



SERVICE BULLETIN

PN: 21329212

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MODEL: NewLife 5L and 10L Models

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

NOTES: 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 current standards that are compliant with IEC 60601, which are the 3-LED oxygen monitor concentrators.

Table 1. Available Kit Options

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

Tools Required:

- Flat-Head Screwdriver
- Phillips-Head Screwdriver
- ESD Electrostatic Protection
- Wire Cutters
- Power Drill with a 3/32" (2.4 mm) and 1/4" (6.35 mm) Drill Bit
- Heat Gun (Procedure B)

Table 2. Parts Included with KI608

Part Number	Description	Qty
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
TU055-040	O2 Board Tubing, 1/4" OD, 4" Long	1
TW001-4	4.0" Tie Wrap	6
TW004-1	14.5" 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
LA452-1	O2 Label w/ Operating Pictogram for Dual Flow / Air Outlet Units Only	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

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.

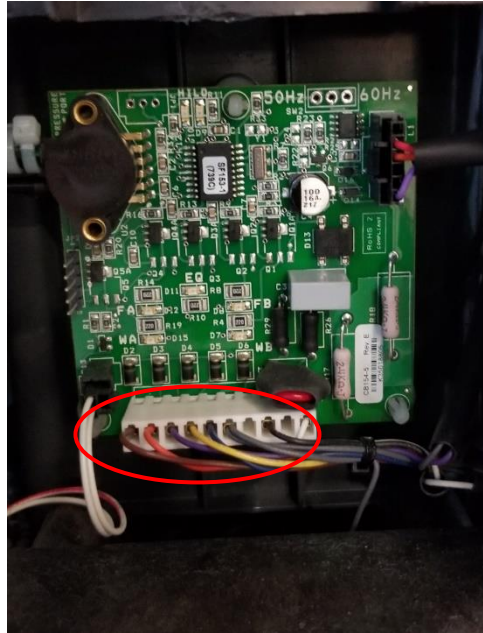


Figure 1. Main Wire Harness

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

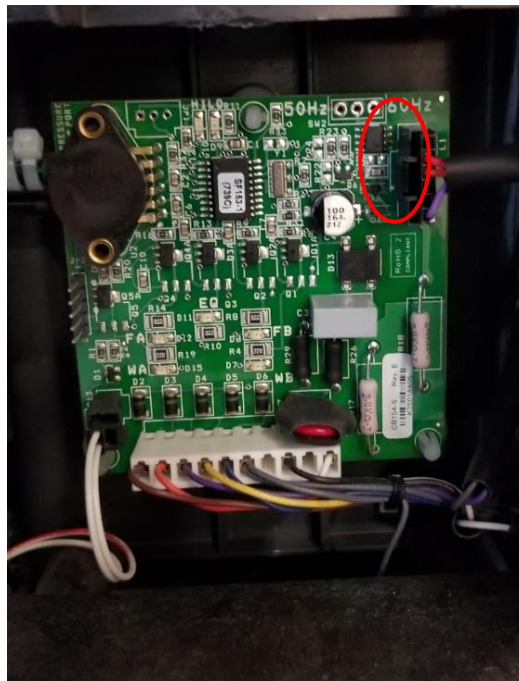


Figure 2. Alarm Wire Harness

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

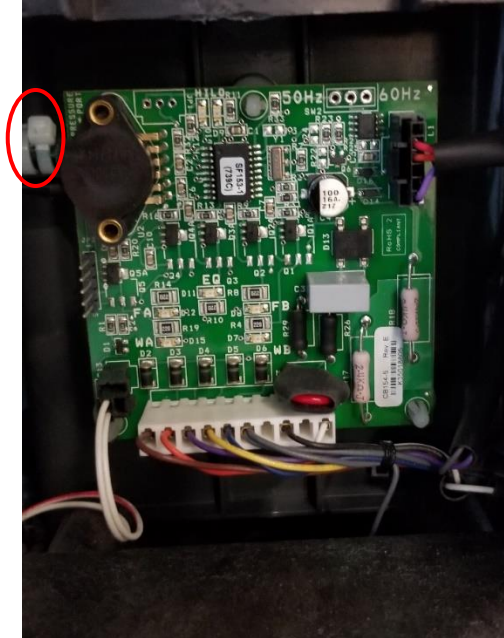


Figure 3. Pressure Transducer Zip Tie

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

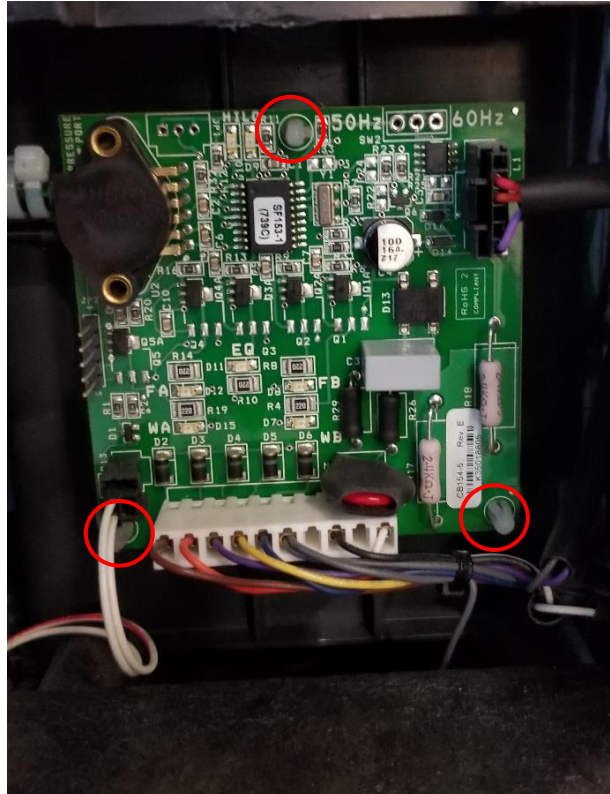


Figure 4. Board Supports

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

See Figure 5

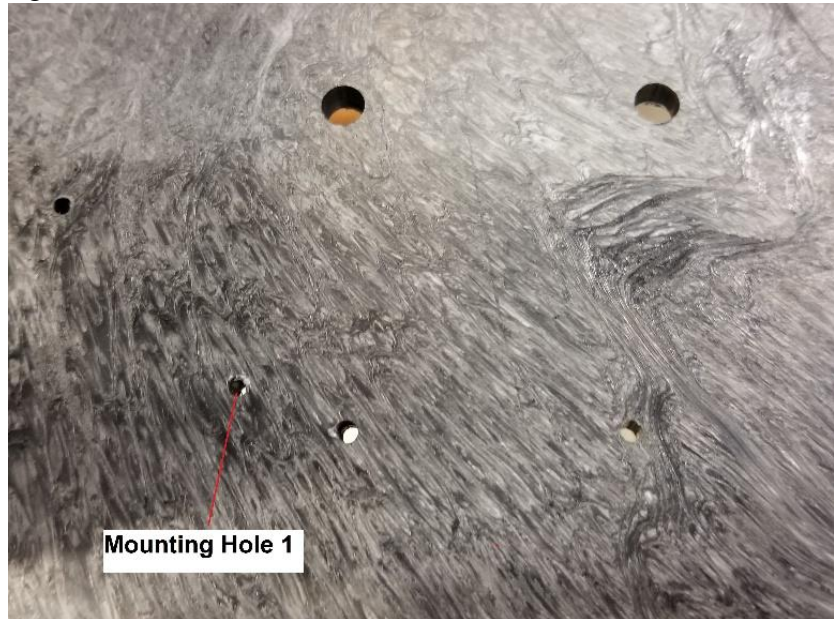


