Mike's Meeting

(13OCT10)

Update on Gun & Cathode System

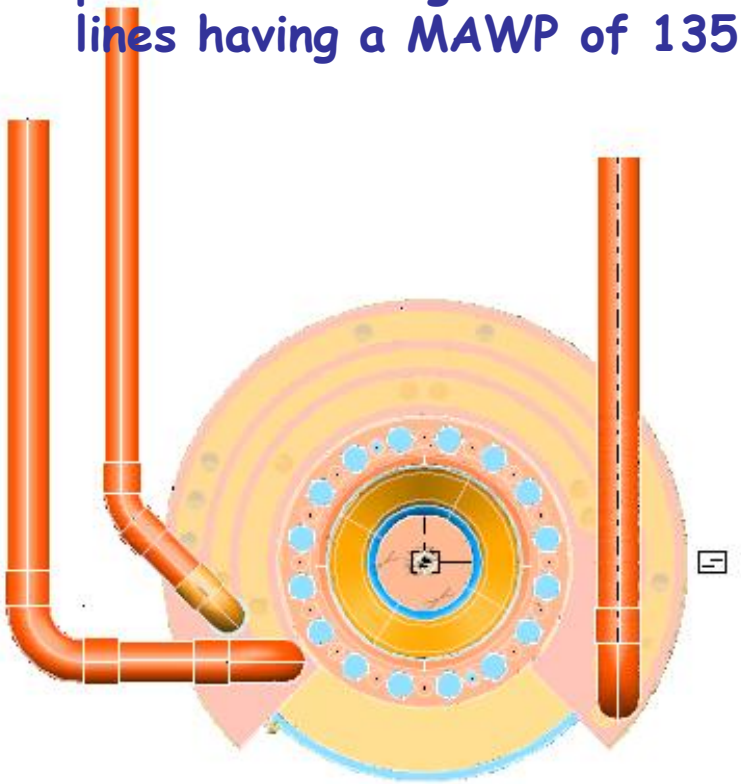
RF Gun
Cathode Transfer System **(NML)**
Cathode Preparation System **(Lab 7)**

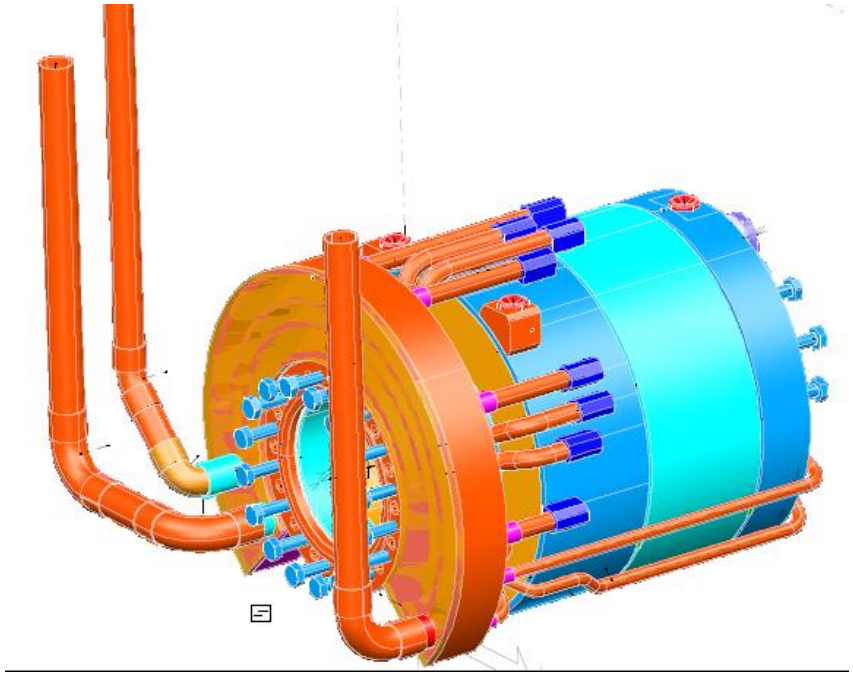
Gun System

- Gun Cavities:
  - DESY cavity still in crate as received
    - Have not inspected it
  - Fermi Cavity #1 is complete
  - Fermi Cavity #2 is awaiting final machining data from Ding Sun
    - Water manifold is machined and is awaiting brazing
- Couplers:
  - Fermi Coupler #1 is complete
  - Fermi Coupler #2 is complete
  - Fermi Coupler #3 is complete
  - Fermi Coupler #4 is ready for the 3rd machining step
    - It has completed its 2nd braze
    - There is a small leak on the mini-flange assembly
- Water Skid:
  - Jerzy Czajkowski has completed the specification
  - A purchase request is making its way through the approval and procurement system

Water Lines for Gun Cooling

Last report, this was awaiting soldering of the lines and pressure testing. This task is now complete with the water lines having a MAWP of 135 psi.

