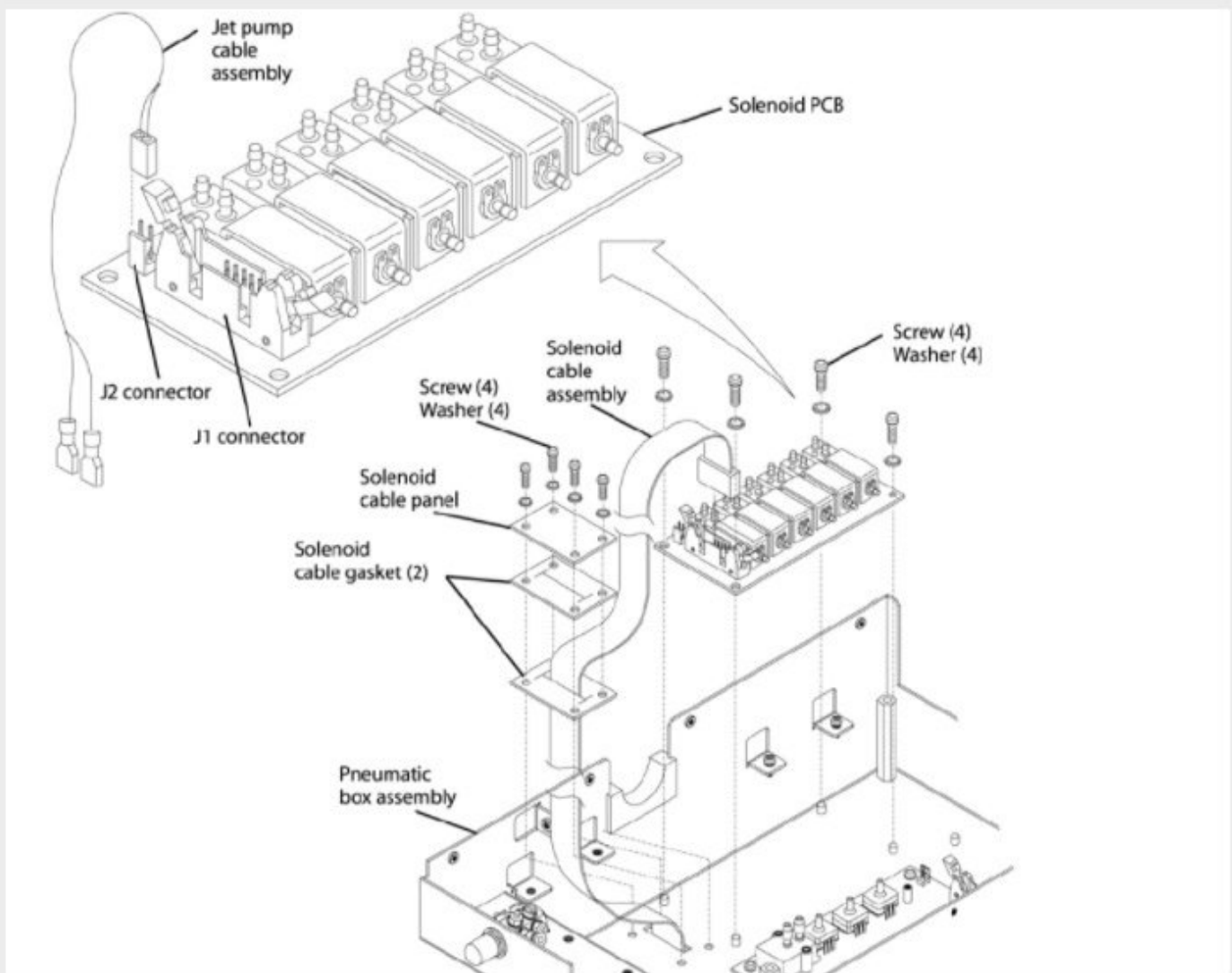




# Newport e500 Solenoid PCB Disassembly

This guide will show how to replace the solenoid PCB in the Newport e500 ventilator.

Written By: Seth Aguilar



# INTRODUCTION

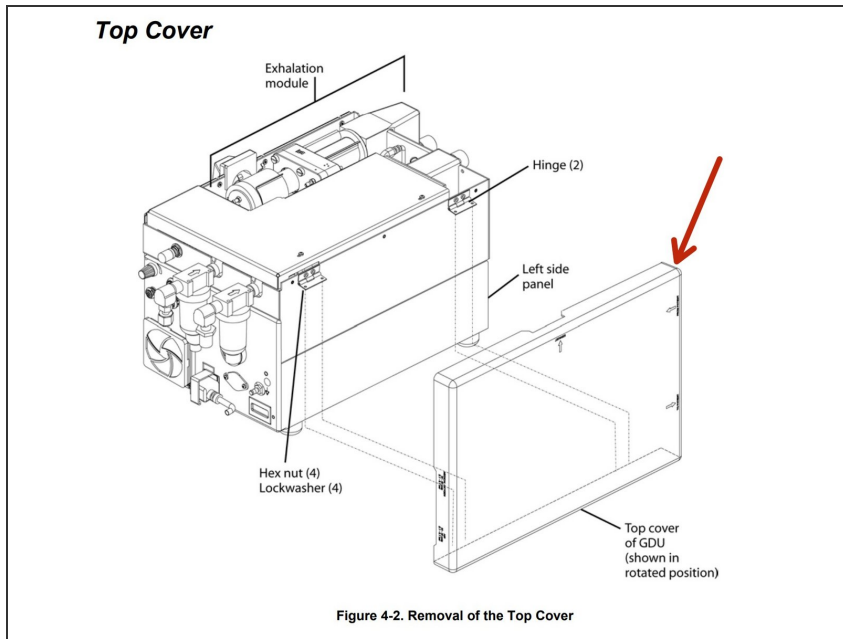
This guide will cover how to replace the solenoid PCB if it no longer operates as intended. Be sure to handle with care when unplugging cables and wires as to prevent any further damage and new replacements. There are some extra helpful tips that can be found in the [user manual](#) on page 67.



