



06-007D

7 DECEMBER 2007

IZS WITH REFERENCE FEEDBACK RETROFIT FOR MODEL M400E

I. PURPOSE:

This note describes how to install an Internal Zero/Span with reference feedback into an M400E analyzer that previously did not have one.

II. TOOLS:

Diagonal Cutters
2 Adjustable wrenches
Phillips head screwdriver

III. PARTS:

KIT000246

IV. PROCEDURE:

INSTALLING OZONE GENERATOR ASSEMBLY

1. Turn off the instrument and remove the power cord.
2. Locate 4 wiring harness connectors labeled CAL, IZS P3, LS P1 and O3 GEN. These are in the general vicinity of where the ozone generator will be installed as shown in Figure 1.
3. Remove the Ozone Generator Assembly from the KIT.
4. Attach connector "O3 GEN" to the heater/temperature sensor board on ozone tower. Route the connector "CAL" under the bracket and snap it into the bracket hole, see Figure 1, and connect the valve to this connector.
5. Install the ozone generator assembly as shown in Figure 1.
6. Route the wiring harness "IZS P3" and "LS P1" under the bracket and along the same path as the bench lamp power supply harness, "BL P1" (connected to optical bench).
7. To install the assembly to the chassis, line up the holes on the chassis with the two mounting holes on the ozone generator assembly bracket. See Figure 2.
8. Fasten the bracket down to the chassis using the two screws provided in the KIT.
9. Attach the connector, "IZS P3" to the reference detector on the ozone tower. Attach the lamp supply connector, "LS P1" to the lamp power supply board, mounted to bracket.

TUBING PLACEMENT AND ROUTING

10. Locate the 1/8" tubing coming from the sample inlet port going to the sample filter assembly.
11. Remove the tubing at the sample filter assembly to the sample inlet port.
12. Take the 1/8" tubing from the KIT and cut a piece long enough to run from Sample inlet port to the Normally Open (NO) side of the SAMPLE/CAL valve on the ozone generator assembly. Refer to FIGURE 3 & 4.
13. Ensure that the tubing is cut straight and that the tubing is properly installed to the valve. Refer to FIGURE 3 & 5
14. Take some of the 1/8" tubing from the KIT and cut a piece long enough to fasten to the (COM) side of the valve, ensure the tubing is cut straight and that the tubing is properly installed to the valve. Refer to FIGURE 4 and 5
15. Connect the opposite end of the tubing to the inlet side of the sample filter assembly on the front panel. Refer to FIGURE 4 and 5
16. Take the ¼ to 1/8 reducing bulkhead connector from the KIT and install it to the DRY AIR port on the rear panel. FIGURE 6

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17. Take the 1/8" tubing from the KIT and cut a piece long enough to run from the charcoal scrubber on the ozone generator to the bulkhead connector installed in step 11. Refer to FIGURE 6
18. Connect the tubing to the bulkhead connector and then connect the opposite end of the tubing to the charcoal scrubber. Refer to FIGURE 6
19. Remove the 1/4" tubing on the outlet side of the flow meter, follow the tubing and remove the control orifice housing assembly that is located on the pump leaving the 90° brass elbow on the pump. Remove the tubing from the instrument. Refer to figure 7
20. Take the 1/4" Tygon tubing from the KIT and cut a piece long enough to run from the brass elbow on the ozone generator tower to the outlet of the flow meter. Refer to FIGURE 7.
21. Take the 1/4" Tygon tubing from the KIT and cut a piece long enough to connect from the brass barbed nipple on the Ozone generator tower to the 90° brass elbow on the pump. Refer to FIGURE 8
22. Take the 1/8" Tubing from the KIT and cut a piece long enough to go from the 1/8" fitting on the side of the O3 Generator to the NC PORT of the SAMPLE CAL valve. Refer to Figure 9.

