

DR's for Serial # **QXFA206**

<i>DR</i>	<i>Description</i>	<i>Status</i>	<i>Disp.</i>	<i>Action Req</i>	<i>Closed Date</i>
AM-120	Spacer parts received with chips	F	UAI		4/30/2019
AM-124	Conductor wire tubing during L1	F	RWK	5/20/2019	7/26/2019
AM-125	Conductor wire tubing during L2	F	RWK	5/20/2019	7/26/2019
AM-129	Wedges displaced during rotation	F	RWK	5/20/2019	6/19/2019
AM-130	Scuff in insulation	F	UAI		5/28/2019
AM-134	Shorts in circuit trace IL & OL	F	RPR	6/12/2019	6/12/2019
AM-135	Chip on coating of end spacer B2OR2	F	RPR	5/28/2019	8/15/2019

MAGNET DISCREPANCY REPORT

DR NUMBER: AM-120

Preliminary: 3-14-19
Action Required:
Final: 4-30-19

1.8

Part No: See Below		Rev	Traveler No.: None	Rev:
Part Name: Spacer, Coated			Traveler OP No.: None	
Qty: 4	Ser. No./Lot No.: QXFA2056 <i>MB</i>		Operation: Receiving Inspection	
Initiator: H. Hocker		Life No.: 22131	Date: 3-14-19	
Type of Problem: (Check) Mechanical Electrical Other <input checked="" type="checkbox"/>				
Description			Disposition	CE
Continue on reverse side if required			<small>RWK, RPR, UAI, SCP</small>	DQAR
Spacer parts as received exhibit chips in coating. See attached photos			<i>UAI</i>	<i>J/S</i>
(1) F10042028 B2 OR3				
(1) F10042030 B2 OR2				
(1) F10042033 B2 OC2				
(1) F10042600 B2 OC5				
<i>(1) F10042029 B2-OR1</i>				
Instructions: Continue on additional sheets if required			Name	Life #
<i>PARTS INSPECTED IAW US-HI-LUMI-DOU-2170</i>				
<i>3-15-19 (WITH BNL MARKUPS) "DISPOSITION</i>				
<i>OF NON-CONFORMING PLASMA COATED PARTS"</i>				
Reason for Discrepancy:				
<i>UNKNOWN</i>				
Corrective Action:				
<i>NOTIFY AUP PROGRAM OFFICE - DONE 3/8/19</i>				
<i>P 3/14/19</i>				
Report reviewed by CE <i>J. Schmale</i>			Date <u>4/30/19</u>	
DQAR <i>[Signature]</i>			Date _____	

Distribution:
 Magnet Traveler
 Section Head, Electrical Systems
 Section Head, Production Engineering

DQAR
 Cognizant Engineer *Schmale*

Distributed by *[Signature]*
 Date: 3.14.19

**MAGNET DISREPANCY REPORT
(Continuation)**

Sketch:

Instructions:	Name	Life #	Date

AM -120

218

4/11/19

D.R.

- Spacer 2, R.E. L2
B2-OR2, F10042030
Op: Wind L2-NL
Chip < 1.5mm located on the I.D., non-transition side, wedge to spacer interface
- Spacer 2, L.E. Layer 2
B2-OC2, F10042033
Op: Wind L2-LE
Chip < 1.5mm located on the O.D., 3rd relief slot closest to the non-transition side
- saddle, R.E. L2, B2-OR3
F10042028
Op: Wind L2-LE.
Chip < 1.5mm located on the O.D., relief slot closest to the transition side + the splice block.
- Splice Block, L.E. L2, B2-OC5
F10042600
Op: Wind L2-LE
Chip < 1.5mm, non-transition side, I.D., adjacent to the splice block to Lead End Spacer interface.

