



09-005A
19 August, 2009

**RETROFITTING THE BYPASS FLOW CONTROL ASSEMBLY IN THE
M200EM-EH**

I. PURPOSE:

This service note is to provide instructions on how to retrofit the bypass flow control assembly in the M200EH/EM with the three-port reaction cell using KIT000287. If your M200EH has a serial number of 465 to 612 or your M200EM has a serial number of 288 to 424, it may be necessary to reconfigure some of the pneumatics that make up the bypass flow control.

II. TOOLS:

Two 9/16 opened end wrench
7/16 opened end wrench

III. PARTS:

KIT000287 KIT, RETROFIT, BYPASS



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:

The arrangement of the components in the flow control assembly is important to control the flow of gas through the instrument. If the components that make up the bypass flow

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control are assembled in the wrong order, the orifice will come in contact with the sample gas before the sintered filter can filter it.

1. Comparing figures 1 and 2 will help to familiarize you with the components that are to be changed.

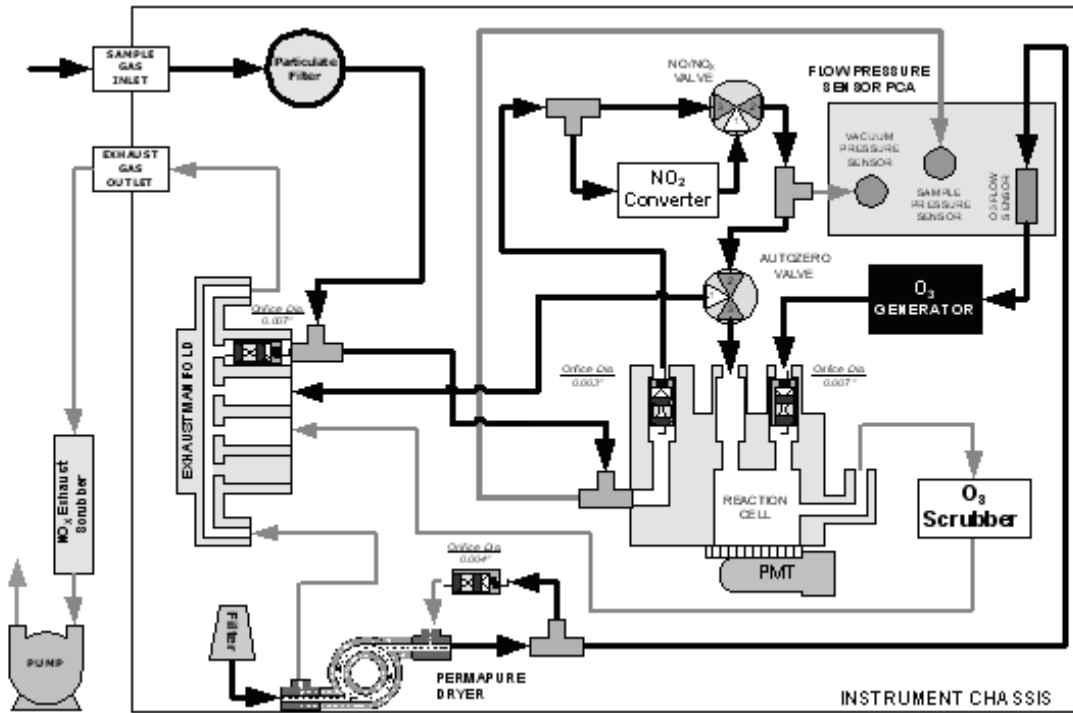


FIGURE 1 – M200EH old pneumatic layout

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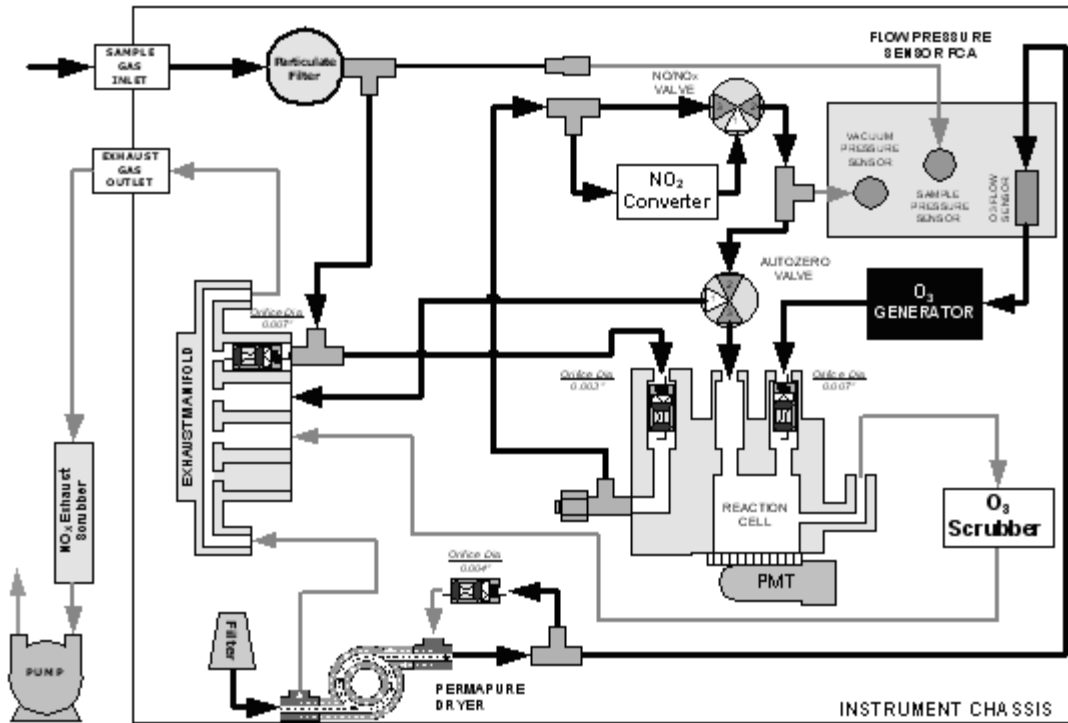


FIGURE 2 – M200EH new pneumatic layout

2. Locate and remove the sample filter by disconnecting the two pneumatic lines from the stainless steel fittings.
3. Remove the two nuts that hold the sample filter bracket to the front panel and lift off the sample filter assembly.
4. Remove the two stainless steel fittings from the bottom of the sample filter assembly. Discard the fitting that you have removed from the center port.
5. Add two turns of Teflon tape to the machine threads of the stainless steel T fitting from KIT000287.
6. Install the T fitting in the center port of the sample filter assembly.
7. Remove the old Teflon tape from the fitting that you removed from the outer port and add two turns of the supplied Teflon tape.
8. Reinstall the fitting in the same port that it was removed from (outer).
9. Reinstall the sample filter assembly in the instrument.
10. Reconnect the clear pneumatic line back to its original fitting on the sample filter.
