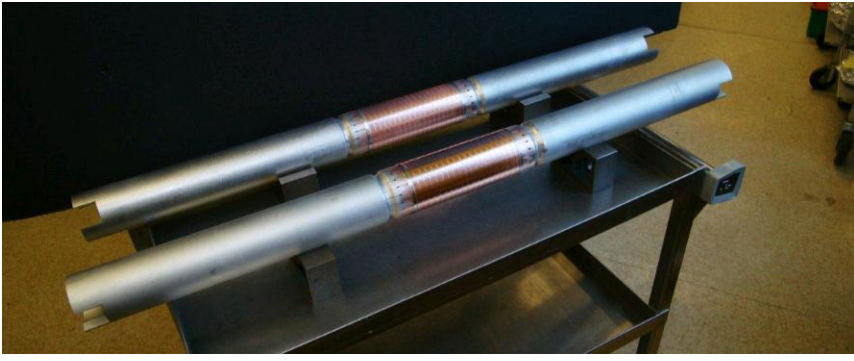


LARP Rotatable Collimator Prototype

Status 19 October 2012

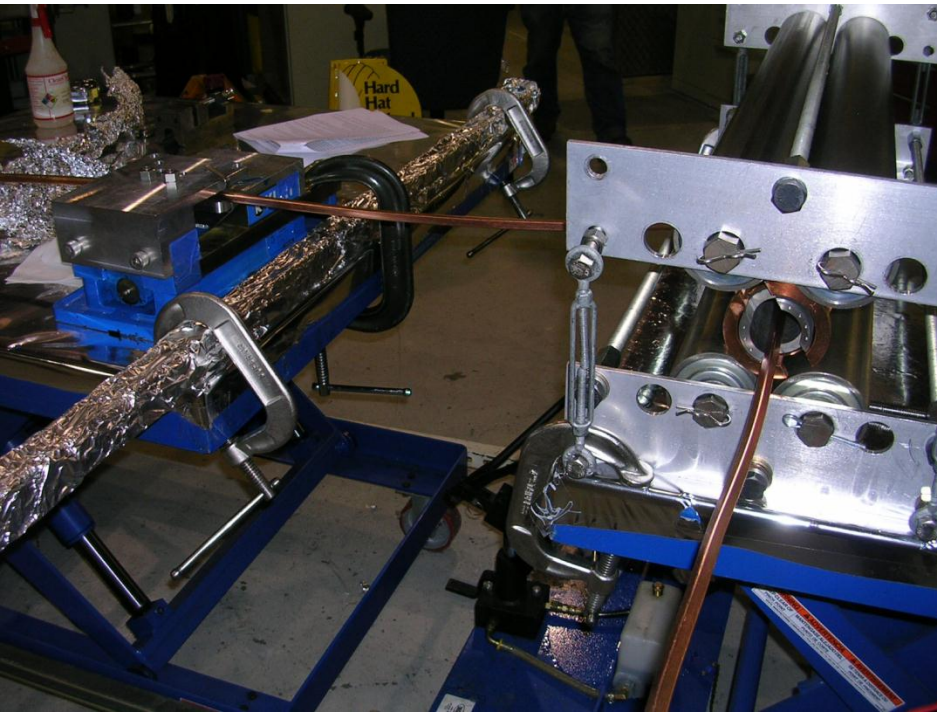
Reminder of where we were as of last report 29 June 2012

- Shaft assemblies (Moly-Glidcop-Moly) brazed & ready
- Prepped with braze wire & inserted into mandrels
- Some problems winding the 1st of the 2 new mandrels