SETTING UP THE FACTORY OPTIONS

23. Turn on the instrument and press SETUP-MORE-DIAG-929-ENTR. Press NEXT until the top line reads **FACTORY OPTIONS** press **ENTER**.
24. Press NEXT to scroll through the options until it reads OZONE GENERATOR: OFF. Press OFF, to toggle the display to read OZONE GENERATOR: ON.
25. Press NEXT to scroll through the options until OZONE GEN. REFERENCE: OFF is displayed. Press OFF, to toggle the display to read OZONE GEN. REFERENCE: ON. Press ENTR.
26. Press EXIT back to the Main Menu. Cycle the power off for 5 seconds and then power the analyzer back on.
27. Allow the analyzer to boot-up. Verify the CAL CALS and CALZ buttons are displayed. Sequence through the display menu by pressing TST> and verify O3 GEN=XXX.X MV, O3 DRIVE=XXXX.X MV and O3 GEN TEMP=XX.X C are displayed. If not, repeat 23-26.

SETTING UP THE OZONE GENERATOR

28. From the main menu press SETUP-MORE-O3.
29. Press MODE and press REF and then ENTR.
30. Press the ADJ then press TST> until the top line reads O3 DRIVE. This should read 2500mv.
31. Press <TST until the top line reads O3 GEN. This should read 2500mv ± 200mv. If it does not, locate the potentiometer on the detector board attached to the ozone generator. Refer to Figure 10.

Note: To allow proper adjustment, the analyzer should be on for sufficient time to be warmed up and stabilized. This can quickly be verified by checking for a stable O3 GEN TEMP=48.0 C +/- 0.4

32. Adjust the potentiometer until the O3 GEN reading reaches 2500mv ± 200mv.
33. EXIT back to the main menu.
34. Perform an O3 generator calibration by pressing SETUP-MORE-DIAG-929-ENTR-NEXT until the top line reads O3 GEN CALIBRATION. This will be done automatically and will take approximately one hour to complete
35. Perform a leak check on the instrument.
36. Return the analyzer to its original operation.