## TOOLS:

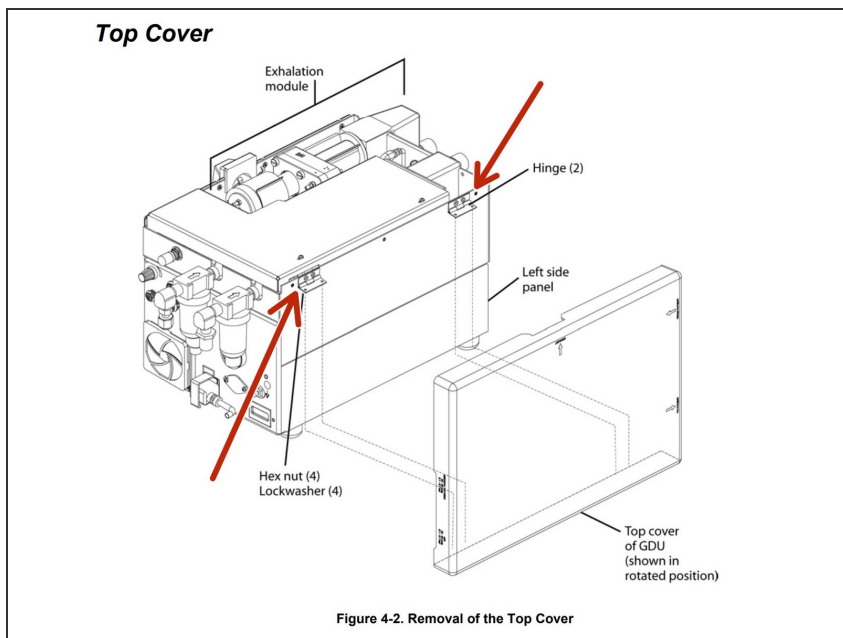
- [Torque Wrench](#) (1)
  - [Phillips #0 Screwdriver](#) (1)
-

## Step 1 — Newport e500 Top Cover Disassembly



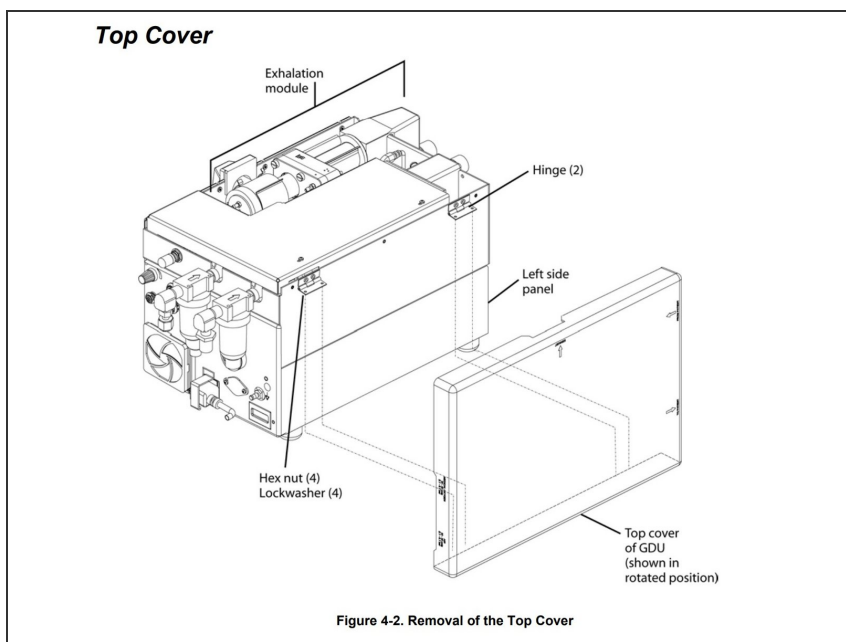
- Place device so that the top cover is facing you.
- Open the top cover.

## Step 2



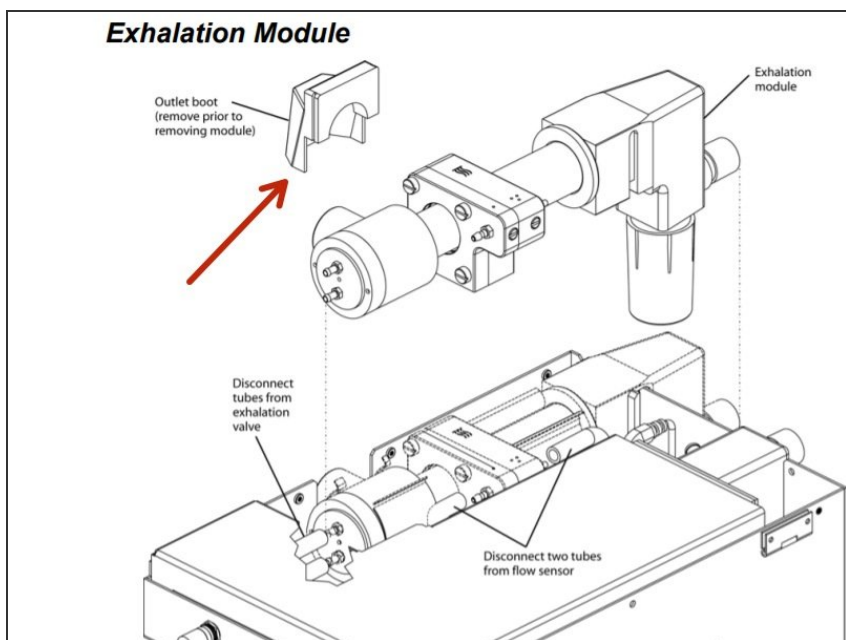
- Remove the four hex nuts and lock washers (two at each hinge) that secure the cover to the hinges on the left side of the pneumatic box.

