

# **INTERMATIC®** **RC2000 SERIES** **REMOTE CONTROLS**

## **INSTALLATION OPERATION & SERVICE MANUAL**

### **AIR OPERATED CONTROL FOR SPAS**

Suitable for Pool Equipment Control and for Direct Connection of Underwater Lights

### **Model: RC2403RT**

**BUTTON #1: PUMP AND BLOWER - SEQUENTIAL**  
1 H.P. - 120V., 2 H.P. - 240 V. EACH CIRCUIT

**BUTTON #2: AUX. CIRCUIT - DOUBLE POLE SINGLE THROW**  
1.5 H.P. - 120V., 3 H.P. - 240V., 10 AMP. TUNGSTEN - 120V.

### **DANGER! To Reduce the Risk of Injury:**

*...do not permit small children to operate the control or use the Pool/Spa unless they are closely supervised at all times.  
...test GROUND FAULT protection regularly. If it fails to reset, DO NOT USE THE POOL or SPA! Contact a qualified service technician.  
...always disconnect electricity before servicing this Control or the equipment connected to it. THIS CONTROL IS NOT TO BE USED AS A POWER DISCONNECT.*

### **IMPORTANT SAFETY INSTRUCTIONS**

**When installing and operating this Product and other associated equipment, basic safety precautions should always be followed,**

1. This Control must be installed by a qualified person, according to National and Local Electrical Codes.
2. Install this Control not less than 5 feet (3 meters in Canada) from inside edge of pool. USE COPPER CONDUCTORS ONLY.
3. Do not exceed the maximum ratings of individual components, wiring devices, and current carrying capacity of conductors.
4. For Control grounding, bonding, installing and the wiring of underwater lights, refer to Article 680 of the National Electrical Code or Article 68 of the Canadian Electrical Code.
5. The Control should not operate any equipment which would cause bodily injury or property damage should it be activated unexpectedly.

**READ, FOLLOW AND SAVE THIS INSTRUCTION MANUAL**

## **GENERAL INFORMATION**

This Air Switch is designed to control three separate pieces of equipment with two air buttons. It can control safely, without electricity at the spa side, for example, a pump (120V. or 240V., single or two speed) blower and an auxiliary equipment. Each time pressure is applied to air button #1 the pump and/or blower will operate in the sequence shown below. In addition, the timer will automatically turn the pump ON/OFF (low speed if two speed pump) for daily filtration.

To heat the spa water on a pre-selected time schedule, set the thermostat to the desired temperature and set the timer accordingly.

Button #2 is provided to operate an additional auxiliary equipment for example, a jet or booster pump, lights or a sanitizer.



<b>EQUIPMENT</b>	<b>Sequence 1 (Home Position)</b>	<b>Sequence 2</b>	<b>Sequence 3</b>	<b>Sequence 4</b>
<b>Filter Pump</b>				
One Speed	Timer ON/OFF	ON	ON	OFF
Low/High Speed	Timer Low/Off	High	High	Low
<b>Blower</b>	OFF	OFF	ON	ON


## INSTALLATION

This Control can operate either a 120 volt or 240 volt, single or two speed pump, together with an air blower and an auxiliary equipment (booster pump, light etc.).

1. Follow wiring diagram on Page 4 and prepare your installation layout. Make sure only copper (solid or stranded) conductors are used, properly sized and suitable for the installation. Each piece of equipment must be grounded properly. **IMPORTANT: NEUTRAL MUST ALWAYS BE CONNECTED TO THE WHITE LEAD OF THE CONTROL.**
2. Hang Control on a flat vertical surface or other support, using hardware suitable for the purpose.
3. Prepare the necessary conduit runs, including ones for the air hoses. Terminate them at both ends and pull-in the conductors as specified by the installation layout.
4. Follow wiring diagram, make LINE and LOAD connections as shown on page 4. Make sure the installation is securely grounded and bonded, if required.
5. Make air hose connections. Follow instructions provided with air buttons.
6. Check wiring, tightness of connections and grounding. Close wiring compartment and test installation.
7. Set timer, see instructions below.

## SETTING / OPERATING INSTRUCTIONS

### Programming Instructions

**To Set or Change the Time of Day:** To clear entire memory, press  key. Hold down the CLOCK key while pressing either the HOUR or MINUTE keys. Continue pressing until the desired number is shown. Then simply lift finger off the CLOCK key to set.

**To Set Program (ON/OFF times):** Press TIMER key once to enter into program mode. Display will show "1 ON-- --". Press the HOUR key and then the MINUTE key to select the desired first ON time. Press TIMER key once. Display will show "1 OFF -- --". Repeat previous step to select the desired first OFF time. Repeat the entire sequence to complete up to eight total ON/OFF times as desired. When programming is done, press the CLOCK key then the SELECT key repeatedly until the indicator bar is above the word "AUTO".

