

Progress Report

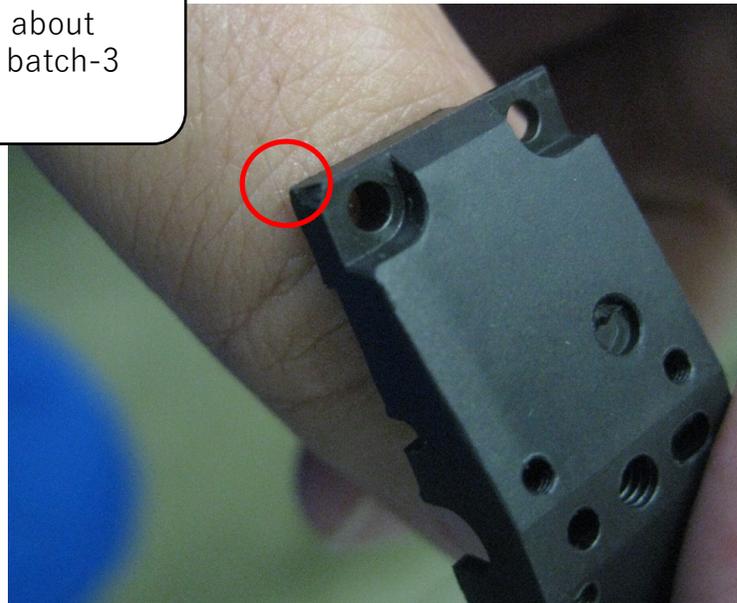
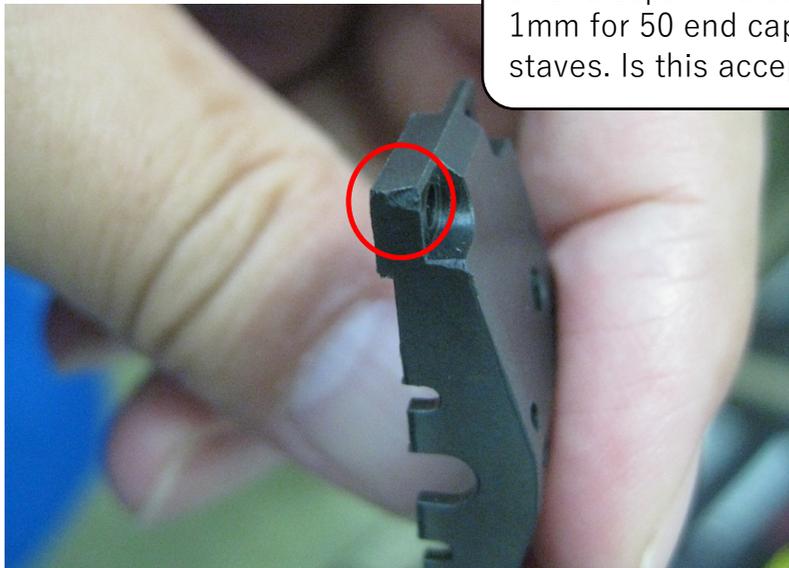
RIKEN/RBRC

Itaru Nakagawa

Stave Batch-3 Production



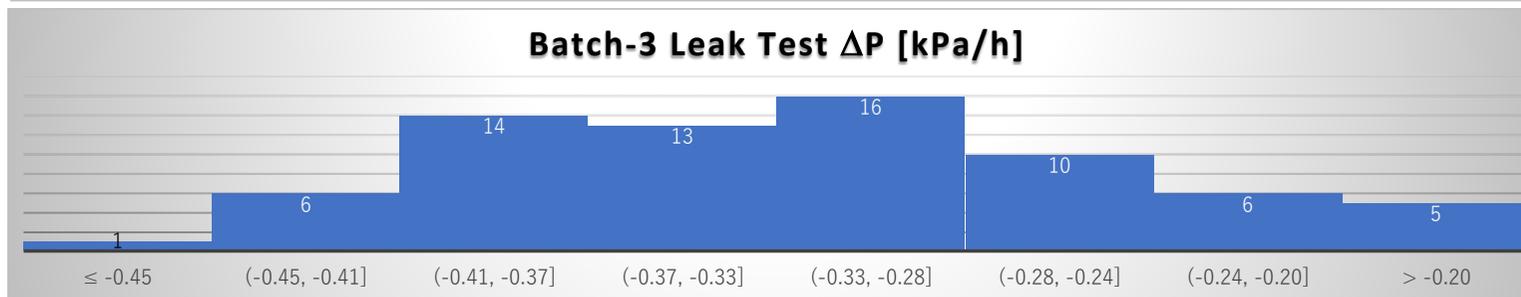
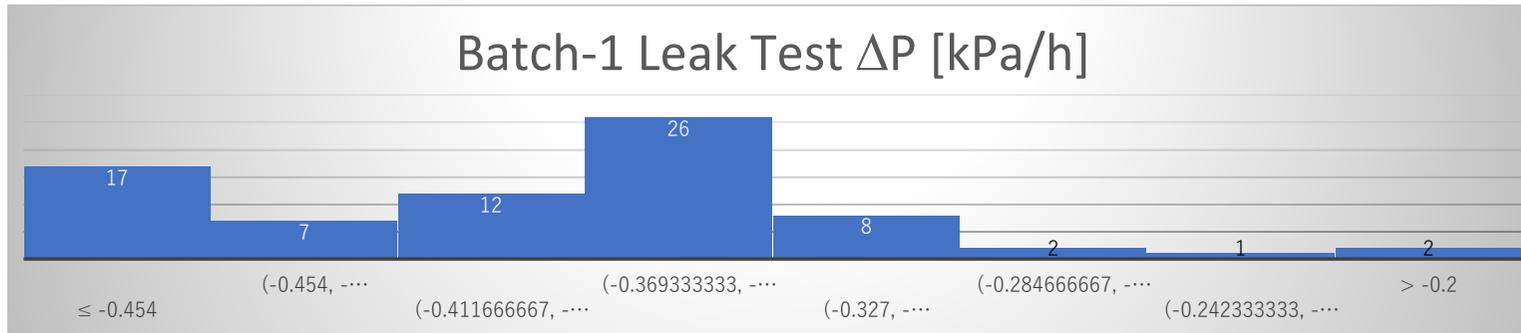
There is a chip at the one of the four corners of end caps. The size of the chip is about 1mm for 50 end caps produced for batch-3 staves. Is this acceptable?



