

LR Motor Shop Repairs

Job Number 104463

Prepared for ALCOA REMEDIATION

1401 BAUXITE CUTOFF BAUXITE AR 72011

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AC Inspection as Found - MOTOR SHOP LR

AC Inspection - Rev. 2: R2112020

1.0





AC Inspection as Found ALCOA REMEDIATION

1401 BAUXITE CUTOFF BAUXITE, AR 72011

Serial Number:

FolderID: 104463 FormID: 24137461

AC Inspection - Rev. 2

Location: MOTOR SHOP LR

R2112020

Description:125 HP U.S. ELECTRIC

Hi-Speed Job Number:	104463
Product Number:	TYPE-RU
Spec/ID #:	R-9982-01-189
Serial Number:	R2112020
HP/kW:	125 (HP)
RPM:	1770 (RPM)
Voltage:	460
Current:	148 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	ODP
# of Leads:	3
J-box Included:	Complete
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	No
Shaft Machined Fit Repairs Required:	Yes
Bearing Housing Machined Fit Repairs Required:	No
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: **a** 2 - High





14 - Good

Overall Condition

1. Report Date 04/23/2025

2. Nameplate Picture



3. Photos of all six sides of the machine.



















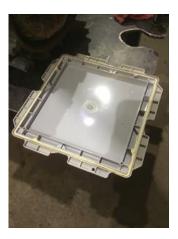














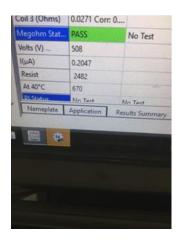




Dirty 5. Is this a UL Listed Motor 6. Is the motor water cooled or can be pressure checked before teardown (No) No Initial Mechanical/Electrical 7. Does Shaft Turn Freely? (Y) Yes 8. Does the shaft require T.I.R in Lathe to identify additional repairs? (No) No 9. Does Shaft Have Visible Damage? (No) No 10. Assembled Shaft Runout Inches 11. Assembled Shaft End Play inches 12. Air Gap Variation <10% 13. Lead Condition (P) Pass 14. Lead Length 6 Inches 15. Does it have Lugs?, If so what is the Stud Size? (No) No 16. Lead Numbers 17. Are the Leads insulated with Chico or other material (No) No 18. Frame Condition (N) No 19. Pass 19. Fan Condition (N) No 20. Does motor have internal fan? (No) No 21. Broken or Missing Components Anti-rotation device, and cover		4.	Describe the Overall Condition of the Equipment as Received	
6. Is the motor water cooled or can be pressure checked before teardown Initial Mechanical/Electrical 7. Does Shaft Turn Freely? 8. Does the shaft require T.I.R in Lathe to identify additional repairs? (No) No 9. Does Shaft Have Visible Damage? (No) No 10. Assembled Shaft Runout Inches 11. Assembled Shaft End Play inches 12. Air Gap Variation <10% 13. Lead Condition (P) Pass 14. Lead Length 6 Inches 15. Does it have Lugs?, If so what is the Stud Size? (No) No 16. Lead Numbers 17. Are the Leads insulated with Chico or other material (No) No 18. Frame Condition pass 19. Fan Condition (N) Na 20. Does motor have internal fan? (No) No 21. Broken or Missing Components Anti-rotation device, and cover			Dirty	
Initial Mechanical/Electrical 7. Does Shaft Turn Freely? 8. Does the shaft require T.I.R in Lathe to identify additional repairs? 9. Does Shaft Have Visible Damage? 10. Assembled Shaft Runout 11. Assembled Shaft End Play 12. Air Gap Variation <10% 13. Lead Condition 14. Lead Length 15. Does it have Lugs?, If so what is the Stud Size? 16. Lead Numbers 17. Are the Leads insulated with Chico or other material 18. Frame Condition 19. Fan Condition 10. No No 20. Does motor have internal fan? 10. Anti-rotation device, and cover		5.	Is this a UL Listed Motor	(No) No
7. Does Shaft Turn Freely? 8. Does the shaft require T.I.R in Lathe to identify additional repairs? 9. Does Shaft Have Visible Damage? 10. Assembled Shaft Runout 11. Assembled Shaft End Play 12. Air Gap Variation <10% 13. Lead Condition 14. Lead Length 15. Does it have Lugs?, If so what is the Stud Size? 16. Lead Numbers 17. Are the Leads insulated with Chico or other material 17. Are the Leads insulated with Chico or other material 18. Frame Condition 19. Fan Condition 10. No 20. Does motor have internal fan? 10. Anti-rotation device, and cover		6.	Is the motor water cooled or can be pressure checked before teardown	(No) No
