SPL

CERN Niobium EP
Status November/2010

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Niobium EP

Content

Site

Installation status

EP R&D status (laboratory scale)

Still missing... (Equipment)

Cost

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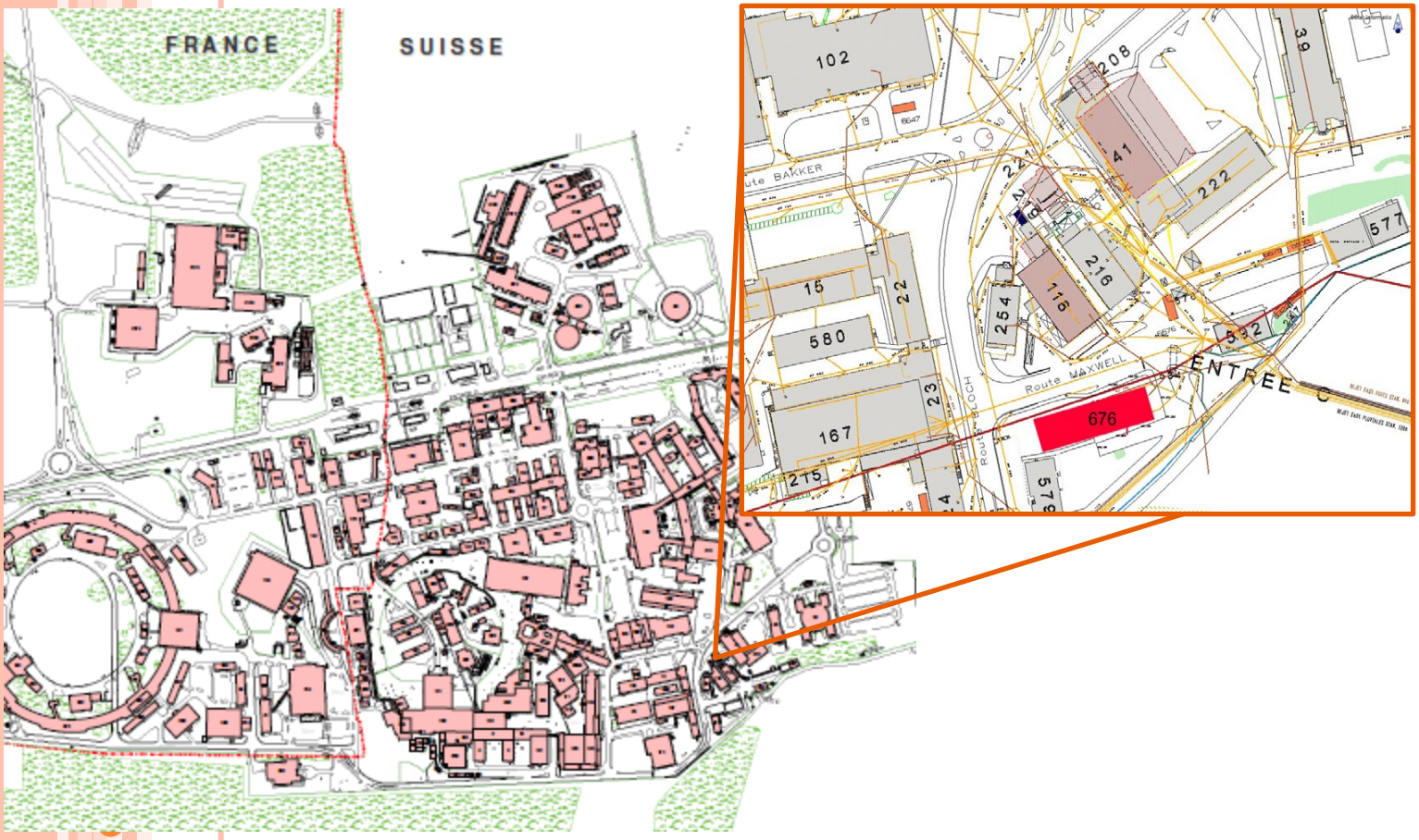
Niobium EP



