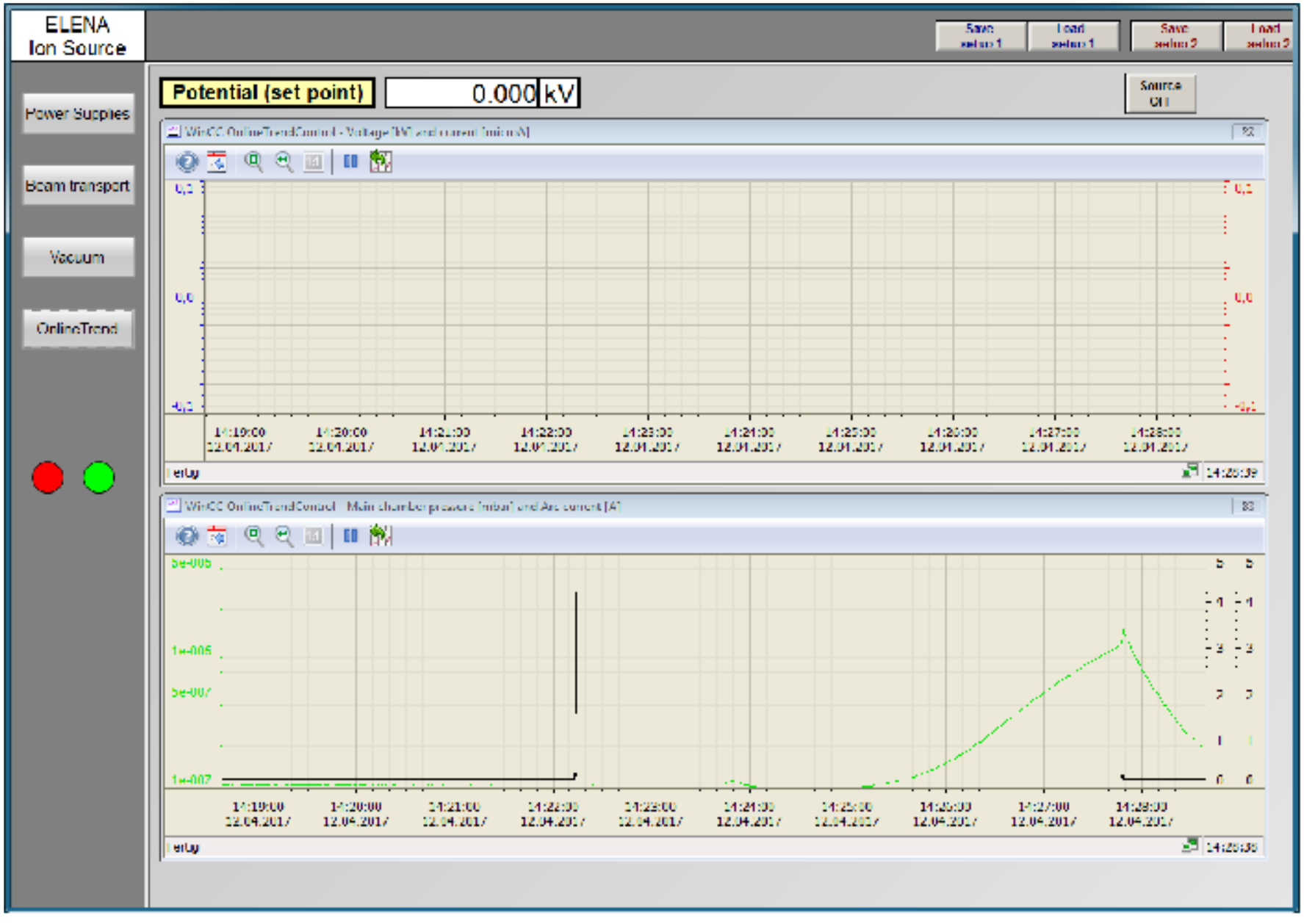
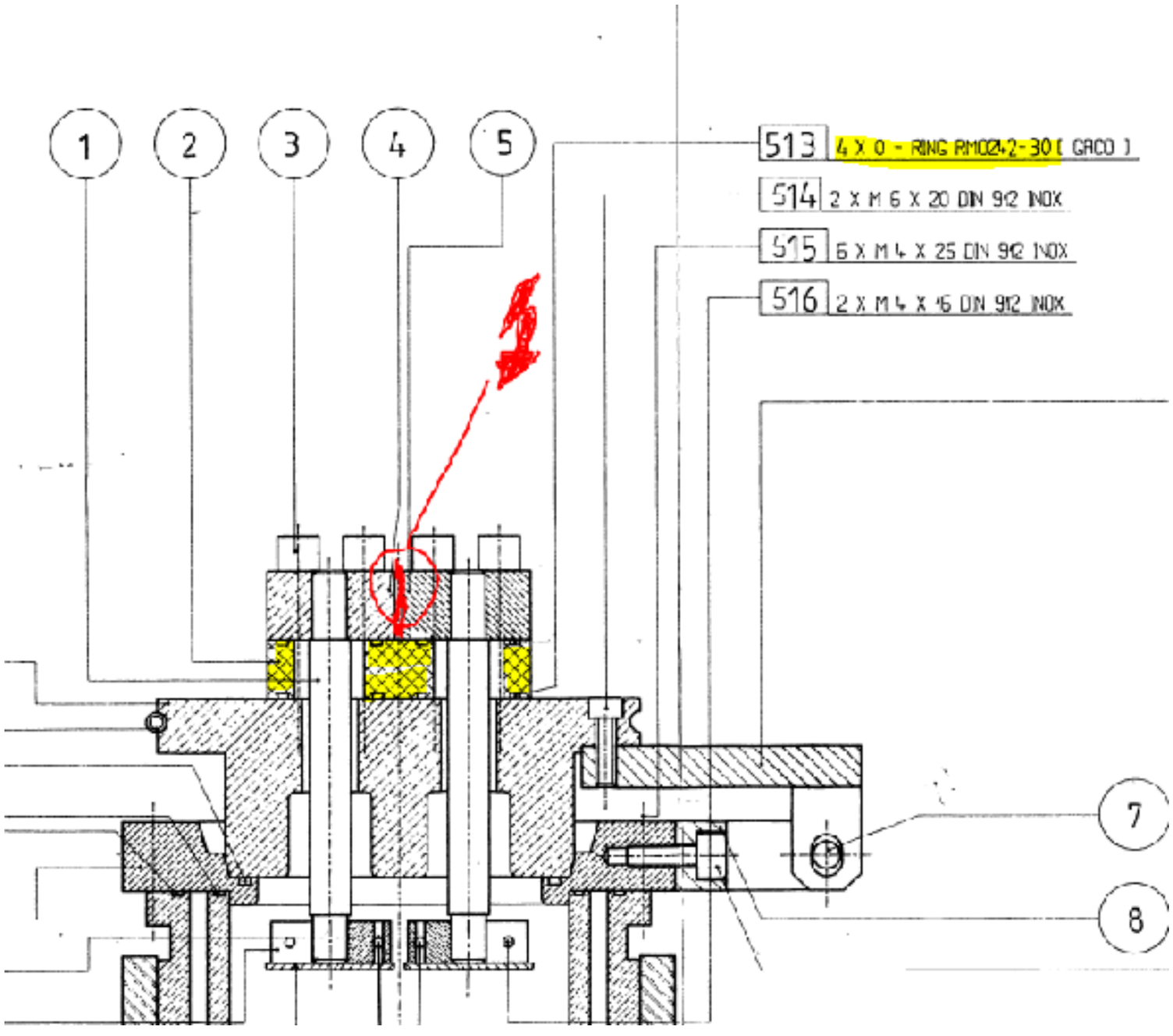
ELENA ION SOURCE

