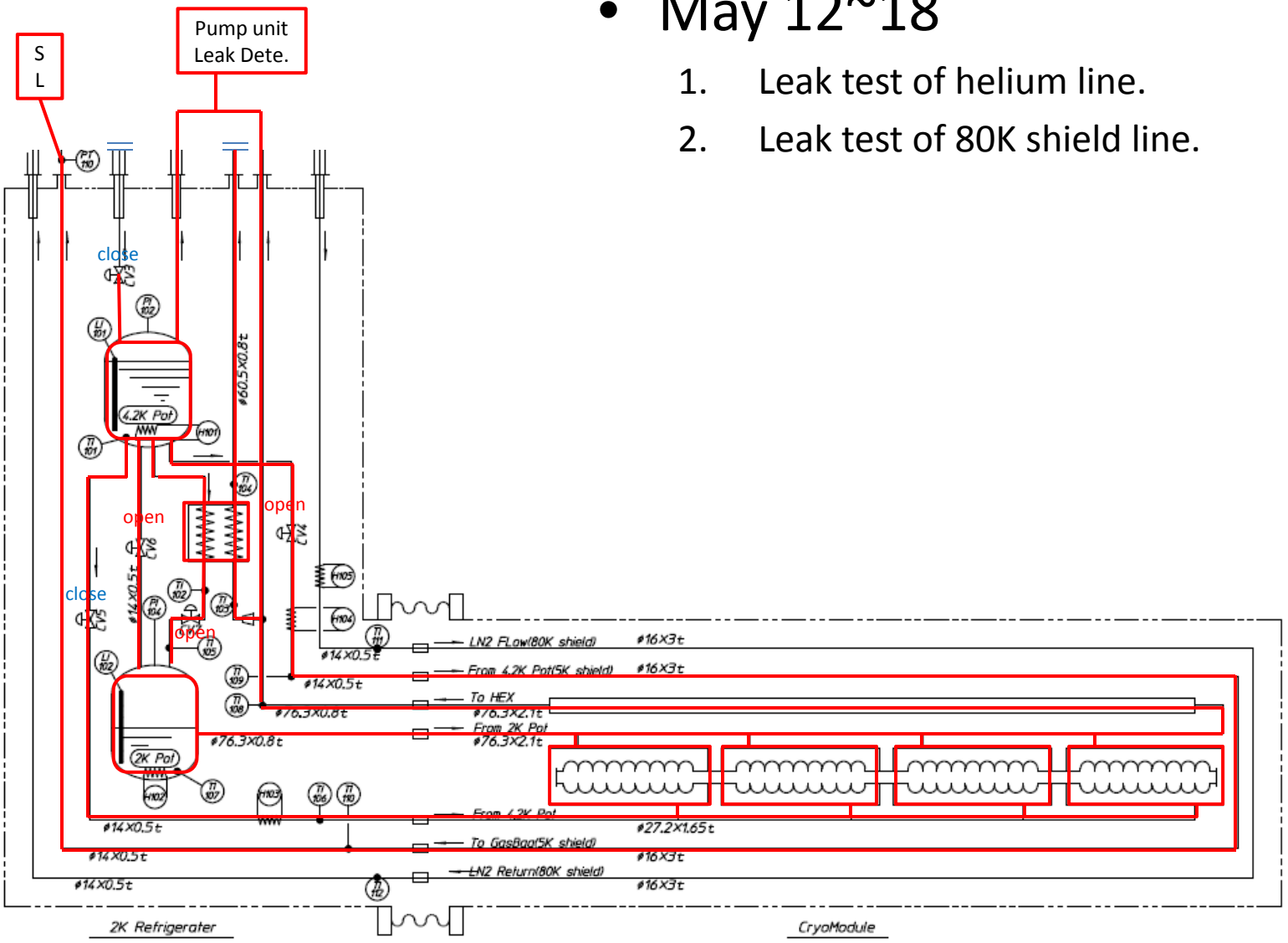
S1-G Modules assembly status : Cryostat (20100518)

(Norihito Ohuchi)

S1-G Module assembly status

- May 12~18
  1. Leak test of helium line.
  2. Leak test of 80K shield line.

