

Tumbling of JLab-2 Status

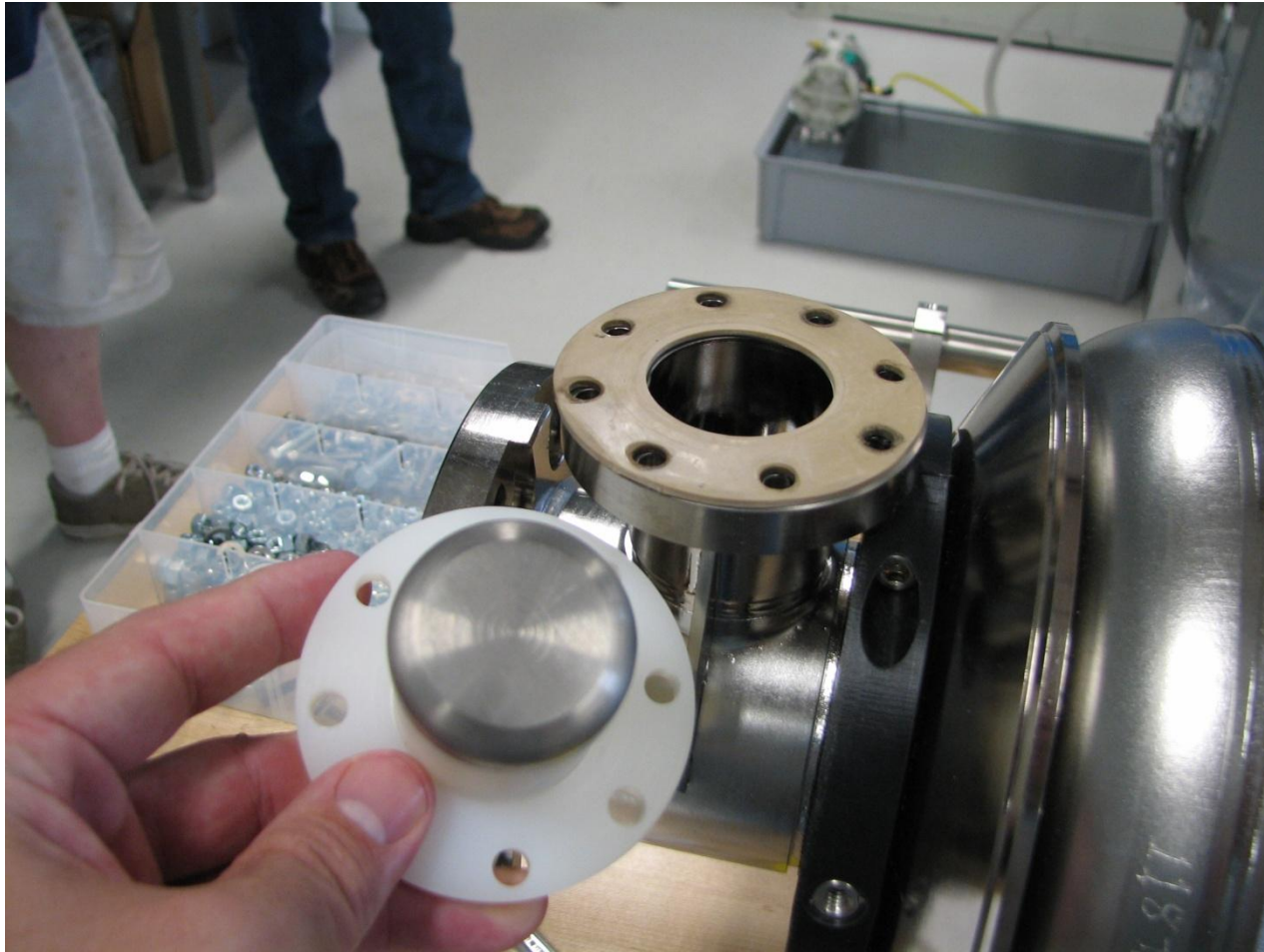
Tumbling Prep Process – Unloading Cavity



