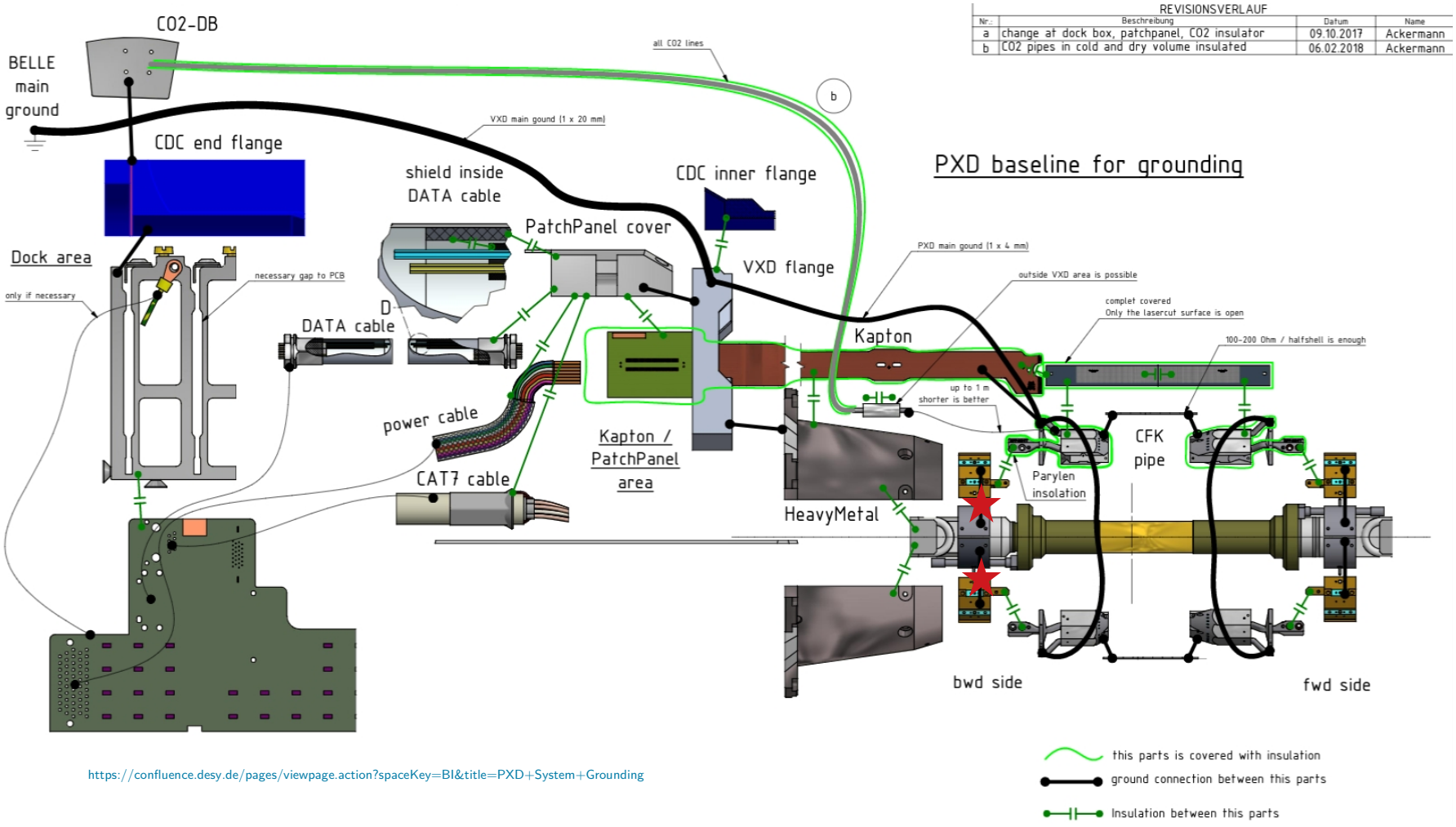
PXD Grounding Scheme (2018)

