

Document ID:



10789

Incoming Magnet Repair Inspection/Survey

318898 / Rev. D

Job No: 442
MSD Project/Task No.: 30/30.13.4.6
M + S Project/Task No.: 30/30.13.4.6

Place This Side Down For Scanning!!!



Rework/Inspection Travelers

LNQB2502-0

Document ID:



10789

Job No.:



442

Project/Task No.



30/30.13.4.6

Series:



LNQB

Serial No:



LNQB2502

Rework ID:



0

Specification No.:



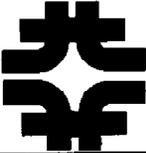
318898

Revision:



D

LNQB2502-0

	<p>Fermi National Accelerator Laboratory Batavia, IL 60510</p>	
<p>Conventional Magnet/Device Incoming Magnet Repair Inspection/Survey</p>		
<p>Reference Drawing(s):</p>		
<p>Project # Task #: 30/30.13.4.6 Job #: 442</p>		
<p>Released by: Jan Szal Magnet/Device Series: LNQB</p>		
<p>Date: 2/3/2009 4:03:41 PM Scan Pages: 13</p>		
<p>Prepared by: B.Jensen</p>		
<p>Title</p>	<p>Signature</p>	<p>Date</p>
<p>TD / Process Engineering</p>	<p>Bob Jensen <small>Bob Jensen / Designee</small></p>	<p>12/5/07</p>
<p>TD / E&F Assembly Supervisor</p>	<p>Dan Smith <small>Dan Smith / Designee</small></p>	<p>12/5/07</p>
<p>TD / E&F Production Physicist</p>	<p>George Velev <small>Gueorgui Velev / Designee</small></p>	<p>12/5/07</p>

Incoming Magnet Repair / Inspection Survey

Magnet / Device Serial No.: LNQB2502-0

Note(s): AKA: LQ2502

Revision Page

Revision	Step No.	Revision Description	TRR No.	Date
None	N/A	Initial Release	N/A	6/30/95
A	3.2	Transferred from Mac to PC format. Inserted a Radiation and Lead Paint Survey. Changed cover page approval list.	0945	2/3/00
B	Cover 4.2 4.5 4.6 6.1 6.2 8.1 10.1	Corrected spelling of Devise to Device. Add a no 'Removal/Replacement.. check box. Changed 'No Damage Noted' to 'If No Damage is noted, check no damage box. Added check box Added a no water path check box, added if no water path, check box. Add a no water path check box, added if no water path, check box. Added a no water path check box, added if no water path, check box Added check box, 'No MFA/CAC Action Required.' Deleted step, 'O.K. to proceed' tag, not used	1231	9/18/01
C	2.2 7.2	Update DSR Update DSR	1600	1/28/04
D	CvrPge RevPge 2.2 3.0 5.1 5.2 5.2 5.3 7.1 7.2 8.2 9.0	Updated to new format Updated to new format Updated: Added check boxes. New: Physically check all bolts holding magnet cores..... Removed: Step was redundant (serial number on btm of page). Added: Checkboxes to indicate Acceptable or Damaged Changed: Sign-off to Inspector instead of Technician Removed: Acquire previous data (data readily available OnBase) Added: Upper and Lower Magnet flow check Added: Upper and Lower Hydro check with Pass/Fail boxes. Updated: Added check boxes Updated to new format	1944	12/5/07

Ensure appropriate memos and specific instructions are placed with the traveler before issuing the sub traveler binder to production.

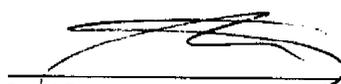
1.0 General Notes

- 1.1 White (Lint Free) Gloves (Fermi stock 2250-1800) or Surgical Latex Gloves (Fermi stock 2250-2494) shall be worn by all personnel when handling all product parts after the parts have been prepared/cleaned.
- 1.2 All steps that require a sign-off shall include the Technician/Inspectors first initial and full last name.
- 1.3 No erasures or white out will be permitted to any documentation. All incorrectly entered data shall be corrected by placing a single line through the error, initial and date the error before adding the correct data.
- 1.4 All Discrepancy Reports issued shall be recorded in the left margin next to the applicable step.
- 1.5 Personnel shall perform all tasks in accordance with current applicable ES&H guidelines and those specified within the step.
- 1.6 Cover the product/assembly with Green Herculite (Fermi stock 1740-0100) when not being serviced or assembled.