## Step 3



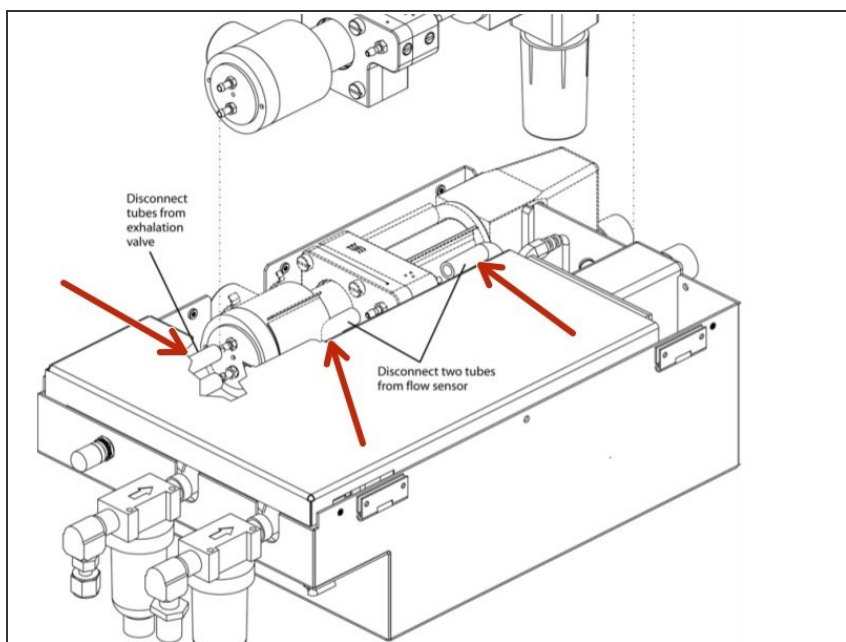
- Remove the cover and set aside. Retain hardware for re-assembly.

## Step 4 — Newport e500 Exhalation Module Disassembly



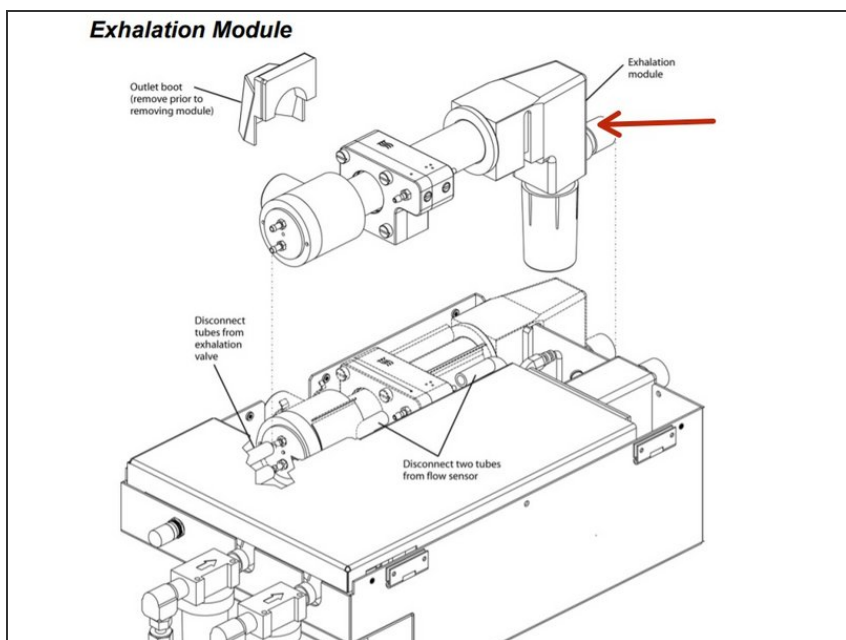
- Pull up and remove the flexible rubber exhalation outlet boot (push fit).