Figure 5. Alarm Mounting Hole

12. Drill a second mounting hole in the case with a 3/32" (2.4 mm) drill bit. See Figure 6

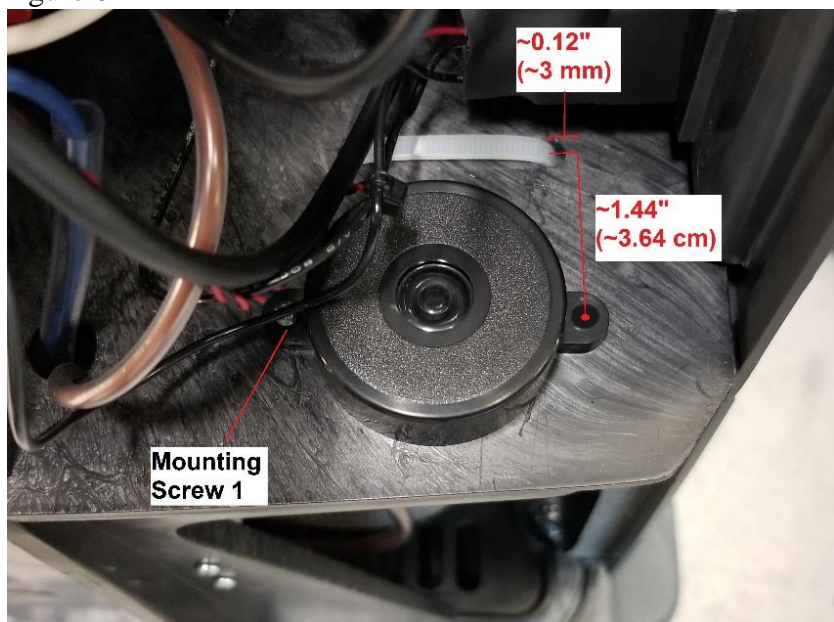


Figure 6. Second Mounting Hole Location

13. Install second alarm buzzer mounting screw (SC177-2) 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 monitoring units, complete Steps 15-35.

15. Remove installed O2 monitor board and discard.
16. Attach wire harness (WH107-1) to new O2 board (CB196-1) at J1C1. Attach tubing to nozzle on O2 board located closest to wire harness. See Figure 7



Figure 7. Connected Wire Harness and Tubing

17. Hold EQ valve out of the way and drill two holes with a 3/32" (2.4 mm) bit for the new O2 monitor board (CB196-1). The holes should be 2 3/8" (6 cm) apart and in line with the existing mounting holes. See Figure 8

