Subject: Anode breaking
Posted by Clemens Adler on Wed, 28 Jul 2004 07:29:13 GMT
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Hello everybody,
Yesterday we noticed a Problem, that was never anticipated (I think).
By coincidence I noticed that after finishing the Anode wiring (gluing, soldering, cutting the wires) some Anode wired did not have contact anymore, while they were fine before cutting the wires (this I measured). Interestingly on this chamber the first few wires of each anode segment were broken between the soldering point and the glue.
This can be seen in the following picture:
www.physi.uni-heidelberg.de/~adler/TRD/pics/2004_07_27/IMG_0457.JPG
(right anode segment, first wire is broken).
We attribute this to the fact, that when cutting the wires (first on the side where the anodes are contacted), the chamber is pulled a bit to the opposite side, by the tension of the wires between winding frame and chamber. When cutting the wires, the chamber is turned a little bit, and the copper strip with solder is pulled a bit outwards, which breaks the first wires.

We looked at another chamber where the wire region was not filled with glue yet and we found that the 4 annode wires around the point where the HV cable was soldered were broken. This might have happened when soldering and pushing down the HV cable core into the solder, that the copper strip was displaced a little bit.

I guess both examples demonstrate that the joint of anodes to the solder is rather delicate, and I'm not sure what to do about it. One idea would be that before cutting the anode wires, on covvers the region where they are soldered with a bit of glue so everything there (wires, solder,copper strip) is well fixed. This however would require an additional day of glue curing. Another possibility would be to solder the wires before gluing and then when gluing make sure to cover the wires until the solder with glue. This I think will not be possible without shifting the wires (even if not touching they swimm on the solder and move probably very easily).

I would like to ask for any idea or sugggestion on this Problem, so we can find a satisfying common solution.

cheers,
Clemens