## Step 5



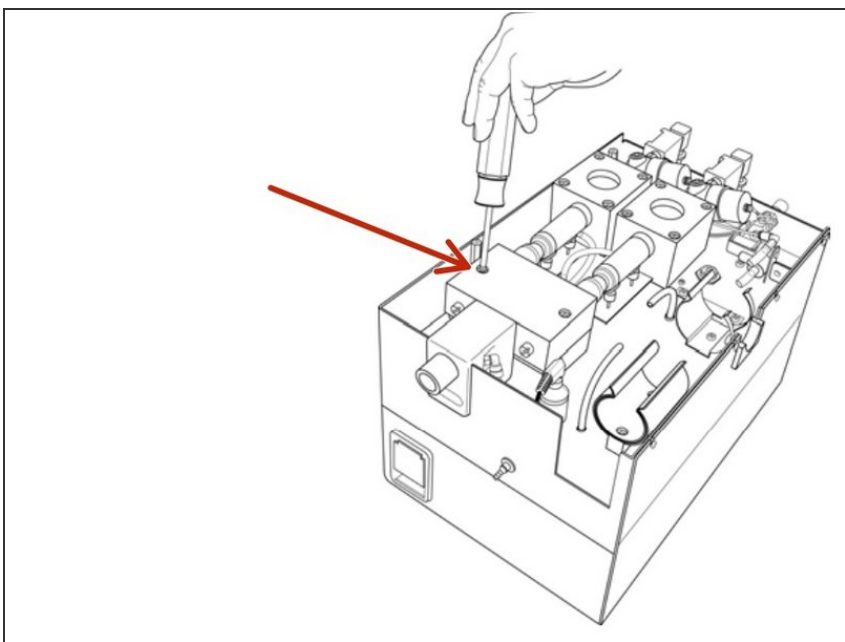
- Disconnect the tubes from both sides of the flow sensor and the two tubes from the exhalation valve.

## Step 6



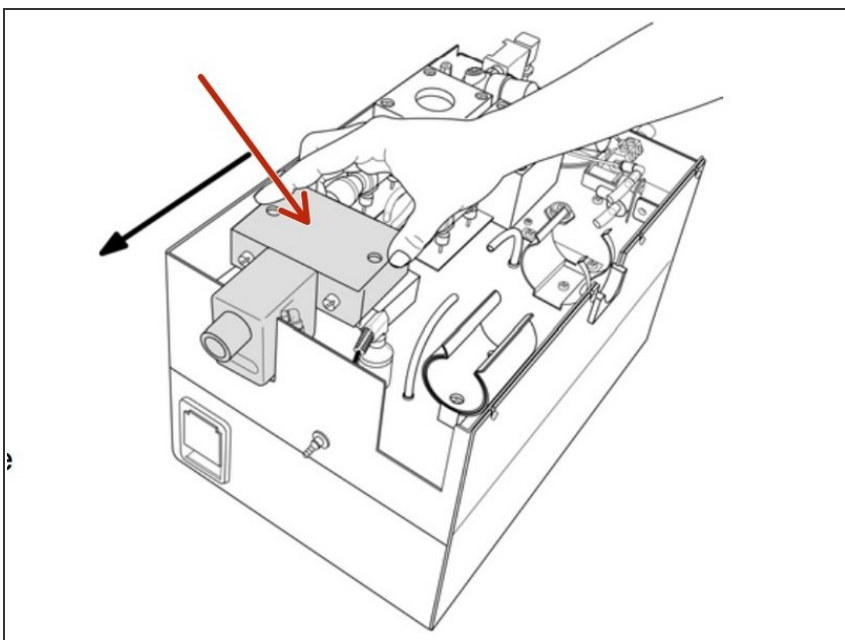
- Pull the exhalation module straight up to remove it from the GDU.

## Step 7 — Newport e500 Air and Oxygen Flow Sensors Disassembly



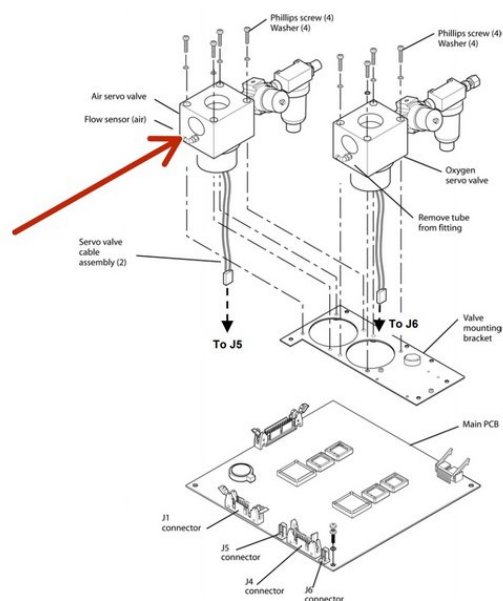
- Remove the 2 screws and washers securing the manifold/mixer assembly

## Step 8



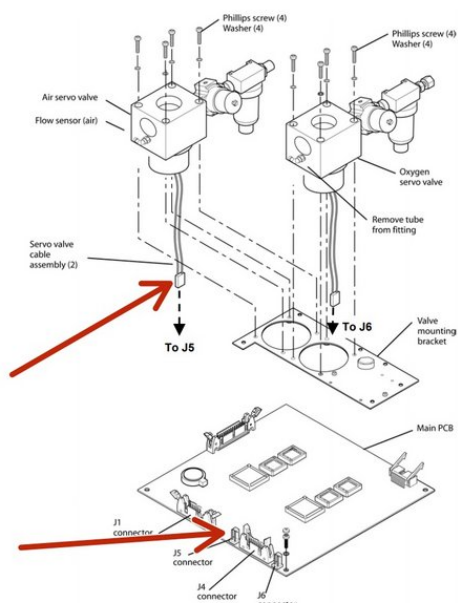
- Slide the manifold/mixer assembly forward to disengage the flow sensors

## Step 9



- Gently pull each flow sensor straight out from the servo valve, (the flow sensor push-fits into the servo valve port).

