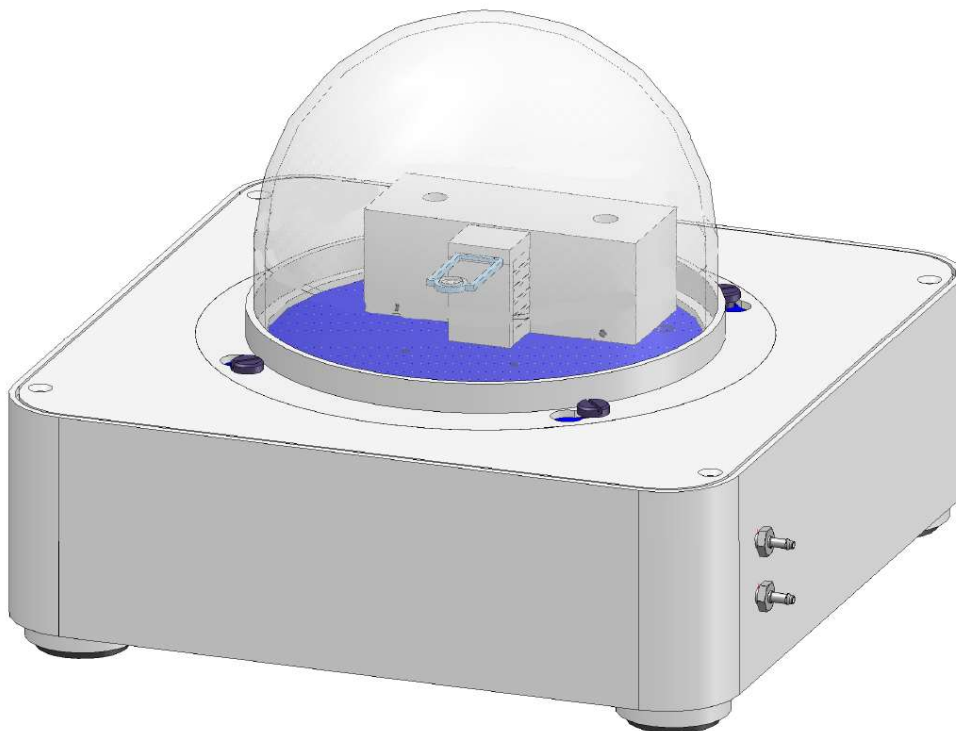


How To Handle vacuum with Chip-DSC



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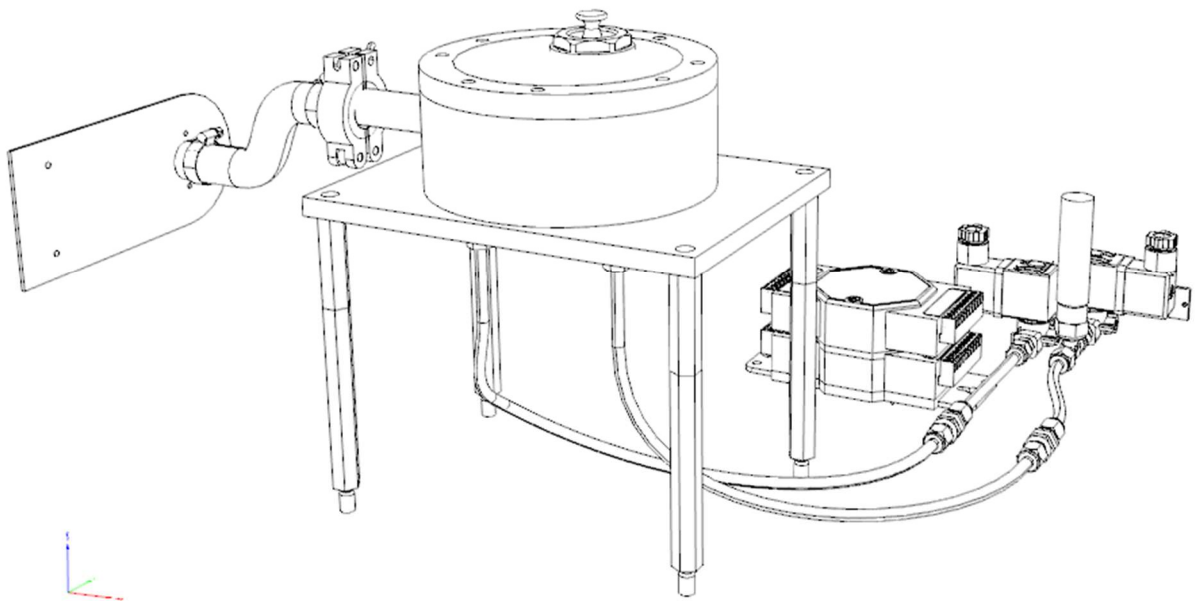
1. General information

This manual is a short description for handling measurements with the Chip DSC in combination with a vacuum pump. The presented option is the most common, that is usually used. However, the options are mostly adapted to the individual customer needs, that cannot all be displayed here. For more information, read the other available instructions or specific manuals for the Chip DSC.