UPDATE

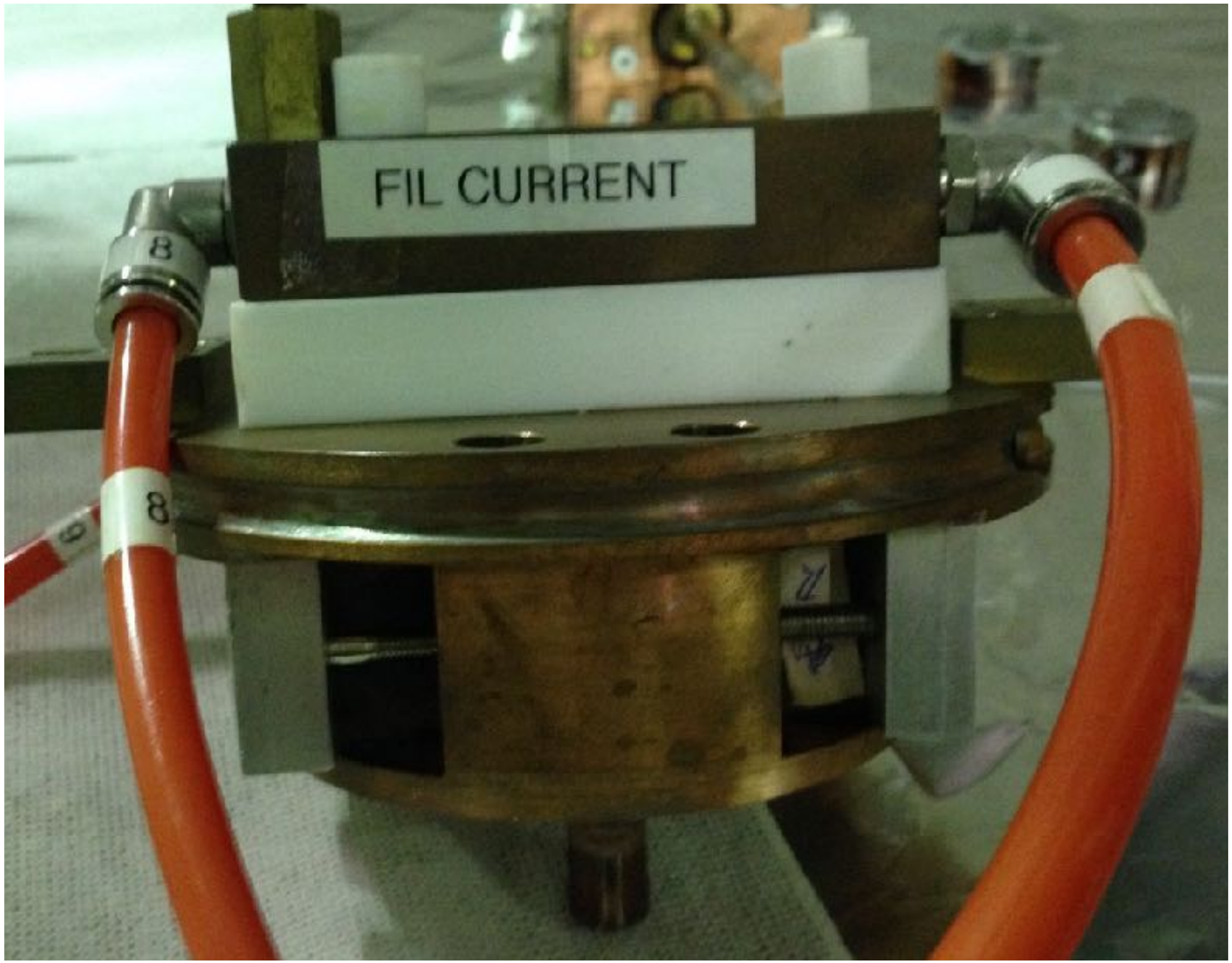
VACUUM LEAK


ELENA
Ion Source
Save setup 1
Load setup 1
Save setup 2
Load setup 2
Power Supplies
Beam transport
Vacuum
OnlineTrend
Potential (set point)
0.000
kV
Source Off
WinCC OnlineTrendControl - Voltage [kV] and current [micro A]
WinCC OnlineTrendControl - Main chamber pressure [mbar] and Arc current [A]

