

S1-G Module-C assembly status

ILC10-Beijing GDE program – S1-G session

(Norihito Ohuchi)

S1-G Module-C assembly status

(Completed jobs: Feb. 24~Mar. 9)

- Feb. 24~28

1. Cool-down/warm-up line setting and He leak test.
2. Checking the signal wires of T-sensors for FNAL/DESY cavities

- Mar. 1~2

1. Assembling 5K shield and welding
2. Setting T-sensors on the 5K shield and 5K thermal anchoring of input couplers

- Mar. 3~5

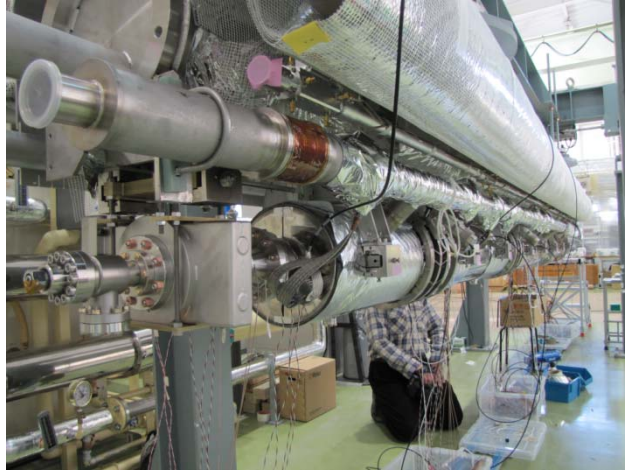
1. Thermal anchoring RF cables on the 5K shield
2. Setting SI on the 5K shield
3. Assembling 80K shield and welding
4. Setting T-sensors on the 80K shield and 80K thermal anchoring of input couples