11. Connect the black pneumatic line to the newly installed T fittings horizontal port (see figure 2).
12. Locate the T fitting on the three-port reaction cell (see figures 1,2 &3).
13. Disconnect the ¼ inch Tygon tubing that runs from the T fitting on the reaction cell to the pressure transducer on the pressure/flow PCA.
14. Install the ¼ inch to 1/8 inch union reducer fitting from KIT000287 onto the ¼ inch Tygon tube from step 13.

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15. Install the 12 inch black Teflon tube onto the 1/8 inch end of the union reducer fitting from step 14 and connect the free end to the straight through port of the T fitting on the sample filter assembly (see figure 2).
16. Locate the bypass flow control assembly on the reaction cell (see figure 1,2,3)
17. Using your 7/16-opened end wrench, loosen the hex nut and disconnect the 1/8th inch pneumatic line from the bypass flow orifice assembly.
18. Loosen and remove the bypass flow orifice assembly from the reaction cell manifold by using your 9/16-opened end wrench to loosen the orifice holder (see figure 3, 4).
19. Use two 9/16-opened end wrenches, one to hold the orifice holder and the other to loosen and remove the inlet fitting (FT 10) from the assembly.
20. Remove the contents of the orifice holder and reinstall them in the order depicted in figure 4.
21. Reinstall the inlet fitting (FT 10).
22. Reinstall the bypass flow control assembly into the reaction.
23. Locate the T fitting on the 3 port reaction cell. This T fitting will at this point in the retrofit have one open (nothing connected) 1/4 inch port and one 1/8 inch port with a 1/8 inch pneumatic line still connected. Disconnect this 1/8 inch tube and reconnect it to the bypass flow control assembly on top of the three port reaction cell.
24. Locate the loose end of the 1/8 inch pneumatic tube that was disconnected from the bypass flow control assembly in step 17 and attach it to the 1/8 inch port of the T fitting on the 3 port reaction cell.
25. Install the stainless steel plug (FT0000024) from KIT000287 onto the 1/4 inch open port of the T fitting on the 3 port reaction cell.

