



# *SERVICE BULLETIN*

PN: 21329212

**DATE:** 10/3/18

**MODEL:** NewLife 5L and 10L Models

**ISSUE:** NewLife 5L and 10L Main Circuit Board Retrofit Instructions

This instruction is intended to guide technicians through replacing circuit board item CB154 / CB160 (or older circuit boards) with circuit board CB200. Other modifications will be required to install CB200 on previous design units, including updated wiring harness, alarm buzzer, and O2 monitor board (for units originally equipped with the O2 monitor option). There are two procedures listed below for you to upgrade the NewLife with the 60601 compliant board. Procedure A specifies how to upgrade the board and components with one LED light or non- oxygen monitor concentrators. Procedure B will instruct the operator how to upgrade the concentrator to the current 60601 compliant standard for the 3-LED oxygen monitor concentrators.

<b>Kit Part Number</b>	<b>Main Board Included in Kit</b>	<b>Model</b>
KI608-4	CB200-4	NewLife 5L (230 V, 50 Hz)
KI608-3	CB200-3	NewLife 5L (120 V, 60 Hz)
KI608-2	CB200-2	NewLife 10L (230 V, 50 Hz)
KI608-1	CB200-1	NewLife 10L (120 V, 60 Hz)

*Table 1. Available Kit Options*

## **Tools Required:**

- Flat-Head Screwdriver
- Phillips-Head Screwdriver
- ESD electrostatic Protection
- Wire Cutters
- Power Drill with 0.093 inch drill bit
- Heat Gun (Procedure B)

Table 2. Parts Included with KI608

Part Number	Description	Qty Included
AL022-1	Alarm with Wire Harness	1
CB200-*	Main Circuit Board, programmed, (*see Table 1 for details)	1
CB196-1	O2 Board	1
WH145-2	LED Wire Harness	1
WH146-1	Power Switch Wire Harness	1
WH147-1	Main Wire Harness	1
SC177-1	Screws for Buzzer and O2 Board	4
HA006-1	Nylon Spacers for O2 Board	2
TW004-1	Tie Wrap	1
IL070-1	LED Housing	3
HA087-1	Lamp Retainers	6
21329212	Instruction Bulletin for Board Retrofit	1
LA439-1	O2 Label	1
LA190-1	Label Operating Pictogram	1
WH107-1	O2 Board wire harness	1
MI450-1	Heat Shrink 1.5" for circuit board and power switch	2
MI449-1	Heat Shrink 2" for hour meter	1

### Procedure A:

1. Switch off the unit and disconnect the power cord.
2. Remove the side panels with the flat head screwdriver.
3. Disconnect the main power 10-pin connector from the circuit board. See Figure 1. Main Wire Harness

Note : If working on the NewLife 10L 230V unit, the 2-pin compressor connector will need to be disconnected as well. This is located directly to the right of the main power 10-pin connector.

