



02-018B
2 May, 2007

M201A SINGLE MOLY CONFIGURATION

I. PURPOSE:

To guide you through changing the pneumatic configuration of the M201A instrument.

II. TOOLS:

7/16" wrench,
9/16" wrench,
Phillips screwdriver,
Flat tip screwdriver,

III. PARTS:

N/A

IV. PROCEDURE:

1. Turn off both the M201A & the M501NH3 boxes & remove the power cords from both of them. remove both of the covers, & allow them to cool.

CAUTION: There are VERY hot items in these instruments & can cause severe burns.

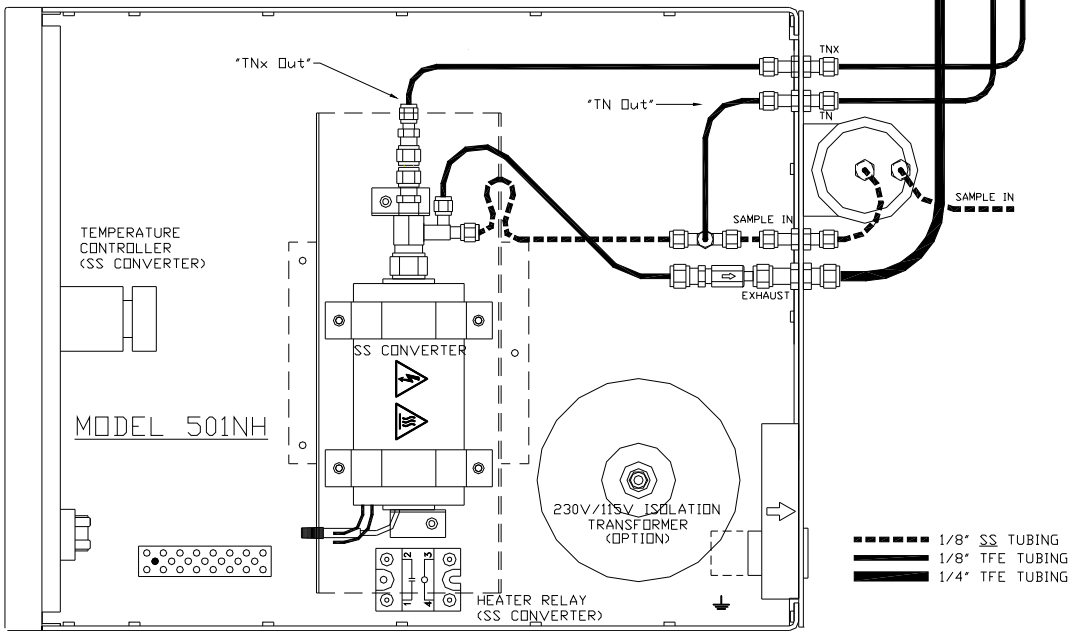
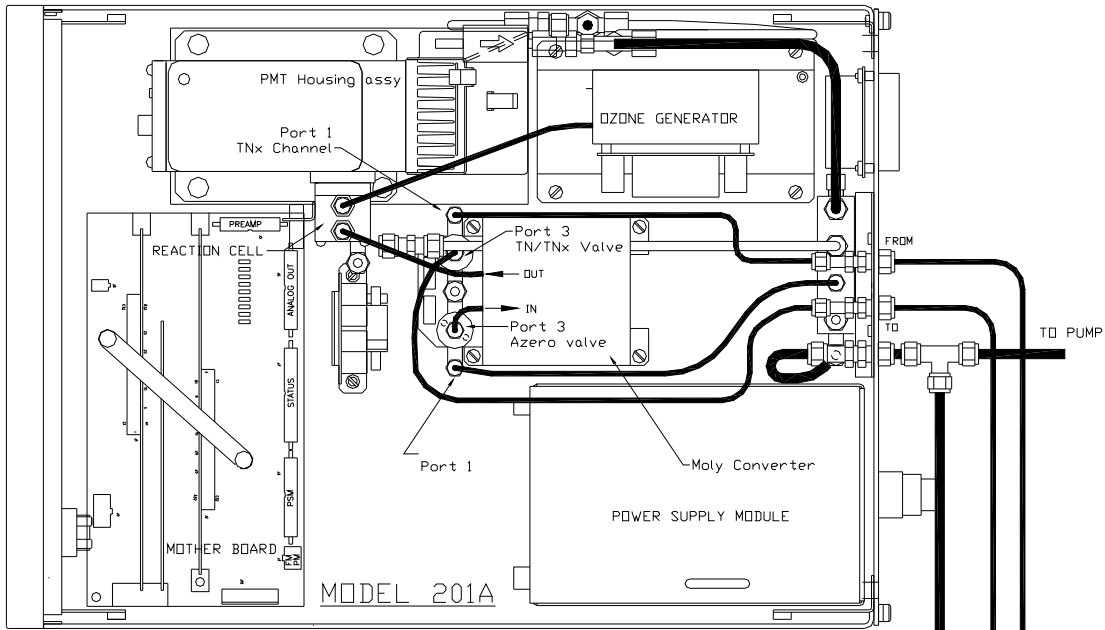
2. For the following steps check the diagrams on page 3 or 4 of this service note. If your instrument does NOT have the Zero & Span valve option use the diagram on page 3, if your instrument does have the Zero & Span valve option, use the diagram on page 4. the diagram on page 5 is the pneumatic diagram (as opposed to the layout diagrams on pages 3 & 4) for the new plumbing configuration.
3. Locate on the diagram the "TNx Out" & the "TN Out", on the M501NH. Trace those lines to the bulkhead fittings on the rear panel on the back of the M501NH. Ensure that the TNx line coming from the converter goes to the bulkhead fitting labeled TNx on the rear panel. Ensure that the TN line goes to the bulkhead fitting labeled TN on the rear panel.
4. Trace those lines over to the rear panel of the M201A & ensure that the TNx line goes to the "FROM" fitting on the rear panel of the M201A. Trace the line from the TN output of the M501NH to the "TO" fitting on the rear panel of the M201A.
5. Follow the TNx line from the rear panel of the M201A (the one that is labeled "FROM") to the TNx port on the TN/TNx valve, this is Port 1 on the valve (See diagram).
6. Coming out of the converter there is a line that goes over to the top of the TN/TNx valve. Disconnect that line from both the converter & the top of the TNx valve & put that short piece of tubing on the table you are going to use this later. On the top of some converters there is a sticker that says "sample in", this is NOT the sample in line, this line is the sample Out line.
7. On the top of the AZERO valve there is a tube that goes over to the Rcell assy. Remove that tube from the top of the AZERO valve & connect it to the Sample out fitting on the converter. This Converter out is the same fitting that you just disconnected the tube from.
8. Remove the tube from the "sample in" fitting on the converter & move it over to the top of the TN/TNx valve.

