

OWNER'S MANUAL

 **Polaris Watermatic**

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C316 ORP Controller  
with pH Display, 24 Volt

 **Polaris**

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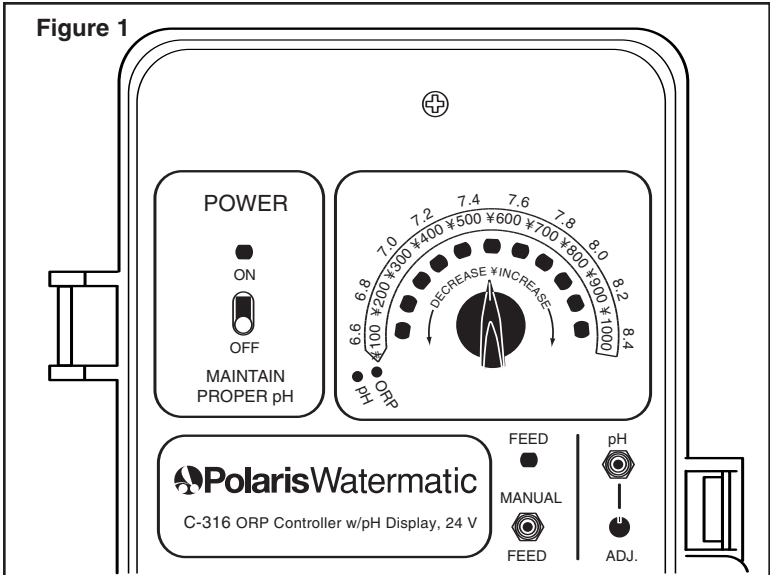
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# I. Introduction

**For your protection, read all instructions carefully before installing or operating this automatic controller.**

The Polaris Watermatic® C316 24-Volt Controller is designed to automatically monitor and maintain the sanitizer level and pH balance in swimming pools, spas and any circulating water system that requires water chemistry management. This controller is designed for easy installation and simple operation, and is used with tablet erosion feeders.

During the filtration cycle of the pool or spa, the sanitizer level and pH balance are maintained by a constant measurement of the ORP (Oxidation-Reduction-Potential) and pH balance of the water. Levels are displayed on the controller's ORP and pH light bar arrays (see Figure 1). If the sanitizer level (ORP) falls below a predetermined set point, the controller activates the chemical feeder until the preset level is reached. The pH is maintained in a similar manner.



## II. Specifications

<b>pH Range:</b>	7.0 - 8.2
<b>ORP Range:</b>	100 mV to 1000 mV
<b>Input Power:</b>	24 VAC 50/60 Hz, 40 Volt Amp (transformer included)
<b>Controller Power:</b>	Less than .5 Amp internally fused
<b>Output Power:</b>	24 VAC 50/60 Hz, 5 Amp fuse
<b>Display:</b>	Light Bar Array — Yellow for ORP, Green for pH
<b>Operating Temperature:</b>	40°-120° F
<b>Sensors:</b>	ORP: platinum combination with 10' cable; pH: glass combination with 10' cable

### Selectable Features:

- Desired ORP settings
- pH calibration
- Safety lockouts for low or high (out of range) ORP levels
- Visual alert and optional audible alert for self-correcting and non-correcting conditions

## III. Components

The C316 Controller box contains:

- C316 Controller
- ORP Sensor (part #3-270)
- pH Sensor (part #3-260)
- 110 V to 24V Plug-in Transformer (part #9-620)
- 1/2" Jaco Compression Fittings (part #2-260)

Recommended (optional) components include:

- Flow Cell Assembly (part #9-700)

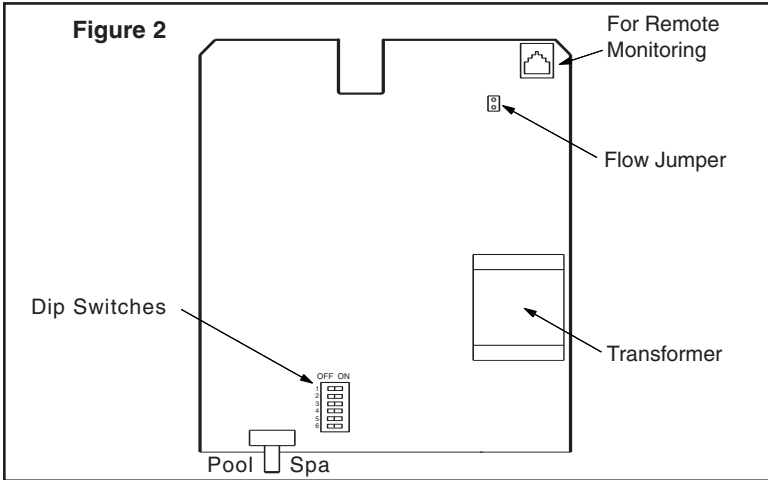
# IV. Pre-installation

Before installing the controller, it is important to do a site assessment and consider where and how you will mount the unit. The controller should be mounted on a wall or other surface at least ten feet away from the edge of the water and less than six feet from the GFCI power source.

