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Service Note

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M400 IZS INSTALLATION

SCOPE:

This procedure provides instructions for retrofit installation of the IZS system into an API M400 ozone analyzer.

PARTS:

KIT63

TOOLS:

#2 Phillips head screwdriver
7/16" wrench
9/16" wrench

PROCEDURE:

1. Remove cover and power from analyzer.
2. Locate the Lamp Power Supply, see Figure 1.7, attached.
3. Disconnect the bench lamp and the DC power from the Lamp Supply. Remove the Lamp Supply from the chassis.
4. Locate the Dual Lamp Supply from the KIT. Install it where the old Lamp Supply was located.
5. Plug the DC power and the bench lamp into the Dual Lamp Supply, making sure to plug the bench lamp into the bottom of the two 6 pin connectors.
6. Locate sample filter on rear panel. Remove ¼" fitting from top of sample filter housing. Install 1/8" fitting from KIT onto top of sample filter housing.

NOTE: For next 3 steps, refer to Figure 1.5, attached.

7. Locate valve bracket assy from KIT. Install 1/8" tube to common port of valve.
8. Install valve bracket assy onto rear panel below sample filter housing.
9. Connect 1/8" tube from common port to top of sample filter housing.

NOTE: For next 2 steps, please refer to FIGURE 1.6, attached.

10. Locate scrubber clip and bracket from KIT. Install clip and bracket onto rear panel.
11. Locate scrubber assy from KIT. Install scrubber assy into clip.
12. Locate pump in analyzer. On inlet side of pump remove ¼" tube from orifice housing, remove other end of tube from port on flow meter. Remove and discard orifice housing from inlet side of pump.

NOTE: For next 6 steps, refer to figure 1.7, attached.

13. Locate IZS tower from KIT. Install O3 generator into chassis using 4 long screws from KIT.
14. Locate Tygon tubing, ¼" brass nuts, ferrules and inserts from KIT.

15. Cut to length and install one piece of Tygon from flowmeter to ¼" brass elbow (the one facing the rear of the analyzer) on side of tower. You will need to install a nut onto one end of the Tygon as follows:
    A. Push one end of Tygon through back side of nut and slide nut onto Tygon.
    B. Slide rear, then front ferrule onto Tygon.
    C. Push insert into end of Tygon.
    D. Swage nut onto a brass fitting by tightening 1½ turns, no more!
16. Cut to length and install one piece of Tygon from inlet of pump to the ¼" brass elbow facing the front of the analyzer. Follow steps 15A – 15D to properly swage a nut onto each end of the Tygon tubing.
17. Connect a 1/8" tube from the fitting at the end of the scrubber assy to the 1/8" fitting on the O3 tower.
18. Connect a 1/8" tube from the other fitting on the O3 tower to the NC port of the valve mounted on the rear panel.
19. Locate the heater and thermistor connectors. These are small, two pin Molex connectors coming from the Power Supply Module and laying in the chassis. The Molex connectors will likely be covered in shrink tubing. There will be 2 yellow wires for the thermistor, matching the 2 yellow wires coming out of the tower, and a gray cable ending in a clear and black wire for the heater.
20. Remove the shrink tubing from the Molex connectors. Plug the heater and thermistor Molex connectors into them.
21. Plug the cable from the detector Pre-amp on the tower to J5 of the motherboard.
22. Apply power to analyzer and turn it on.
23. Perform DAC and bench calibration using the procedure in the manual.
24. If you have AMX software, skip to step 30. Press SETUP-IZSC. Enter 650 for the password and press ENTR. Press MODE-IZSR-ENTR. Press EXIT until you are at the main SAMPLE menu.
25. Allow the analyzer to warm up for 1 hour.
26. Press TEST until IZSREF is displayed.
27. Press SETUP-MISC-O3-GEN-ADJ.
28. Wait 5 minutes. Adjust the lamp and the detector board until the IZSREF is 2500±100 mV as follows:
    A. Loosen the screws on the lamp retainer at the top of the tower. Physically turn the lamp until the IZSREF on the front panel is as close to 2500 mV as you can get. Tighten screws on the lamp retainer.
    B. On the left side of the detector cover, (mounted on the front face of the tower) is a small plug. Pry this plug out and you will see a small pot inside. Adjust this pot until the IZSREF is 2500±100 mV.
29. Press EXIT-CAL-ENTR. This will start the IZS calibration.
30. After approximately one hour, the IZS calibration will be finished. Skip to the end of this procedure.
31. For AMX press SETUP-MORE-VARS. Change the password to 929 and press ENTR. Press JUMP. Enter 44 and press ENTR. The display should say Factory Options. If not, press NEXT until you see Factory Options. Press EDIT. Change the number to 4 and press ENTR. Press EXIT until you are at the main SAMPLE menu.
32. Turn power off. Wait 5 seconds and turn power on.
33. Allow the analyzer to warm up for 1 hour.
34. Perform DAC cal per section 9.2 of the M400 manual.
35. Perform bench cal per section 3.1.1 and 3.1.2 of the M400 manual.
36. Press TEST until O3GEN is displayed.

