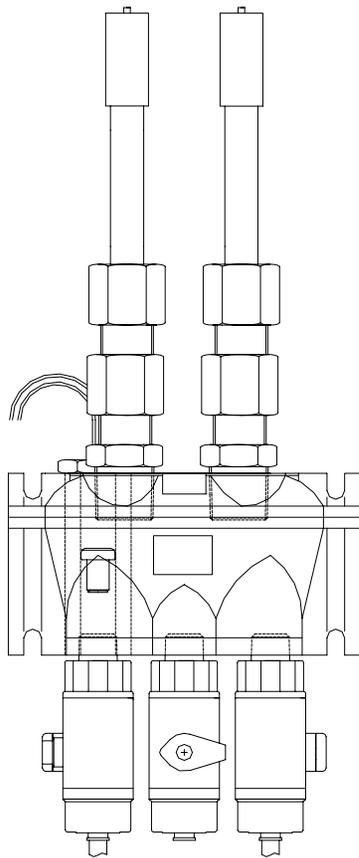




## GLOBE FLOWCELL



## Operating Manual

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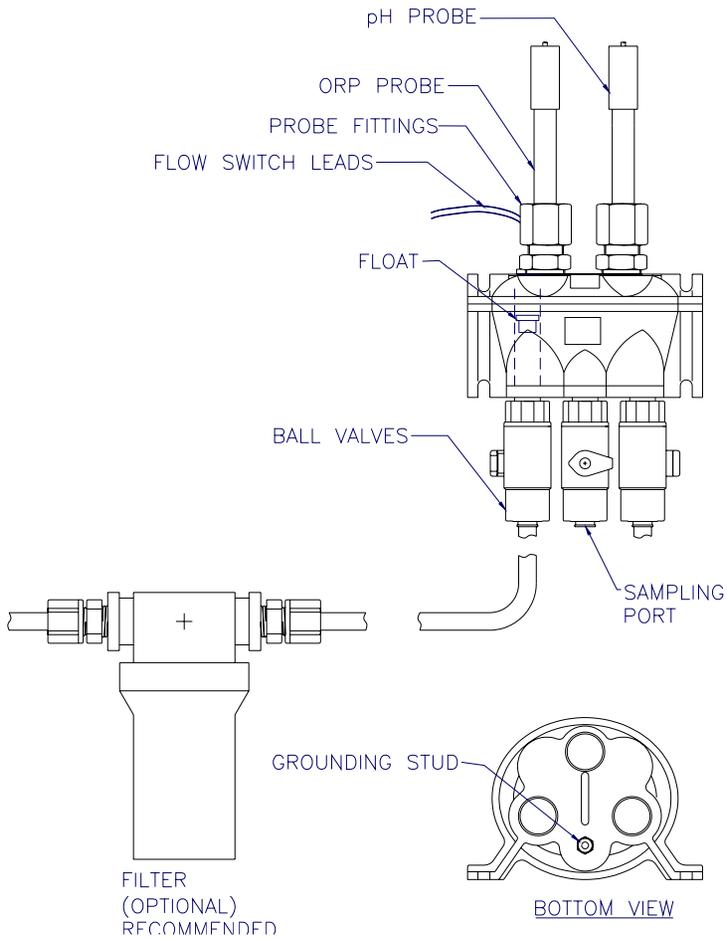
## 1.0 Safety Instruction

**See controller manual for additional safety instructions.**

- A- **WARNING:** Do not shut down circulating and control system immediately after using pool, spa or hot tube. Systems must operate until water chemistry is stable. Systems must be restarted before water chemistry is out of NSPI recommended ranges or water chemistry must be manually corrected.
  
- B- **WARNING:** Removing power from circulating pump must also remove power from the controller. Provide a properly located outlet controlled by the circulating pump circuit.
  
- C- **WARNING:** Use a device such as a flow switch to remove power from the controller in the event of pool pump or circulation failure. It is not safe to automatically dispensed chemicals into circulating system that is not running.

## 2.0 Description

The manifold is designed to be used with a controller as part of a chemical automation system, which continuously monitors and maintains pH balance and sanitizer level in a swimming pool or spa.



### 3.0 Installation

#### 1. Mount Manifold:

Pre-mark hole locations for manifold mounting screws using the manifold. The manifold should not be above the controller unit or other equipment or electrical devices. Manifold holes will accept #10 screws.

#### 2. Install pH and ORP Probes:

Probe ends should not dry out. They are packaged within a jar to keep the ends wetted during shipment and storage. Remove the wetting jars from the probes by unscrewing the jar cap. Remove the jar cap and grommet from the probe. (Save for future probe storage.) Close left and right manifold valves, and open the center manifold valve.