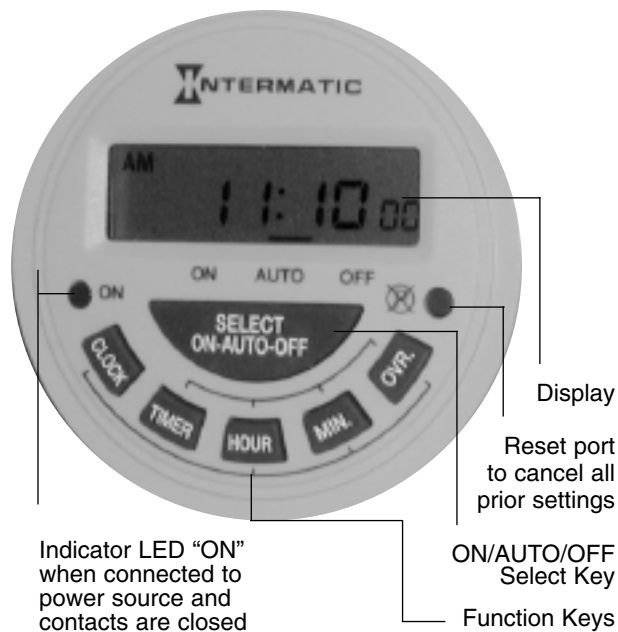
**To Review Program:** Press TIMER key repeatedly. When done, press CLOCK key to return to the time of day.

**To Cancel/Change Part of the Program:** Press Timer key repeatedly until the particular ON or OFF time appears. Set new ON or OFF time.

**To Override the Automatic Operation one time:** Press OVR. key.

**NOTE: Timer will resume automatic operation with the next opposite setpoint.**

**To Override Automatic Operation Permanently:** Press SELECT key to move indicator bar to the desired ON or OFF position. **Note: Timer will not resume automatic operation until indicator bar is repositioned above the word AUTO.**



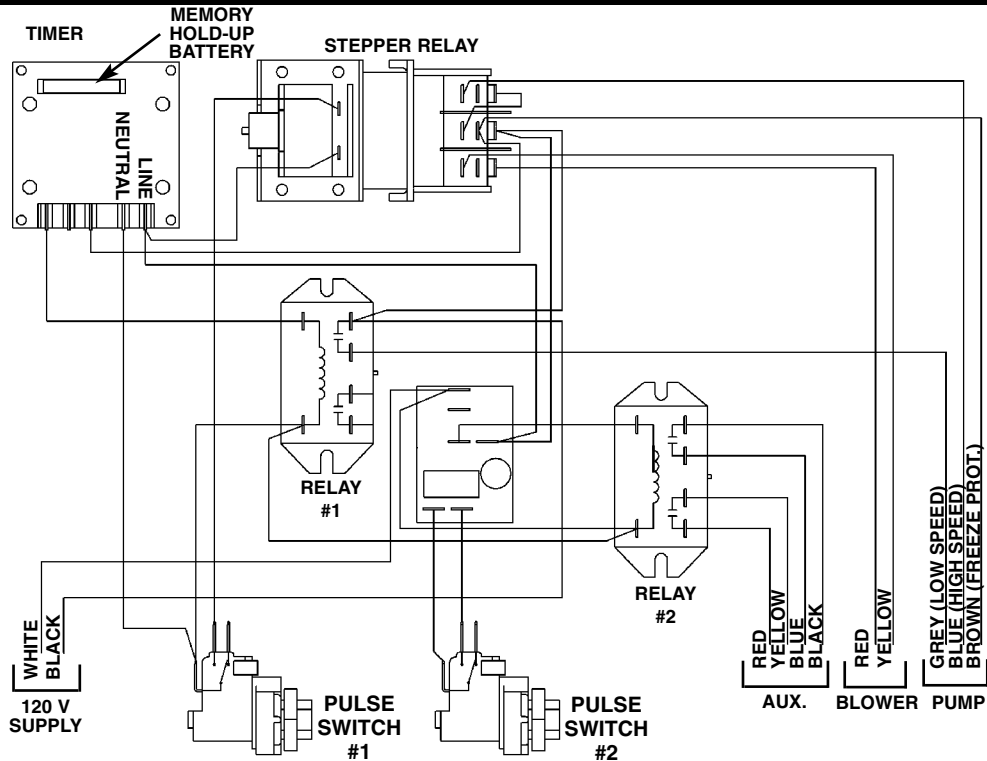
**TO OPERATE EQUIPMENT,** press air button #1 at spa side to turn ON/OFF jets and blower in the following sequence:

<u>SEQUENCE</u>	<u>JETS</u>	<u>BLOWER</u>
1*	OFF	OFF
2	ON	OFF
3	ON	ON
4	OFF	ON

\*Home position; automatic ON/OFF operation as set by the timer.