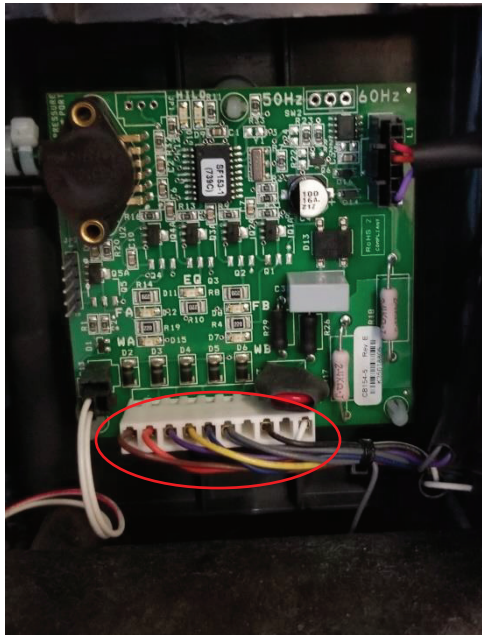


Figure 1. Main Wire Harness

4. Disconnect the alarm 6-pin connector from the circuit board. See Figure 2. Alarm Wire Harness

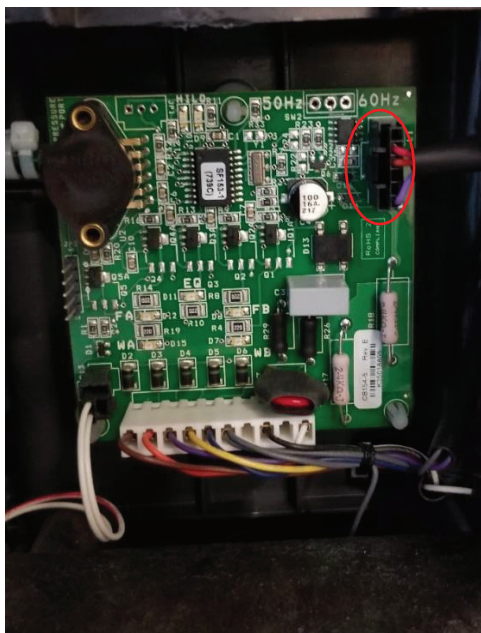
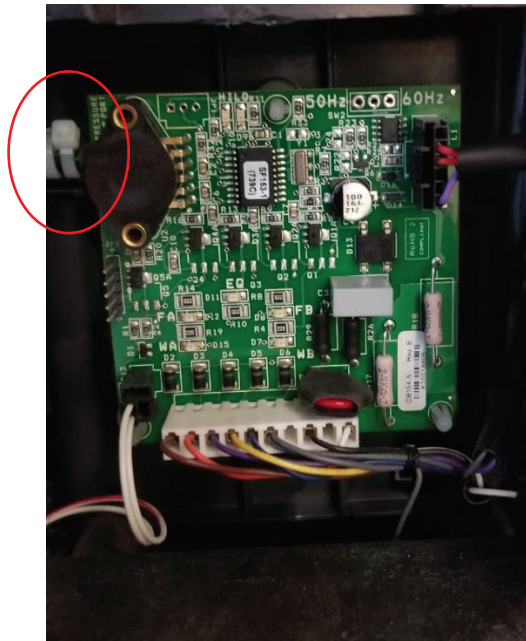


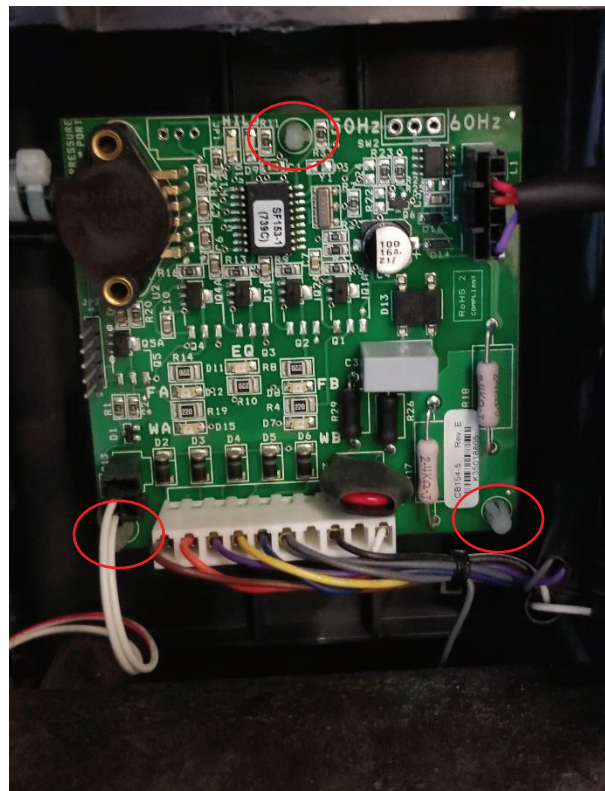
Figure 2. Alarm Wire Harness

5. Cut the tie-wrap at the circuit board pressure transducer and disconnect the green tube from the transducer. See Figure 3. Pressure Transducer Zip Tie



*Figure 3. Pressure Transducer Zip Tie*

6. Push in on the circuit board support tabs while you lift each area of the circuit board to remove circuit board from the control panel. See Figure 4. Board Supports