Remove nuts from probe fittings and slide onto probes, noting direction of nut thread. Insert the pH probe (with blue band on cable) into the right probe receptacle. Probe should slide freely through the fitting and into the manifold until it bottoms out inside the manifold. Then raise the probe about 1/8", hold in position and finger-tighten the nut onto the fitting. Use a wrench to tighten the cap about another 1/4 turn.

**DO NOT OVER TIGHTEN.** Repeat the procedure for the ORP probe (red band on cable) in the left probe fitting.

### 3. Install Manifold Connections to the Pool Water System

Turn off the pool's pump system during this procedure. Check that sufficient tubing (supplied) is available for connecting manifold prior to drilling holes.

Additional tubing may be obtained –see parts list for part numbers. Do not exceed a total of 40' of tubing.

Cut a length of black plastic tubing long enough to reach from the left manifold fitting to the upstream side of the pool filter. Install this piece of tubing into the left push-on valve fitting of manifold. (Turn this valve 'off.')

Cut a length of black plastic tubing long enough to reach from the right manifold fitting to the downstream side of the pool filter. Install this piece of tubing into the right push-on valve fitting of manifold. (Turn this valve 'off.')

A length of tube can also be added to the center manifold valve for convenience of water sampling.

Drill and tap a 1/4" NPT thread into a **straight** water pipe just upstream of the pool filter (Figure 1, 2, 3.)

Screw in 1/4" MNPT x tube fitting and tighten.

Note: use Teflon<sup>®</sup> tape on pipe threads and **DO NOT OVER TIGHTEN.** Push in the black tube that you connected to the left valve of manifold.

Drill and tap a 1/4" NPT thread into a water pipe just downstream of the pool filter (Figure 1, 2, 3.)

Screw in 1/4" MNPT x tube fitting and tighten.

Note: use Teflon<sup>®</sup> tape on pipe threads and **DO NOT OVER TIGHTEN.** Push in the black tube that you connected to the right valve of manifold.

Open both the left and right valves on the manifold and close the center valve of the manifold (see Figure 4). Turn on the pool's pump system and check for water leaks. Fix leaks as required.

Connect the two probe cables to controller. The blue banded probe cable connects to the mating jack on the bottom of the controller labeled "pH Probe." Push the connector onto the jack and turn clockwise about 1/4 turn. The red banded probe cable connects to the mating jack on the bottom of the controller labeled "ORP Probe."

#### 4. Flow Switch

Although the float is an integral part of the flow switch, it may also be used as a manual flow indicator. On controllers with a flow switch feature, connect the two lead wires as specified in the controller manual.

#### 5. Grounding

The manifold is supplied with a titanium grounding stud. It is recommended that this stud be used to ground the manifold to earth ground. Grounding the manifold helps to eliminate ground loop problems that could potentially damage probes and/or cause erroneous readings.

## **4.0 Use of Manifold**

### 1. Manifold Inlet and Outlet Valves:

1.1 Adjust flow through manifold. Turn left valve to full on position. Close the right valve and then open it until the float in the flow indicator is just at the top of its chamber. The float will not raise if flow is not sufficient or backwards.

1.2 Removing probes. These valves allow the operator to remove probes without shutting down the pool pump. Simply close both left and right valves before loosening the probe fittings. (Whenever re-inserting probes in manifold, open center manifold valve before and during insertion to relieve pressure, then close the center valve after probe insertion is complete.)

### 2. Water Sampling Valve:

The center valve on the manifold can be used to conveniently take water samples from the pool water.

## 5.0 Maintenance

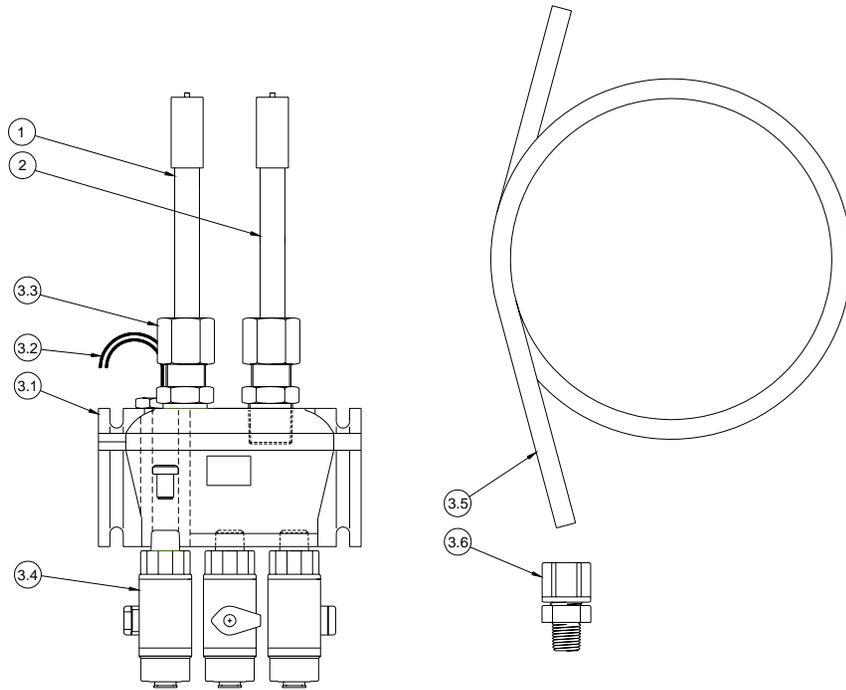
1. Refer to your feeder manuals for instructions on their maintenance.
2. Do not let probe ends dry out. If it is expected that probes will be dry for a long period (several hours), remove them from the manifold and submerge tips in water. At year end shutdown, remove probes from manifold and return to wetting jars. Add 4.0 pH buffer solution to wetting jar as required to wet probes. Drain the manifold to prevent freeze damage. Plug probe fitting openings in manifold to minimize contamination.
3. Periodically (approx. each month) remove probes from manifold and check that they are free of dirt. Clean more frequently as required if bathers are using large amounts of oils and sun tan lotions in the pools. See "Troubleshooting" for cleaning instructions.