Once the best site is selected, obtain all necessary mounting screws or anchors (no mounting screws are provided with controller). Seal-tight or strain relief connectors for the electrical access holes in the control box and electrical wire will also be needed.

## A. Timed Feeds

The controller was designed with the flexibility to be adjusted to meet individual user applications. Feed times and alerts can be adjusted through optional dip switch settings. To access and adjust the dip switches, located on the back of the board (see Figure 2), disconnect the controller from the power source and remove the three mounting screws.



The timed feed and delay option allows the use of erosion feeders on spas and small bodies of water without spiking. An automatic shut down feature that can be adjusted for small pool/spa applications. Additionally, the timed feed allows the injection of sanitizer before the ORP/pH sensors.

## B. Switch Settings

1. Dip switches #1 and #2 control the feed times. Feed times vary depending on whether the controller is in the pool or spa mode.

**Note:** Once the settings have been modified, move the Pool/Spa Switch on the front of the controller to the appropriate mode to activate the changes. Refer to Figure 4.

Pool Position			Spa Position		
Dip Switch		Feed Time	Dip Switch		Feed Time
1	2		1	2	
OFF	ON	1 min.	OFF	OFF	1 sec.
ON	ON	5 min.	ON	OFF	5 sec.
OFF	OFF	10 min.	OFF	ON	10 sec.

2. Dip switch #3 controls the delay time between feeds.  
OFF 30 sec.  
ON 7 min.

3. Dip switch #4 must be in the OFF position.

4. Dip switch #5 controls the low ORP shutoff.

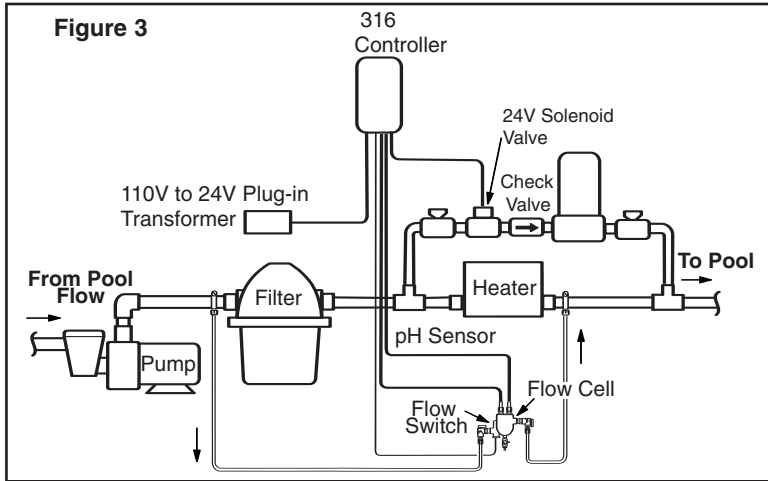
The controller is set to shut down when the ORP level drops below 100 mV. This prevents overfeeding if there is an ORP sensor failure.

Moving switch #5 to the OFF position will override this function. This override might be required in extremely small bodies of water where sudden organic loads dissipate the sanitizer in a very short time.

5. Dip switch #6 has no assigned function.

## V. Installation

The feeder should be installed before the controller.



### A. Feeding System

Install the feeding system as shown in Figure 3 or in accordance with the installation instructions that were provided with the feeder.

### B. Controller Installation

The voltage on the feeder solenoid valve must match the output voltage of the controller. The C316 Controller must be matched with a 24V solenoid valve.

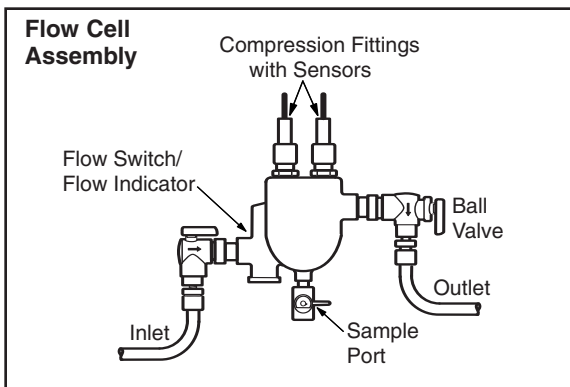
1. Turn off the power to the filter pump at the breaker box.
2. Remove the Caution Plate at the bottom of the controller by removing the two screws.
3. To avoid damage, remove the controller module from the controller box by removing the BNC connector(s) and the faceplate screws.
4. Drill or cut out the electrical access holes that are best suited for your installation (using a hammer can damage the controller). Install seal-tight or strain relief connectors in the access holes and replace the module.
5. Mount the controller on a wall or surface within eight feet of the feeder.

