

# Balcrank®

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## Pump Sentinel

Model #3110-009



Patent Applied For







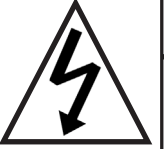

Thoroughly read and understand this manual before installing, operating or servicing this equipment.

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**OPERATION, INSTALLATION,  
MAINTENANCE AND REPAIR GUIDE**

## GENERAL SAFETY REQUIREMENTS

**NOTE: THOROUGHLY READ AND UNDERSTAND THIS MANUAL BEFORE INSTALLING, OPERATING, OR SERVICING THIS EQUIPMENT.**

	 <h3 style="margin: 0;">IMPORTANT</h3>
<p>Check equipment regularly and repair or replace worn and damaged parts.</p>	
<p>Never alter or modify any part of this unit, doing so may cause damage to the unit and/or personal injury.</p>	
<p>Always read and follow the fluid manufacturer's recommendations regarding the use of proper use, handling, and disposal.</p>	
	 <h3 style="margin: 0;">WARNING</h3>
<p><b>Pressure Relief Procedure:</b></p> <p>Follow this procedure whenever you shut off the pump, when checking or servicing any part of the system and when installing, cleaning or changing any part of the system.</p> <ol style="list-style-type: none"> <li>1) Disconnect the air to the pump.</li> <li>2) Point dispensing valve away from yourself and others.</li> <li>3) Open dispensing valve until pressure is relieved.</li> </ol>	
	 <h3 style="margin: 0;">WARNING</h3>
<p><b>DANGER:</b> Not for use with fluids that have a flash point below 100°F (38°C). Examples: gasoline, alcohol. Sparking could result in an explosion which could result in death.</p>	
	 <h3 style="margin: 0;">WARNING</h3>
<p><b>High Voltage</b> may be present when servicing this equipment.</p>	
<p>Do not attempt to service the Pump Sentinel. Return defective unit to the factory.</p>	

### Cable Color Code Chart

TERMINAL STRIP & CONDUCTOR #	COLOR	USE
1	White	Numbers 1-6 individual
2	Red	conductors for solenoid
3	Brown	valves.
4	Blue	
5	Orange	
6	Yellow	
7	Black	Common for solenoid
8	Green	Ground
	Red Terminal	Power Supply, Hot
	Black Terminal	Power Supply, Common

## INTRODUCTION

### General Description

The 3110-009 Pump Sentinel allows for the controlled dispensing of fluids. The unit is capable of preventing fluid theft by utilizing rocker switches to enable or disable up to six pumps via a master key which is needed to turn on the system. The console also prevents fluid spills during non-working hours by using a built in timer which will turn off the air supply to all pumps at a predetermined time each day.

### System Specifications

Power Required ..... 120 VAC, 60/50 Hz, 50 Watts  
 Control Capacity ..... 6 Products  
 Operating Temperature ..... 0° - 140° F (-17° - 60° C)  
 Solenoid Rating ..... 24 VDC, 5 Watts Max.  
 Dimensions ..... 3" H x 6.5" W x 5" D  
 Cable Length ..... 6 feet

## INSTALLATION

The 3110-009 Pump Sentinel is powered by 115 VAC power. Simply plug the power supply into a wall outlet and then plug the other end of the power cord into the back of the Pump Sentinel console.

Each pump is controlled by a 24 VDC air solenoid valve. Plumb this into the air inlet of the pump, BETWEEN the FRL and the pump air inlet.

Installation should be made in accordance with the National Electrical Code (NFPA 70) and the Flammable and Combustible Liquids Code (NFPA 30).

Power input to the Pump Sentinel must be uninterrupted 115 VAC. All control circuits are 24 VDC which are not normally restricted by electrical codes, however, local codes should be checked for applicability, and all electrical installations should comply with codes.