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FIGURE 1

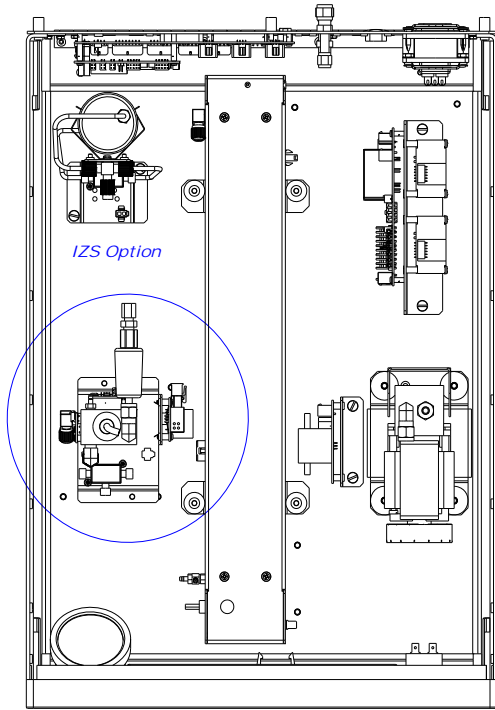


FIGURE 2

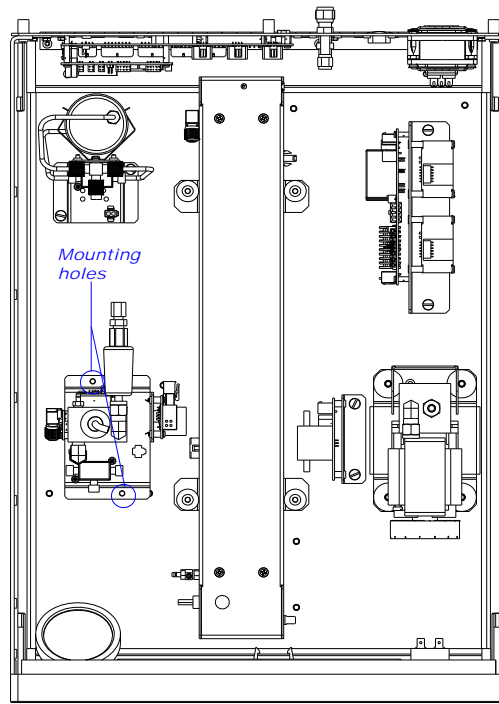


FIGURE 3

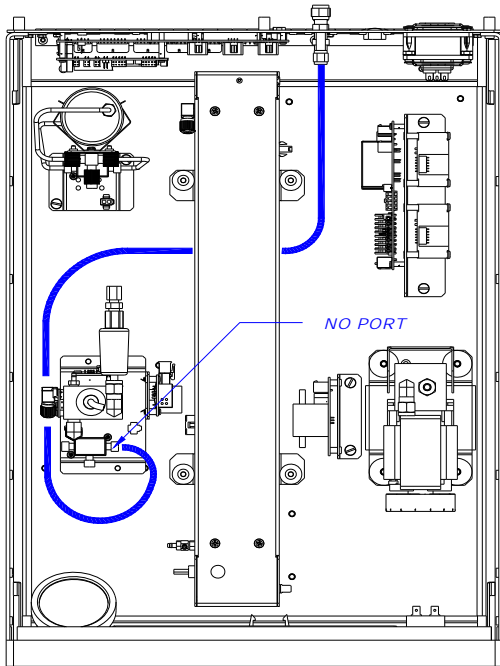
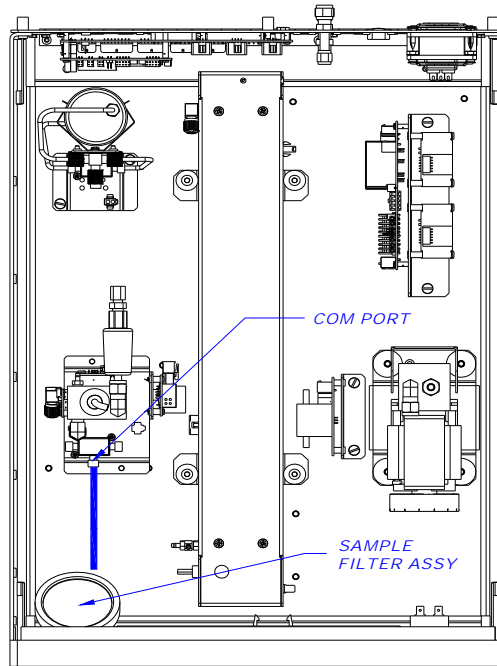