- Mar. 8~9

1. Checking the signal wires of T sensors on the 5K and 80K shield
2. Setting SI on the 80K shield

- Feb. 24~28

1. Cool-down/warm-up line setting and He leak test.
2. Checking the signal wires of T-sensors for FNAL/DESY cavities



Signal wires for DESY/FNAL cavities



Assembling cool-down/warm-up pipe

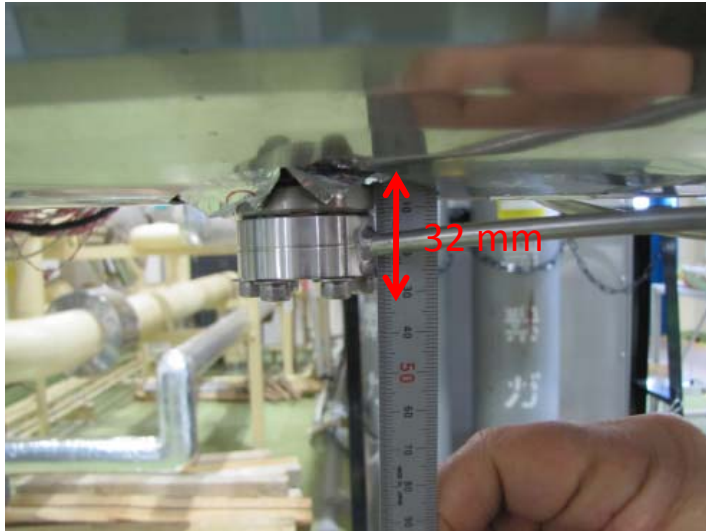


Temperature sensor for Piezo

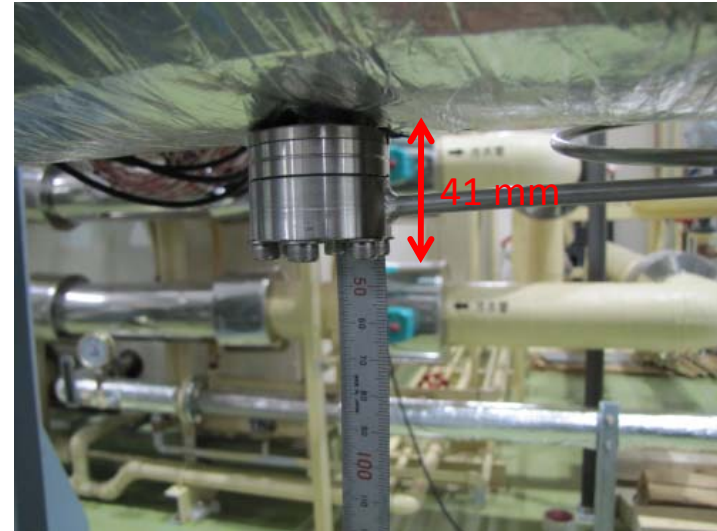


Temperature sensor for Piezo

- Connection flange size problem between FNAL and DESY cavities



Connection flanges for DESY cavities



Connection flanges for FNAL cavities

Size of the assembled connection flange are not coincident.

The height of the assembled flanges for DESY cavities from the He jacket is 32 mm.

The height of the assembled flanges for FNAL cavities from the He jacket is 41 mm.

The INFN/Zanon 5K shield has interference with the FNAL flanges. Then the holes on the 5K shield were processed.

- Mar. 1~2

1. Assembling 5K shield and welding
2. Setting T-sensors on the 5K shield and 5K thermal anchoring of input couplers



Assembling 5K shield



Making holes for FNAL cool-down pipe connection



Welding of 5K shield.
After welding, all bolts were dismantled.



Connection of 5K thermal anchors to 5 K shield.
Indium sheet was sandwiched. T-sensor is Cernox.

- Mar. 3~5

1. Thermal anchoring RF cables on the 5K shield
2. Setting SI on the 5K shield
3. Assembling 80K shield and welding
4. Setting T-sensors on the 80K shield and 80K thermal anchoring of input couples



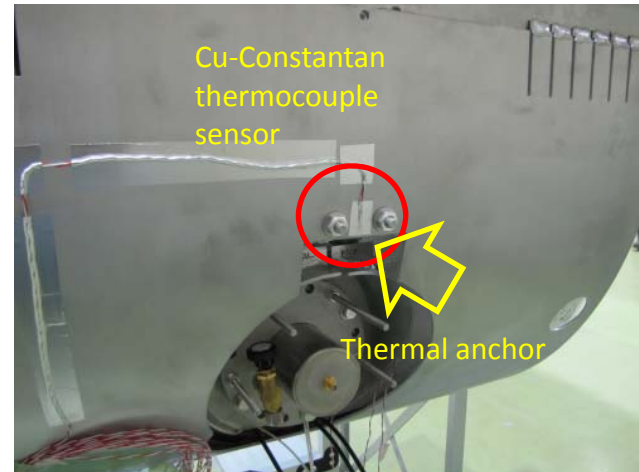
Thermal anchoring RF cables on the 5K shield



Setting SI on the 5K shield



Assembling 80 K shield



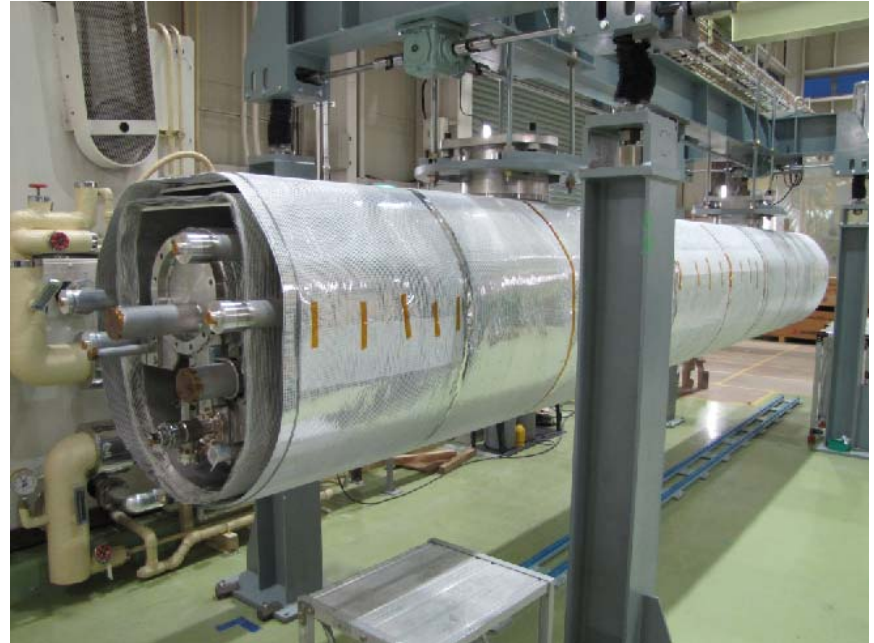
Setting T-sensors on the 80K shield and 80K thermal anchoring of input couple