Tumbling Prep Process – Frame Around Cavity



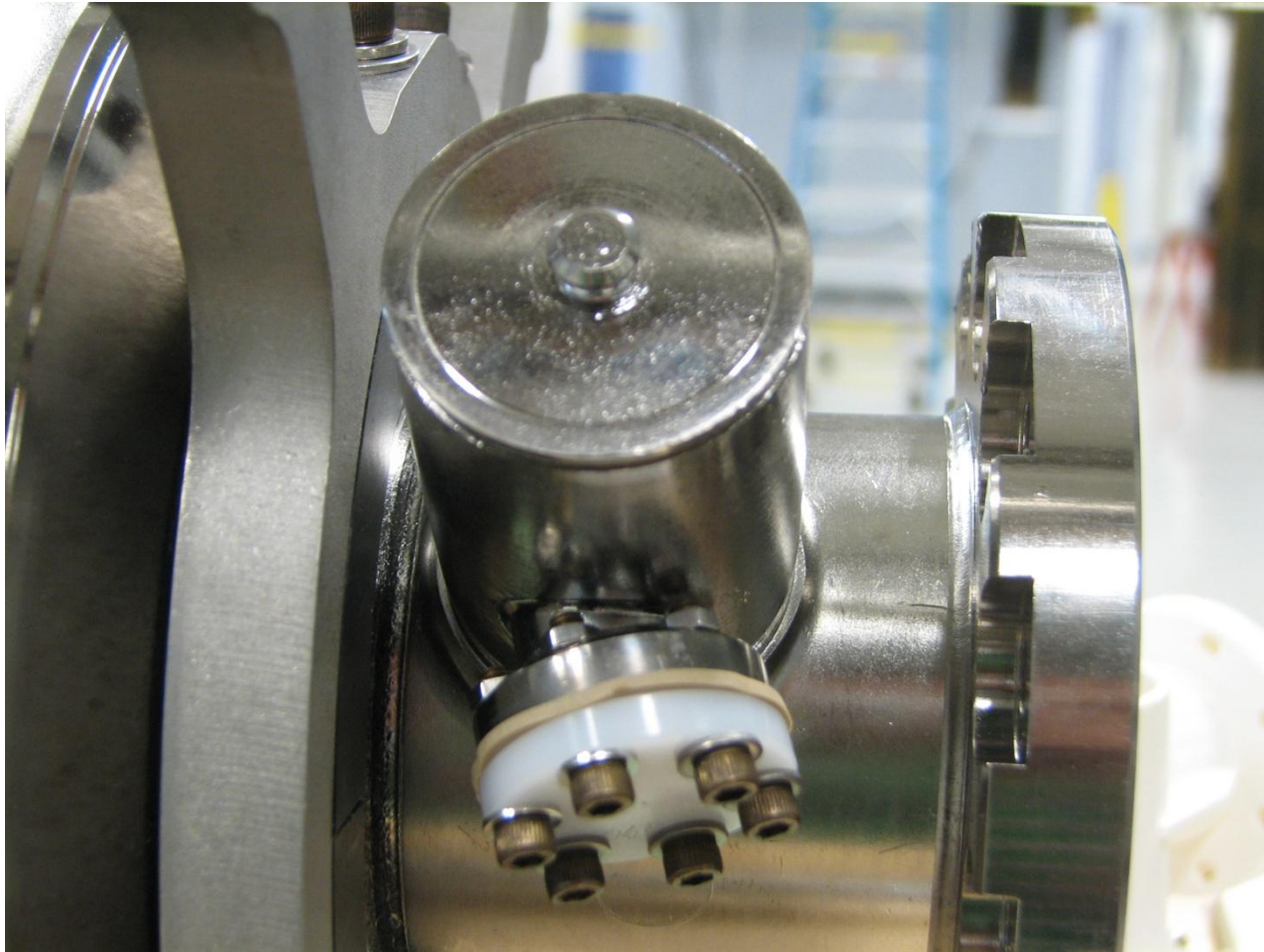
Tumbling Prep Process – Input Coupler



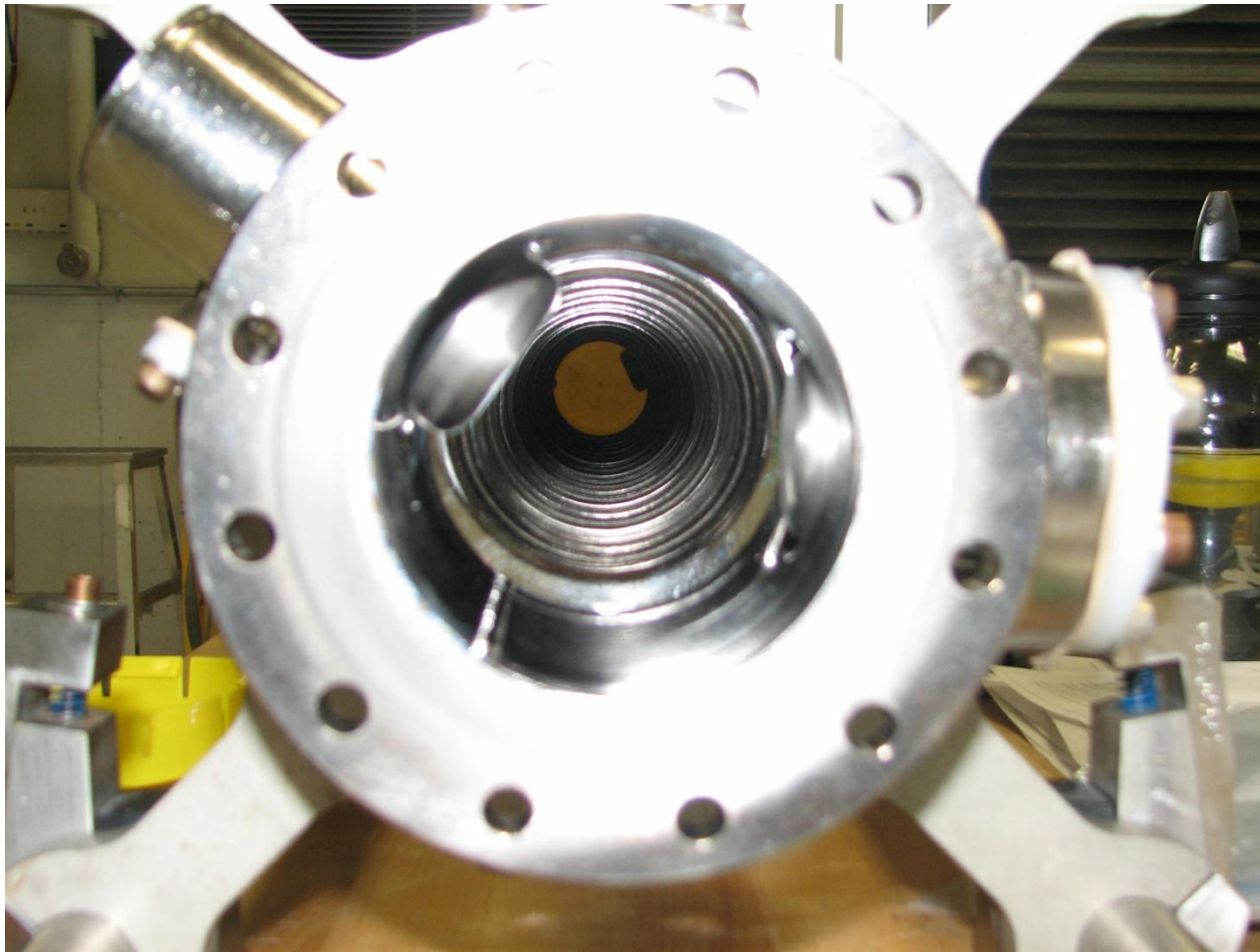
Tumbling Prep Process – HOM Can



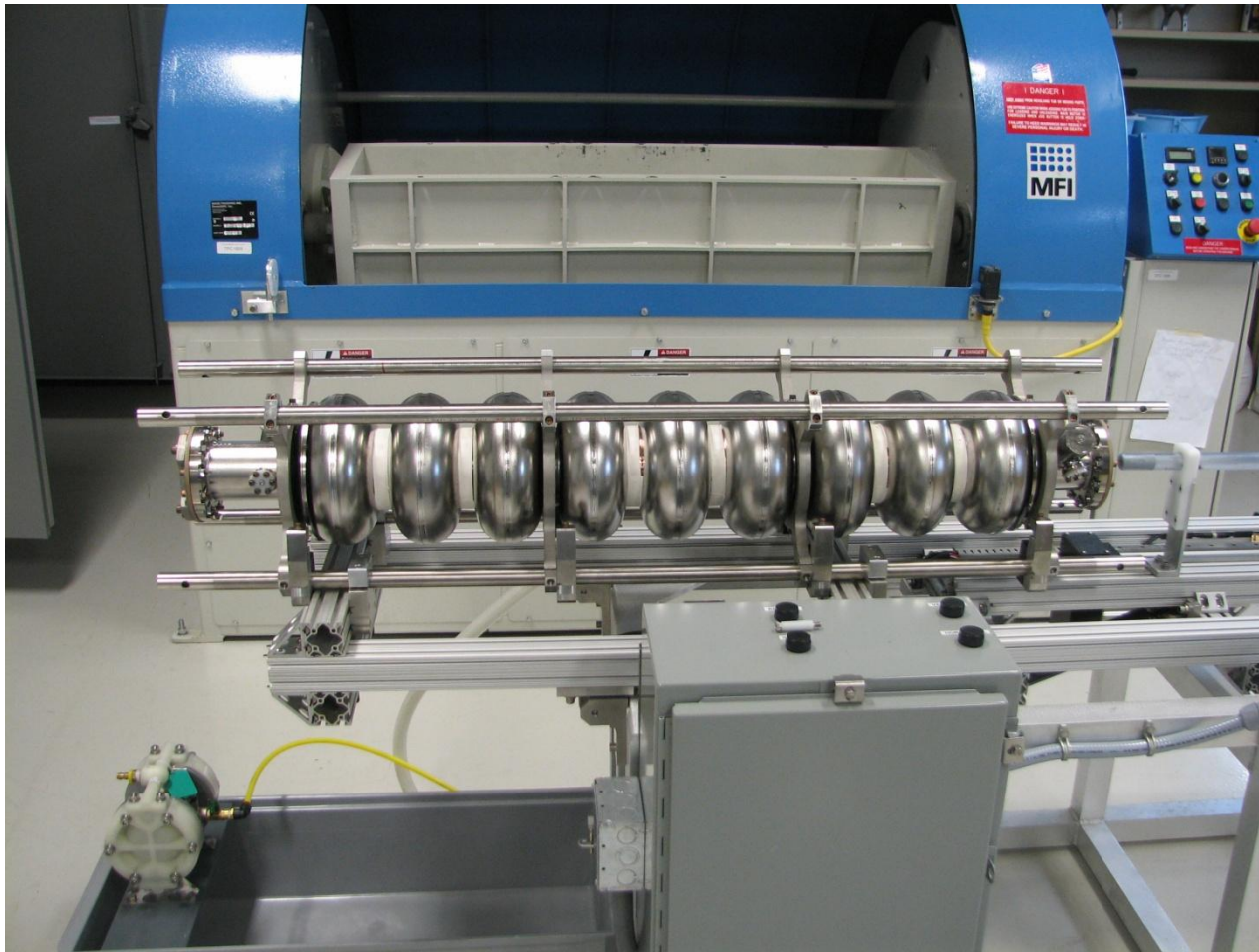
Tumbling Prep Process – HOM Can