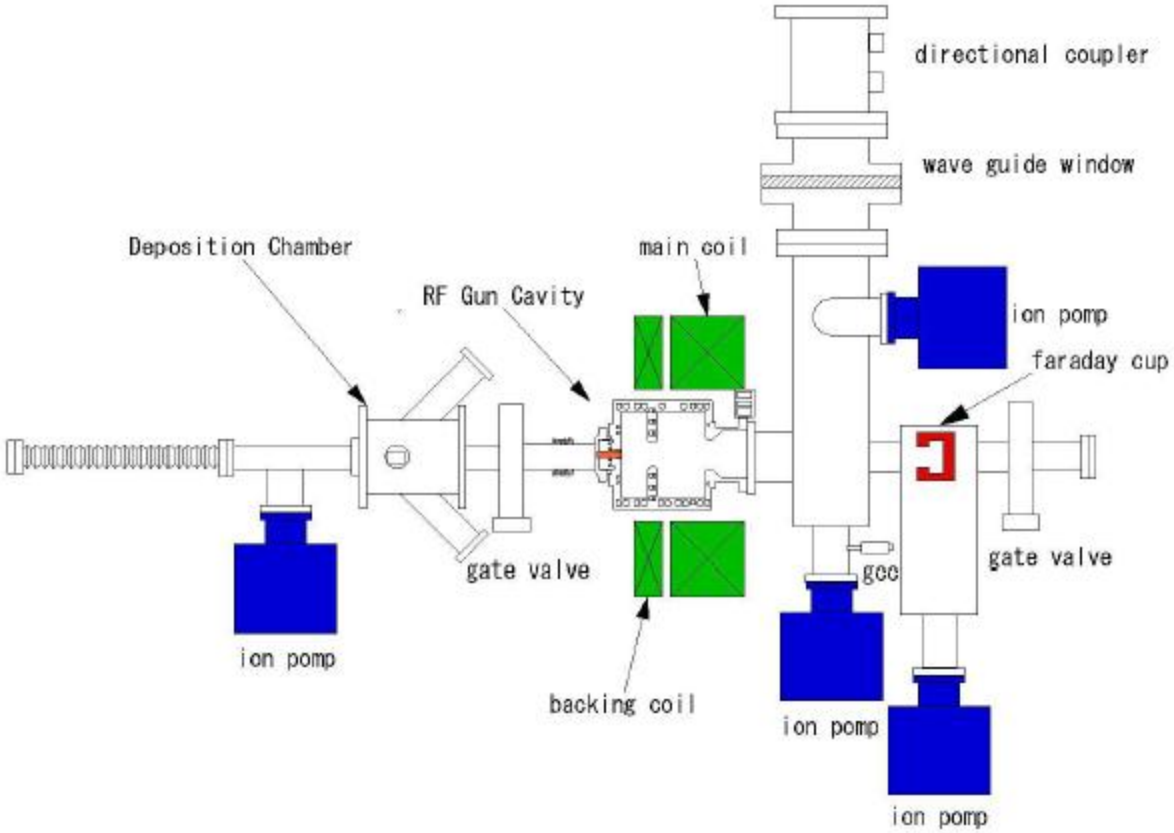




Solenoid Measurements @ IB-1

- Alignment and characterization of this assembly is complete
  - Reported last week by Dan Broemmelsiek
- Water lines have been blown out and is awaiting transport to NML
- Kermit will move these to NML later in the week
- We will not install in the cave until we have a resolution of the vacuum pumping requirements for the Thales RF window

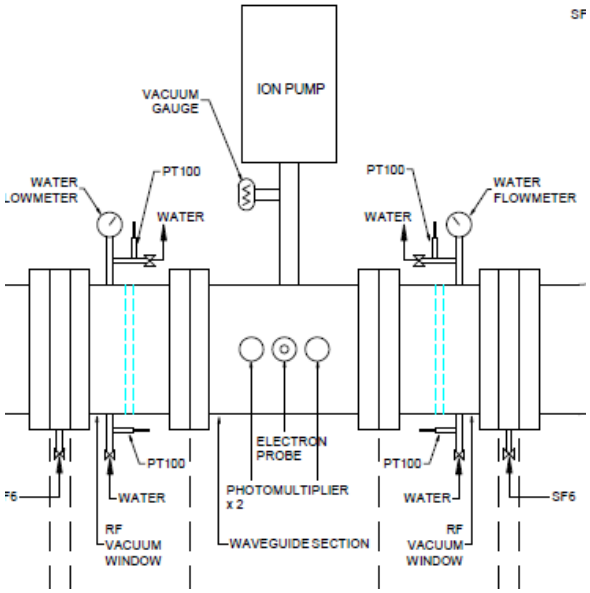
RF processing setup (@ KEK)



Installed Ion pumps (measurement in Vac.)

