TELEDYNE
INSTRUMENTS
Advanced Pollution Instrumentation
A Teledyne Technologies Company

9480 Carroll Park Drive., San Diego, CA 92121-5201
Phone (858) 657-9800 Fax: (858) 657-9818 Toll Free 1800 324-5190
E-mail: api-customerservice@teledyne.com http://www.teledyne-api.com

Service Note

08-011
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PRESSURIZED SPAN/AMBIENT ZERO RETROFIT KIT M200E

I. PURPOSE:

To give instructions on installing new valves into the M200E NOx instrument.

II. TOOLS:

Philips Screwdriver
7/16 Wrench
9/16 Wrench

III. PARTS:

KIT000273

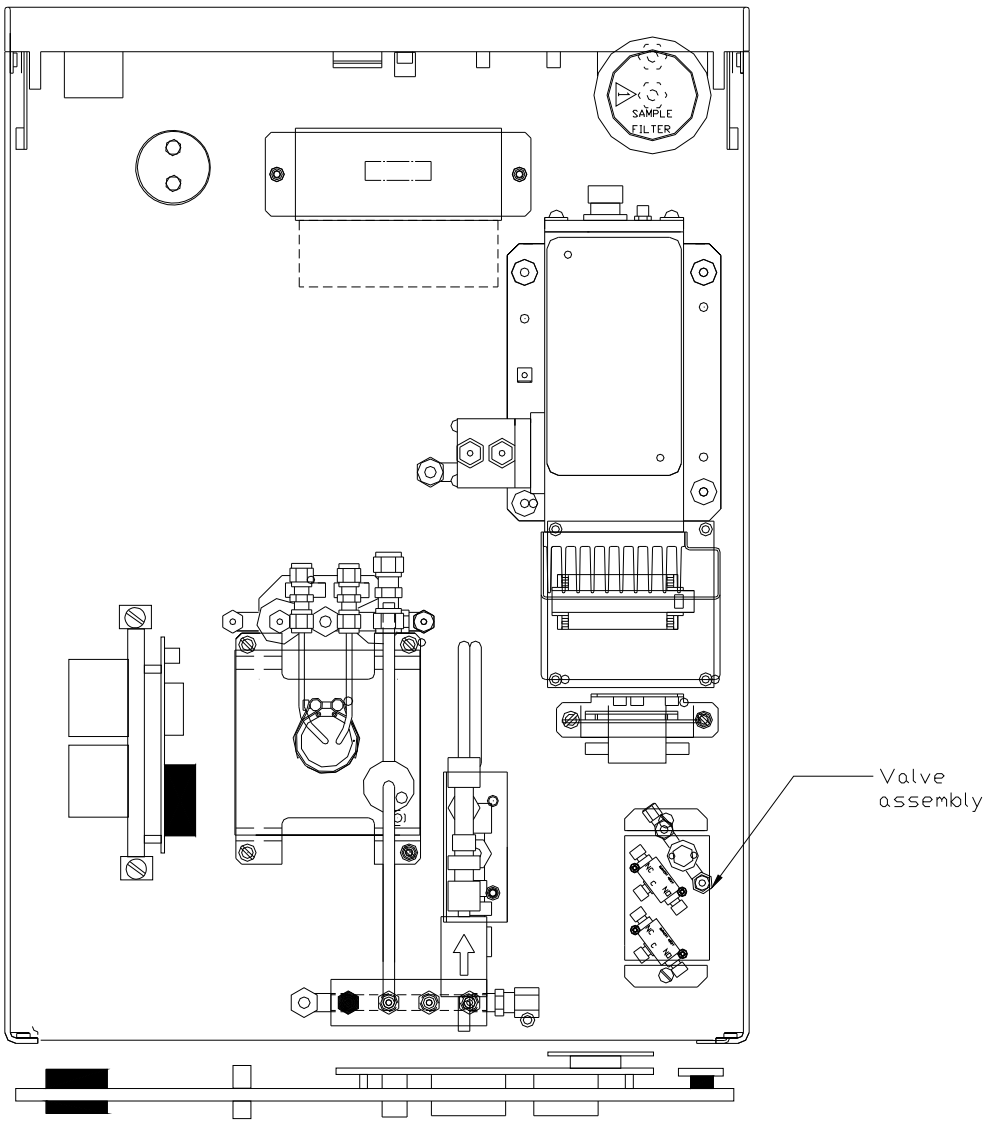
The electronics used in T-API analyzers are sensitive to Electrostatic Discharge (ESD). When working on any T-API device, please ensure that you are properly grounded prior to handling or touching any electronic circuitry in the analyzers! For more information on how to protect sensitive components from ESD during handling, please contact T-API customer service and ask for the ESD Service note number 03-022A.