*Figure 4. Board Supports*

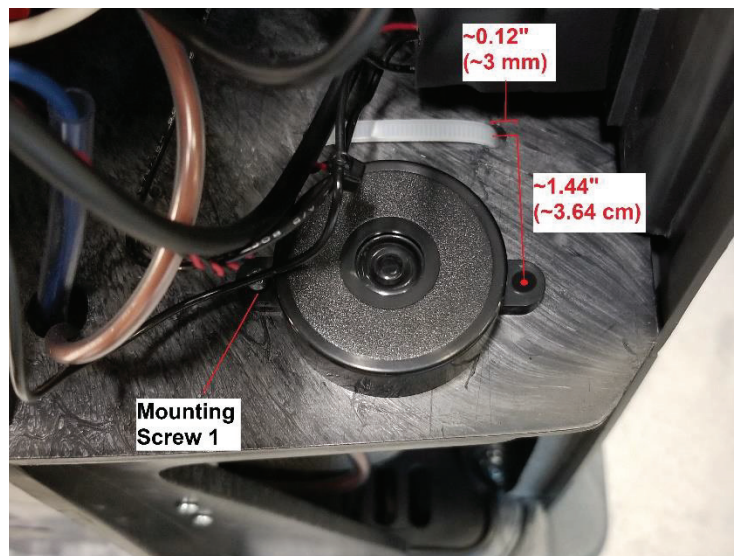


7. Remove main wire harness and O2 wire harness from hour meter, terminal block, valve block, EQ valve and fan board. Discard wire harness.
8. Remove and discard buzzer, 9 Volt battery, and 9 volt battery holder.
9. Remove and discard buzzer harness from the power switch.
10. Cut zip tie and move compressor capacitor out of the way to allow drilling of new alarm buzzer mounting holes.
11. Install alarm buzzer AL022-1 with one mounting screw in location 1 (SC177-1). This screw will be aligned with one of the existing holes used for the 9 Volt battery holder. See Figure 5. Alarm Mounting Hole.



*Figure 5. Alarm Mounting Hole*

12. Drill a second mounting hole in the case with a 0.093" drill bit. See Figure 6.

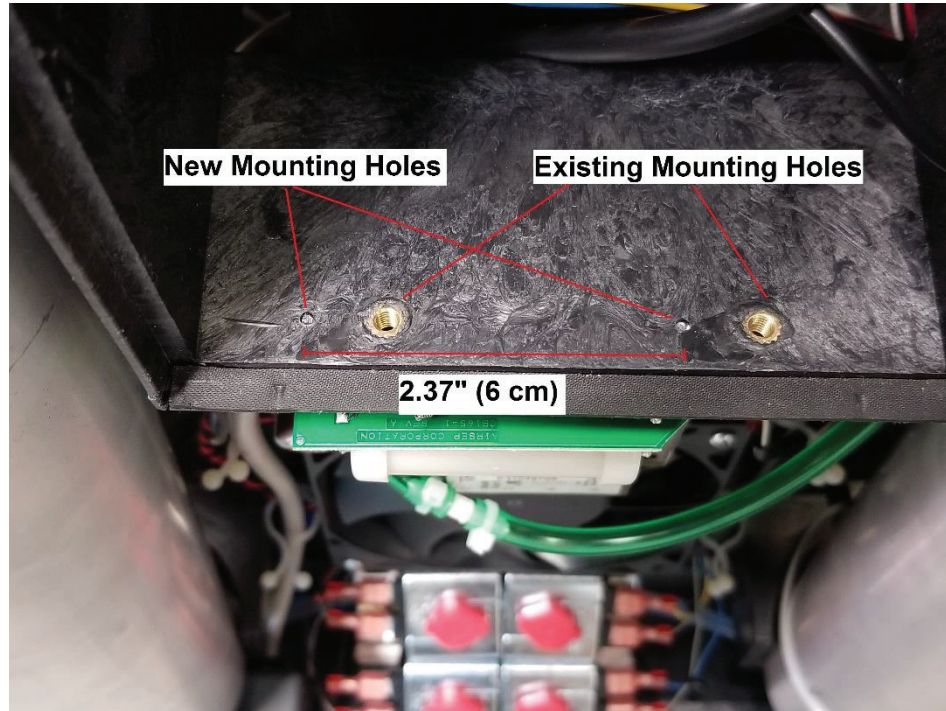


*Figure 6.*

13. Install second alarm buzzer mounting screw SC177-1 in the new mounting hole that was drilled in step 12.
14. Re-attach the capacitor with a new zip tie, TW004-1.

