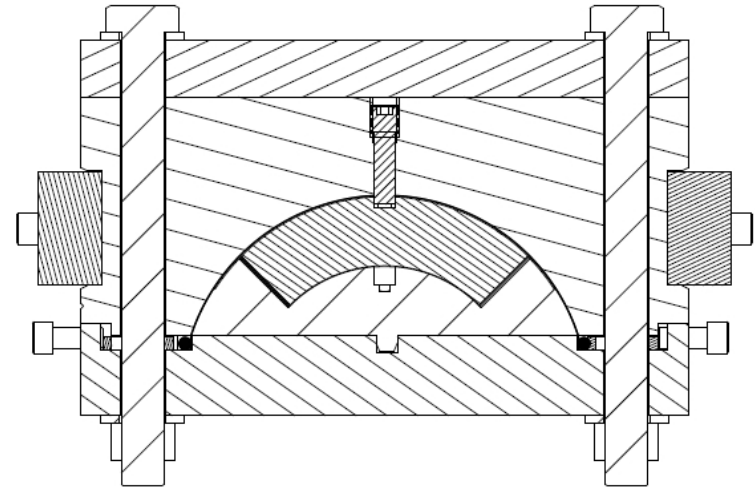


HQ Coil Fab at BNL

Jesse Schmalzle, BNL
11/04/09

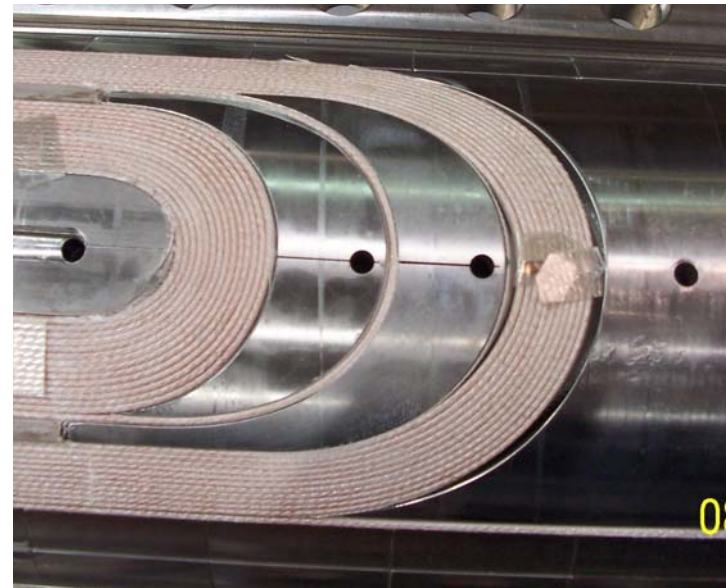
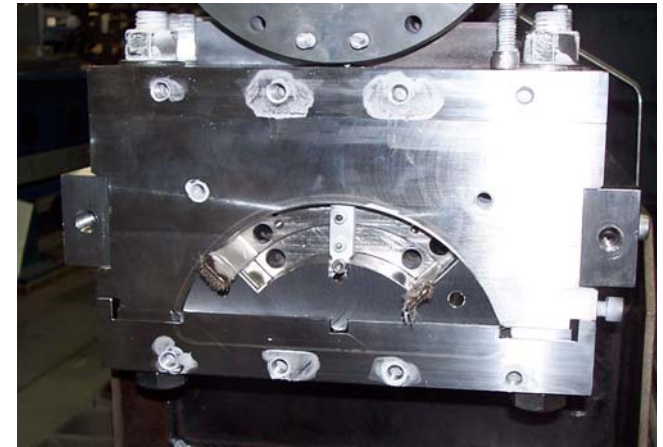
HQ Coils

- Reaction and impregnation tools:
 - Similar to LQ tool with the addition of alignment pins.
 - Designed at BNL, fabricated at LBL.
- Coils wound and cured at LBL.
- HQ02 (practice coil) shipped to BNL in the impregnation tooling.
 - Shipping fixture not available.

