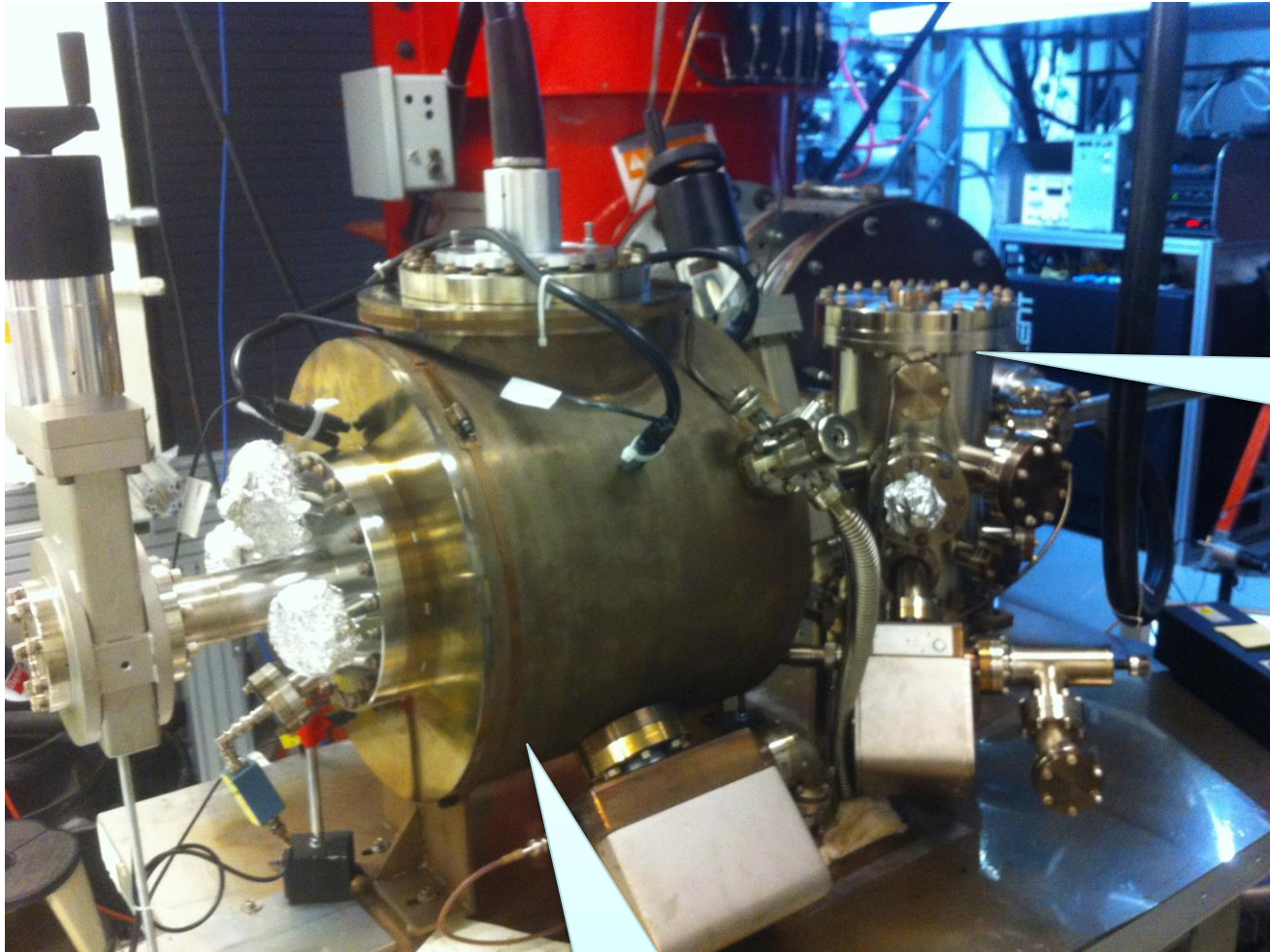


Design Update Puck and Gun Magnet

February 16, 2016

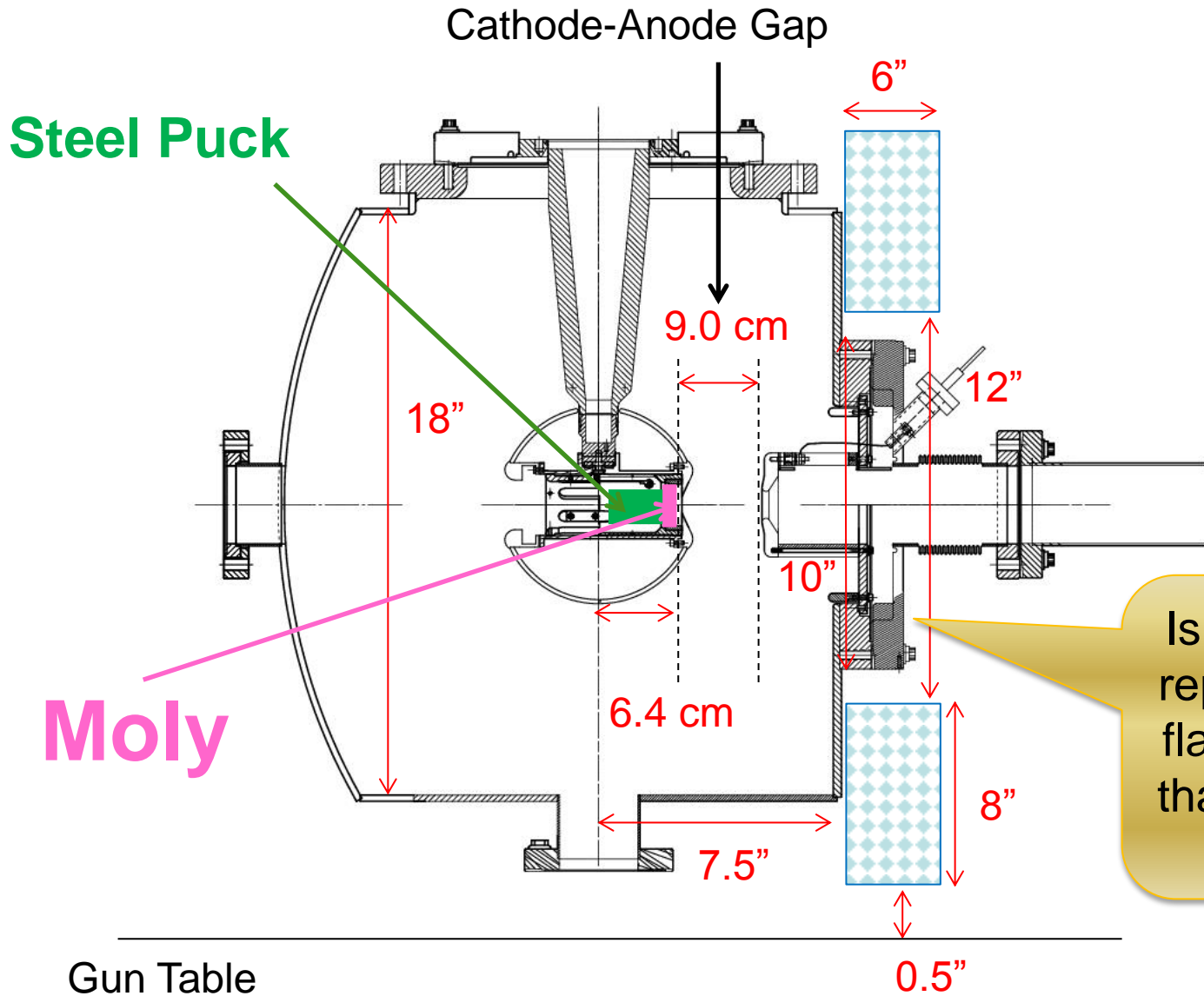
