

Pumps Do Not Reverse Direction

1. For the proportioning pumps to reverse direction, the activator plate (219) must contact the rocker arm to activate the reversing switch (210). Check for a bent or loose activator plate, rocker arm, or reversing switch. See FIG. 1 on page 25, and the parts drawing on page 59.
2. Check the function of the directional valve. Direction indication lights should switch on and off based on the reversing switch (210) position. LEDs D19 and D20 (near J5 reversing switch connector on motor board) should alternately illuminate based on the reversing switch position.

There are two possible problems with the directional valve:

- a. If D19 and D20 do not alternately illuminate, the possible causes include:
 - faulty reversing switch wiring,
 - faulty reversing switch, or
 - faulty motor board.

To resolve this problem:

- verify the continuity of each reversing switch wire. Replace faulty wires.
- verify reversing switch. Unplug the J5 reversing switch connector. Verify that continuity alternates between NC2 to com and N03 to com by toggling the reversing switch (see Electrical Diagrams manual 312064). If continuity does not alternate, replace the reversing switch and reconnect the J5 reversing switch connector.
- if the reversing switch and wiring are not the cause, and D19 and D20 will not alternately illuminate, replace the motor board.

- b. If D19 and D20 do illuminate but the direction indication lights do not, the possible causes include:

- faulty motor board,
- faulty directional valve wiring, or
- faulty directional valve.

To resolve this problem:

- verify the motor board output voltages at the J18 directional valve connector. When the reversing switch is toggled one direction, there should be 230V output between pins 1 and 2 (A+ and A-). When it is toggled the other direction, there should be 230V output between pins 3 and 4 (B+ and B-). If output voltages are not present, replace the motor board.
- verify continuity of each directional valve wire and verify wiring connections (see Electrical Diagrams manual 312064).
- if motor board and wiring are not the cause, replace the directional valve.



For diagnostic purposes, it is possible to manually override the directional valve by using a small screwdriver to depress the button in the center of either directional valve end cap. Depressing the button in the right end cap should cause the pump to travel to the right. Depressing the left button should cause the pump to travel to the left.

3. If you have determined that the cause is none of the above, check for a loose piston packing retaining bolt. This causes the piston to contact the inner face of the pump inlet flange before the activator plate contacts the rocker arm. Shut down the unit and disassemble the appropriate pump for repair.