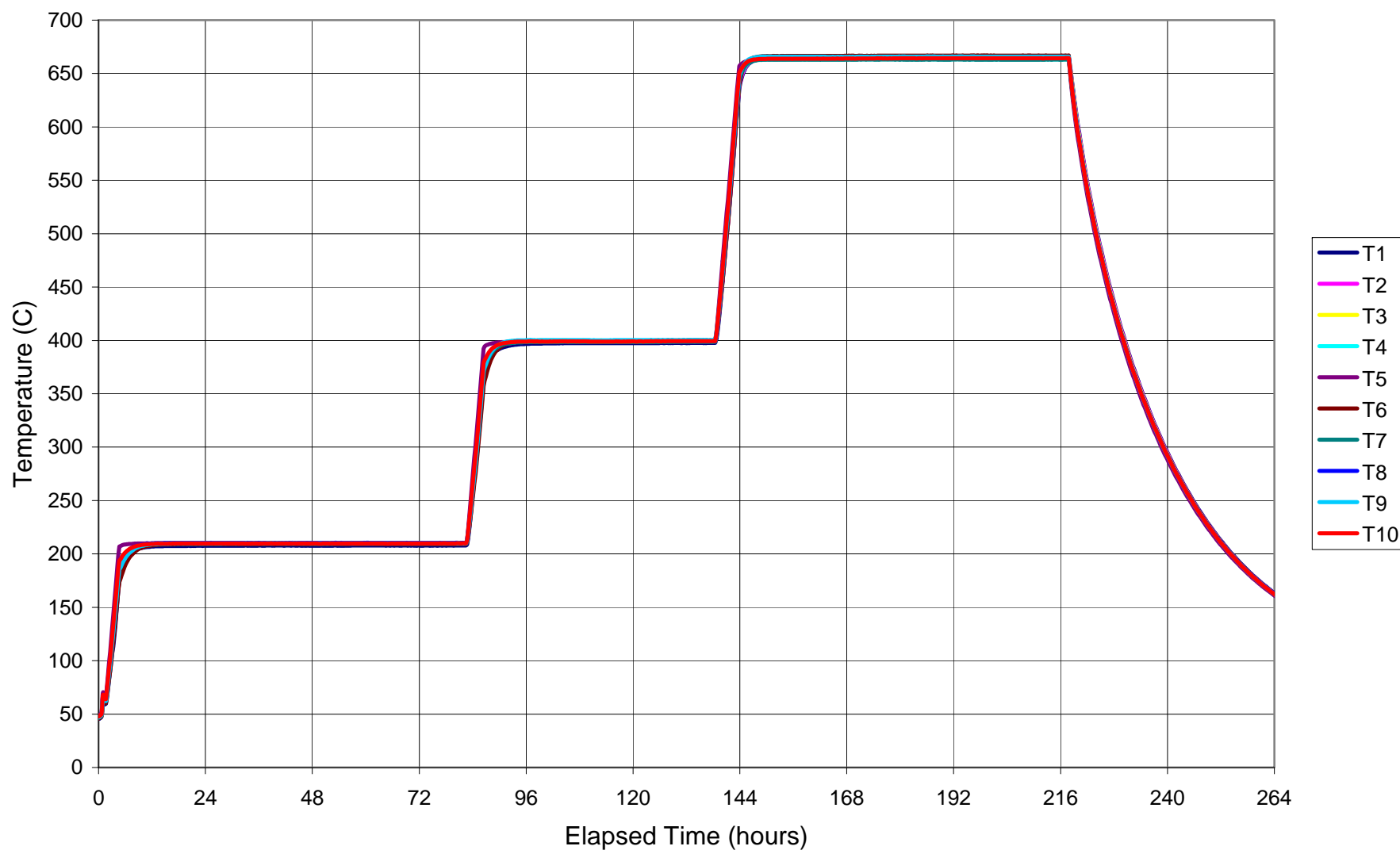


HQ02 – prep for reaction

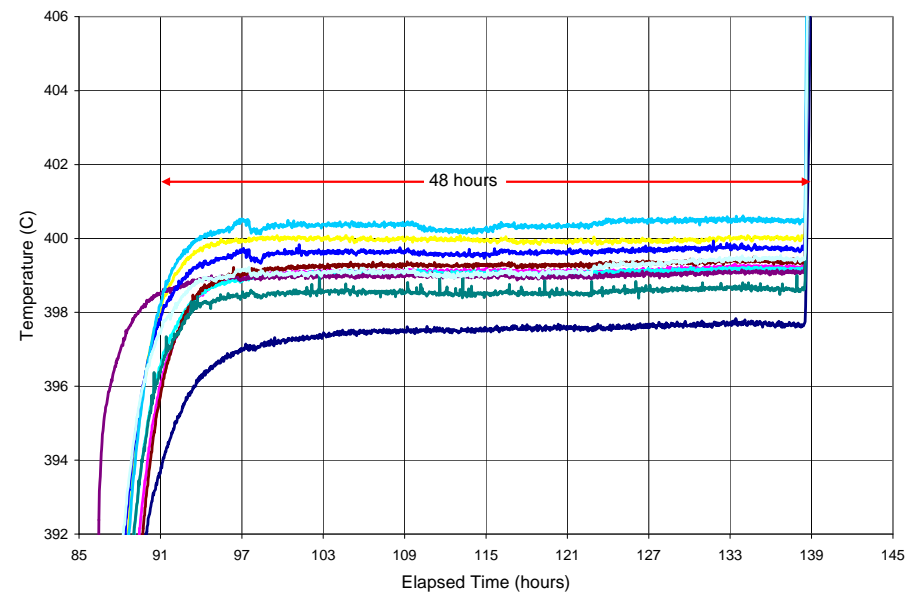