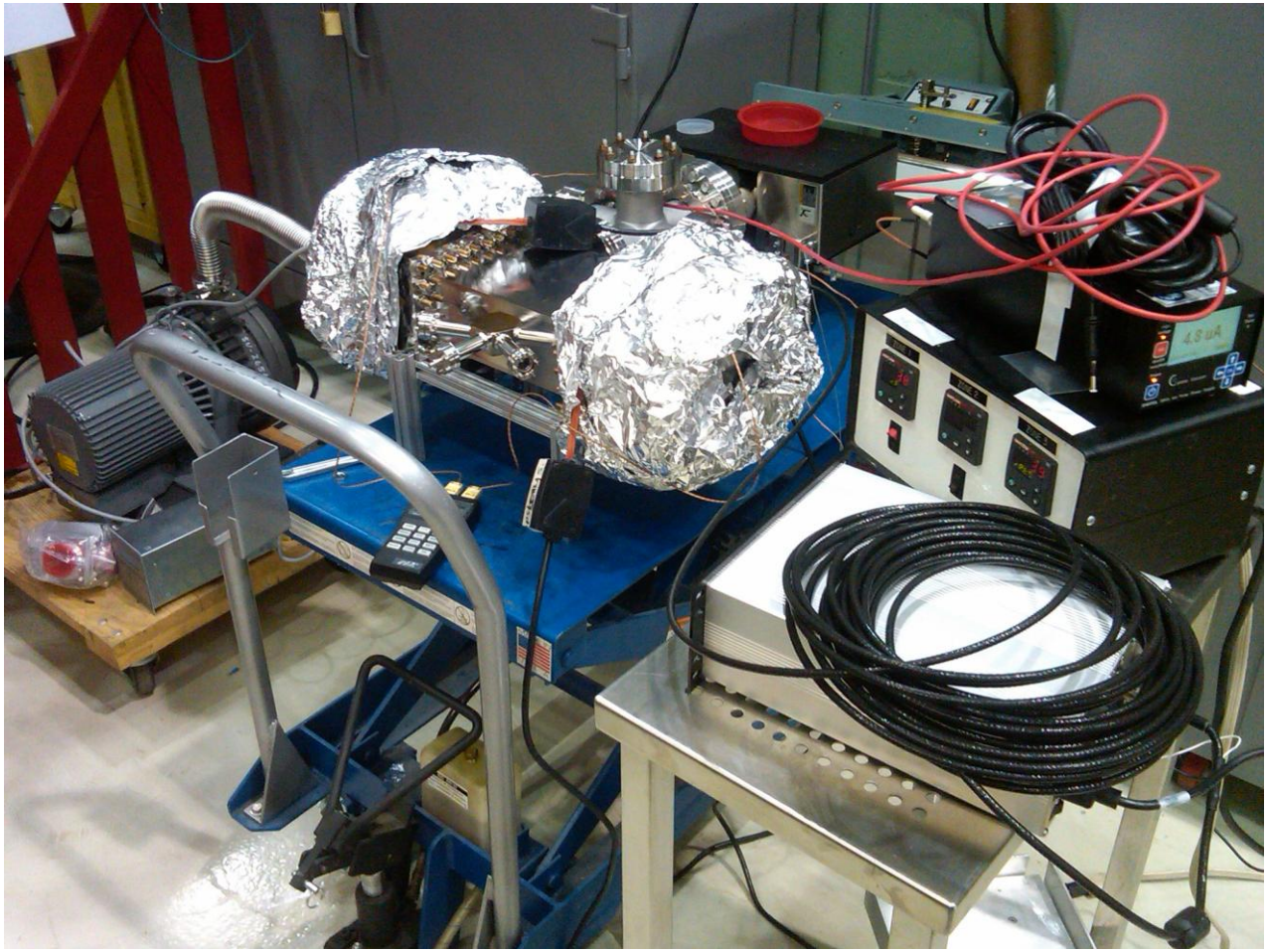
RF Windows

NML Windows Test configuration:

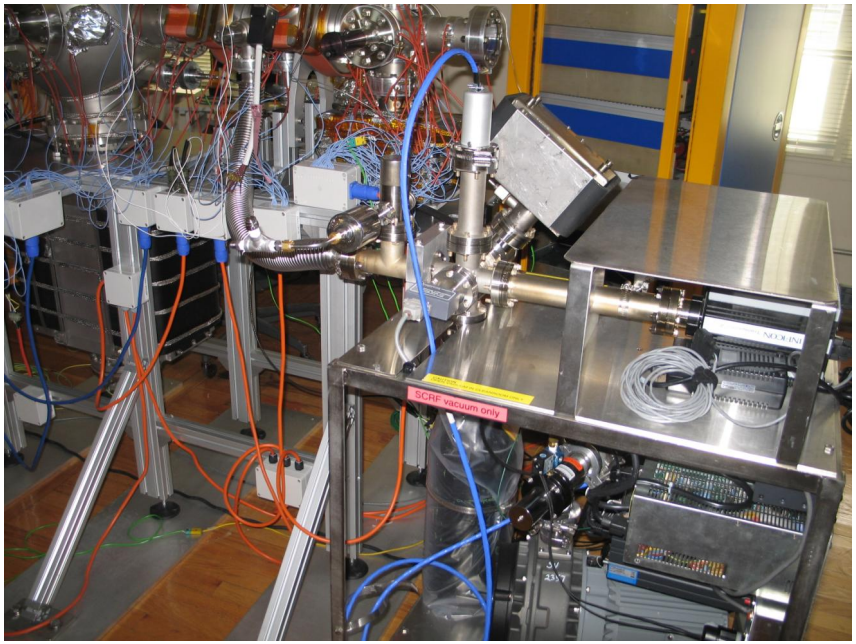


- This test assembly is partially assembled at NML
- Ding Sun has been working very hard to correct the two problems with the vacuum seal:
  - Procurement of scratch free Cu to make the gaskets required,
  - The surface finish on the sealing surface of the Thales window
- He has been successful creating the vacuum seal, and is subjecting the assembly to some thermal cycles
- Leak checking will be done next week
- When this activity is successfully completed, two additional support tasks need to be completed:
  - Water needs to be provided and connections made
  - The mechanical support stand needs to be completed as well
- SF_6?

