

Electrodes for GTS and UITF guns, September 11, 2014 (Poelker)

Dummy Balls:

304 SS welded flagpole ball, silicon carbide and DPP, used many times for tests. I believe we degassed this ball at 900C inside Big Blue before testing at high voltage

316L SS welded ball, Fay has been barrel polishing it. Is the hole the right size for support cup collar? Yes, I think so, need to check. The finish looks good, but some divots are visible at the weld joint. Bubba should evaluate. **It should be baked in Big Blue.**

Aluminum ball. Silicon carbide paper by Jim and Bubba. I don't think it was polished with diamond grit. Pre-bake it? **Needs to be coated with TiN.** Must speak with Arnold Deutchman at BeamAlloy to get the motorized mount specs (flange size, vacuum feedthroughs, two stage rotation?)

Electrodes that can hold pucks:

Fine grain Nb hemispheres, press-fit together. Large grain Nb front and back pieces, with large grain Nb support collar (in shop now). Holes have been properly sized. The ball and front and back faces have been BCP-d. **Need to BCP the support collar. Touch up with DPP? Can't recall if we HPR-d it. Need to degas inside Big Blue.**

316L SS. Welded together using imperfect hemispheres. Polished with silicon carbide paper. Elongated sphere, so fit up seems a bit problematic. We have front and back faces made from 316L SS that need to be polished (how many?, check at Phil's desk). I had three 316L stainless steel support collars made. **The front, back pieces and support collar need to be polished.**

Will have manufactured one 316L sphere electrode composed of two press-fit hemispheres. And one 316L sphere composed of hemispheres welded together. These can be barrel polished and DPP-d. Front and back faces, plus support collar as described above.

Copper hemisphere brazed together. Polished by Bubba, looks good. Have front and back faces, **which need to be polished. Shop needs to make copper support collar, it needs to be polished. Everything needs to be coated with TiN.**

Where is the aluminum fixture to hold the spheres?