AM-120

3/8

• SPACER, RE L2

B2 - ORI F10042029

EXPOSED SPACER TIP $< 1.5m$ LOCATED ON
THE NON-TRANSITIONAL SIDE, OD

Name: SADDLE, RETURN END LAYER 2 B2-OR3
Dwg: F10042028
Rev: C
U/M: EA **Qty:** 1
Op: WIND L2 - LE

P
 C
 No: E 10041406
 DrawingDwg#: E 10042030
 L2 RE Spacer-2
 B2-OR2
 ID#: 14

Name: SPACER-2, RETURN END LAYER 2
 B2-OR2
Dwg: F10042030
Rev: -
U/M: EA **Qty:** 1
Op: WIND L2 - NL

Part
Coat
L2RE Spacer-2
B2-OR2

F10042030
ID# : 1A

Name: SPACER-2, RETURN END LAYER 2
B2-OR2
Dwg: F10042030
Rev: -
U/M: EA Qty: 1
Op: WIND L2 - NL

Name: SPACER-2, LEAD END LAYER 2 B2-
OC2
Dwg: F10042033
Rev: -
U/M: EA **Qty:** 1
Op: WIND L2 - LE

Name: SPLICE BLOCK, LEAD END LAYER 2
B2-OC5
Dwg: F10042600
Rev: -
U/M: EA **Qty:** 1
Op: WIND L2 - LE

Part No: F10039893
CoatingDwg#: F10042600
Splice Block

MAGNET DISREPCANCY REPORT

DR NUMBER: AM-124

Preliminary: 4.29.19
 Action Required: 5.20.19
 Final: 7.26.19

Part No: <u>F10115633</u>	Rev	Traveler No.: <u>AUT-110</u>	Rev: <u>B</u>
Part Name: <u>QXFA COIL ASSEMBLY, L1</u>		Traveler OP No.: <u>930</u>	
Qty: <u>1</u>	Ser. No./Lot No.: <u>QXFA206</u>	Operation: <u>Winding</u>	
Initiator: <u>Glenn Jochen</u>		Life No.: <u>15764</u>	Date: <u>4/26/19</u>
Type of Problem: (Check) Mechanical <input checked="" type="checkbox"/> Electrical <input type="checkbox"/> Other <input type="checkbox"/>			

Description	Disposition <small>RWK, RPR, UAT, SCP</small>	CE	DQAR
<small>Continue on reverse side if required</small>			
<u>Conductor wires began to tube; popping wires from the cable matrix. This occurred while winding turning around the lead end on layer 1</u>	<u>RWK</u>	<u>98</u>	48

Instructions: Continue on additional sheets if required	Name	Life #	Date
<u>PAUSE WINDING, REDUCE CABLE TENSION, USE HANDS/DUCKBILL PLIERS TO WORK CABLE STRANDS BACK INTO POSITION, APPLY BINDER TO CABLE AND CURE WITH HEAT GUN. REPOSITION CABLE AROUND COIL END, INCREASE TENSION, CONTINUE WINDING</u>	<u>[Signature]</u>	<u>15764</u>	<u>4/19/19</u>

Reason for Discrepancy: CONDUCTOR INSTABILITY

Corrective Action: REVIEWED ISSUES WITH TECHNICIANS TO INCREASE VIGILANCE

Report reviewed by CE [Signature] Date 5/20/19
 DQAR [Signature] Date _____

Distribution:
 Magnet Traveler
 Section Head, Electrical Systems
 Section Head, Production Engineering

DQAR
 Cognizant Engineer [Signature]

Distributed by [Signature]
 Date: 4-29-19

**MAGNET DISREPANCY REPORT
(Continuation)**

Sketch:

Instructions:	Name	Life #	Date

MAGNET DISREPARANCY REPORT

DR NUMBER: AM-125

Preliminary: 4-29-19
 Action Required: 5-20-19
 Final: 7-26-19

Part No: <u>F10115633</u>	Rev	Traveler No.: <u>AUP 130</u>	Rev: <u>B</u>
Part Name: <u>QXFA COIL ASSEMBLY, L2</u>		Traveler OP No.: <u>020</u>	
Qty: <u>1</u>	Ser. No./Lot No.: <u>QXFA 206</u>		Operation: <u>Winding</u>
Initiator: <u>Glenn Jochen</u>		Life No.: <u>15764</u>	Date: <u>4/26/19</u>
Type of Problem: (Check) Mechanical <input checked="" type="checkbox"/> Electrical <input type="checkbox"/> Other <input type="checkbox"/>			

Description	Disposition <small>RWK, RPR, UAI, SCP</small>	CE	DQAR
Continue on reverse side if required			
<u>Conductor wires began to tube; popping wires from the cable matrix. This occurred while winding turn 19 around the non-lead end on Layer 2.</u>	<u>RWK</u>	<u>JS</u>	<u>UB</u>