6. A plug-in 110v to 24v transformer (part #22-3190) is provided with the controller. Locate the nearest 110V standard outlet. Using a minimum of 20 to 22 gauge PVC jacketed wire, connect the controller to the transformer that will plug into the 110V outlet. Thread the wire through the controller seal-tight or strain relief connector and hook it to the line side of the terminal strip and transformer.
6. Connect the controller output using a minimum of 20 to 22 gauge wire through the compression fitting to the solenoid.
7. Replace the Caution Plate at the bottom of the controller.
8. We recommend that the sensor be installed in the Flow Cell Assembly (part #9-700), available from Polaris.

If you do not use the flow cell assembly, you can install the sensor using the compression fitting that comes with the controller. The fitting should be installed in a vertical position on the pressure side of the pool circulation system. It should be located after the filter and before the heater, and it can be installed using a tee, saddle tee or a 1/2" NPT tap.

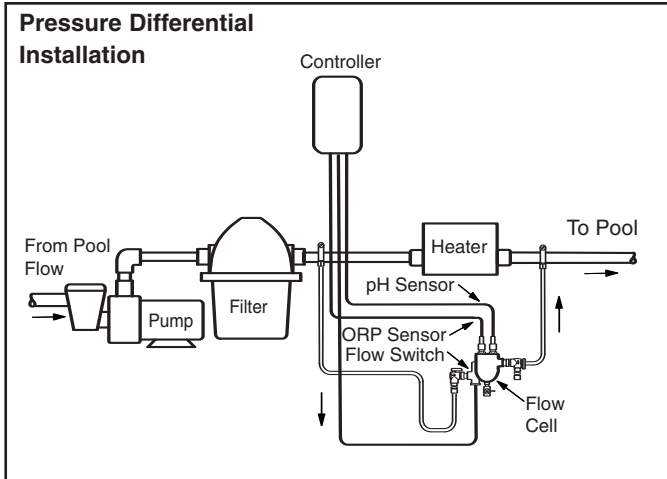
### C. Flow Cell Assembly Installation (Optional)

If using the flow cell assembly, locate the assembly within eight feet of the controller and mount it using the brackets provided. The flow cell must be plumbed so the pressure difference between the inlet and outlet is sufficient to ensure flow through the flow cell. It is also desirable to have filtered water pass over the sensors to minimize cleaning.

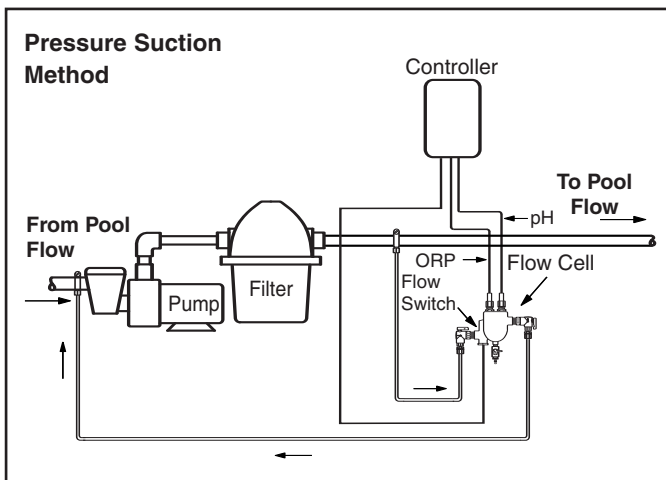


There are three suggested methods to install the flow cell.

