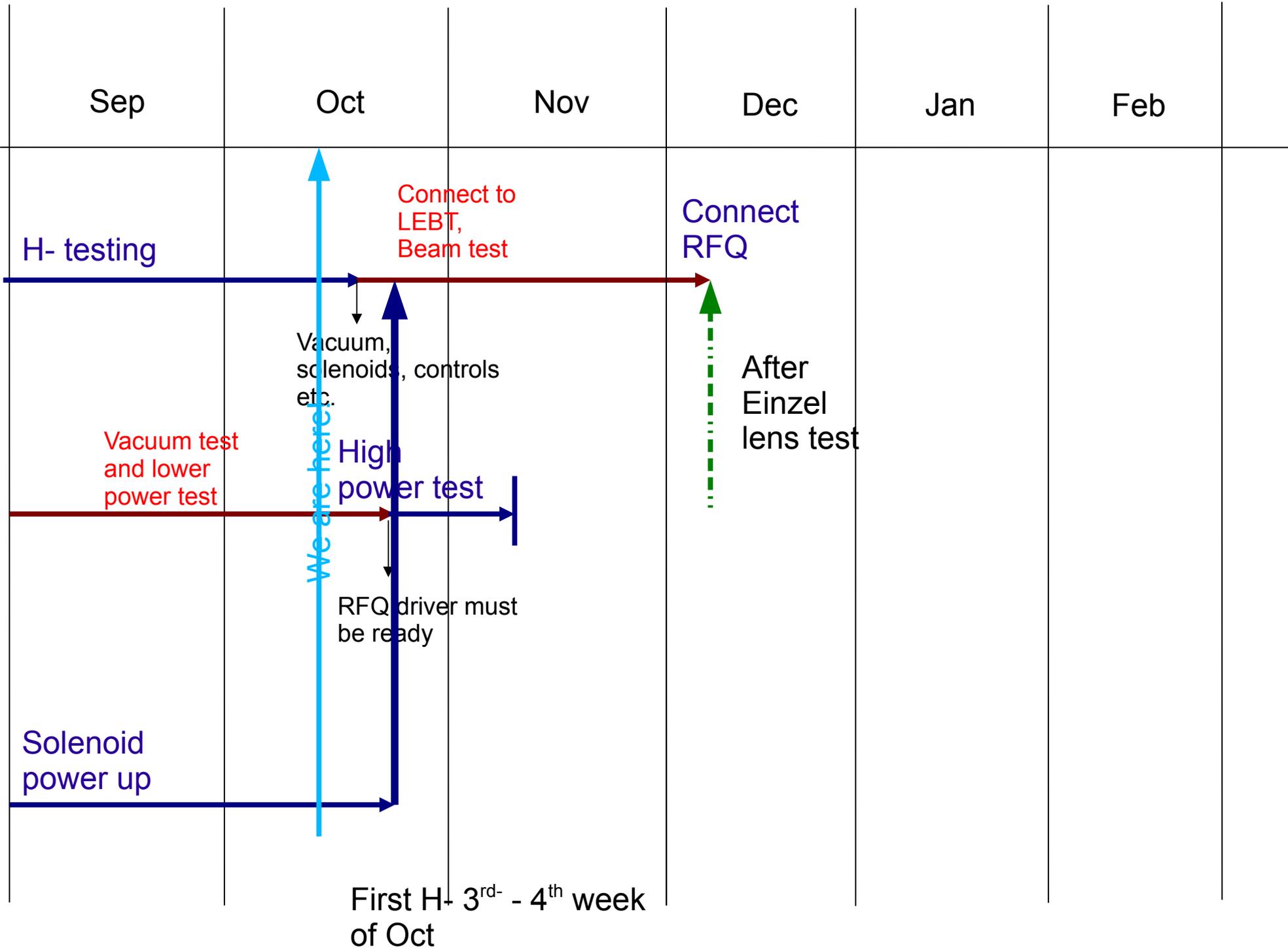
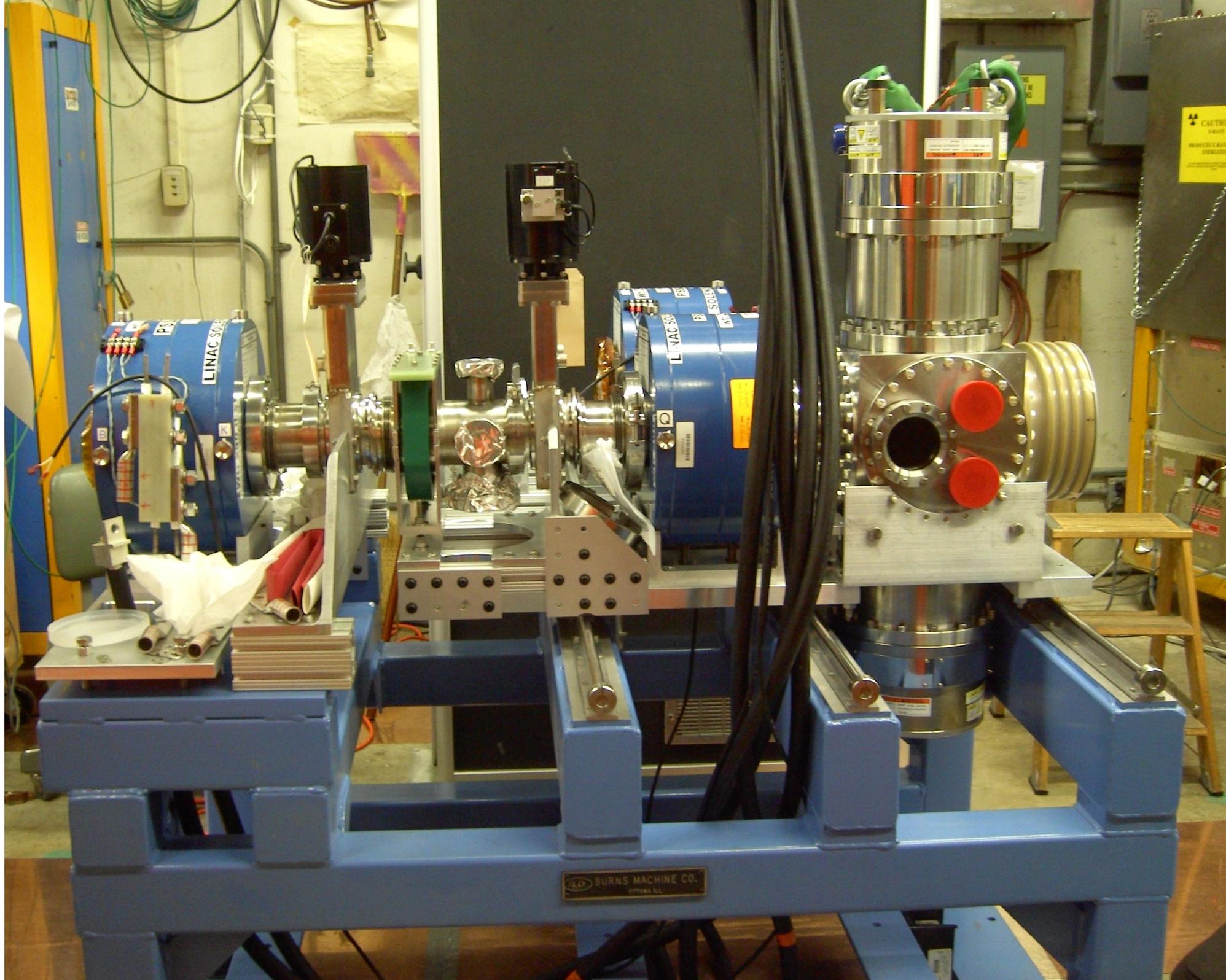


