

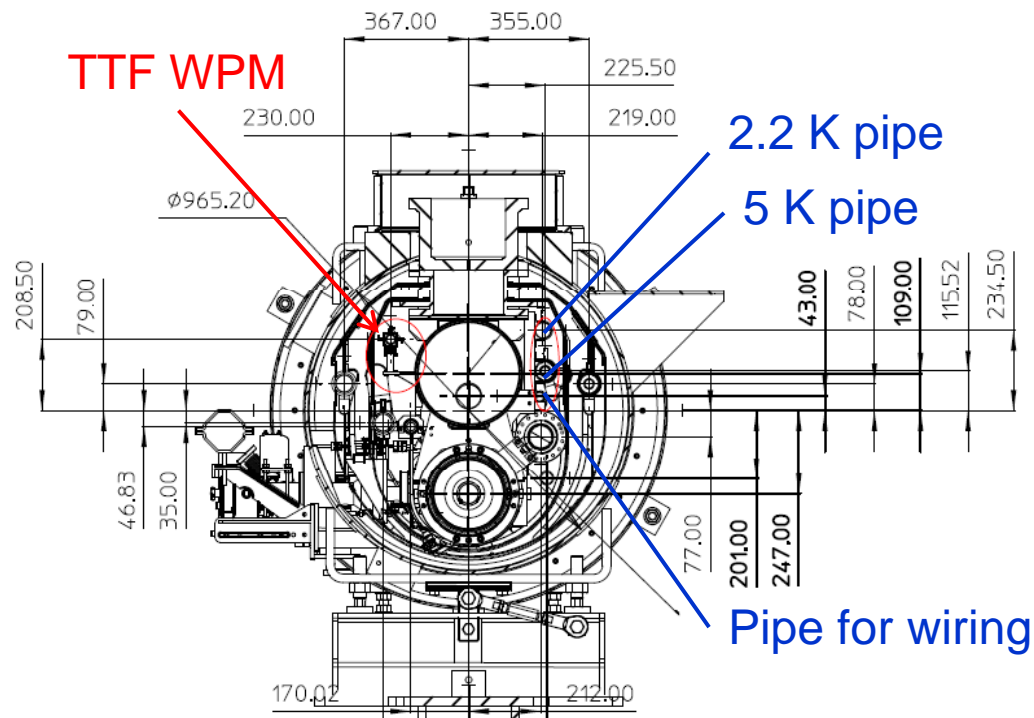
Meeting for
S1-Global module design
Cryomodule and Cryogenics
20081209

Norihito Ohuchi

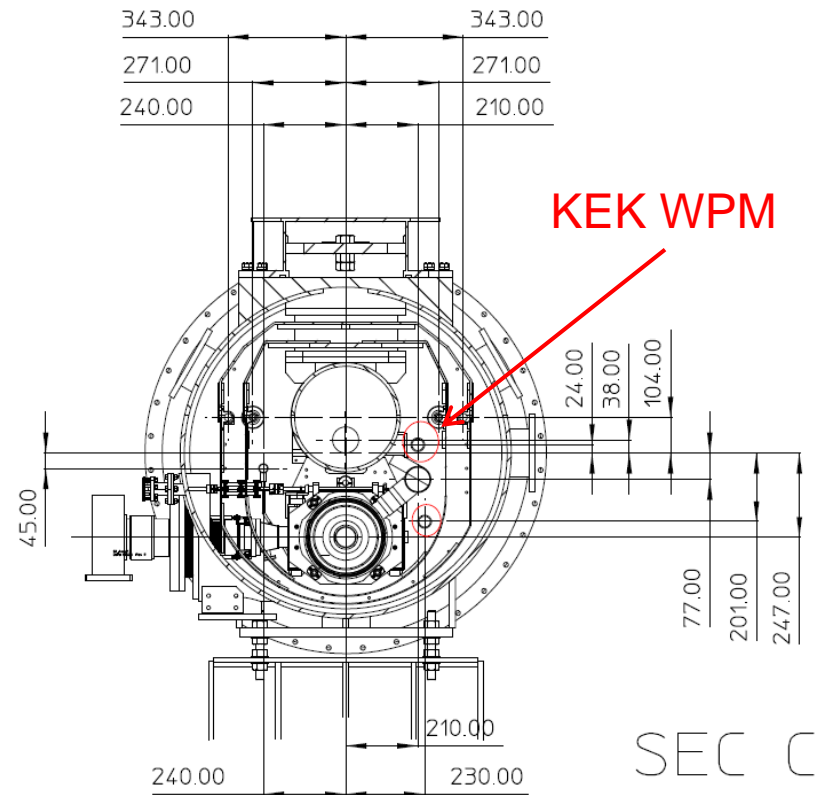
Agenda

1. WPM stage in Module-C (Norihiro Ohuchi)
2. WPM system in S1-G and test results in STF (Hitoshi Hayano)
3. Other components (Norihiro Ohuchi)
4. PAC09 abstract (All)