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9. Does Shaft Have Visible Damage? 10. Assembled Shaft Runout 11. Assembled Shaft End Play 12. Air Gap Variation <10% 13. Lead Condition 14. Lead Length 15. Does it have Lugs?, If so what is the Stud Size? 16. Lead Numbers 17. Are the Leads insulated with Chico or other material 18. Frame Condition 19. Frame Condition 19. Fan Condition 10. No No 11. Broken or Missing Components 10. Anti-rotation device, and cover		7.	Does Shaft Turn Freely?	(Y) Yes
10. Assembled Shaft Runout 11. Assembled Shaft End Play 12. Air Gap Variation <10% 13. Lead Condition 14. Lead Length 15. Does it have Lugs?, If so what is the Stud Size? 16. Lead Numbers 17. Are the Leads insulated with Chico or other material 18. Frame Condition 19. Fan Condition 20. Does motor have internal fan? 21. Broken or Missing Components Anti-rotation device, and cover		8.	Does the shaft require T.I.R in Lathe to identify additional repairs?	(No) No
11. Assembled Shaft End Play 12. Air Gap Variation <10% 13. Lead Condition 14. Lead Length 15. Does it have Lugs?, If so what is the Stud Size? 16. Lead Numbers 17. Are the Leads insulated with Chico or other material 18. Frame Condition 19. Fan Condition 20. Does motor have internal fan? 21. Broken or Missing Components Anti-rotation device, and cover		9.	Does Shaft Have Visible Damage?	(No) No
12. Air Gap Variation <10% 13. Lead Condition (P) Pass 14. Lead Length 6 Inches 15. Does it have Lugs?, If so what is the Stud Size? (No) No 16. Lead Numbers 17. Are the Leads insulated with Chico or other material (No) No 18. Frame Condition pass 19. Fan Condition (N) NA 20. Does motor have internal fan? (No) No 21. Broken or Missing Components Anti-rotation device, and cover		10.	Assembled Shaft Runout	Inches
13. Lead Condition 14. Lead Length 15. Does it have Lugs?, If so what is the Stud Size? 16. Lead Numbers 17. Are the Leads insulated with Chico or other material 18. Frame Condition 19. Fan Condition 20. Does motor have internal fan? 21. Broken or Missing Components Anti-rotation device, and cover		11.	Assembled Shaft End Play	inches
14. Lead Length 15. Does it have Lugs?, If so what is the Stud Size? 16. Lead Numbers 17. Are the Leads insulated with Chico or other material 18. Frame Condition 19. Fan Condition 20. Does motor have internal fan? 21. Broken or Missing Components Anti-rotation device, and cover		12.	Air Gap Variation <10%	
15. Does it have Lugs?, If so what is the Stud Size? (No) No 16. Lead Numbers 17. Are the Leads insulated with Chico or other material (No) No 18. Frame Condition pass 19. Fan Condition (N) NA 20. Does motor have internal fan? (No) No 21. Broken or Missing Components Anti-rotation device, and cover		13.	Lead Condition	(P) Pass
16. Lead Numbers 17. Are the Leads insulated with Chico or other material 18. Frame Condition 19. Fan Condition 20. Does motor have internal fan? 21. Broken or Missing Components Anti-rotation device, and cover		14.	Lead Length	6 Inches
 17. Are the Leads insulated with Chico or other material 18. Frame Condition 19. Fan Condition 20. Does motor have internal fan? 21. Broken or Missing Components Anti-rotation device, and cover 		15.	Does it have Lugs?, If so what is the Stud Size?	(No) No
18. Frame Condition pass 19. Fan Condition (N) NA 20. Does motor have internal fan? (No) No 21. Broken or Missing Components Anti-rotation device, and cover		16.	Lead Numbers	1-3
19. Fan Condition 20. Does motor have internal fan? (No) No 21. Broken or Missing Components Anti-rotation device, and cover		17.	Are the Leads insulated with Chico or other material	(No) No
 20. Does motor have internal fan? (No) No 21. Broken or Missing Components Anti-rotation device, and cover 		18.	Frame Condition	pass
 21. Broken or Missing Components Anti-rotation device, and cover 		19.	Fan Condition	(N) NA
Anti-rotation device, and cover		20.	Does motor have internal fan?	(No) No
		21.	Broken or Missing Components	
Initial Electrical Inspection		•	Anti-rotation device, and cover	
	In	Initial Electrical Inspection		