# Pre-injector Upgrade Updates (28 Sep 2011 – 12 Oct 2011)

C.Y. Tan  
12 Oct 2011



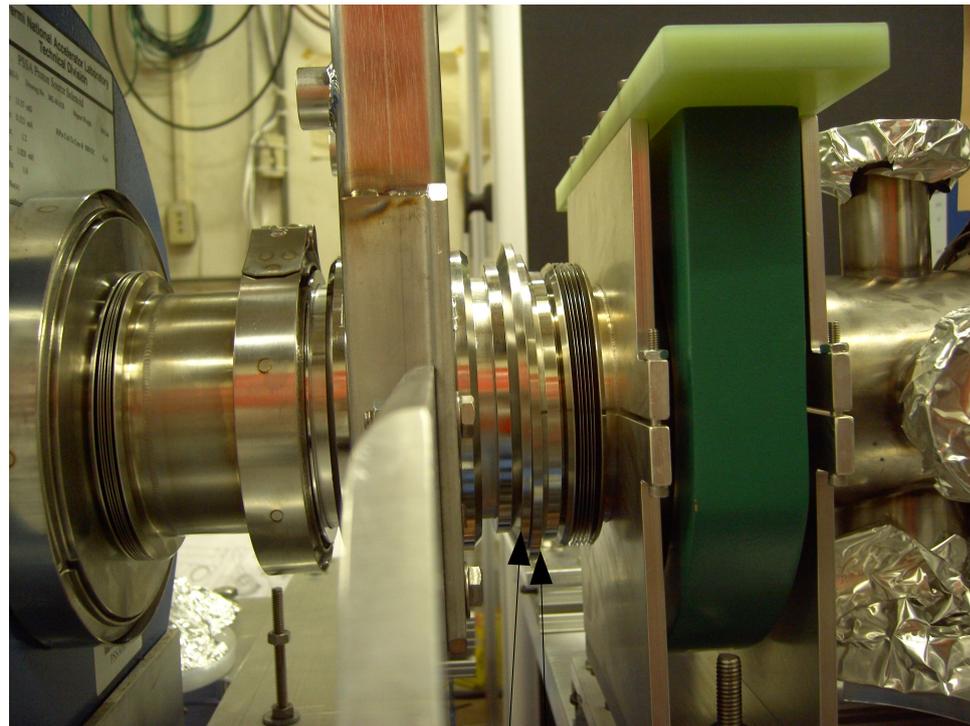


# Disaster Monday

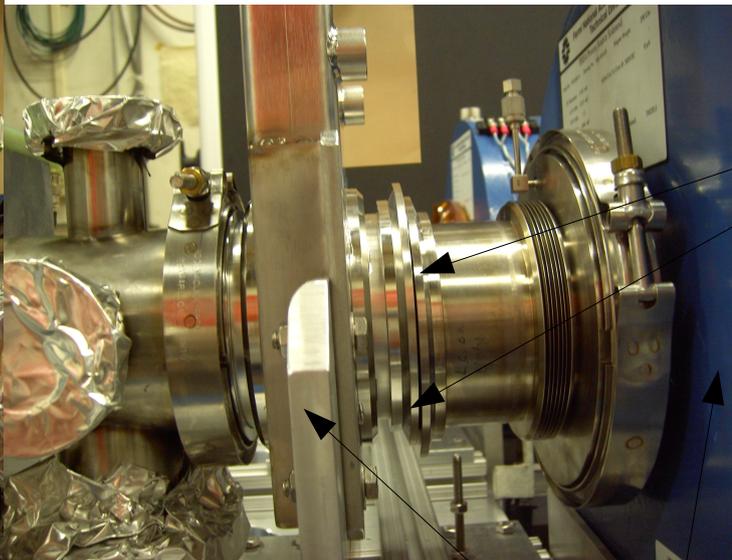
- Turbos don't fit in hole!
  - Fixed by enlarging slot.
- Turbos are too long and will hit bar when slid.
- No adjustments for centre solenoid.
