TPC Seal and Purge Manual (Preliminary - this procedure may be incomplete) 11/19/07

Before starting the TPC circulation it is necessary to check whether it is sealed or not. This can be done by Argon or by Nitrogen. In summer TPC is kept on Nitrogen. Therefore before run starts TPC is usually on Nitrogen flow.

1. On Rack 2 open manually FM5 - (MV4 valve) (all others : FM3 (MV6), FM4 (MV5) are closed)

2. Install on FM5 - 16 l/min flow (Computer: Slide FM5 to 16 l/m and click on Set Flow Meters)

3. Close SV 11 by clicking it on Computer (Green turns to Red). This Stops a purge flow through the FI5. Clear Interlock for SV18 on Rack 2 by pushing the button (SV 18 Reset button on Rack 2, right)

4. Confirm that MV10 (Rack1 lower left) is closed and confirm that MV14a (bubbler bypass, rear end of the gas mixing room) is closed.

5. To check seal, close SV 18 by clicking on the computer (Green turns into the Red). Listen for a sound - "Bang"!

6. The pressure on Rack 1, shown by "Inside TPC Pressure (PT8) PI6" on Rack 1 starts to rise up. It should reach value 1300. This will take ~ 5 minutes.

7. After PI6 is close to 1300, open SV18 by clicking on the computer SV l8 button (Red turns to Green) and PI6 drops rapidly

8. One can start PID program to follow pressure change. Before starting the PID program, the switch at the power supply, located at the right bottom of Rack I should be switched on.

9. Start a PID program. Click on a start button. Two evolving lines will appear. The upper line is a set point value (Red) taken by a computer from DB. Lower line is yellow, which starts to rise, showing rising pressure in PT8. Watch lines, until the lower line reaches the top line. Just before reaching, click on SV18 button on the computer screen (Red turns to Green as in p. 7.)

10. During p.9, when lower line goes up, it might be some delay in rise, which is a result of outer pressure variation (wind, pressure change outside and etc.)

<u>To get gas system into a purging mode after the seal check</u>

I. Put the FM5 flow to 0 by computer

2. After PI6 pressure drops below 100, manually close FM5 (MV4 valve) on Rack 2.

3. Close the PID program and switch back a power supply switch on the box located at the Rack 1 (lower right)

4. Open SV11 by clicking SV11 button on the computer display (Both SV11 and SV18 should be Green during the purge mode)

5. Can firm a purge flow on FI5 (indicated by a line on FI5 on Rack 2)

Here is the original document as a .jpg file.

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2. Install on FM5 – 16 l/min flow (Computer: Slide FM5 to 16 l/m and click on Setflowmeters
3. Close SV11 by clicking it on Computer (Green turns to Red). This Stops a purge flow through the FI5. Clear Interlock for SV18 on Rack 2 by pushing the button (SV18 Reset button on Rack 2, right)
4. Confirm that MV10 (Rack2 lower left) is closed and confirm that MV14a (bubbler bypass, rear end of the gas mixing room) is closed
5. To check sealing, close SV18 by clicking on the computer (Green turns into the Red). Listen for a sound – "Bang"
6. The pressure on Rack 1, shown by "Inside TPC Pressure (PT8) PI6" on Rack1 starts to rise up. It should reach value 1300. This will take 5 – ~~10~~ minutes
7. After PI6 is close to 1300, open SV18 by clicking on the computer SV18 button (Red turns to Green) and PI6 drops rapidly
8. One can start PID program to follow pressure change. Before starting the PID program, the switch at the power supply, located at the right bottom of Rack 1 should be switched on
9. Start a PID program. Click on a start button. Two evolving lines will appear. The upper line is a set point value (Red) taken by a computer from DB. Lower line is yellow, which starts to rise, showing rising pressure in PT8. Watch lines, until the lower line reaches the top line. Just before reaching, click on SV18 button on the computer screen (Red turns to Green as in p.7.)
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To get gas system into a purging mode after the seal check

1. Put the FM5 flow to 0 by computer
2. After PI6 pressure drops below 100, manually close FM5 (MV4 valve) on Rack 2
3. Close the PID program and switch back a power supply switch on the box located at the Rack 1 (lower right)
4. Open SV11 by clicking SV11 button on the computer display (Both SV11 and SV18 should be Green during the purge mode)
5. Confirm a purge flow on FI5 (indicated by a line on FI5 on Rack 2)