22. Insulation Resistance/Megger





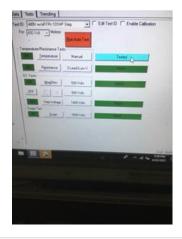
23. Winding Resistance

1-2 1-3 2-3



24. Perform Surge Test

(P) Pass



25.	Number of Stator Slots	48
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26. Stator Condition needs cleaned

27. Stator Thermistors/Ohms

28. Stator Overloads/Ohms

Mechanical Inspection

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29. Drive End Bearing Brand 30. Drive End Bearing Number- 31. Drive End Bearing Qty. 32. Drive End Bearing Type (Thrust) Thrust 33. Drive End Lubrication Type (Oil) Oil Lubricated 34. Drive End Bearing Insulation or Grounding Device? 35. Drive End Wavy Washer/Snap-Ring Other Retention Device? 36. Drive End Bearing Condition Contamination				
31. Drive End Bearing Qty. 32. Drive End Bearing Type (Thrust) Thrust 33. Drive End Lubrication Type (Oil) Oil Lubricated 34. Drive End Bearing Insulation or Grounding Device? 35. Drive End Wavy Washer/Snap-Ring Other Retention Device? 36. Drive End Bearing Condition	29.	Drive End Bearing Brand	FAG	
32. Drive End Bearing Type (Thrust) Thrust 33. Drive End Lubrication Type (Oil) Oil Lubricated 34. Drive End Bearing Insulation or Grounding Device? 35. Drive End Wavy Washer/Snap-Ring Other Retention Device? 36. Drive End Bearing Condition	30.	Drive End Bearing Number-	7222	
 33. Drive End Lubrication Type (Oil) Oil Lubricated 34. Drive End Bearing Insulation or Grounding Device? 35. Drive End Wavy Washer/Snap-Ring Other Retention Device? 36. Drive End Bearing Condition 	31.	Drive End Bearing Qty.	1	
 34. Drive End Bearing Insulation or Grounding Device? 35. Drive End Wavy Washer/Snap-Ring Other Retention Device? 36. Drive End Bearing Condition 	32.	Drive End Bearing Type	(Thrust) Thrust	
35. Drive End Wavy Washer/Snap-Ring Other Retention Device?36. Drive End Bearing Condition	33. Drive End Lubrication Type (Oil) Oil Lubricated			
36. Drive End Bearing Condition	34.	34. Drive End Bearing Insulation or Grounding Device?		
•	35.	35. Drive End Wavy Washer/Snap-Ring Other Retention Device?		
Contamination	36.	36. Drive End Bearing Condition		
	-	Contamination		



37.	Opposite Drive End Bearing Brand	FAG
38.	Opposite Drive End Bearing Number-	6212
39.	Opposite Drive End Bearing Qty.	1
40.	Opposite Drive End Bearing Type	(Ball) Ball Bearing
41.	Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
42.	Opposite Drive End Bearing Insulation or Grounding Device?	
43.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	snapping and spacer
44.	Opposite Drive End Bearing Condition	
-	Contamination and metal fatigue	



