



## Equalizer Systems Motor Replacement Instructions

**Uni-directional pump numbers: 2015, 2017, 2016, 2142, 3126, 3126S, 3170 Motor # 2427**

**Bi-Directional pump numbers: 2390, 2532 and 2542 Motor # 2605**

Disconnect the negative cables from the batteries prior to starting.

It is suggested that digital photos be taken prior to disassembly to assist in reassembly.

1. Cut any wire ties holding wires or cables to the motor or solenoid(s) or other items that may be in the way of removing the motor.
2. Disconnect all wires connected to the motor solenoid(s) and to the motor.
3. Remove the solenoid(s) from the motor. It is held onto the motor with a hose clamp.
4. Loosen and remove the 2 hex head screws (10 MM wrench) in the end of the motor.
5. Pull the motor away from the pump port plate. It will be necessary to rock the motor side to side to help pull it loose.
6. Check to be sure that the motor shaft bearing came out of the housing with the motor shaft. If the bearing stayed in the housing it must be removed. If the bearing is corroded or seized in the housing and won't come out then the complete pump assembly must be replaced.
7. Check to be sure that the pump drive coupler stayed in the aluminum pump port plate (it may have come out with the motor).
8. Verify that the pump drive coupler is engaged to the pump shaft. Rotate it so that it is vertically straight up and down. (As a reference for item 11)
9. Remove the shipping block from the end of the motor by loosening the hex head screws from the other end.
10. Rotate the motor shaft so that when the slot is vertical that the motor screws will line up with the threaded holes in the port plate.
11. Install the motor lining up the bearing into the hole in the port plate while taking care to line up the slot in the motor with the tang on the pump drive coupler. **(See Drawing)**
12. Push and rock/rotate the motor as needed to fully seat the motor housing against the port plate. **Note this part is important.** If the slot in the motor does not line up properly with the pump coupler, you will not be able to push the motor housing up against the port plate. Do not use the screws to pull the motor in. **Failure to line up the motor slot with the pump coupler properly will result in a destroyed pump and will void the warranty.**
13. After it is certain that the motor shaft is properly lined up, it may be necessary to rotate the motor housing slightly to line the screws up with the threaded holes. Start both of the screws by hand then tighten in an alternating manor until 10 to 12 lbs ft is reached on both screws.
14. Reassemble items removed (solenoid(s) and wires) in reverse order of removal (from items 3 and 4 above).
15. Use new wire ties to secure wires and cables correctly.
16. The use of a corrosion preventative battery terminal spray may be used on all wire terminals after all connections have been made.
17. Reconnect the battery negative cable and test the unit for proper operation.

## Uni-Directional Pump number: 1551 Motor # 2006

Disconnect the negative cables from the batteries prior to starting.

It is suggested that digital photos be taken prior to disassembly to assist in reassembly.

1. Cut any wire ties holding wires or cables to the motor or solenoid or other items that may be in the way of removing the motor.
2. Disconnect all wires connected to the motor solenoid and to the motor.
3. Remove the solenoid from the motor. It is held onto the motor with a hose clamp.
4. Loosen and remove the 2 hex head screws (3/8 inch wrench) in the end of the motor.
5. Pull the motor away from the pump port plate. It will be necessary to rock the motor side to side to help pull it loose.
6. Check to be sure that the motor shaft bearing came out of the housing with the motor shaft. If the bearing stayed in the housing it must be removed. If the bearing is corroded or seized in the housing and won't come out then the complete pump assembly must be replaced.
7. Check to be sure that the pump drive connector stayed in the aluminum pump port plate (it may have come out with the motor).
8. Verify that the pump drive coupler is engaged to the pump shaft.  
Rotate it so that it is vertically straight up and down. (As a reference for item 9)
9. Remove the shipping block from the end of the motor by loosening the hex head screws from the other end.
10. Rotate the motor shaft so that when the slot is vertical that the motor screws will line up with the threaded holes in the port plate.
11. Install the motor lining up the bearing into the hole in the port plate while taking care to line up the slot in the motor with the tang on the pump drive coupler. (**See Drawing**)
12. Push and rock/rotate the motor as needed to fully seat the motor housing against the port plate. **Note this part is important.** If the slot in the motor does not line up properly with the pump coupler, you will not be able to push the motor housing up against the port plate. Do not use the screws to pull the motor in. **Failure to line up the motor slot with the pump coupler properly will result in a destroyed pump and will void the warranty.**
13. After it is certain that the motor shaft is properly lined up, it may be necessary to rotate the motor housing slightly to line the screws up with the threaded holes. Start both of the screws by hand then tighten in an alternating manor until 10 to 12 lbs ft is reached on both screws.
14. Reassemble items removed (solenoid and wires) in reverse order of removal (from items 3 and 4 above).
15. Use new wire ties to secure wires and cables correctly.
16. The use of a corrosion preventative battery terminal spray may be used on all wire terminals after all connections have been made.
17. Reconnect the battery negative cable and test the unit for proper operation.