WPM stage in Module-C



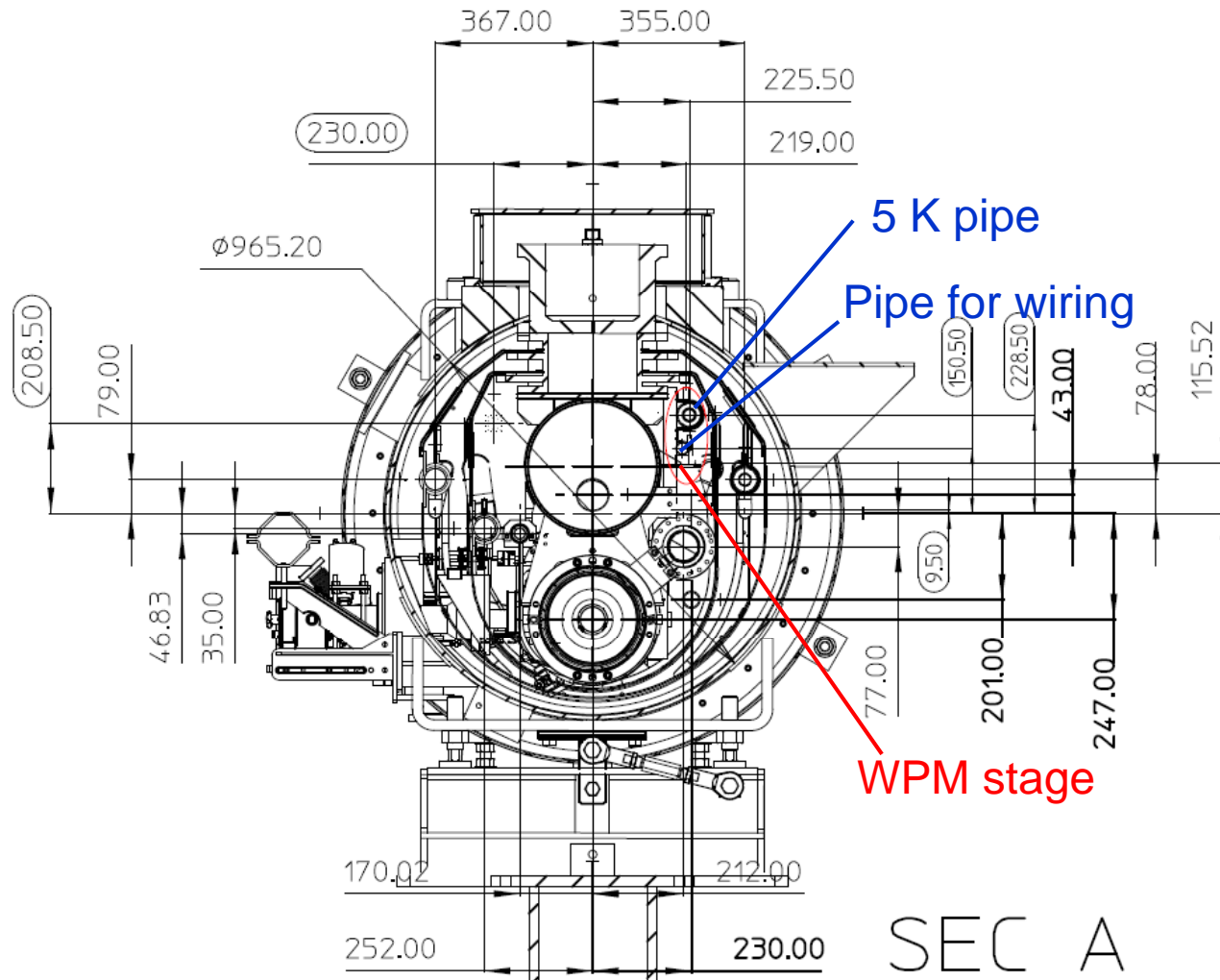
Module-C cross section (based on Type III+)



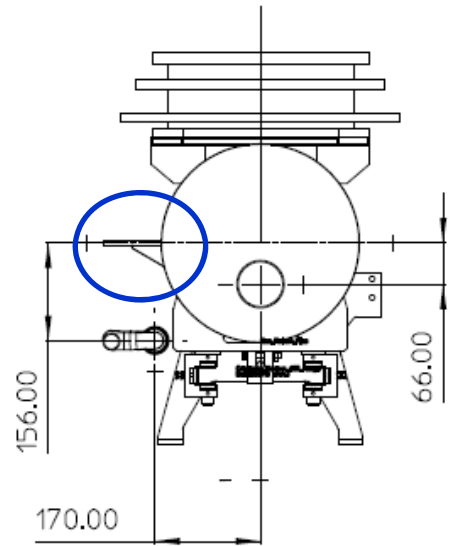
Module-A cross section

The wire for the KEK WPMs conflicts with the pipe for wiring.