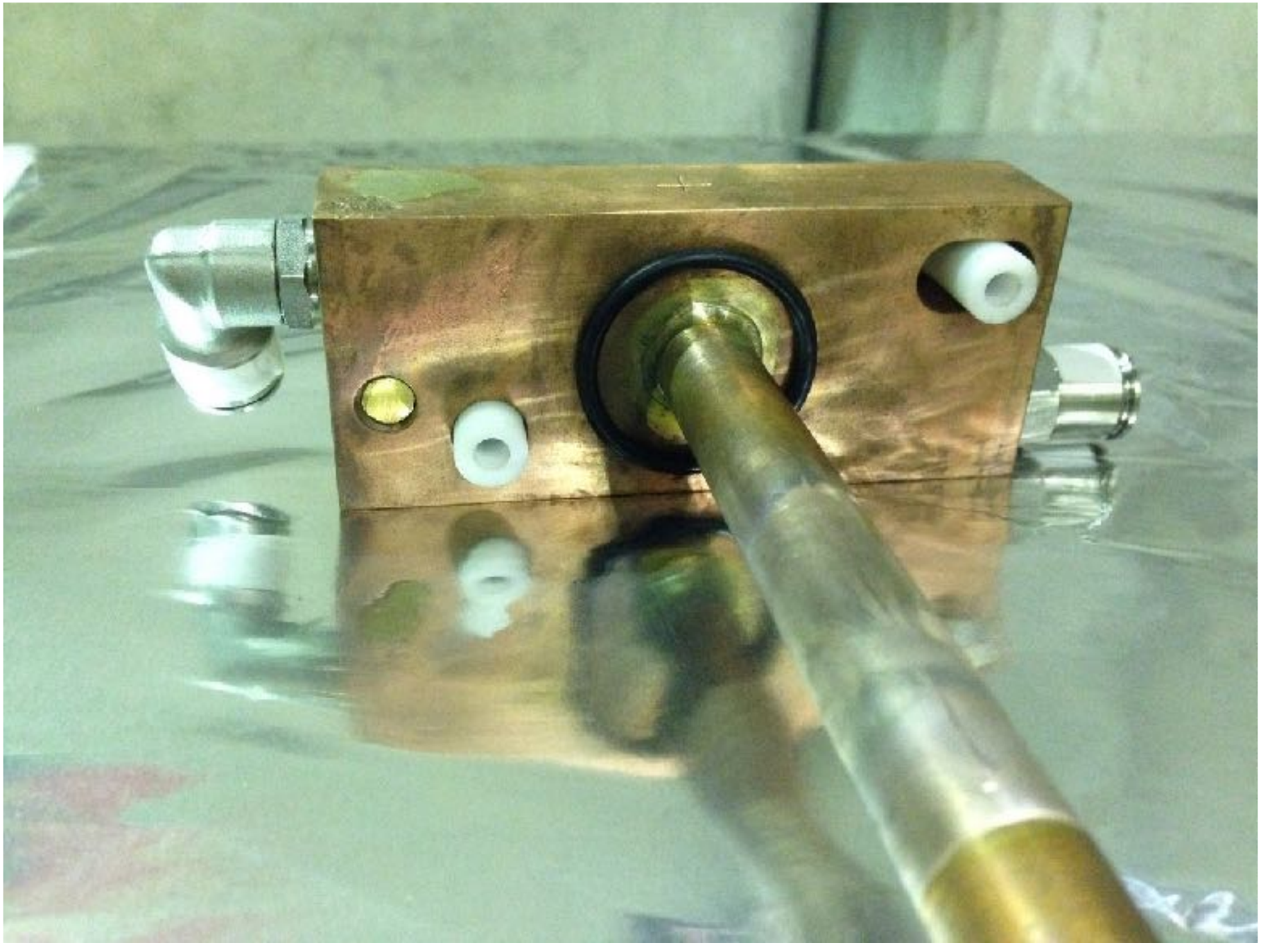
VACUUM LEAK


1
2
3
4
5
513 4 X O - RING RM002-2-30 (GACO)
514 2 X M 6 X 20 DIN 912 INOX
515 6 X M 4 X 25 DIN 912 INOX
516 2 X M 4 X 16 DIN 912 INOX
7
8

