



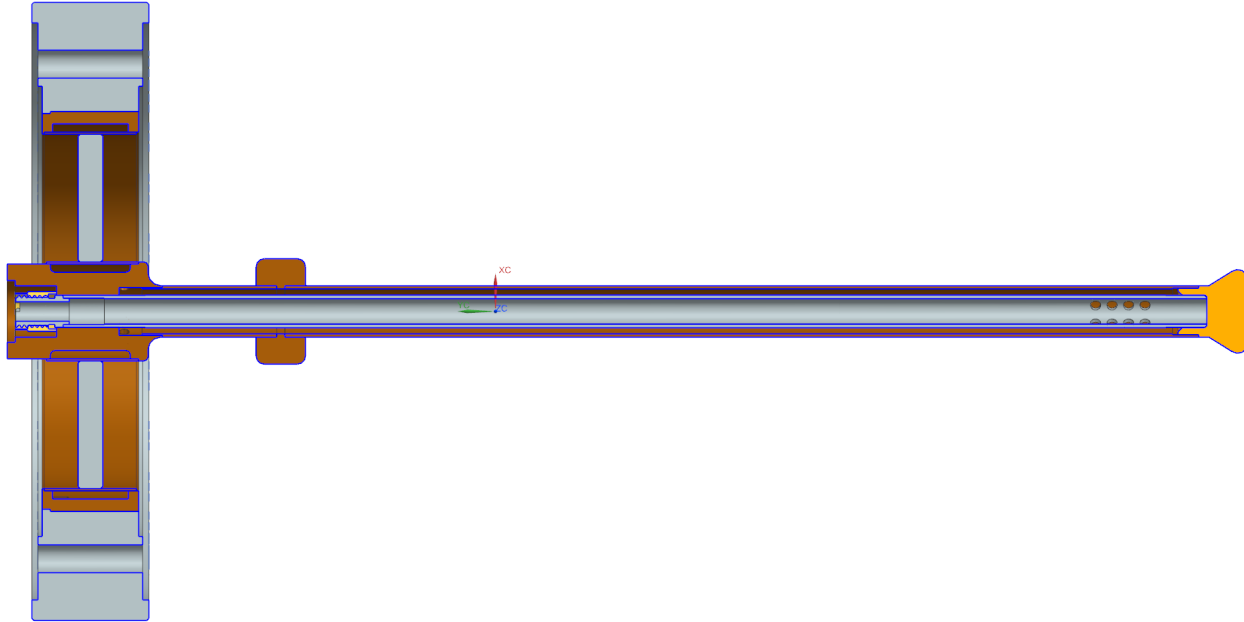
# pHB650 Coupler - Design Notes

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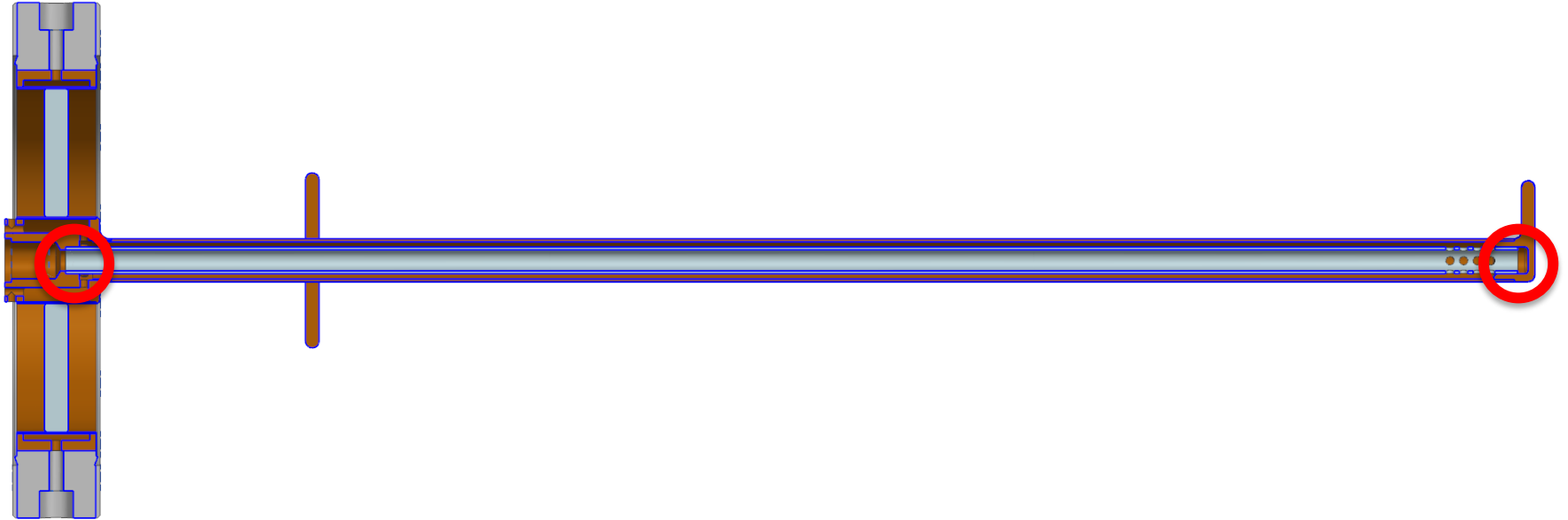
# Mechanical Design – Antenna / Ceramic Window Assy

- Design improvements based on HB650/SSR Procurement
  - Shouldered fits
  - Modify antenna inner tube to allow thermal expansion during brazing