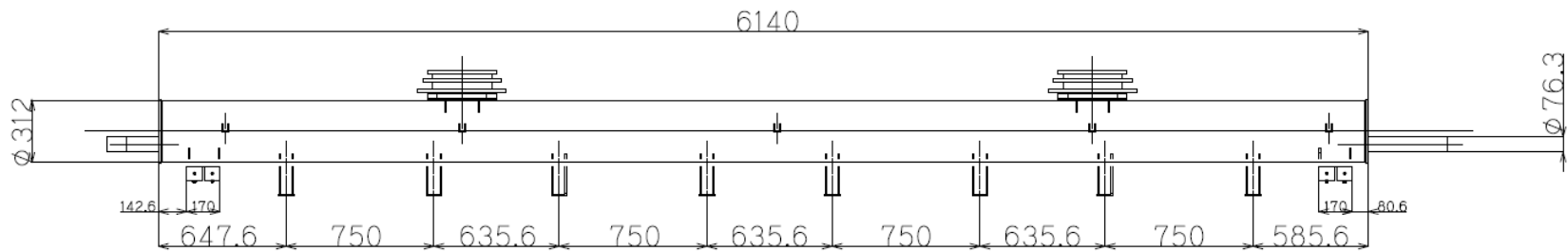
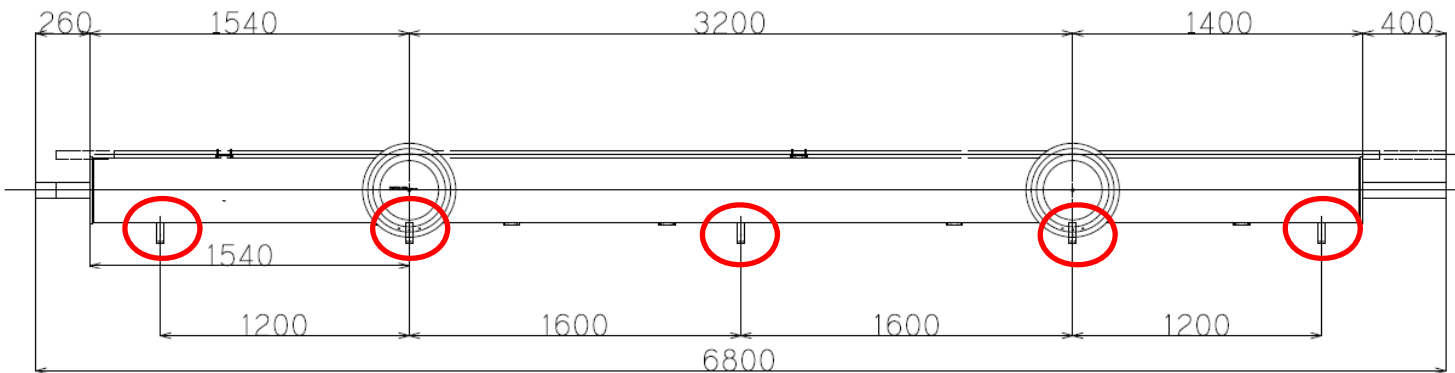
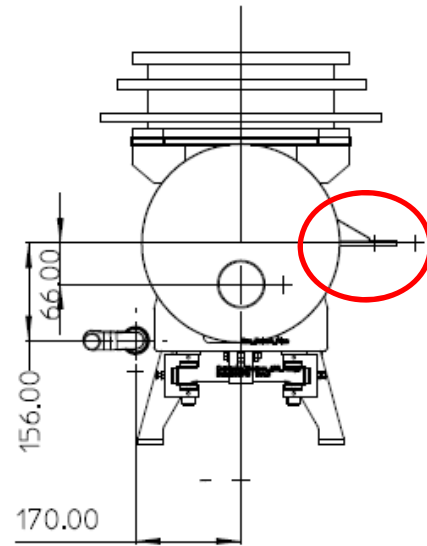
Proposal of the positions of cooling pipes and WPM stages