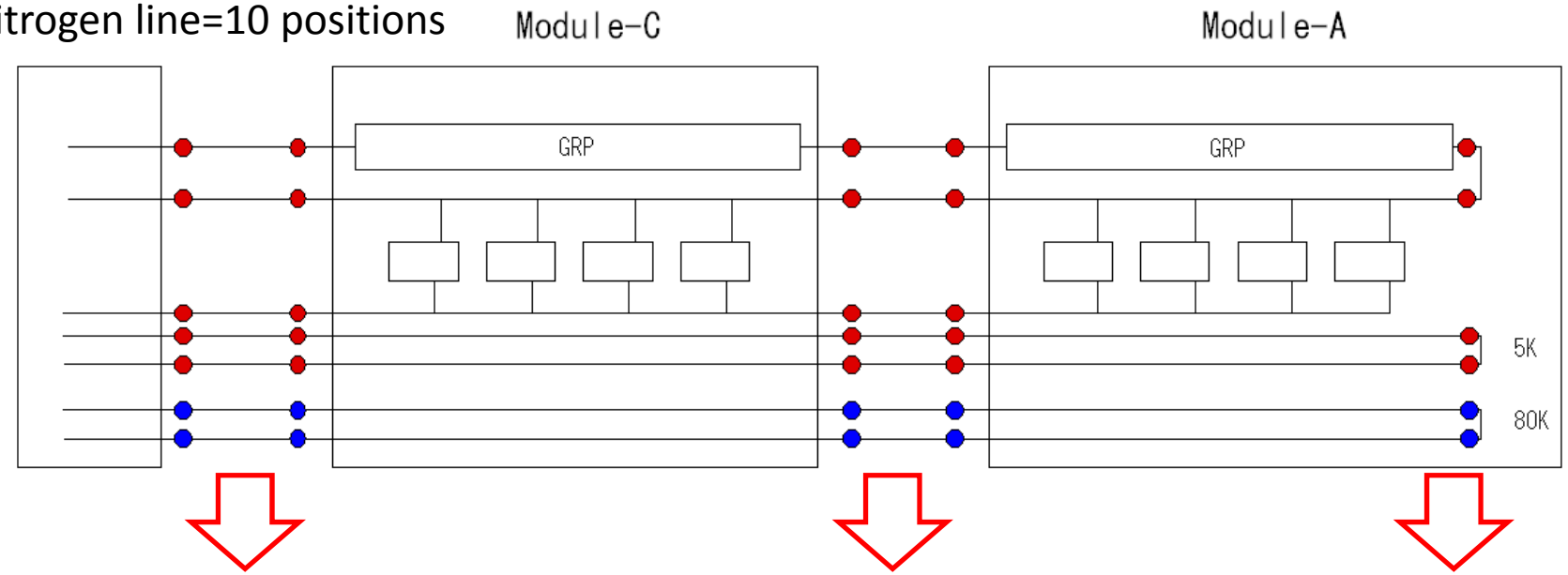
Leak test of Helium line

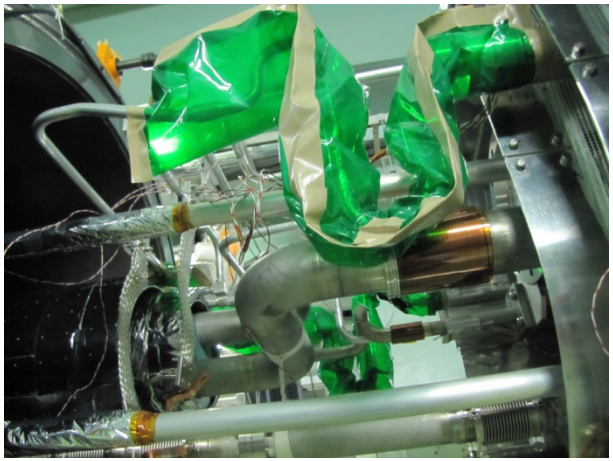


Welding positions