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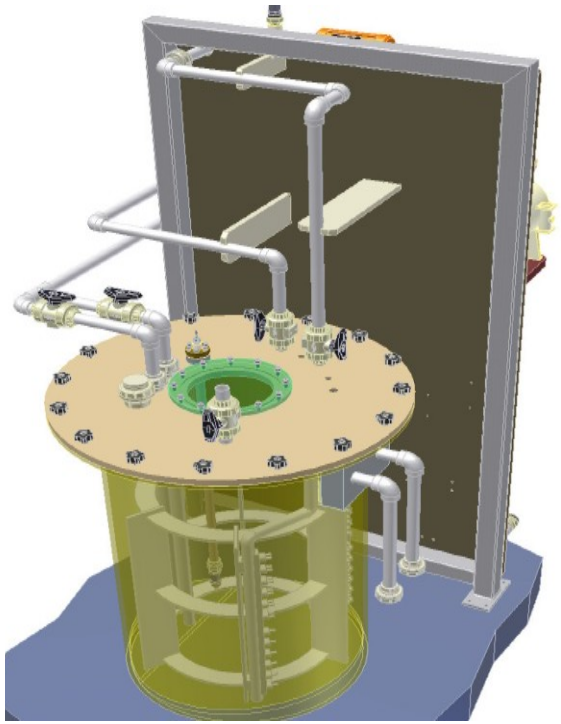
Installation Status / Conception

3D drawing of the circuit



All materials are compatible with standard baths (CP/EP)