2. Requirements and installation

2.1 Chip-DSC

- A Chip-DSC 100 with vacuum measurement chamber is needed
- Cap and socket of this measurement cell are made of metal to avoid any leakage
- Depending on your needs also controllable valves are built-in

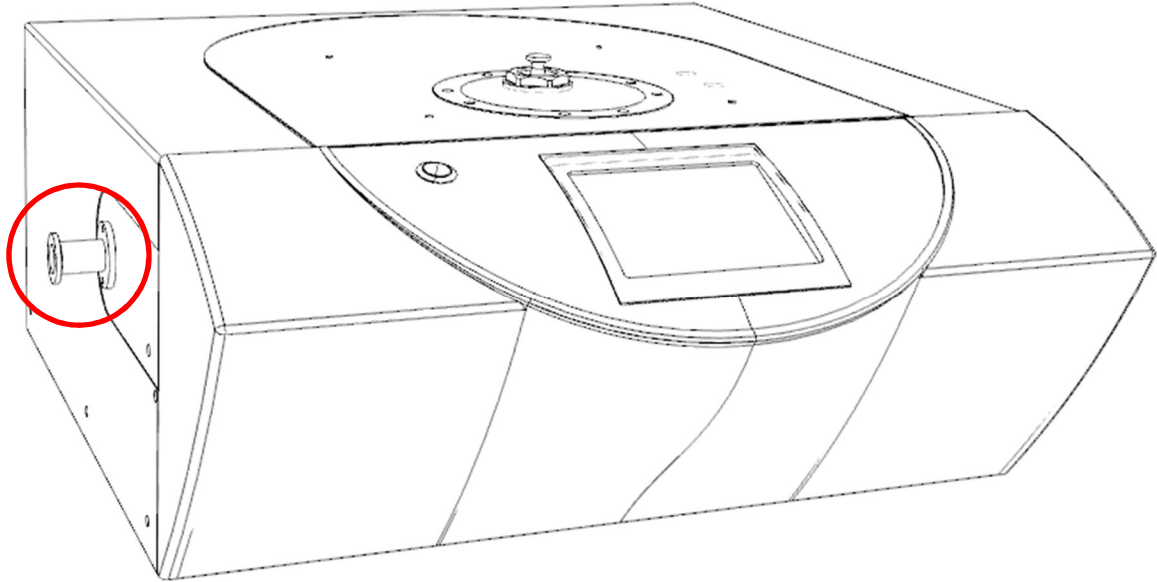


2.2 vacuum pump

- A vacuum pump is needed
- Different models are recommended and tested
- additional to the pump in certain cases also a special pump oil and connection tubes between Chip-DSC and Pump are necessary

2.3 connect vacuum pump

- The vacuum tube must be assembled between Chip-DSC-fitting and vacuum pump fitting



2.4 tighten connections

- The clamp of the vacuum tube must be tightened at both end properly
- The measurement cell plug must be tightened properly
- All screws of the measurement cell cap must be tightened

2.5 test vacuum system

- First check if all nuts, screws and clamps are closed properly
- Check the manual of your vacuum pump if its ready to use
- Turn on the vacuum pump
- Depending on the pump you are using with your Chip-DSC different pressure levels could be achieved

3. Calibrate

3.1 prepare calibration

- Open the screws of the measurement cell cap
- Prepare your sample (follow instructions of *How To calibrate with Chip-DSC*)
- Place the sample on the sensor
- Close the measurement cell
- Make sure all screws, nuts and clamps are tightened

3.2 calibrate

- Setup the calibration in your Chip-DSC software
- Turn on the vacuum pump and wait until the pressure level is constant
- Start the calibration process and store the successful calibration

3.3 release measurement cell

- Turn off the vacuum Pump
- Release the vacuum on your measurement cell at the valve at your vacuum pump
- Open the measurement cell and remove calibration crucible

4. Measurement

4.1 prepare measurement

- Open the screws of the measurement cell cap
- Prepare your sample and place the sample on the sensor
- Close the measurement cell
- Make sure all screws, nuts and clamps are tightened

4.2 measure

- Setup the measurement in your Chip-DSC software
- Turn on the vacuum pump and wait until the pressure level is constant
- Start the measurement

4.3 release measurement cell

- Turn off the vacuum Pump
- Release the vacuum on your measurement cell at the valve at your vacuum pump