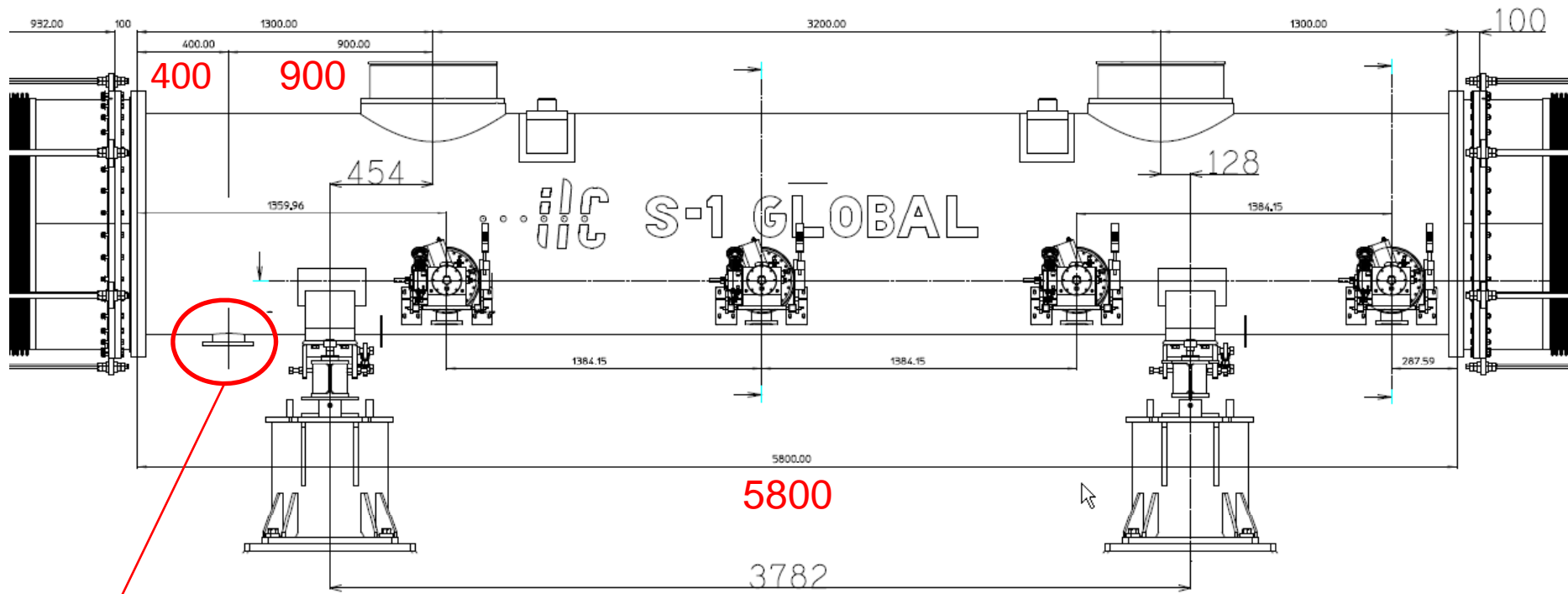
1. 2.2 K pipe is removed.
2. 5K pipe moves upward.
3. Stages for WPM move to the opposite side of the GRP.
4. The connection surface with the WPM is the underside of the stage.