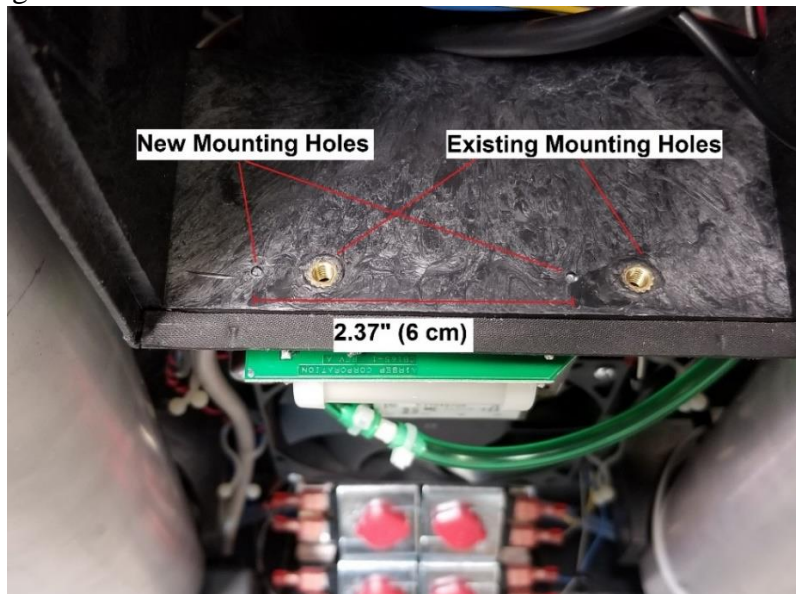


Figure 8. New Board Mounting Holes

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

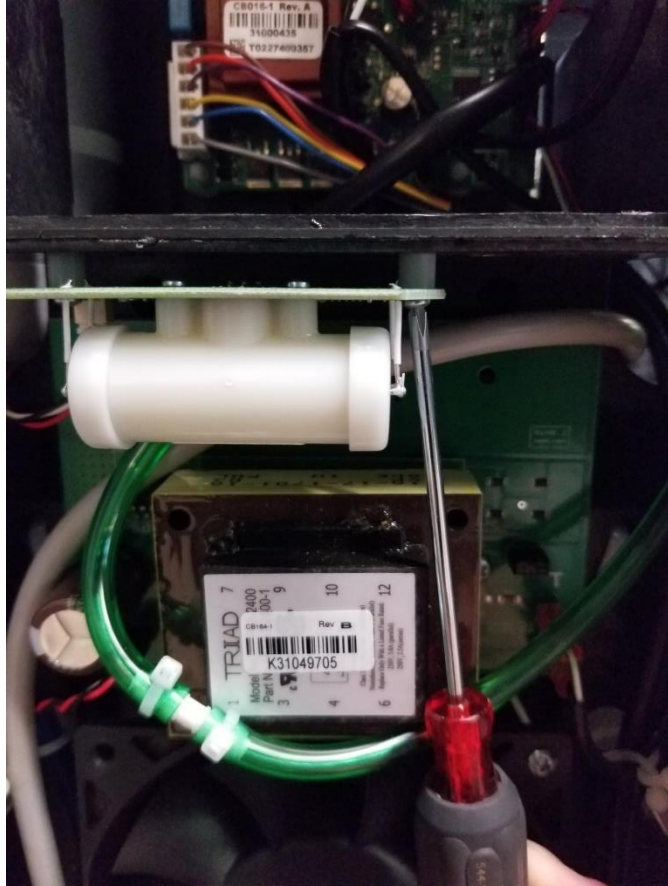


Figure 9. Attached O2 Monitoring Board

19. Install LED housing (IL070-1) and retainer (HA087-1) into the control panel O2 monitor hole. Add retainer (HA087-1) with the beveled side opposite of the front panel.

See Figure 10



Figure 10. Installed LED Housing

20. Install the top LED wire harness, which is the O2 monitor light (WH145-2), into the hole and tuck the other lights behind the control panel. The O2 monitor light will have red and purple wiring.

See Figure 11

21. Add a retainer (HA087-1), with the beveled side facing the front panel, onto the lens while holding LED into the housing. Pressing the two retainers together will lock them in place. The beveled sides of both retainers should be facing each other.

See Figure 11

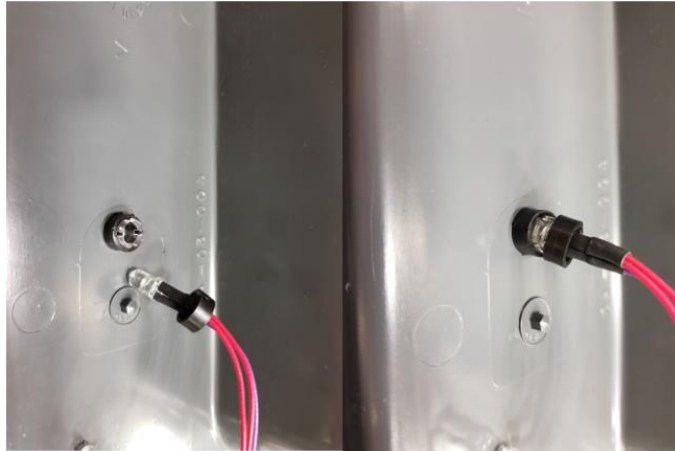


Figure 11. Installed O2 Monitor Light

22. Cut zip tie off the new harnesses (WH147-1 and WH146-1). You will now have two harnesses.

See Figure 12



Figure 12. Separated Wire Harnesses

23. Install main harness by first installing the 6-pin and purple/gray harness, route through center hole by fan board up to the EQ Valve.
See Figure 13