Instructions: Continue on additional sheets if required	Name	Life #	Date
<u>PAUSE WINDING, REDUCE CABLE TENSION, USE HANDS/DUCKBILL PLIERS TO WORK CABLE STRANDS BACK INTO POSITION, APPLY BINDER TO CABLE AND CURE WITH HEAT GUN, REPOSITION CABLE AROUND COIL END, INCREASE TENSION, CONTINUE WINDING</u>	<u>GJochen</u>	<u>15764</u>	<u>4/26/19</u>

Reason for Discrepancy:
CONDUCTOR INSTABILITY

Corrective Action:
REVIEWED ISSUE WITH TECHNICIANS TO INCREASE VIGILANCE

Report reviewed by CE [Signature] Date 5/20/19
 DQAR [Signature] Date _____

Distribution:
 Magnet Traveler _____ DQAR _____ Distributed by [Signature]
 Section Head, Electrical Systems _____ Cognizant Engineer J. Schmalzle Date: 4.29.19
 Section Head, Production Engineering _____

**MAGNET DISREPARCY REPORT
(Continuation)**

Sketch:

Large empty rectangular area for sketching.

Instructions:	Name	Life #	Date

MAGNET DISREPCANCY REPORT

DR NUMBER: AM-129

Preliminary: 5-1-19
 Action Required: 5-20-19
 Final: 6-19-19

Part No: F1011563		Rev	Traveler No.: AUP-140	Rev: B	
Part Name: QXFA COIL ASSEMBLY			Traveler OP No.: 150		
Qty: 1	Ser. No./Lot No.: QXFA 206 L2		Operation: Curing		
Initiator: Glenn Jochen		Life No.: 15764	Date: 04/29/2019		
Type of Problem: (Check) Mechanical <input checked="" type="checkbox"/> Electrical <input type="checkbox"/> Other <input type="checkbox"/>					
Description			Disposition	CE	DQAR
Continue on reverse side if required			<small>RWK, RPR, UAI, SCP</small>		
Two layer 2 wedges fell out of the coil as the mandrel was rotated to begin teflon wrapping.					
The wedges were located ~40" from the lead end and originated from both sides					
- WEDGES DROPPED ONLY A SHORT DISTANCE ONTO CARDBOARD BOX ON WINDING TABLE.			RWK	98	
Instructions:	Continue on additional sheets if required		Name	Life #	Date
CAREFULLY INSPECT WEDGES RE-INSTALL WEDGES IN COIL			<i>[Signature]</i>	15764	6/19/19
Reason for Discrepancy:					
INSUFFICIENT NUMBER OF STRAPS INSTALLED PRIOR TO TEFLON WRAPPING.					
Corrective Action:					
REVISION TO TRAVELER AUP-120 & AUP-140 TO VERIFY STRAPS PRIOR TO ROLL-OVER					
Report reviewed by CE <i>[Signature]</i>			Date <u>5/20/19</u>		
DQAR <i>[Signature]</i>			Date _____		

Distribution:
 Magnet Traveler
 Section Head, Electrical Systems
 Section Head, Production Engineering

DQAR
 Cognizant Engineer Schmalz

Distributed by *[Signature]*
 Date: 5-2-19

MAGNET DISREPANCY REPORT
(Continuation)

Sketch:

Instructions:	Name	Life #	Date

MAGNET DISREPARCY REPORT

DR NUMBER: Am-130

Preliminary: 5-1-19
 Action Required: -
 Final: 5-28-19

Part No: F1011563		Rev	Traveler No.: AUP-130	Rev: B
Part Name: QXFA COIL ASSEMBLY			Traveler OP No.: 820	
Qty: 1	Ser. No./Lot No.: QXFA 206 L2		Operation: Winding	
Initiator: Glenn Jochen		Life No.: 15764	Date: 04/29/2019	
Type of Problem: (Check) Mechanical <input checked="" type="checkbox"/> Electrical <input type="checkbox"/> Other <input type="checkbox"/>				

Description	Disposition <small>RWK, RPR, UAI, SCP</small>	CE	DQAR
Continue on reverse side if required			
Scuffed insulation on turn 28, transition side, located 48" from the lead end straight section			
<i>AND STAINED</i>	<i>UAI</i>	<i>JS</i>	<i>[Signature]</i>
<i>ATTEMPT TO CLEAN WITH ALCOHOL</i>			
<i>UNSUCCESSFUL</i>			