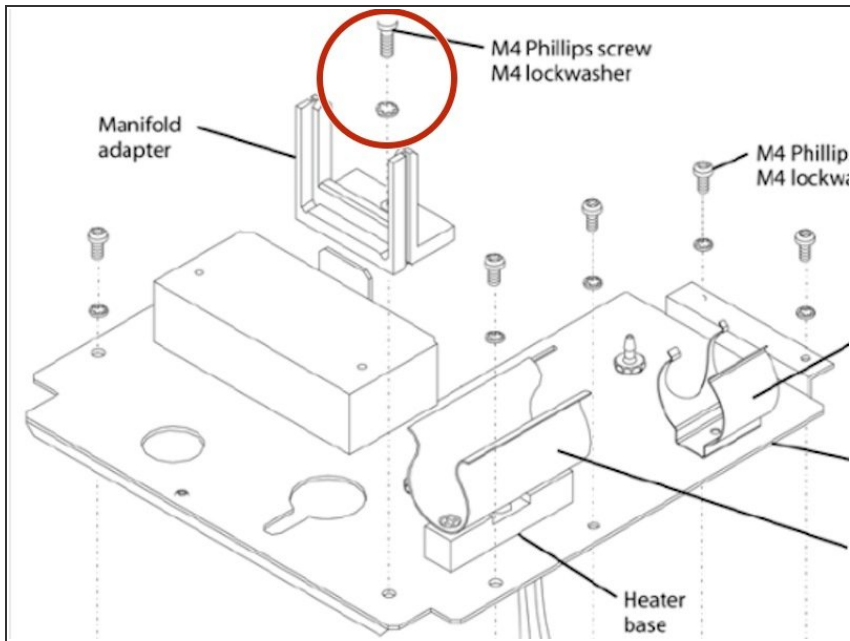
## Step 10



- Disconnect the flow sensor cable from its 10 pin connector at the underside of the flow sensor PCB and lift out the flow sensor.

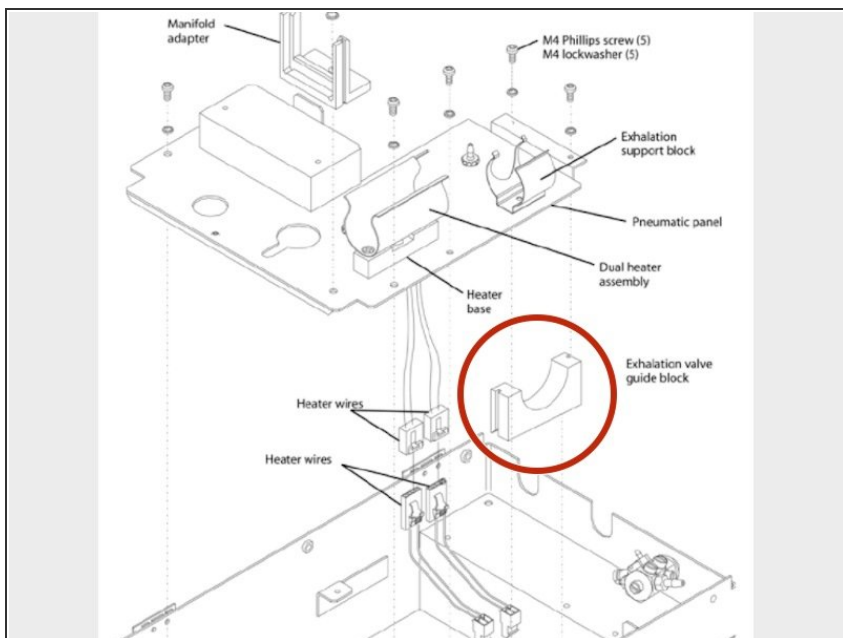


## Step 11 — Newport e500 Pneumatic Panel Disassembly



- Remove the screw and washer that secure the exhalation manifold support to the pneumatic panel.

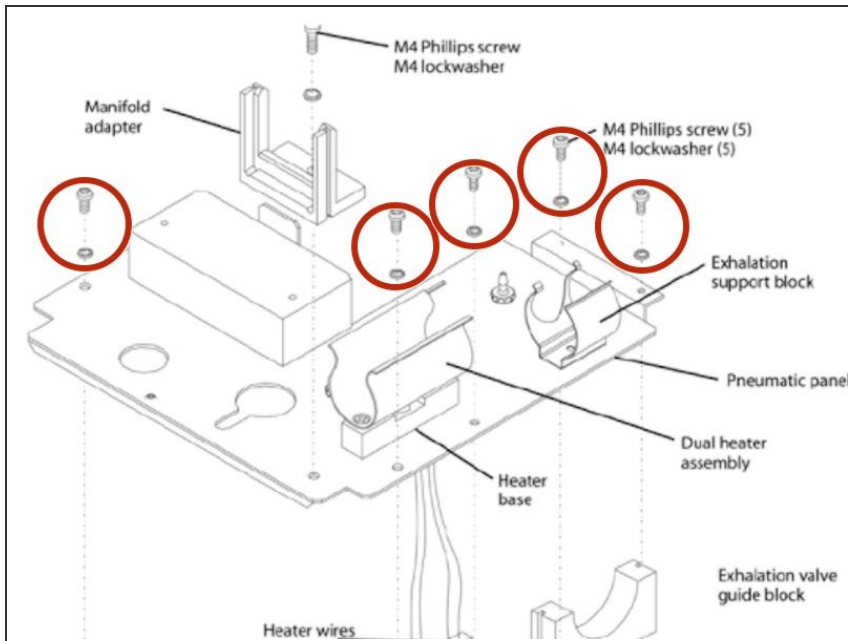
## Step 12



- Pull up on the exhalation valve guide block to remove it from the pneumatic box.