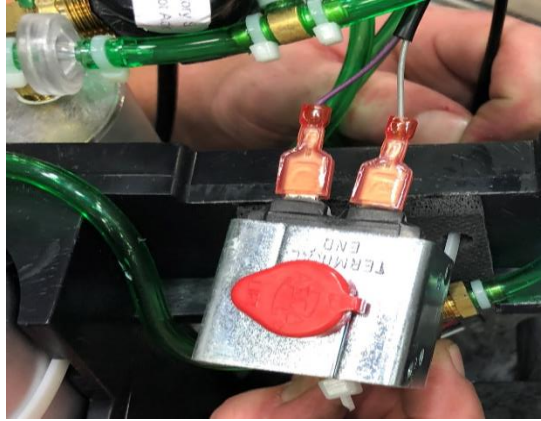


Figure 13. Harness Routed Through Center Hole

24. Install bottom of harness to valve block.
See Table 3 and Figure 14

Table 3. Wire Harness Color

	Left	Right
Top	Orange, Gray	Yellow, Gray
Bottom	Brown, Gray	Blue, Gray

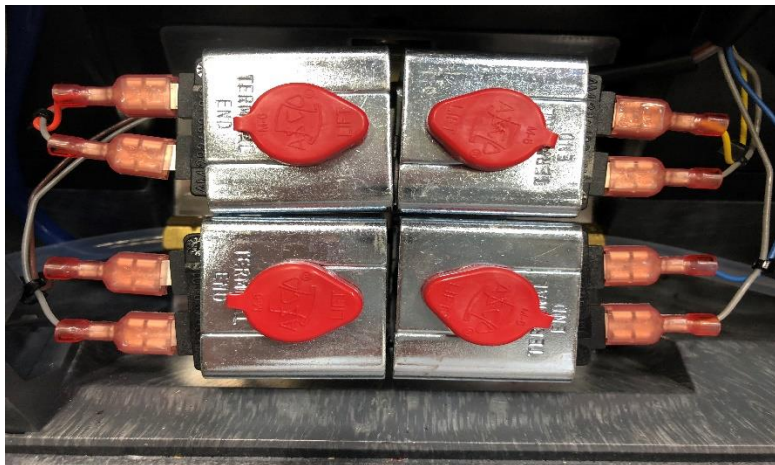


Figure 14. Valve Block

25. Install the three pins (white terminal) through the center hole by the fan board to the main board.

26. Install the small terminals (black and white terminals) to the fan (Elite) or fan board (Intensity).
 See Figure 15.A Elite units.
 See Figure 15.B Intensity 10 units.



Figure 15.A. Installed Terminals to Fan



Figure 15.B. Installed Terminals to Fan Board

27. Install the terminals into the terminal block.
 See Table 4.1 and Figure 16.A for Intensity 10 120V units.
 See Table 4.2 and Figure 16.B for Intensity 10 220V units.
 See Table 4.3 and Figure 16.C for Elite 120V units.
 See Table 4.4 and Figure 16.D for Elite 230V units.

Table 4.1. Intensity 10 120V Terminal Wires and Colors

	Left - Neutral		Right - Positive	
Top	Single White	Single White	Single Black	Single Black
Bottom	Single Blue	Double White	Single Brown	Double Black



Figure 16.A. Intensity 10 120V Terminal Wires

Table 4.2. Intensity 10 230V Terminal Wires and Colors

	Left – Neutral		Right - Positive	
Top	Single Blue	Single White	Single Black	Single Black
Bottom	N/A	Double White	N/A	Double Black



Figure 17.6. Intensity 10 230V Terminal Wires

Table 4.3. Elite 120V Terminal Wires and Colors

	Left - Neutral		Right - Positive	
Top	Single White	Single White	Single Black	Single Black
Bottom	Single Blue	Double White	Single Brown	Double Black

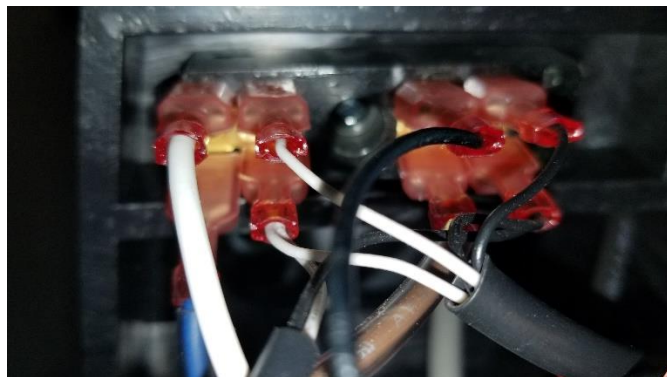


Figure 17.6. Elite 120V Terminal Wires

Table 4.4. Elite 230V Terminal Wires and Colors

	Left – Neutral		Right - Positive	
Top	Single Blue	Single White	Single Black	Single Black
Bottom	Single Blue	Double White	Single Brown	Double Black