  - We will align to the upstream solenoid magnetic axis rather than downstream solenoid because this is the only one that is adjustable.
- There will be a redesign of the slide.
  - Add in 3 point adjustors solenoids and source.

**We will soldier on!**

# We are NOT aligned!



Flange faces do not meet up

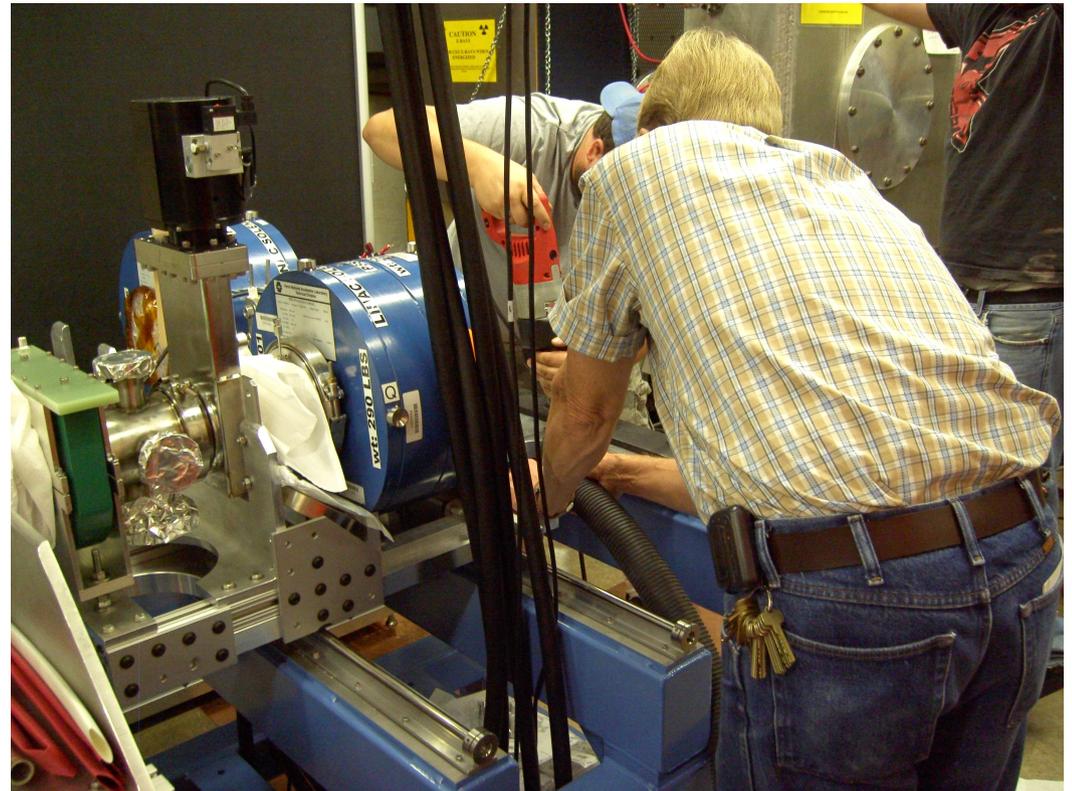
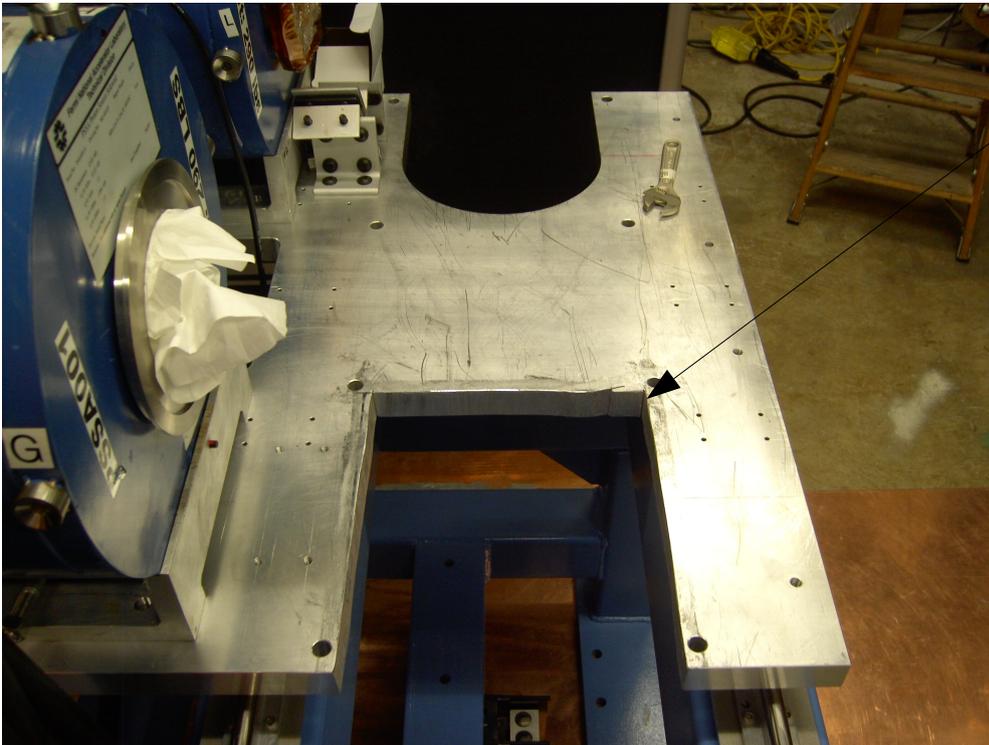