- 45. Drive End Seal
- 46. Opposite Drive End Seal

Rotor Inspection

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47.	Rotor Type/Material		(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
48.	Growler Test		(Pass) Pass
49.	Number of Rotor Bars		42
50.	Rotor Condition		
51.	List the Parts needed for the Repair	Below	
	7222		
	6212		
52.	Signature of Technician that Disasse		Сw
	Rue		
Mech	anical Fits- Rotor		
53.	Shaft Runout		0.001 inches
54.	Rotor Runout		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
55.	Coupling Fit Closest to Bearing House	ing	
	0 Degrees	90 Degrees	120 Degrees
56.	Coupling Fit Closest to the end of the		100 5
	0 Degrees	60 Degrees	120 Degrees
57.	Drive End Bearing Shaft Fit		
	0 Degrees	60 Degrees	120 Degrees
-	4.3303-4.3318-3.3308		
58.	Drive End Bearing Shaft Fit Condition	١	(F) Fail
59.	Opposite Drive End Bearing Shaft Fir	i	
	0 Degrees	60 Degrees	120 Degrees
7	2.3629-2.367-2.3630		
60.	11 3	Condition	(P) Pass
61.	Shaft Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	
Mech	anical Fits- Bearing Housings		
62.	Drive End - Endbell Bearing Fit		
	0 Degrees	60 Degrees	120 Degrees
63.	Drive End - Endbell Bearing Fit Cond	lition	(NA) Not Applicable
64.			(NA) NOT Applicable
J-1.	0 Degrees	60 Degrees	120 Degrees
	0 D0g1000	00 D0g1000	120 Dog1000
-	4.3318-4.3316-4.3317		
65.	Opposite Drive End - Endbell Bearing	g Fit Condition	(P) Pass

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66.	Bearing Cap Condition		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
67	End Bell Air Seal Fits		
07.	Drive End Air Seal	Opposite Drive End Air Seal	
	Drive Life All Seal	Opposite Drive Life All Geal	
68.	List Machine Work Needed Below		
	DE shaft bearing fit		
69.	Technician		Cw
	-		
	(freis	~	
-	Co sign DM		
Root	Cause of Failure		
70.	Failure locations		
	Bearings		
71.	Root cause of failure		
	Contamination		
Dynar	nic Balance Report		
72.	Rotor Weight and Balance Grade		
	Rotor Weight	Balance Grade	
73.	Initial Balance Readings		
	Drive End	Opposite Drive End	
74	Final Balance Readings		
,	Drive End	Opposite Drive End	
	DIVO LIIG	opposite Enve End	
75.	Technician		
Mecha	anical Fits- Rotor - Post Repair		
76.	Shaft Runout Post Repair		
77.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
	0 11 51 01 11 5 11 11	B 18 1	
78.	1 0	· · · · · · · · · · · · · · · · · · ·	100 B
	0 Degrees	90 Degrees	120 Degrees
79.	Coupling Fit Closest to the end of the	Shaft Post Repair	
, 0.	0 Degrees	60 Degrees	120 Degrees
			0 _09.000
80.	Drive End Bearing Shaft Fit Post Repa	air	
	0 Degrees	60 Degrees	120 Degrees
81.	11 0	·	
	0 Degrees	60 Degrees	120 Degrees

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82.	Shaft Air Seal Fits Post Repair			
	Drive End Air Seal	Opposite Drive End Air Seal		
	Shaft Repair Sign-off			
Asser	•			
	QC Check All Parts for Cleanliness Pr	, , , , , , , , , , , , , , , , , , ,		
	Photograph All Major Components pri	or to assembly		
86.	Final Insulation Resistance Test			
87.	Assembled Shaft Endplay			
88.	Assembled Shaft Runout			
89.	Test Run Voltage			
	Volts	Volts	Volts	
90.	Test Run Amperage			
	Amps	Amps	Amps	
01	91. Drive End Vibration Readings - Inches Per Second			
91.	•		A: - 1	
	Horizontal	Vertical	Axial	
92.	Opposite Drive End Vibration Reading	s - Inches Per Second		
	Horizontal	Vertical	Axial	
93.	Ambient Temperature - Fahrenheit			
94.	Drive End Bearing Temps - Fahrenheit			
	5 Minutes	10 Minutes	15 Minutes	
95.	Opposite Drive End Bearing Temps -	Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes	
	Document Final Condition with Pictures after paint			
97.	Final Pics and QC Review			

