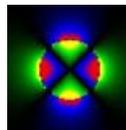


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Magnet Division Procedure



Superconducting  
Magnet Division

Proc. No.: SMD-BEPC-3005

Revision: A

BEPC-II Heat Shield Installation

- Prepared by: [Signature on File](#)
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### Revision History

Rev A: Initial Release

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1. Scope:

This specification describes the procedure used to prepare BEPC-II Heat Shield Installation

2. Applicable Documents:

BNL Dwg No. 21010001  
BNL Dwg No. 21010005  
BNL Dwg No. 21010006

3. Requirements:

3.1 Safety Precautions:

3.1.1 It is imperative that safety precautions be strictly adhered to during all installation procedures given below. Two technicians, at a minimum, must be present at all times during performance of the assembly/disassembly and magnet rotation activities.

3.1.2 Safety shoes must be worn at all times during installation procedure.

3.1.3 Rigging assistance is required for all magnet lifting operations. Hard hats must be worn during crane operations. All lifting and handling operations requiring overhead crane operations shall be performed by holders of valid Safety Awareness Certificates. They shall also be instructed in the use of the appropriate lifting devices by the Cognizant Engineer or Technical Supervisor.

3.1.4 The technicians connecting and disconnecting power leads shall have Lock Out /Tag Out training for affected worker.

4. Procedure

4.1 Weld the (21010081) flexible hose assembly to its proper end on the nitrogen manifold. Weld a nitrogen manifold end cap (21010058) onto the proper end of the manifold.

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- 4.2 Weld inner nitrogen manifold (21010057) to the inner heat shield. Note that there are eight welded tube connections.
- 4.3 Wrap the 21010006 inner heat shield assembly with 12 layers of super insulation.
- 4.3.1 This is best done by wrapping with 2 layers of a 6 layer blanket, making sure the seams fall between the cooling tubes.

**NOTE:**

**Insulation will have to be wrapped fairly tight in order for it to fit into the containment vessel.**

- 4.4 Insert the inner heat shield into the lead end of the inner helium containment vessel. Judging by the 21010001 assembly drawing, roughly position in place.
- 4.5 Wrap outer helium containment with super insulation.
- 4.5.1 Wrap with 18 layers of MLI as either 3 layers of a 6 layer blanket or 2 layers of a 9 layer blanket.
- 4.5.2 Be sure seams fall between cooling tubes.

**NOTE:**

**Insulation will have to be cut out around supports to get a good fit around the containment vessel.**

- 4.6 Starting from the non-lead end slide (21010006) outer heat shield, assemble over the containment vessel. Heat shield may have to have its seam spread slightly to fit over supports.
- 4.7 Position outer heat shield cooling tubes into the manifold of the inner heat shield at the non-lead end.
- 4.8 Attach outer heat shield to the magnet supports using the designated screws.
- 4.9 At the lead end weld (21010058) end cap and (21010082) flexible hose assembly to the outer nitrogen manifold.
- 4.10 Weld cooling tubes into the inner shield manifold.

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- 4.11 Temporarily install this assembly back into the cryostat assembly. Hold keys in place with a clamp.
- 4.12 Proceed with pressure leak check of the nitrogen circuit. See MAP SMD-BEPC-3006.
- 5. Quality Assurance Provisions:
  - 5.1 The Quality Assurance provisions of this procedure require that the technician shall be responsible for performing all assembly operations in compliance with the procedural instructions contained herein and the recording of the results on the production traveler.
  - 5.2 The technician is responsible for notifying the technical supervisor and/or the cognizant engineer of any discrepancies occurring during the performance of this procedure. All discrepancies shall be identified and reported in accordance with RHIC- MAG-Q-1004.
  - 5.3 Measuring and test equipment used for this procedure shall contain a valid calibration label in accordance with RHIC-MAG-Q-1000.
- 6. Preparation for Delivery:

N/A