Flange faces do not meet up

No height adjustments!  
Only last solenoid has any height adjustments.

Downstream solenoid centre is about 39.5" from the floor.  
If we add 8" I-beam, total centre line height will be 47.5". **This is at least 0.5" too high to Tank 1 centreline!!!!**

Slot enlarged to fit turbo.





Cannot fit controller cable



Bar too high for sliding pump

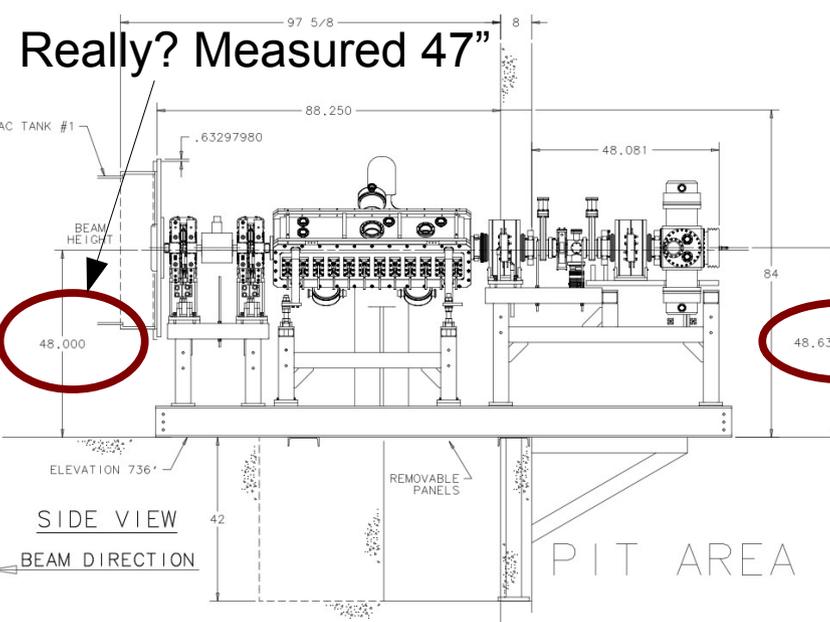
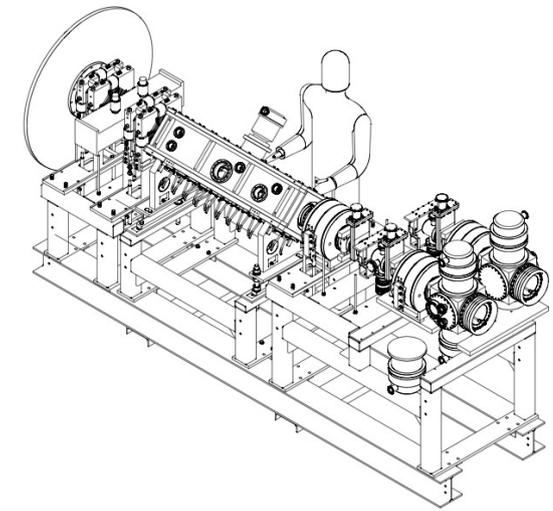
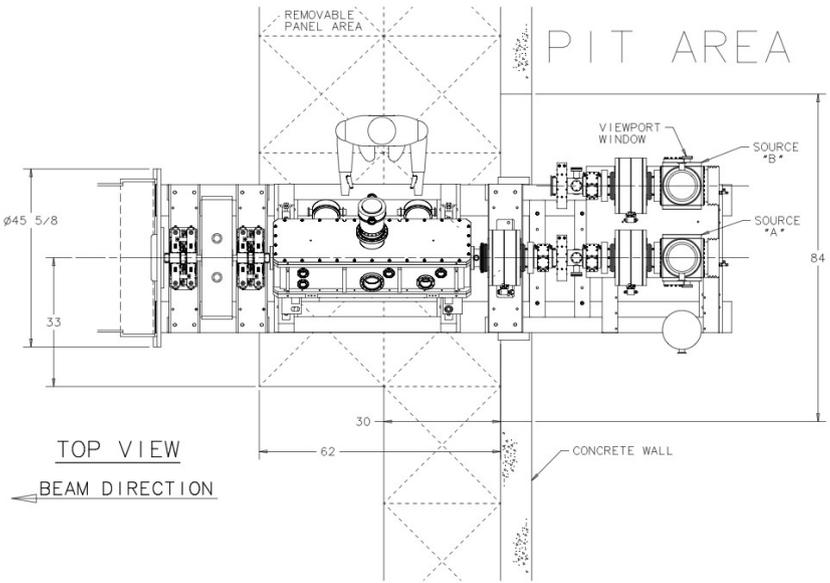
# What's missing for first H-

- Installation of source in cube
- Installation of source HV rack
  - New arc modulator not ready. Have to use old.
  - Modulator PS, heater PS, HRM, scope, heater controls
- Clamps to secure slide.
  - Cannot do survey until then.
  - We are missing height adjustments. And may be too high w.r.t. Tank 1 centreline.