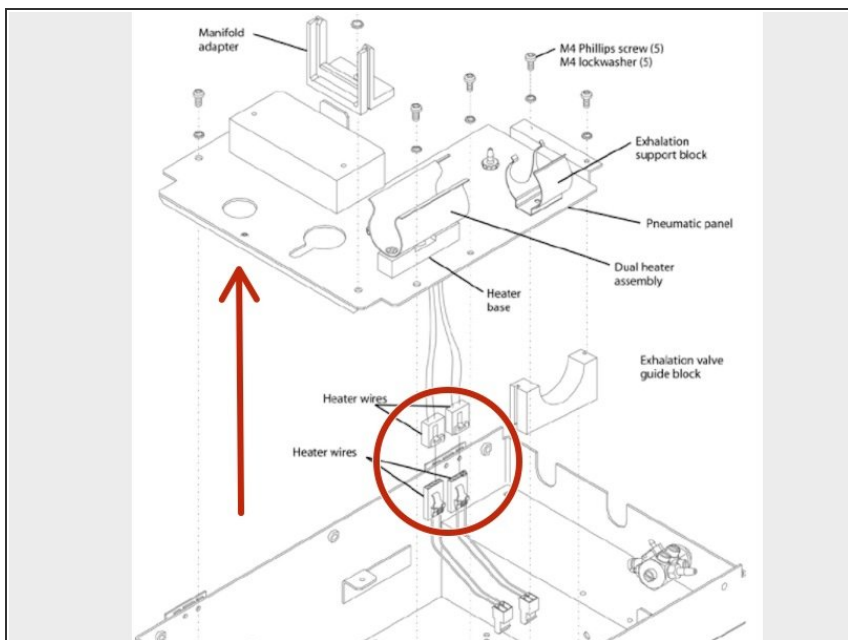


## Step 13



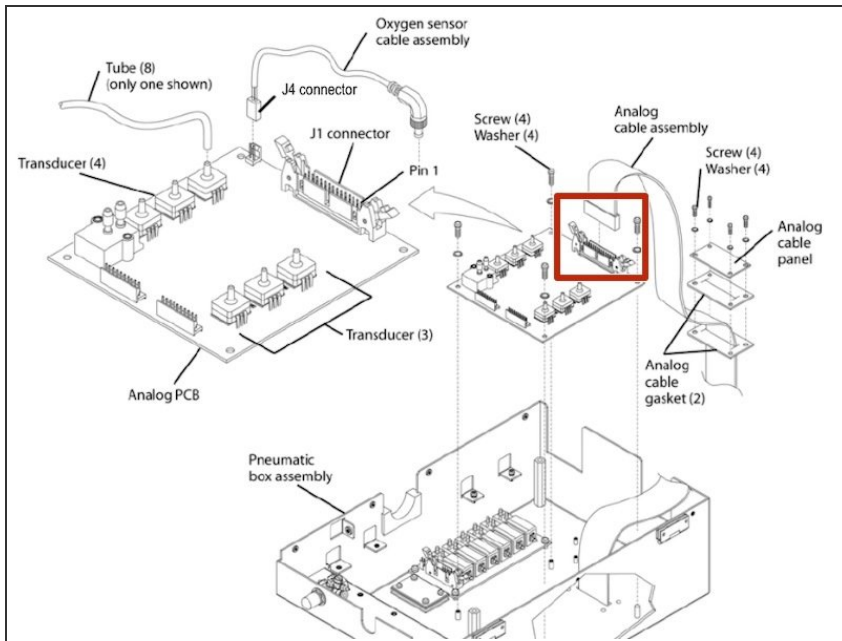
- Remove the standoff and five screws and washers that secure the pneumatic panel to the pneumatic box.

## Step 14



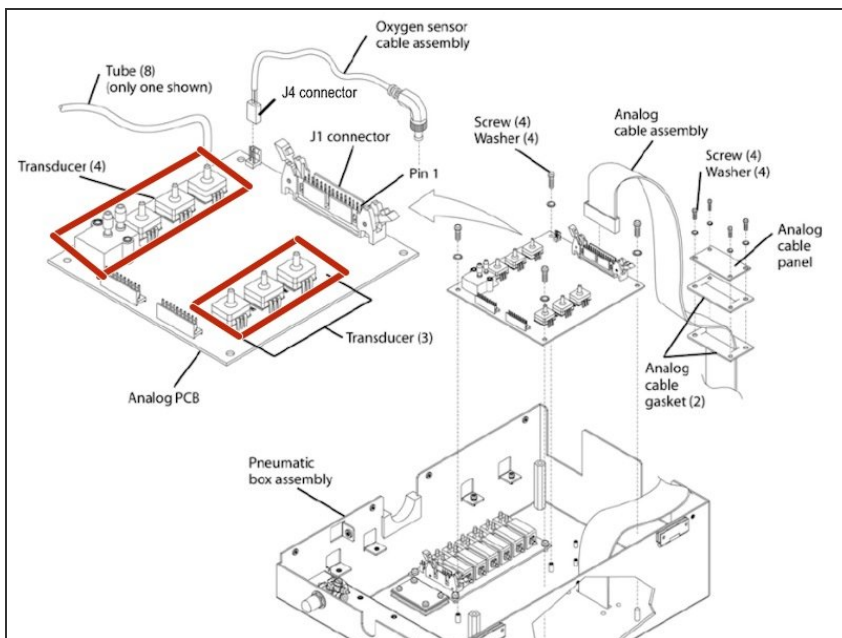
- Lift the pneumatic panel out of the box, and from the underside, detach all tubes and the heater wires that connect to the analog PCB.