Tumbling Prep Process - Plugs



Tumbling Prep Process – Rinse Station



Tumbling Prep Process – Load Media

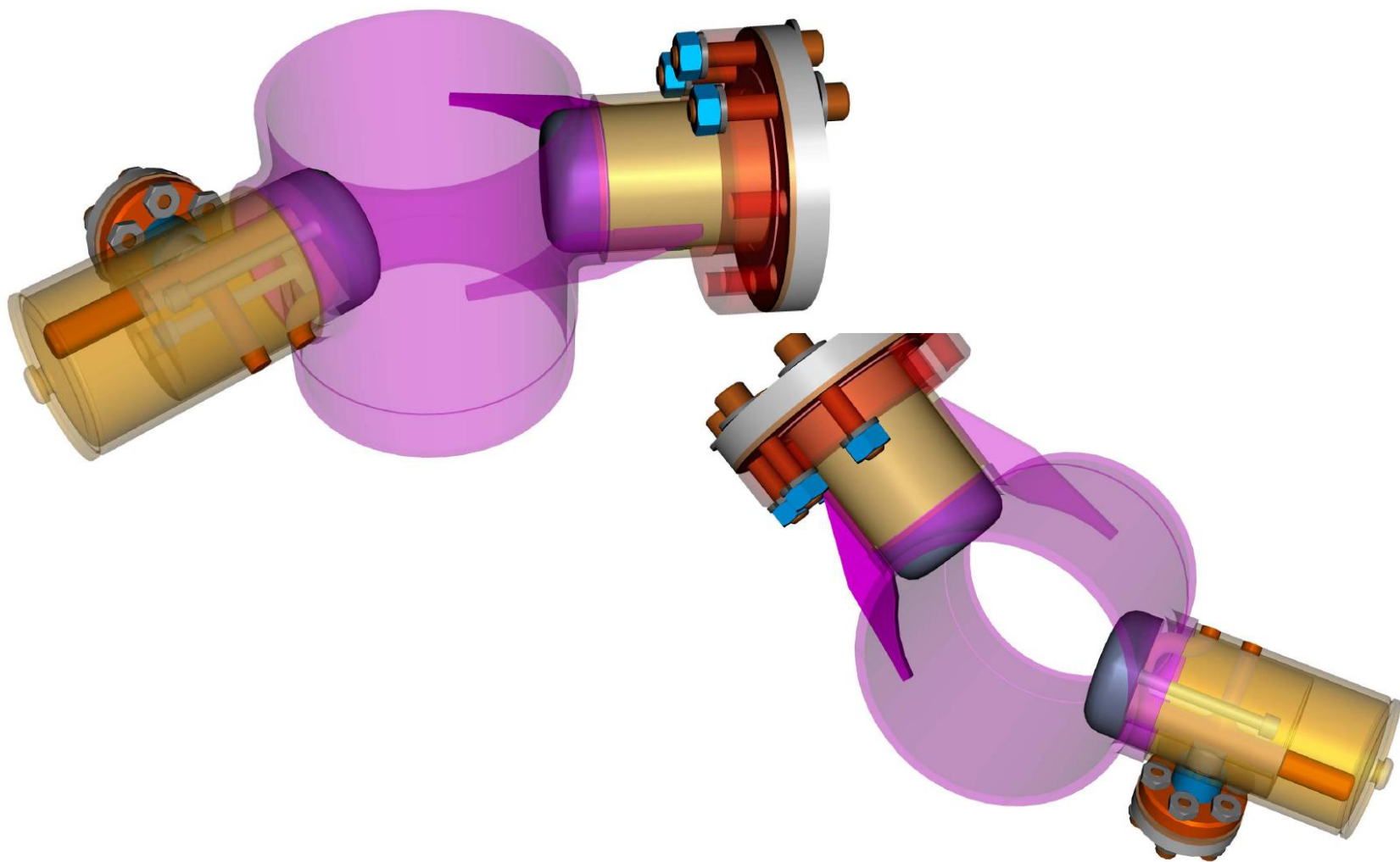


Tumble



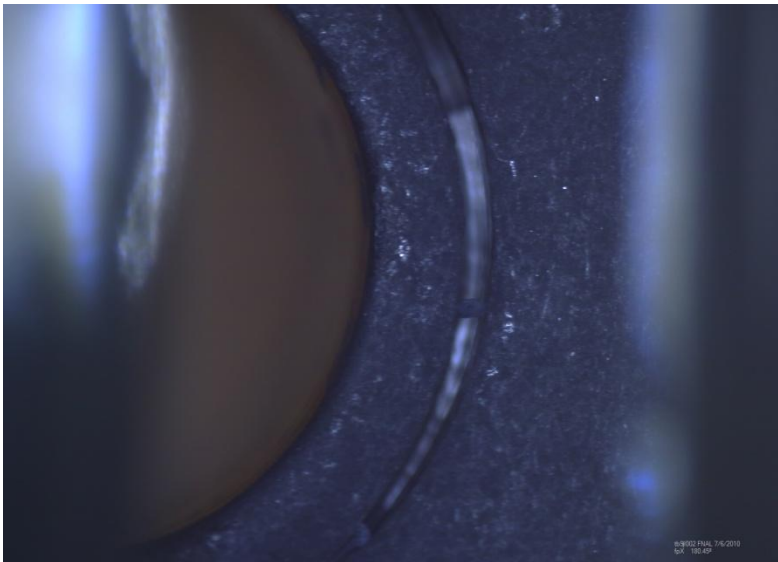
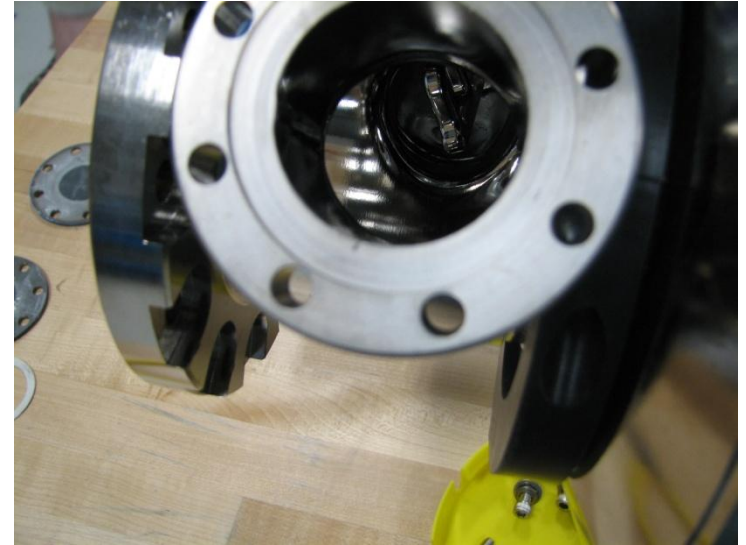
Tumbled