# What's missing for first H- (cont'd)

- Installation of turbos
  - Need to connect to controller.
  - Turbo in middle of LEBT needs to be installed.
- Connect instrumentation.
  - Quick test needed.

REV	DESCRIPTION	DRAWN	DATE
		APPROVED	DATE



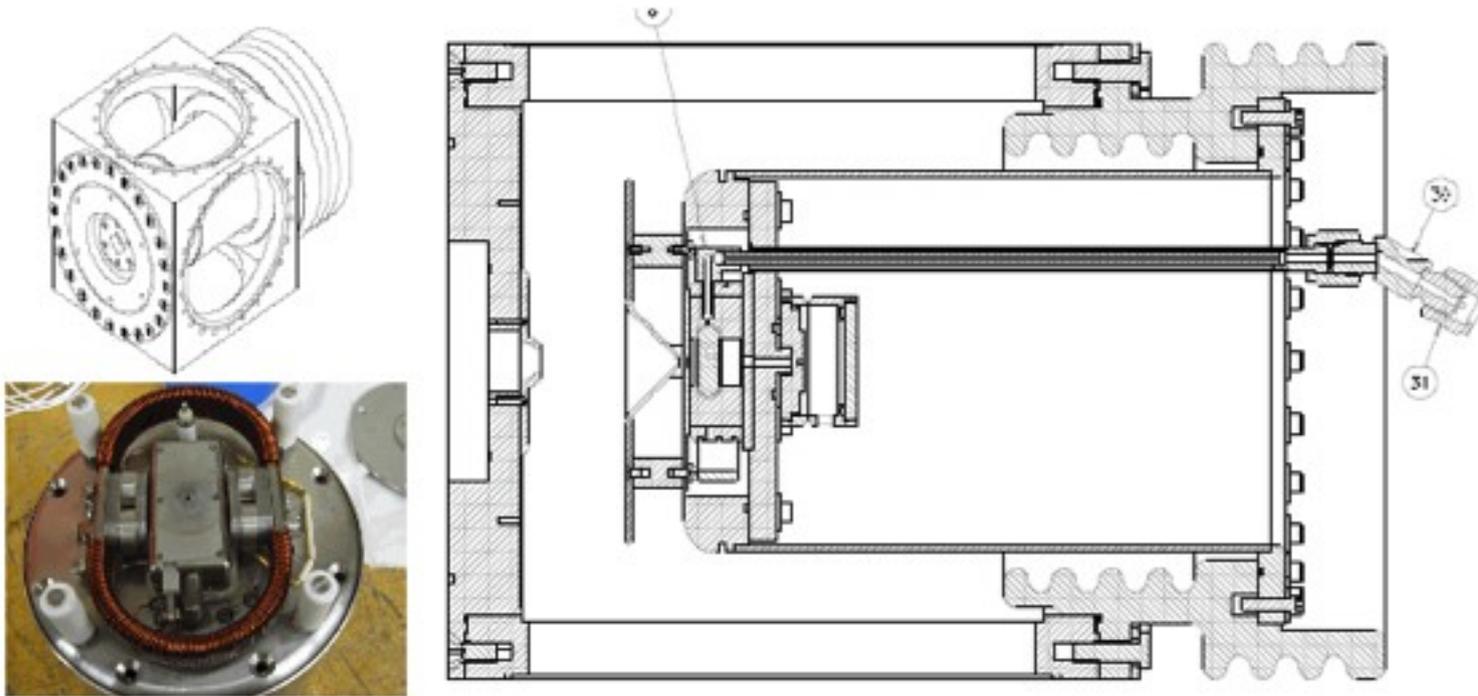
Really? Measured 47"