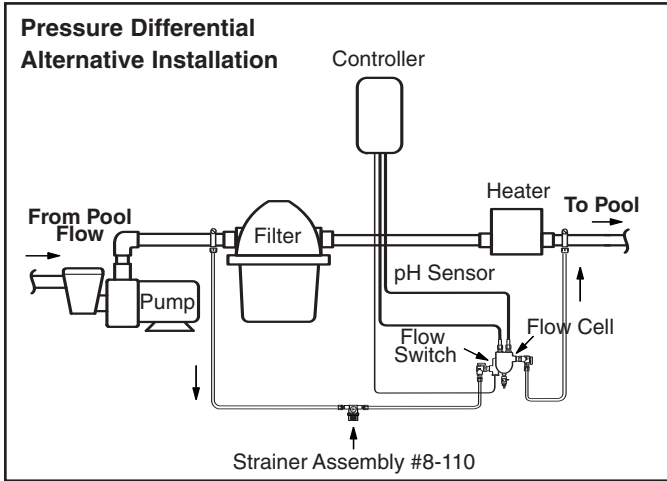
1. Plumb the inlet to the flow cell after the filter and plumb the outlet of the flow cell after the heater using the saddle clamps provided. See the Pressure Differential Installation diagram. Fittings for 1/4" NPT taps are included.



2. Plumb from after the filter to before the pump. This ensures excellent flow but the flow will need to be adjusted so the sensors are not subjected to a suction environment. See the Pressure Suction Installation diagram. Open the sample port (see Flow Cell Assembly drawing) to verify that the water is flowing freely.



- Plumb from before the filter to after the heater, using an inline filter to minimize debris coming into contact with the sensors. See the Pressure Differential Alternative Installation diagram.

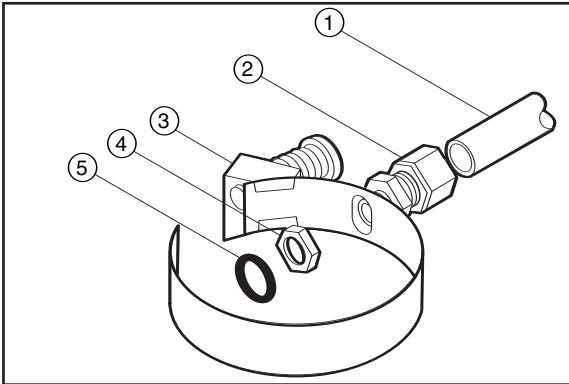


**Note:** Solar systems and other factors can alter pressure differentials in a system, adversely impacting flow through the flow cell.

The flow cell comes fully assembled in the box. It is setup to use with the 3/8" tubing provided; however, other sized tubing or 1/2" hard plumbing can be used. To use alternative tubing, remove the 90° on/off valves and plumb according to the application.

1. **If using a saddle clamp**, drill a 7/16" hole in the pipe on the pressure side of the pump. Thread the 1/8" Jaco fitting (#2 in diagram below) through the clamp (#3) and place the nylon jam nut (#4) onto the Jaco fitting. Slide the pipe seal washer (#5) onto the end of the Jaco fitting. Insert the completed assembly into the hole in the pipe and tighten the clamp. Test for leaks.

If the pipe is larger than 2" in diameter, two clamps joined together will be required per each hole.



**If using a pipe tap**, drill a 7/16" hole and tap a 1/4" NPT hole. Apply RTV silicone, teflon stick or teflon paste to the threads on the Jaco fitting and screw securely into the pipe. Test for leaks.

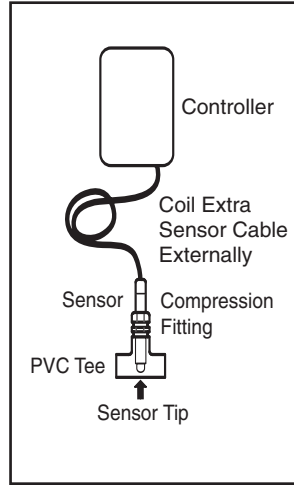
- 2.. Cut the tubing (#1) to the appropriate length. Slightly loosen the Jaco fitting in the pipe and insert the tubing into it. Take the free end of the tubing and insert it into the Jaco fitting on the flow switch side of the flow cell.
3. Complete these steps for the return side of the flow cell. Use the appropriate remaining parts to complete this task. Take the free end of the tubing and insert it into the Jaco fitting on the outlet side of the flow cell.

## D. Sensor Installation

Carefully unpack the ORP and pH sensors and remove the plastic protective cap(s) from the sensor tip(s). Store the protective cap(s) inside the controller enclosure for future use when winterizing or reshipping.

Slide the sensor inside the compression fitting on the flow cell assembly or the main pool line so that the sensor tip is below the water line in the pipe. Tighten the nut of the compression fitting until it is finger tight. **DO NOT USE A WRENCH.**

Attach the sensor connector(s) to the proper fittings on the controller box. (see Figure 4, #7 and #14).



