

# HELIOTROPE POOL HM-4000C SOLAR POOL HEAT CONTROLLER Operational Instructions

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## ***DESCRIPTION***

The HM-4000C Helio-Matic is a combination 120 Volt or 240 Volt controller for solar pool heating. The HM-4000C provides a 24VAC output which controls the water flow direction with a three-way valve. (Note: The Flo-Verter valve will operate with either a 12 or 24VAC input.)

High Limit is adjustable from 60° to 104° and when the set temperature is reached the pumped water flow is directed away from the solar collectors.

## ***OPERATING***

1. Be sure the pump is on. When the pump is on, the indicator "POWER ON" will be lit.
2. Turn the function switch on the HM-4000 controller to the "AUTOMATIC" operation position.
3. Set the "WATER TEMP" knob to the desired position. LOW is 60°F and HIGH is 104°F. This knob limits how hot pool or spa will become. The dial indicates temperatures from 70°F to 100°F.
4. If there is sufficient sunlight to heat the pool, the "FLOW THRU COLLECTORS" light will be illuminated.

5. When flow is through the collectors there will be a slight increase in pressure...2-25 psi as indicated by the pressure gauge on the filter.
6. When the flow begins from the collectors, there will be bubbles for 3 to 5 minutes as the air is being purged from the collectors.

## **CAUTION**

**PROLONGED IMMERSION IN HOT WATER (ABOVE 98.6°F) MAY RESULT IN ELEVATED BODY CORE TEMPERATURE WHICH MAY CAUSE PERMANENT DAMAGE OR DEATH. PREGNANT WOMEN SHOULD USE HEATED POOLS AND SPA UNDER A DOCTOR'S DIRECTION ONLY. SYMPTOMS OF HYPERTHERMIA INCLUDE DIZZINESS, DISORIENTATION, AND/OR INABILITY TO FUNCTION. THESE SYMPTOMS ARE INTENSIFIED BY ALCOHOL AND SOME DRUGS. AVOID EXTENDED SOAKING IN A TOO HOT SPA, OR WHILE UNDER THE INFLUENCE.**

## **WHAT TO DO IF:**

NOTE: (Switches and valves can get accidentally turned off or to different positions. To eliminate the time and dollars involved in unnecessary service calls, use this check list for your system.)

1. If the "FLOW THRU COLLECTORS" indicator light does not go on when you believe the system should be collecting heat and the pump is on, verify that the function switch is in the "AUTOMATIC" position. If still no light, put the function switch in "TEST ON" and if there is still no light, then the controller requires service by your installing dealer. If the light goes "ON" then it could be that there is no solar heat to be collected.

If you still believe that there should be solar heat collected and/or the light does not go on in the "AUTOMATIC" position, then call your installing dealer for service.

2. If there are no initial "bubbles" after the system has been turned on as indicated by the "FLOW THRU CONNECTORS" light being on:
  - a. Make sure the pump is turned on and is working. (If pump doesn't go on, check circuit breaker or fuse, and check the power to the pump.)
  - b. Turn function switch on controller to "TEST ON." In this position the "FLOW THRU COLLECTORS" indicator will light and flow will start and be visually demonstrated by the initial "bubbles." It is possible that the system is not supposed to have flow through the collectors because the pool water is already at desired temperature or there is not enough radiant heat available.
  - c. Check collector panels to see if there is a water flow. They should be "cool" to the touch if they are getting the proper flow.

## ***HOW TO HANDLE:***

### ***Backwashing the Filter***

No changes in the controller setting or valves should be made.

### ***Adding Diatomaceous Earth***

No changes in the controller setting or valves should be made.

### ***Pool Service/Maintenance***

No changes in the controller setting or valves should be made.

## ***Automatic Pool Cleaners***

The ideal time to set the pool cleaner timer is for the early morning (4:00 a.m. - 8:00 a.m.) before the solar system comes on. The next choice is to set the timer to come on after the solar system has already come on. If the solar system comes on while the pool clean pump is on, it may momentarily (2-3 minutes) cause the pool cleaner pump to be starved for water. This should not harm the pump because of the short duration of time involved. However, it is possible that some pool cleaner pumps may not regain their prime.

## ***Pool Cooling***

Set the pool pump time clock to run at night with an ending time of approximately 5:00 a.m. and have the switch in the "TEST ON" position. The result of these settings will cause circulation through the solar collectors during the coolest time period and the water temperature will be reduced.

**HELIOTROPE POOL**  
204-E Greenfield Drive  
El Cajon, CA 92020  
Phone: 866•314•8400  
Fax: 866•314•8600