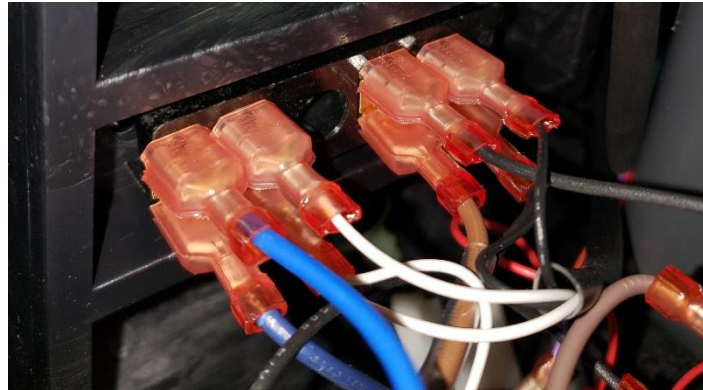


Figure 17.6. Elite 230V Terminal Wires

28. Install main circuit board by inserting tube onto the pressure sensor and attach with zip tie.
See Figure 17

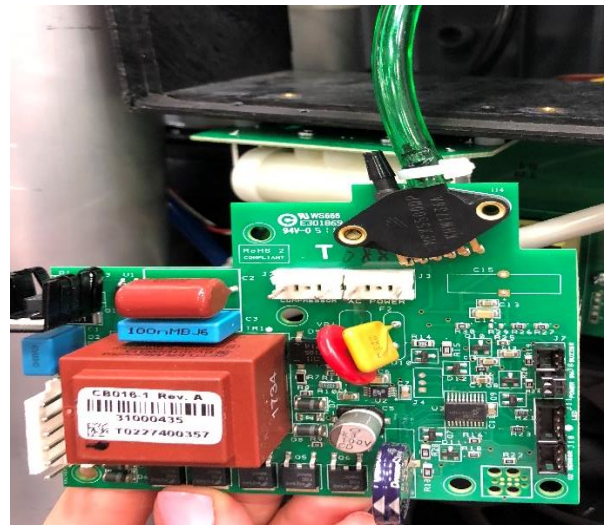


Figure 17. Attached Tubing to Pressure Sensor

29. Insert standoffs back on the board and connect to the front cabinet.

30. Install 6-pin and 3-pin from harness onto the board.
See Figure 18.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 18.B



Figure 18.A. Main Board



Figure 18.B. Intensity 10 230V i Board with Compressor Connector

31. Attach O2 harness to J10, LED harness to J11, power switch harness to J8, and buzzer J7 to the board.
See Figure 19



Figure 19. Main Board with Attached Harnesses

32. For non-oxygen monitor units attach the alarm LEDs to the main board but leave them tucked inside the front case panel (they do not need to be installed in the front case panel if the unit was not originally equipped with the oxygen monitor feature).

33. Attach the power switch jumper wire from the circuit breaker to the terminal block.

See Table 5 and Figure 20

Table 5. Power Switch Wiring

	Left – Positive	Right - Neutral
Top	Single Red. Wire from circuit board location J8.	Single Black. Wire from circuit breaker.
Bottom	Single Red. Wire from circuit board location J8.	Single Black. Wire from terminal block.

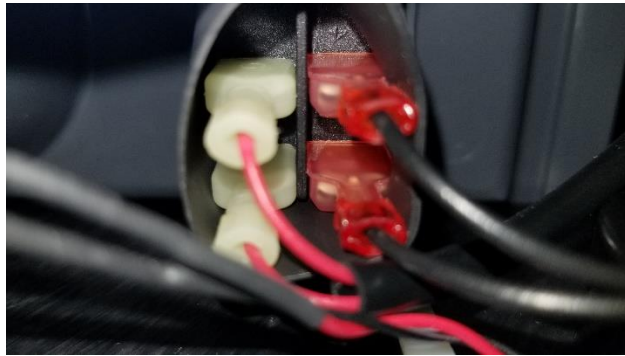


Figure 20. Attached Power Switch Wire

34. Re-attach case panels and test to ensure O2 monitor light works (if equipped) and purity / flow meets manufacturing specifications.

Procedure B

1. Follow instructions 1-19 from Procedure A.
2. Apply O2 label and instruction label to the front cabinet.

Note:

- For a Single Flow unit use LA439-1 and LA190-1 only.
- For a Dual Flow or Air Outlet unit use LA452-1 only.

See Figure 21.A for applied labels to a Single Flow unit.

See Figure 21.B for applied labels to a Dual Flow or Air Outlet unit.



Figure 21.A. Single Flow Front Panel with Labels



Figure 21.B. Dual Flow Front Panel with Label

3. Drill additional holes for the other LED lights using a 1/4" (6.35 mm) drill bit.

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 retainers together will lock them in place. The beveled sides of both retainers should be facing each other.