**Bi-Directional pump numbers: 3040, 3041, 3043, Motor # 2751**

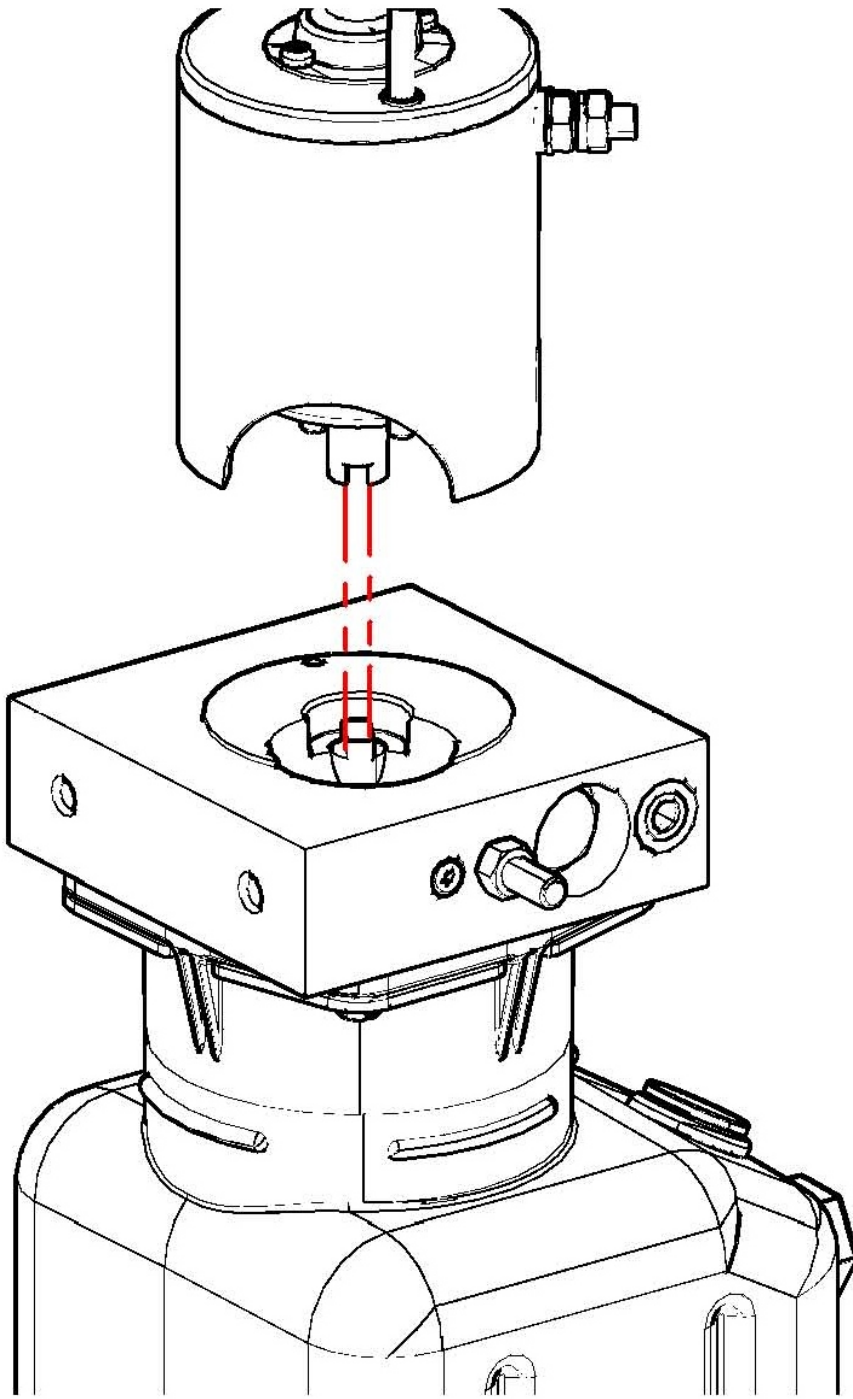
**Uni-Directional pump numbers: 1531, 1636, Motor # 2011**

Disconnect the negative cables from the batteries prior to starting.

It is suggested that digital photos be taken prior to disassembly to assist in reassembly.