VACUUM LEAK



VACUUM LEAK



VACUUM LEAK

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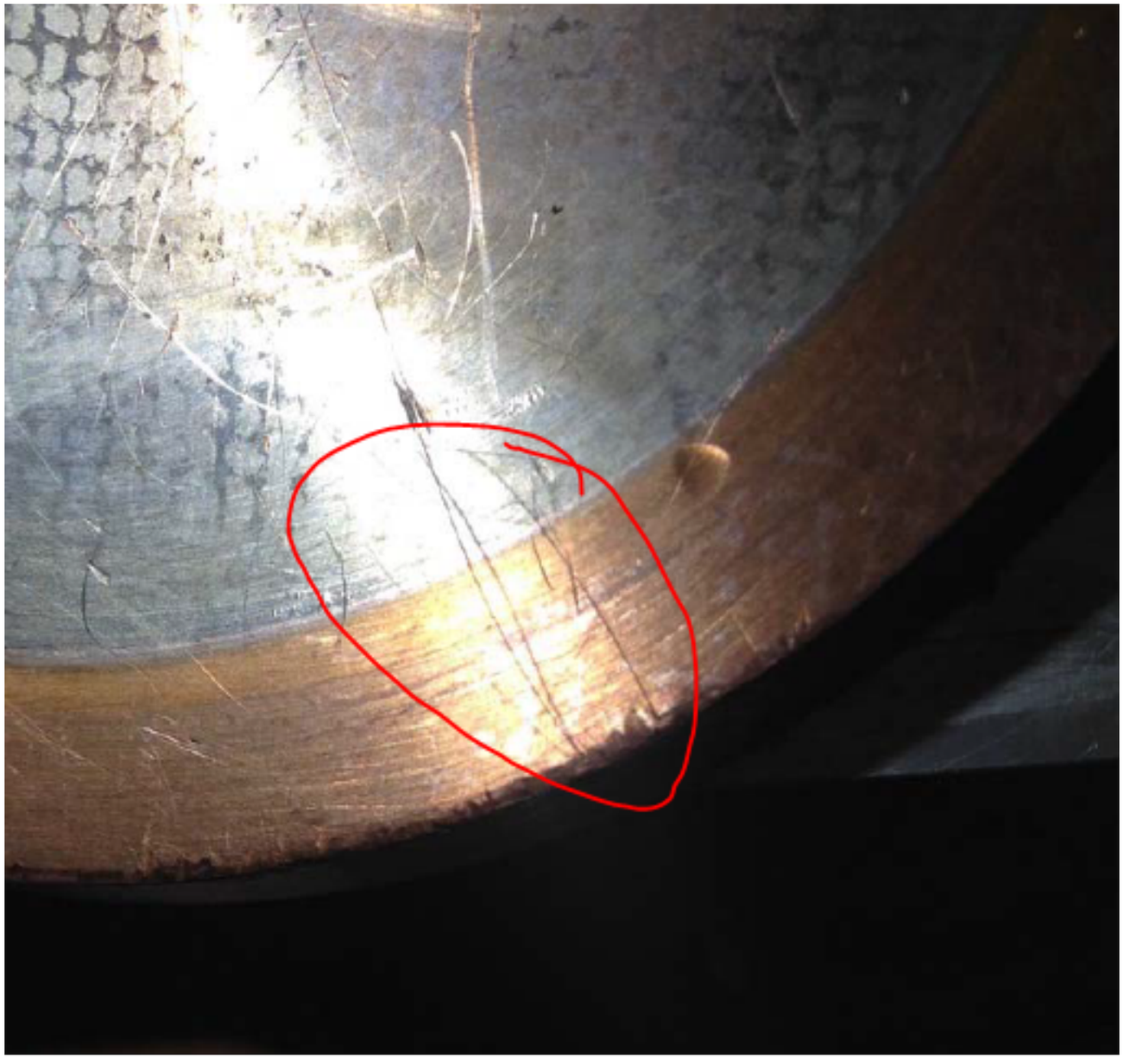
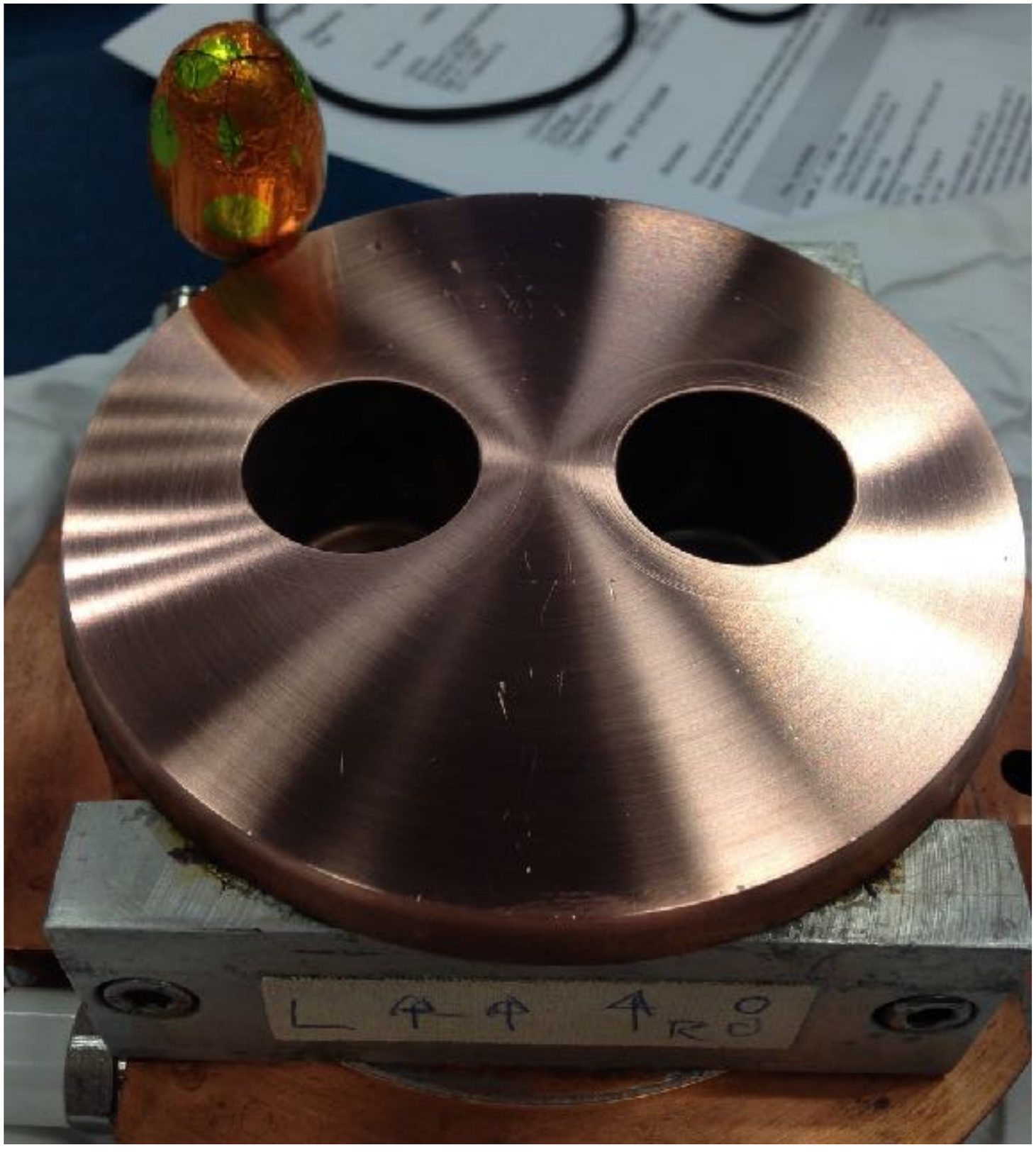