## Step 15 — Newport e500 Analog PCB Disassembly



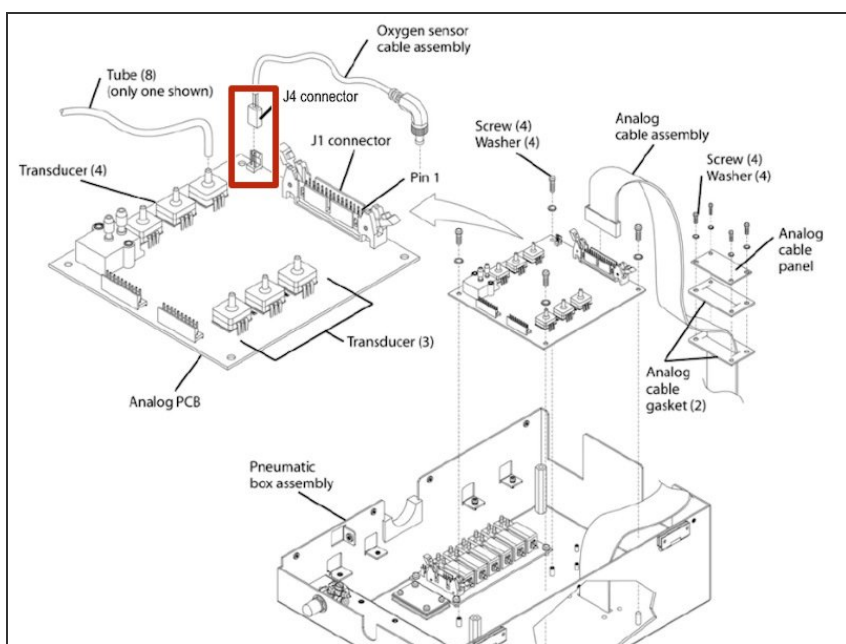
- Remove the cable from the connector J1 on the analog PCB.

## Step 16



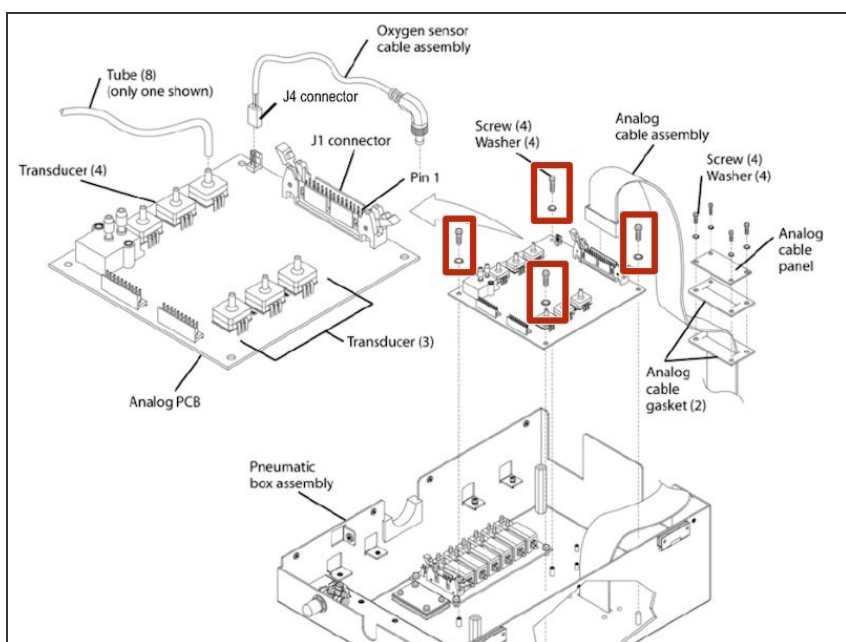
- Carefully pull the tubes from each of the seven transducers on the analog PCB. Take note of the tubing connections for re-assembly.

## Step 17



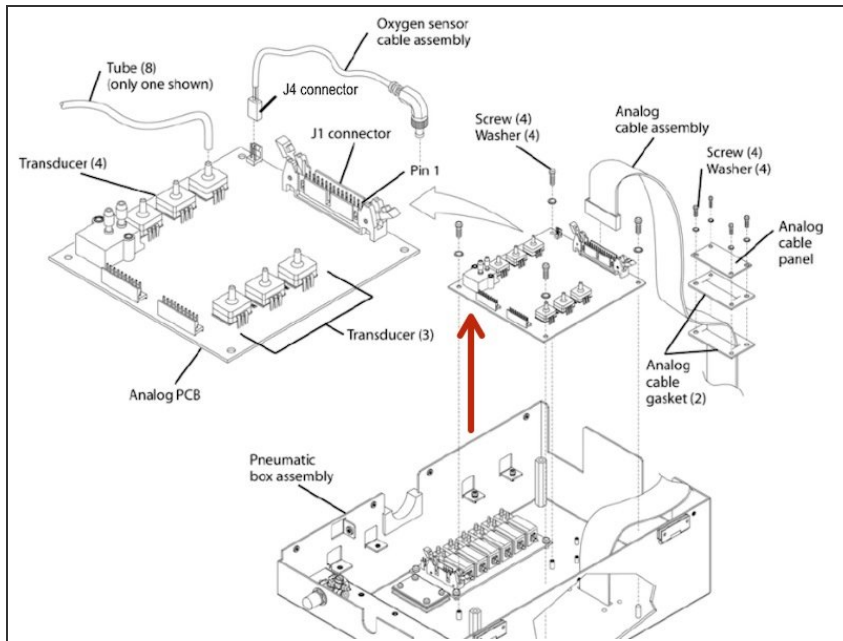
- Disconnect the J4 connector from the analog PCB.