**NOTE:** For non-oxygen monitor units, skip steps 15-22 and proceed to step 23. For oxygen monitor units, complete steps 15-35.

15. Remove installed O2 monitor board and discard.
16. Hold EQ valve out of the way and drill two holes with a 0.093" drill bit for the O2 monitor board (CB196-1). The holes should be 2.37 inches (6 cm) apart and inline with the existing mounting holes. See Figure 7. New Board Mounting Holes



*Figure 7. New Board Mounting Holes*

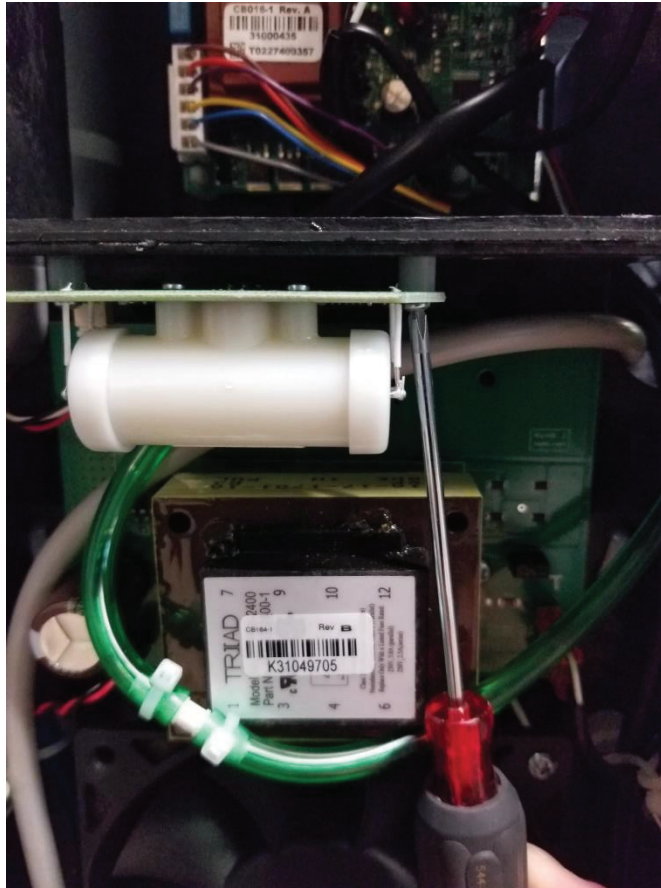
17. Attach wire harness (WH107-1) to O2 board at J1C1. See Figure 8.



*Figure 8.*



18. Install O2 board (CB196-1) onto superstructure with two screws (SC177-1) and two nylon spacers (HA006-1). Use ESD protection when handling boards. See Figure 9.



*Figure 9.*

19. Attach tubing to the O2 board. See Figure 10.



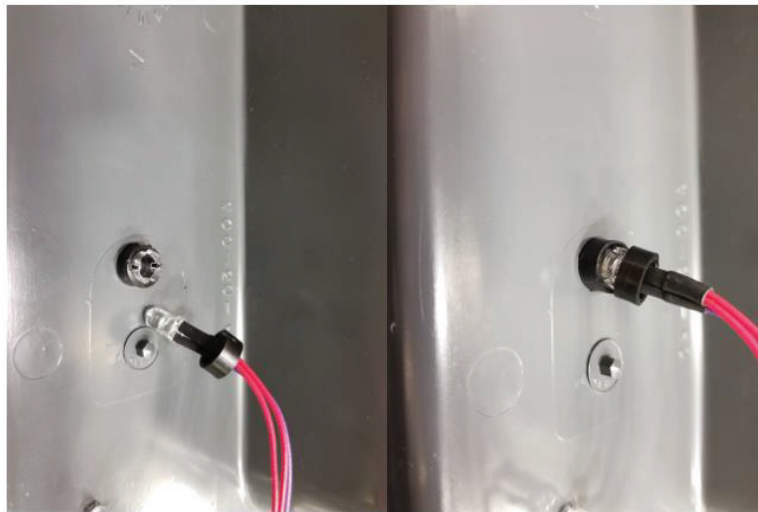
*Figure 10.*

20. Install IL070-1 and retainer HA087-1 into the control panel O2 Monitor hole. Add retainer (HA087-1) bevel side opposite the front panel. See Figure 11.