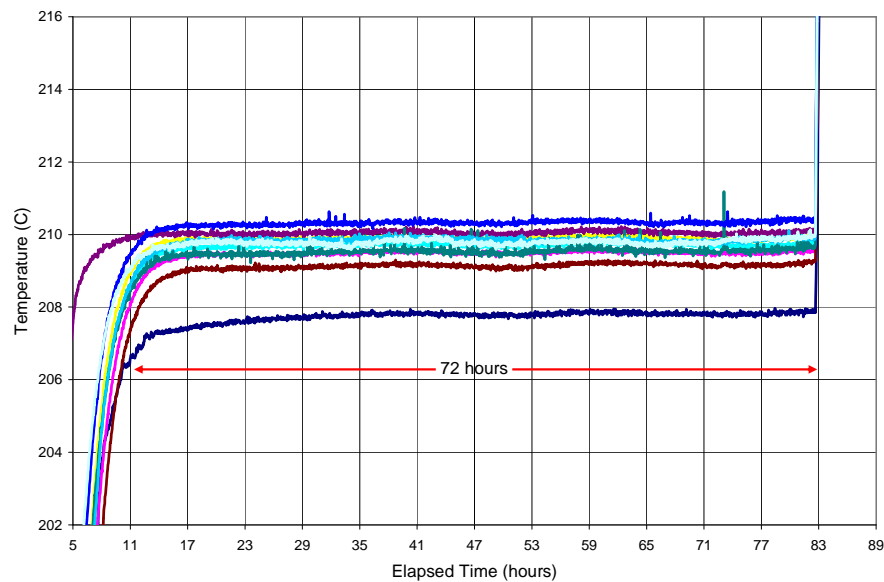
- Gaps at wedge ends.
- Gaps at endspacers.
- Turns lifted from mandrel.



