NCP-CERN Project status

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Items

- Production sites requirements
- Clean room
- Gas system

Gas leak measurement station.

- Leakage current measurement station
- X-ray box

Clean Room

- The clean Room must certified cleanroom, rated at least at class 1000, equipped with one large bench to assemble full GE1/1 chambers for both long and shot versions.
- The Clean Room must be large enough
  - To allow personnel to easily move around the assembly bench.
  - To accommodate auxiliary benches for assembly tools and spares are also required.
  - To accommodate storage cabinets were keep the tools necessary for the assembly.
- The cleanroom must be equipped with clean and dry nitrogen gas lines used to blow chamber parts during assembly.
- Clean Room class 1000 and particular area class 100.

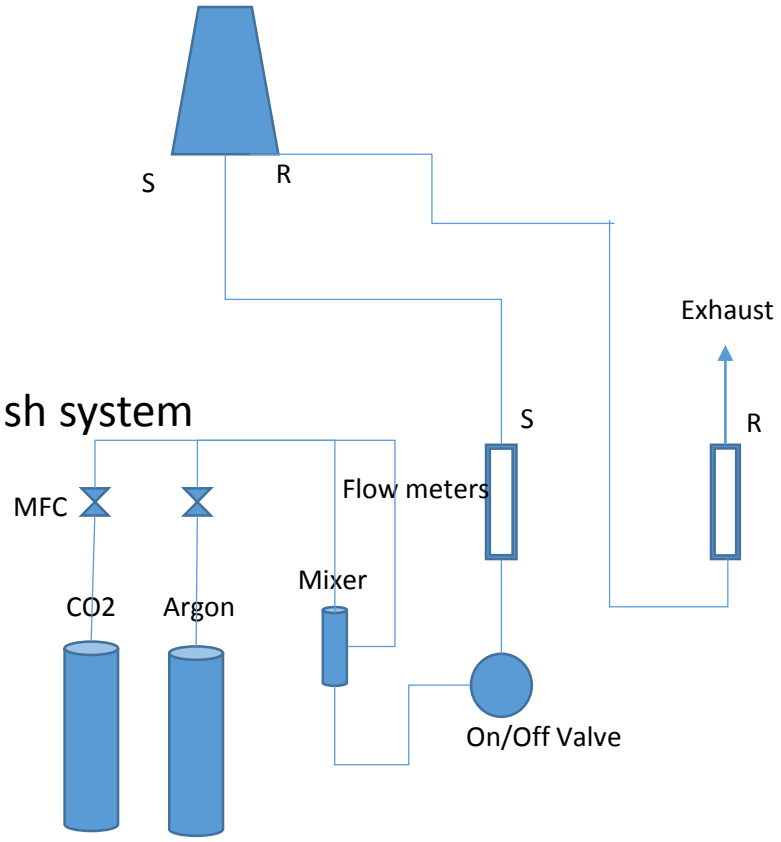
Gas system

- In this area the assembled chamber will be tested for gas Leaks. The station must be equipped with a dry and clean nitrogen gas line and with a manometer to measure a pressure drop of the order of a few tens of a millibar per hour.
- The use of oil or any oil-based devices to produce over pressure (U-shape tube) is forbidden.

Single chamber Gas System

- S Supply
- R Return
- Flow meter V-100
  - Range (0 --1.21 Bar)
- Pipe SS
  - ID 4mm
  - OD 6mm

- Use separate Valve of Dry Nitrogen flush system
  - FESTO
    - Range 0 – 10 Bar