*Figure 11.*

21. Install the top LED wire harness (WH145-2) only, the O2 monitor light, into the hole and tuck the other lights behind the control panel. The O2 monitor light will have red and purple wiring. See Figure 12.
22. Add retainer HA087-1 (with the bevel side facing the front panel) onto the lens while holding LED into the housing. Pressing the two HA087-1 retainers together will lock them in place. The beveled sides of both retainers should be facing each other. See Figure 12.



*Figure 12.*

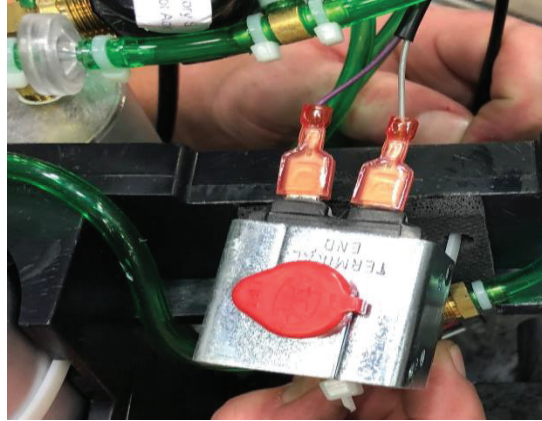
23. Cut zip tie off the new harnesses WH147-1 and WH146-1. You will now have two harnesses. See Figure 13.



*Figure 13.*

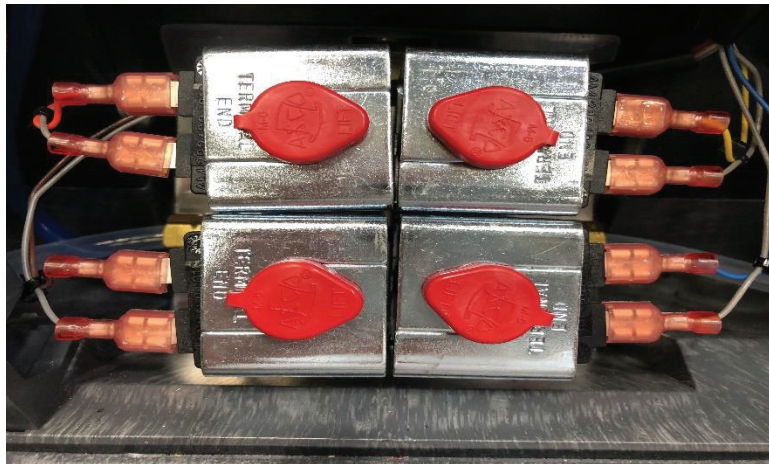


24. Install main harness by first installing the 6 pin and purple/gray harness and route through center hole by fan board up to the EQ Valve. See Figure 14.



*Figure 14.*

25. Install bottom of harness to valve block. See Figure 15.  
Left Terminal: Top: orange, gray | Bottom: brown, gray  
Right Terminal: Top: yellow, gray | Bottom: blue, gray



*Figure 15.*

26. Install the three pins (white terminal) through the center hole by the fan board to the man board.  
27. Install the small terminals (black and white terminals) to the fan board. Note: Ensure white on top, black on bottom for uniformity. See Figure 16.



