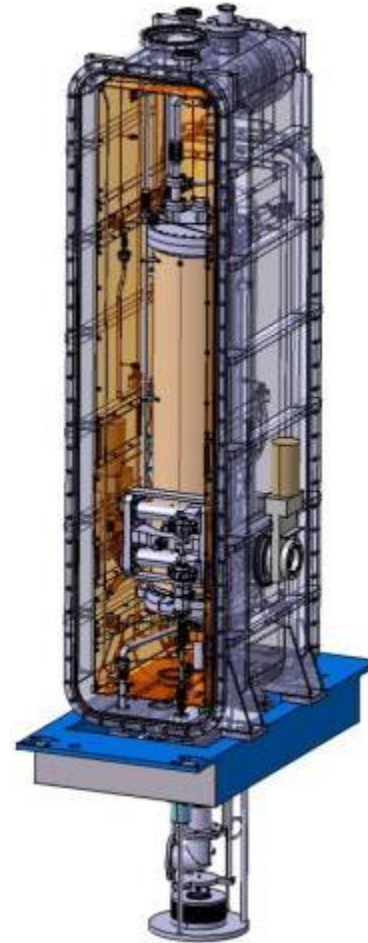


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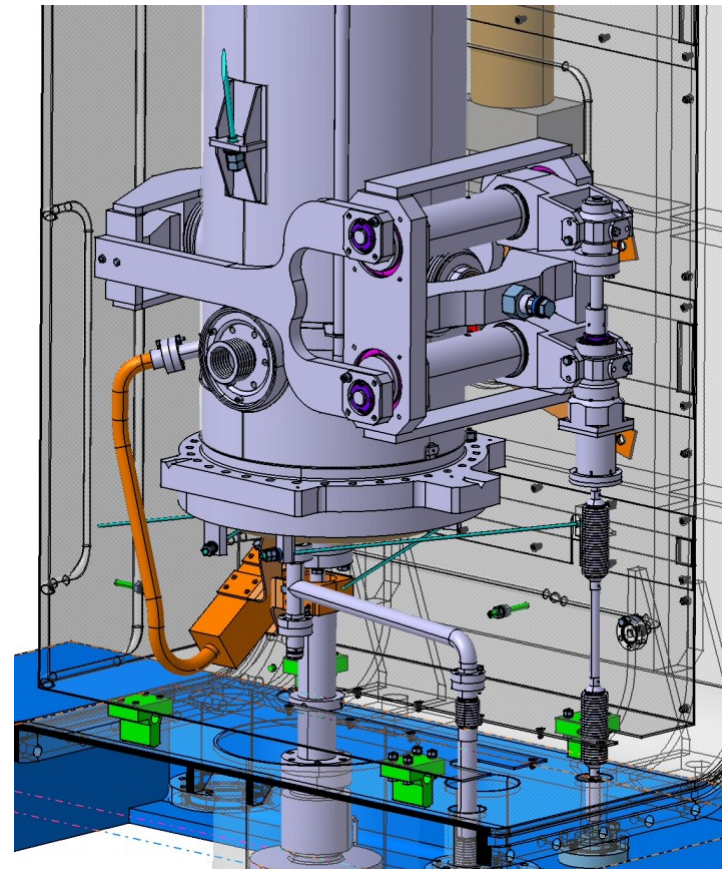
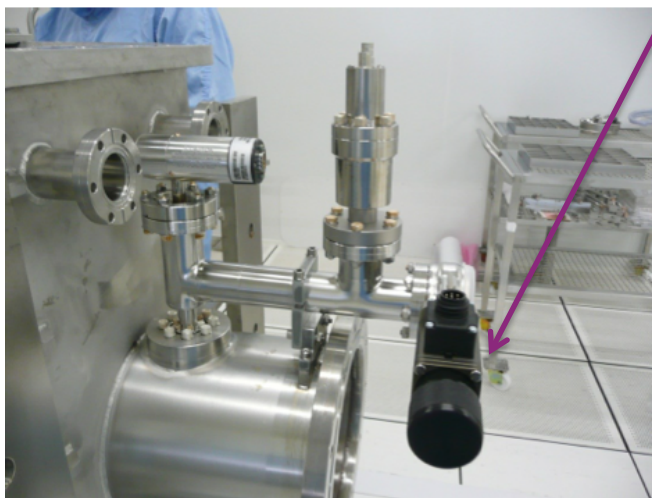