VACUUM LEAK



VACUUM LEAK

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VACUUM LEAK


ELENA
Ion Source
Power Supplies
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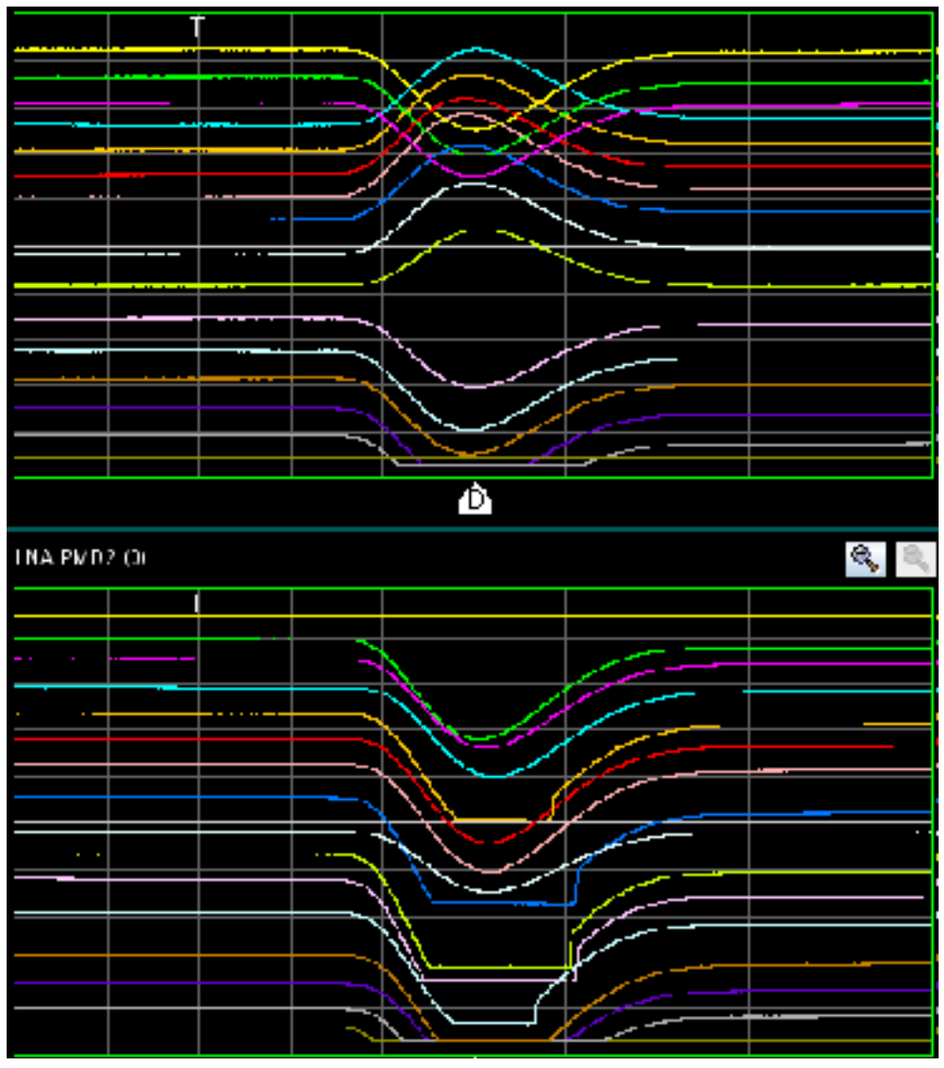
Online trend
Save section 1
Load section 1
Save section 2
Load section 2
Potential (set point)
0.000
kV
Source OFF