If we use 8" I beam, we will be  $\geq 47.5$ " high

PREACCELERATOR  
PRELIMINARY  
LAYOUT  
APRIL 27, 2011

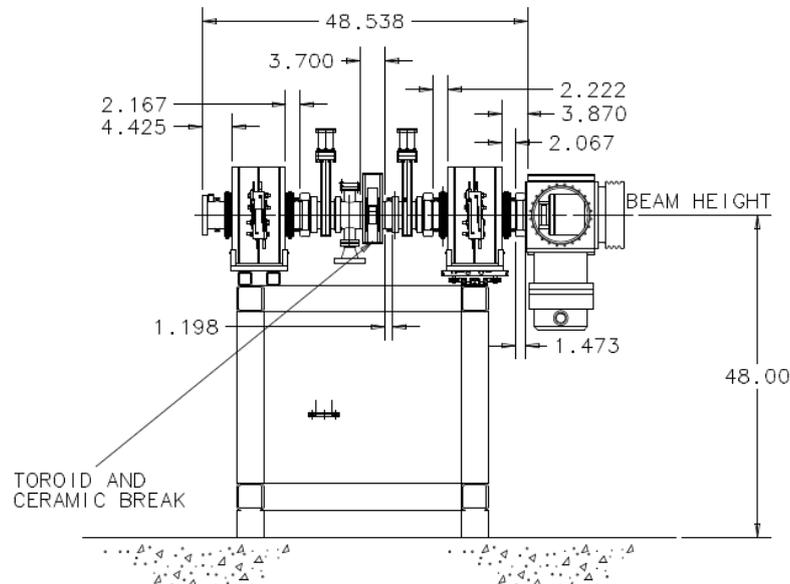
UNLESS OTHERWISE SPECIFIED			ORIGINATOR
+	+	+	DRAWN
			CHECKED
			APPROVED
1. BREAK ALL SHARP EDGES MAX.			USED ON
2. DO NOT SCALE DRAWING.			
3. DIMENSIONS BASED UPON ASME Y14.5M-1994			
4. MKV, ALL MKV SURFACES			MATERIAL
5. DRAWING UNITS: U.S. INCH			
<b>FERMI NATIONAL ACCELERATOR LABORATORY</b> UNITED STATES DEPARTMENT OF ENERGY			
SCALE	DRAWING NUMBER	SHEET	REV
		1 OF 1	
CREATED WITH :	GROUP :		

# Source Status



Device	Status	Comments
Modulator PS	To be installed	
Valve pulser	being modified	Some problems (27 Sep)
Arc modulator pulser	starting on it now	
extractor pulser	tested OK	Connected to present test stand to check reliability (22 Sep)

# LEBT Status

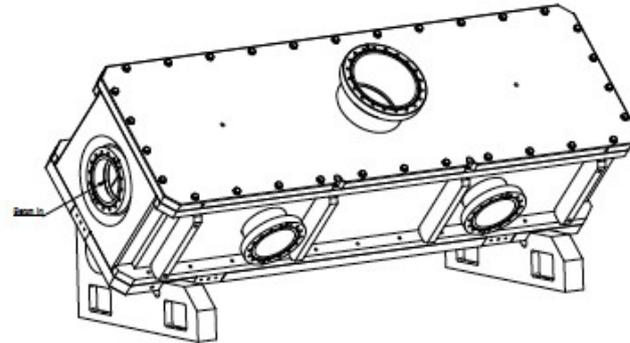


Klixons on solenoids!

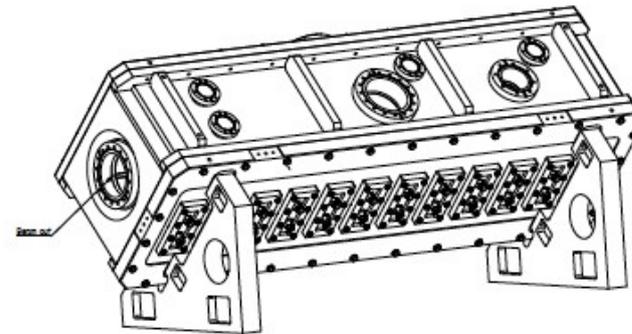
Device	Status	Comments
Solenoid PS	Waiting to be tested	Needs current regulator (19 Sep)
LEBT stand	being assembled (26 Sep)	Lots to design problems!
LEBT beampipe	Complete (22 Aug)	
Correctors		End of Oct delivery (03 Oct)
solenoid g10	modified (05 Oct)	To stop bolts shorting out power connector
Solid state switches	Have PO	Expect to be delivered 1 <sup>st</sup> week of November
Solenoid #4	Potted	Waiting for measurements. Klixons installed 06 Oct

# RFQ Status

- Stepper motor for tuner has been replaced 29 Sep. Works!
- Water fittings replaced.
- Manifold being built or ordered.
- Tuner and RFQ low power measurements started (12 Oct)