Stave-3 Tube Leak Test Performance

Larger leak ←

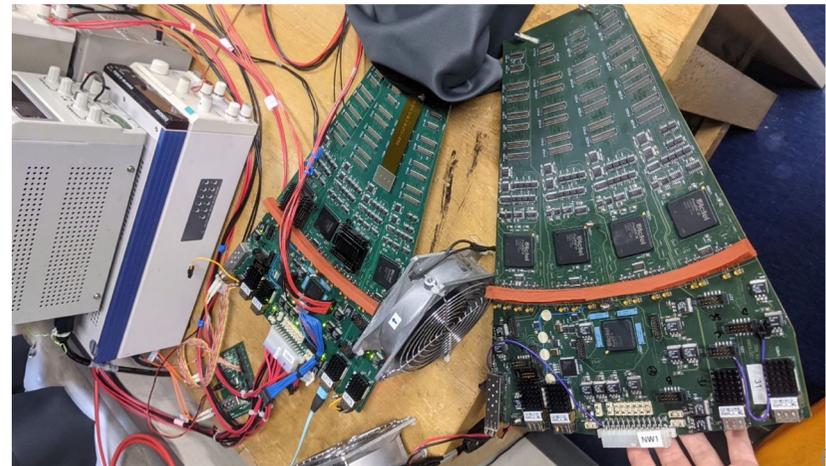
→ Smaller leak



1008 ROC Regulator Replacements

- Total 16 ROCs out of 18 ROCs : NW2, NE5, NE4, NW4, NE2, SE3, SE4, NW0, NE3, NE0, NE2, SE3, SE0, SE1, NW3, 29
- Sent to Hayashi-REPIC for the regulator replacements.
- 3.0V for Digital, 2.8V for Analogue for Column A,B,C,D.
- Expected delivery in August 31st.
- Tests in September at RIKEN.

In the meantime, two ROCs SW5, NW1 are to be tested. So far, so good.



Beam Test in Tohoku Univ.

Beam Test in Electron-Photon Facility at Tohoku University (Japan)

Feasibility Study

- 2021/5/25 https://indico2.riken.jp/event/3751/contributions/16297/attachments/10177/14338/200826_BeamTestTohoku.pdf
- 2020/8/26 https://indico.bnl.gov/event/9252/contributions/40813/attachments/30124/47043/200826_BeamTestTohoku.pdf



<https://www.lns.tohoku.ac.jp/en/>



Boundary Conditions

- Proposal Deadline July 26th
- Stick with Standalone DAQ (No Felix)
- Should be operation only by domestic manpower (Not sure if oversea collaborators can participate)
- Beam time in Winter (Nov.2021~March, 2022).
- Dark box for full ladder has to be built.
- Avoid conflict with the barrel assembly and testing in BNL.

What can we do in the beam test @ Tohoku U.

1. Prove ~100% detection efficiency of the silicon sensors by inclusion of TDC in data. (~97% in the last two beam tests)
2. Time in with respect to the trigger timing. (Taken accidentals in the last two beam tests). -> same as cosmic in standalone
3. Smooth DAQ commissioning
4. Test (Taiwan + BNL) production full ladders
5. Inefficiency between silicons/cell borders -> $\phi 20\text{mm}$ is too large
6. Successful HV operation
7. Satisfactory data taking with a (pre-)production bus extender
8. Play with grounding conditions
9. Fine threshold scan to measure fake hit rates and calculate S/N
10. Monitor ROC power consumption during the beam data taking
11. Etc.

Some important items have to be removed from the scope. However, I think it is better than no 3rd beam test.

Do we have sufficient domestic man power for Tohoku?

- Itaru* (DAQ, Detector, Analysis)
- Takashi* (DAQ, Detector, Analysis)
- Genki (DAQ, Detector, Analysis)
- Yasuyuki (Detector)
- Shoichi* (Detector)
- Miu (DAQ, Detector, Analysis)
- Yumika (DAQ, Detector, Analysis)
- + NWU/Rikkyo Students for assistant
- + Remote offline analysis by international members

Student 2019 beam test participant*

Tight, but may not be impossible.