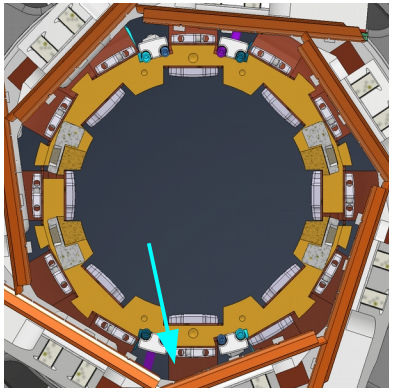


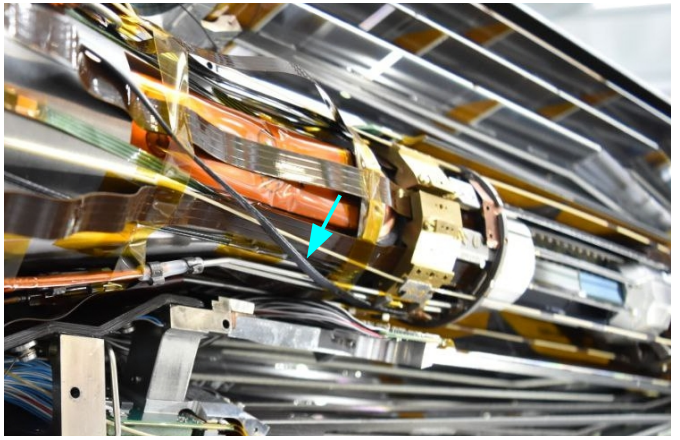
https://confluence.desy.de/pages/viewpage.action?spaceKey=BI&title=PXD+System+Grounding

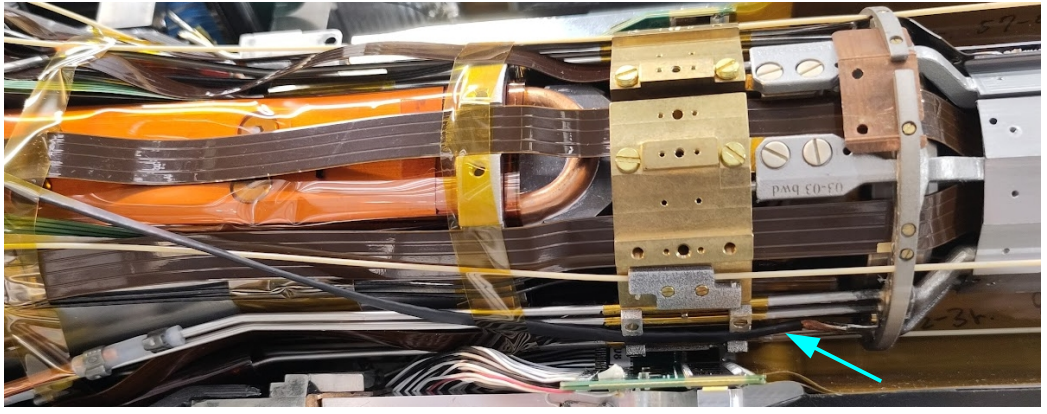
How The Ground Cable was Installed for PXD1

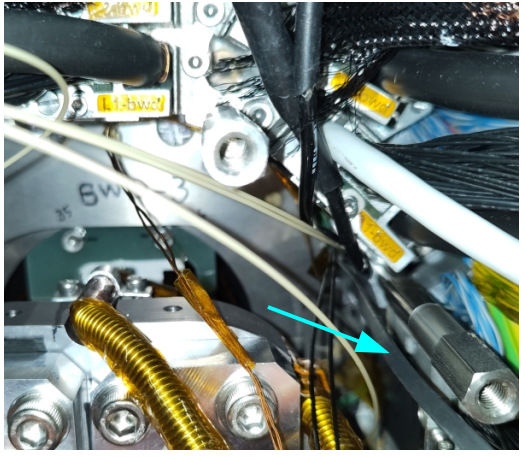
What I Could Find Out:

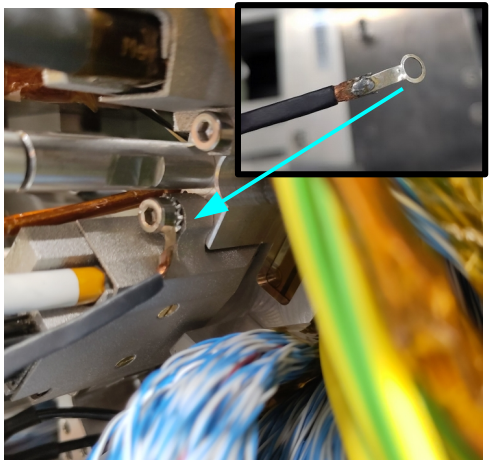
- Flat cable routed over L2 Kapton gap
- Measured cable dimension ~1x3 mm^2
- Routed through end flange and connected to PP screw