Place the console(s) where it will normally be used. All electrical connections are made through the multi-wire cable supplied with the unit. Some kind of pull box should be mounted within 5 feet of the console. A suitable place might be behind a desk or in the ceiling where the existing electrical system is likely located. Connect the supplied cable to a screw type terminal strip.

No. 18 AWG wire is recommended for all runs less than 400 feet. For runs from 400 to 625 feet, use wire no. 16 AWG or larger. Normally the 24 VDC wiring can be run around the overhead structure of the building without using conduit. This wire should be clamped or secured to the structure in such a way that it is not subject to any mechanical stress. Use a strain relieving clamp any time a cable enters a junction box. The cables from all the consoles in the system can be run to one junction box with conduit running to the 115 VAC circuit breakers and then using multi-wire cable for the control circuit runs.

Another junction box or group of boxes should be mounted near the solenoid valves.

## OPERATION

### To set time of day (clock):

Push and hold the HOUR button for five seconds. The display will flash. Push the HOUR or MINUTE button to adjust. The "PM" LED will be "on" for PM and "off" for AM. When the time is correct, push the "SET" button. During normal operation the time of day will be displayed.

### To set "OFF" time:

By setting the "OFF" time the Pump Sentinal will turn off power to the pump air solenoids at this time each day. This will prevent theft and accidental spills during non-working hours.

Push and hold the "SET" button for 5 seconds. Push the HOUR or MINUTE button to adjust.

### To check "OFF" time setting:

Push the "SET" button and then release.

### To turn unit on:

Turn the key to the "OFF" position and then rotate to the "ON" position.

**NOTE:** It is recommended that this key be removed from the console and secured during non-working hours.

### To dispense fluid:

- 1) Turn key to "ON" position.
- 2) Turn on rocker switch for desired fluid. LED above rocker switch will light.
- 3) Dispense fluid.

**NOTE:** It is recommended that all rocker switches be kept in "OFF" position when fluid is not needed.

## FACTORY SERVICE

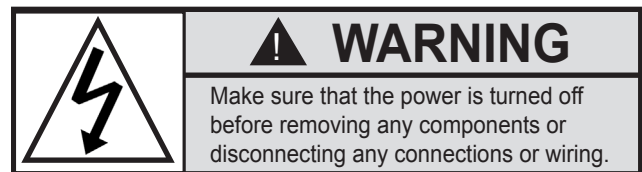
### Repair

No attempt to repair the Pump Sentinal should be made beyond the scope of this manual. The modular design of the unit, made possible by the use of integrated circuits, makes it necessary to have access to special test equipment if serious damage to the system is to be avoided. The unit should be returned to a Balcrank Authorized Service Center for repair or adjustment.

## TROUBLESHOOTING CHART

In order to properly troubleshoot the system and perform proper replacement or repair of parts, it is necessary that the technician performing the work be thoroughly familiar with the equipment. Attempted repair by unqualified personnel could void the warranty. It is suggested that this manual be studied thoroughly before any troubleshooting is attempted.

It is suggested that whenever there is a problem with the system that a visual inspection first be made of the overall condition of the equipment. Here is a list of things to look for:



Symptom	Cause	Solution
1. No power at console.	a. Circuit breaker tripped. b. Unit not plugged in. c. Cable not connected or properly seated. d. Key lock switch off.	a. Reset breaker at main panel. b. Plug unit in. c. Plug in cable connector. d. Turn on key lock.
2. Display not illuminated or digit elements are incomplete.	Counter is defective.	Return the unit for repair.
3. Console controls the wrong fluid.	Control wires to the solenoid valves are improperly connected.	Rewire as specified.
4. System has power, but no fluid can be dispensed.	a. Pump is not operating. b. Out of fluid. c. Control solenoid valve not operating. d. Outlet of pump is blocked. e. Defective rocker switch. f. System not properly wired. g. Cable not connected or properly seated.	a. Check the air supply to the pump and the pump air solenoid valve. b. Check the fluid level in the storage container. c. Check valve for energized position. d. Check fluid outlet line. e. Return the unit for repair. f. Recheck electrical connections and rewire as specified. g. Plug in cable connector.