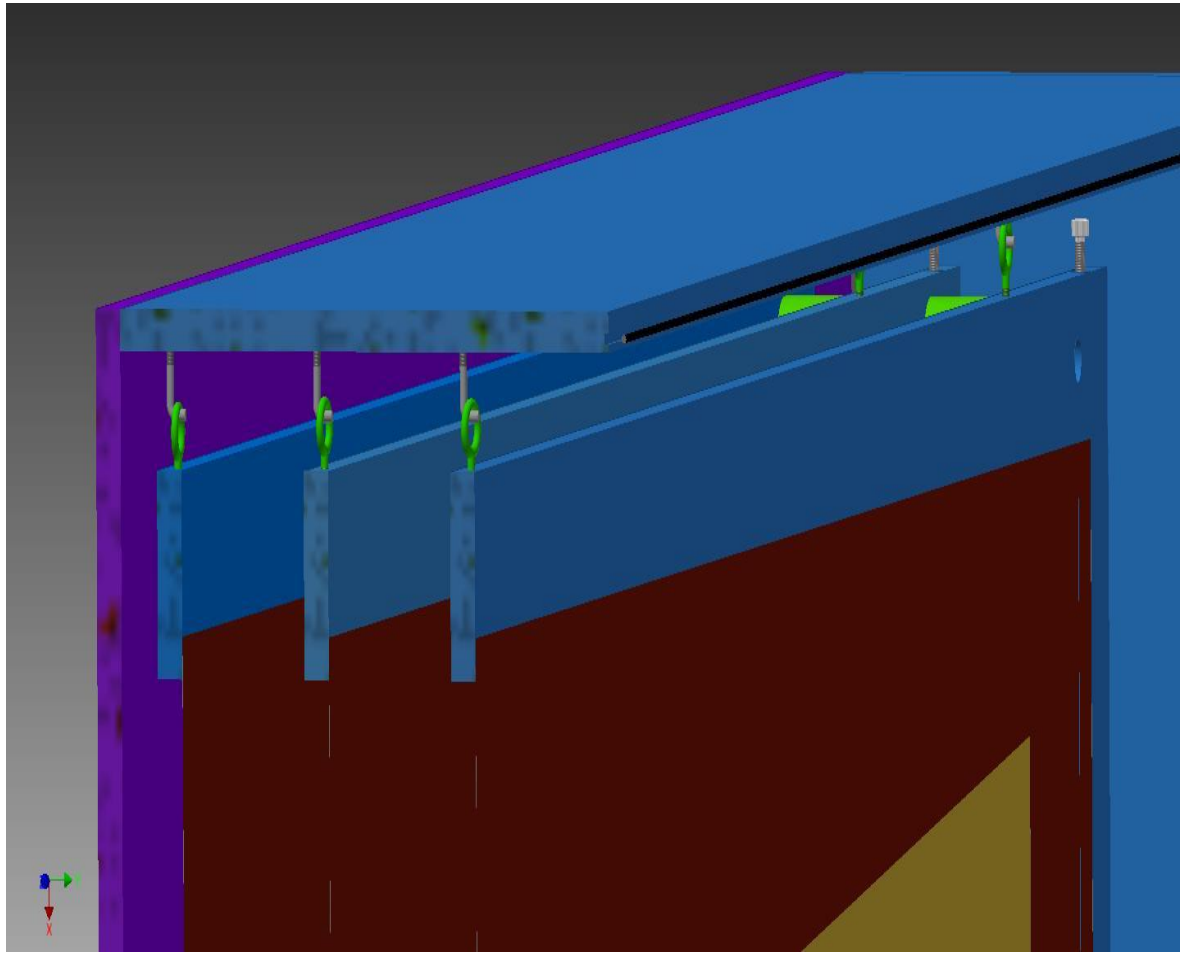
Assemble Chamber Gas leak test

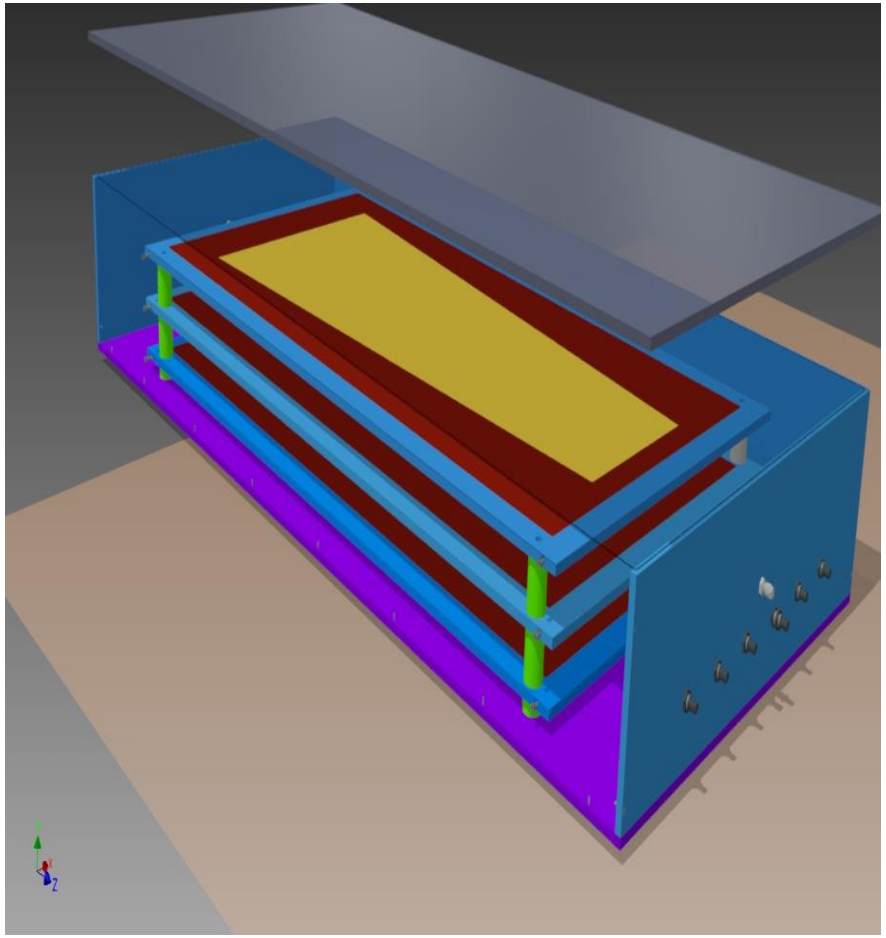
- In this area the assembled chamber will be tested for gas leaks.
- The station must be equipped with a dry and clean nitrogen gas line and with a manometer to measure a pressure drop of the order of a few tens of a millibar per hour.

Large Current Measure system

- There must be a nitrogen-flushed box of large enough size to comfortably house GE1/1 foils, both short and long version.
- A power supply must be available to provide at least 500 V at sufficient current for a single GEM foil.
- The nitrogen gas used for flushing in the leakage current box must be dry and clean.
  - Should be place in to the cool room in order to reduce the foils to “dirty” environment.

Foil testing Box





X-Ray Box

- It is used to measure the gain uniformity of the assembled chambers
  - To ensure homogeneity among different assembly sites,
- X-ray box must be equipped with mini-X source from Amptek.
- Each site must take care of the safety operation of the x-ray box according to the local radiation protection prescriptions.(follow Imran Presentation)
- The box must be large enough to accommodate both long and short chambers.
- The box must have gas line for chamber operation and DAQ system based on APV-SRS.

X-Ray Box

ASK for CERN Peoples….

- In particular CERN asked
- Cleanroom dimensions
- The dimensions of the optical bench (or similar) to be used for the assembly.
- X-ray box for the gain uniformity test dimensions and readiness status.
- The number of people that will be involved during the assembly period
- The general infrastructures status (gas lines, electronics, etc…)

Q & A

Thanks