2.0 Parts Kit List

- 2.1 No Parts Kit List required.
- 2.2 Update DSR.

Update DSR Keywords	<input checked="" type="checkbox"/>
Location	<input checked="" type="checkbox"/>
Location Verified Date	<input checked="" type="checkbox"/>
Status	<input checked="" type="checkbox"/>
Make entry regarding work performed.	<input checked="" type="checkbox"/>



 Lead Person

2-4-09

 Date

3.0 Magnet Safety Check prior to Truck Un-loading

3.1 Physically check all bolts holding magnet cores together are finger tight. If any bolts are loose, acquire proper dwg/torque values and Production tighten all bolts to the proper torque value.

Note: Prior to tightening the bolts, ensure that the keyway stock is installed and the cores/keyway stock are in the correct alignment position.

Record torque value N/A ft/lbs

Welded Magnet, no action needed!

[Signature]
Inspector(s)

2-4-09
Date

N/A D.G.
Technician(s)

2-4-2009
Date

4.0 Hazard Survey

4.1 Perform a Radiation Survey and record results below. Describe Location and Level of any "HOT" spots.

mR@ 1 Foot

None Radioactive

Note(s):

If device is more than Radiation Class 1, reject acceptance of the device, unless there is written authorization from the Section Head.

If written authorization is given attach to the traveler.

[Signature]
Technician(s)

2-04-09
Date

4.2 Send a sample of the paint to ES & H for lead testing, unless previously cleared by ES & H

No Lead
ES & H Approved

Lead Based Paint
Follow Precautions Below

NO PAINT REMOVED

[Signature]
Technician(s)

2-4-2009
Date

6.0 Electrical Inspection

6.1 Perform a Resistance (R), Inductance (Ls), and 'Q' electrical inspection and record the results below.

Equipment Serial No. <u>32-1515, 84619</u>					
	Resistance	Ls @1KHz	Q@1KHZ	Ls @100Hz	Q @ 100Hz
Upper Half	_____				
Lower Half					
Total Magnet	<u>51.2mΩ</u>	<u>1.71mH</u>	<u>11.6</u>	<u>1.74</u>	<u>16.5</u>

[Signature]
Inspector

2-4-09
Date

6.2 Hipot the Magnet.

Equipment Serial No. <u>A20503</u>			
500 Volts with < 5μA	Total Magnet	Upper Half	Lower Half
Coil to Core	<u>< 1 μA</u>	_____	_____
Coil to Beam Tube	_____		
Core to Beam Tube			

[Signature]
Inspector

2-4-09
Date

6.3 Perform Ring Test at 100 Volts. Attach the Ring Test results to the back of this traveler.

[Signature]
Inspector

2-4-09
Date

7.0 Flow Test and Hydro

7.1 Perform a flow test at a ΔP of 60 psi and 100 psi as per the Mechanical (flow) Inspection (ES-318968)

No Water Cooling Passages.

	INNER	OUTER	
	Upper Magnet	Lower Magnet	Full Magnet
ΔP of 60 psi	10.0 gpm	9.4 gpm	gpm
ΔP of 100 psi	13.1 gpm	12.1 gpm	gpm

Note(s): Include a diagram of the water input and output test locations, and what part of the magnet is being tested.

D. Odu
Inspector

2-6-2009
Date

7.2 Perform a hydro static check of the manifold/coil system at 500 psi for 30 minutes.

No Water Cooling Passages.

	INNER		OUTER			
	Upper Magnet		Lower Magnet		Full Magnet	
	Pass	Fail	Pass	Fail	Pass	Fail
500 psi/30 mins	X		X			

D. Odu
Inspector

2-6-2009
Date

8.0 Beam Tube Vacuum Inspection

8.1 Perform a vacuum leak check on the Beam Tube.

Check box if no Beam Tube is installed in the Magnet.

PART NO.		SCALE UNITS BEFORE HELIUM PROBE	SCALE UNITS WHILE ENCLOSURE FLOODING	DETERMINATION OF MINIMUM DETECTABLE LEAK				
DATE TIME	OPERATOR'S LAST NAME			MDS + ((Response - Bckgrnd) ÷ Leak Value) = MDL				

D. GAW
Inspector

2-6-2009
Date

8.2 Update the DSR.

Update DSR Keywords

Location

Location Verified Date

Status

Make entry regarding work performed.