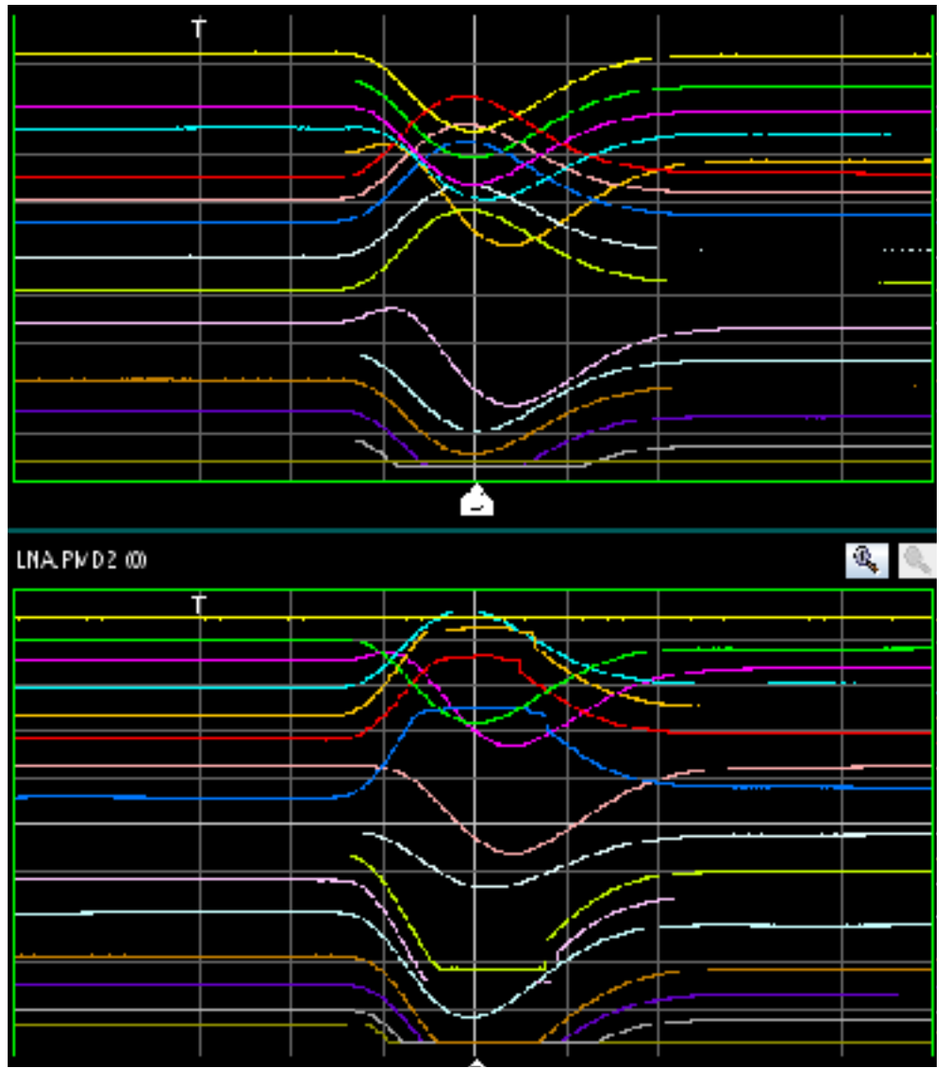
“UPDGRAGE”