Magnetized Gun



K₂CsSb
Preparation
Chamber

HV Chamber

Solenoid + Steel Puck



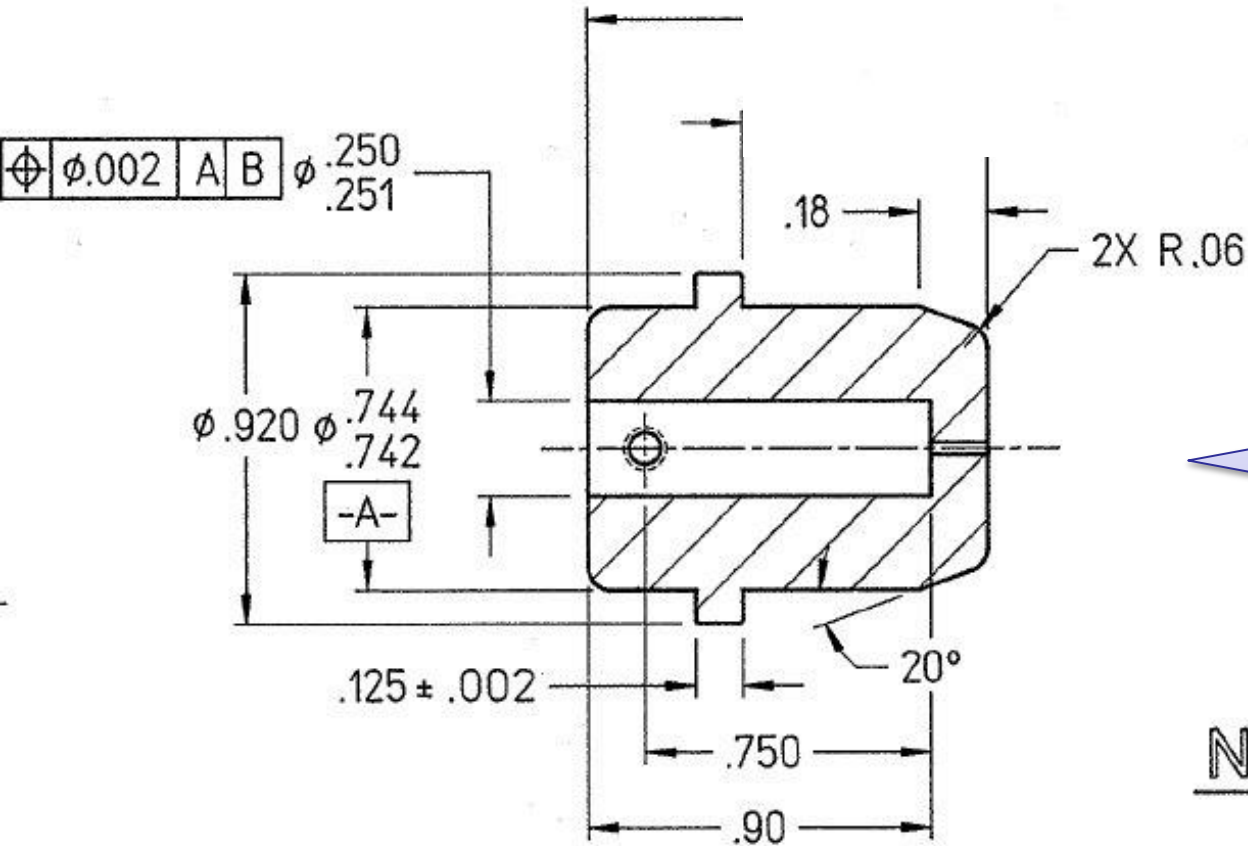