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- 10. <u>SEVERABILITY.</u> The partial or complete invalidity of any provision of these Standard Terms and Conditions shall not affect the enforceability of the remainder of these Standard Terms and Conditions. If any provision is found to be invalid or unenforceable, that portion shall be modified to make it enforceable or shall be stricken and the remainder of these Standard Terms and Conditions shall enforced.
- 11. **GOVERNING LAW AND JURISDICTION.** Any controversy arising out of any quotation, the purchase order, the goods sold or delivered, repair or replacement thereof, or any services provided pursuant to any quotation or any purchase order, or these Standard Terms and Conditions shall be governed by the laws of the state of Tennessee without regard to any choice of law provisions and any cause of action related in any manner thereto shall be brought only in the state or federal courts of Shelby County, Tennessee.
- 12. ABANDONED EQUIPMENT. Hi-Speed requires that Buyer promptly pick up or provide shipment instructions for Buyer equipment or other Buyer property in Hi-Speed's possession. If equipment or other Buyer property is left with Hi-Speed and not picked up within six (6) months after Hi-Speed's final action related to the applicable property (e.g. evaluation, teardown, estimate, completion of services), Hi-Speed will consider such property abandoned and may dispose of it in accordance with applicable law. Buyer agrees to hold Hi-Speed harmless for any damage or claim for such abandoned property and acknowledges that Hi-Speed may discard or recycle it at Hi-Speed's sole and absolute discretion. Specifically, Hi-Speed may sell Buyer's abandoned property at a private or public sale and retain the proceeds to offset Hi-Speed's storage, inspection and servicing costs. For the avoidance of doubt, Hi-Speed reserves its statutory and other lawful liens for unpaid charges related to abandoned property.
- 13. FORCE MAJEURE. Neither party shall be responsible for any delay or failure in performance of any party of the quotation, purchase order or these Standard Terms and Conditions to the extent that such delays or failures are caused by fire, flood, earth quake, explosion, war, embargo, government requirement, civil or military authority, acts of God, or any other circumstances beyond its reasonable control and not involving any fault or negligence on the party affected ("Condition"). If any such Condition occurs, the party delayed or unable to perform shall promptly give written notice to the other party and, if such Condition remains at the end of thirty (30) days, the party affected by the other party's delay and inability to perform may elect to (i) terminate such order or part thereof, or (ii) suspend the order for the duration of the Condition, if the Buyer is the suspending party, buy elsewhere comparable material to be sold under the order and apply to any commitment the purchase price of such purchase, and resume performance of the order once the Condition ceases, with an option in the affected party to extend the period of this order up to the length of the time the Condition endures.
- 14. <u>NONWAIVER.</u> No course of dealing or failure of either party to strictly enforce any term, right, or condition of these Standard Terms and Conditions will be construed as a waiver of such term, right or condition. Any waiver by Hi-Speed will only be in writing and will waive no succeeding breach of a term, right or condition.
- 15. **ASSIGNMENT.** The rights and obligations of the parties shall neither be assigned nor delegated without the prior written consent of the other party. However, any party may assign or delegate its respective rights and obligations, in whole or in part, (i) to any subsidiary, (ii) pursuant to other financing, merger or reorganization or (iii) pursuant to any sale or transfer of substantially all of the assets of the assigning party. These Standard Terms and Conditions shall bind the heirs, successors and assigns of the parties hereto.
- 16. NO INDIVIDUAL LIABILITY. Notwithstanding any other agreement to the contrary, the Buyer agrees that in no event will the Buyer hold and HI-Speed owner, director, officer or employee personally liable for unintentional tortious conduct or conduct that constitutes the breach of any contract between HI-Speed and the Buyer, even if the HI-Speed owner, director, officer or employee is or could be construed to be a party to such contract.