

How to open the instrument and clean the mobility analysers

Instructions for the NAIS user

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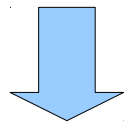
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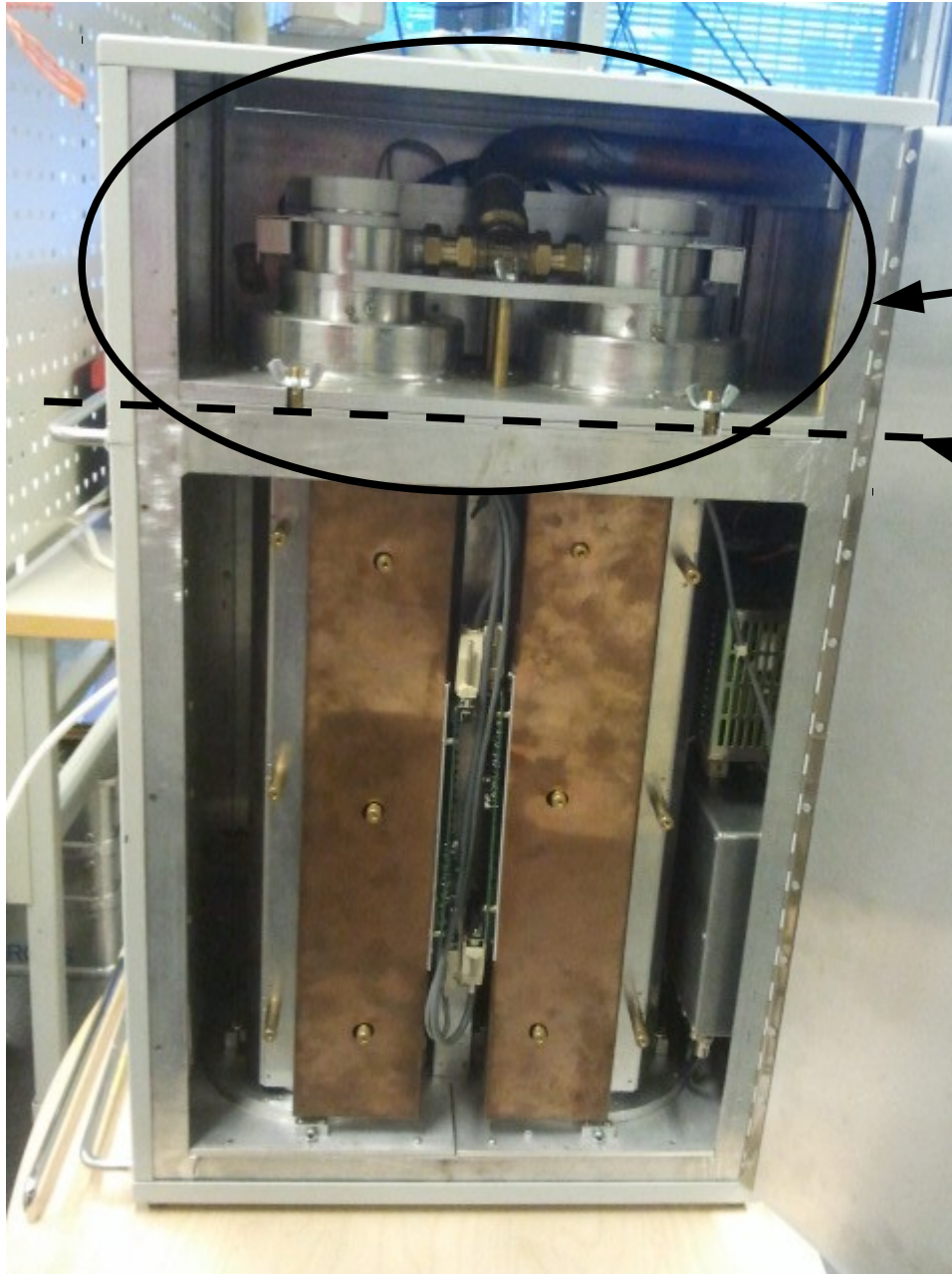
2013

Moi,
this are the instrunctions on how to clean the EM rings of the NAIS
I will start with the easy way that implies that you have a cleaning rod available.
I transported it to CERN, so it should be somewhere there.
This is how it looks like:



In case you have it the cleaning it's going to take 15-20 mins, otherwise the procedure is a bit longer, but not too bad.
Let's start:

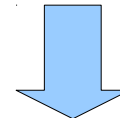




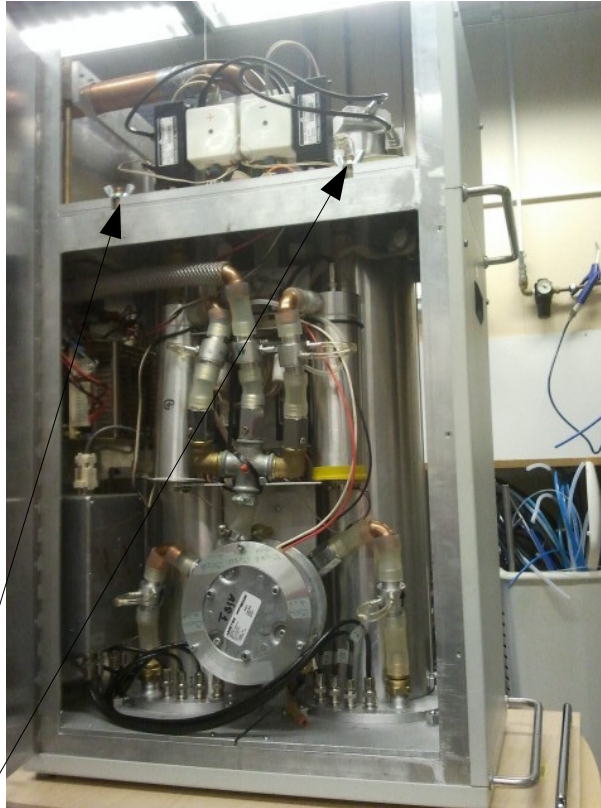
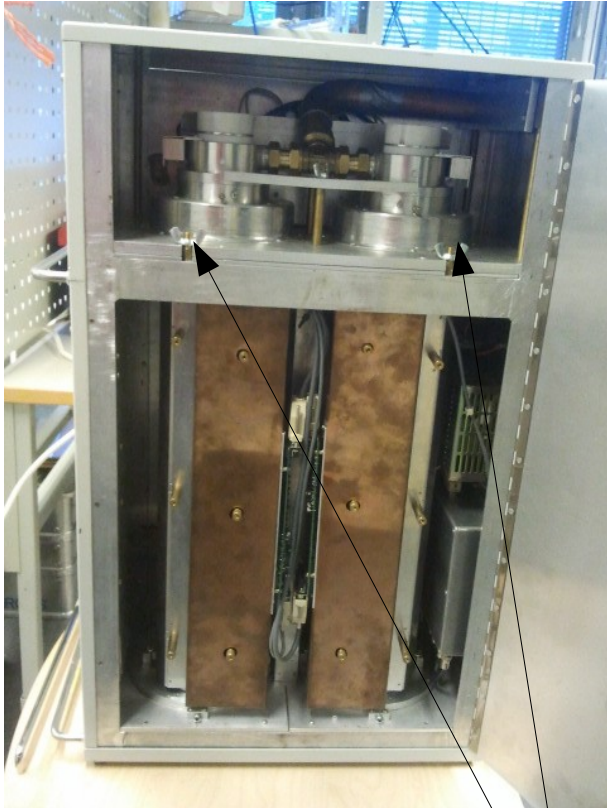
The instrument looks a bit like this,
Even though this is an AIS
First you have to remove the top

To do this we need to open the top and the
side walls, removing the screws that hold
them In place

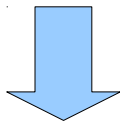
This is where the top part is
supposed to get up