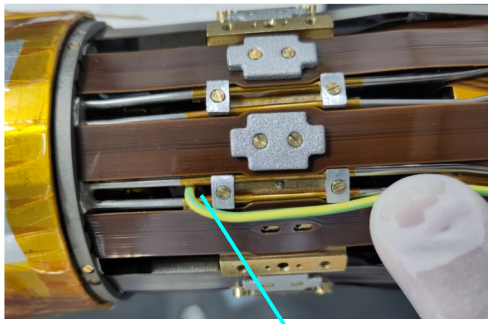
SCB Ground Cable

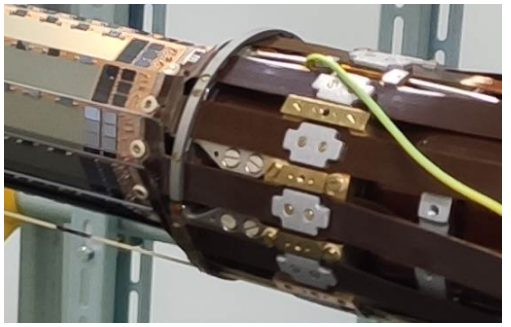
Ground Cable Collision With SVD Wire Bonds

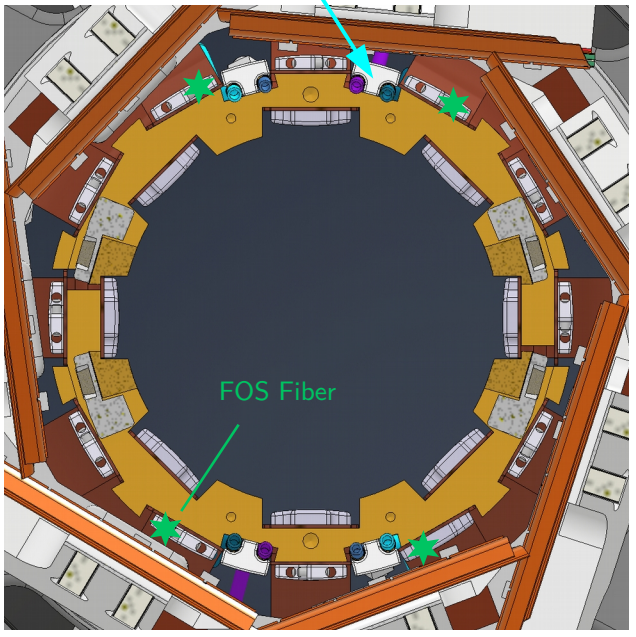
- SVD wire bonds in the area of our brass piece (1 mm clearance)
- Our ground cable makes a strong bent without any good permanent fixation in that area
- Stripping the cable so close to the Kapton difficult

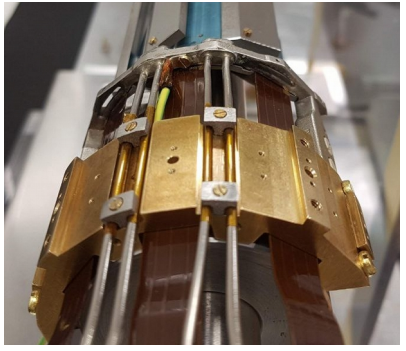
Possible Solutions

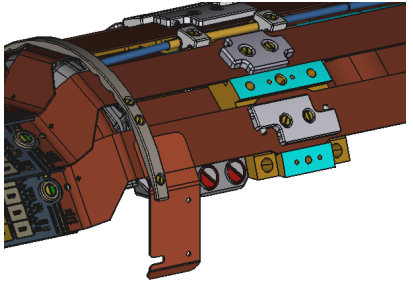
- Try to route (old) cable behind the Kapton through brass piece gap (carefully remove the Kapton strain relief? **Only when ground ring is installed!**) (bad)
- Install a new (thick/flat) cable and solder it to the copper SCB ground connector (cut/remove the old cable) (good)
- Route a thin cable through the fiber holder (BUT: Richard says cable should be as thick as possible) (bad)
- Route cable somehow though the L1 Kapton gap? (but here is the Kapton strain relief as well) (bad)
- Fix cable to the isolator of the carbon tube (bad)