D. GAW
Lead Person

2-9-2009
Date

8.3 Photograph the magnet, and store in OnBase.

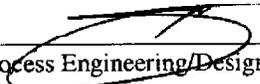
D. GAW
Inspector

2-9-2009
Date

9.0 Production Complete

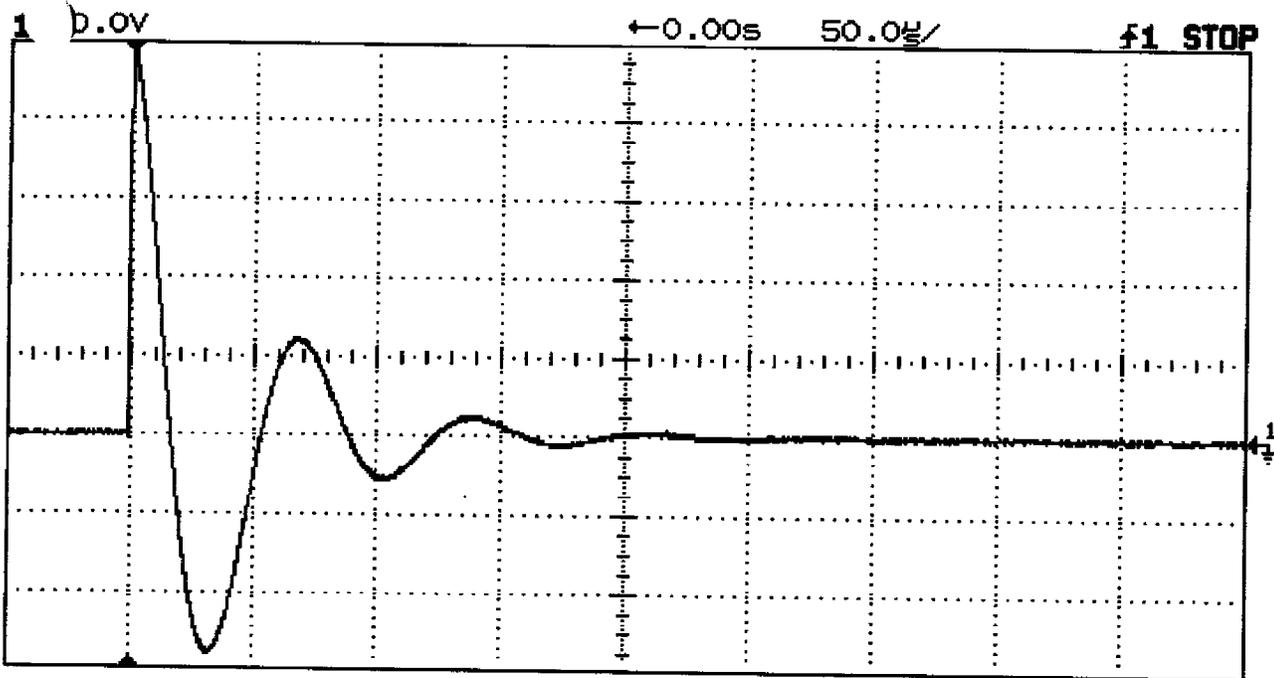
9.1 Process Engineering verify that the Traveler is accurate and complete. This shall include a review of all steps to ensure that all operations have been completed and signed off. Ensure that all Discrepancy Reports and dispositions have been reviewed by the Responsible Authority for conformance before being approved.

Comments:


Process Engineering/Designee

2-9-09

Date



Chan	State	Volts/Div	Position	Cplg	BW Lim	Inv	Probe
Chan 1	On	20.00 V	-20.00 V	DC	Off	Off	10:1
Chan 2	Off	100.0mV	0.000 V	DC	Off	Off	1:1

Horizontal	Mode	Main Time/Div	Main Delay	Time Ref	Delayed Time/Div	Delayed Delay
Horizontal	Normal	50.00us/	0.000 s	Left	-----	-----

Trigger Mode	Source	Level	Holdoff	Slope	Couplg	Reject	NoiseRej
Normal	Ch 1	5.000 V	200.0ns	Pos	DC	HF	On

Display Mode: Normal

Traveler	318898
Step #	6.3
Magnet Serial Number	LNQB2502
Technician	J. G.
Page Count	1 of 1