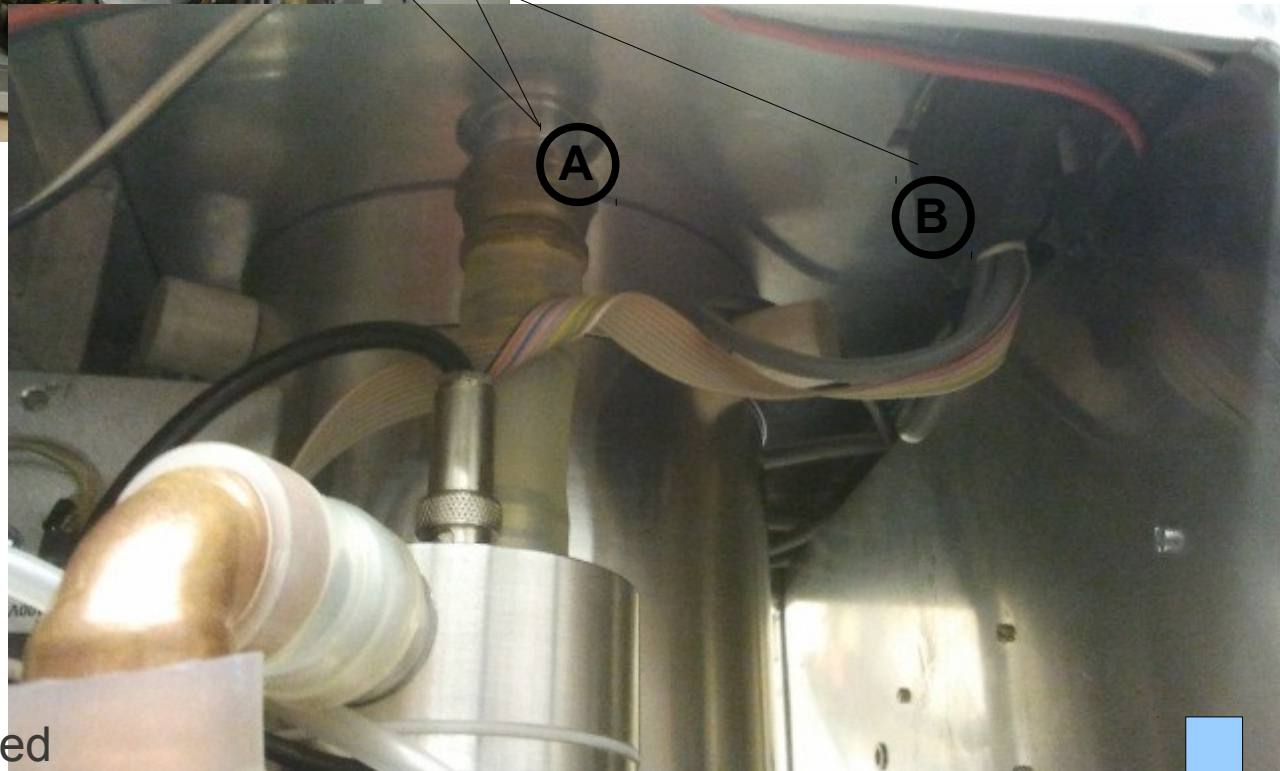


In this way both sides of the instrument are accessible



Now unscrew this butterfly screws



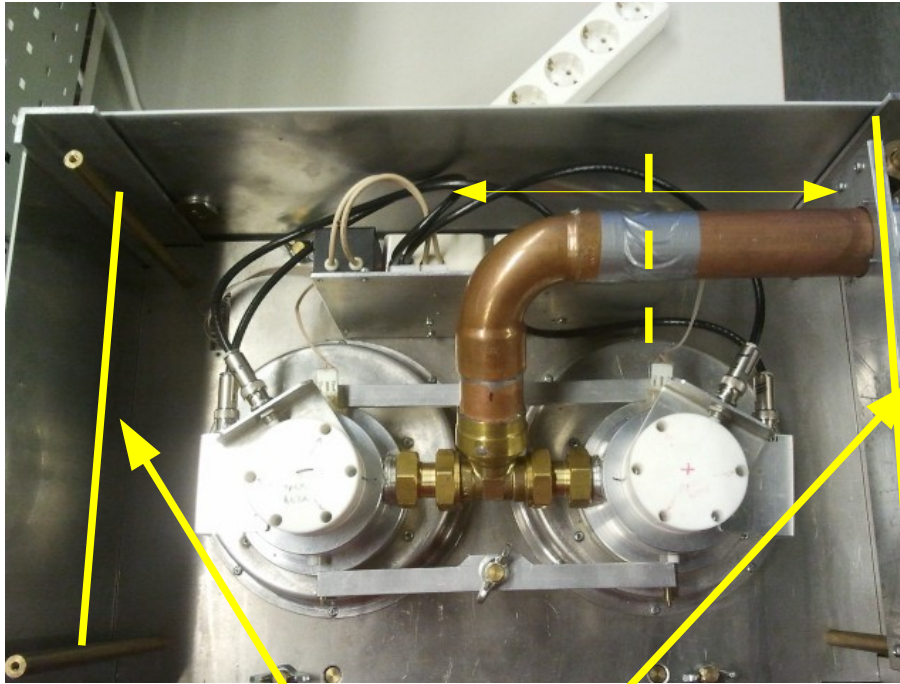


Unscrew the two pipes (A)
From each analyzer
You might need a wernch

Disconnect also the two
Connectors (B) if I remember
correctly there is one on each
Side

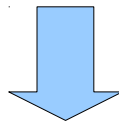
In this way the top i free to be lifted





Remember to
disconnect the inlet
Before lifting the top
part

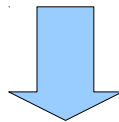
These are good point for lifing



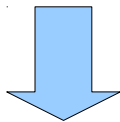
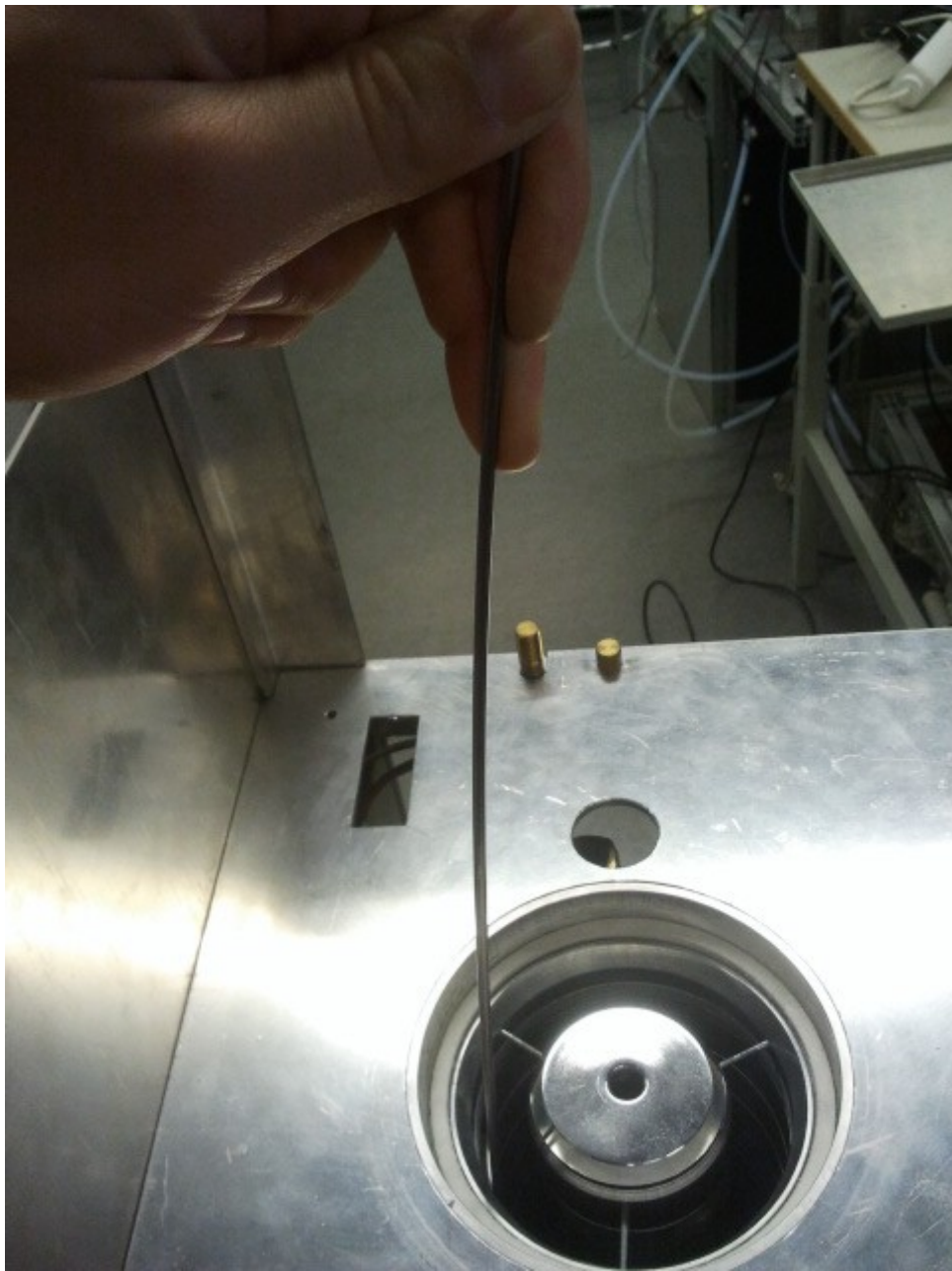