9. Take the short piece of tubing off of the work bench that you took out of the machine in step 6, & connect it from the top of the AZERO valve to the “sample in” line on the converter.
10. You should now have all the tubes connected back up to the M201A & the plumbing should look like it does in the diagram that you are working from. However there might be one exception.
11. On some instruments the two tubes on the Rcell get confused. There are two fittings on top of the Rcell. There is a fitting that is close to the pmt housing assy (see diagram), & there is a fitting that is away from the pmt housing assy. We would prefer that the “sample out” fitting on the converter goes to the fitting that is “away” from the pmt housing & that the ozone that comes from the ozone generator goes to the fitting that is close to the pmt housing, but if your machine is not that way it is OK. there are orifices under the fittings that have specific flow through them & you can not just change them with out removing the orifices & putting them into the other holes in the Rcell assembly.
12. The way to know for certain is to measure the flows through the two fittings. You can connect your pump to the Exhaust of the M201A & measure the sample flow right there at those fittings. When you have your flow meter connected to the fittings you should measure 80 cc/min of ozone flow & 500 cc/min if sample flow. If the ozone flow & the sample flow are backwards change the two tubes on top of the Rcell & make them flows right. If you are still not sure if you have the flow right, continue with this service note.
13. You should have all the fittings connected & tight, put a cap on the sample inlet of the back of the M201NH & cap the filter on the permeation dryer that is right next to the O3 generator & leak check the instrument & the converter. If you have any questions regarding the leak check procedure, see section 8.9 in the M200A manual. As a system it should not leak more than 1” in 5 minutes. If it does then you are going to have to find the leak before you continue on with the instrument. If the system leaks, I would suggest that the first thing to do would be to separate the M501NH from the M201A & figure out which box is leaking & then go into that box & find out where it is leaking. Using the pneumatic diagrams would help to trouble shoot this & to find the leak.
14. Once you have the pneumatics leak free & the flows are proper, turn on the M501NH & the M201A & allow them to warm up. ensure that you have your pump connected to the exhaust, & pulling good vacuum. While they are warming up, push the TST> button on the front panel until you come to Ozone flow. If your ozone flow is 80 cc/min, then you have the fittings on the top of the Rcell connected properly. if the ozone flow is 500 cc/min then the fittings on top of the Rcell are backwards. Loosen the two fittings on top of the Rcell & switch them, you should see that the ozone flow goes down to 80 cc/min. if it does not then there is a problem with one or both of your orifices & you are going to have to do the maintenance on them, follow the direction in the M200A manual, in the maintenance section.
15. follow the service note “calibration of the M201A analyzer”. if you have any problems with this calibration procedure, Email or fax to the customer service email address, the COMPLETED page 5 of the service note. The M201A instrument will NOT work properly unless it is calibrated on both NO & NH3 gasses. You must use both gasses to calibrate it properly. if you don't have both gasses, obtain them & then fill out the Page 5 of the calibration note & email it to the customer service department. If you don't have the form filled out properly & completely figuring out what is wrong with the M201A is VERY difficult.