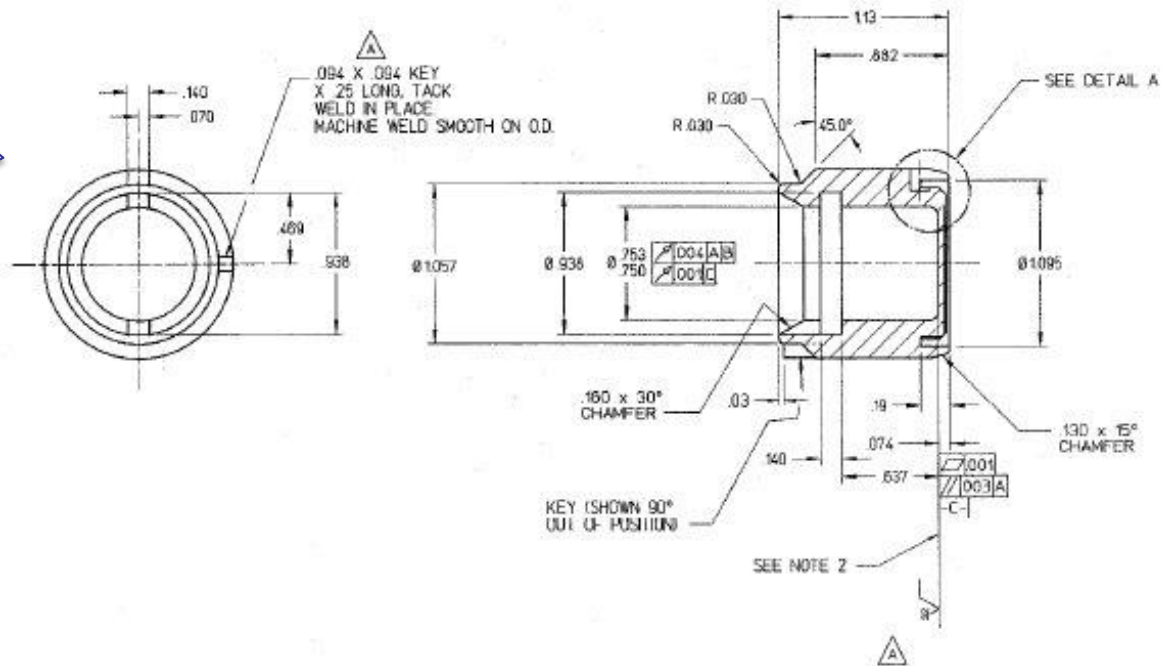
Is it possible to replace this 10" flange with one that has shorter ports?