Ding's Test Setup

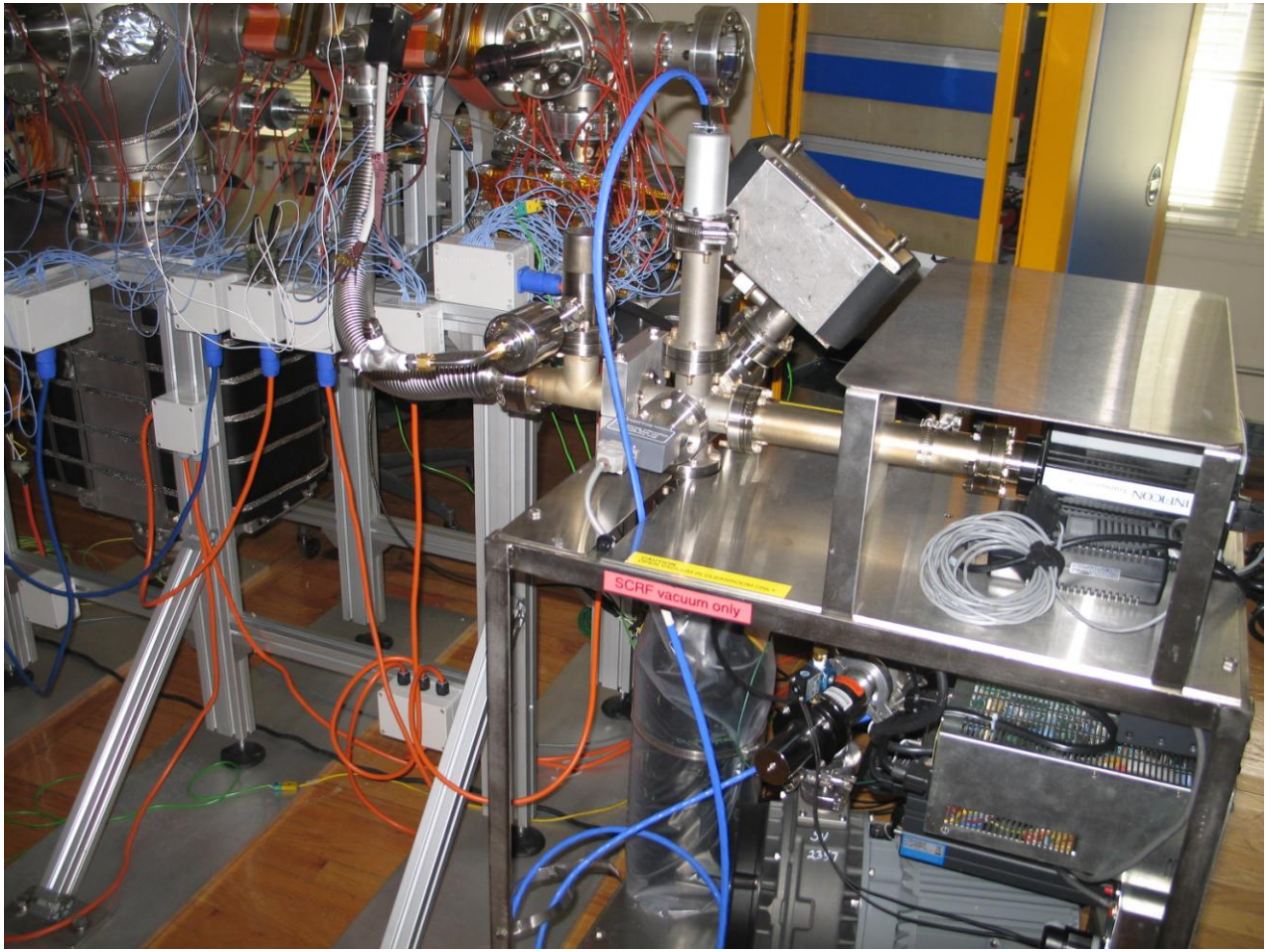


Cathode Prep System



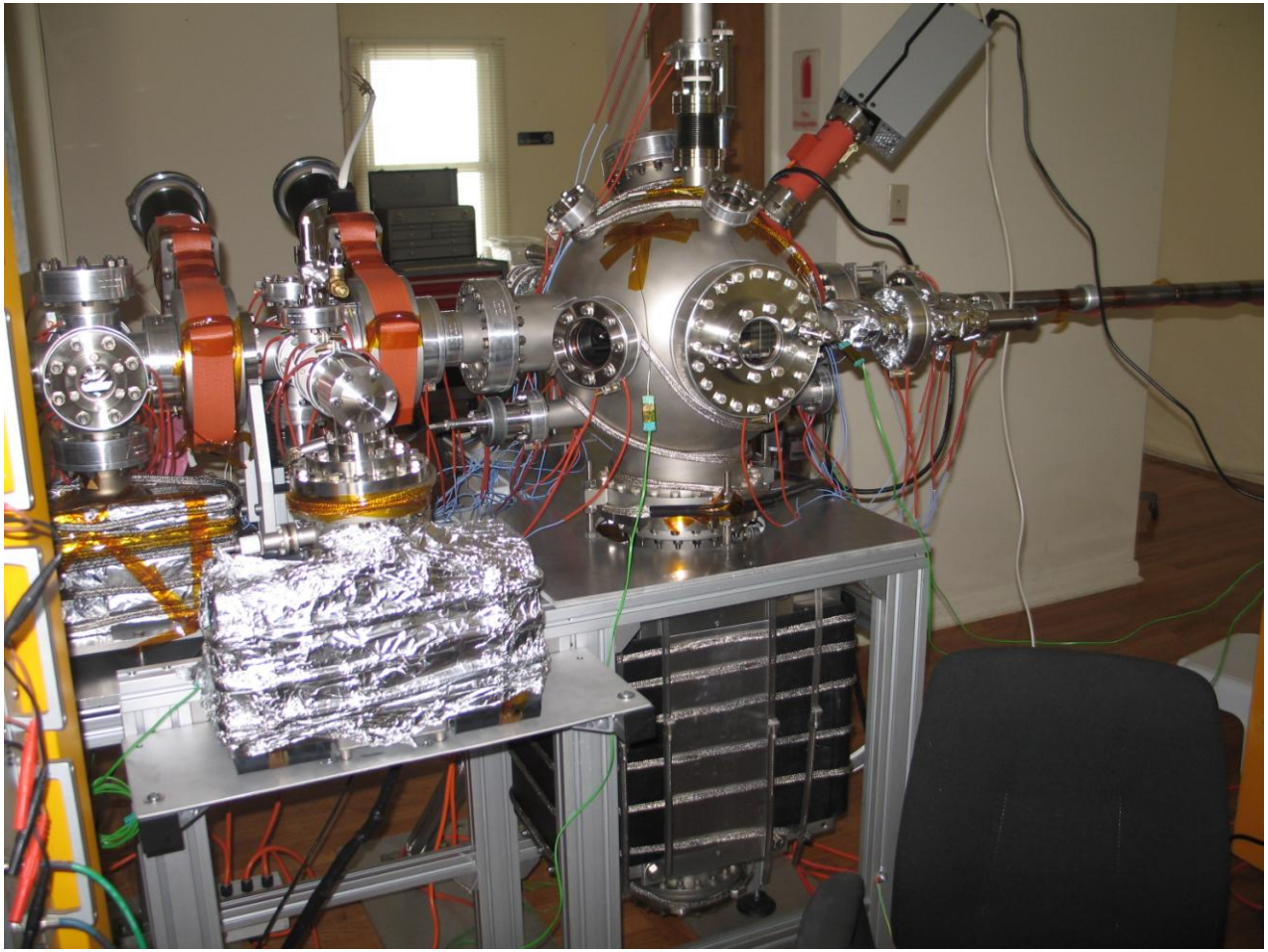
- System was leak checked last week by Dave Franck and Ron Kellett
- Eileen has returned and is tracing the heating bands, clamps and tapes to identify each controller
  - She is making a flow chart
  - Hopes to have this done this week
- She will begin wrapping early next week
- Hopes to start the bakeout by the middle of the week (optimistic date)
- Vacuum cart:
  - Finish the assembly in the next two days
  - Would like to connect to the system early next week (to begin the bakeout)
- Would also like to resolve a pressure instrumentation issue:
- One channel isn't working; need to resolve if it's the controller or the gauge.
- I would like to notify Daniele next week of the time for his trip