This is how it looks like once
The top panel has been
Removed

If you haven't found the
cleaning rod skip to slide 8



Clean with the rubber part the EM with vertical and tangential movements when done skip to slide 24

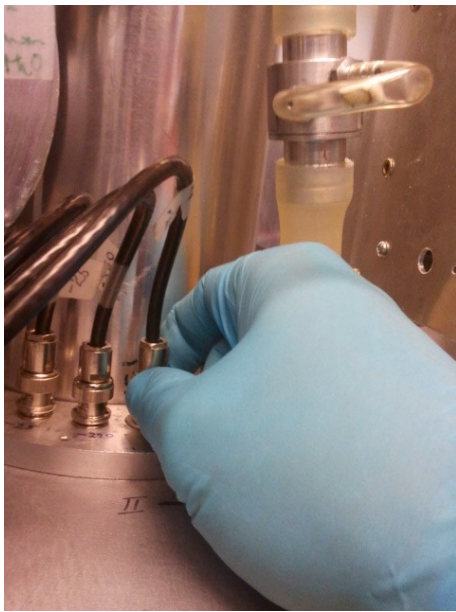


In case you don't have the cleaning tool
You have to remove the analyzers:

First unscrew these screws

And remove the metallic plate





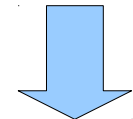
1- Disconnect the BNC at the base of the analyzer

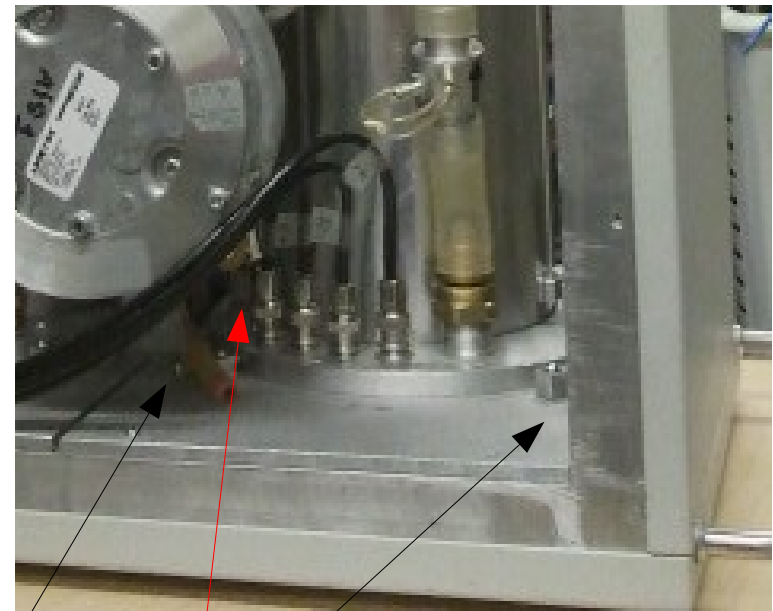
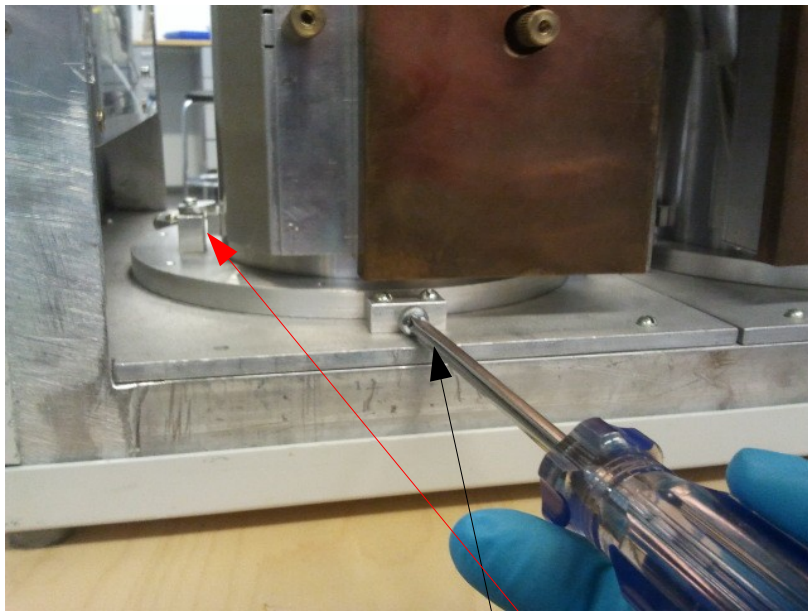


2- disconnect the sheath gas connector
(it's next to the BNCs)

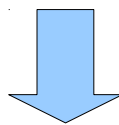


3 – disconnect the electronic connectors



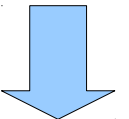
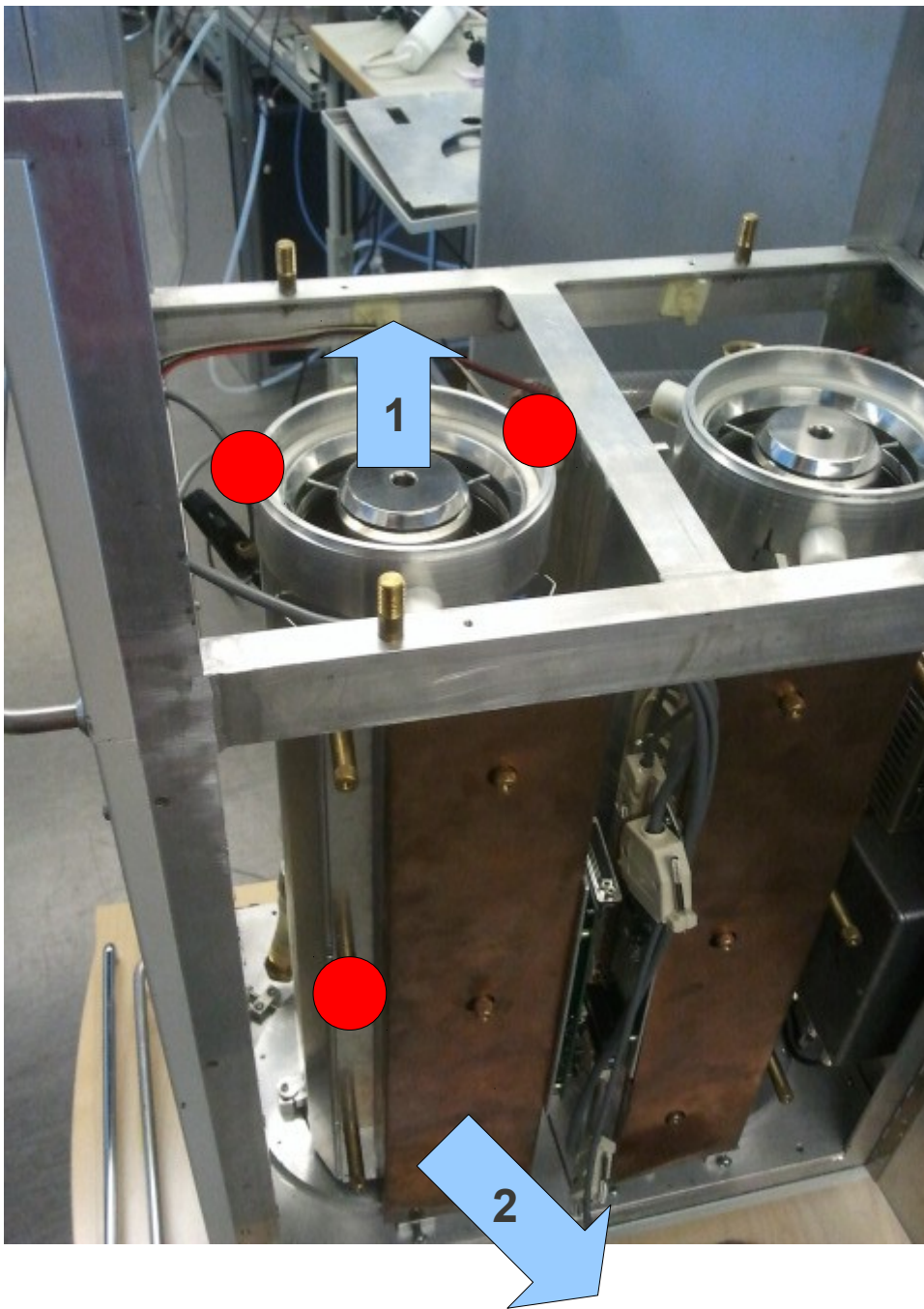