Modify



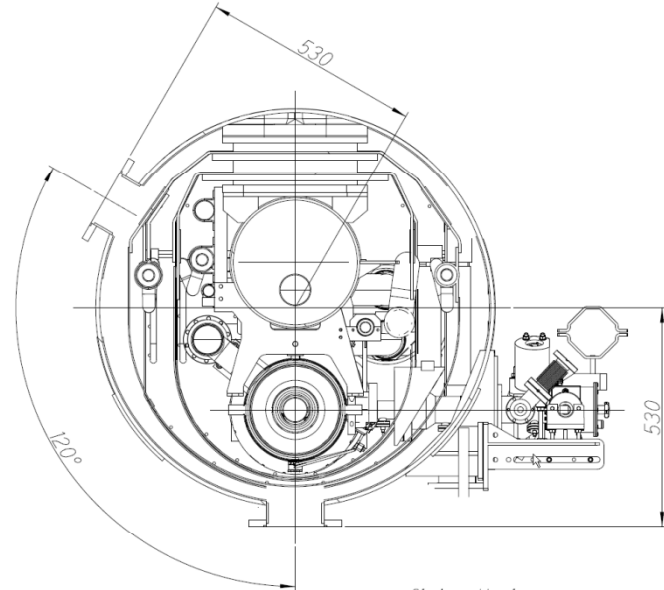
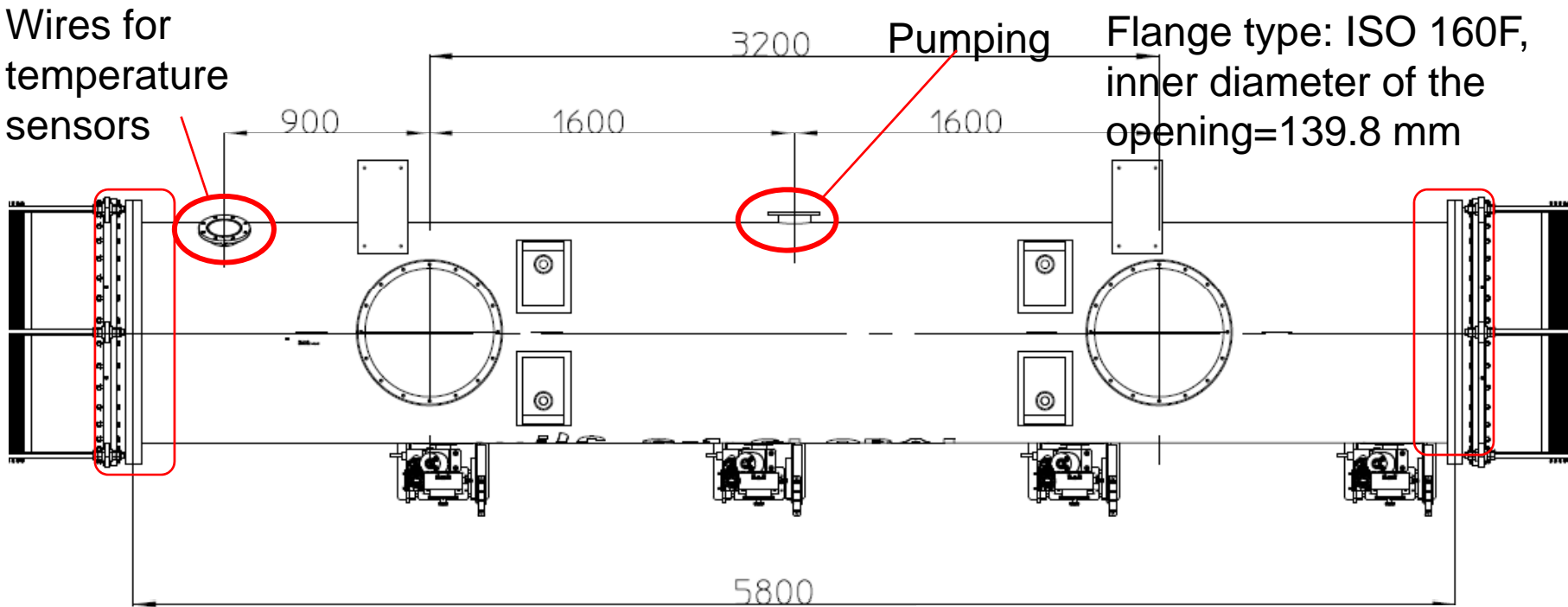
Opening position for signal wires and pumping



