

### The Problem

Certain BioCal products manufactured after June 20, 2000 have been found to have pump motors operating in reverse. This can result in the linkage between the gearbox output shaft and the pump piston binding, causing the linkage to become disconnected.

Also included with this repair packet is a wire harness that you will install to ensure wires do not get caught on crank shaft.

### The Solution

Verify that the pump motor rotates in the correct direction. A functional pump motor rotates counterclockwise when viewed from the bottom of the unit.

Follow these steps to check your BioCal unit to make sure the pump motor is rotating correctly, and to correct the problem if it is not.



*Dangerous voltages are wired into this unit and are present in the enclosure. Installation and service must only be done by qualified personnel and must comply with all applicable electrical codes.*

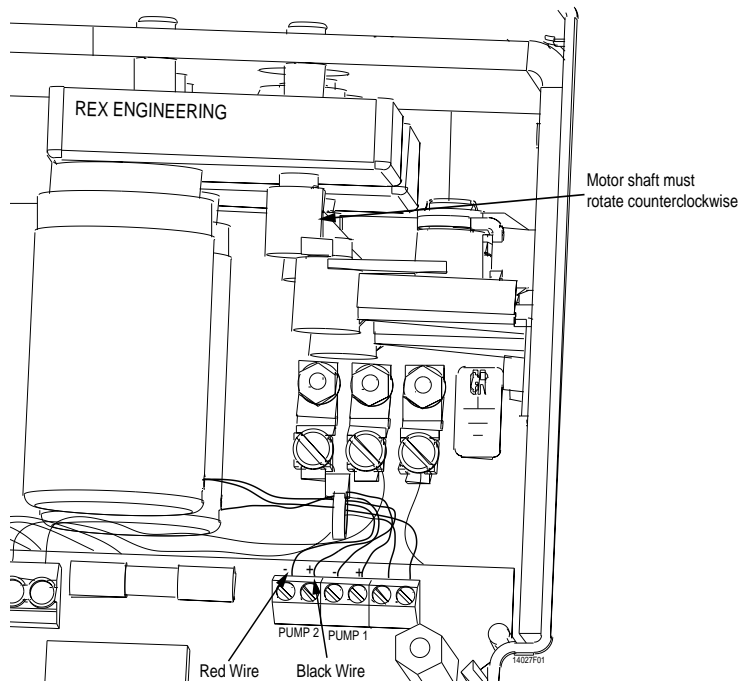


Figure 1. Cutaway drawing showing Pump 1 and Pump 2 wires and terminals.

1. Remove front panel of unit by removing the four screws. Look at the gearboxes and see if it has a nameplate that shows REX as the manufacturer. If it does, proceed to next step. If it does not, unit does not require repair.
2. Carefully avoiding live power terminals, activate pump prime and observe motor rotation. Viewed from the bottom of the unit, the motor shaft should rotate counterclockwise. If rotating clockwise, reverse wires per step 3.
3. Find the terminal block that says PUMP 1. Disconnect the red wire from the positive (+) terminal and the black wire from the negative (-)
4. Reconnect the black wire to the positive (+) terminal, and the red to the negative (-) terminal as shown in Figure 1.
5. Repeat these steps for the PUMP 2. terminal block.
6. Attach wire harness with tie wrap to right wall of BioCal, and secure black and red wires into it as shown in Figure 2. Make sure that wire harness is far enough from pump linkage so that it doesn't catch on crank shaft.
7. Apply the label supplied to top end of inside casing to indicate that your unit has been reworked.
8. Replace the front panel.



Figure 2. Pump terminal wires secured with wire harness and tie wrap.