Steel Puck

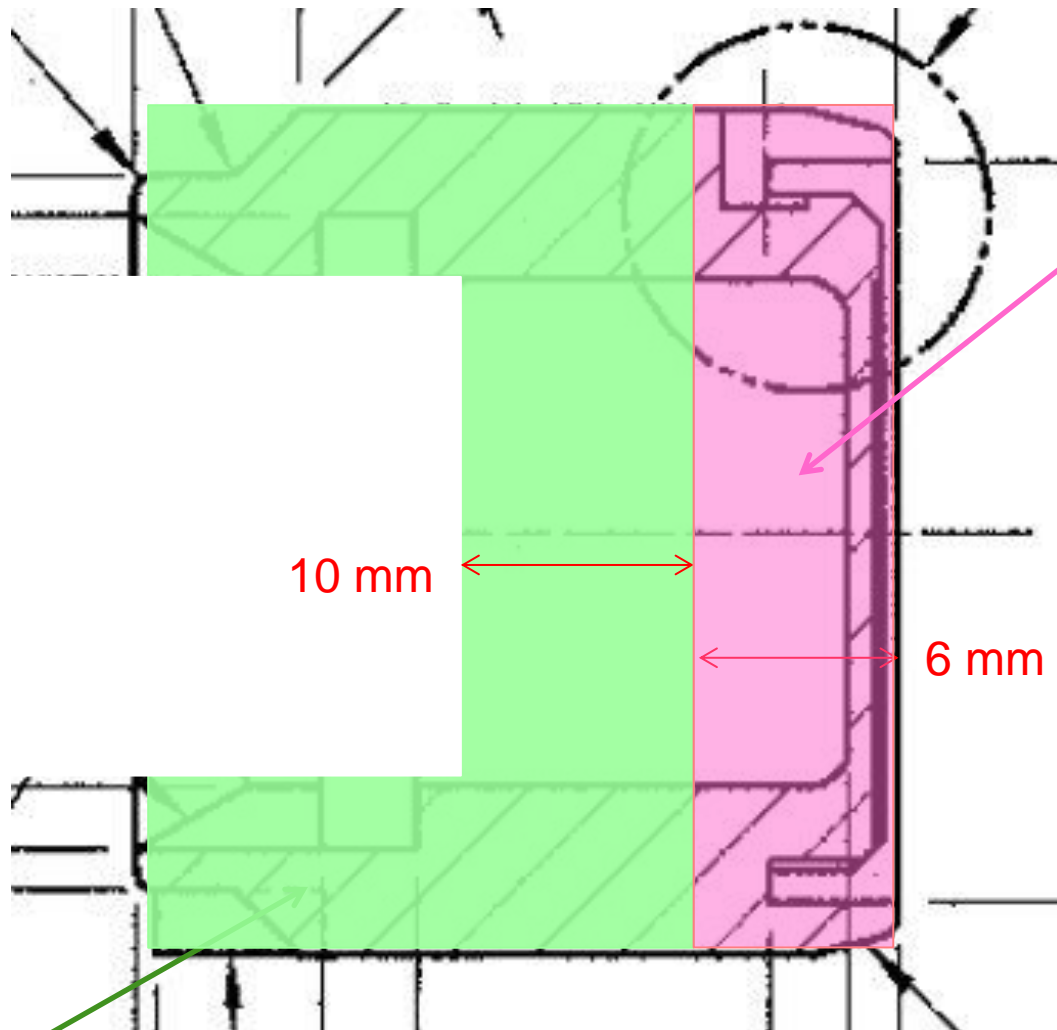
- Molybdenum and Steel hybrid puck – brazing not screwing
- Use 1010 carbon steel
- Re-design new Puck Manipulator End Adapter
- Order 4 pucks – map with Solenoid
- Heat Treatment:
 1. Un-heated
 2. 200°C (Sb) and 120°C (K – Cs) growth
 3. 550°C Heat Cleaning then 200°C and 120°C
 4. Multiple

