

# EVERY DAY SINCE 1946

LR Motor Shop Repairs

# Job Number 102047

Prepared for Almatis Inc/RCP Bauxite (10014)

4701 Alcoa Road Bauxite AR 72011

## Table of Contents

AC Inspection as Found - LR Motor Shop

2.0

AC Random Coil Rewind Report



Hi-Speed Industrial Service 7030 Ryburn Dr Millington, Tn 38053 901-873-5300

> FolderID: 102047 FormID: 18306264

### **AC Inspection as Found**

Almatis Inc/RCP Bauxite (10014) 4701 Alcoa Road

Bauxite, AR 72011

#### AC Inspection - Rev. 2

Location:	LR Motor Shop
Serial Number:	JN 383005

Description:100HP GE 3600RPM 405Z

Hi-Speed Job Number:	102047
Manufacturer:	GE
Product Number:	5K405BK170B1
Serial Number:	JN 383005
HP/kW:	100 (HP)
RPM:	3560 (RPM)
Frame:	405Z
Voltage:	230 / 460
Current:	232/116
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.0
Enclosure:	TEFC
J-box Included:	None
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

#### Priorities Found: **5 - High**

igh 🛛 🔵 4 - Good

#### **Overall Condition**

- 1. Report Date
- 2. Nameplate Picture



3. Photos of all six sides of the machine.

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11/03/2023









































4. Describe the Overall Condition of the Equipment as Received Serviceable

#### Initial Mechanical/Electrical

- 5. Does Shaft Turn Freely?
- Completely locked up.
- 6. Does Shaft Have Visible Damage?





7.	Assembled Shaft Runout	Inches
	Unable to perform due to locked up shaft.	
8.	Assembled Shaft End Play	inches
	See above.	
9.	Air Gap Variation <10%	

🗭 Na

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(No) No

(Yes) Yes

#### 10. Lead Condition

connection box

Megohms





11. Lead Length	15 Inches
12. Lead Numbers	1-3
13. Frame Condition	pass
14. Fan Condition	(P) Pass



15. Broken or Missing Components

#### Initial Electrical Inspection

16. Insulation Resistance/Megger

🗭 Na



17. Winding Resistance			
1-2	1-3	2-3	
Na.			
18. Perform Surge Test			(F) Fail
19. Number of Stator Slots			60

19.	Number of Stator Slots	60
20.	Stator Condition	rewind
21.	Stator Thermistors/Ohms	na
22.	Stator Overloads/Ohms	na
Mech	anical Inspection	
23.	Drive End Bearing Brand	SKF

#### 24. Drive End Bearing Number-





25. Drive End Bearing Qty.	1
26. Drive End Bearing Type	(Ball) Ball Bearing
27. Drive End Lubrication Type	(Grease) Grease Lubricated
28. Drive End Bearing Insulation or Grounding Device?	none
29. Drive End Wavy Washer/Snap-Ring Other Retention Device?	none
30. Drive End Bearing Condition	complete cage failure



31. Opposite Drive End Bearing Brand





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skf



- 32. Opposite Drive End Bearing Number-
- 33. Opposite Drive End Bearing Qty.
- 34. Opposite Drive End Bearing Type
- 35. Opposite Drive End Lubrication Type





36.	Opposite Drive End Bearing Insulation or Grounding Device?	none	
37.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	none	
38.	Opposite Drive End Bearing Condition	flaking	





39. Drive End Seal	none
40. Opposite Drive End Seal	none

6312 2Z/ C3

(Ball) Ball Bearing

(Grease) Grease Lubricated

1

#### **Rotor Inspection**

41. Rotor Type/Material

#### (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast





42.	Growler Test	(Pass) Pass
43.	Number of Rotor Bars	46
44.	Rotor Condition	Pass surge test
	Rotor shaft require machine work.	
45.	List the Parts needed for the Repair Below	
	316 & 312 sleeves. 6316 & 6312 bearings. New shaft.	
46.	Signature of Technician that Disassembled Motor	Terrence Holland
/	I Allad	

#### **Mechanical Fits- Rotor**

47. Shaft Runout

Unable to perform due to d.e shaft bearing journal being damaged. 