## E. Electrical

Use the plug-in transformer provided to attach to the 110V outlet. Low voltage (24V) wiring can be run from the transformer output to the controller input. Low voltage wiring can then be run from the controller output to the 24V solenoid valve.

## F. Start-up Operations

1. Determine the free sanitizer level of your swimming pool or spa using a DPD test kit. It should be between 1.0 and 3.0 ppm—adjust if required.

The controller will not operate if the sanitizer level is below 0.2 ppm (below 100 mV).

2. Check the pH level of your pool or spa with a test kit. The pH should be maintained between 7.2 and 7.6 to maximize sanitizer efficiency and ensure the accuracy of the controller. A pH level above or below this range will cause inaccurate sensor readings. High or low pH levels can also cause irritation to swimmers as well as other problems associated with the pool and equipment.

3. Make sure the power switch (Figure 4, #2) is off and the ORP selection knob (Figure 4, #9) is rotated counterclockwise to the lowest setting.
4. Turn on the filter pump and then the controller power switch. The red power light (Figure 4, #1) and indicator lights on the controller light bar array (Figure 4, #8) will come on.
5. Leave the system running for approximately five minutes so the sensors can get an accurate reading from the pool.
6. Check for leaks and correct as necessary.

## **G. Sanitizer Settings**

Be careful when adjusting the ORP set knob. The dial is extremely sensitive in the 600 to 800 mV range and an adjustment of 50 mV could change the sanitizer level by several parts per million.

1. The average pool should have a sanitizer level between 1.0 and 3.0 ppm. This equates to approximately 650 mV on the controller's ORP light bar array. If the pool has been balanced correctly, the lights illuminated on the ORP light bar array should be near 650 mV. Adjust the ORP selection knob to point at the illuminated light on the ORP light bar array. If more than one light is illuminated, set the knob to point in between the two lights.

To maintain a higher sanitizer level, set the selection knob above the light shown on the light bar array. To maintain a lower sanitizer level, set the selection knob below the light shown on the light bar array.

2. Allow the system to operate for 24 hours.
3. With the filtration system running, retest the sanitizer level using a test kit and adjust the sanitizer selection knob if necessary. It may require two to three days to accurately set the controller to maintain the ideal sanitizer level.
4. If the chemistry of the pool or spa water changes (e.g. refilling, significant changes in pH, build-up of total dissolved solids, additions of other chemicals, etc.), the sanitizer selection knob may have to be adjusted.

## H. pH Calibration

1. Take a clean sample of pool water and place the pH sensor into the water sample.
2. Push the pH display button (Figure 4, #10). The yellow ORP lights on the scale indicator light (Figure 4, #3) will go out and the green pH scale indicator lights will come on. The lights on the light bar array now correspond to the readings on the pH scale.

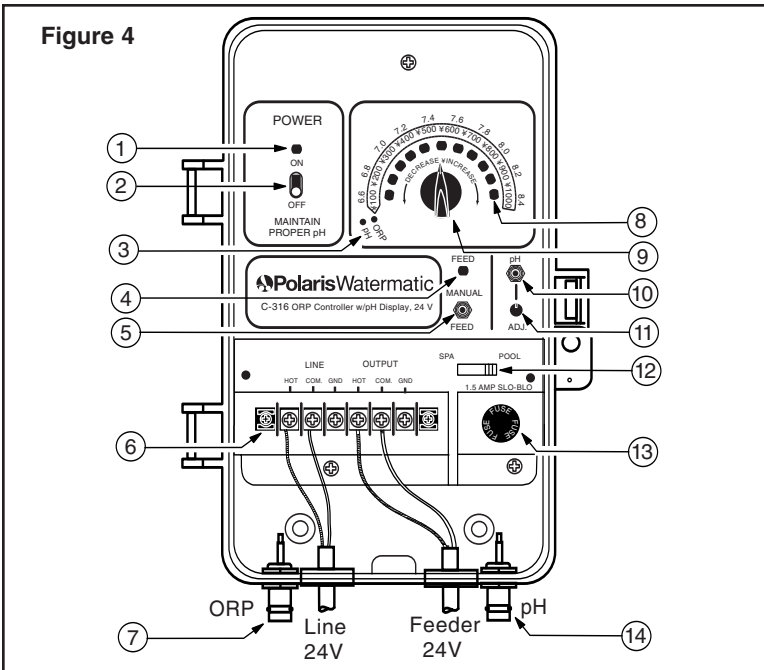
When the button is pushed, the controller will monitor the pH for approximately 5 seconds, or for as long as the pH button is held down, before returning to the ORP scale.