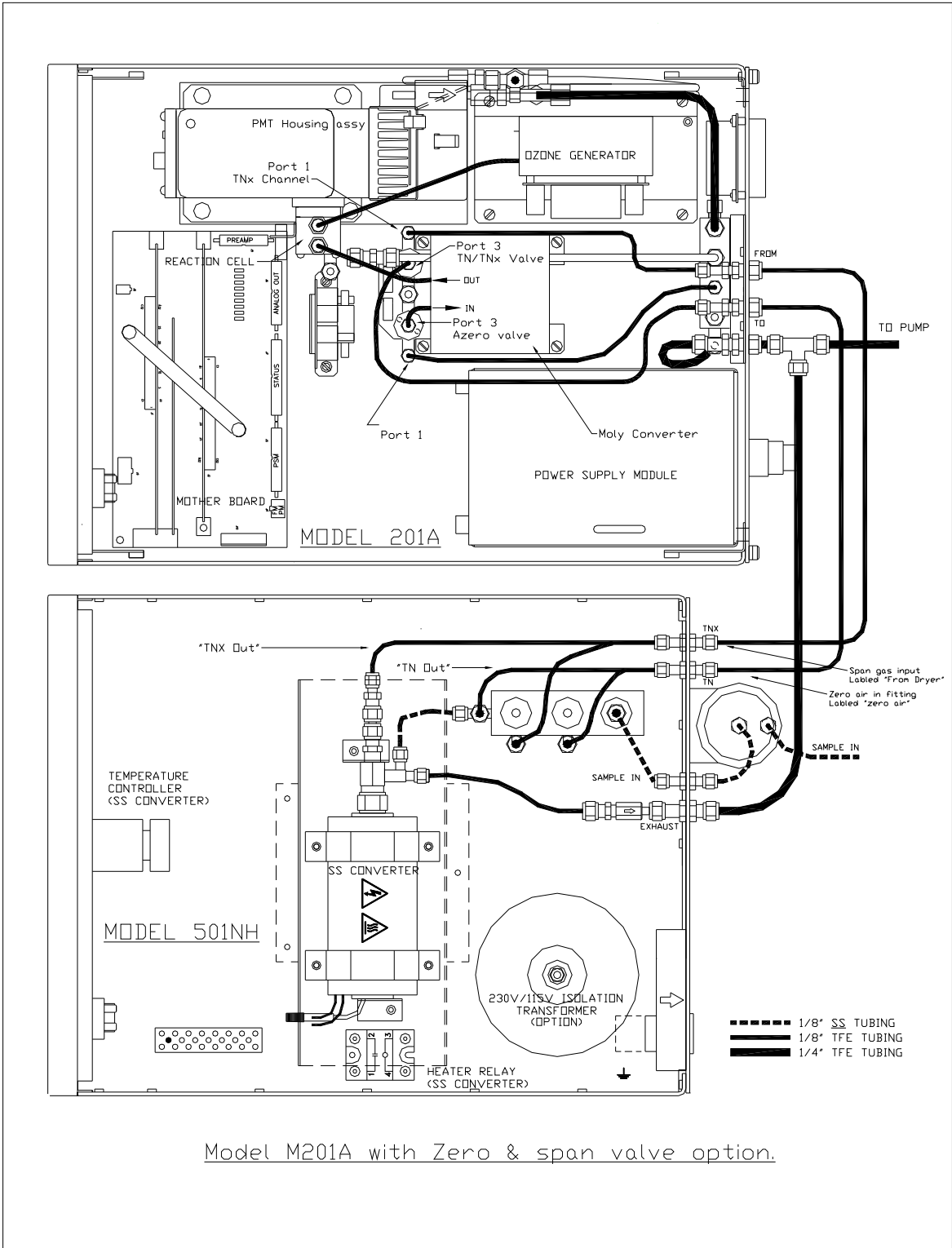
M201A Single Moly Configuration

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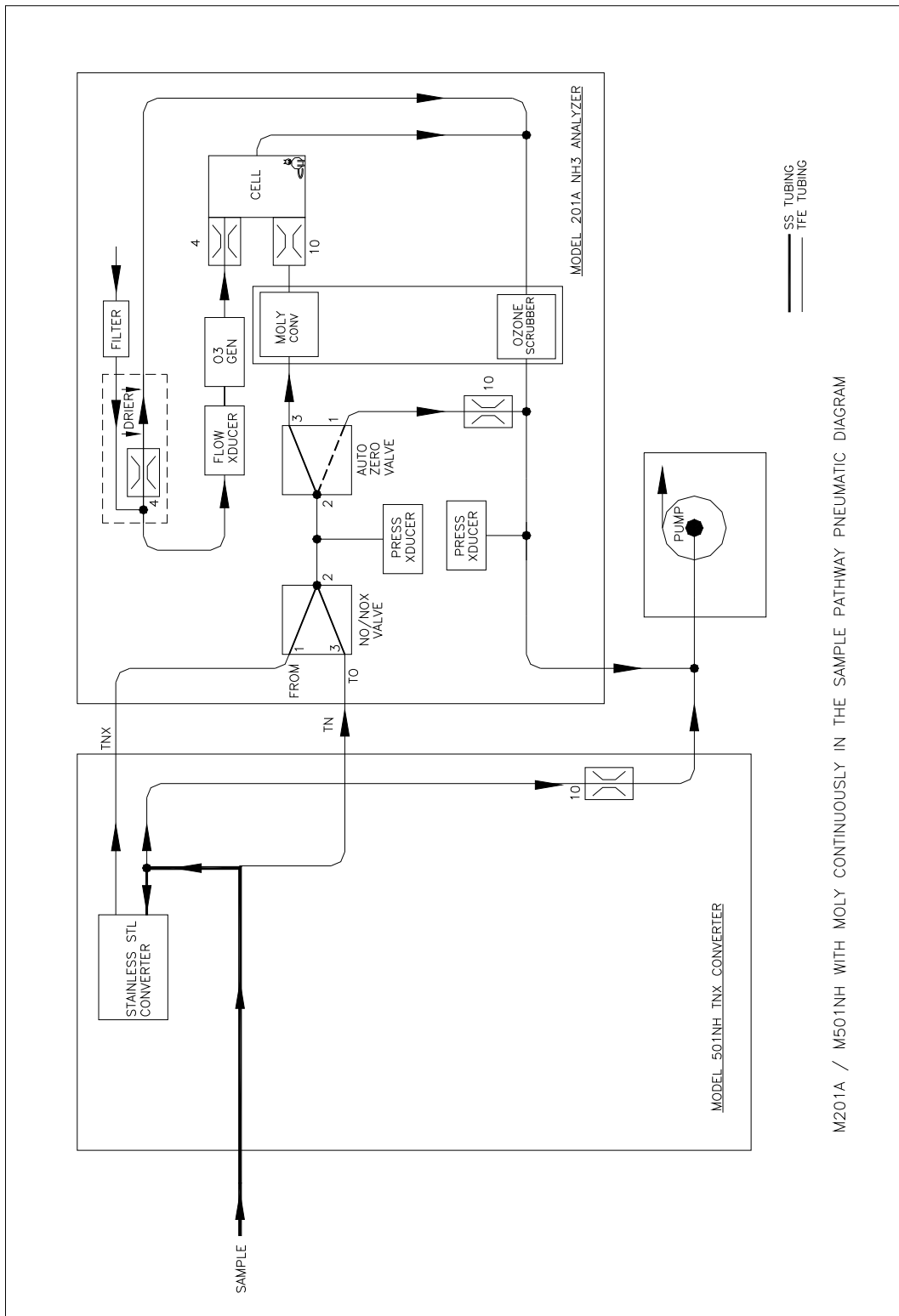
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Model M201A With Out Zero & span valve option.



Model M201A with Zero & span valve option.



M201A / M501NH WITH MOLY CONTINUOUSLY IN THE SAMPLE PATHWAY PNEUMATIC DIAGRAM