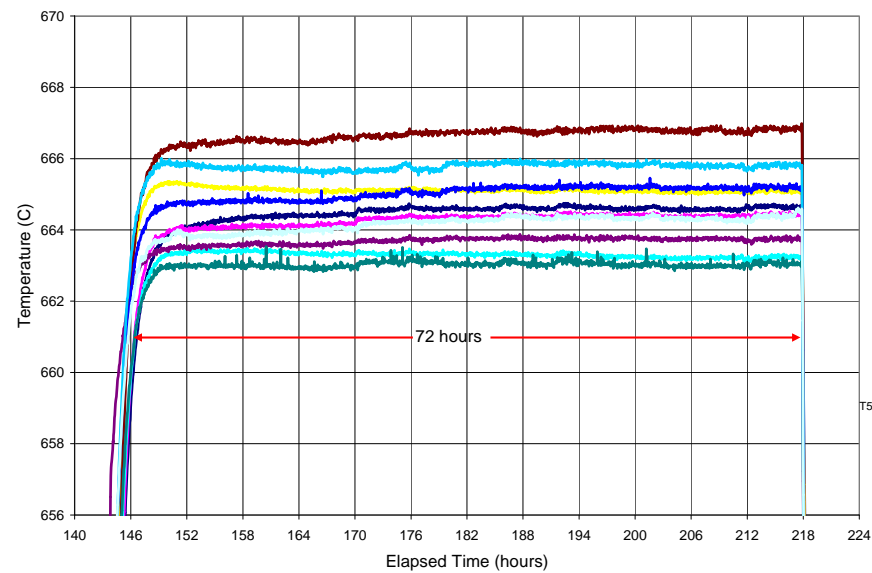
HQ02 - Reaction



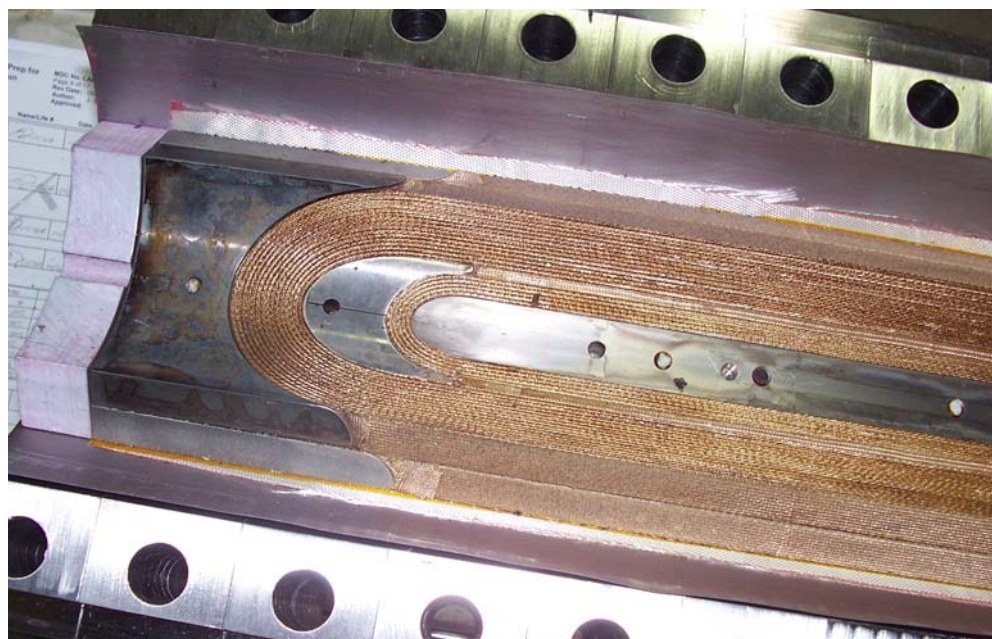
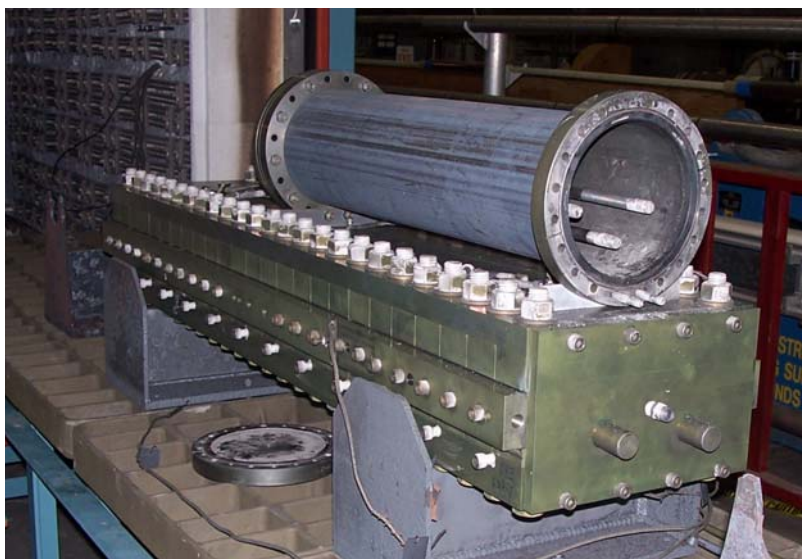
HQ02 - Reaction