**Caution:** Clean probes every 2 to 3 weeks when using di-chlor or tri-chlor products.

## 6.0 Troubleshooting

1. If controller doesn't appear to be reading correctly, check the pH probe with 7.2 pH buffer solution. The ORP probe can be checked with a solution of 1 drop 5.25% bleach (i.e. household bleach) and 1 pint water. This should provide a 1-2 ppm free chlorine solution (check with test kit) Add one drop of chlorine at a time to adjust test mixture as required. Put ORP probe in mixture. The ORP reading should be 600 to 800 mV. Note: It may take three to five minutes for probes to respond to solution. If it takes longer you should replace the probes.
2. Cleaning- wash probes with dish washing liquid and a cotton swab or cloth and then soak it for three minutes in a solution of muriatic acid diluted 20:1, then rinse with water.
3. Incorrect ORP/pH reading can occur if water is flowing too fast in the manifold –see Use of Manifold section.
4. Verify that probe ends are in the flow stream of the manifold.
5. If controller shuts down it may indicate that no water or inadequate flow is going through the flow switch.

## 7.0 Parts List



ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	550136	ORP PROBE- HEAVY DUTY
2	1	550135	pH PROBE- HEAVY DUTY
3	1	550180	FLOWCELL ASSEMBLY, 3/8 TUBE (INCLUDES 3.1 THRU 3.5)
3.1	1	550181	FLOWCELL, CLEAR GLOBE
3.2	1	550183	FLOW SWITCH
3.3	2	550089	PROBE FITTING
3.4	3	7145490	VALVE, SHUT-OFF, 3/8 TUBE
3.5	40 FT	550194	TUBING, 3/8 OD x 40 FT
3.6	2	550193	FITTING, 3/8 TUBE X 1/4 NPT
4	1	550591	FILTER KIT , 3/8 TUBE (OPTION)
5	3	550054	VALVE, SHUT-OFF, 1/4 TUBE (OPTION)
6	40 FT	550027	TUBING, 1/4 OD x 40 FT (OPTION)
7	2	550026	FITTING, 1/4 TUBE X 1/4 NPT (OPTION)
8	1	550590	FILTER KIT, 1/4 TUBE (OPTION)

## **8.0 Warranty and Service-**

### **8.1 Limited Warranty**

Rola-Chem Corporation warrants the original purchaser that this unit is free from manufacturing defects in material and workmanship from the date of the original purchase for one (1) year.

If this unit fails within the one (1) year period, it will be repaired or replaced at Rola-Chem's option, at no charge, when returned to Rola-Chem Corporation with proof of purchase receipt. This warranty does not apply to any product damage caused by improper use, accident, misuse, improper line voltage, fire, flood lightening, earthquake or other acts of nature, or, if product was altered or opened by anyone other than qualified Rola-Chem personnel.

All expendable items- hoses, etc., are not covered under this warranty.

Heavy duty probes are warranted from the date of original purchase for one (1) year. Standard duty probes are warranted from the date of original purchase for 90 days.

Rola-Chem Corporation under no circumstances shall be liable for any consequential damages directly or indirectly caused by this unit. Please observe all rules and regulations required by state and local regulations, building codes, health codes, OSHA, etc.

### **8.2 Service Procedure**

For operation assistance in the United State, please call:

(800) 549-4473 or FAX (651)-653-0989

Monday thru Friday 8:00 am-5:00 pm, Central Time.

Rola-Chem Corporation has specialized knowledge and equipment to properly test your unit and help you with special problems. After talking to our service personnel, the product in need of service should be shipped with RGA#, freight prepaid, via UPS if at all possible to:

Rola-Chem Corporation  
5858 Centerville Road  
St. Paul, MN 55127-6804