own economic independence and stability.

This manual has been prepared to help you understand the operation and maintenance of your system, so that it will provide you with years of trouble-free service.

Should your system ever require service beyond the solutions outlined in this manual, first contact your installing Dealer. For additional assistance, contact Aquatherm Industries, Inc. at 732-905-9002 or [info@warmwater.com](mailto:info@warmwater.com).

## System Operation:

The filtration pump circulates pool water through the many small passages of the **solar collector**. Pool water is warmed by the sun as it passes through the collector, then the warm water flows back to the pool.

Your solar pool heater is equipped with either an automatic or manual temperature control.

### Automatic Temperature Control:

A **solar control** functions like a thermostat, opening and closing a **motorized diverter valve** to control your pool's temperature.

When open, the diverter valve directs pool water through the solar collectors, provided the solar sensor indicates the sun is shining, and further provided the pool water sensor indicates that the pool water needs heating.

The solar control closes the diverter valve if no solar energy is available, or if the pool water has reached the set temperature, returning pool water directly back to the pool and bypassing the solar collectors.

### Manual Temperature Control:

Manual systems are equipped with a **manually operated diverter valve**, in place of the motorized valve.

In the event your pool becomes overheated due to warmer than usual weather conditions, it is possible to cool the pool water to a more comfortable temperature by circulating it through the solar collectors during cooling conditions, usually at night.

## Checking for Proper Operation:

Each time the solar system cycles on, there are a few things to watch for:

- 1) Air will initially be purged into the pool, and may last several minutes.
- 2) Filter pressure will increase slightly, and remain elevated as long as pool water is flowing through the solar collectors.
- 3) When water is flowing through the collectors, they should feel uniformly cool to the touch.

### If there are no initial bubbles:

**Manual Control** - the diverter valve has not been correctly turned to direct the flow of water through the solar collectors.

**Automatic Control** - though you should refer to the manufacturer's manual for your solar control for more detailed troubleshooting, here are some general points that can be checked:

- 1) Is there power to the solar control? There is usually a "POWER ON" indicator or light.
- 2) The solar control may not be functioning properly. Check by over-riding the "AUTO" mode and place the control into the "ON" or "SOLAR" position.
- 3) It is possible that water is not supposed to be flowing through the collectors. There may not be enough solar energy available at the moment, or the pool may have reached the set temperature.

## Troubleshooting Pool System Performance:

- 1) Is the pump's strainer basket clean, and has the filter been backwashed lately? Dirt and debris in the filtration system can slow the flow of water through the collectors, reducing system performance.
- 2) Is the filtration pump operating at least 8-10 hours per day during normal daylight hours?
- 3) Have you been adding a lot of cold (make-up) water to the pool lately?
- 4) Has the weather been cooler or dryer than usual? Low relative humidity increases heat loss.
- 5) If nighttime temperatures are very cool, are you using a pool blanket to help retain heat that has been collected during the day?

## Pool Service and Maintenance:

It is advisable to bypass the solar collectors when either backwashing your filter, or when adding Diatomaceous Earth (DE). This prevents the possibility of any DE or other debris from passing through the solar system as well as any other pool equipment downstream of the filter. When the backwashing cycle and/or the adding of DE is complete, run the filtration pump for 10-15 minutes before returning your solar heating system to operation.

If you have an automatic pool cleaning system with its own pump, there may be several precautions that you need to take depending on system type. These precautions prevent the air that is initially purged from the solar system from possibly damaging pool cleaning equipment while your solar system is cycling on.

**Manual Systems** - do not start the flow of water through the solar collectors while the pool cleaning pump is running. Allow the air to be purged from the system before activating your pool cleaning system.

**Automatic Systems** - if your automatic control system is not equipped with a timed pool cleaner delay cycle, it will be necessary to run your pool cleaner in the early morning and turn it off before your solar system cycles on.

Alternatively, you can run your pool cleaner in the late morning, well after your solar system cycles on. If you manually vacuum your pool, bypassing the solar collectors at this time will provide you with full power for better vacuuming performance.

## Operation During Freezing Conditions:

In some climates, pool owners operate their pools throughout the winter, even though light freezing conditions may occur. If your system is equipped with an

isolation ball valve in the collector feed line, and a check valve in the collector return line, turn the filtration pump off and allow at least 30 minutes for the solar collectors and piping to drain. If your installation does not allow for gravity drainage, the system must be manually drained.

Once drained, close the isolation ball valve in the collector feed line. If your system is automatically controlled, switch the solar control into the "POOL" or "OFF" position. Turn the filtration pump back on to protect it from freezing.

When freezing conditions have passed, open the isolation valve in the collector feed line, and if your system is automatically controlled, return the solar control mode to the "AUTO" position.

If your system is not equipped with isolation valves, or cannot be manually drained, it is recommended to continuously circulate the pool water through the solar heating system at any time the outside temperature is 42°F or lower. This method is not recommended, however, where temperature levels may drop suddenly and severely.

## Service:

As with any swimming pool equipment, periodic inspections can prevent future problems. It is suggested that you or your installing Dealer inspect the solar heating system on a regular basis. See the maintenance section of the installation manual for details.

## Winterizing Procedures:

There are no special requirements for winterizing solar collectors in climates where the pool is shut down for the winter, as long as the collectors and piping have been installed to allow the system to completely drain each time the pump cycles off.

Installations where the collectors are located below pool water level, where collectors lie flat on a roof or patio cover, or which have a piping configuration that does not allow for drainage of water must be checked to ensure the collectors and piping are drained.

## CAUTION:

*Solar collectors are often installed on roofs of buildings. Unless you are 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, leading to serious injury to you or others.*