Helium line=24 positions

Nitrogen line=10 positions



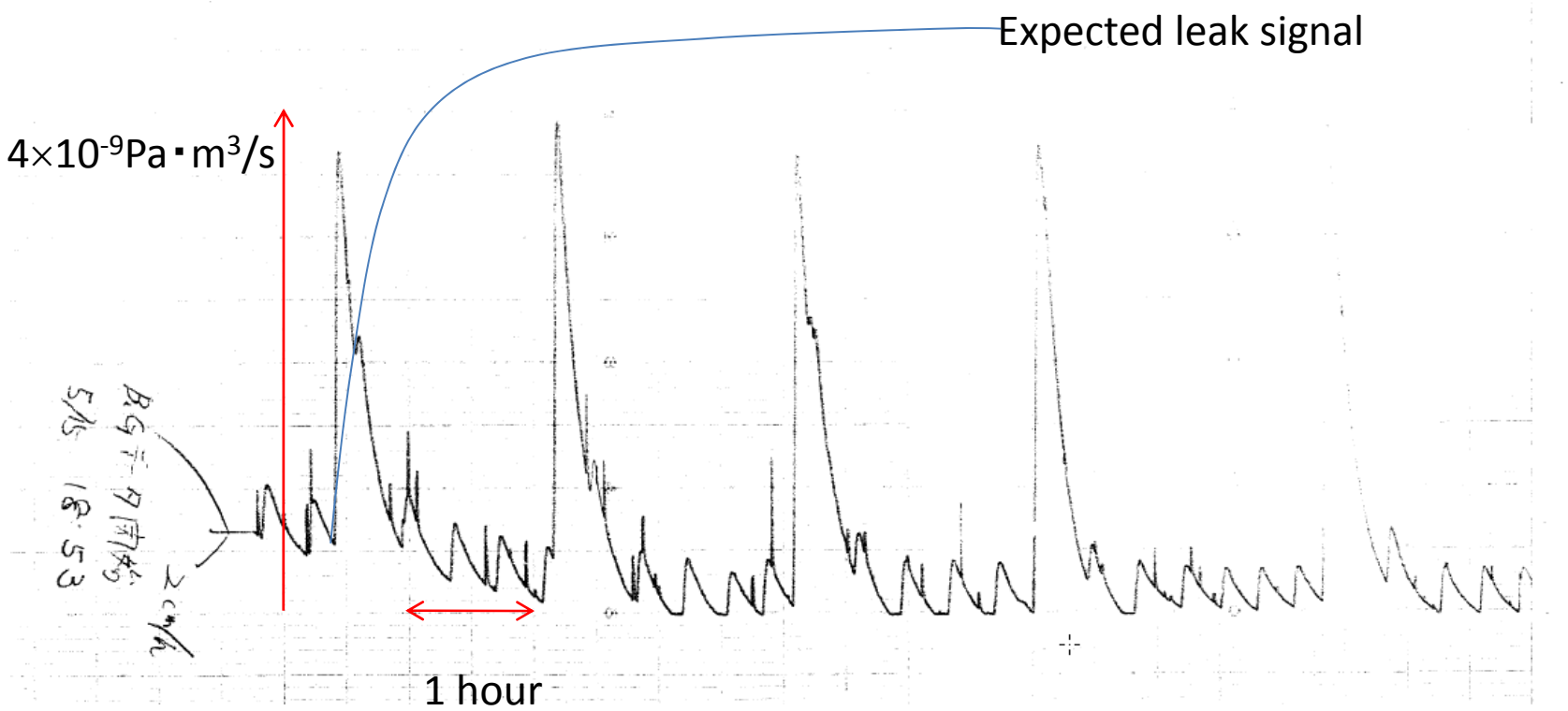


Welding positions were covered with plastic bags.