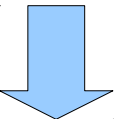
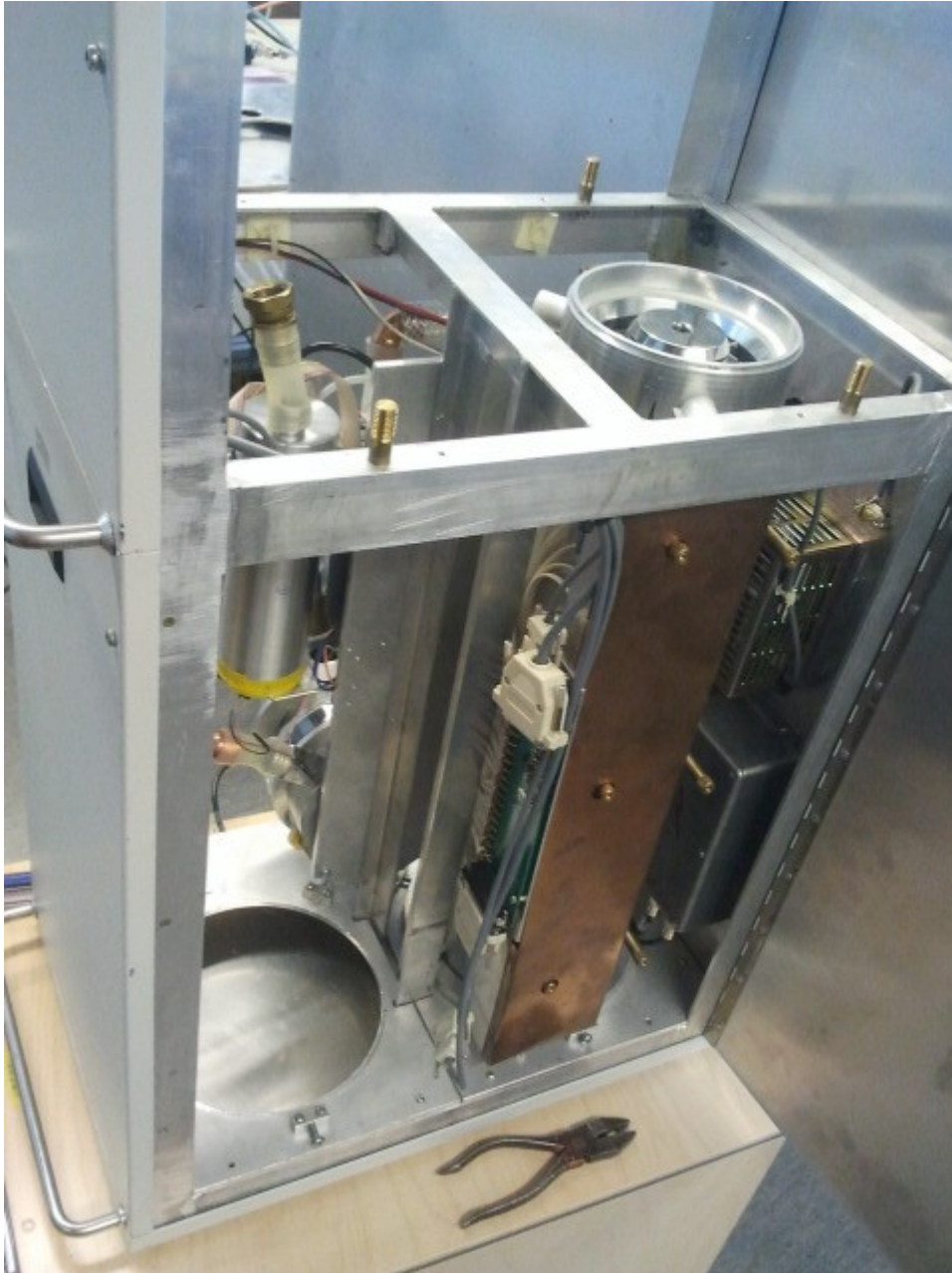
4- Open the 3 screws that keep the analyzer
In place
ATT!! do not confuse them with the two that keep the outer
part connected to the inner one don't open those one yet!