IV. PROCEDURE:

1. Turn the instrument OFF and disconnect the power cable.
2. Remove the top cover off of the instrument.
3. Place the valve assembly in the location shown if figure 1

FIGURE 1

M200E LAYOUT



4. Fasten the bracket down by tightening the captive screw on either side of the bracket.
    a. If there are Zero/Span valves already installed you will need to remove the old valve assembly in order to install the new valve assembly.
5. Install the bulkhead reducing unions contained in the KIT into the rear panel at the SPAN2/VENT port, ZERO port and SPAN port.
    a. If the instrument already had ZERO/SPAN valves then install only one bulkhead reducing union into the SPAN2/VENT port.
6. Connect the SAMPLE IN port on the rear panel to port 3 of the Sample Cal valve shown in Figure 2.
7. Connect the ZERO port on the rear panel to port 3 of the Zero/Span valve as shown in Figure 2.
8. Connect the SPAN port on the rear panel to PRESSURIZED SPAN port as shown in Figure 2.

9. Connect the SPAN2/VENT port on the rear panel to the VENT port as shown in Figure 2 or refer to Figure 3 (Pneumatic Diagram)
10. Locate the connectors for the ZERO/SPAN and SAMPLE/CAL valve. These connectors will be in the wiring harness and will have some heat shrink over the connectors. They will be labeled Z/S S/C valves.
    a. Cut the heat shrink off of the connectors and connect the harness to the valve assembly.
    b. If the instrument has had ZERO/SPAN valves previously use the same connector and connect it to the new valve assembly.
11. Take the connector from the pressurized span valve and connect it to the Relay board at J6.
12. Install the zero air scrubber contained in the KIT on to the ZERO port on the rear panel.