See Figure 23



Figure 22. Three LED Housing

5. Install LED wire harness (WH145-2) into the holes.

See Figure 24

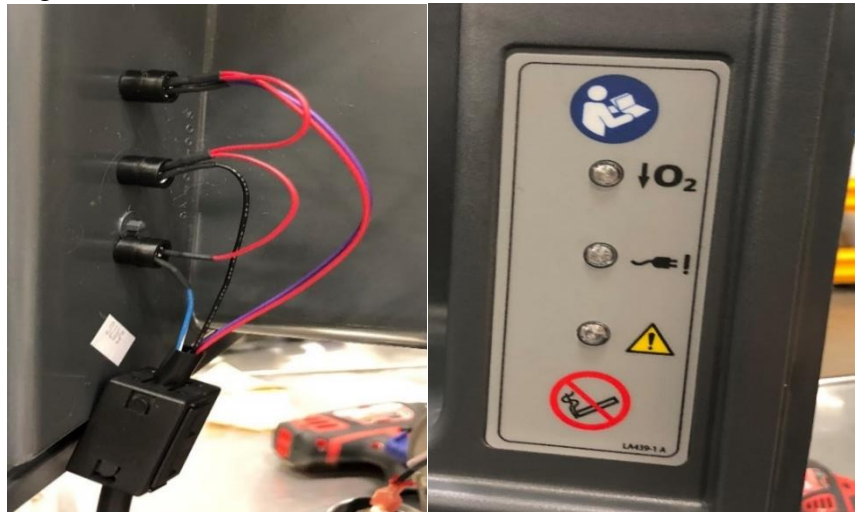


Figure 23. Installed LED Lights

6. Complete Steps 22-23 from Procedure A.
7. Apply heat shrink to the hour meter, circuit breaker, and power switch.

- Combine power switch and control board into one heat shrink.
See Figure 24.

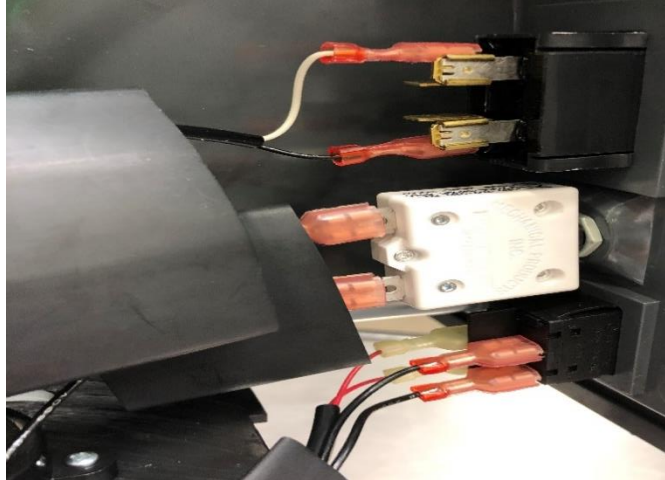


Figure 24. Combined Power Switch and Control Board

- 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 25

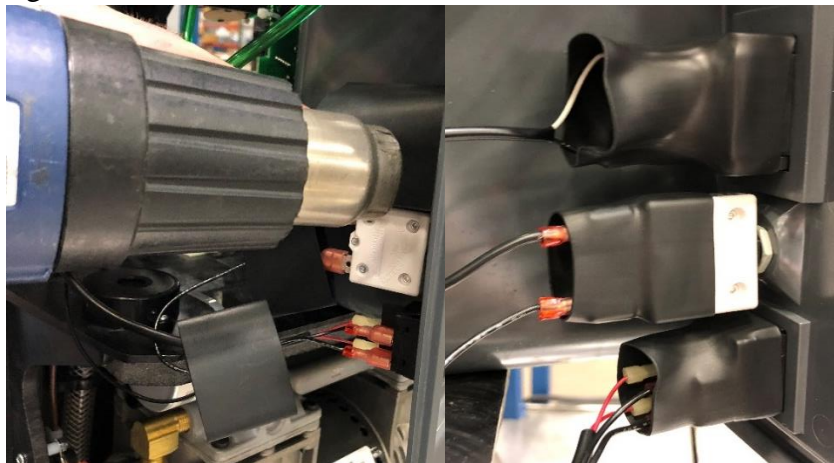


Figure 25. Heat Shrink on Connectors

10. Re-attach the panels and test to ensure the top light illuminates for low O₂, middle light illuminates when there is a power failure, and the bottom light illuminates when there is a high or low pressure. Also, ensure the purity / flow meets manufacturing specifications. See Figure 26



Figure 26. Illuminated Monitoring Lights

CONTACT: For technical questions or concerns, contact Technical Service:

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