*Figure 16.*

28. Install the terminals into the terminal block. See Figure 17.

Bottom Left (Neutral) : Blue and double white

Bottom Right (Positive) : Brown and double Black

Top Left (Neutral) : Single white and single white

Top Right (Positive) : Single black

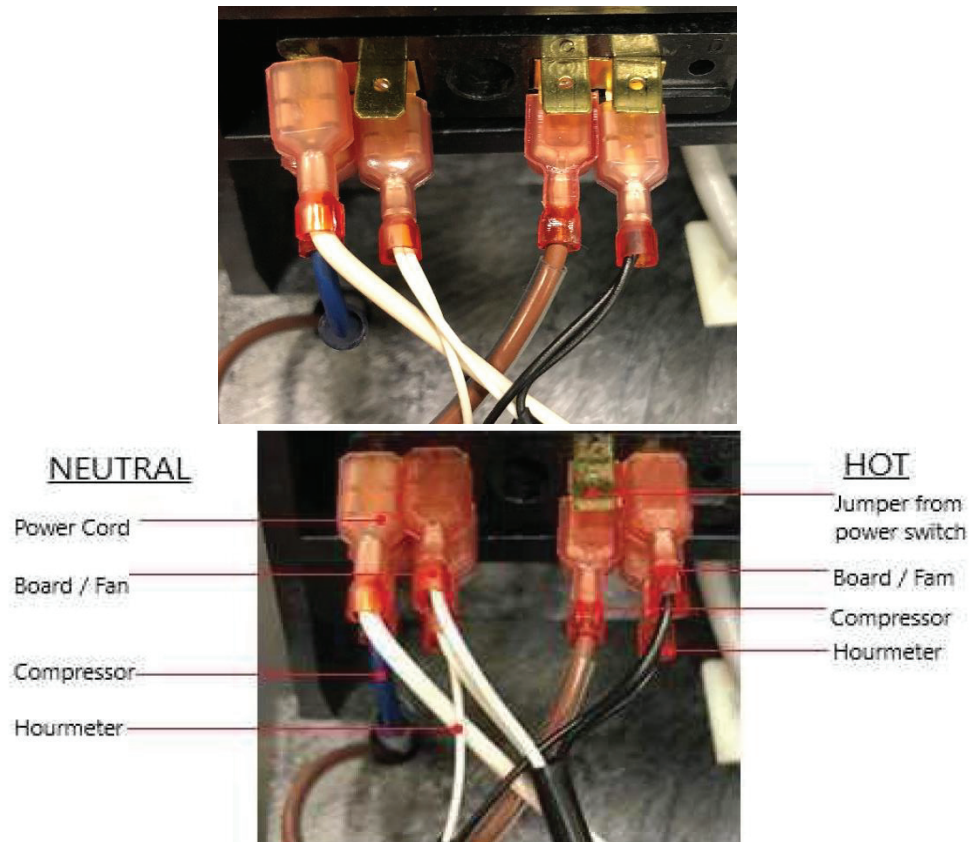


Figure 17.

29. Install main circuit board by inserting tube onto the pressure sensor and attach with zip tie. See Figure 18.

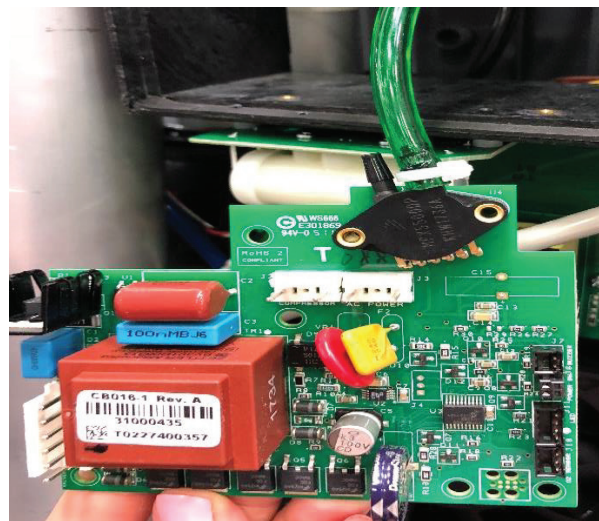
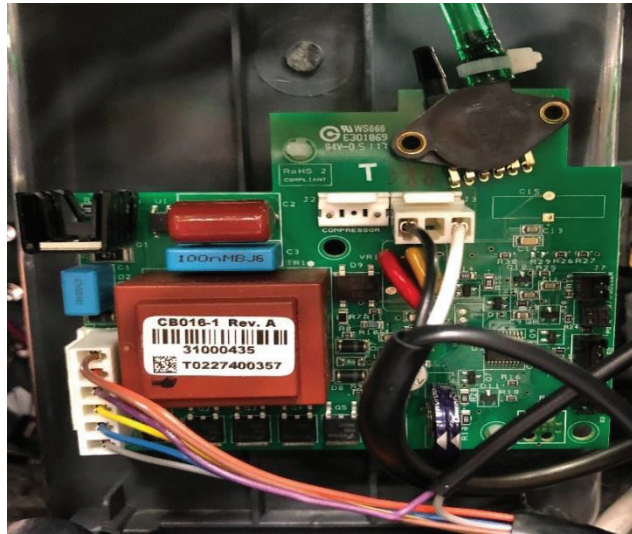
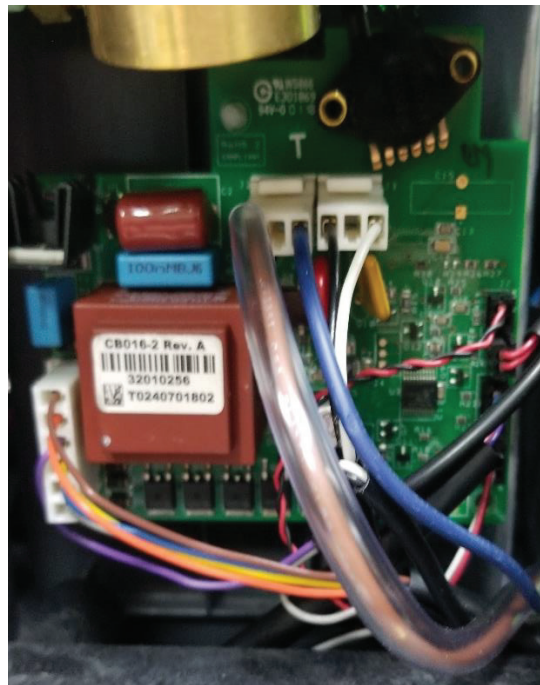