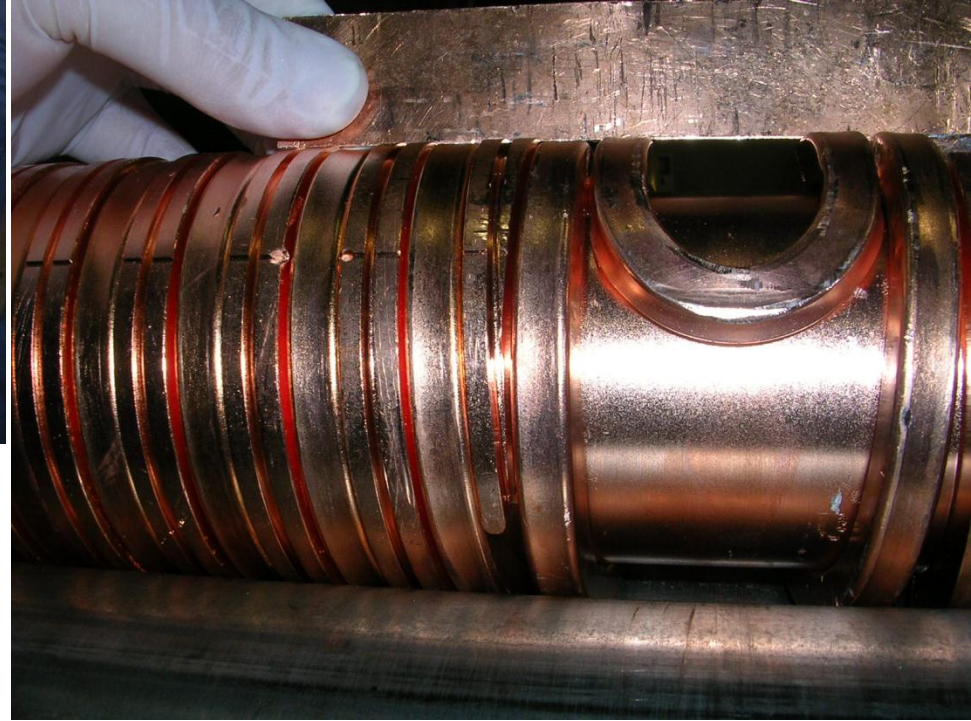
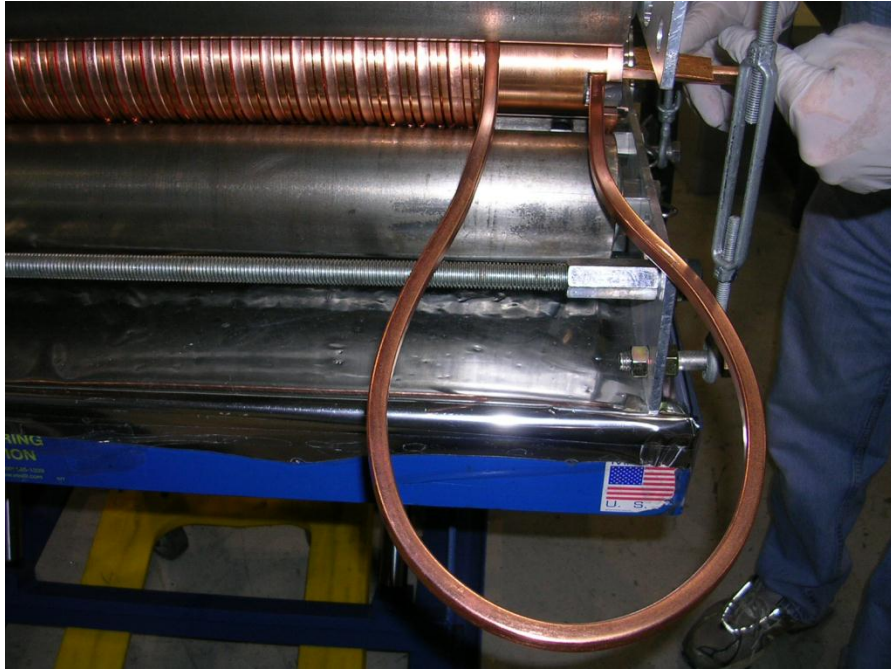


Basic winding greatly improved by swaging (squeezing) tube slightly and applying tension during the wind