Press air button #2 to operate auxiliary equipment.

# INTERNAL WIRING

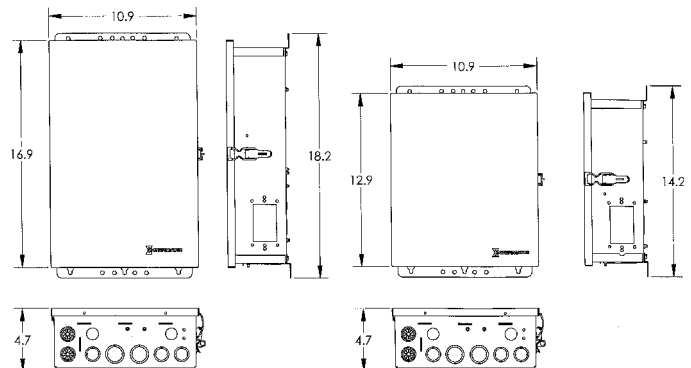


## TROUBLE SHOOTING

SYMPTOM	CAUSE(S)	CORRECTIVE ACTION
1. Pump will not turn ON/OFF or operate on low speed only.	1a. Air hose disconnected. 1b. Defective air button. 1c. Water in air hose. 1d. Defective pulse switch. 1e. Defective relay. 1f. Air button is too far.	Check hose connections. Replace air button - see note 1. Blow-out air hose - see note 2. Replace pulse switch - see note 2. Replace relay - see note 3. Install larger air button.
2. Timer is not turning Pump ON/OFF for daily filtration.	2a. Defective timer. 2b. Defective relay. 2c. Timer is set to permanent ON/OFF. 2d. No program in timer's memory. 2e. Dead memory hold-up battery .	Replace timer. Replace relay. Set timer to AUTO.  Set program - see instructions. Replace battery.
3. Pump turns ON/OFF by itself.	3a. Defective pulse switch 3b. Water in air hose 3c. Changing air pressure in air hose	Replace pulse switch. Blow-out air hose - see note 2. Reroute air hose.