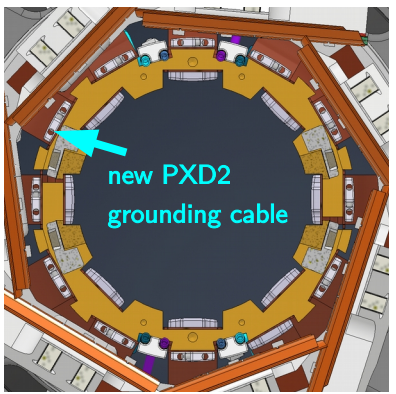
New PXD2 Ground Cable Approach

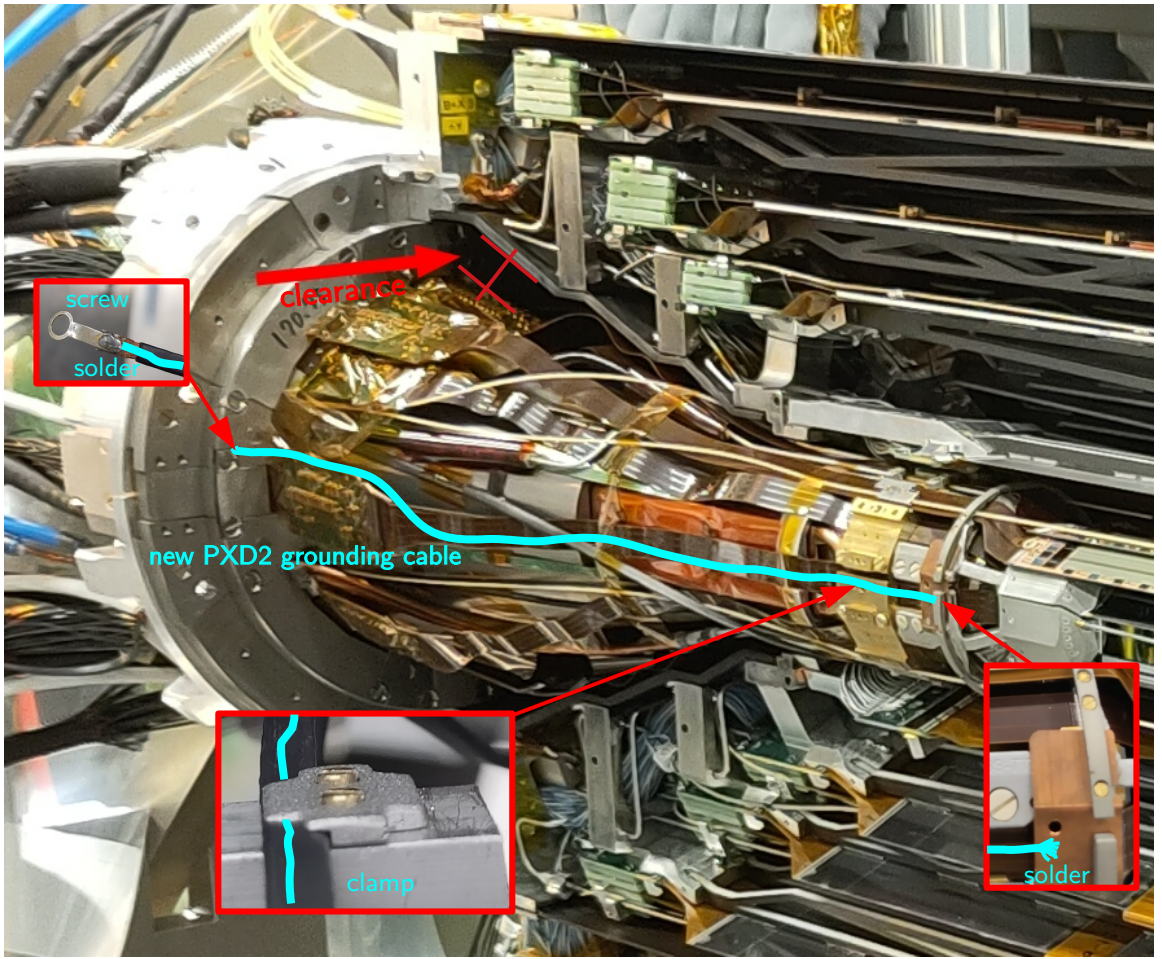
VXD Inner End Flange

- Impossible to route cable through the end flange
- Enough clearance to the inner side of SVD cone
- Fix the grounding cable (1.25 mm^2) to the inner side of the end flange (heavy metal piece screw)