**Finished product with straightedge on top:
tubing is uniformly below tops of grooves**

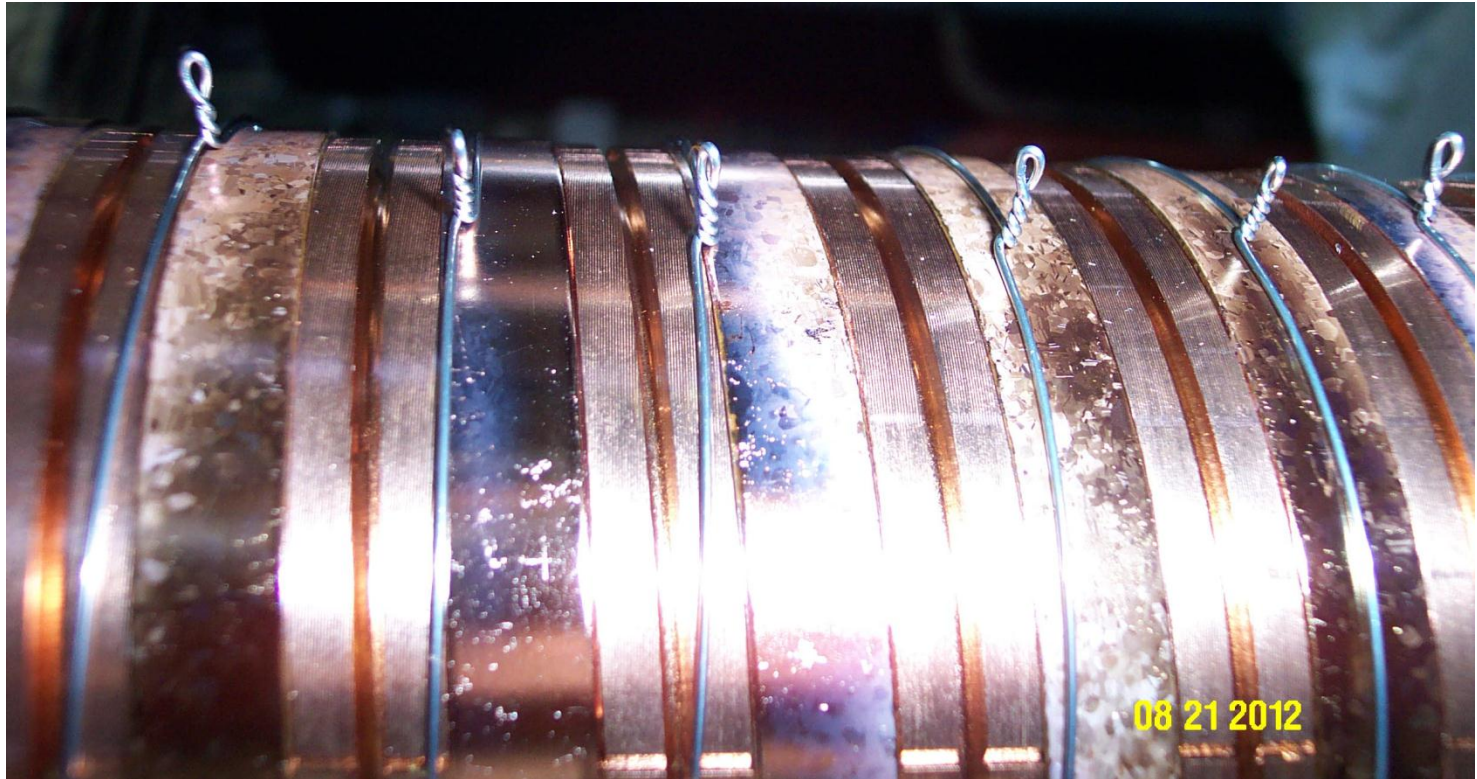


Forming “U-Bend” at Downbeam End Something of an Art Form



We are very happy with the two wound mandrels

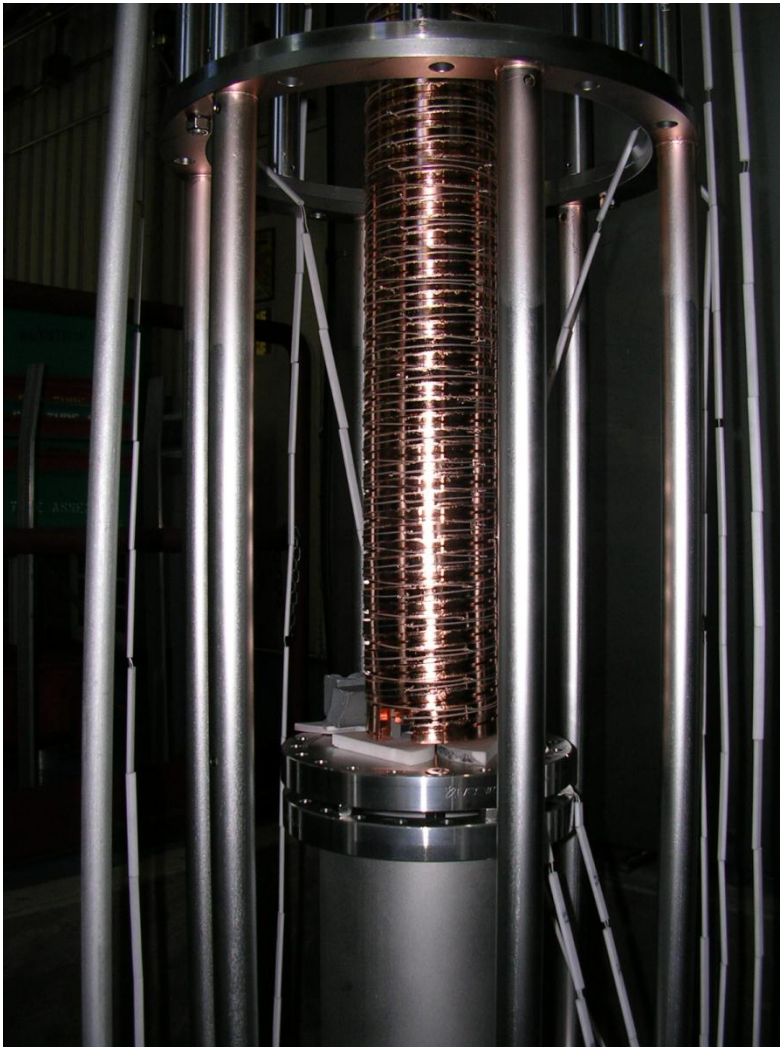
Next Job: Wrap 1mm thick Copper Shim in top of coil and hold in place with Nichrome wire



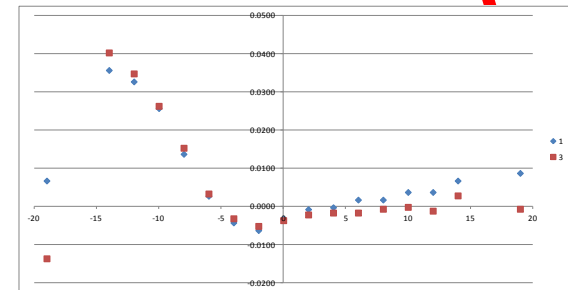
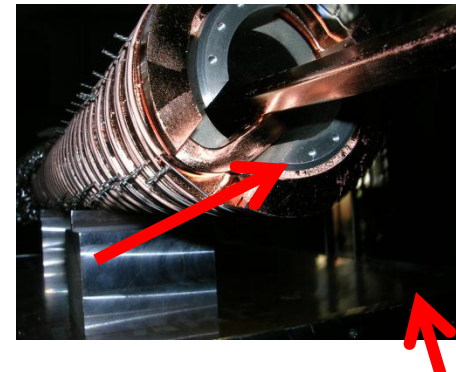
Recall that purpose is so that after braze, coils are protected from later machining operations:

- Prep surface smooth so Glidcop jaws can be brazed to outside

First of 2 mandrel assemblies prepped and out of braze oven 29 August



Excess braze material in hub joint flowed down & connected shaft to mandrel, introducing a bend in the mandrel