- Cycle:
 - 210 C – 72 hrs
 - 400 C – 48 hrs
 - 665 C – 72 hrs

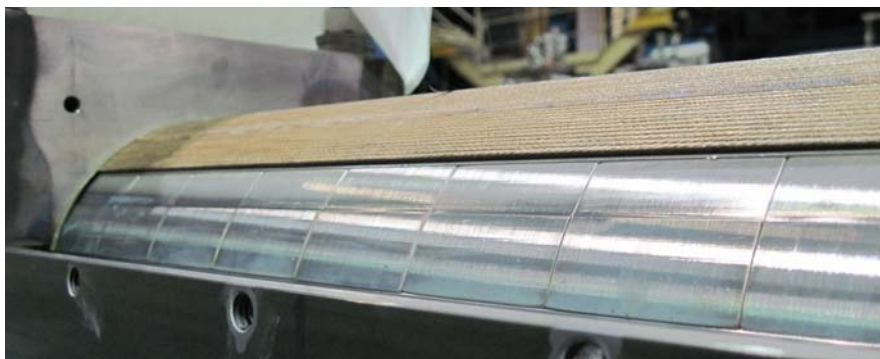
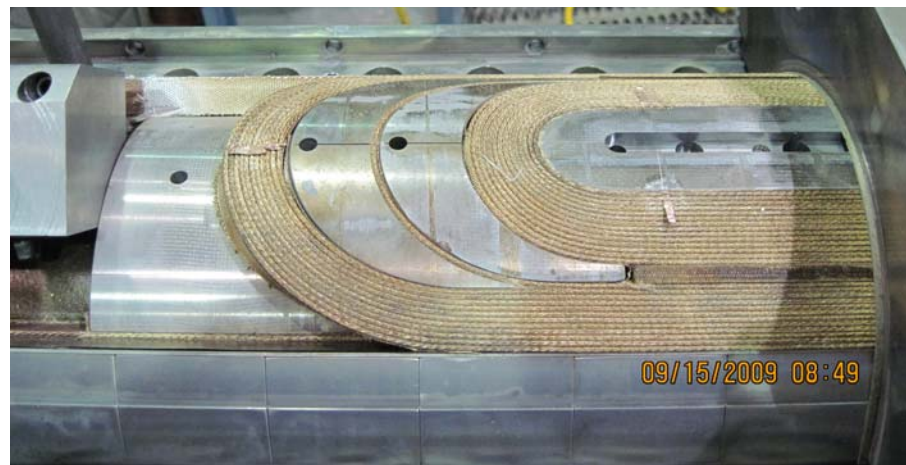
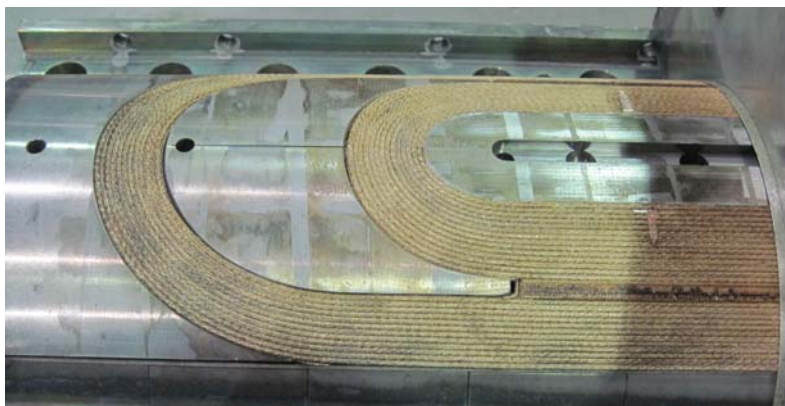