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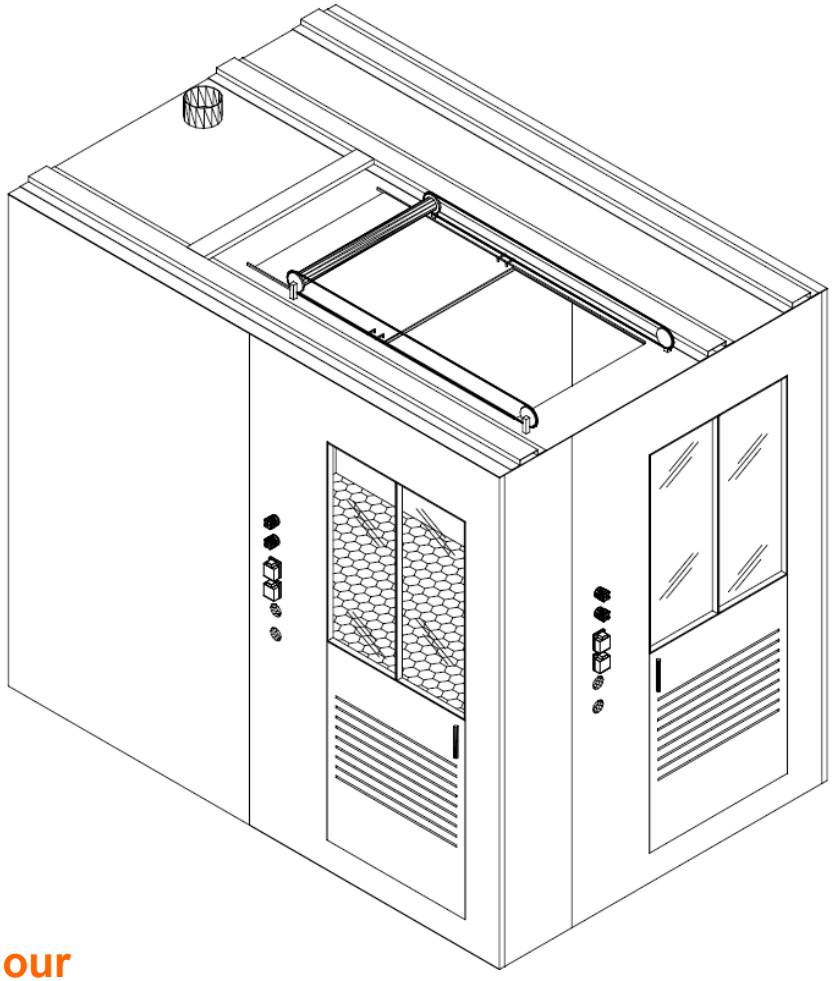
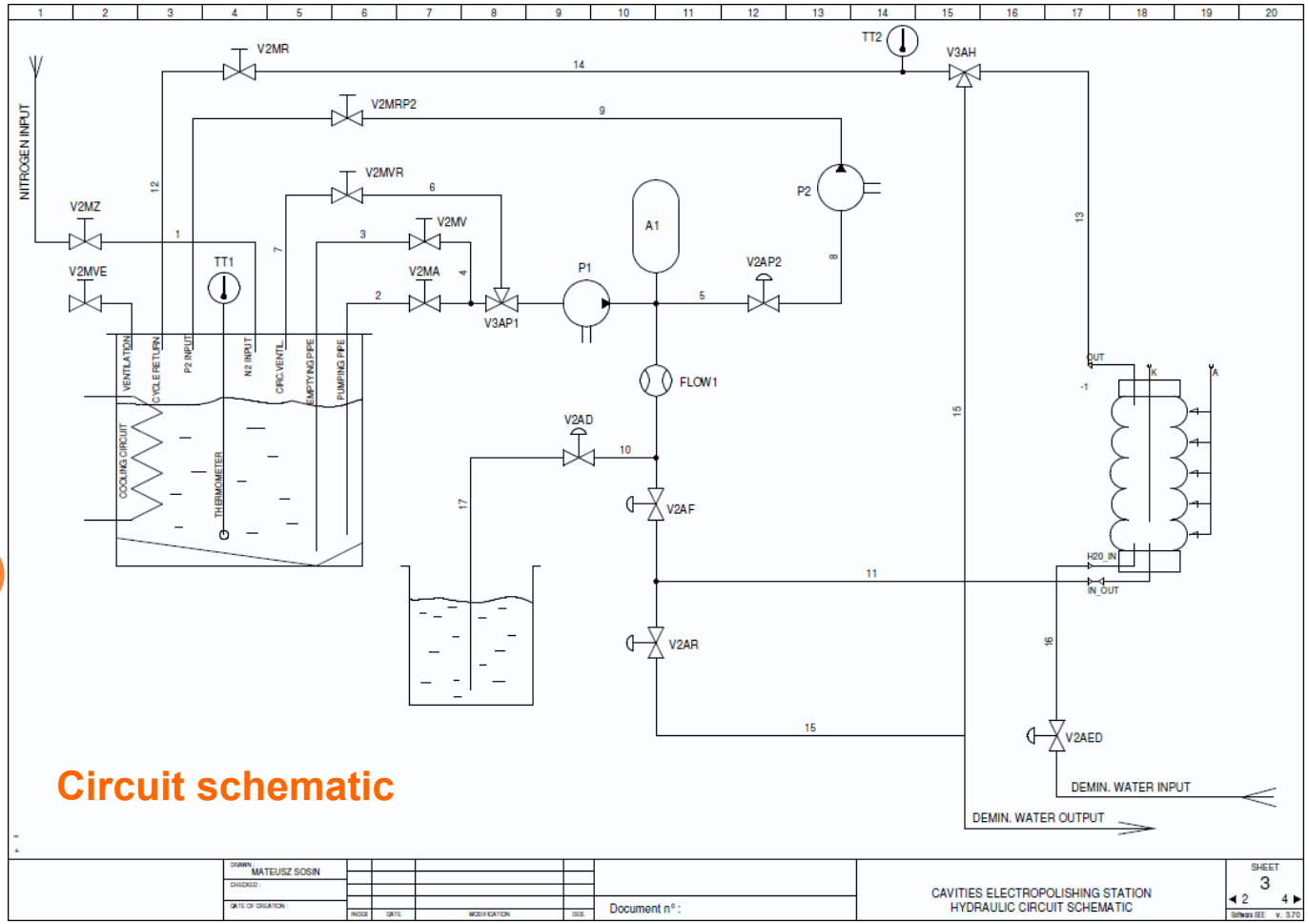
Installation Status / Conception



Walk-in booth:
- **~500 m3/h**
- **~40 volumes/hour**

Niobium EP

Installation Status / Conception



Circuit schematic

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Installation Status / At CERN