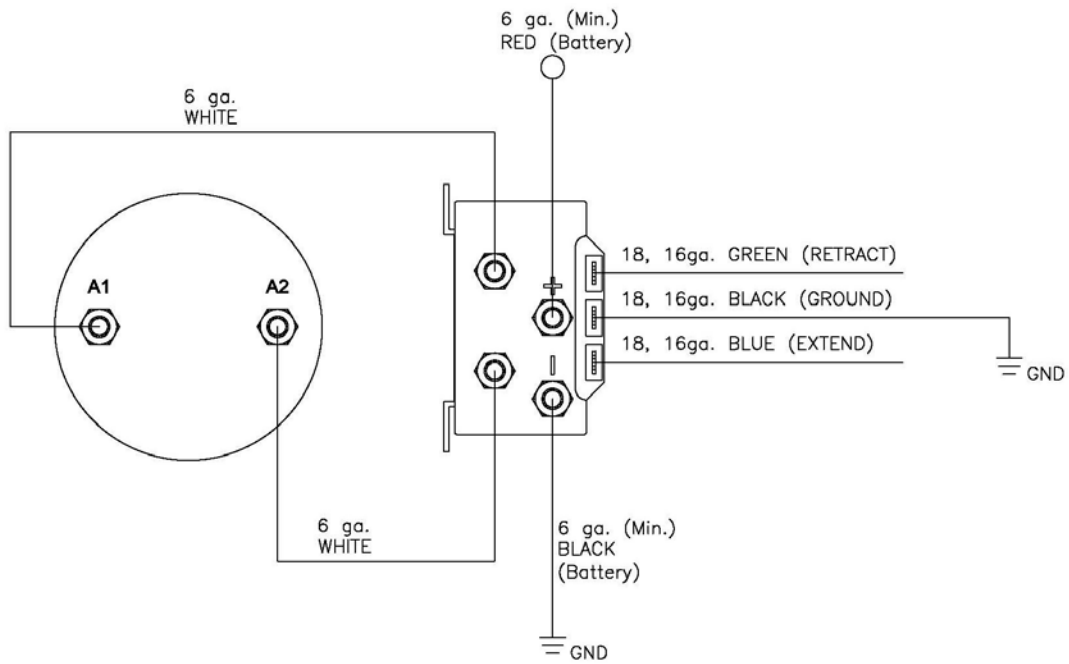
Note: Pump #s 3040, 3041 and 3043 are polarity reversing bi Rotational Motors. The terminals on the end are marked for polarity, the replacement motor must be installed orientated and wired exactly the same as the original. Failure to do so will result in “Reverse” operation of the unit.

1. Cut any wire ties holding wires or cables to the motor or solenoid(s) or other items that may be in the way of removing the motor.
2. Disconnect all wires connected to the motor solenoid(s) and to the motor.
3. Remove the solenoid/contacter from the motor. It is held onto the motor with a hose clamp.
4. Loosen and remove the 2 Allen head screws (3/16 Allen wrench) in the flange of the motor.
5. Pull the motor away from the pump port plate. It may be necessary to rock the motor side to side to help pull it loose.
6. Check to be sure that the pump drive connector stayed in the aluminum pump port plate (it may have come out with the motor).
7. Verify that the pump drive coupler is engaged to the pump shaft. Rotate it so that it is vertically straight up and down. (As a reference for item 9)
8. Rotate the motor shaft so that when the slot is vertical that the motor screws will line up with the threaded holes in the port plate.
9. Line up the slot in the motor with the tang on the pump drive coupler. (**See Drawing**)
10. Push and rock/rotate the motor as needed to fully seat the motor housing against the port plate. **Note this part is important.** If the slot in the motor does not line up properly with the pump coupler, you will not be able to push the motor housing up against the port plate. Do not use the screws to pull the motor in. **Failure to line up the motor slot with the pump coupler properly will result in a destroyed pump and will void the warranty.**
11. After it is certain that the motor shaft is properly lined up, it may be necessary to rotate the motor housing slightly to line the screws up with the threaded holes. Start both of the screws by hand then tighten in an Alternating manor until 10 to 12 lbs ft. is reached on both screws.
12. Reassemble items removed (solenoid(s) and wires) in reverse order of removal (from items 3 and 4 above).
13. Use new wire ties to secure wires and cables correctly.
14. The use of a corrosion preventative battery terminal spray may be used on all wire terminals after all connections have been made.
15. Reconnect the battery negative cable and test the unit for proper operation.



Pump # 2532, 2542 showing motor shaft slot and pump coupler alignment.

**This proper alignment is critical on all pump/motor types.**



Electrical Connections: Motor # 2751 and contactor # 2994 used on pump #s 3040, 3041 and 3043

**Note: Failure to properly wire this motor/contacter can result in motor running in reverse direction or direct short to ground possibly damaging motor and or contacter and wiring.**