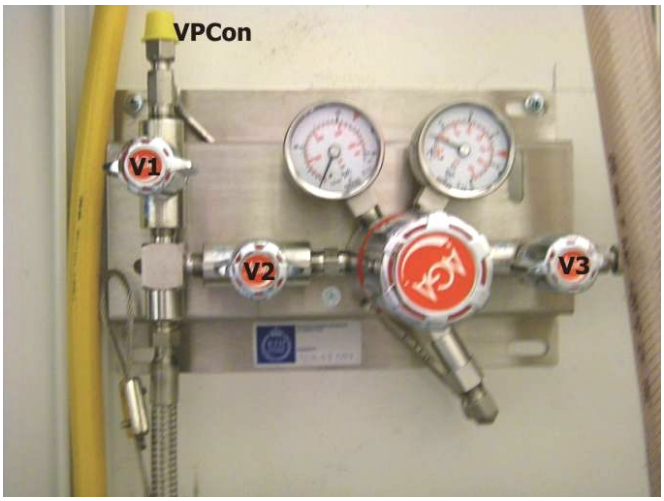
SF6-bottle exchange procedure

Rev. 1. 2016-01-31 Anders Holmberg, first version



VPCon - Vent/Pump connector
V1 - Vent/Pump valve
V2 - Bottle side regulator valve
V3 - System side regulator valve

Unmount the old SF6 bottle:

1. Close V3
2. Close V2
3. Close the SF6 gas bottle valve.
4. Mount a vent tube from VPCon to the house exhaust tube
5. Open V1 to let the SF6 gas out
6. Close V1 valve
7. Unmount the vent tube from VPCon
8. Unmount the old gas bottle

Mount the new SF6 bottle and evacuate the air:

9. Mount the new gas bottle with a new gasket (size DIN6 or DIN8)
10. Mount the vacuum pump to VPCon
11. Open V1
12. Start pumping to vacuum at the bottle side tubing with the vacuum pump
13. Pump for at least 15 min
14. Close V1, turn off and unmount vacuum pump from VPCon

Flush with process gas:

15. Mount the vent tube from VPCon to the house exhaust tube
16. Open the gas bottle valve to fill the bottle side tubing with process gas
17. Close SF6 gas bottle valve
18. Wait for 10 min

19. Open V1 to flush out the SF6 gas, close immediately when the noise from the venting fades out
20. Repeat step 16 to 18 once

Final pump out through PT100 system:

21. Open the SF6 gas bottle valve to fill the bottle side tubing with process gas
22. Carefully open V2. Inlet pressure gauge should read ~21 Bar (@21 degC) for the new bottle.
23. If necessary, regulate pressure on outlet side to 3 bar
24. Open V3
25. Start a SF6 flow recipe at the PT100 system. Set maximum flow and ignore tolerances. Pump until flow is down to 0 sccm. At this point both gauges on the regulator central should read 0 bar. This may take several hours or can be done overnight.

Final filling of regulator and piping with process gas:

26. Close V2
27. Open the SF6 gas bottle valve to fill the bottle side tubing with process gas
28. Carefully open V2 to fill the regulator and system side tubing with gas
29. Start a SF6 flow recipe at the PT100 system. Test different flows up to 90% of maximum flow.