- Mar. 8~9

1. Checking the signal wires of T sensors on the 5K and 80K shield
2. Mounting SI on the 80K shield



Thermal sensors on the 80K shield
(Cu-Constantan thermo-couples)



Mounting SI on the 80L shield

Assembly Schedule

	2010				January				Feb				March				
	4	11	18	25	1	8	15	22	1	8	15	22	29				
FNAL/DESY cavity string in the clean room	←→																
Preparation	←→																
Class 10/1000 assembly work		←→															
FNAL/DESY cavity string outside of the clean room				←→													
KEK cavity string in the clean room								←→									
Preparation								←→									
Class 10/1000 assembly work								←→									
KEK cavity string outside of the clean room and assembling tuners								←→									
Module-C assembly	←→																
Checking the item and number of assembly components by the company personnel		←→															
Placing the GRP cold mass under assembly stand																	
Preparation for welding liquid helium supply pipe																	
Verifying the distance between couplers and cavities																	
Welding liquid helium supply pipe and LT																	
Clamping 4 Cu straps on the liquid helium supply pipe for one cavity																	
Mounting T-sensors on the cavity jackets																	
Wrapping SI on the cavity jackets																	
Assembling magnetic shieldings and tuner components																	
Checking and tuning RF characteristics of cavities and HOM couplers																	
Mounting the cavity string to GRP with C cramps and roller bearing																	
Connecting Cu straps to HOM couplers and HOM antenna																	
Mounting T-sensors on HOM couplers and Pin-diode																	
Connecting RF cables and signal cables to cavities																	
Welding flanges to GRP ends																	
Wrapping SI on LHe supply pipe																	
Installing the cool down and warm up pipe and connecting flanges to jackets																	
Assembling temporary support brackets for cold couplers																	
Alignment of cavities (measurement of cavity location)																	
Locking cavity jackets to Invar rod																	
Assembling thermal shield for cold couplers																	
Assembling the magnetic shields at the cavity-ends																	
Routing the cables and wires from cavities																	
Assembly of 5K shields (welding work)																	
Connecting heat intercepts of input coupler to 5K shield																	
Sensors and wirings on 5K shield																	
Checking sensors and wiring, and mounting SI on 5K shield																	
Assembly of 80K shields (welding work)																	
Sensors and wirings on 80K shields																	
Checking sensors and wiring, and mounting SI on 80K shields																	
Connecting wires to feed-throughs																	
Inserting the cold mass into vacuum vessel																	
Fixing the cavity-string axis on the vacuum vessel																	
Installing the Module-C in the tunnel																	
Connecting cooling pipes of Module-C and 2K Cold Box																	
PT and LT of Module-C cooling pipes																	
TTF-3 warm coupler installation																	

ILC10-Beijing GDE program – S1-G session

Cryomodule – S1-Global Session		
Cryogenics		
Conveners: Norihito Ohuchi, Paolo Pierini, Tag Arkan		
Tom Peterson		
(Mar 29, 08:30 – 12:00)		
Time	Subject	Presenters
8:30 – 10:00		
40min	S1-G Cryomodule assembly status	Norihito Ohuchi
30min	S1-G Cavity assembly status	Eiji Kako
20min	S1-G RF preparation	Shigeki Fukuda
30min	Coffee Break	
10:30 – 12:00		
30min	Proposal of experoment schedule of S1-G cryomodule	Hitoshi Hayano
20min	Cavity test plan	Eiji Kako
20min	RF test plan	Shinichiro Michizono
20min	Cryomodule thermal test plan	Norihito Ohuchi