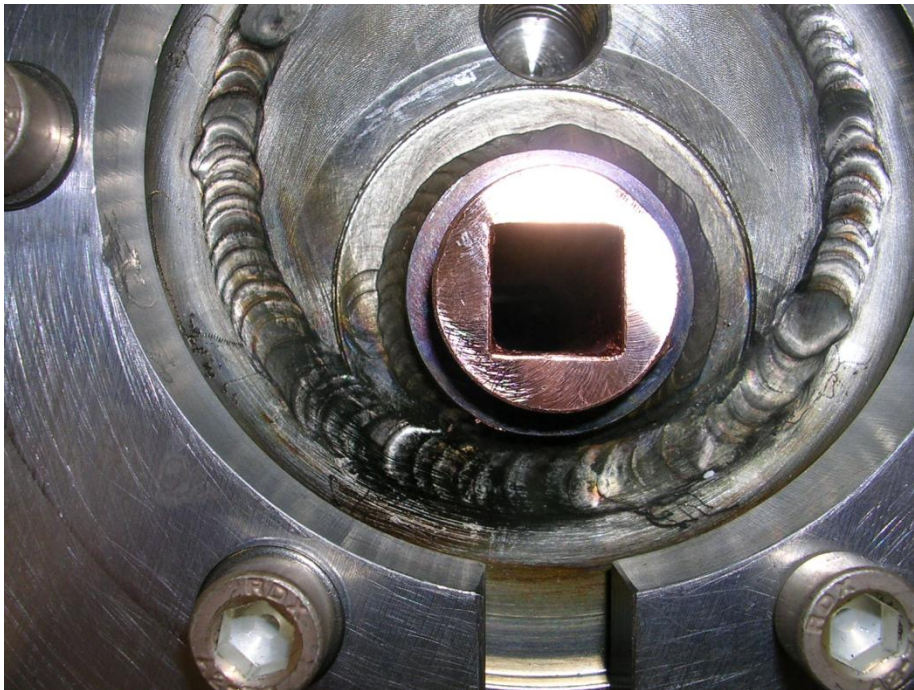
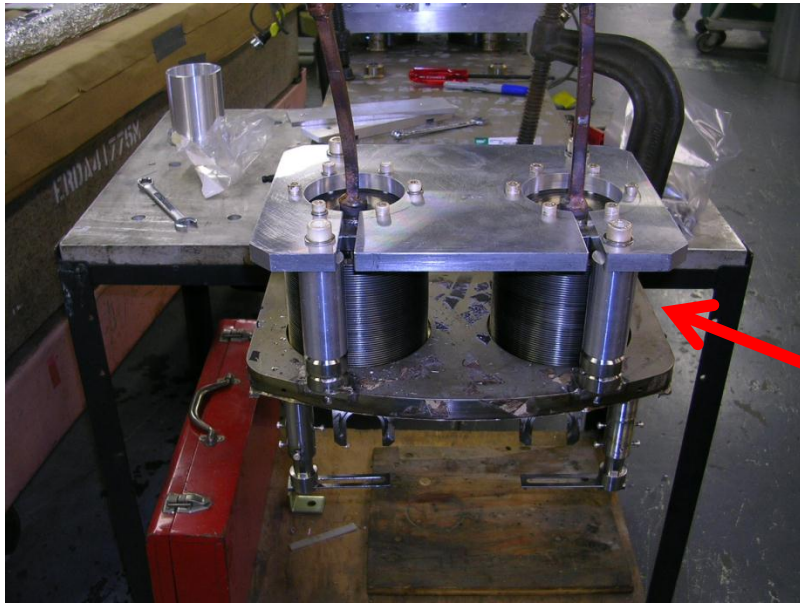
Bend has been removed by careful bending and is ready to be machined to mate with its Glidcop jaw