- Cavity previously processed with bulk EP and 2 light EPs. Max performance around 31 MV/m. Has a mode mixing problem.
- Tumbled for 5 hours with cutting media (3/8 inch oblong ceramic pyramid)
- Removed 40 microns from equator and 10 microns from beam tube. Unknown removal rate on iris.
- Tumbling process went well in general but 3 general problems found.
 - Plugs Stuck – New Design Being Implemented
 - Rinse Wand Had Poor Coverage – New Design Implemented
 - Cavity got hot during tumbling (estimated 50°C)

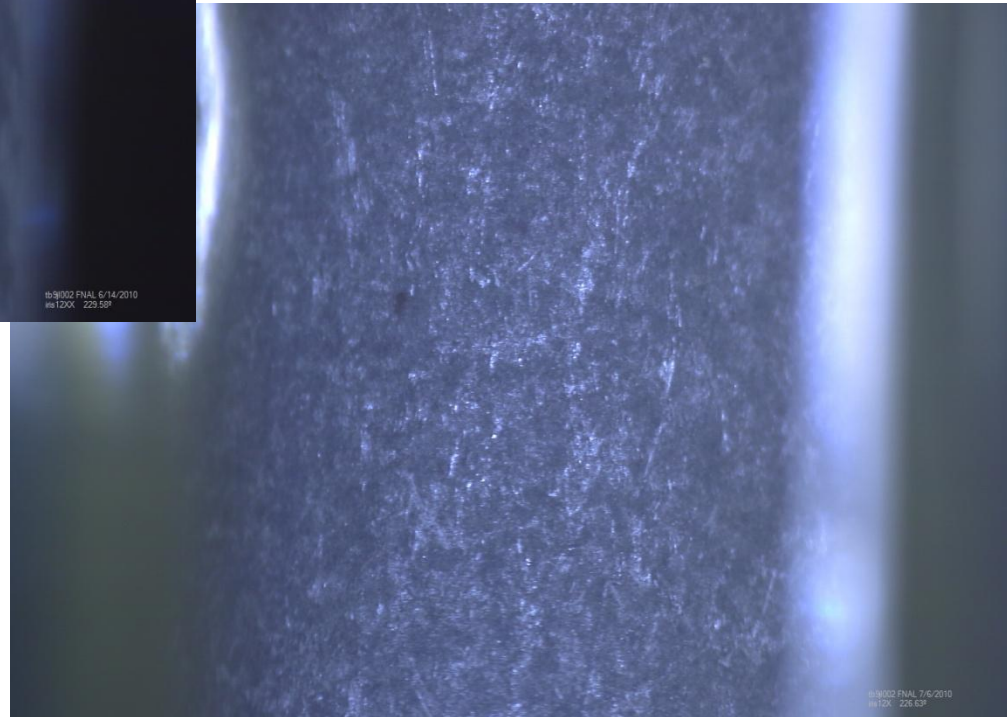
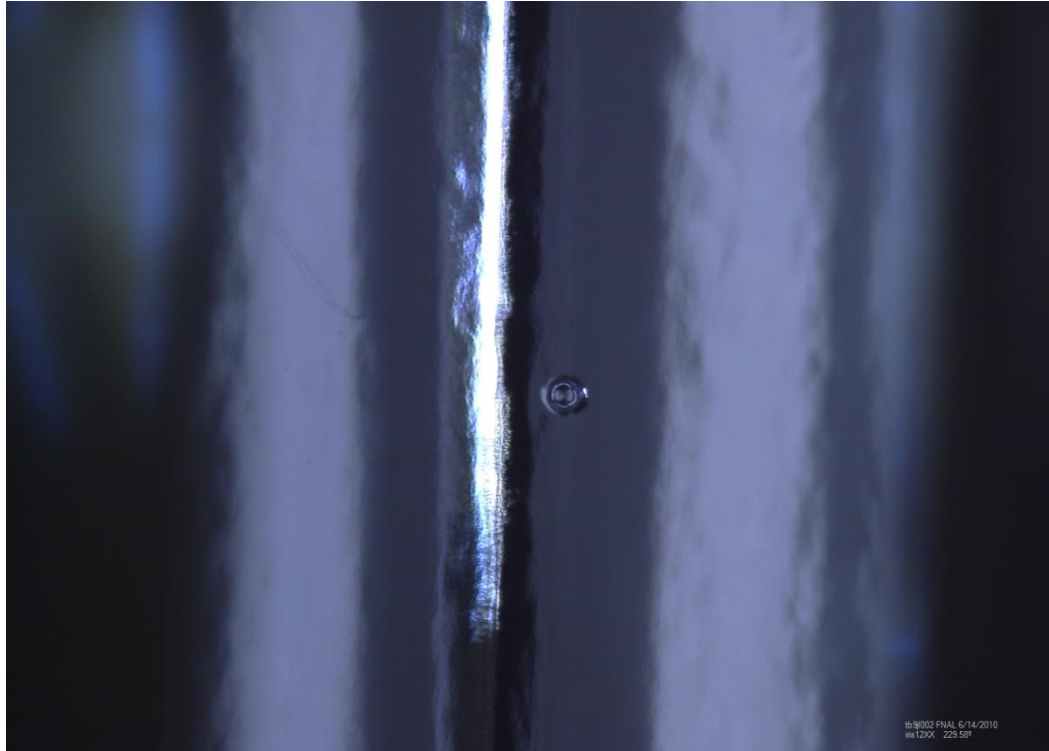


