

VELO UPGRADE MECHANICS MINUTES

Attendees: Themis, Freek, Wolfgang , Karlis, Vinicius, Claudia, Kazu, Paula, Edgar, Raphael, Rolf

ACTION LIST

- No actions listed

DISCUSSION

I.1 METROLOGY

Vinicius is in contact with a company for a quote of Raph's idea. S/w of Oscar for used for reflection of modules in tank might be useful. Stable holding of camera is crucial, maybe get 20-30mu. We need relative values (module to module).

"Old" setup is used for metrology of base.

I.2 MEASUREMENT OF THE FOIL – DUMMY MODULE DISTANCE AT FOIL REPLACEMENT

Marco designed a beep module setup. The contact switches have a force to the foil of 30gr, maybe too much. Could measure mountains of foil and not valleys, where foil is more resistant. Could we use capacitive sensors.

Freek explained, that Pascal has now an etched and Torlon coated half box, to try to do measurements this week with a laser scanner. We will try to get a precision of better 200mu to see if the box is deformed. Measurement should be done this week

Paula is looking with a different metrology group at CERN into another measurement setup (Ahmed).

I.3 PT100 CABLE ROUTING INSIDE SECONDARY VAC

no news today, last week news below:

Kieran proposes to use the cable Allectra 301-KAP-RIB4-300M: KAPTON RIBBON CABLE, 7x0.12mm, 4 WIRES, TYPE 'KAP301' (= RADIATION RESISTANT) (from Quote #75673 see 6 weeks indico).

PCB production on both ends of these cables should be now launched (Edgar)

Peek cable constraint pieces for the new routing of the cables are in production.

SMDX pt100 sensors are now envisaged.

Tefzel cable ties to be ordered soon (delivery time)

We need to define as well the base heating power cables. Sasha is proposing the Allectra 301-KAPM-200 cable with an outer dia of 2.15mm

1.4 PT100 POSITIONING AT ISOLATION VAC

no news today, last week news below:

Allectra 301-KAPM-060-PAIR1-100M is proposed to be used (listed at same quote as above). Length of ordered cable to be determined.

On the 3rd feedthrough now 10 pins are still free to be used, Proposal: 2 pt100s on pressurized air capillaries (one at first line, second at last line). 1 pt100 on one capillary arriving at one expansion volume, 1 redundant pt100 at output manifold, 1 pt100 flying in the air. The number of pt100s in tertiary vacuum from Kieran does not correspond to Wolfgang's number! Kieran to revise.

SMDX pt100 envisaged.

1.5 EXPANSION VOLUME, FILLER INSIDE THE EMPTY VALVE VOLUME

Input safety valve of C-side (and likely output safety valve for A-side) is not installed in the orientation as we would have liked to minimize CO₂ leakage volume in case of accident. This would increase the liquid volume of CO₂ substantially which has severe consequences for possible transfer of CO₂ into prim vac.

Kieran has sent a prototype of his new design for the filler to CERN. A spring which will prevent that filler is moving during flow. Checks at CERN are ongoing. Material of the spring (17-7 PH) to be checked to be used 10 years in CO₂ (Wolfgang will ask Bart, done material ok for Bart). Some Mangan is part of this stainless steel. Raph/Kieran will check if the spring is magnetic.

1.6 BASE METROLOGY AT LIV

John presented last time measurements for the C-side base (see slides). He was asked to produce a plot with x (slot number) and y (distance between tip of a perfect module to a perfect foil position) with this base to see deviation from the 890mu nominal distance. Then we could choose for installation shorter modules where the margin is smaller etc.. John promised to do this in the coming weeks at least for the 4 worst slots – started!

A-side metrology later. Comparison of Oxford to LIV metrology needed.

1.7 OTHER BUSINESS

LIV requested some feedthroughs to be delivered for testing. Feedthroughs are very fragile and if one connector is broken the whole assembly of glued feedthrough is waste!

Kazu reported that Tjeerd is still measuring A2 with the Wenzel, some delay before delivery to CERN? Over pressure deformation measurements are done.