48.	Rotor Runout		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

Na

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inches

49.	49. Coupling Fit Closest to Bearing Housing		
	0 Degrees	90 Degrees	120 Degrees
	Na		
50.	Coupling Fit Closest to the end of the	Shaft	
	0 Degrees	60 Degrees	120 Degrees
	Na		
51.	Drive End Bearing Shaft Fit		
	0 Degrees	60 Degrees	120 Degrees
-	Bearing was seized on shaft		



52. Drive End Bearing Shaft Fit Condition

(F) Fail





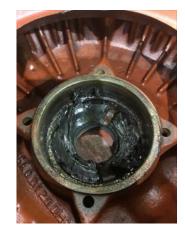
	53.	53. Opposite Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		2.3624	2.3625	2.3625	
	54.	Opposite Drive End Bearing Shaft Fit	Condition		(P) Pass
	55.	Shaft Air Seal Fits			
		Drive End Air Seal	Opposite Drive End Air Seal		
	•	Na			
Μ	Mechanical Fits- Bearing Housings				

	Drive End - Endbell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
-	Bearing seized to shaft			
57.	Drive End - Endbell Bearing Fit Cond	dition		(F) Fail
	Excessive wear from total bearing cag	e failure.		
6				

58.	Opposite Drive End - Endbell Bearing	l Fit
	0 Degrees	60 Degrees

- Lip worn in due to bearing failure on both ends
- 59. Opposite Drive End Endbell Bearing Fit Condition
- Lip worn in fit. Bearing failed from flaking.





120 Degrees

(F) Fail

#### 60. Bearing Cap Condition Drive End Bearing Cap pass

# Opposite Drive End Bearing Cap pass





61.	End Bell Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	
	Na		
62.	List Machine Work Needed Below		
	Re-sleeve both end-bell housing fits, re	pair or replace tapered shaft. Minor core repair on stator.	
63.	Technician		Terrence Holland
	0		
	7		
	1 en la	Hellow	
Dynai	mic Balance Report	, ,	
64.	Rotor Weight and Balance Grade		
	Rotor Weight	Balance Grade	
	0	0	
65.	Initial Balance Readings		
	Drive End	Opposite Drive End	
	0	3.59	
66.	Final Balance Readings		
	Drive End	Opposite Drive End	
	0	.16	
67.	Technician		David Maclin
	<i>,</i>		
		$\frown$	
Rewir	nd		
	Core Test Results - Watts loss per Po	bund	
001	Pre-Burnout	Post Burnout	
	na	na	
	na	iiu	

69	Core Hot Spot Test		
00.	Pre-Burnout	Post-Burnout	
	na	na	
70	Post Rewind Electrical Test- Insulatio		2000 Megohms
	Post Rewind Polarization Index		0 Polarization Index
	Post Rewind Winding Resistance		0 F Olarization index
12.	1-2	1-3	2-3
	0	0	0
73	Post Rewind Surge Test	0	(Pass) Pass
	Post Rewind Hi-Pot		0 micro-amps
	Technician		Bob Roberson
		V	
Root	Cause of Failure		
76.	Failure locations Bearing, stater contact		
77.	Root cause of failure Bearing failure		
Mecha	anical Fits- Rotor - Post Repair		
78.	Shaft Runout Post Repair		0 inches
79.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
	0	0	0
80.	Coupling Fit Closest to Bearing Housi	ng Post Repair	
	0 Degrees	90 Degrees	120 Degrees
	0	0	0
81.	Coupling Fit Closest to the end of the	Shaft Post Repair	
	0 Degrees	60 Degrees	120 Degrees
	0	0	0
82.	Drive End Bearing Shaft Fit Post Rep	air	
	0 Degrees	60 Degrees	120 Degrees
	3.15	3.1502	3.1502