Cavity Defects

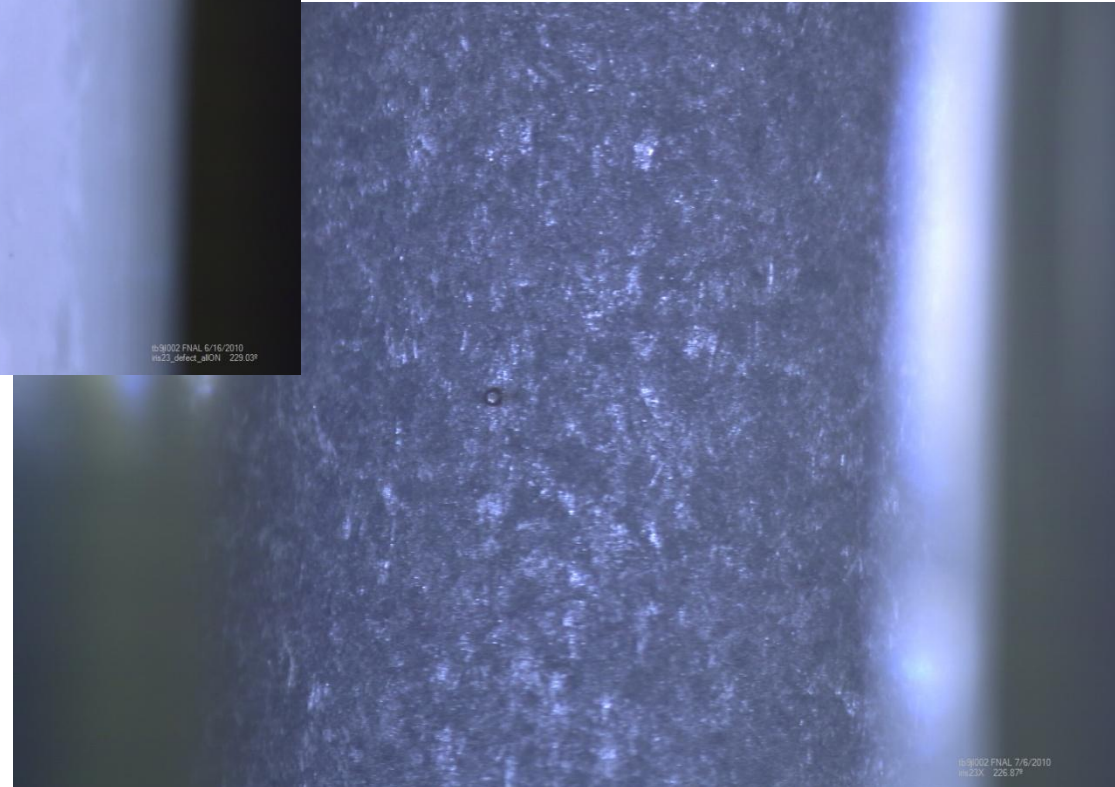
- Pit on Input Coupler Sealing Surface
- Scratch on Sealing Surface on Field Probe Side
HOM Can Flange
- Bad etching on inside and outside of HOM cans
- HOM Can ID too big.
- Clearance between HOM can flange and beam tube too small.
- Field Probe weld not full penetration