Puck



Puck Manipulator End Adapter

NC



Moly

10 mm

6 mm

Steel

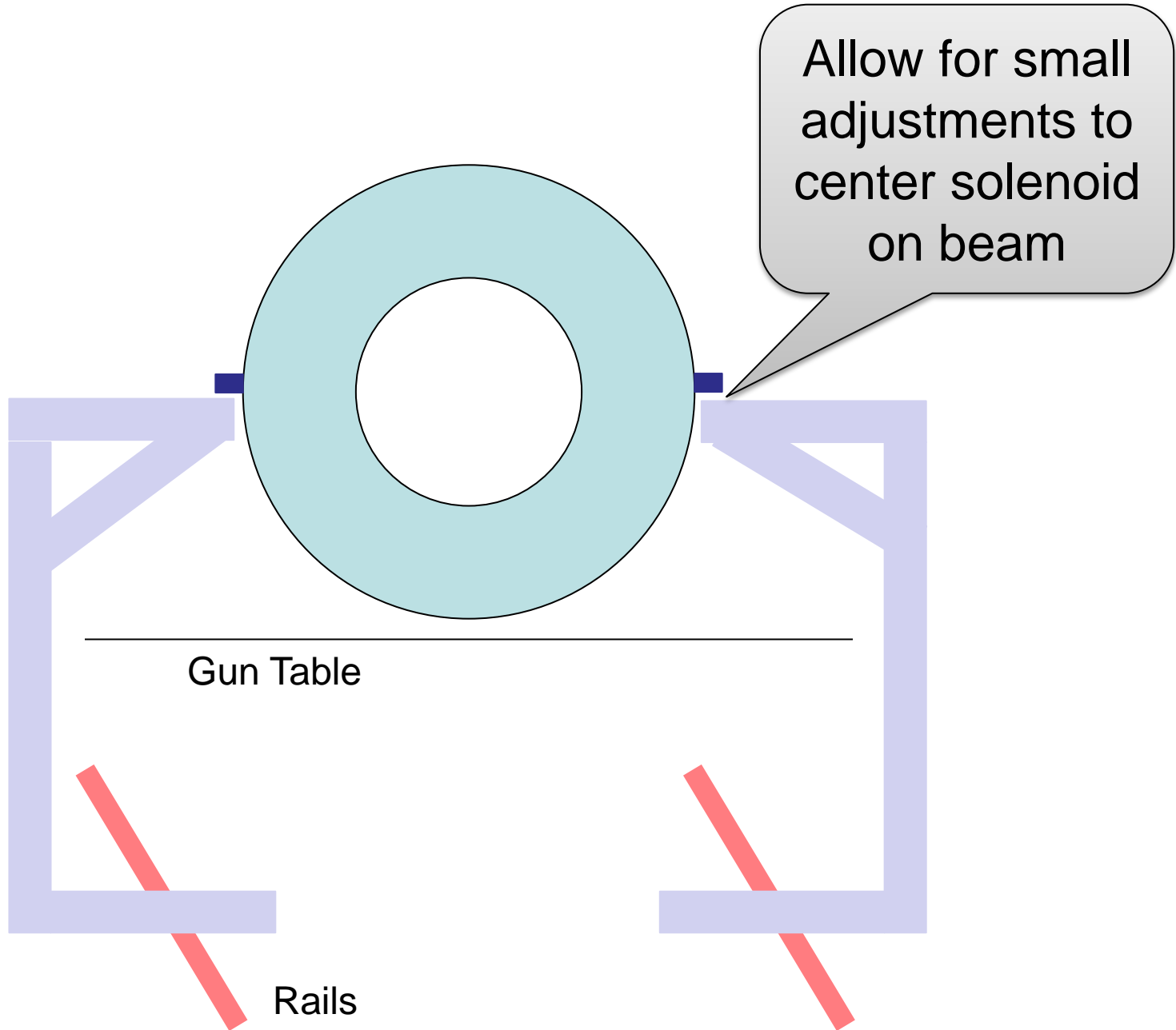
Power Supply

- Use new spare Dogleg power supply (450A, 72V)
- We have Arne's permission
- If needed at CEBAF, we can use an old Dogleg supply (270A, 50V) to keep going
- Need to add polarity switch to be able to degauss steel

Solenoid

- Not bakable – will be mounted on rails. Push downstream out of oven and run LCW through. Move gate valve after beamline solenoid (in place of BPM).
- Single-wound
- Once inner diameter is determined, ask companies for design and quote:
 1. Everson Tesla
 2. Buckley Systems

Solenoid Mount



Timeline

Power Supply (new spare Dogleg):

1. Being built at Magnet Lab: March
2. Test and add polarity switch: April
3. Move to GTS: May
4. Ready: July 1, 2016

**All work has to
be completed
by September
30, 2016.**

Solenoid:

1. Design: February and March
2. Procure: April
3. Map (with and w/o puck), check hysteresis and forces: July
4. Install: August, 2016