Cathode Prep System
(front view)



Cathode Prep System

(business end)



Summary:

- Still need to assemble a straw man schedule for completing Gun and Cathode Transfer Systems:
  - Installation
  - Conditioning program
- Water Skid:
  - Specification complete

- 10 Way Cross:
  - Conceptual design is complete
  - Ready for some discussion and review
- Make a decision on Daniele Sertore's visit

Cathode Transfer System

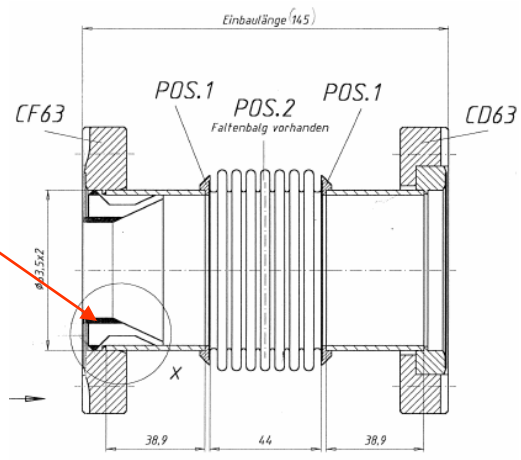
- Completed Tasks:
  - Alignment complete
  - Frame modifications complete
  - Assembled w/ dummy gun, new spring in pincer, and cathode plug
  - Vacuum connection between dummy gun and Cathode System complete
  - Vacuum level: that provided by the leak detector only.
    - ~1 Torr
- Remaining tasks:
  - Get the vacuum system running
    - Cabling for ion gauges and ion pump to be done
  - Complete the cathode guide piece
  - Standardize the Cathode Transport System interfaces
  - Preparation for bake out to be done
- Vacuum System Work to do:
  - 1. Determine where supplies will be mounted (rack or cave).
  - 2. Determine what supplies will be used to power the pumps.
  - 3. Making and pulling cables from the rack to the cave.
  - 4. Acquiring a turbo and scroll to lower vacuum level low enough to turn on ion pumps.
- Sertore visit:
  - Possibly can be done in mid-July but September may be more realistic
  - Want to train the A-0 techs on the Prep System as well as Lab 7 personnel
  - A-0 techs have work to do during 1st two weeks of shutdown, but it's possible we could get some of their time.

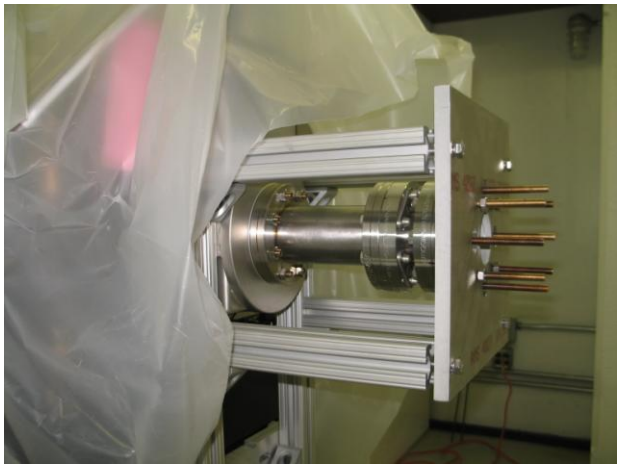
Vacuum discussion:

- Ron,
- We have an extra Varian controller in the racks that can be used for these pumps
- there might even be extra cables pulled for some pumps (Kermit, is this so?).
- If there are, we should re-terminate them with our new Varian Fisher connectors.
- The new turbo-molecular and scroll pumps are on order and will take several weeks to arrive here.
- We should borrow some pumps to get this going.
- ~Lucy

Gun/Cathode System Interface

(Cathode Insertion Guide)