- check of sealing surfaces and improvement by polishing
- degrease the o-rings
- Replace 4 o-rings on the PTFE block
- use 1 mm diameter filament
- adjust maximum current for ARC mode to about 49 Amps
- filament length is not okay: limits the emission to 2 Amps by reaching 11 Volt of filament power suppl

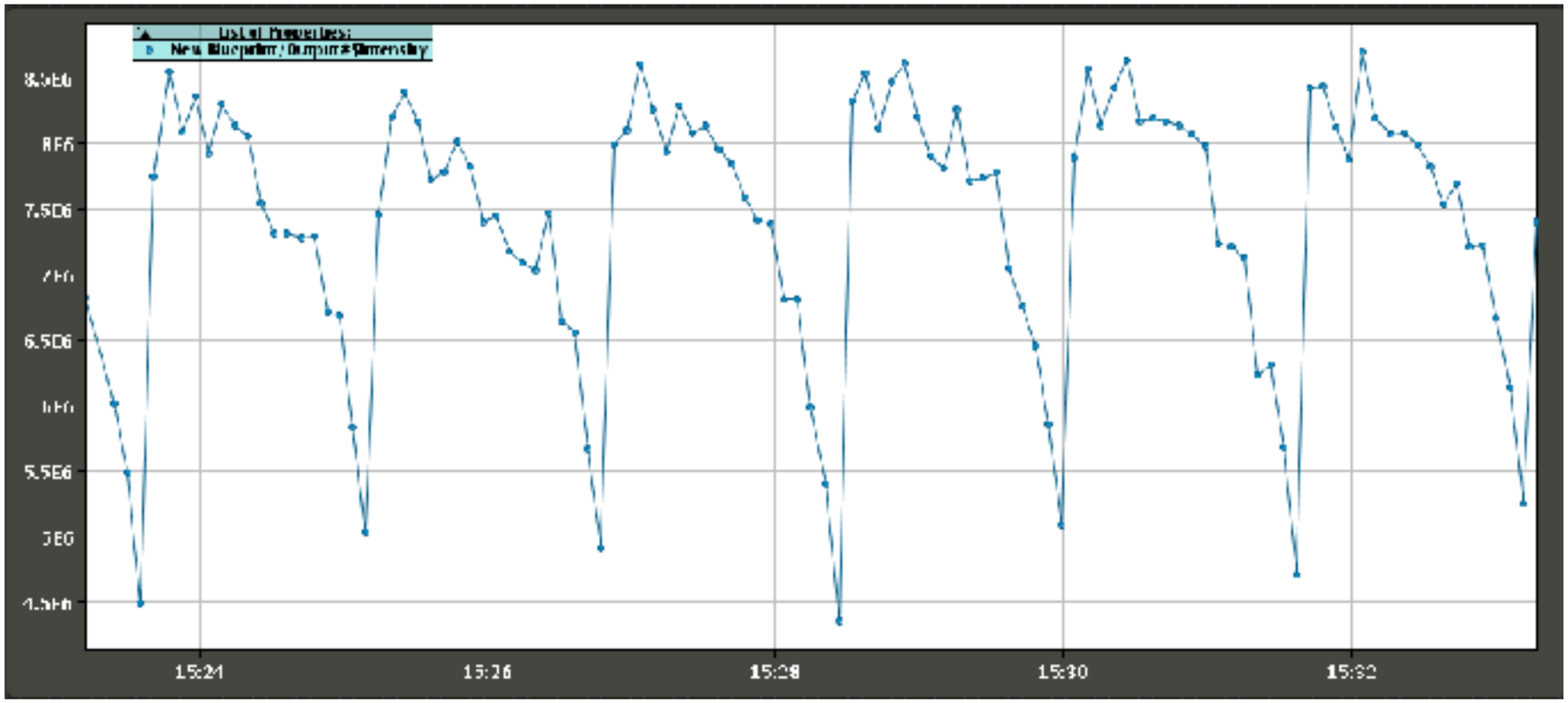
H+ SEM TESTS

- Test Beam current about 70μA and length about 3μs.





SOURCE STABILITY



TO BE CONFIRMED:

– After reaching thermal equilibrium, Position on First BTV is stable.

– Life Time in the machine still fluctuating.

WHAT NEXT ?

- Electrons are also going out of the source and this was maybe not foreseen during the design of the quadrupoles and the SEM grid.
- Dielectrics charging up could explain intensity fluctuations and lifetime variations.
- Removing the SEM ?
- Double check the design of all the elements between the source and the ion switch for dielectrics visible from the beam point of view.