EP installation

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Niobium EP

Installation Status / At CERN

Walk-in booth

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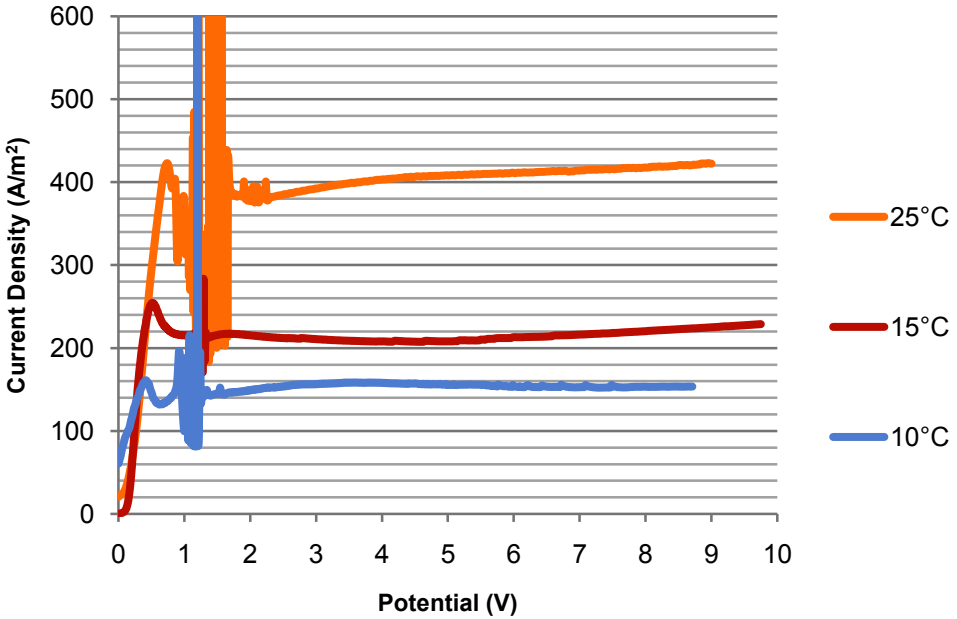
Niobium EP

EP R&D Status

Working parameters

Temperature-effect on polarization curve Nb



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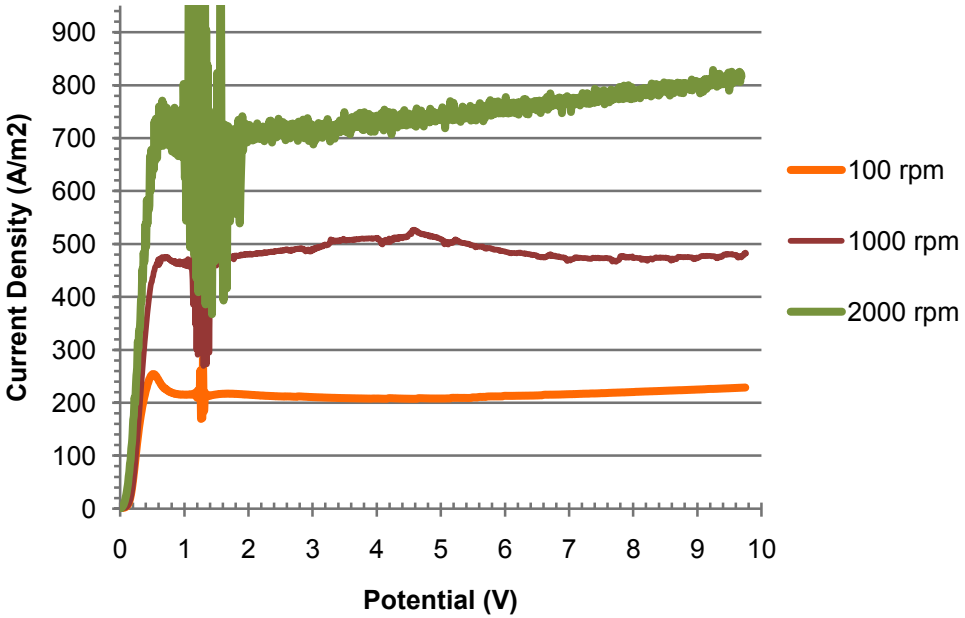
EP R&D Status