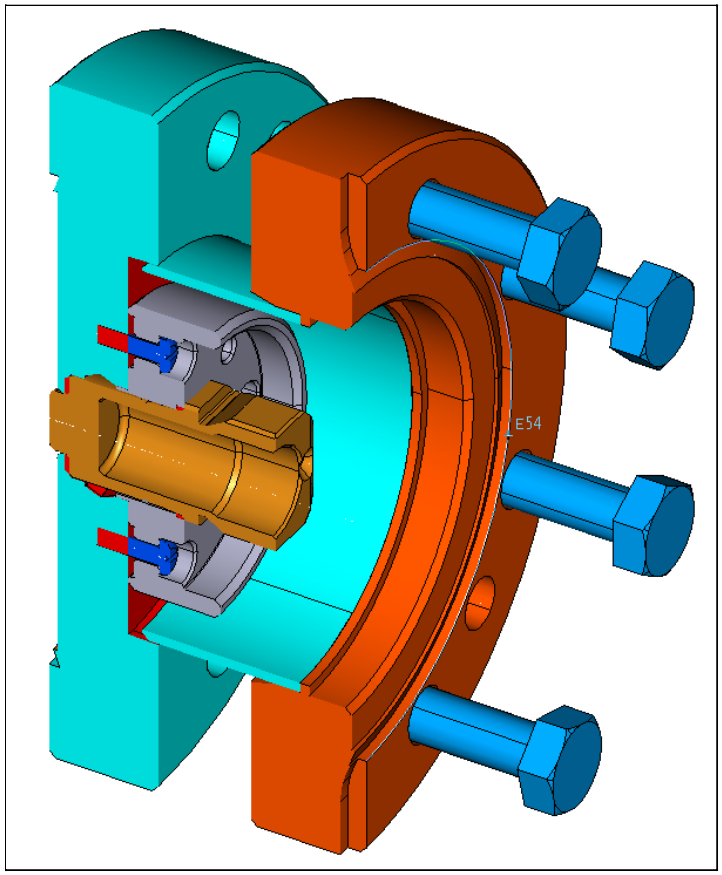


- Design exists now
- Parts on hand:
  - Flanges
  - Bellows (welded metal)
- Need to make the conical piece:
  - Estimate 4 weeks after completion of drawings

Pincer

- Issues:
  - Made of Be/Cu alloy
  - The W spring does not have enough stiffness to hold the cathode when being manipulated
- Resolution:
  - INFN looking to increase stiffness of the W spring

