

Thermo Scientific Orion 24 VAC Air Pump Assembly Upgrade Kit, Cat. No. 181173

General Information

A newer style air pump is now used on Thermo Scientific Orion 1800 series fluidic panels. Follow the instructions below to install the new pump assembly. The first set of instructions is for all 1800 series monitors except the 1818 oxygen scavenger monitor.

The air pump assembly upgrade kit, Cat. No. 181173, includes the air pump assembly with mounting bracket. The air intake line, attached to black barb fitting, now has a second double barbed fitting with an extra 3 cm piece of tubing attached. During calibration of the 1811EL and 1811LL monitors, this fitting is used to disconnect the air pump intake line.

24 VAC Air Pump Installation

1. Disconnect the main power to the monitor by turning off the breaker switch at the electronics case bottom.
2. Remove the old air pump assembly. Save the existing mounting screws for step 3. Most models have the pump on the fluidics panel and the wiring connects to the 24 volt terminal (left front terminal on the power board, top board behind the main keypad). If the air pump is not on the fluidics panel, refer to the instructions in the **115 VAC Air Pump Replacement** section.
3. Check the location of the reference electrode reservoir bottle clip. On 1800 series monitors made since 2004, the front side edge of this clip lines up with the edge of the fluid panel. On older monitors, this clip is indented by $\frac{1}{4}$ inch. For these older monitors, the enclosed PVC offset spacer must be used to move the clip forward so the new, larger air pump can be mounted without interference. Remove the reservoir bottle clip and use the existing screws to mount the spacer to the panel holes. The extra holes on the spacer should be toward the front. Use the enclosed two self tapping screws to mount the clip to the spacer.
4. Clip the new air pump assembly over the top of fluidics panel. Slide the air pump left until the mounting plate holes line up with the ones in the panel. Attach the pump using the existing screws.
5. Connect the intake line to the tee fitting on top of the 1811EL and 1811LL sodium monitors. Leave this tubing disconnected on all other 1800 series monitors. Connect the discharge line (coming from the white barbed air pump fitting) to the intake of the one way check valve.
6. Re-wire the power line for the air pump to the 24 volt power terminal (left front terminal on the power board, top board behind main keypad). Turn on the breaker to restore the power.

24 VAC Air Pump Installation for the 1818 Oxygen Scavenger Monitor

The 24 VAC air pump installation on the 1818 oxygen scavenger monitor requires different mounting plate, which is included with the new air pump, Cat. No. 181173.

1. Disconnect the main power to the monitor by turning off the breaker switch at the electronics case bottom.
2. Remove the old air pump assembly from the monitor, including the tubing and needle used for pressurizing the reference reservoir. Save the #10 mounting screws. Remove the wiring from the left front terminal of the top power board behind the main keypad.
3. Locate the spare plate shipped with the replacement air pump.
4. Remove the four small Phillips screws and the mounting plate from the new pump. Replace this plate with the spare plate, which is designed for mounting the pump on the 1818 fluidics panel. The plate should be mounted so the hook and intake/discharge air lines are on the same side.
5. Mount the new pump so the hook fits over the right top side of the fluidic panel. Secure the pump with two #10 screws to the existing mounting holes on the front side of the fluidics panel.
6. Remove the check valve and tubing connected to the needle from the old pump and install these on the discharge line coming from the white barb on the new pump. Reinstall the needle into the existing hole in the reference reservoir bottle
7. Connect the air pump wiring to the power board terminal, replace the keypad and turn on power to the monitor.

115 VAC Air Pump Replacement

The following instructions are for the replacement of the 115 VAC air pump, Cat. No. 181174, that was formerly used on 1811AO, 1820AO and 1810AO monitors. This pump was located inside the electronics enclosure behind the power rack, and was used only on monitors that are over 10 years old.

1. Disconnect the power to the monitor.
2. Remove the main keypad and locate the two white power wires of the old air pump, which connect onto the transformer behind the power board.
3. Cut the white wires near the transformer where they are terminated and then cap or tape the ends to prevent the possibility of an electrical hazard.
4. The old air pump, located behind the rack holding the power and PMA boards, can be left in place.
5. Mount the new air pump on the fluidics assembly by following the instructions in the **24 VAC Air Pump Replacement** section.
6. Connect the new air pump to the two lug terminal strip on the left front of the power board, which is the 24 VAC power supply.

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