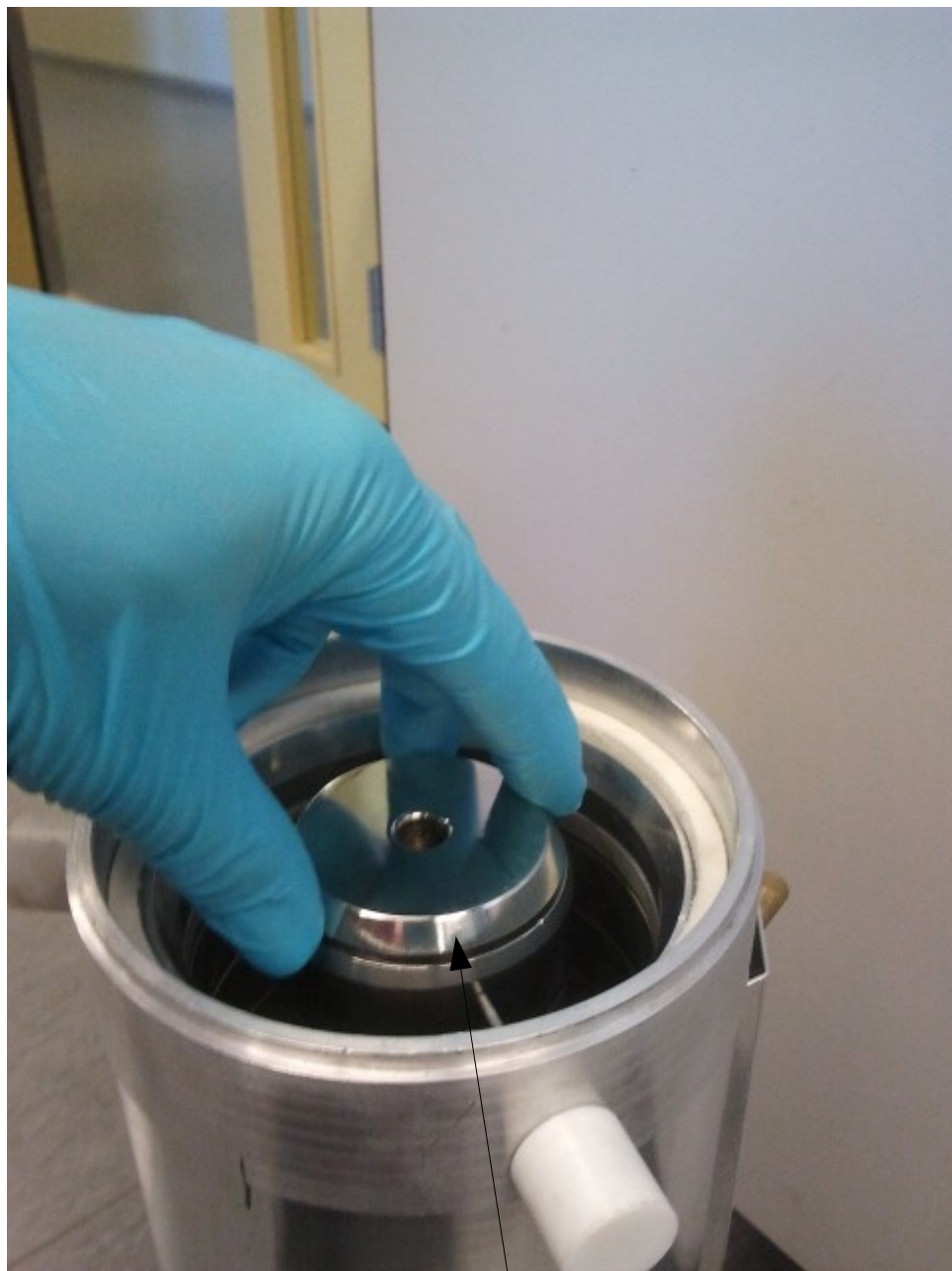


Lift the analyzer up and then
Incline it and remove it from the rack
From the bottom

The red circles are good points where
to hold the analyzer

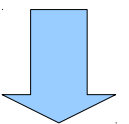






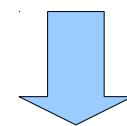
1- once the analyzer is out unscrew the holder
Of the central electrode

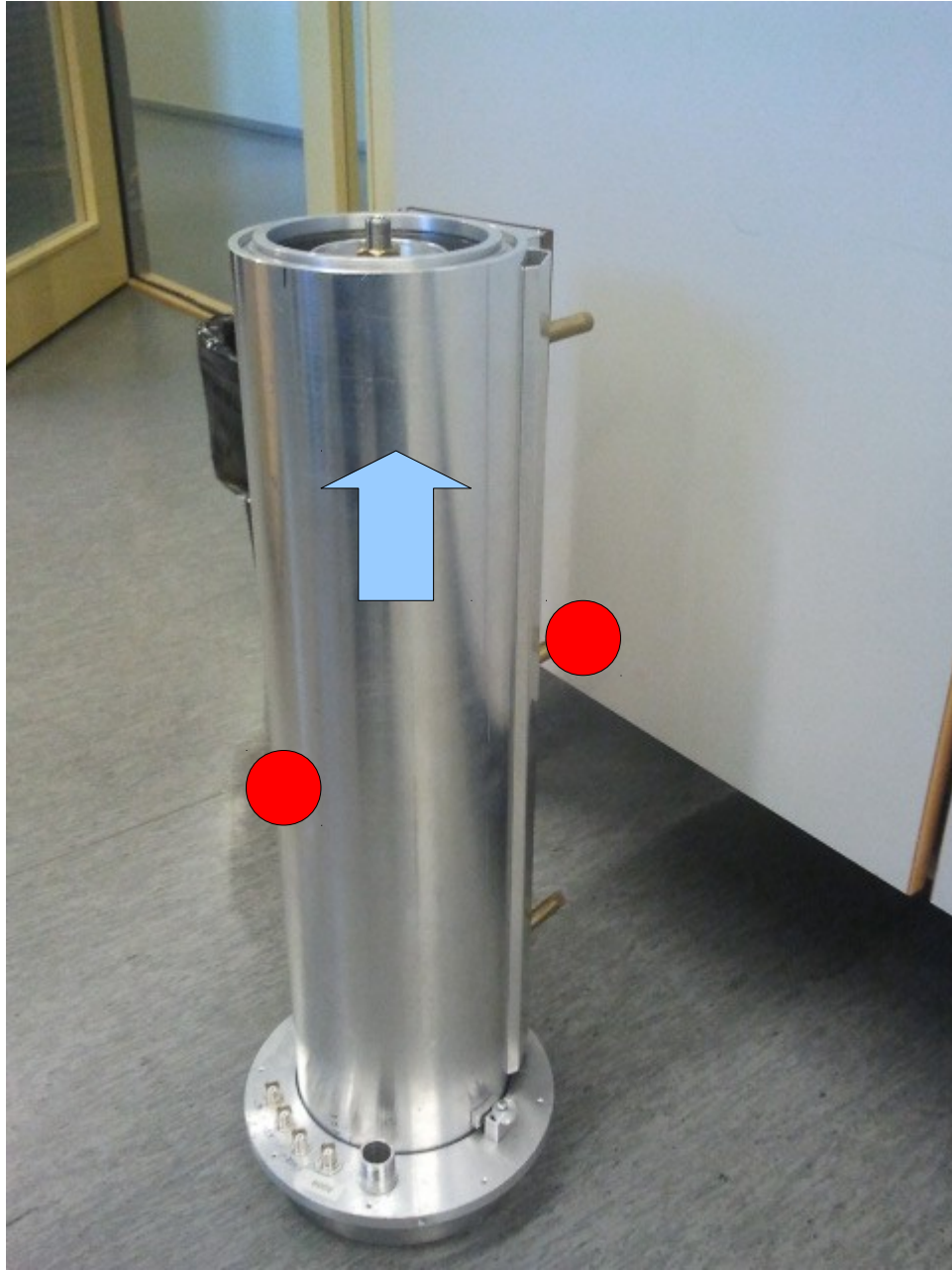
2 – then remove the centering ring
(it can be quite tight) if they are not there
you could mark a vertical line across the ring
and the analyzer with a permanent
marker to be able to place them back in the
exact same position





Now it's time to unscrew the screws that
Keep the outer part together with the
inner part

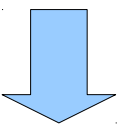


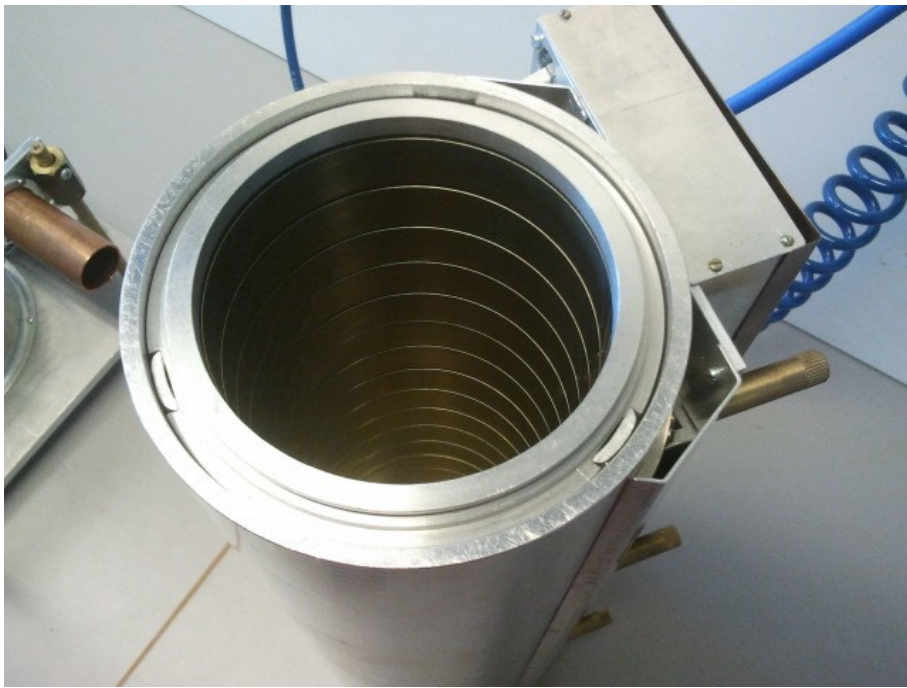


Now the outer part of the analyzer is ready to be lifted

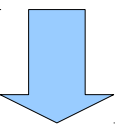
Take care not to scratch the inner part against the outer part