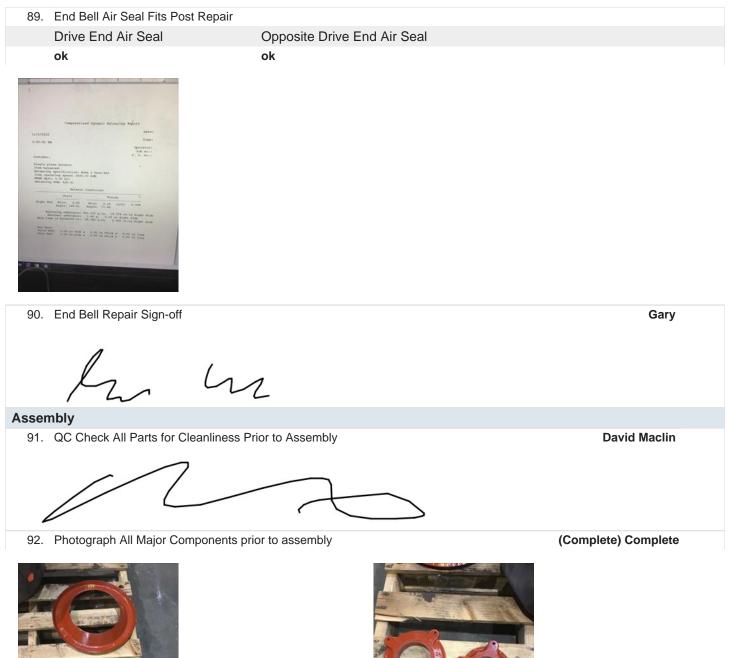
83.	Opposite Drive End Bearing Shaft Fit	Post Repair			
	0 Degrees	60 Degrees	120 Degrees		
	0	0	0		
84.	Shaft Air Seal Fits Post Repair				
	Drive End Air Seal	Opposite Drive End Air Seal			
	ok	ok			
85.	Shaft Repair Sign-off		(	Gary	
	In				
Mecha	anical Fits- Bearing Housings - P	ost Repair			
86.	Drive End - Endbell Bearing Fit Post F	Repair			
	0 Degrees	60 Degrees	120 Degrees		
	6.6935	6.6936	6.6936		
1					



87. C	87. Opposite Drive End - Endbell Bearing Fit Post Repair					
C	) Degrees	60 Degrees	120 Degrees			
5	5.1185	5.1185	5.1186			



88.	Bearing Cap Condition Post Repair	
	Drive End Bearing Cap	Opposite Drive End Bearing Cap
	ok	ok





































	460	460	460
	Volts	Volts	Volts
96.	Test Run Voltage		
95.	Assembled Shaft Runout		0 inches
94.	Assembled Shaft Endplay		0 inches
93.	Final Insulation Resistance Test		2000 Megohms



97. Test Run Amperage			
Amps	Amps	Amps	
25.5	25.2	25.6	

98.	Drive End Vibration Readings - Inches Per Second			
	Horizontal	Vertical	Axial	
	0.0103	0.0245	0.0315	
99.	Opposite Drive End Vibration Reading	s - Inches Per Second		
	Horizontal	Vertical	Axial	
	0.0246	0.0215	0.0276	
100.	Ambient Temperature - Fahrenheit			70
101.	Drive End Bearing Temps - Fahrenhei	t		
	5 Minutes	10 Minutes	15 Minutes	
	0	0	0	
102.	Opposite Drive End Bearing Temps -	Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes	
	0	0	0	
103.	Document Final Condition with Picture	s after paint	c	ean
104.	Final Pics and QC Review		David Ma	clin



Hi-Speed Industrial Service 7030 Ryburn Dr Millington, Tn 38053 901-873-5300

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### AC Random Coil Rewind Report

Almatis Inc/RCP Bauxite (10014) 4701 Alcoa Road

Bauxite, AR 72011

Priorities Found:

General			
1. Job Number	102047		
2. Report Date	11/01/2023		
3. Customer	Almatis		





**Stator Winding** 



4. Core Length



5.	Core ID	"
6.	Back Iron Depth	"
7.	Slot Depth	"
8.	Tooth Width	
9.	Number of Vents	
10.	Vent Width	"
11.	Before Burnout Core loss	
12.	Flux Before Burnout	
13.	Watts before burnout	
14.	Watts loss per lb. before burnout	
15.	After Burnout Core Loss	
16.	Flux After burnout	
17.	Watts After Burnout	
18.	Watts loss per lb After Burnout	
19.	Core Iron Condition	
20.	RTD's	
21.	RTD's Reading	
22.	Motor Heaters	
23.	Heater Qty.	
24.	Heater Voltage	
25.	Heater Wattage	
26.	Thermistors	
27.	Number of Poles	
28.	Slots	
29.	Number of Coils	
30.	Coil Weight	
31.	Lead Markings	
32.	Grouping	
33.	Multiple Wires	
34.	Wire Size	
35.	Turns per coil	
36.	Pitch 1 to:	
37.	Connection	
38	Lead Length	

38. Lead Length

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39.	Lead Size	
40.	Number of Leads	
41.	Megger Reading After Rewind	
42.	Coil Machine Slot	
43.	Coil Machine Tip	
44.	Coil Machine Pitch	
45.	Hi Pot Reading After Rewind	
46.	Surge Pattern After Rewind	
47.	Service Technician	



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