Working parameters

Agitation effect on polarization curve Nb

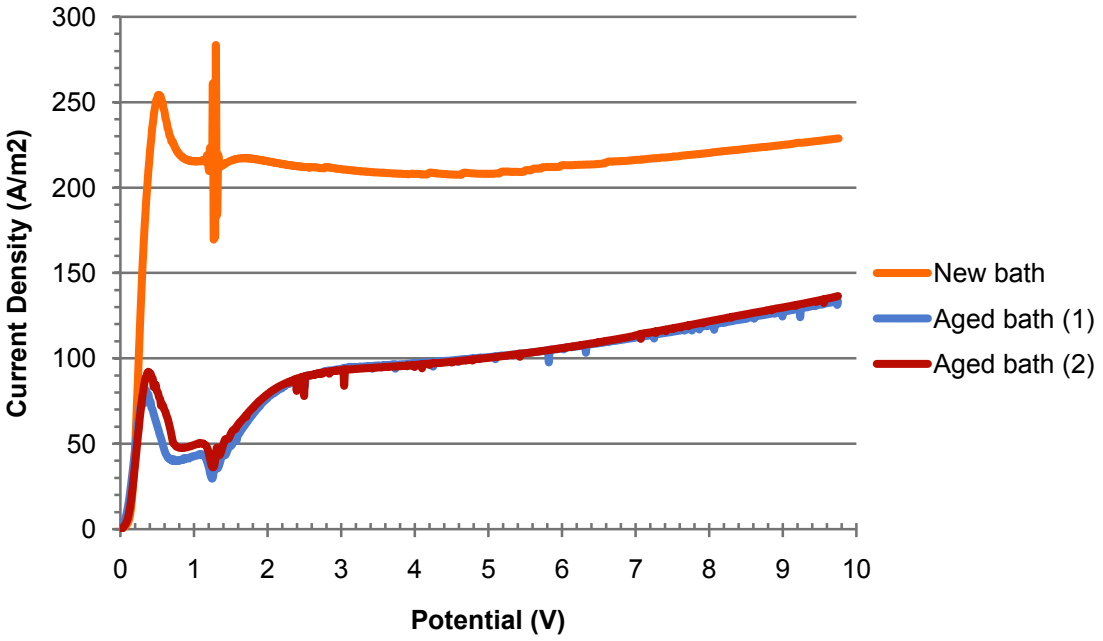


Niobium EP

EP R&D Status

Working parameters

Aging-effect on polarization curve



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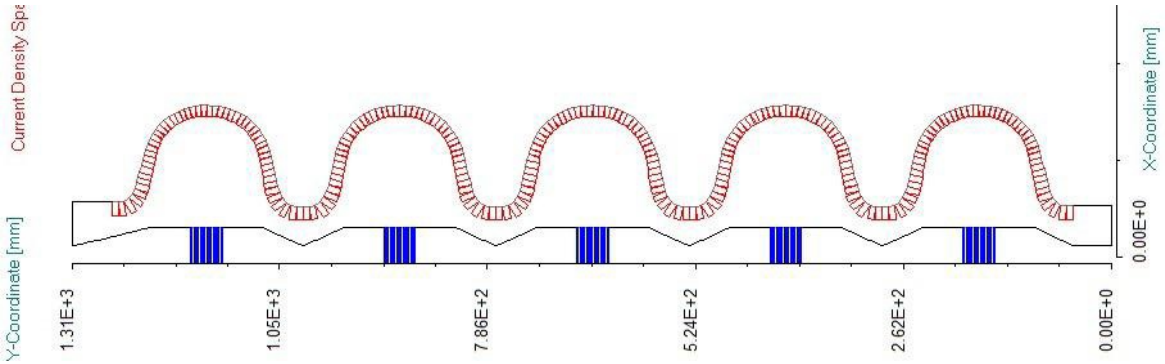
EP R&D Status

Cathode geometry



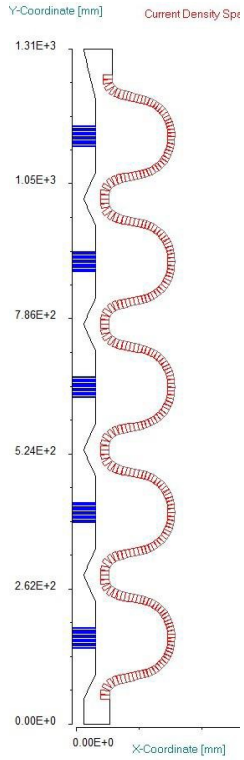
- Current distribution optimised:
  - bigger cell/cut-off diameter ratio
  - Higher power input (22.5 V)
- Bath flow to be optimised…