Instructions: Continue on additional sheets if required	Name	Life #	Date
<i>USE AS IS</i>			

Reason for Discrepancy:

UNKNOWN

Corrective Action:

-

Report reviewed by CE <i>J. Schmiele</i>	Date <i>5/20/19</i>
DQAR <i>[Signature]</i>	Date _____

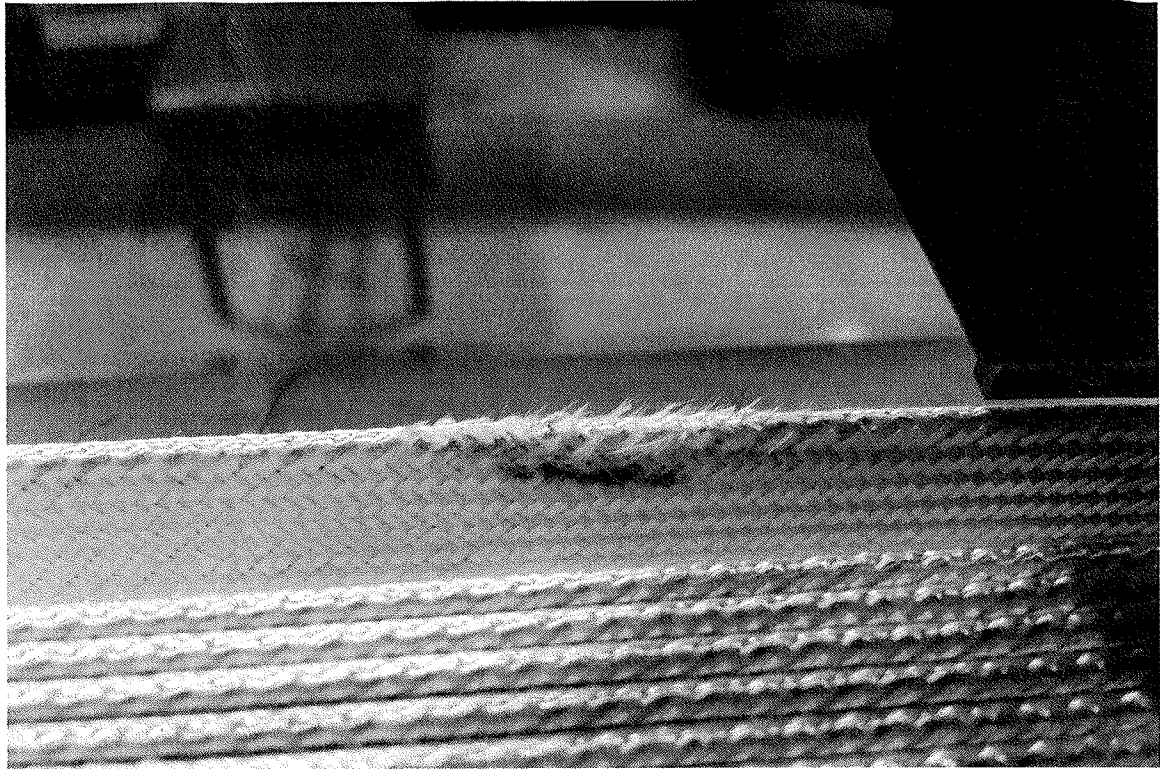
Distribution:

Magnet Traveler	DQAR	Distributed by <i>[Signature]</i>
Section Head, Electrical Systems	Cognizant Engineer <i>Schmiele</i>	Date: <i>5-8-19</i>
Section Head, Production Engineering		

**MAGNET DISREPANCY REPORT
(Continuation)**

Sketch:

Instructions:	Name	Life #	Date



MAGNET DISREPARCY REPORT

DR NUMBER: AM-134

Preliminary: 5-23-19
 Action Required: 6-12-19
 Final: 6-12-19

Part No: <u>F10108759</u>	Rev	Traveler No.: <u>AUP-160</u>	Rev: <u>B</u>
Part Name:		Traveler OP No.: <u>305</u>	
Qty: <u>1</u>	Ser. No./Lot No.: <u>QXFA206</u>	Operation: <u>Hipot Instrumentation Circuit</u>	
Initiator: <u>Toby Levine</u>		Life No.: <u>21627</u>	Date: <u>5/22/19</u>
Type of Problem: (Check) Mechanical <input type="checkbox"/> Electrical <input checked="" type="checkbox"/> Other <input type="checkbox"/>			