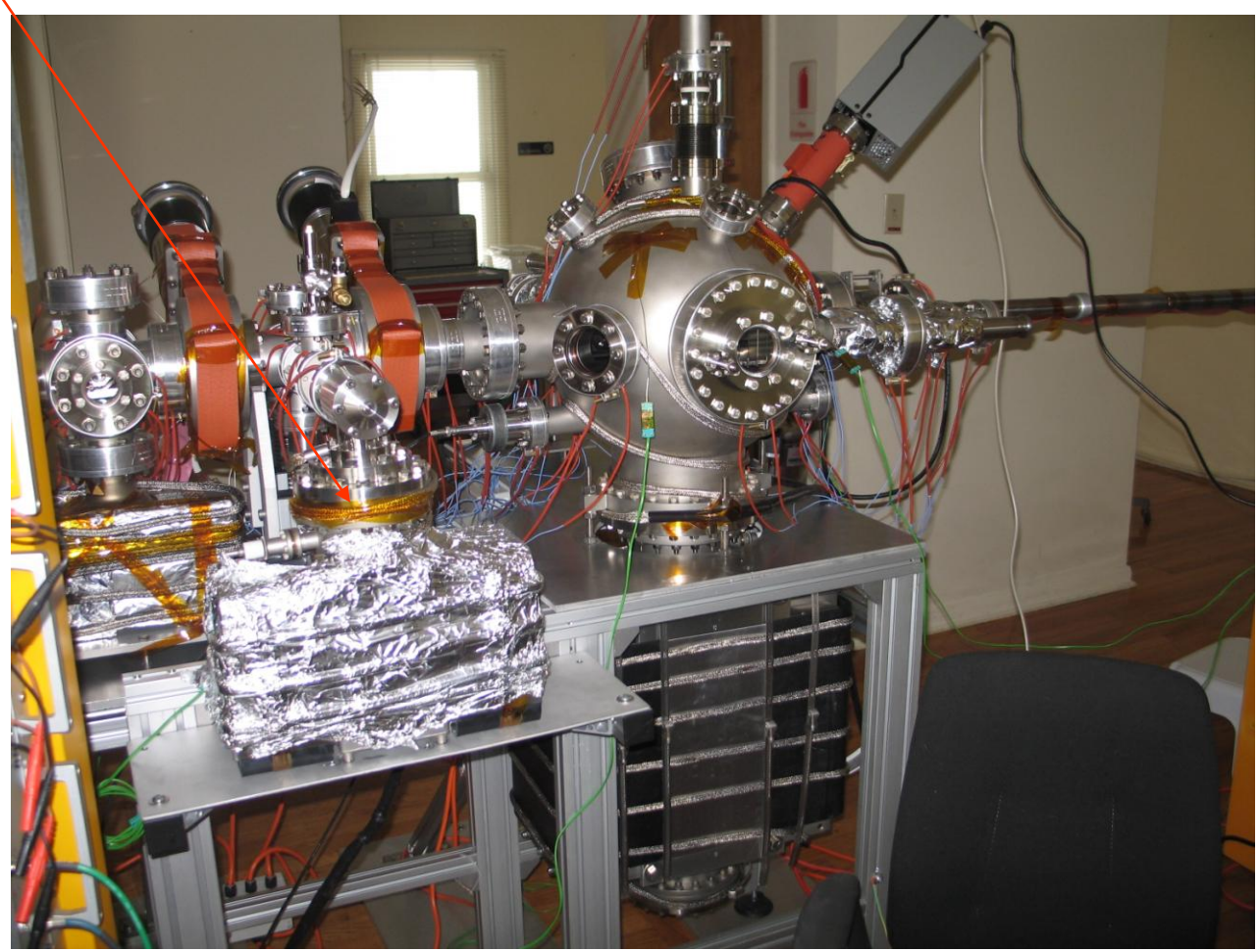
Dummy Cavity



CROSS SECTION – CATHODE TRANSFER TEST SPOOL

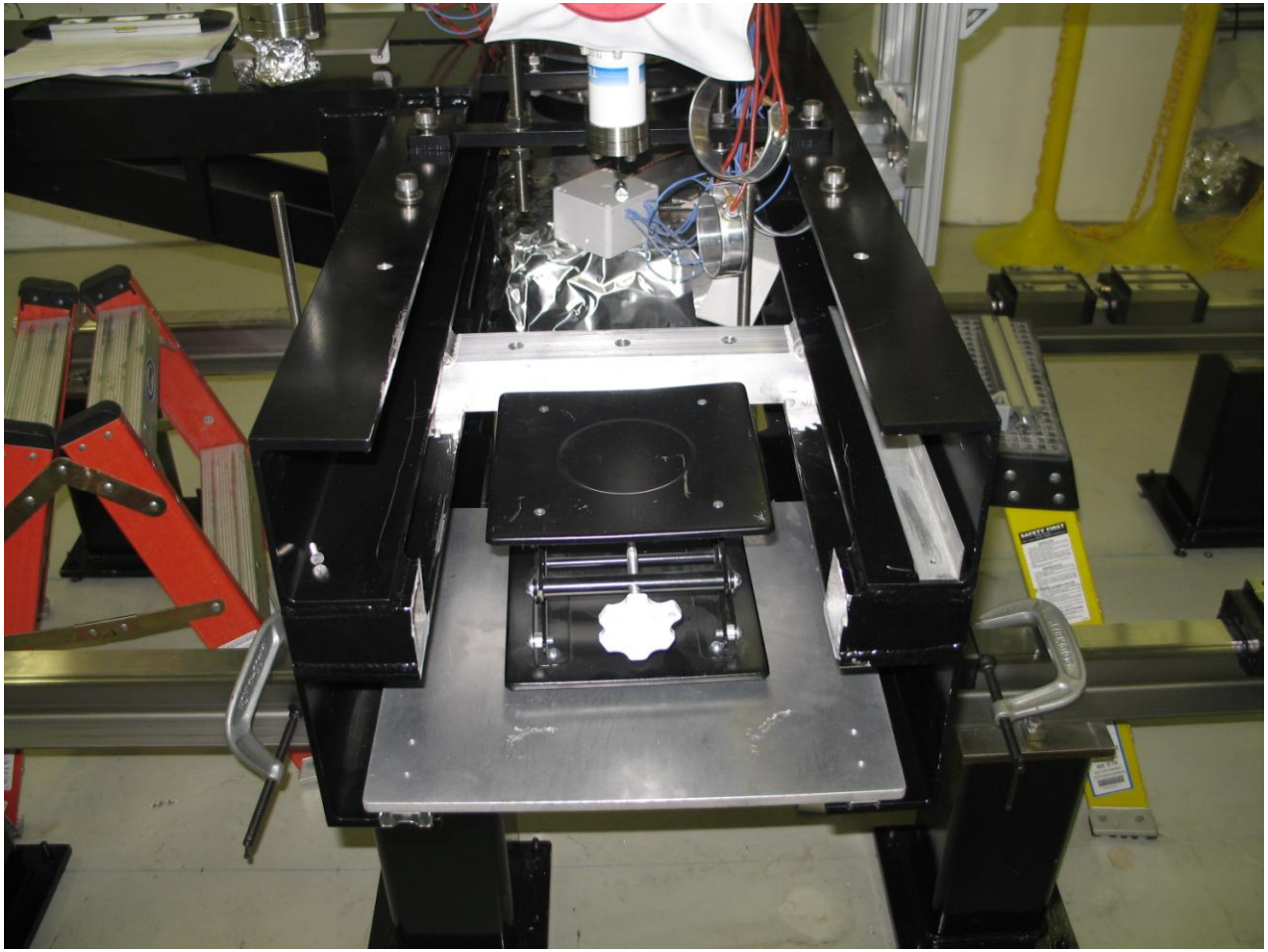
Transport Chamber

(re-connected to Cathode Prep System)



Rework of Cathode Transport Station

(there was no provision built into our structure to accommodate the slide for the Transport System)



A-0 Progress
(from Daniele Sertore)

- Three plugs baked at 450 °C
- Te source calibrated
- Cs source calibrated
- One cathode prepared
- Still waiting UV power meter calibration for final QE assessment.
- Two cathodes still to be deposited