3. The pH can be calibrated to match the reading taken by the test kit by simultaneously holding down the pH display button and turning the pH calibration set knob (Figure 4, #11) until the lights on the light bar array indicate the pH reading of the test kit.

Sanitizer can now be added to the feeder. See the feeder owner's manual for instructions.

# VI. Panel Features

#	DESCRIPTION	FUNCTION
1	Power On Light	Indicates controller is on
2	Power On/Off Switch	Turns on the controller
3	Scale Indicators	Indicates which scale is being displayed
4	Feed Light	Flashes during feed cycle; lit during delay
5	Manual Feed Button	Instantly feeds sanitizer
6	Terminal Strip	24 volt input/output
7	ORP Sensor Connector	BNC jack
8	Light Bar Array	Displays the ORP or pH sensor readings
9	ORP Set Knob	Selects the desired ORP level of the water
10	pH Display Button	Displays the pH reading for 10 seconds
11	pH Adjustment Knob	Calibrates pH sensor
12	Pool/Spa Switch	Selects applicable delay cycles
13	Fuse	Adjust to match feeder solenoid
14	pH Sensor Connector	BNC jack
15	Output	24V to solenoid valve
16	Input	24V to controller



## VII. Operation

The controller will only operate during the filtration cycle.

### A. Setting Feed and Delay Times

1. The controller is preset at the **factory** with the following feed and delay times:

**Pool Setting:** Feed = 1 minute, Delay = 30 second

**Spa Setting:** Feed = 10 seconds, Delay = 30 seconds

These settings can be adjusted as needed to maintain the pool balance. To modify the factory settings see Pre-Installation, section B.

2. Delays are built into the system to prevent the feeder from oversanitizing the pool. Once the feeder has dispensed a dose of sanitizer, the feeder is unable to dispense again for either 30 seconds or seven minutes. This delay allows the sanitizer to be circulated through the pool or spa and returned through the filtration system where the sensors can test the sanitizer level. After the delay period, another dose of sanitizer will be dispensed if needed.

### B. Feed Light Activation

1. The yellow feed light (Figure 4, #4) flashes to indicate that the feeder is active and sanitizer is being dispensed. During feed delays, although no sanitizer is being dispensed, the feeder is still technically active, so the feed light remains constantly lit.
2. Do not adjust the set knob while the feed light is on. When the feed light is on, the lights on the light bar array may register an inaccurate sanitizer level since the system is still circulating a dose of sanitizer.

## C. Out-of-range Alert

When the ORP is out-of-range (less than 100 mV) for ten consecutive minutes, the lowest red light on the light bar array will flash and the controller will not activate the feeder. Depending on the level of ORP, the manual feed button may be used to raise the ORP level.

## D. Manual Feed

The manual feed button is mainly used to restart the feed cycle when the system shuts down because the ORP level dropped below 100 mV (commonly due to an empty feeder or dirty sensor). It can also be used to test the solenoid. It cannot be used while the feed light is on, i.e. the feeder is active or in delay.

## E. Winterizing

If the system is subject to extended shutdowns or is located in colder climates, it is important to winterize the system.

1. Turn off the main power to the controller.
2. Remove the sensors from the compression fittings. **The sensor tips must be stored in a protective cap or bottle filled with a liquid solution of one teaspoon salt and three teaspoons water.** Mix the solution thoroughly and make sure the solution completely covers the sensor tips. **STORE SENSORS IN A WARM PLACE - DO NOT SUBJECT SENSORS TO FREEZING TEMPERATURES.**
3. Empty the system of all water.
4. If the pool or spa has a flow cell assembly installed, drain the water from the assembly.
5. Remove all material from the feeder and clean all feeder parts.

## VIII. Maintenance

### A. Testing

1. Test the sanitizer and pH levels with a test kit weekly or more frequently as required by local health codes.
2. Adjust the pH in the pool or spa as needed to maintain a level between 7.4 and 7.6.

### B. Cleaning the Sensor Tips

1. It is important to keep the sensor tips clean to ensure accurate sanitizer level readings. When the sensor tips become dirty, the sensors may read lower than actual sanitizer levels and cause the controller to oversanitize.