Niobium EP

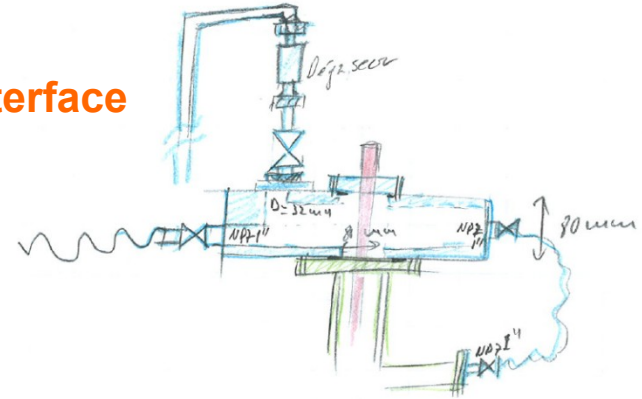
Still missing...

Main equipment

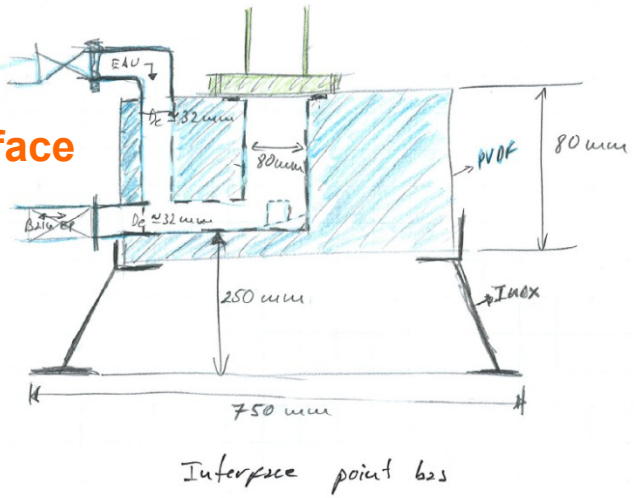
Cathode(s)



Top interface



Bottom interface



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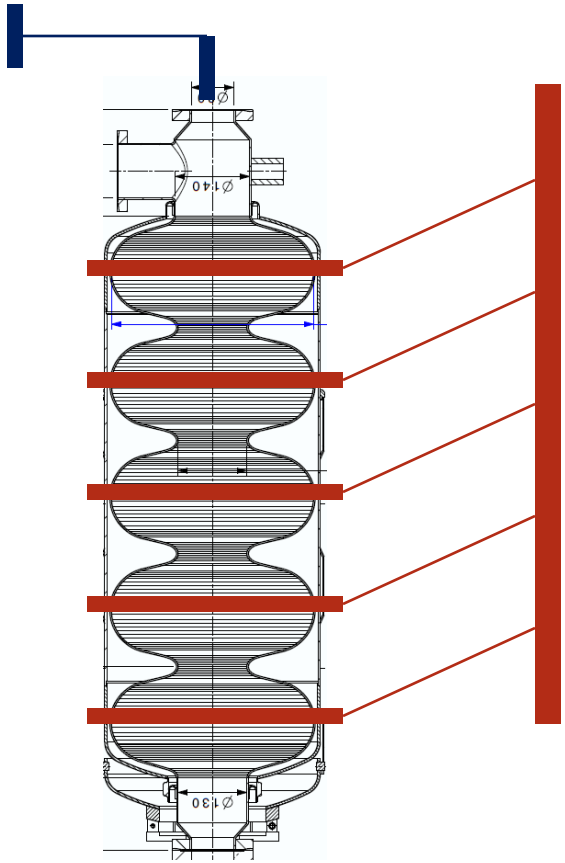
Still missing...

Main equipment

Electrical contacts

... To cathode ... To anode (cavity)



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Still missing...

Facility integration

Auxiliary equipment

Power supply

Cooling

Demineralised water

Compressed

Nitrogen

Air and water treatment

HES authorisation

Safety file

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Cost follow-up

Estimated: 200 kCHF (Material without power supply)

Cost at October 2010: 170 kCHF

Expected expenses to completion: 45 kCHF