SCB Cu Ground Connector

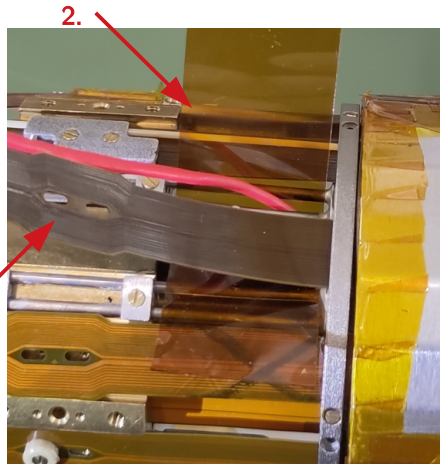
- Solder cable to top side of copper plate
- Fix cable with modified strain relief to brass piece



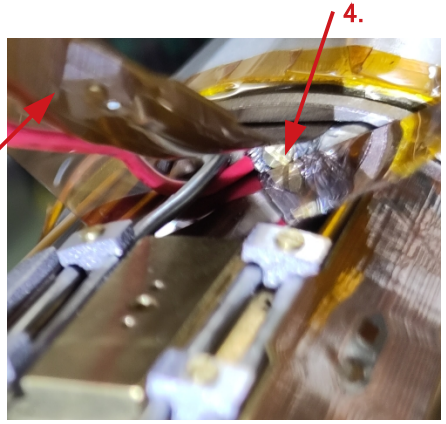


Removing The Old Ground Cable

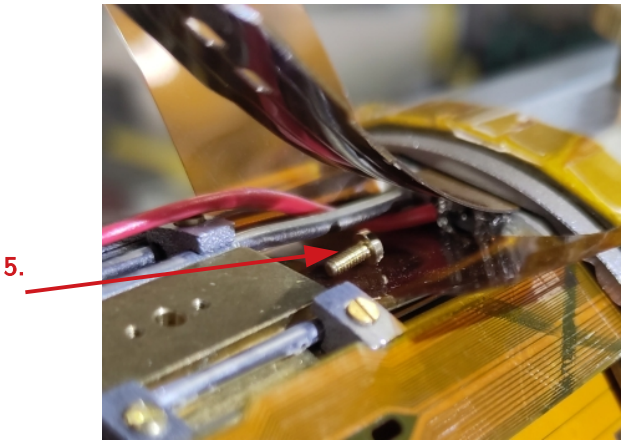
1. Remove Kapton stain relief
2. Insert safety Kapton foil (prevent screw dropping in the detector)