**Note:** A sensor tip coated with scale or oil will not look visibly dirty.

2. As a general rule, the sensor tips should be cleaned every two to four weeks for commercial pools and spas, and once a month for residential pools and spas. Cleaning frequency, however, can vary from one body of water to another. To determine the appropriate frequency for your pool or spa, note the light bar reading prior to cleaning. After cleaning the sensor, allow a stabilizing period of approximately ten minutes. If the light bar reading is identical to the reading prior to cleaning, the sensor was not dirty and the time between sensor cleanings can be increased.
3. To clean the sensor tip, turn off the controller and gently remove the sensor from the compression fitting. Swirl the tip for five seconds in muriatic acid (diluted 5 to 1) or white vinegar, and rinse it in water. **DO NOT TOUCH, WIPE OR BRUSH THE END OF THE SENSOR.** For commercial pools and spas, every third cleaning, swirl the sensor tip in a solution of liquid soap and warm water. Rinse with water.
4. Gently replace the sensors and turn on the controller.
5. Allow the controller to operate for a few minutes to get an accurate reading. Adjust the selection knob if necessary.

### **C. Checking the ORP Sensor**

1. The ORP sensor should be checked every six months or anytime the feeder oversanitizes the water.
2. Clean the sensor tip as noted previously.
3. Place the sensor in a clean glass of tap water. This should give a reading between 200 and 400 mV. Adding a small amount of chlorine should cause the ORP level to jump to between 700 and 800 mV.

If the sensor has been sitting in a high concentration of chlorine for more than 20 hours, it may pick up a 'memory' that will not allow it to read below the 500 to 600 mV level. If this is the case, adjust your controller setting accordingly. The sensor should return to normal after a week or two of normal operation. To return it to normal functioning more quickly, place the sensor in a glass of tap water for 72 hours.

4. If the sensor does not respond as indicated, the sensor should be replaced.

### **D. Checking the pH Sensor**

1. The pH sensor should be checked every six months or anytime the pH goes out of range or cannot be calibrated to the test kit.
2. Place the sensor in a clean glass of tap water. Add a small amount of acid to the glass. The pH reading should drop to the lowest red light. Then place the sensor in any solution with a pH above 7.5. The pH reading should move up.
3. If the sensor does not respond as indicated, the sensor should be replaced.

## IX. Erosion Feeder Operating Tips

- Feeders must be sized properly. When automating an existing system, multiple feeder may be required. The feeder should be able to attain desired levels in short operating cycles. Automation becomes ineffective if the feeder must run for prolonged periods.
- The output of erosion feeders is dependent on the erosion rate of the tablets. This erosion rate is dependent on the water flow, contact area on the tabs, and temperature of the water. Also, bromine tends to erode more slowly than chlorine.

To maximize output:

1. Fully open all valves into and out of the feeder,.
  2. Keep the feeder full at all times.
  3. If possible, use small tablets, not large pucks.
- Erosion feeders are designed to maintain levels, not to balance the pool's chemistry. Erosion feeders should not be used to bring a pool up to the desired levels. Use liquid or Cal Hypo to raise levels to the desired point. Once the desired level is reached, the erosion feeder can be used to maintain these levels.
  - Feeders must be located on a separate bypass line with a **check valve** between the solenoid valve and the feeder. It is recommended that a flow indicator be placed in this bypass line.
  - The coil/plunger on the solenoid valve should be checked periodically for corrosive buildup that could affect its operation.
  - The bypass loop for the feeder may be hooked up from before the filter to after the heater. If it is, an **inline filter** located before the solenoid valve is desirable to prevent debris from entering the solenoid valve.
  - Erosion feeders are subject to potting (continued tablet dissolution when the flow is off). As a result, the sanitizer concentration in the feeder can be extremely high. When

the solenoid valve opens, the initial flow from the feeder may significantly increase (spike) the sanitizer level in a small body of water. For this reason, it may be desirable to use the timed-feed feature, which opens the solenoid for a short period, then delays the next feed cycle until the initial feed is distributed throughout the pool/spa system.

# X. Troubleshooting

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>SOLUTION</b>
SANITIZER LEVEL TOO LOW	Set knob set too low	Adjust knob clockwise until the proper sanitizer level is reached
	pH level too low (less than 7.2)	Check pH level with a test kit and adjust as required
	Chemical feeder empty	Refill chemical feeder
	Chemical feeder is clogged	Clean and dry feeder measuring cup assembly
	Defective sensor	Replace sensor
SANITIZER LEVEL TOO HIGH	Set knob set too high	Adjust knob counterclockwise until the proper sanitizer level is reached
	pH level too high (above 7.8)	Check pH level with a test kit and adjust as necessary
	Sensor tip is dirty	Clean sensor tip
	Defective sensor	Replace sensor
DISPLAY LIGHTS OFF	No power supply	Check circuit breaker

