

1. Scope:

This procedure describes the method used to assemble the Storage Unit Coil Assembly for RHIC Helical magnets.

2. Applicable Documents:

RHIC-MAG-Q-1004
BNL Drawing 25.1737.01

Discrepancy Reporting Procedure
Coil Lamination Stacking Fixture

3. Requirements:

3.1 Material & Equipment

3.1.1 Material

Dry Teflon Spray
Ethyl Alcohol
Black Felt Tip Pen

BNL Stock No. I-72608
BNL Stock No. E-53970
BNL Stock No. S-23757

3.1.2 Equipment:

Coil Lamination Stacking Fixture
Drill
Drill Fixture and Bushings (15/64" and 0.2500")
Drill Bit 15/64"
Reamer .2495

3.2 Safety:

3.2.1 All lifting and handling operations requiring overhead crane operations shall be performed by holders of valid Safety Awareness Certificates. They shall also be trained and certified in the use of the appropriate lifting device by the Cognizant Engineer or Technical Supervisor.

3.2.2 Hard hats are required when the overhead crane is in use. Failure to observe this caution may result in head injury.

3.2.3 Operators shall wear safety glasses with side shields, or goggles while performing drilling operations.

3.3 Procedure

3.3.1 Inner Coil Assembly

3.3.1.1 Set up Coil Lamination Stacking Fixture for Coil Assembly per drawing 25.1737.01.

Verify that the bottom plate of the fixture is oriented for the particular Coil Assembly being built.

3.3.1.2 Clean the OD of the Coil Assembly with alcohol. Remove all foreign material from the surface.

3.3.1.3 Attach rigging to the non-lead end of the Inner Coil Assembly for crane lift.

3.3.1.4 Lift the Inner Coil Assembly from the horizontal to vertical attitude by the Non-Lead End and lower the coil into the Coil Lamination Stacking Fixture. Guide the leads through the lower plate of the Stacking Fixture. Take care not to pinch or bend the leads.

3.3.1.5 Orient coil so that the keyway on the inside diameter of the coil tube lead end aligns with the key on the fixture.

3.3.1.6 Check that the fixture stop and key is in the full engagement with I.D. of the coil support tube and that the tube end is in contact with the shoulder of the stop.

3.3.1.7 Detach rigging used for crane lift.

3.3.1.8 Spray the outer surface of the inner coil with Dry Teflon Spray.

3.3.2 Outer Coil Assembly

3.3.2.1 Clean the ID of the Outer Tube. Swab the ID with a lint free swab soaked with alcohol. Remove all foreign material. Dry with a lint free swab.

3.3.2.2 Attach rigging to Non-Lead End of the Outer Coil Assembly for crane lift.

3.3.2.3 Lift the Outer Coil Assembly from the horizontal to vertical attitude by the Non-Lead End and carefully center the Outer Coil Assembly over the Inner Coil Assembly on the Lamination Stacking Fixture.

3.3.2.4 Orient the Outer Coil Assembly so that the pin protruding from lead end aligns centrally with the line marked on the OD of the Inner Coil Assembly.

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- 3.3.2.5 Slowly lower the Outer Coil Assembly with the crane to engage the Inner Coil assembly. Take care not to damage the leads. Continue to lower the Outer Coil with the crane, keeping the pin on the centerline of the marked line. Near the end of vertical travel the pin on the Outer Coil engages a slot on the tooling key to align the Inner and Outer Coils. Seat the lead end of the outer coil assembly on the shoulder of the tooling.
- 3.3.2.6 Detach rigging used for crane lift.
- 3.3.3 Press Pin
 - 3.3.3.1 Install 15/64" diameter drill bushing into drill fixture and mount fixture to Lamination Stacking fixture & drill 15/64" diameter hole through the wall of the Outer and Inner Tube. Vacuum out all chips. Replace the drill bushing with one to ream 0.250" diameter hole. Using reamer, open the hole to 0.2495-0.2498 inch diameter. Vacuum out any chips.
 - 3.3.3.2 Remove the drilling fixture.
 - 3.3.3.3 Install pin 12011155 into through hole until pin is just below the OD of outer coil.
- 3.3.4 Final Preparation
 - 3.3.4.1 Attach rigging and remove assembled coil from Lamination Stacking fixture. Use lifting tool attached to both inner & outer coil on lead end.
 - 3.3.4.2 Lower the Coil Assembly to its horizontal attitude. The coil must be supported by a flat surface at its quarter points until the next operation. Do not pinch or bend leads. The leads should protrude straight out from the tube.
 - 3.3.4.3 Detach rigging used for crane lift.
 - 3.3.4.4 Rubber stamp assembly with P/N 12011102-applicable dash no. and applicable Rev letter in 0.13 high characters in location shown on Dwg.

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4.0 Quality Assurance Provisions:

4.1 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.

4.2 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.

5.0 Preparation for Delivery:

N/A