# WARRANTY

All Balcrank® equipment sold by authorized Balcrank® distributors is warranted to their original customer to be free from defects in materials and workmanship for a period of one year from the date the equipment was sold to the original customer. Select equipment carries extended warranty terms as individually noted within the Balcrank® Lubrication Equipment & Accessories User Price List. Any Balcrank® equipment carrying an extended warranty will be warranted for the period indicated; those items carrying a "lifetime" warranty are warranted for a period of thirty years. All Balcrank® equipment determined by Balcrank® to have defective materials or workmanship within the one year warranty period will be repaired or replaced. For equipment carrying extended warranties Balcrank® will repair or replace the product including parts and labor for the first full year and will provide parts only for the remaining period of the specified warranty.

This warranty only covers equipment installed and operated according to applicable Balcrank® Service Bulletins and Installation Instructions. Any equipment claimed to be defective must be returned, freight prepaid, to an Authorized Balcrank® Service Center. If the part(s) or equipment is found to be defective, it will be repaired or replaced, and returned freight prepaid from the Authorized Service Center. If the claimed part(s) or equipment is found not to be defective, the Authorized Balcrank® Service Center will, upon written authorization being received from the original customer, repair them for a reasonable charge to the customer which will include all applicable parts, labor, and return transportation costs. Any equipment returned to Balcrank® must have the Warranty Service Claim number (WSC#) clearly marked on the outside of the carton. Balcrank's sole responsibility is for defects in material and workmanship, and Buyer's sole and exclusive remedy hereunder, shall be limited to repair or replacement of the defective part or equipment.

This warranty does not cover, nor shall Balcrank® be liable for repair or replacement of parts or equipment resulting from general wear and tear through use, or damage or failure caused by improper installation, abuse, misapplication, abrasion, corrosion, insufficient or improper maintenance, negligence, accident, alteration, or substitution of non-Balcrank component parts. Furthermore the Balcrank® Warranty for Lubrication Equipment and Accessories does not cover the following specific conditions:

- Failure or damage to equipment that is caused by dirt or debris in air and fluid lines. This includes, but is not limited to clogged inlet filters, strainers, or regulators; fluid meters; control handles; fluid tips; and valves.
- Failure of normal wear parts including but not limited to: o-rings, packings, seals and valves unless originally improperly installed by the factory.
- Products placed in applications for which their use was not intended. Examples include but are not limited to: A lubricant pump being used to pump solvents, or placing a piece of equipment intended strictly for indoor use in an outdoor application.
- Damage to equipment resulting from operation above and beyond Balcrank's recommendations.
- Leaks at air and fluid fittings and connections.
- Damage caused by thermal expansion when adequate pressure relief was not included in the system.
- Loose suction tubes on pumps.
- Reel spring tension adjustment.

**THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL BALCRANK BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, OR OTHER DAMAGES OF SIMILAR NATURE, INCLUDING BUT NOT LIMITED TO LOST PROFITS, LOST PRODUCTION, PROPERTY DAMAGE, PERSONAL INJURY, WHETHER SUFFERED BY BUYER OR ANY THIRD PARTY, IRRESPECTIVE OF WHETHER CLAIMS OR ACTIONS, LEGAL OR EQUITABLE, FOR SUCH DAMAGES ARE BASED UPON CONTRACTS, WARRANTY, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE. ANY CLAIM OR ACTION FOR BREACH OF WARRANTY MUST BE BROUGHT WITHIN TWO (2) YEARS FROM THE DATE OF SALE TO THE ORIGINAL CUSTOMER.**

Balcrank® Products Inc.  
115 Reems Creek Road  
Weaverville, NC 28787  
800-747-5300  
800-763-0840 Fax  
www.balcrank.com

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