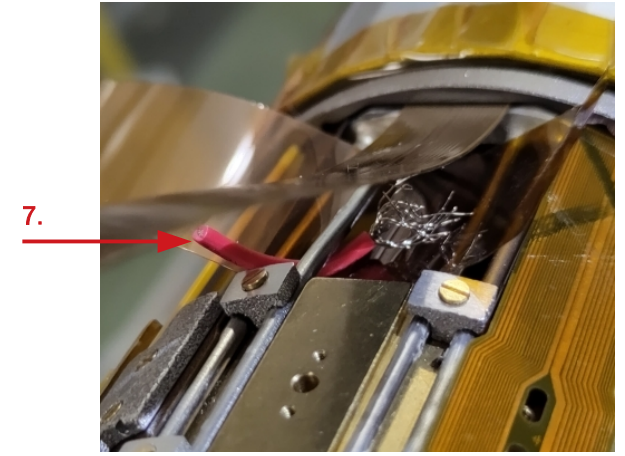
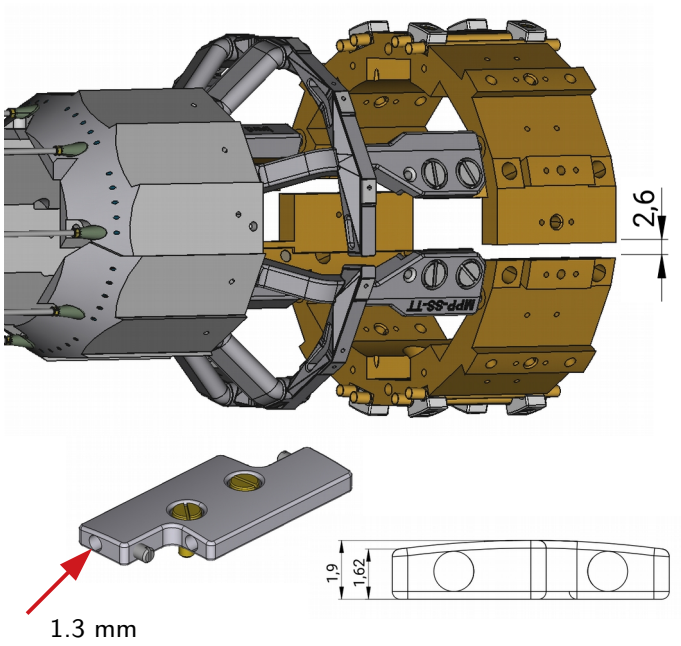
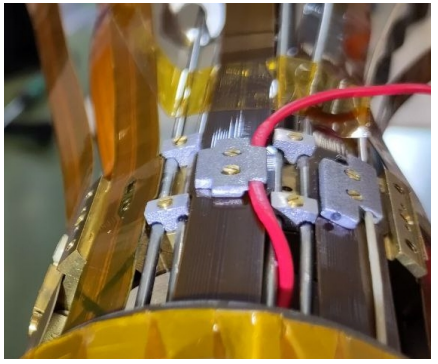
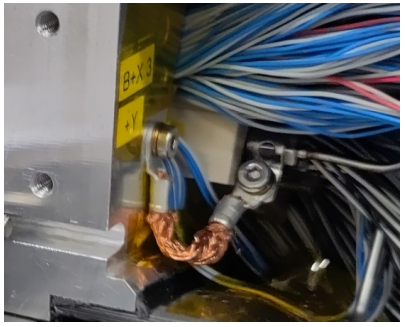
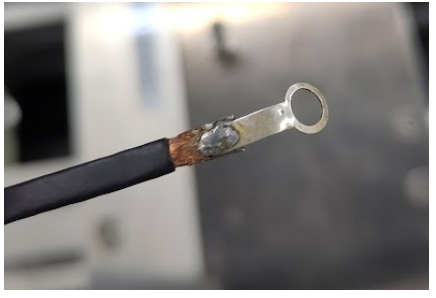
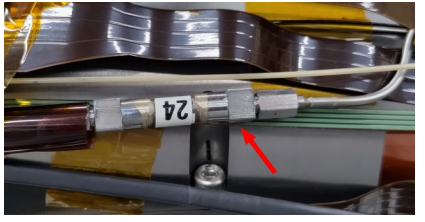
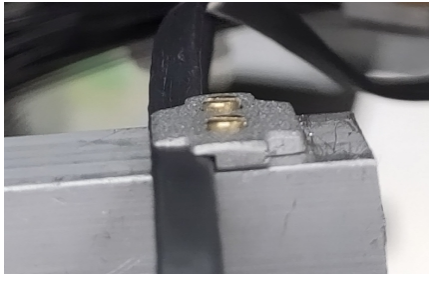
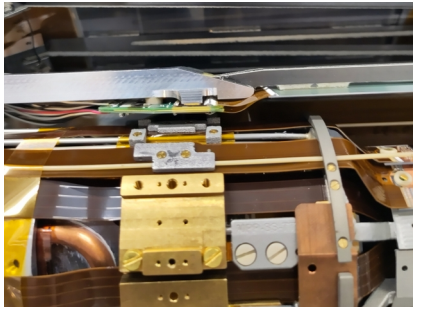
3. Bend slightly the Kapton to the top
4. Release the ground wire fixation fixation screw



5. Screw can fall on the safety Kapton
6. Remove the screw



7. Cut the wire
8. Remove the wire



Ground Cable Re-Routing Approaches