37. Press SETUP-MORE-O3-ADJ.
38. Wait 5 minutes. Adjust the lamp and the detector board until the O3GEN is 2500±100mV as follows:
    A. Loosen the screws on the lamp retainer at the top of the tower. Physically turn the lamp until the O3GEN is as close to 2500mV as you can get. Tighten the screws on the lamp retainer.
    B. On the left side of the detector cover, (mounted on the front face of the tower) is a small plug. Pry this plug out and you will see a small pot inside. Adjust this pot until the O3GEN is 2500±100mV.
39. Press EXIT until you are at the main SAMPLE menu.
40. Press SETUP-MORE-DIAG. If you see the password press ENTR.
41. Press NEXT 3 times. This should bring you to O3GEN CAL. Press ENTR. This will start the IZS calibration.
42. After approximately one hour the IZS calibration will be finished.

If you have questions about this or any API equipment, please contact an API Customer Service Engineer via:

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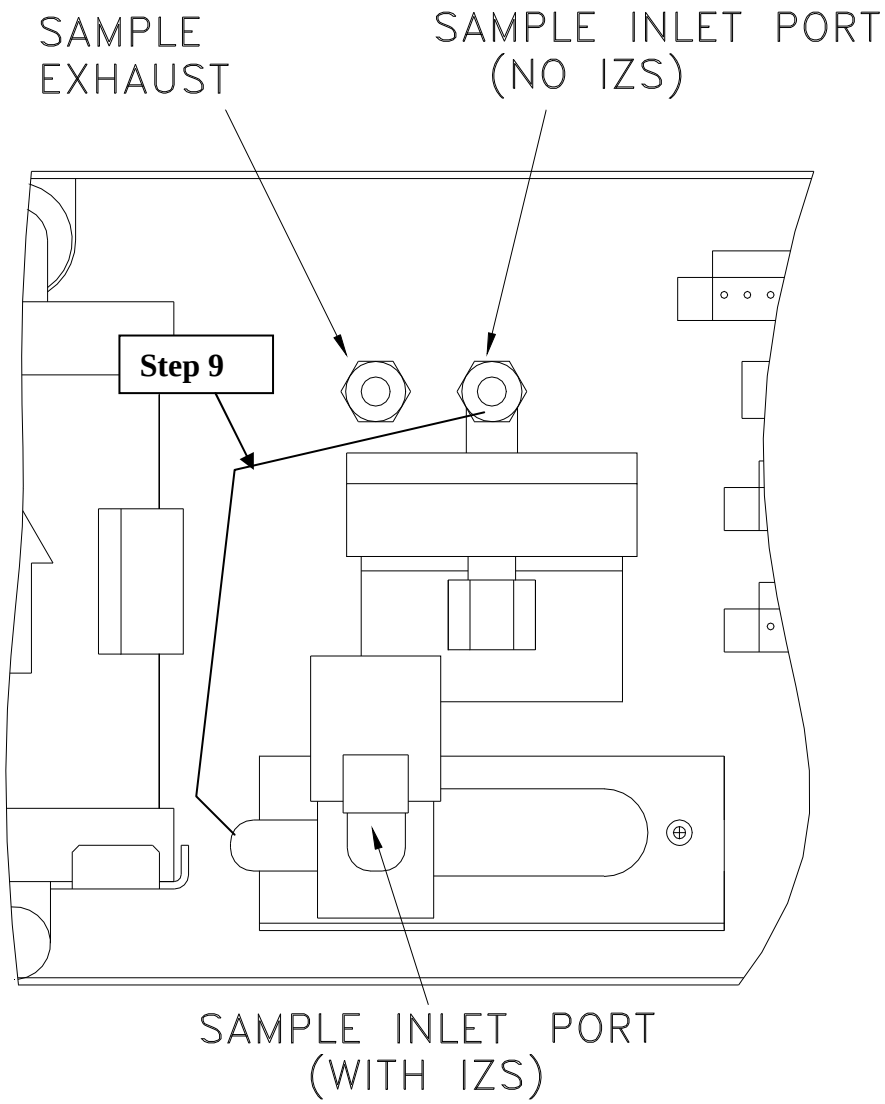
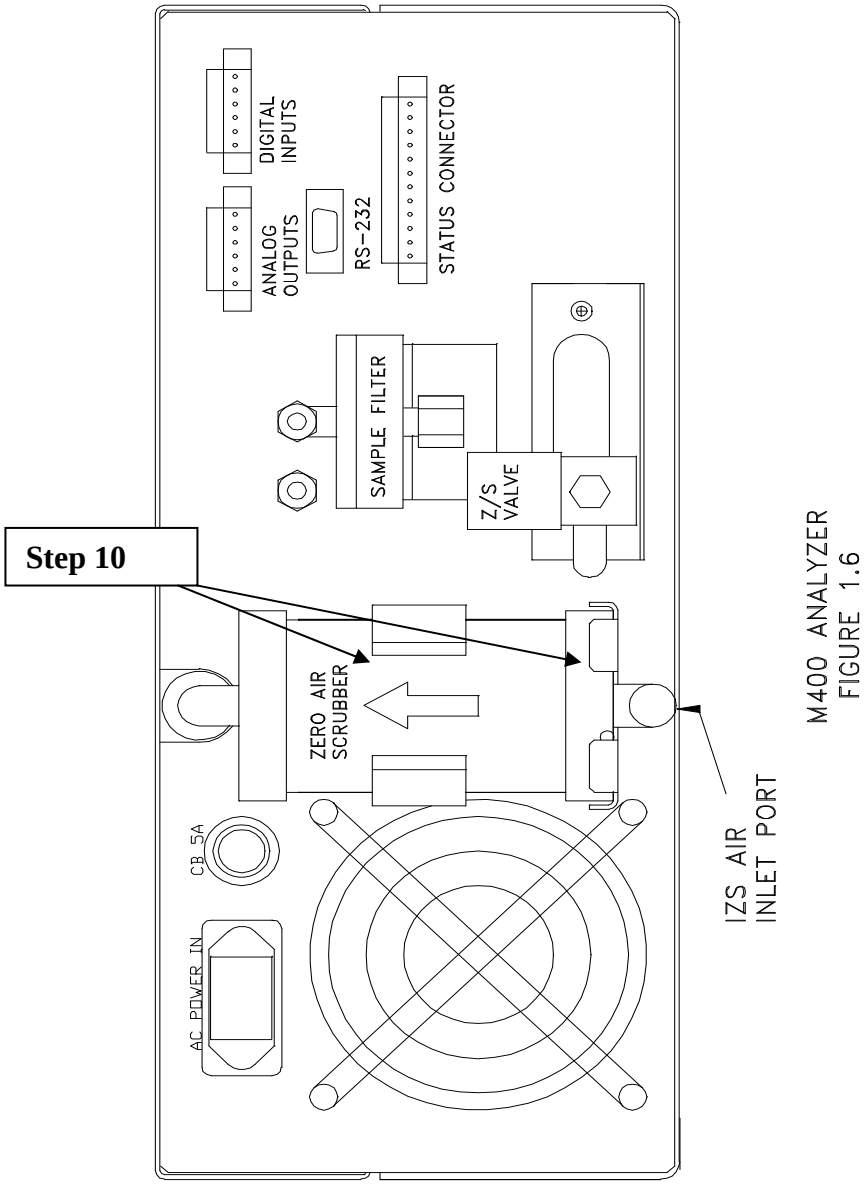
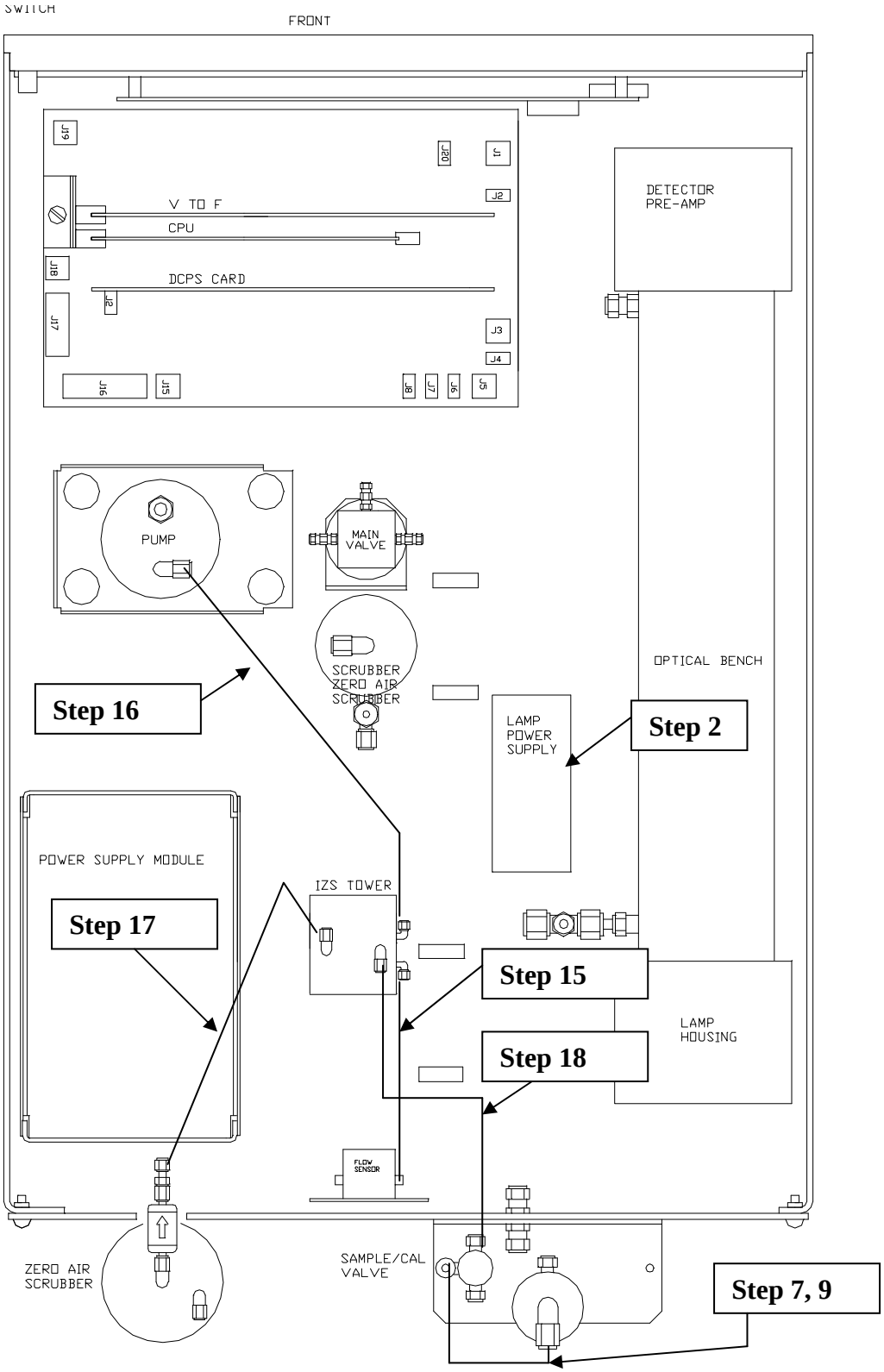
Fax: (619) 657-9816
E-mail: customerservice@advpol.com



M400 ANALYZER
PNEUMATIC CONNECTIONS
FIGURE 1.5



M400 ANALYZER
FIGURE 1.6



M400 ANALYZER CHASSIS LAYOUT

FIGURE 1.7