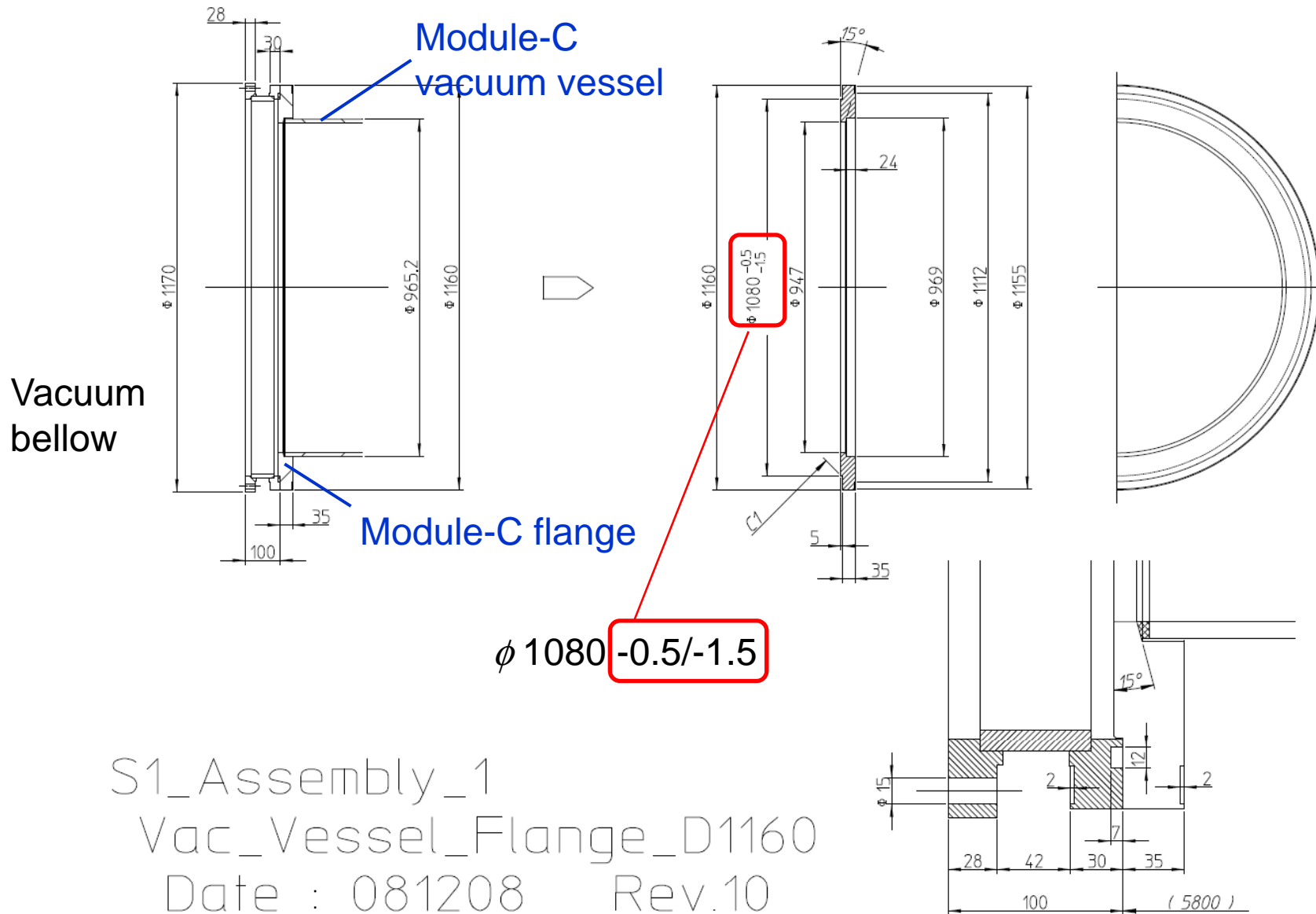
Flange for WPM wires

Flange type: ISO 160F, inner diameter of the opening=139.8 mm

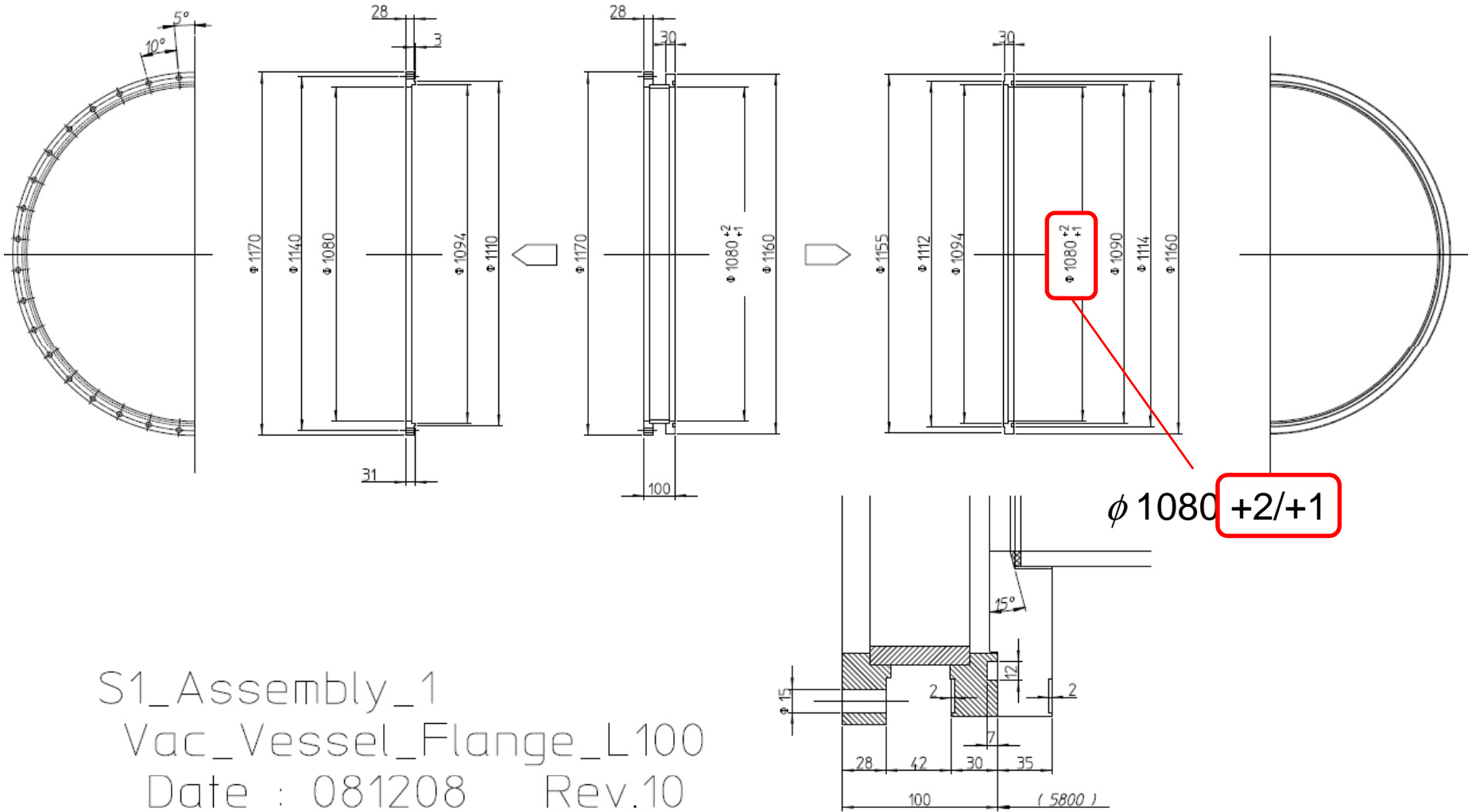
Wires for temperature sensors



Connection flange of vacuum vessel