HQ02 – post reaction



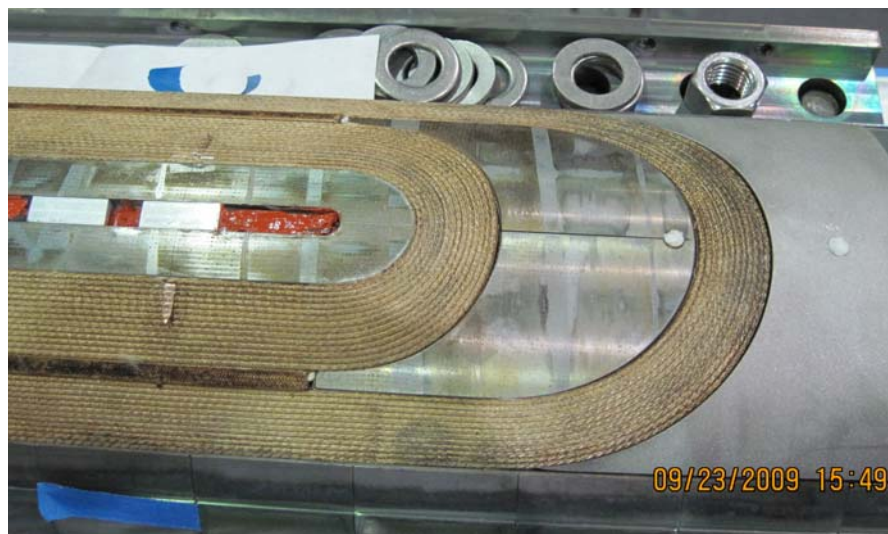
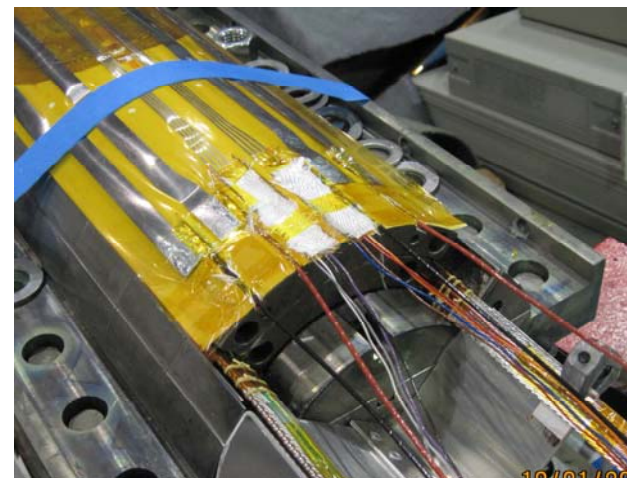
HQ02 – post reaction

- Gaps at wedge ends .062"-.101"
- Gaps at endspacers.
- Turns lifted from mandrel.



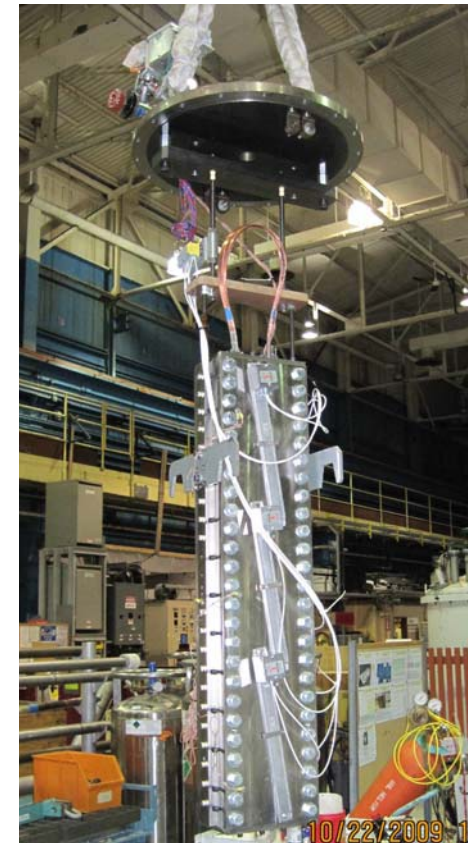
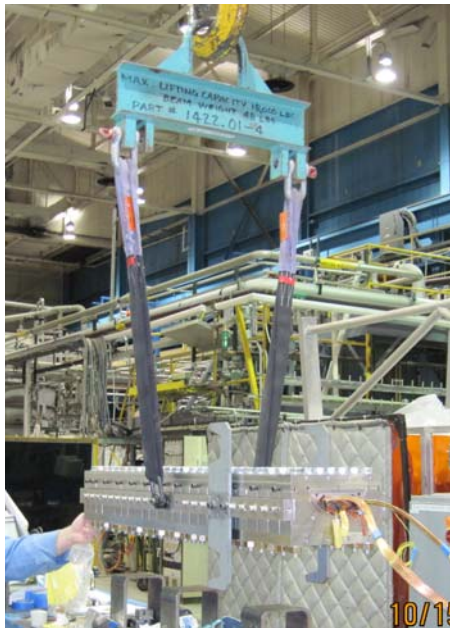
HQ02 – prep for impreg