## **XI. Guidelines for Using ORP for Water Maintenance**

- Q. Why should I maintain a pH level between 7.4 and 7.6?
- A. pH levels below 7.4 can cause eye irritation, metal corrosion, etching of plaster, stains, damage to vinyl liners, and loss of sanitizer. In addition to eye irritation, pH levels above 7.6 can cause cloudy water, scale formation and loss of sanitizer efficiency (low ORP).
- Q. How do I increase the pH level?
- A. Small amounts of basic (alkaline) chemicals such as pH Plus or pH Up can be added.
- Q. How do I lower the pH level?
- A. Small amounts of liquid acid (muriatic) or dry acid (sodium bisulfate) such as pH Minus or pH Down can be added.
- Q. How does 650 mV relate to the ppm of chlorine?
- A. Pure water, without conditioner, at a pH level of 7.5 corresponds to approximately 1.5 ppm of chlorine. Actual pool or spa water usually takes at least 1-2 ppm of chlorine to generate 650 mV ORP, although the Total Dissolved Solids and pH can affect the activity of the chlorine and thus change the level of ORP.
- Q. Does an ORP of 650 mV stop algae?
- A. No. Because algae is a living organism that adapts genetically to a constant level of sanitizer, the periodic addition of an algicide or shocking may be necessary. Please note that the addition of some chemicals can change the ORP readings for up to several days.
- Q. What causes a low ORP?
- A. A low sanitizer level, a pH level above 7.6, a conditioner level above 200 ppm or a TDS (Total Dissolved Solids) above 3,000 ppm can all cause a low ORP.

- Q. How do I make sure the ORP sensor is working properly?
- A. Watch the sensor reading when adding sanitizer. If it does not respond properly, follow the recommended cleaning procedures, see Maintenance. If cleaning does not solve the problem, check the sensor as outlined in the Maintenance section.
- Q. How should the ORP sensor respond to adding acid?
- A. Adding acid decreases the pH level thus increasing the ORP.
- Q. How should the ORP sensor respond to adding base?
- A. Adding base increases the pH level thus decreasing the ORP.
- Q. How should the ORP sensor respond to adding sanitizer?
- A. Depending upon the type of sanitizer used, the ORP should increase. A sanitizer high in base, such as liquid chlorine (sodium hypochlorite) or a dry chlorine powder (calcium hypochlorite), however, can cause the pH level to rise and the ORP to decrease. The pH level must be in the ideal range to maintain the proper ORP level.
- Q. Can ORP be used with ozone?
- A. Even though ozone is an excellent oxidizer, it has a very short lifetime. Therefore, a chlorine or bromine residual will still be needed in order to maintain the proper ORP level. When using ozone, the ozone must be introduced into the system downstream from the sensors.
- Q. Can ORP be used with UV or metal ions?
- A. Only if the proper chlorine or bromine residual is maintained.

## **XII. WARRANTY**

### **Polaris Watermatic C316 Controller**

This limited warranty is extended to the original consumer purchaser of this Polaris Watermatic C316 Controller manufactured by Polaris Pool Systems, Inc., 2620 Commerce Way, Vista, CA 92081-8438, USA.

Polaris Pool Systems warrants the Watermatic Controller it manufactures, including all parts and components thereof, to be free of defects in material and workmanship. For questions regarding your Polaris Watermatic Controller, please feel free to call or write us. Be sure to provide the serial number of your unit.

The warranty commences on the date of installation of the controller and shall remain in effect for a period of one (1) year, but in no event shall it be in effect for more than two (2) years from the date of manufacture of the controller as established by the serial number.

This limited warranty does not apply if the failure is caused or contributed by any of the following: improper handling, improper storage, abuse, unsuitable application of the unit, lack of reasonable and necessary maintenance, winter freezing or repairs made or attempted by other than Polaris Pool Systems or one of its authorized service centers. Polaris will repair or replace, at its option, a unit or part proved to be defective within the warranty period and under the conditions of the warranty.

Unless local repair is authorized, the consumer must deliver or ship the unit or the warranty parts, freight prepaid to the nearest Polaris Authorized Service Center or return it freight prepaid (after proper authorization) to the plant of manufacture. Authorization to return a unit to the plant of manufacture must be obtained from the Polaris Customer Service Department. For your convenience, please check with your dealer for the local procedure before exercising this warranty. If further directions or instructions should be required, contact the Customer Service Department at 1-800-VAC-SWEEP (USA and Canada only) or 760-599-9600. Be sure to insure your shipments against loss or damage during transit.

Polaris is not responsible for the cost of removal of the unit, damages due to removal, any other expenses incurred in shipping the unit or parts to or from the factory or its authorized service centers, the installation of the repaired or replacement unit. The consumer must bear these expenses.

This warranty does not cover repair or replacement of a unit except at our factory or a Polaris Authorized Service Center.

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