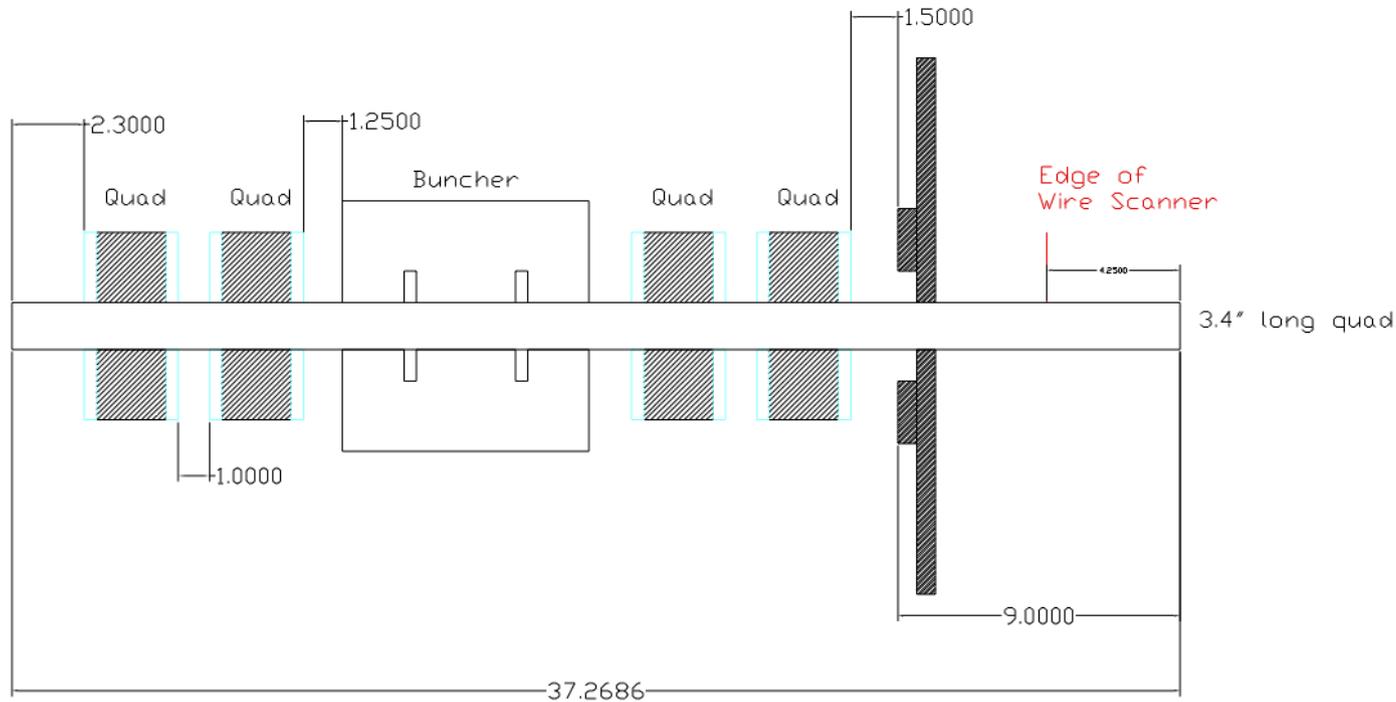


15



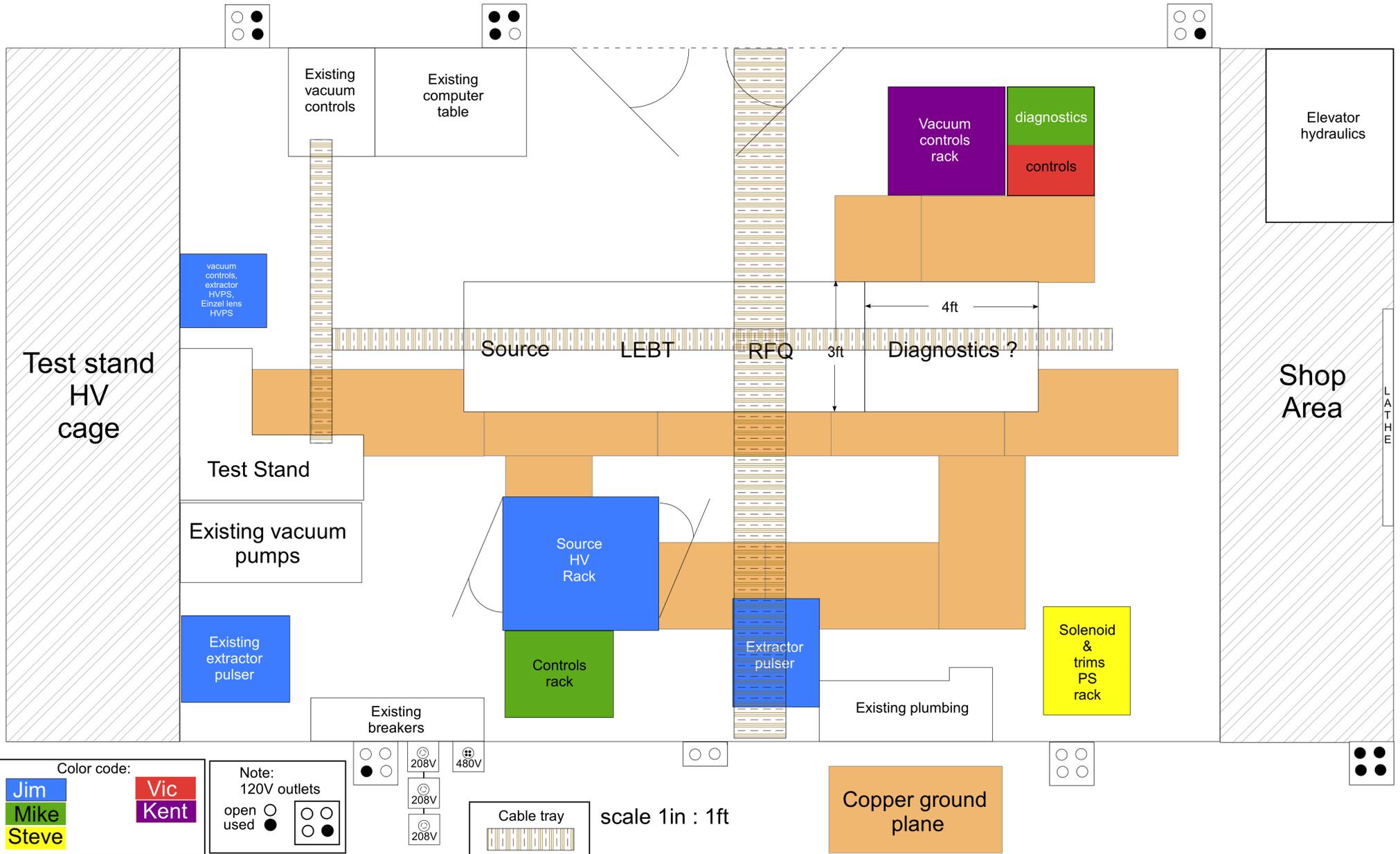
Device	Status	Comments
4816 PA	Tube changed out to a lower power one	Should be OK. Operationally < 100 kW (RFQ)+40kW (beam)

# MEBT Status



Device	Status	Comments
Quads	Being measured (03 Oct)	First wire measurements on worst quad done. (11 Oct)
Buncher	Low power measurements are done! (29 Sep)	
Power for quads	Being assembled (19 Sep)	
Power for buncher		Use present buncher supply in the line.