- Keyway filled
 - RTV, Solid fillers at pins.
- Holes packed with fiberglass.
- Nomex over saddle.
- Wires attached to circuit.

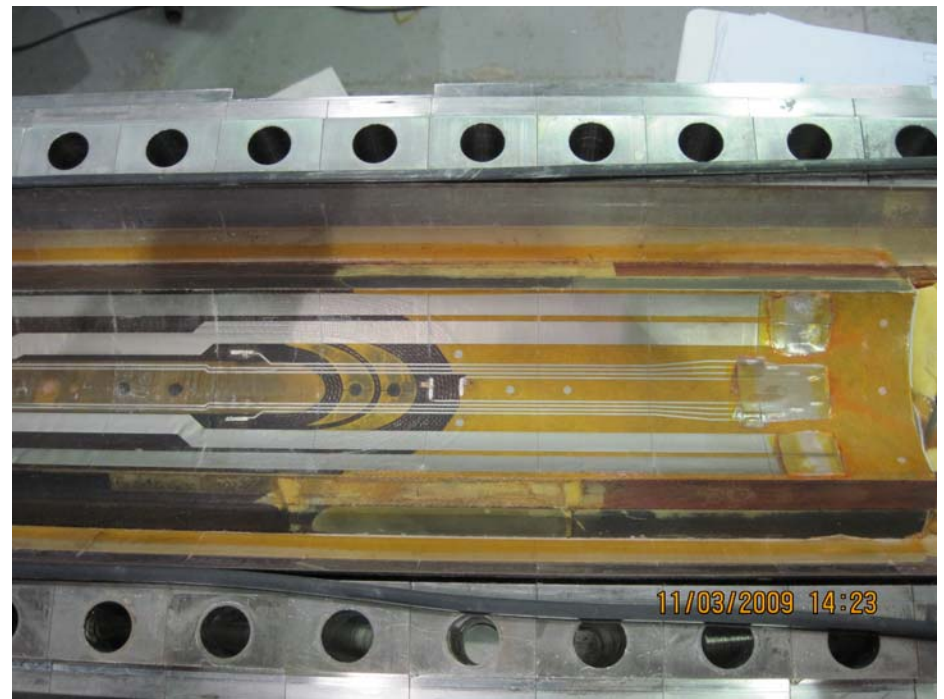


HQ02 – prep for impreg

- Fixture lift / rotate.
- Suspended from vacuum tank top plate.
- Mount strap heaters.



- Impregnation quality looks good.
- Final prep starting now – ready to ship mid November.



HQ04 – prep for reaction

- Cured coil shipped using shipping fixture.
 - Oversize coil doesn't fit well – fixture to be modified.
- Transferred to reaction tool using coil lift beam.
 - Shims required to accommodate oversize coil.



HQ04 – prep for reaction

- Cycle change - now 48 hrs at 665 C (was 72 hrs).
- End spacer fit seems better, still have large wedge gaps .060”-.165”.
- Reaction to start this week.
- Complete and ship mid January.