## Step 18



- Remove the four screws and washers that hold the analog PCB to the pneumatic box assembly.

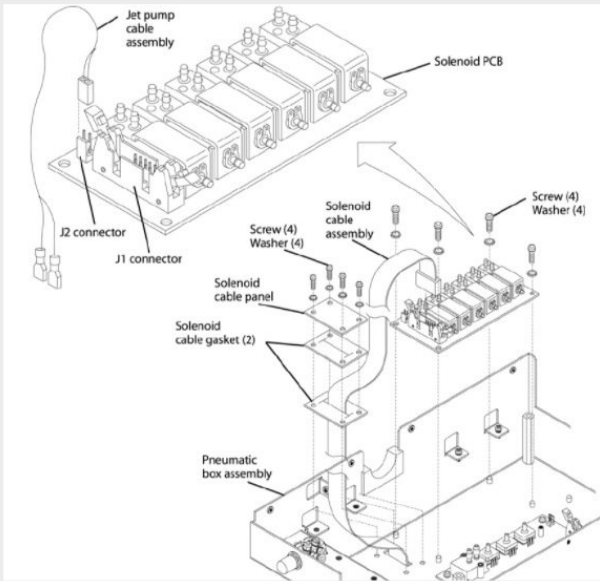
## Step 19



- Hold tubing aside and remove analog PCB from the box assembly.

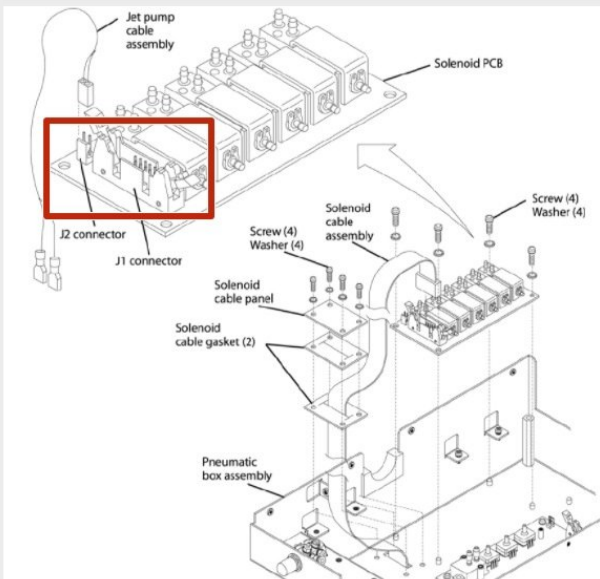
## Step 20 — Newport e500 Solenoid PCB Disassembly

- Carefully pull the tubes from their connections opposite the solenoid PCB (not directly from the solenoid PCB). Make note of the tubing connections for re-assembly.

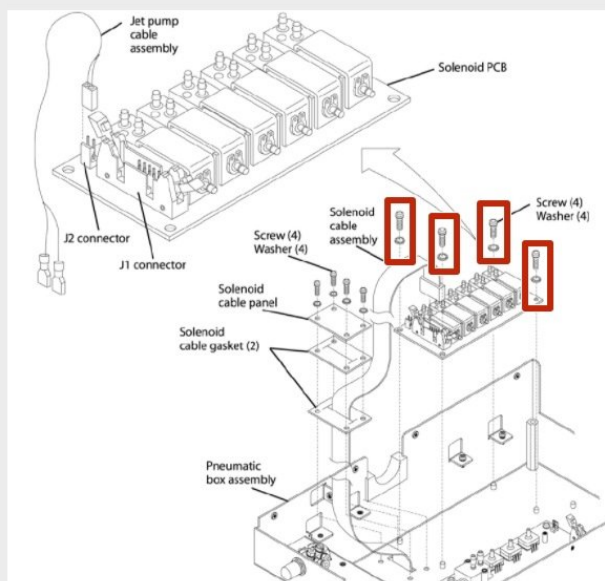


## Step 21

- Remove the cables from J1 and J2 on the solenoid PCB.

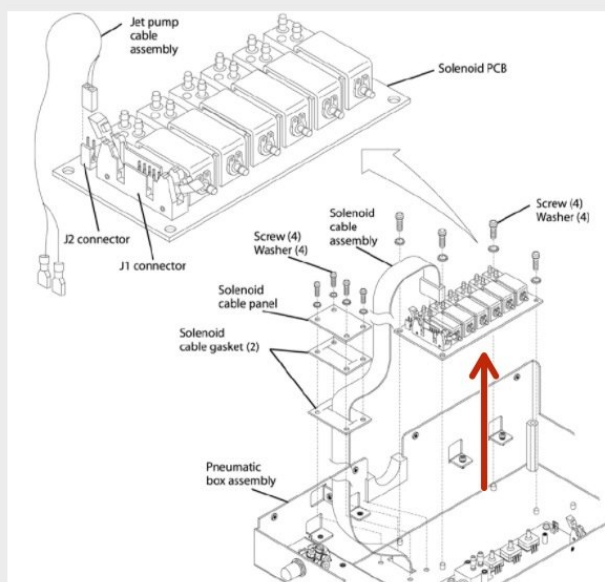


## Step 22



- Remove the four screws and washers that hold the solenoid PCB to the pneumatic box assembly.

## Step 23



- Hold the tubing aside and remove the solenoid PCB from the box assembly.

To reassemble your device, follow these instructions in reverse order.