Figure 18.

30. Insert standoffs back on the board and connect to the front cabinet.
  31. Install 6 pin and 3 pins from harness onto the board. See Figure 19.A
- Note : If working on the NewLife 10L 230V unit, the 2-pin compressor connector will need to be installed as well. This is located directly to the left of the main power 3-pin connector. See Figure 19.B



*Figure 19.A*



*Figure 19.B*



32. Attach O2 harness J10, LED harness J11 and power switch harness J8 and buzzer J7 to the board. See Figure 20.



Figure 20.

33. For non-oxygen monitor units only, attach the alarm LEDs to the main board, but leave them tucked inside the front case panel (they are not needed to be installed in the front case panel if the unit was not originally equipped with the oxygen monitor feature).
34. Attach power switch jumper wire from the circuit breaker to the terminal block positive top left. See Figure 21.

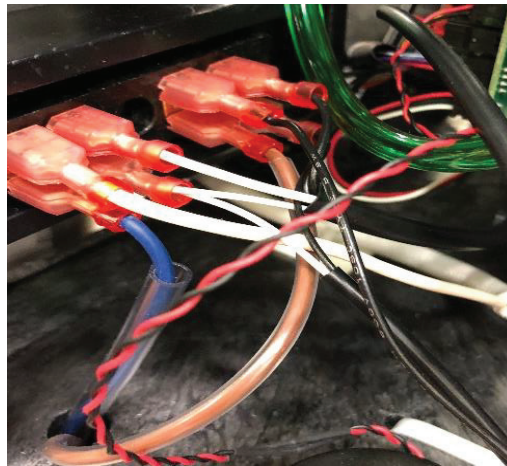


Figure 21.

35. Reattach case panels and test to ensure O2 monitor light works (if equipped) and purity/flow is to specifications.



## Procedure B

1. Follow instructions 1-19 from Procedure A.
2. Apply O<sub>2</sub> label and instruction label (LA439-1 and LA190-1) to the front cabinet.  
See Figure 22