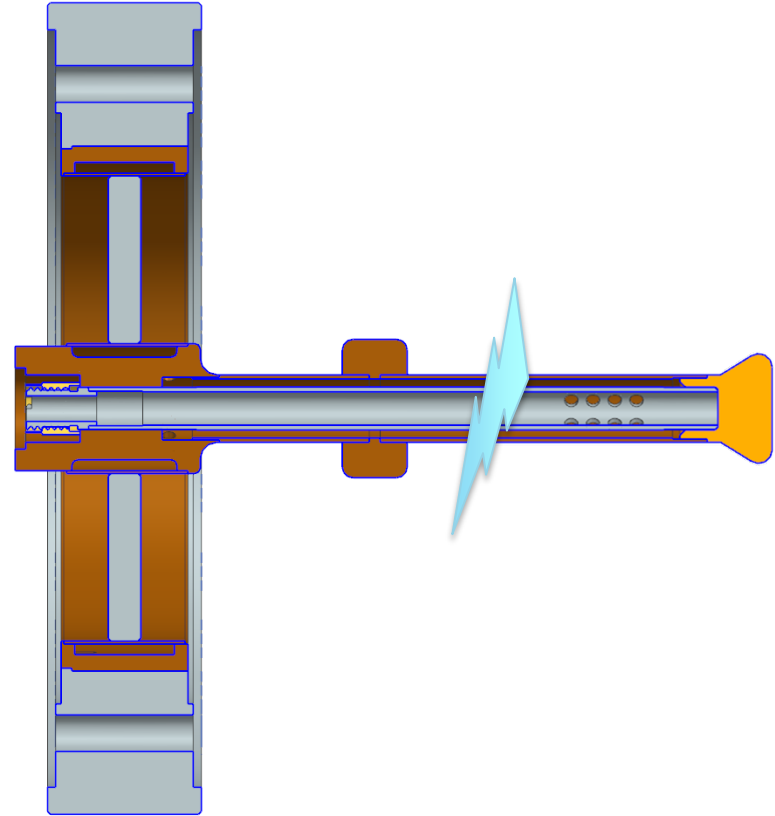
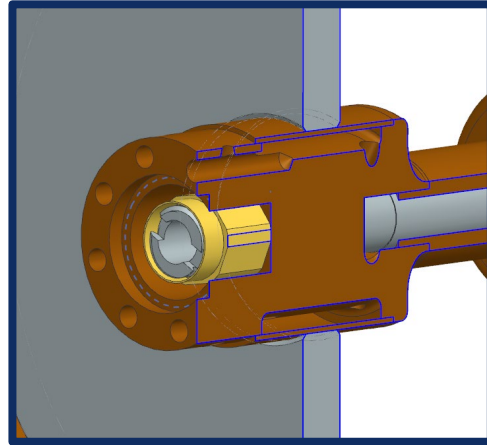
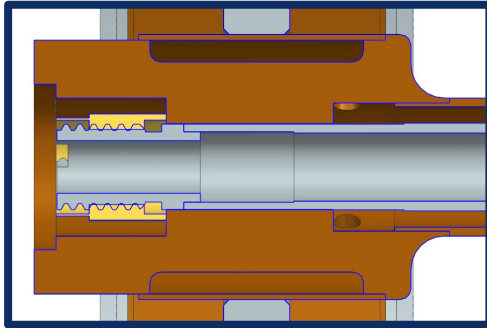
# Mechanical Design – Antenna / Ceramic Window Assy

- Previous, similar antennas used the design below, with brazed joints at both sides of the SS air cooling tube
  - Buckling upon cooldown

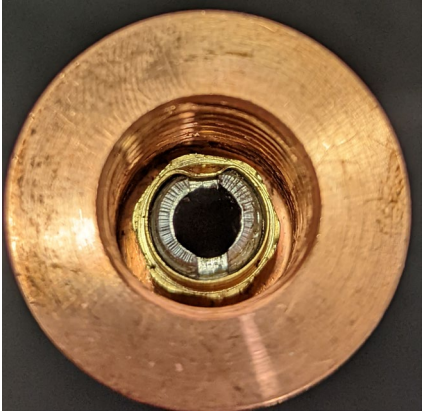
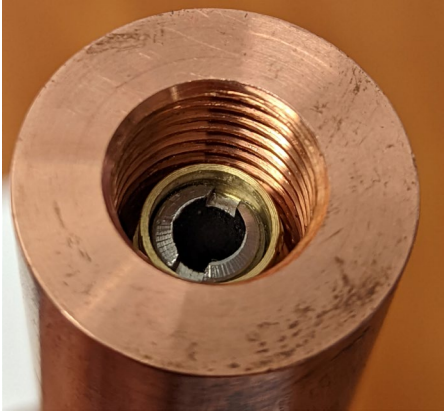


# Mechanical Design – Antenna / Ceramic Window Assy

- Solution
  - 0.0005" slip joint between SS tube and Copper piece
  - Custom 'crimp nut' installed after brazing
  - Same stiffness as previous
  - This was prototyped successfully



# Mechanical Design – Antenna / Ceramic Window Assy



# Proof Test

- We are working to make a proof test of the coupler to approx. 130 PSIG
  - This would certify coupler for pressure boundary safety per BVPC
  - Analysis finds that we may see some plastic yield, but no failure should occur
  - This pressure level has enough margin to certify all units of a production run with a single test

# Test Configuration

- Hydrostatic test
  - Better for safety
  - We will do it before FDR is finalized