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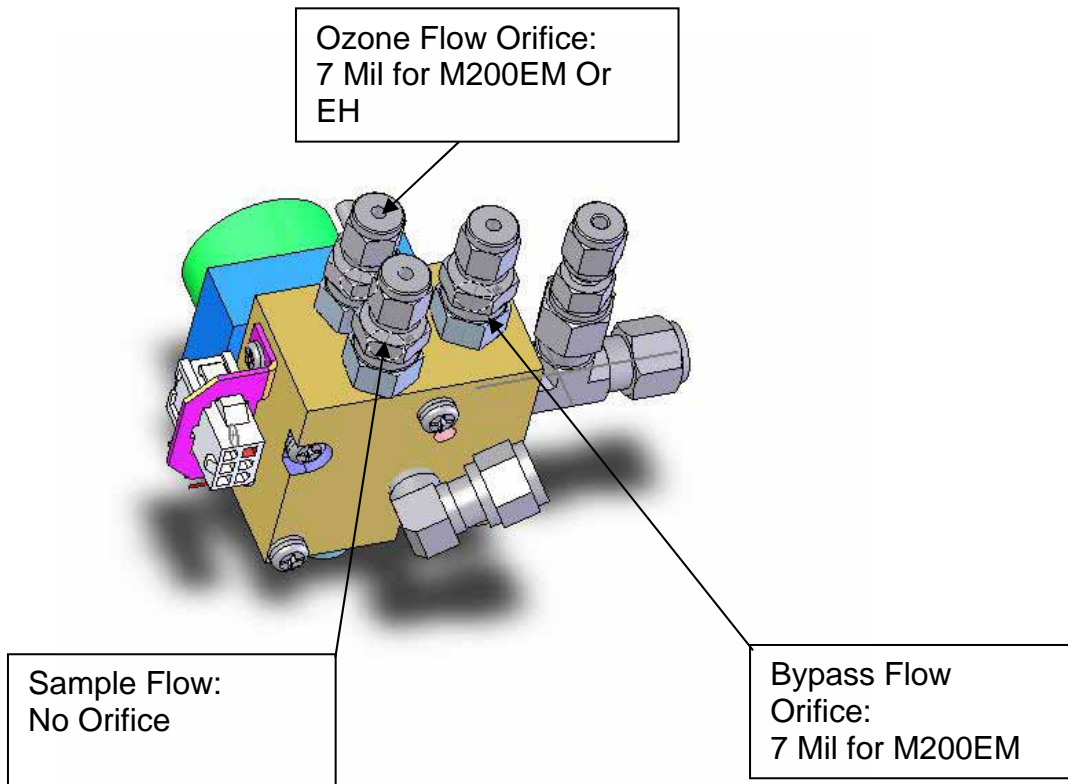


FIGURE 3 - Three Port Reaction Cell Assy P/N 0006028

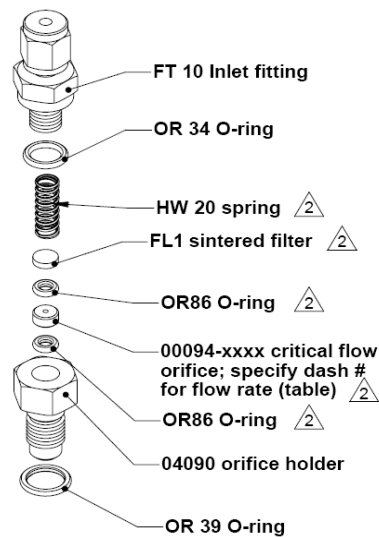


FIGURE 4 - Flow Control Assy P/N 045500200

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