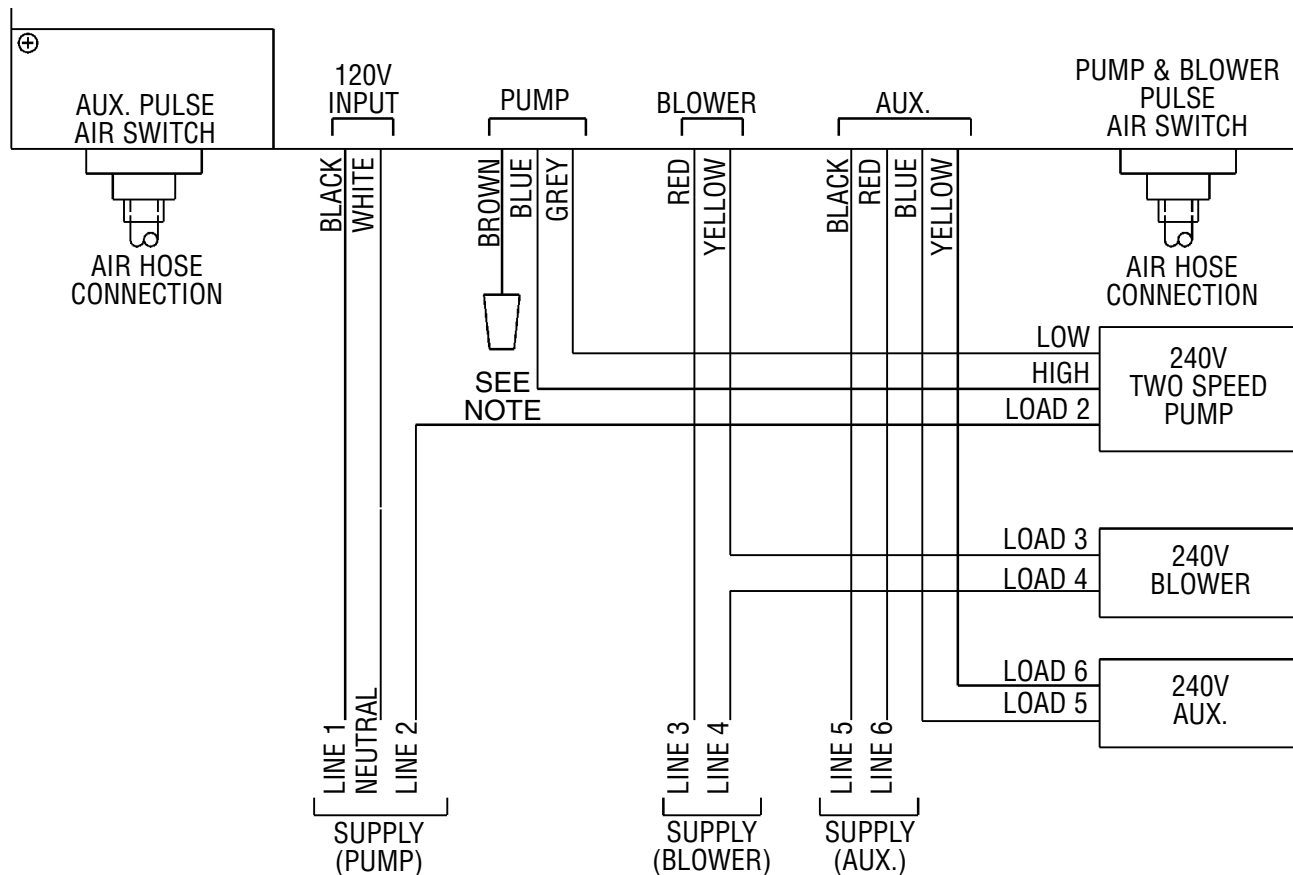
## NOTES AND SPECIFICATIONS

1. An air button with ruptured seal or bellows inside, will not produce sufficient air pressure to operate the momentary air switch and could lead to total break-down.
2. Water in air hose will damage the pulse switch and it is caused by a faulty air button (see note 1 above) or condensation. In either case, it must be drained and the cause found and corrected. To reduce condensation, protect the air hose from exposure to direct sun, ice or frequent temperature fluctuations.
3. A defective relay is either due to contact or coil failure. Contact failure is caused by over-load or cross-wiring and coil failure is caused by 240 volt connected across the 120 volt coil or permanently applied 120 volt. (The relay is designed for intermittent duty only). Permanently applied 120 volt could be the result of water in the air hose (see note 2 above) or spa cover placed over (and depressing) the air button. In any case, the cause must be found, corrected and the relay replaced.



# WIRING DIAGRAMS

- IMPORTANT:**
1. Neutral must always be connected to the WHITE lead of the control.
  2. Grounding conductors are not shown but must be provided.



## 240V 2 - SPEED PUMP WITH TIMER, 240V BLOWER AND AUX. CIRCUIT.

- 240V SINGLE SPEED PUMP:** Connect both BLUE and GREY leads to LOAD 1 of pump.  
**120V TWO SPEED PUMP:** Connect NEUTRAL to WHITE leads of control and pump.  
**120V SINGLE SPEED PUMP:** Connect both BLUE and GREY leads to load (black lead) of pump and connect NEUTRAL to WHITE leads of control and pump.  
**120 V BLOWER:** Substitute NEUTRAL for LINE 4.  
**FREEZE PROTECTION:** (IF REQUIRED) Connect LINE 1 and BROWN lead to thermostat.

NOTE: Brown lead if not used must be permanently capped.

### ONE YEAR LIMITED WARRANTY

If within the warranty period specified, this product fails due to a defect in material or workmanship, Intermatic Incorporated will repair or replace it, at its sole option, the unit free of charge. This warranty applies only to the original purchaser and is not transferable. This warranty does not apply to: (a) damage caused by accident, abuse, mishandling, dropping, acts of God, or any negligent use; (b) units which have been subject to unauthorized repair, opened, taken apart, or otherwise modified; (c) units not used in accordance with instructions; (d) damages exceeding the cost of the product. Some states do not allow a limitation of damages, so the foregoing limitation may not apply to you. This warranty gives you specific legal rights and you may have other rights that vary from state to state.

INTERMATIC INCORPORATED WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES. ALL IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY MODIFIED TO EXIST ONLY AS CONTAINED IN THIS LIMITED WARRANTY, AND SHALL BE OF THE SAME DURATION AS THE WARRANTY PERIOD STATED ABOVE.

This warranty service is available by either (a) returning the product to the dealer from whom the unit was purchased, or (b) mailing postage prepaid to the nearest authorized service center listed. Please be sure to wrap the product securely when mailing to avoid shipping damage. This warranty is made by: Intermatic Incorporated/After Sales Service, 7777 Winn Rd., Spring Grove, IL 60081-9698/815-675-7000 <http://www.intermatic.com>

*Because of our commitment to continuing research and improvements, Intermatic Incorporated reserves the right to make changes, without notice, in the specifications and material contained herein and shall not be responsible for any damages, direct or consequential, caused by reliance on the material presented.*

**INTERMATIC INCORPORATED, SPRING GROVE, IL 60081-9698**  
<http://www.intermatic.com>