2nd mandrel assemblies successfully brazed 17 October

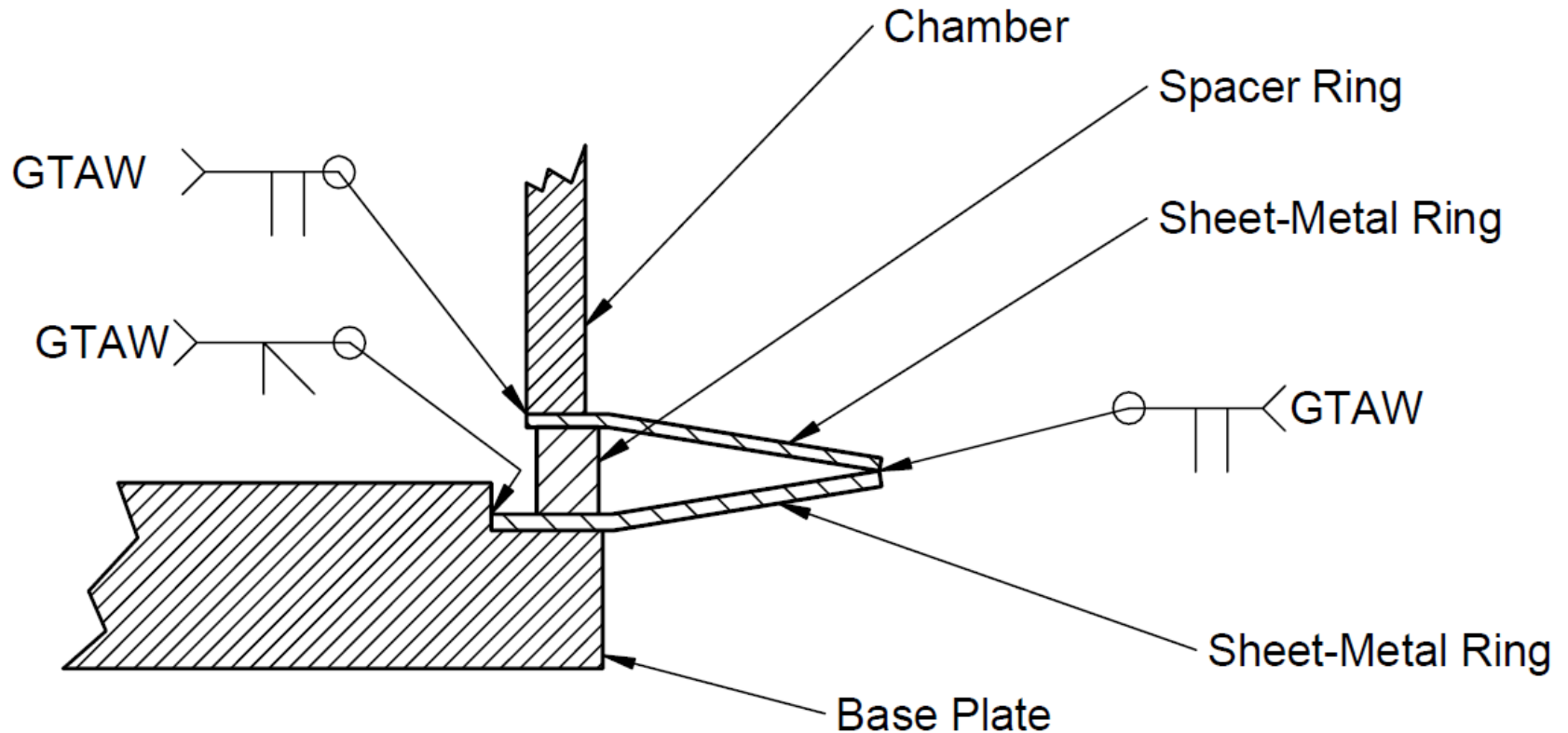


After cleaning up nichrome wire and vacuum checking integrity of cooling coil will also be machined to mate with Glidcop jaws

Old Tubing Stubs Machined
out of Baseplate and edge of
baseplate machined clean to
allow a new weld



Possible Design for a Vacuum Tank Weld Joint that Would Permit Multiple Accesses to Interior



Width of Sheet Metal Ring Could Allow 3-5 Weld/Grind/Re-Weld Cycles

Work List Shown on 29 June

- ~~After that, wind 2nd mandrel, then~~
 - ~~Prep with strips & braze coils and inner hub/shafts to mandrels (2 of 2 done)~~
 - Machine assembly round & concentric to axis at diameter to accept Glidcop jaws
 - Machine & Cu plate Glidcop jaws (in progress)
 - Prep and braze jaws to mandrels
 - Machine facets, end features
 - Install RF bearing housing
 - Install shaft support bearings and rotation drives
 - Test prior to installation in vacuum system
 - ~~Prep existing vacuum base plate to receive new collimators~~
 - Mount, align & test
 - Decide details of how vacuum cover will be attached to vacuum base plate & machine appropriately
 - Mate cover & baseplate
 - Test rotation after welding, pre and post vacuum
 - Vacuum bakeout
 - Test after bakeout
 - Ship

Time early to have 2 ready
to assemble jaws back at
SLAC 15-Dec 2012