VACUUM HANDLING FOR SPIRAL2 CRYOMODULES A

C. Marchand, CEA/IRFU

Vacuum handling of QWR cavity in CR:

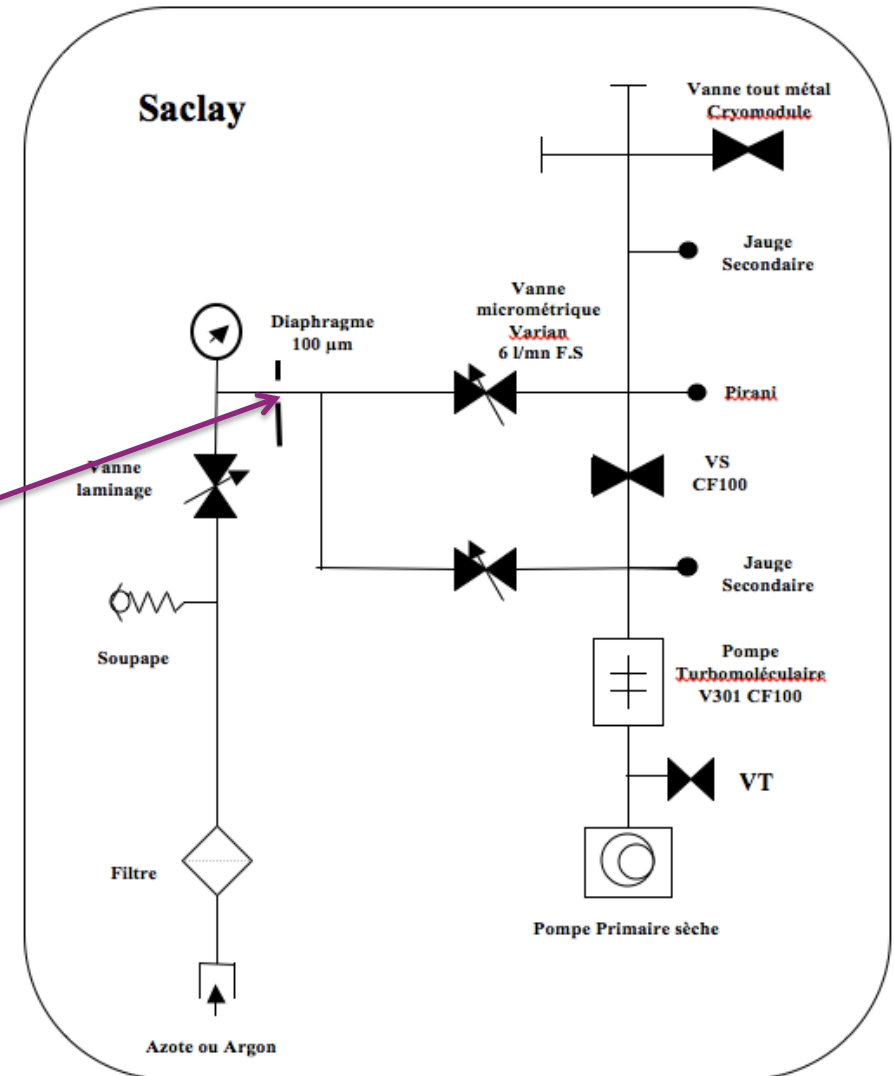
- put back pumped out cavity to AP
- put back pumped out coupler to AP
- after full assembly of cavity/coupler... in CM,
pump out cavity to 10^{-7} mbar and close valve



SPIRAL2 CRYOMODULES A: PUMPING SCHEME

For all vacuum pumping and put back to AP:

- respect the rule established by CERN of having N₂ flux below 3 bar l/mn to avoid displacing particles during the process
- to achieve that, add a small diameter diaphragm in the pumping line; for Spiral2 cavity size, typically diameter of 0.1 mm
- typical time to go from vacuum to AP: 8h

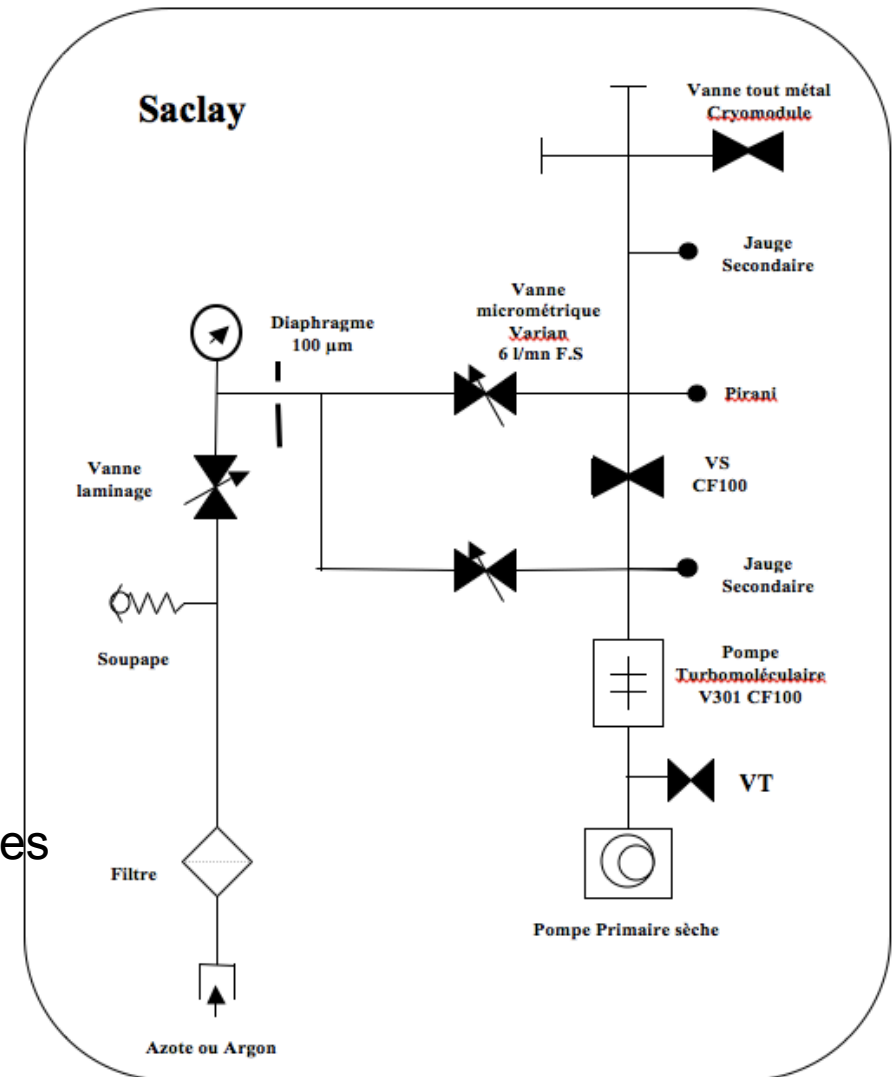


Procedure to put back cavity to N2 AP:

- Pump out from N2 to CM valve (10^{-7} mbar)
- Leak check the pumping line
- Close V5 pumping valve
- Open N2 valve and put to AP up to CM (through N2 filter $0.22 \mu\text{m}$)
- Open CM valve and put cavity to AP (8h)

Procedure to clean pumping line:

- Repeat pump out/fill at AP N2 6 times
- Clean line with ionizing gun and count particles



THANKS
FOR YOUR ATTENTION

Commissariat à l'énergie atomique et aux énergies alternatives
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