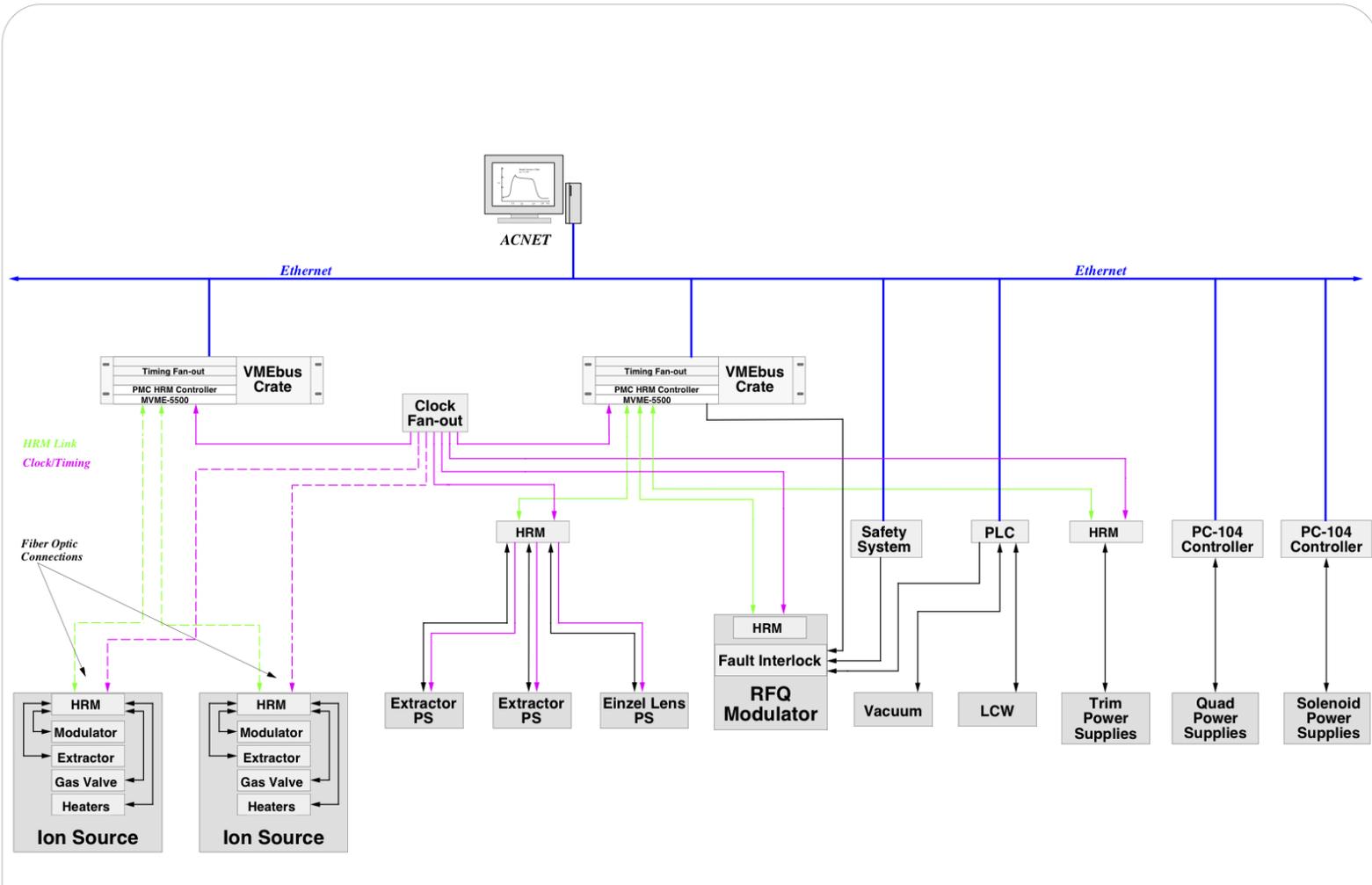
# Proposed test area layout



# Test area, test stand and instrumentation

Device	Status	Comments
MW can	Complete! (10 Aug)	
MW electronics	Complete! (10 Aug)	
Instrumentation stand	Drawings done! (21 Sep)	
emittance probes can	Drawings done! (21 Sep)	
Toroid and dump	Complete! (24 Aug)	
Toroid stand.	Complete! (09 Sep)	
TOF	3 BPM shells	Waiting for flanges
Faraday Cup	Needs zero length adapter	Also some machining

# Controls



*Linac RFQ Upgrade Controls Block Diagram*

# Safety

- Documents submitted to safety (27 Sep)