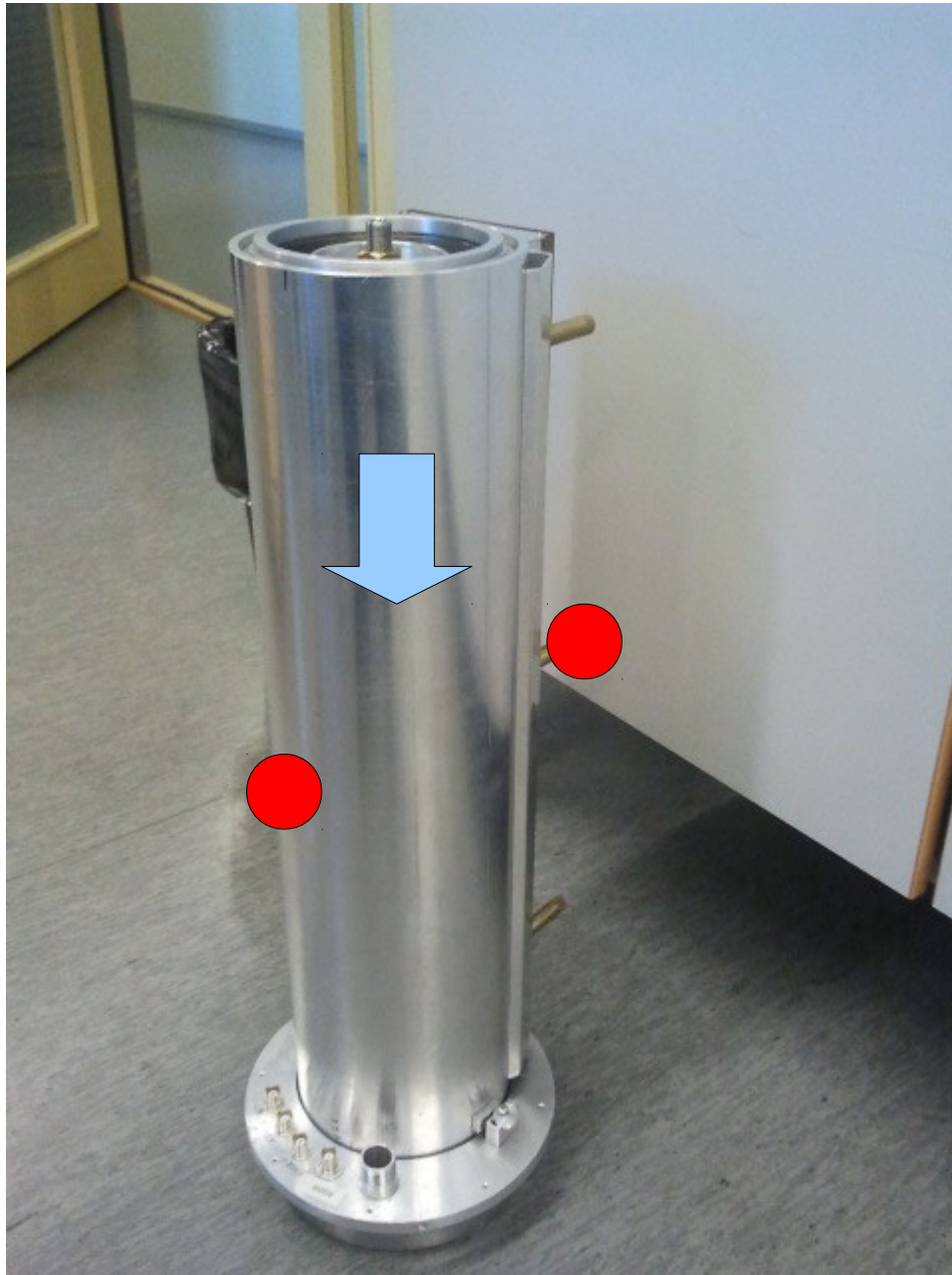
The red circles ● are good points where to hold the analyzer





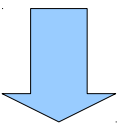
Now it's possible to clean the EM
With a rubber glove or with wipes and
Isopropanol
from the center to the
Top with particular care to clean the gaps
Between one EM ring and the other, as well as
Their surface
Flip the analyzer upside down and repeat the
Operation to clean the lower part

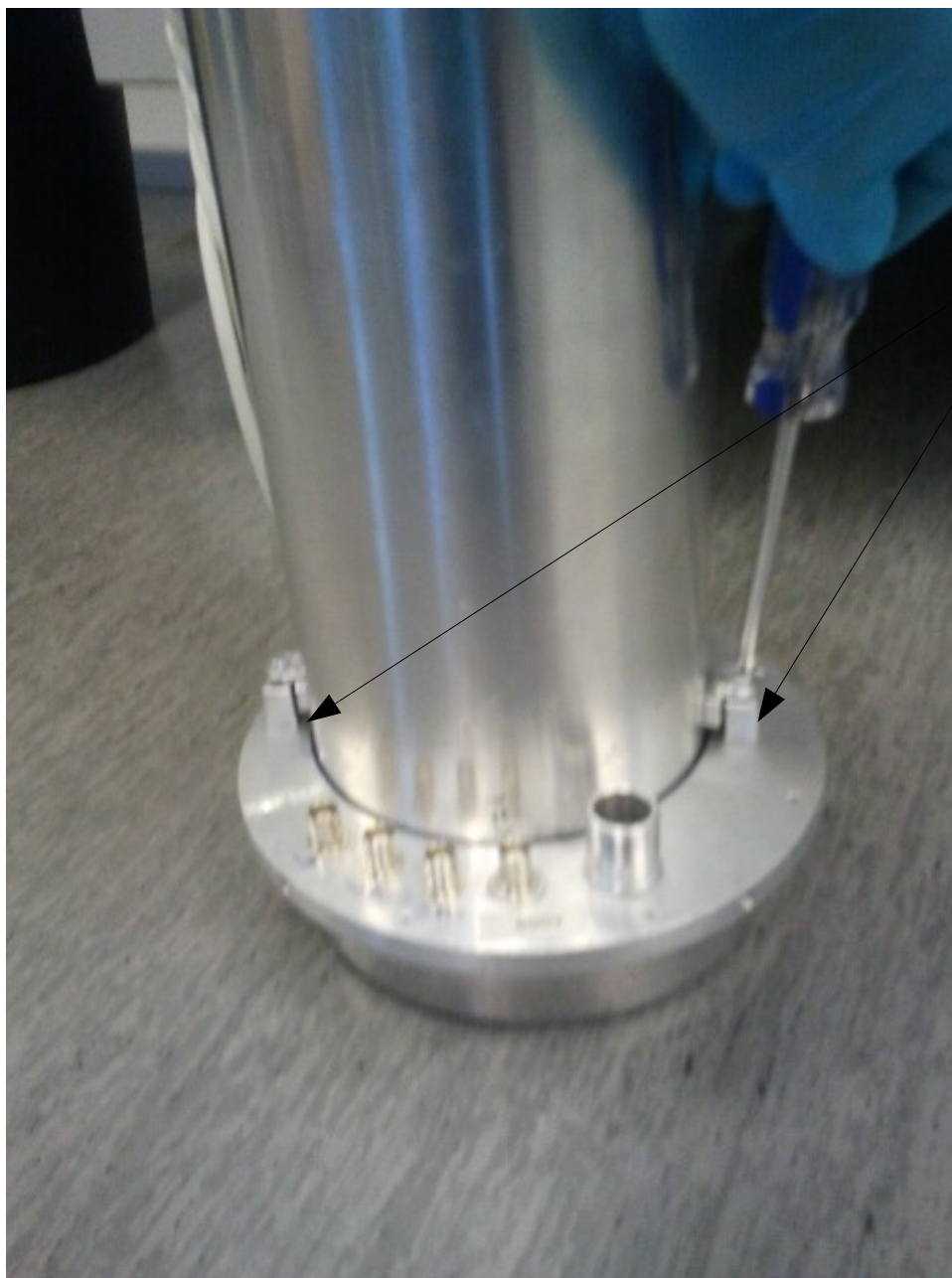




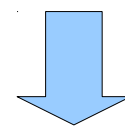
Put back in place the outer part of the analyzer
To avoid to put it upside down
Remember that the smaller EM rings are at the top