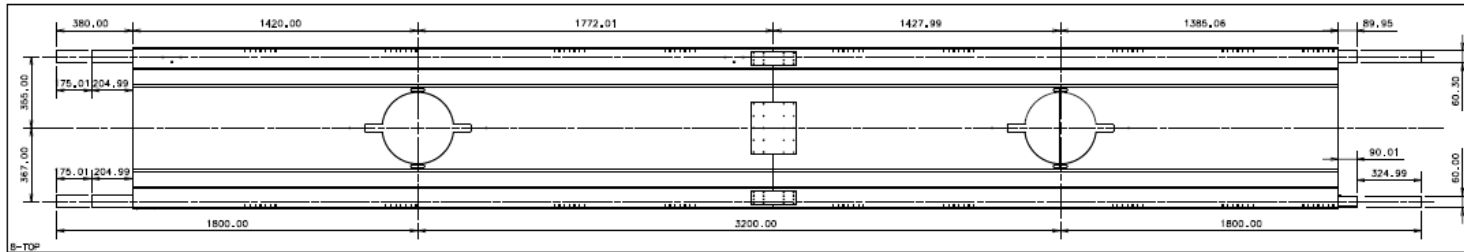


Connection flanges between the flange of Module-C and the vacuum bellows

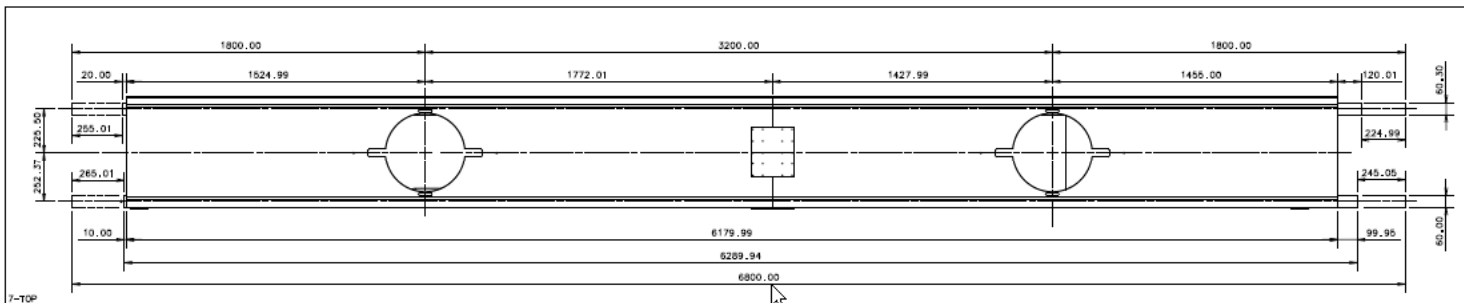
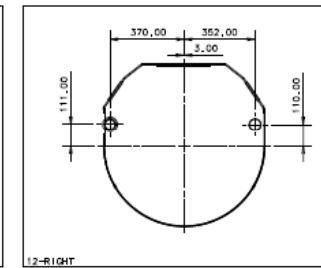
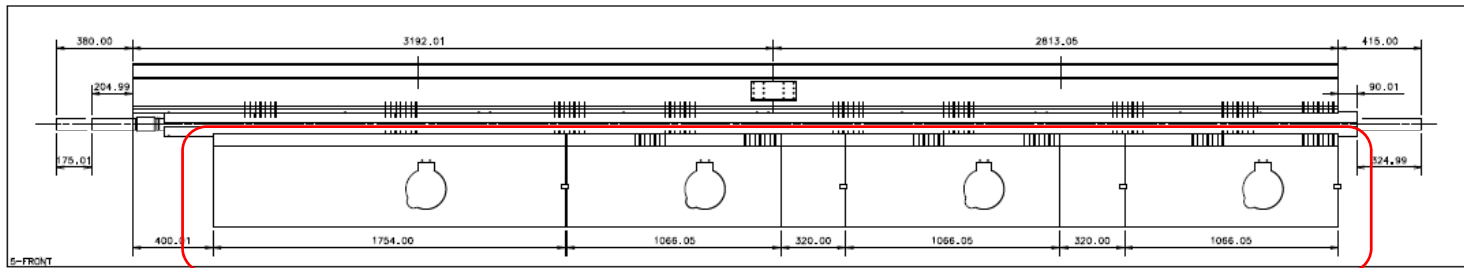