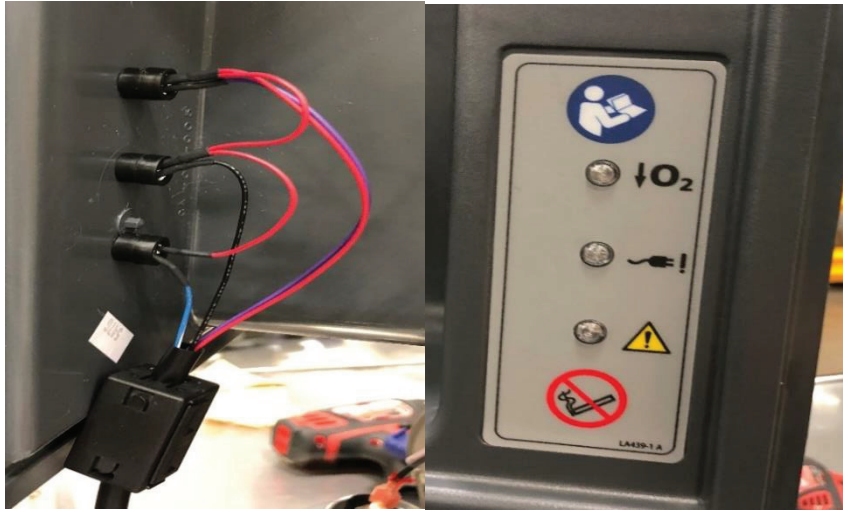
*Figure 22.*

3. Drill additional holes for other LED lights.
4. Add retainers HA087-1 (with the bevel side facing the front panel) onto each lens while holding LED into the housing. Pressing the two HA087-1 retainers together will lock them in place. The beveled sides of both retainers should be facing each other. See Figure 23



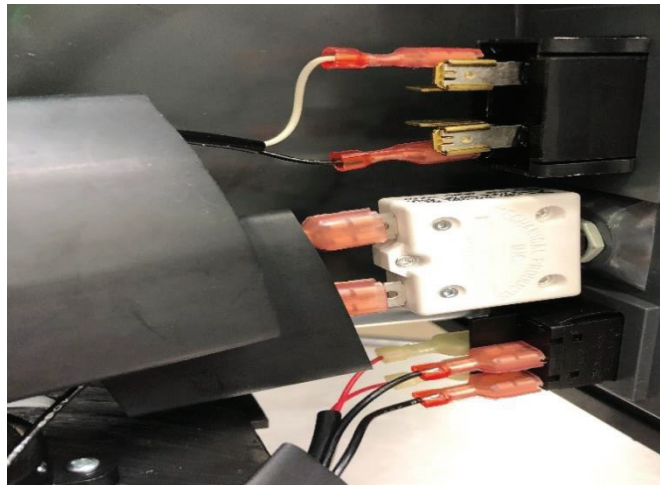
*Figure 23.*

5. Install LED Wire harness (WH145-2) into the holes. See Figure 24



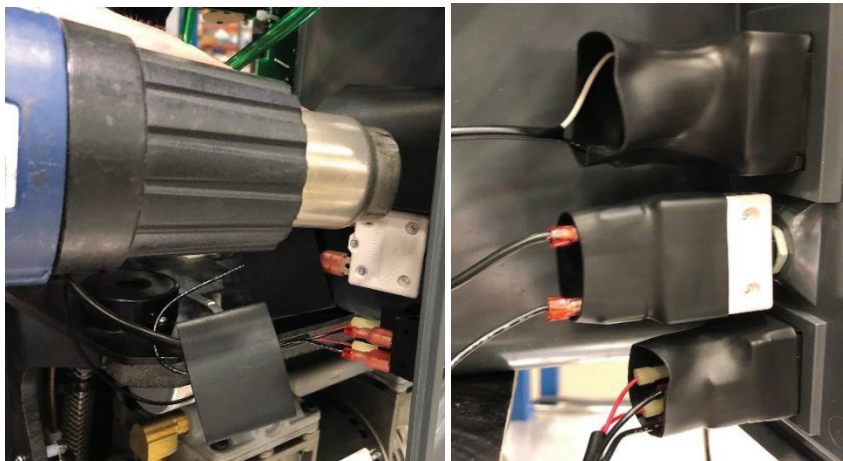
*Figure 24.*

6. Complete steps 23-34 from Procedure A.
7. Apply heat shrink to the hour meter, circuit breaker and power switch.
8. Combine power switch and control board into one heat shrink. See Figure 25



*Figure 25.*

9. Ensure connections are correct and then use the heat gun to complete the heat shrink starting closest to the cabinet then move backwards to the terminals. See Figure 26



*Figure 26.*

10. Reattach the panels and test to ensure the top light illuminates for low O<sub>2</sub>, middle light illuminates when there is a power failure, and the bottom light illuminates when there is high or low pressure. Also, ensure the purity/flow is to manufacturing specifications before boxing. See Figure 27



Figure 27.

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