Figure 2

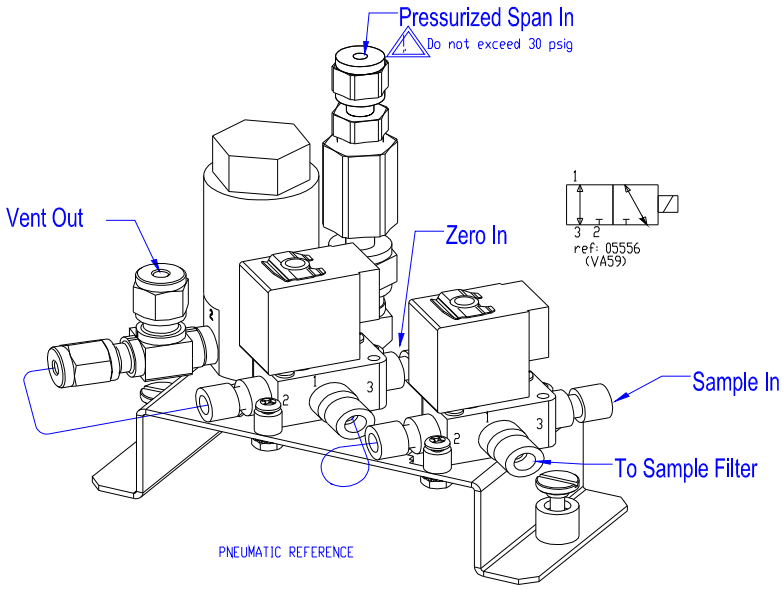
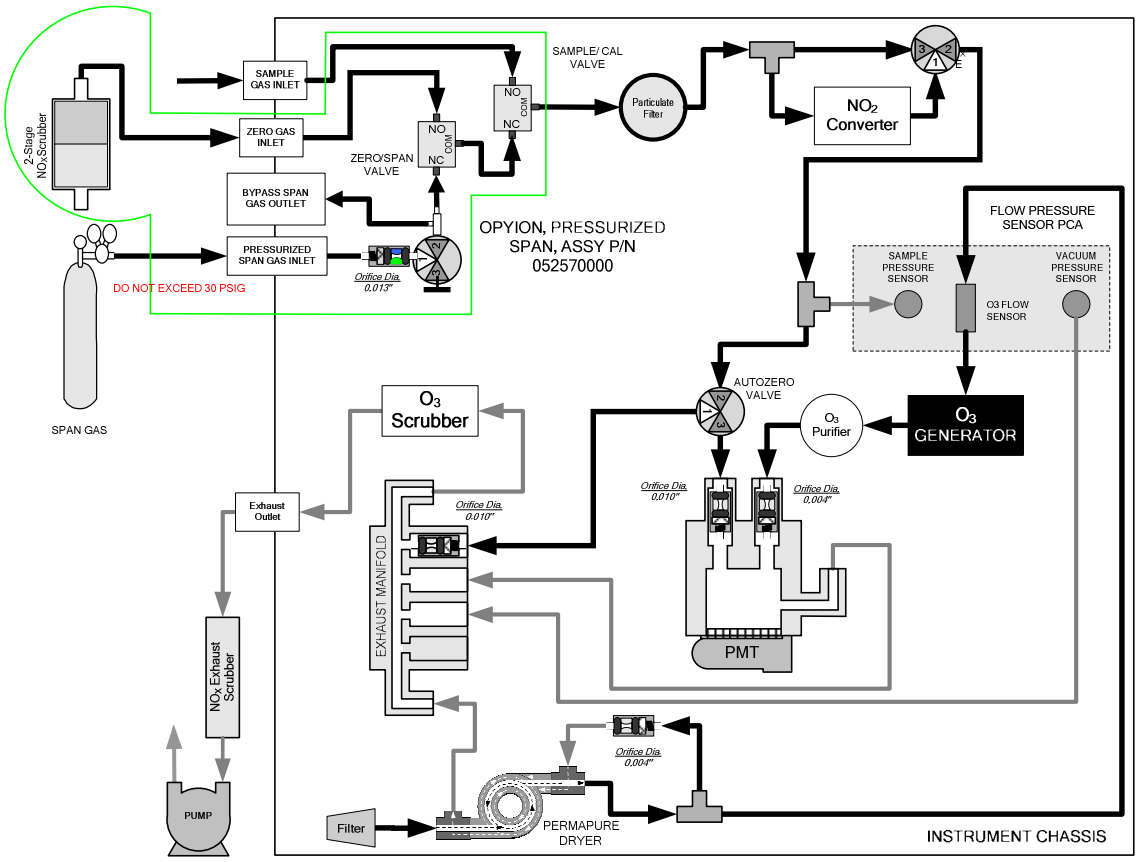


FIGURE 3. PNEUMATIC DIAGRAM



13. You will now need to install the new DOC (Disk On Chip) provided in the KIT.
14. Remove the old DOC from the CPU board. (Ensure an ESD strap is being used when replacing any electronic components) Note the direction of the chip.
15. Take the new DOC and install it into the CPU. (Please Note the Direction of the chip). Ensure that the DOC is installed correctly before turning on instrument. Refer to Figure 4.

FIGURE 4
(DOC LOCATION ON CPU)

16. Once the DOC has been installed. Turn the instrument ON.
17. After the boot sequence press SETUP-MORE-DIAG-929-ENTER and then next until the top line reads FACTORY OPTIONS.
18. Once the DOC has been installed. Turn the instrument ON.
19. After the boot sequence press SETUP-MORE-DIAG-929-ENTER and then next until the top line reads FACTORY OPTIONS.
20. Press NEXT until ZERO/SPAN VALVES. Turn this ON and Press ENTER.

21. Press NEXT until PRESSURIZED SPAN and turn this ON and press ENTER.
22. EXIT out to the Sample Menu and Clear any warnings.
23. Perform a Leak Check on the instrument.

> CAUTION!
> When connecting span gas to the span port, **do not** exceed 30PSIG.

24. The instrument is ready to use.

If you have any questions regarding this service note please contact a customer service representative. Api-customerservice@teledyne.com