FIGURE 4



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FIGURE 5

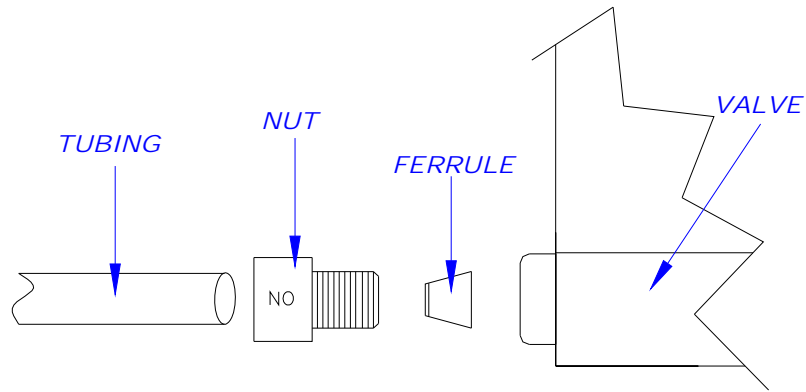


FIGURE 6

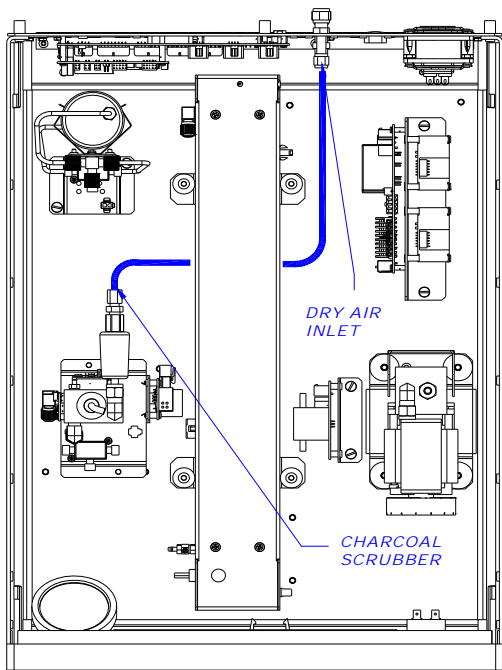
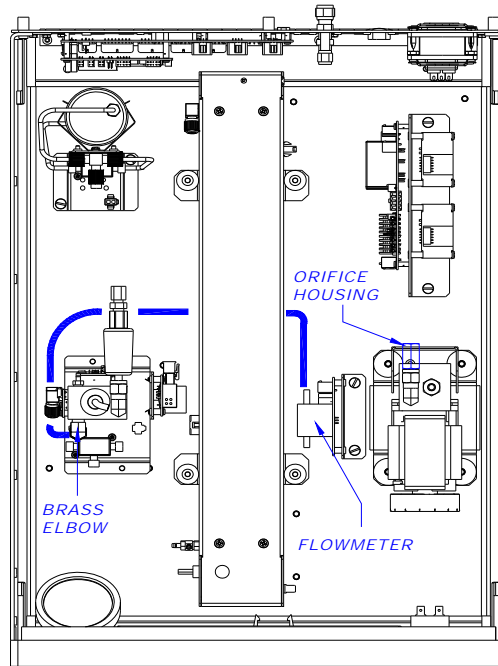