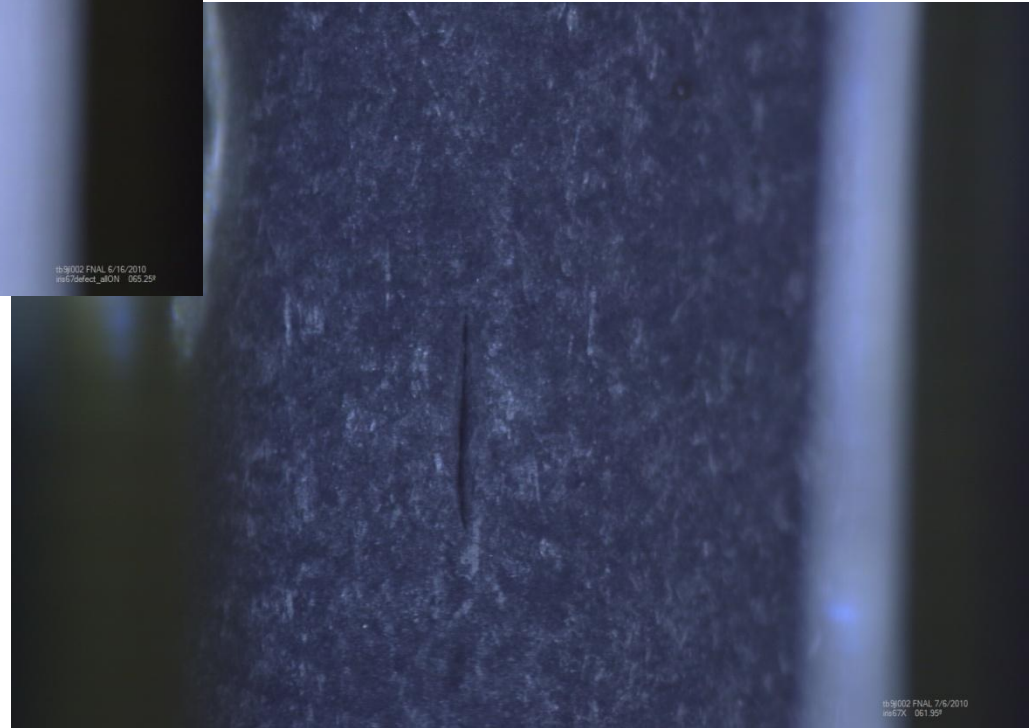
Iris 1-2



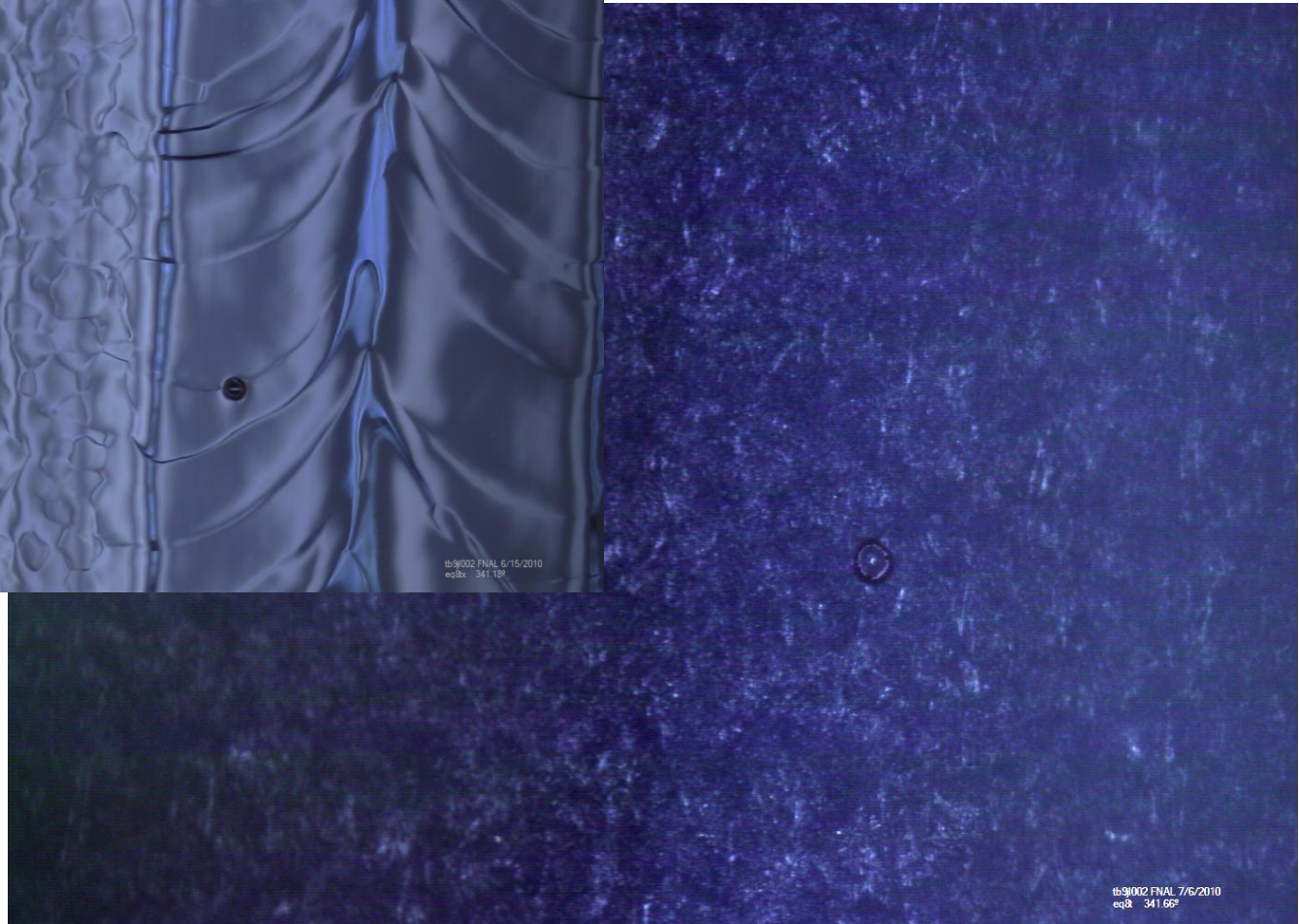
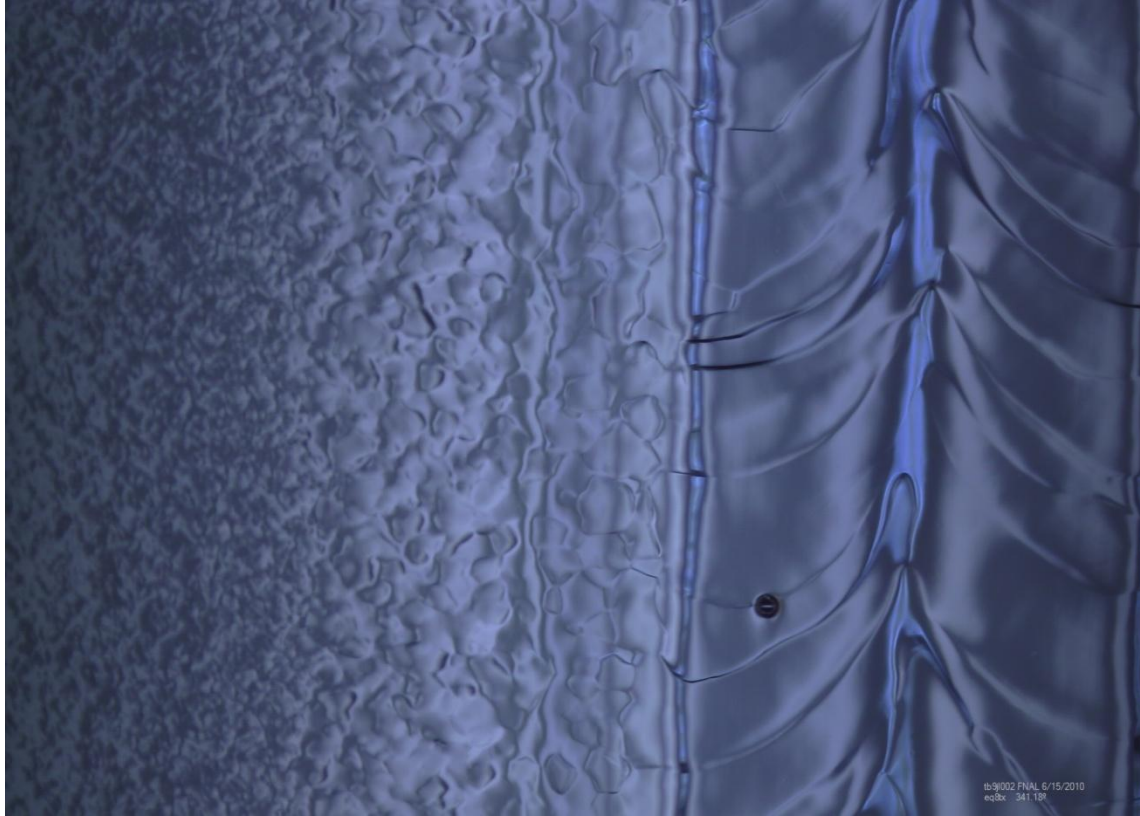
Iris 2-3



Iris 6-7



Equator 8



Next Steps

- Finish modifying HOM Can Plug
- Tumble 3 more steps – polishing
 - ½ inch plastic cone
 - 2 mm silicon carbide
 - 1200 grit alumina
- Ultrasonic Degrease/ 20 micron EP at Argonne