



# Status Forward Endcap EMC

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Thomas Held

Ruhr-Universität Bochum  
Institut für Experimentalphysik I

# Topics

- Submodule Manufacturing
- Forward Endcap Cooling
- New Front/Back Lids
- Inner 'Stiffener' Ring
- Move to Jülich
- Miscellaneous

## Submodule Manufacturing

- Latest numbers (February):
  - ▶ 214 of 268 submodules built so far (80%)
- Problems with failing or mixed-up channels in several submodules tested in Bonn (Tobias S.)
- Presumably most of these problems occur at low temperatures only (not seen in Bochum)
- Modification of test procedure of finished submodules and/or single crystal-read out units:
  - ▶ Additional test stand in climate chamber using mobile test stand built for Jülich installation (Christopher, Lukas)
  - ▶ Single channel HV setting using HV regulator boards: identification of APD mix-ups (Tobias T.)
- Some effort for last submodules to be built, but dismantling of finished submodules and repair time-consuming and blocking production (Claudius, Tobias H.)

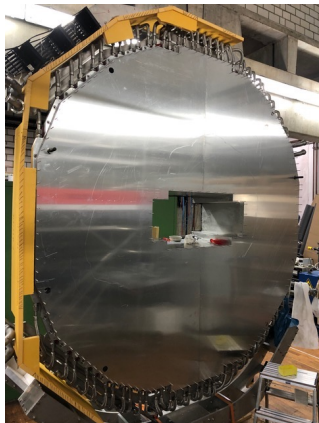
# Forward Endcap Cooling

- Side cooling completely installed (Lennart)
- Front cooling still to be mounted to front lid
  - ▶ Delayed because of problems with inner stiffener ring sealing and
  - ▶ Connecting pipes need to be finished (welding, machining)
- Supply lines (feeding, return) in preparation

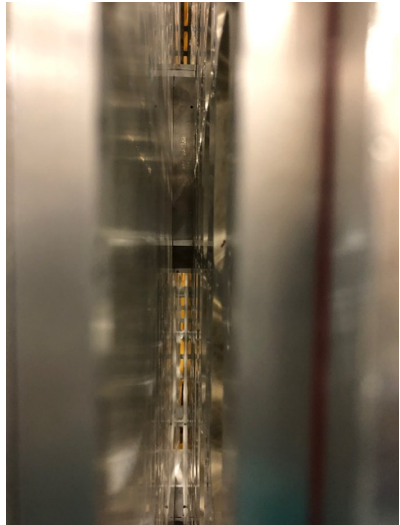
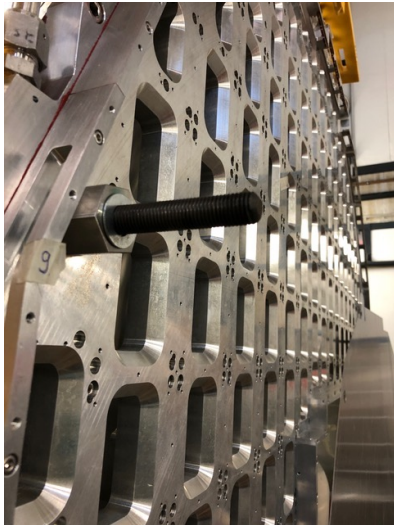


# New Back Lid

- Aluminum lids need to be welded
- Original ones TIG welded:  
Huge amount of heat
- Unavoidable deformation  
(compromising 'electronics space' behind backplate)
- New back lid laser welded, no deformation (3 mm aluminum)
- Suitability for 0.8 mm aluminum of front lid and inner stiffener ring?



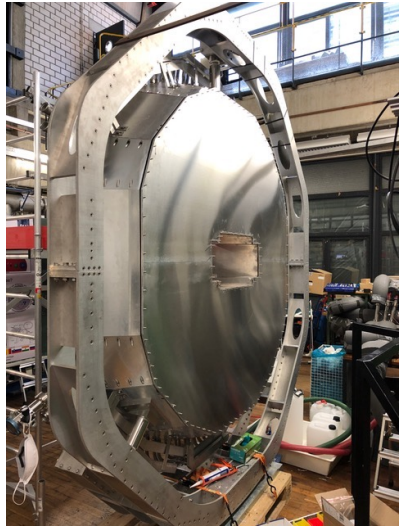
# New Back Lid



# Inner 'Stiffener' Ring



# New Front Lid



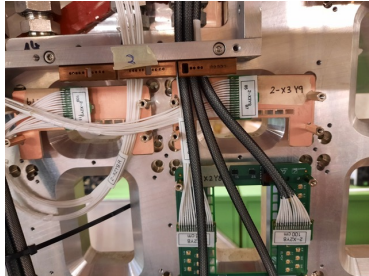
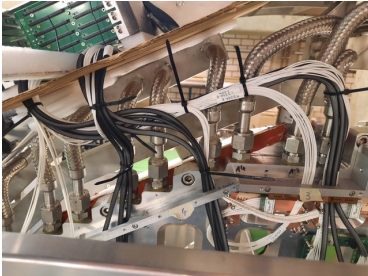


# Move To Jülich

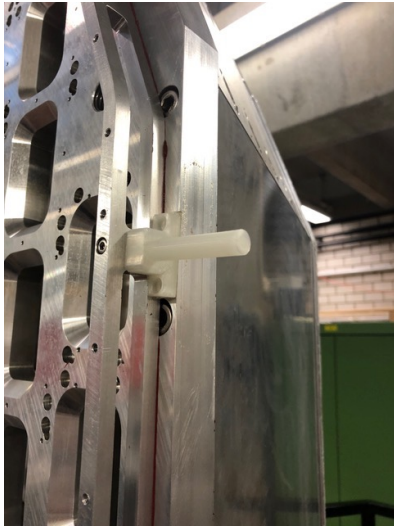
- Transportation of Forward Endcap to Jülich originally foreseen for March
- Problems, delays in sealing, pipe welding will shift date by some weeks
- Creating seals from PU compound as done at the outer front lid seal did not work out for inner sealing
- Ordered 10 mm x 1 mm coil of rubber, intend to glue seal rather than forming from PU



# Miscellaneous: Cable Routing (Bonn)



# Miscellaneous: Forward Endcap Alignment (Christian)



## Miscellaneous

- Irradiation of HV boards/components and intense radiation studies (Christoph)
- Refined HV cable length estimation, discussion of routing from detector to racks (w/ Jost, Stefan)
- Inserts to alveole glueing (final step prior to shipping to Jülich) (Christian)
- Some more refinement in cable route optimization as long as endcap still in Bochum (Vinee)
- Finishing of thyristor regulator boards (Sebastian)
- SADC crate cooling: Heat foils as substitute for still missing crate power supplies (Sven)
- T-sensor production/calibration (Fabian)
- APD screening (Orestis)
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