FIGURE 7



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FIGURE 8

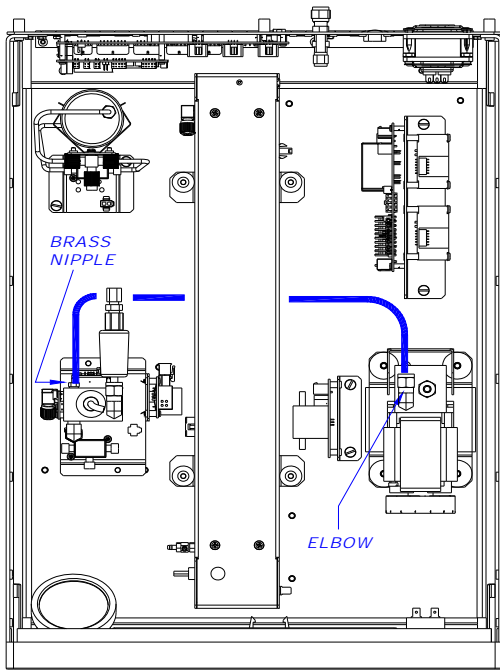


FIGURE 9

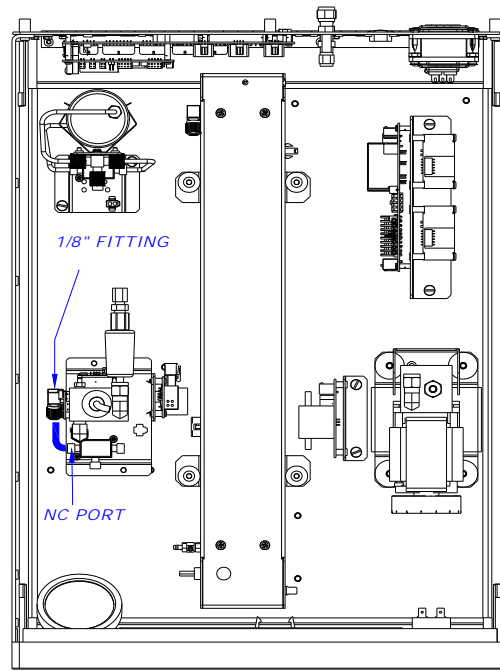
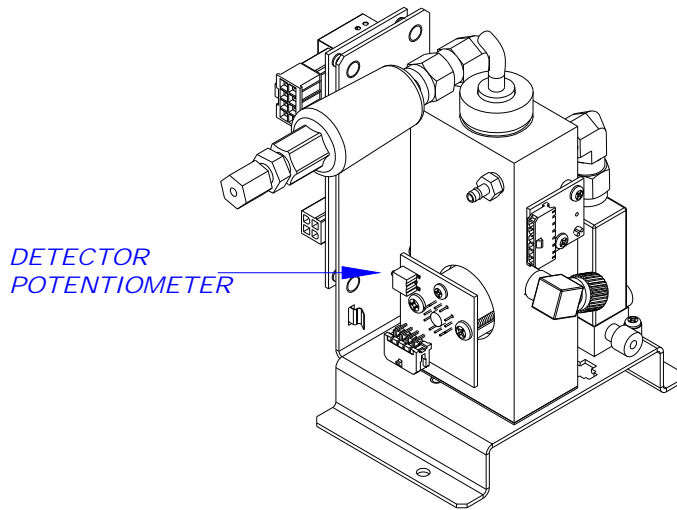


FIGURE 10

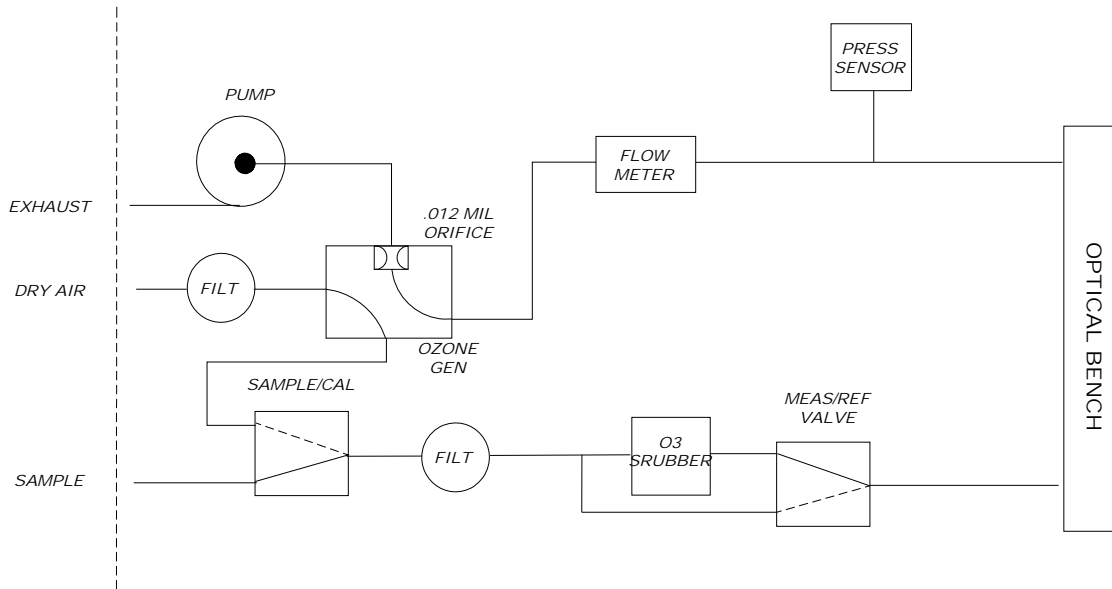


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M400E IZS OPTION



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