The red circles ● are good point where to hold the analyzer





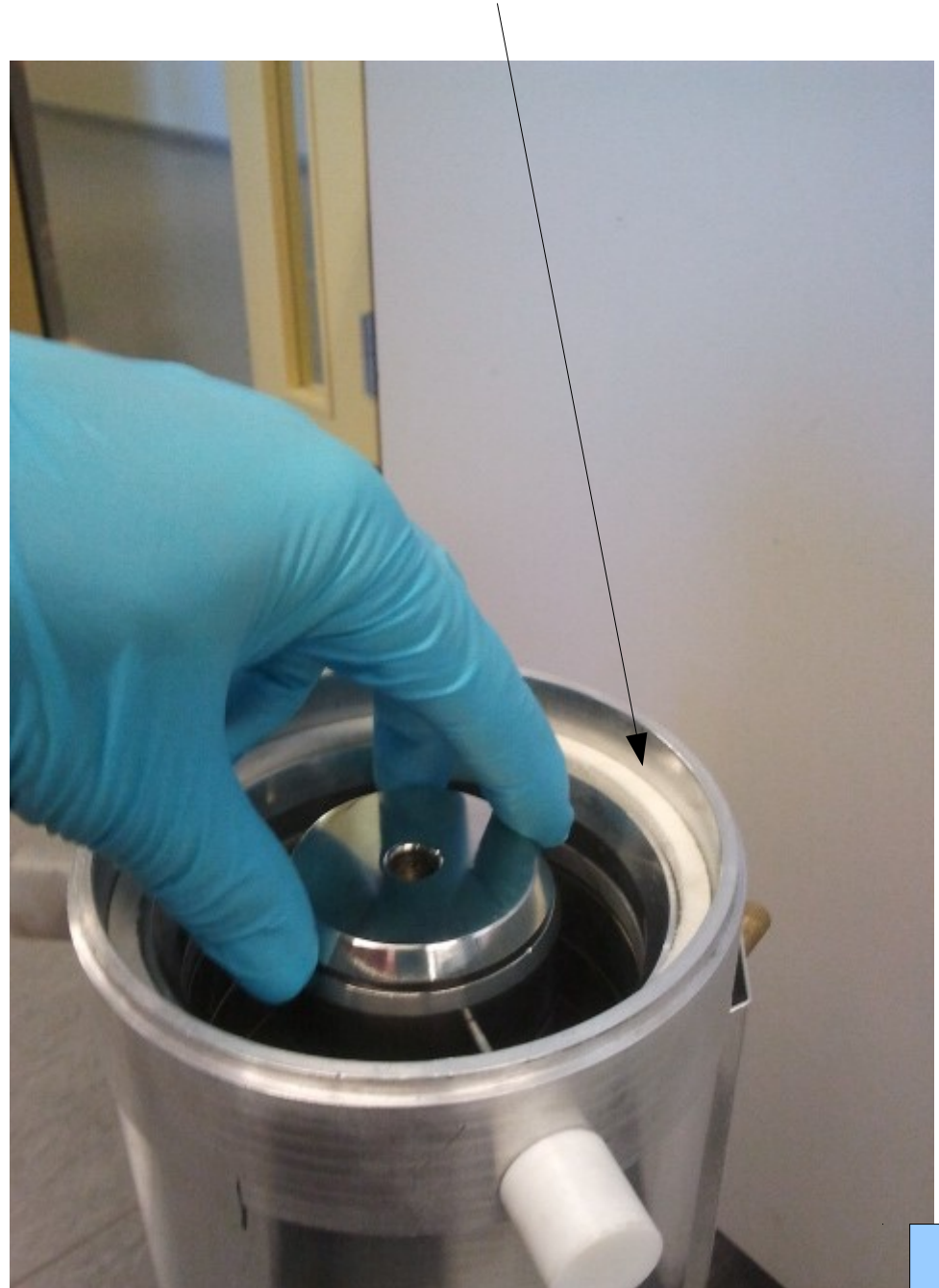
Fix the holders



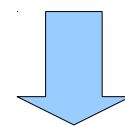
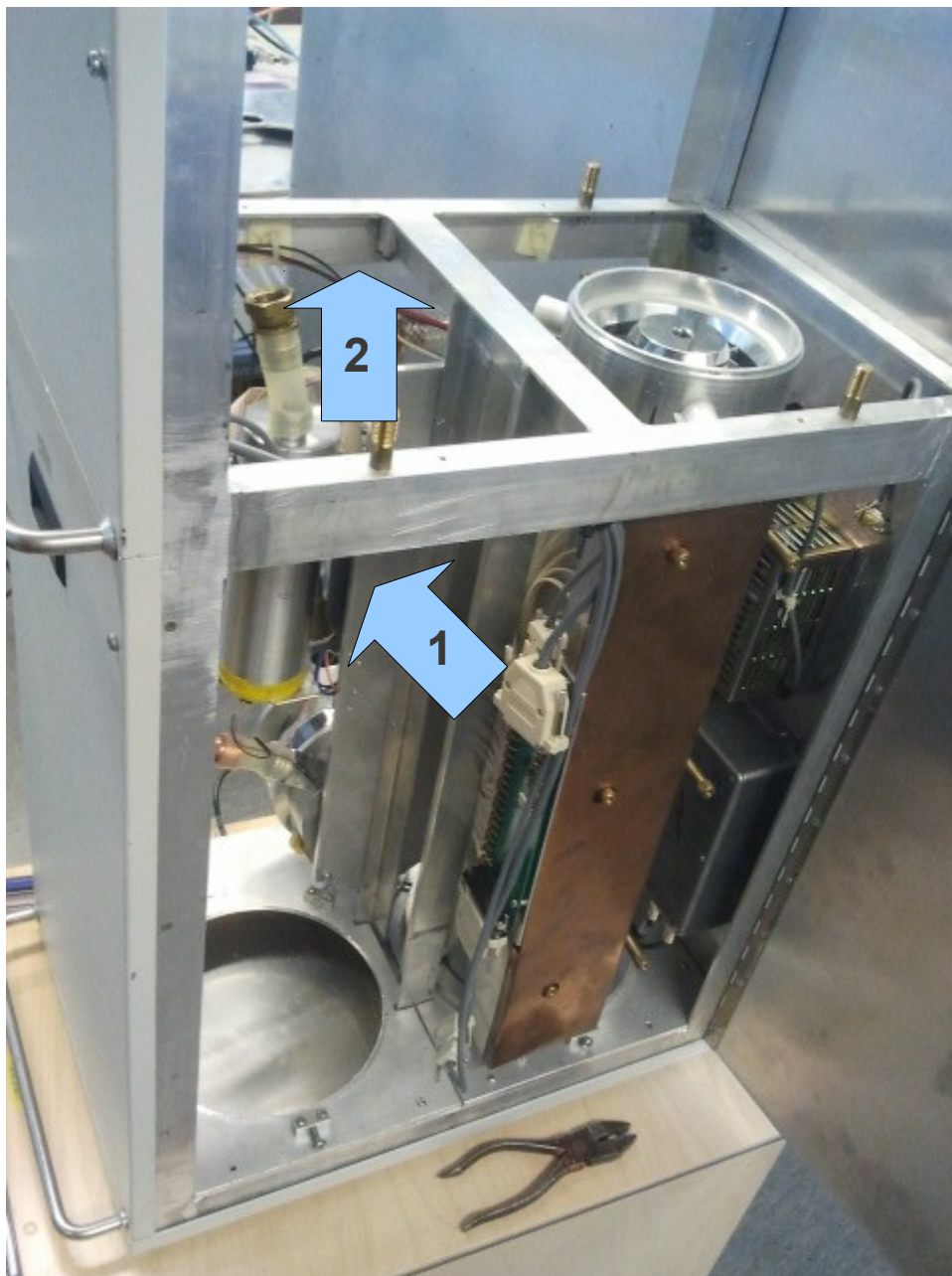