Description	Disposition <small>RWK, RPR, UAI, SCP</small>	CE	DQAR
Continue on reverse side if required			
<u>Numerous shorts appeared while hipotting the instrumentation circuit (holes in the kapton insulation layer) at 3800V.</u>			
<u>Inner layer circuit - one at a voltage tap.</u>	<u>RPR</u>	<u>JS</u>	<u>JS</u>
<u>Outer layer " - Nine at the quench heaters and one at a voltage tap.</u>	<u>REPLACE</u>	<u>JS</u>	<u>JS</u>

Instructions: Continue on additional sheets if required	Name	Life #	Date
<u>INNER LAYER CIRCUIT - REPAIR PIN HOLE WITH A PATCH OF 1 MIL KAPTON TAPE</u>	<u>Levine</u>	<u>21627</u>	<u>5/24/19</u>
<u>OUTER LAYER CIRCUIT - DO NOT USE, PLACE CIRCUIT IN QUARANTINE.</u>	<u>Levine</u>	<u>21627</u>	<u>5/24/19</u>
<u>REPLACE WITH TRACE SENT FOR NEXT COIL</u>			

Reason for Discrepancy: unknown

Corrective Action: REVIEWED w/ AUP ROSSMAN OFFICE. A REVISION TO THE METHOD OF PREPARATION WAS MADE

Report reviewed by CE [Signature] Date 6/4/19
 DQAR [Signature] Date _____

Distribution:
 Magnet Traveler _____
 Section Head, Electrical Systems _____
 Section Head, Production Engineering _____

DQAR Cognizant Engineer Schmidt
 Distributed by [Signature]
 Date: 5-28-19

MAGNET DISREPAncy REPORT (Continuation)

Sketch:

Instructions:	Name	Life #	Date

MAGNET DISREPAncy REPORT

DR NUMBER: AM-135 1/2

Preliminary: 5-23-19
 Action Required: 5-28-19
 Final: 8-16-19

Part No: <u>F10108759</u>	Rev	Traveler No.: <u>AUP-160</u>	Rev: <u>B</u>
Part Name:		Traveler OP No.: <u>245</u>	
Qty: <u>1</u>	Ser. No./Lot No.: <u>QXFA206</u>	Operation: <u>Fill voids between end parts & cable turns</u>	
Initiator: <u>T. Levine</u>		Life No.: <u>21627</u>	Date: <u>5/16/19</u>
Type of Problem: (Check) Mechanical <input checked="" type="checkbox"/> Electrical <input type="checkbox"/> Other <input type="checkbox"/>			

Description	Disposition <small>RWK, RPR, UAI, SCP</small>	CE	DQAR
Continue on reverse side if required			
<u>Ceramic coating is chipped on outer top surface of NLE outer layer and spacer # B20R2 where relief cuts start on transition side of cable winding face.</u>	<u>RPR</u>	<u>9/1</u>	1/1

Instructions: Continue on additional sheets if required	Name	Life #	Date
<u>COVER CHIPPED AREA WITH KAPTON TAPE, TUCKED AS FAR AS POSSIBLE BETWEEN SPACER AND CABLE AND FOLDED OVER CORNER OF SPACER. FILL REMAINING GAP WITH FIBERGLASS CLOTH.</u>	<u>T. Levine</u>	<u>21627</u>	

Reason for Discrepancy:
COATING IS FRAGILE & SUBJECT TO CHIPPING IN PROCESS

Corrective Action:
INCREASED VIGILANCE IN HANDLING

Report reviewed by CE J. Schmalz Date 5/28/19
 DQAR [Signature] Date _____

Distribution:
 Magnet Traveler Section Head, Electrical Systems
 Section Head, Production Engineering

DQAR Cognizant Engineer Schmalz

Distributed by [Signature]
 Date: 5-23-19

**MAGNET DISREPANCY REPORT
(Continuation)**

Sketch:

Instructions:	Name	Life #	Date

B2-OR2

CHIP

B2-OR2

DR AM-135
SHT 2