S1_Assembly_1
 Vac_Vessel_Flange_L100
 Date : 081208 Rev.10

Thermal shield design

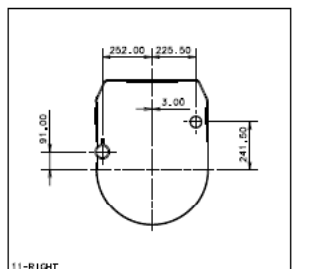
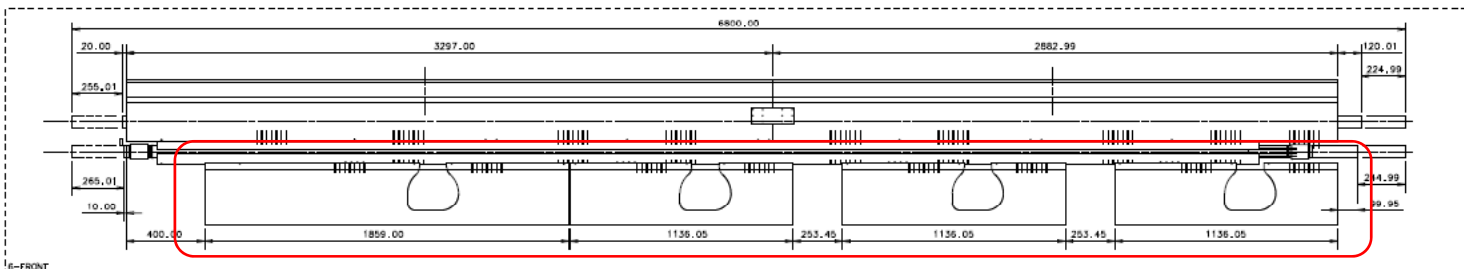


70K shield



5K shield

4.5K_S



PAC09 abstract

Title: Plan of the S1-Global Cryomodule for ILC

Authors: Norihito Ohuchi, Hitoshi Hayano, Norio Higashi, Hirotaka Nakai, Kiyosumi Tsuchiya, Akira Yamamoto, Carlo Pagani, Paolo Pierini, Serena Barbanotti, Mark Champion, Harry Carter, Don Mitchell, Jim Kerby, Chuck Grimm, Tug Arkan, Thomas J. Peterson, Marc Ross and Lutz Lilje

Abstract: In an attempt at demonstrating an average field gradient of 31.5 MV/m as per the design accelerating gradient for ILC, a program called S1-Global is in progress as an international research collaboration among KEK, INFN, FNAL, DESY and SLAC. The S1-Global cryomodule will contain eight superconducting cavities from FNAL, DESY and KEK. The cryomodule will be constructed by joining two half-size cryomodules, each 4 m in length. The module containing four cavities from FNAL and DESY will be constructed by INFN. The design of this module is based on an improved 3rd generation TTF design. KEK will modify the 6-meter STF cryomodule to contain four KEK cavities. The designs of the cryomodules are ongoing between these laboratories, and the operation of the system is scheduled at the KEK-STF from June 2010. In this paper, the S1-Global cryomodule plan and the module design will be presented.

‘S1-Global collaboration’ as a co-author.

Next meeting

- 6 January 2009 (Tuesday)
- 23:00 (KEK), 8:00 (FNAL), 15:00 (DESY, INFN)