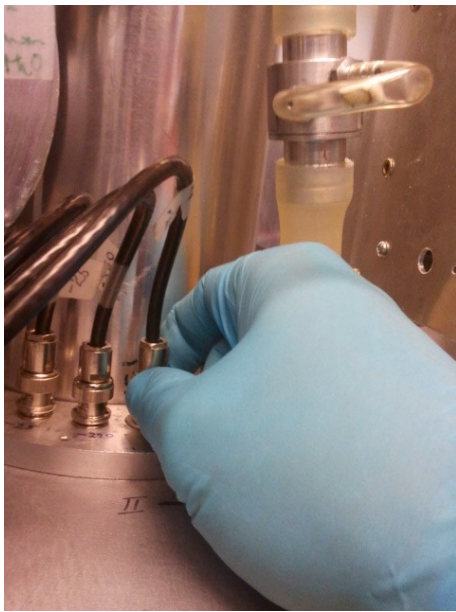
1 - Put back the centering ring
(there should be some markings)

2 – place back the central electrode holder



Now it's time to put the analyzer back





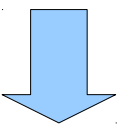
1- Connect the BNCs at the base of the analyzer



2- connect the sheath gas connector

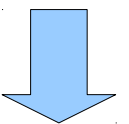


3 – connect back the electronic connectors



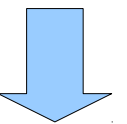


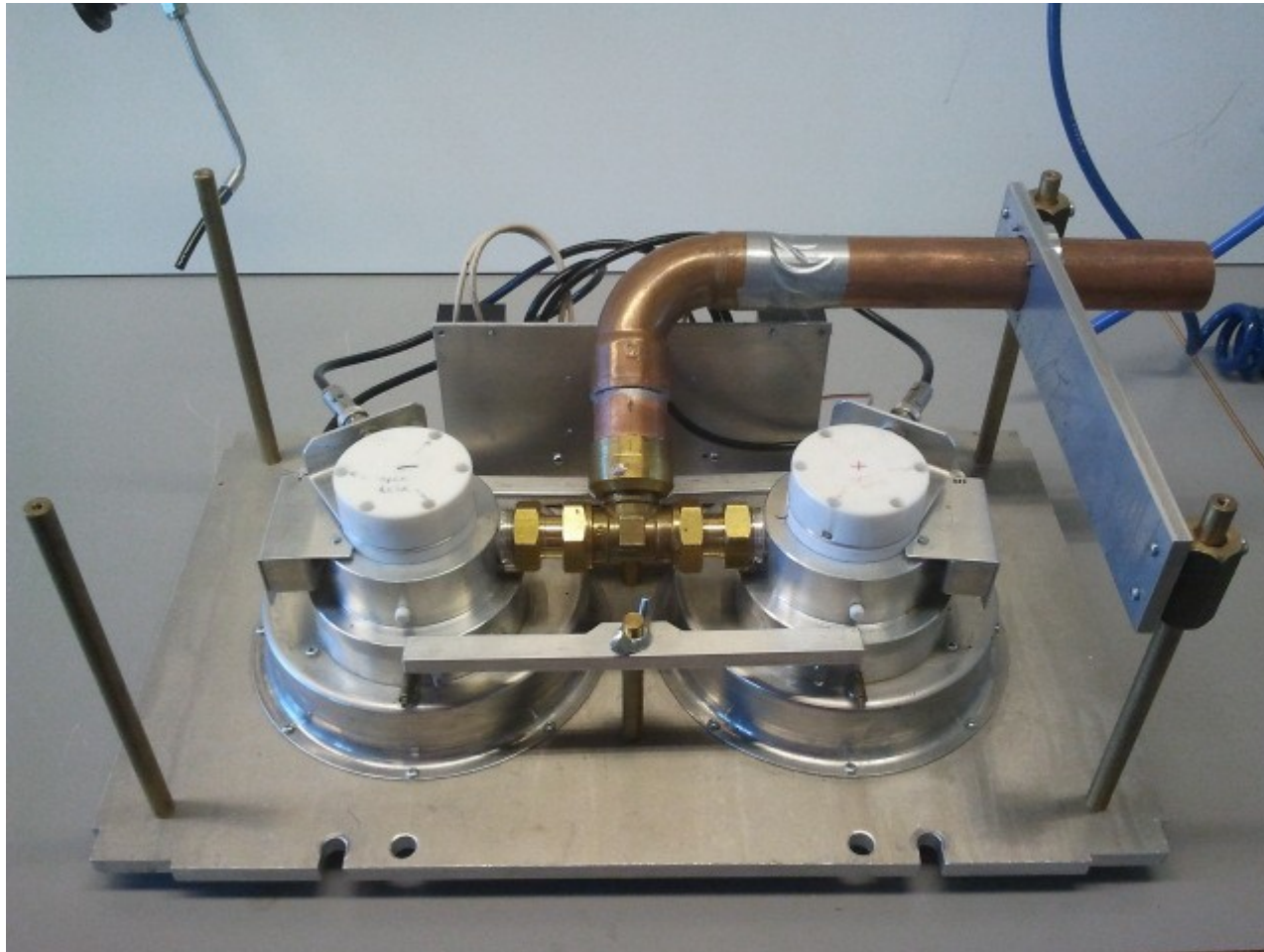
Now it's time to
Do the same for the other
Polarity (slide 9 to 21)



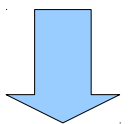


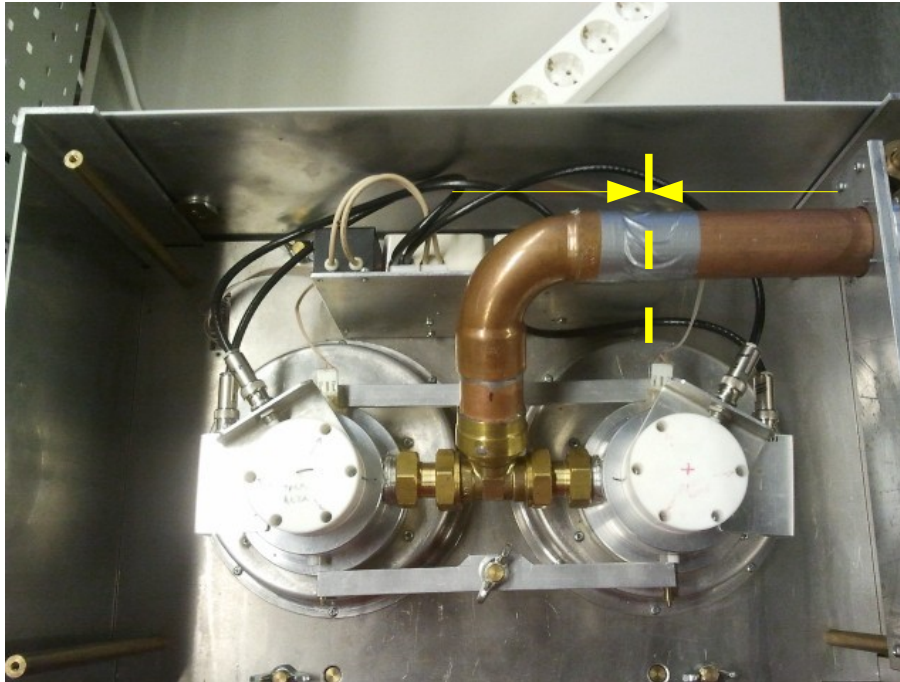
Put back the metallic plate and
Fix it back with the screws





Put back the top part
And fix it with the butterfly
screws
Take particular care to
Tighten Them evenly
So that the pressure on the
plate is equally distributed





connect the inlet back

END