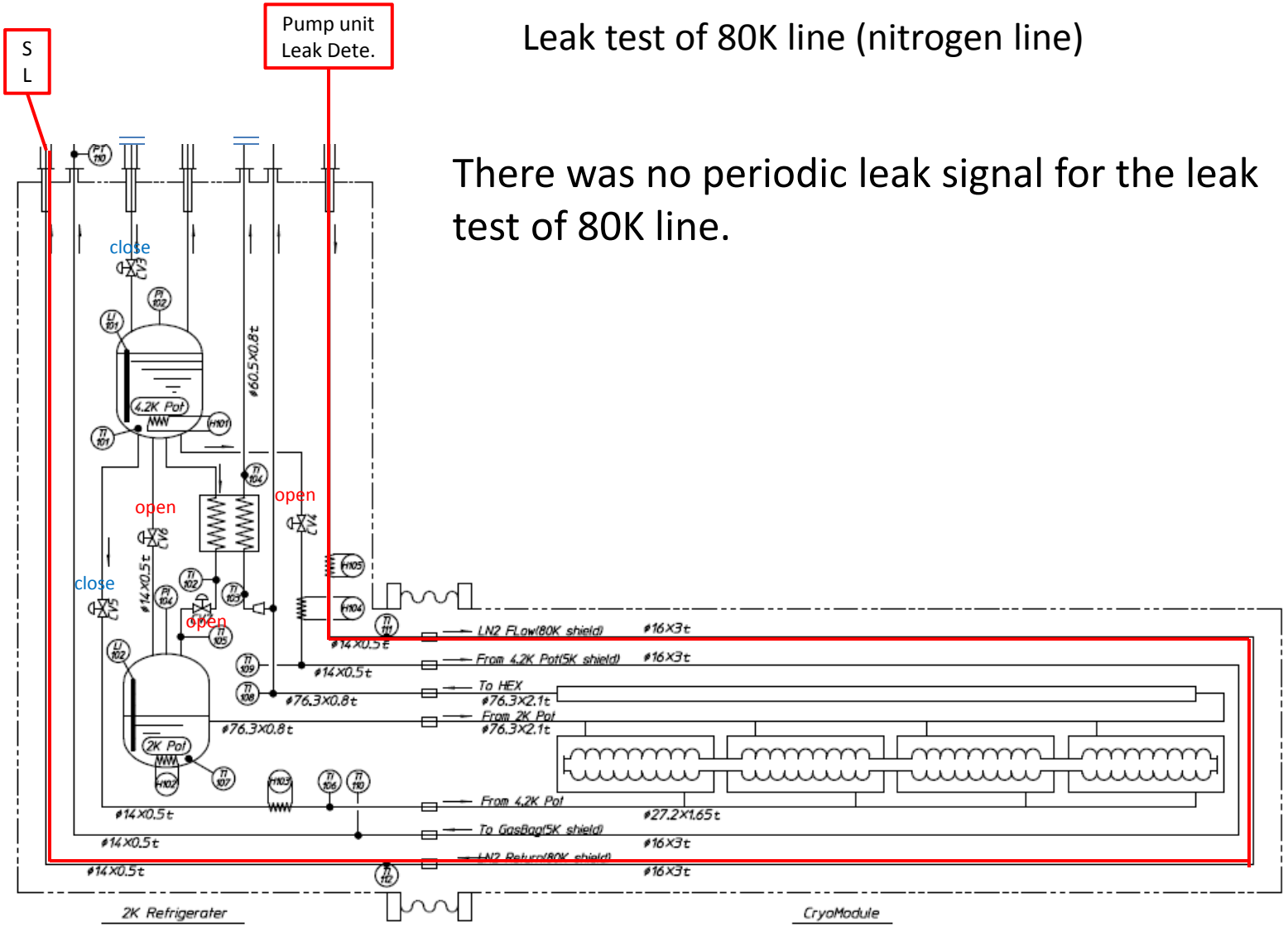
Procedure of helium leak test

- Gas in the helium lines was exchanged with N_2 gas 5 times.
- The helium lines were evacuated with turbo-molecular pump.
- The leak rate was confirmed with a standard leak, and the level of 10^{-11} Pa·m^3/s was confirmed.
- The allowable leak rate of the test was 1.3×10^{-10} Pa·m^3/s.
- Helium gas was inserted into the gas bags.
- Holding the conditions for 30 minutes to check helium leak into the pipes.

- During the leak tests, we measured periodic leak signal of 4×10^{-9}Pa・m^3/s. This signal was decreased spontaneously.
- The signals were observed without helium gas in the plastic bags.
- In the final leak test, we kept helium gas in the all plastic bags for 30 minutes. And we confirmed that there was no signal which continuously increased.
  - We judged that there is no external leak of the welded parts.



S1-G Module-A assembly status



Leak test of 80K line (nitrogen line)

There was no periodic leak signal for the leak test of 80K line.

Assembly Schedule of S1-G Module

- May 19 ~ 21:
  - Assembling the thermal shields and SI
  - Final checking of sensors
  - Closing vacuum bellows
- May 22:
  - Closing cryostats and starting to pump vacuum vessel
- May 24 ~ May 31 :
  - Pumping the vacuum vessel and doing the final leak test of the S1-G cryomodule
  - Cabling of sensors out of the S1-G cryostat, and completing the logging system