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LR Motor Shop Repairs

**Job Number 100624**

Prepared for 3M-Main Plant (10001)

310 Walter Road  
Little Rock AR 72216

# Table of Contents



Hi-Speed Industrial Service  
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## AC Recondition As Found

### 3M-Main Plant (10001)

310 Walter Road  
Little Rock, AR 72216

FolderID: 100624  
FormID: 15358764



#### AC Recondition - Rev. 2

Location: MOTOR SHOP LR

Serial Number: YKG484004

Description: 100HP GE 600RPM 509Z

Hi-Speed Job Number:	100624
Manufacturer:	GE
Product Number:	5KGS509SN601P
Serial Number:	YKG484004
HP/kW:	100 (HP)
RPM:	595 (RPM)
Frame:	509Z
Voltage:	460
Current:	134
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
J-box Included:	None
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Teardown Inspection
Shaft Machined Fit Repairs Required:	Yes
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: ● 1 - High ● 7 - Good

#### Overall Condition

1. Report Date

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1.0

## 2. Nameplate Picture



## 3. Photos of all six sides of the machine.





4. Describe the Overall Condition of the Equipment as Received

*Drive shaft is snapped off and motor is very dirty*

#### Initial Mechanical/Electrical

5. Does Shaft Turn Freely?	(No) No
6. Does Shaft Have Visible Damage?	(Yes) Yes
<i>Drive end shaft is broken</i>	
7. Assembled Shaft Runout	Inches
8. Assembled Shaft End Play	inches
9. Air Gap Variation <10%	
10. Lead Condition	(P) Pass



11. Lead Length	12 Inches
12. Frame Condition	



14. Broken or Missing Components

yes, drive end shaft

**Initial Electrical Inspection**

15. Insulation Resistance/Megger

16. Winding Resistance

1-2

1-3

2-3

17. Perform Surge Test

(P) Pass

18. Number of Stator Slots

Megohms

84 slots

19. Stator Condition

**Mechanical Inspection**



20. Drive End Bearing Number-



21. Drive End Bearing Qty.	1
22. Drive End Bearing Type	(Roller) Roller Bearing
23. Drive End Lubrication Type	(Grease) Grease Lubricated
24. Drive End Bearing Insulation or Grounding Device?	
25. Drive End Wavy Washer/Snap-Ring Other Retention Device?	snap ring
26. Drive End Bearing Condition	grease looks mixed




27. Opposite Drive End Bearing Number-

6315 2Z c3



28. Opposite Drive End Bearing Qty.	1
29. Opposite Drive End Bearing Type	(Ball) Ball Bearing

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30. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated		
31. Opposite Drive End Bearing Insulation or Grounding Device?			
32. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	snap ring		
33. Opposite Drive End Bearing Condition	grease looks mixed		
34. Drive End Seal			
35. Opposite Drive End Seal			
<b>Rotor Inspection</b>			
36. Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast		
37. Growler Test	(Pass) Pass		
38. Number of Rotor Bars	105		
39. Rotor Condition			
40. List the Parts needed for the Repair Below	<i>NU 320 c3</i> <i>6315 c3</i> <i>New shaft</i>		
41. Signature of Technician that Disassembled Motor	Trevor Hall		
			
<b>Mechanical Fits- Rotor</b>			
42. Shaft Runout	inches		
43. Rotor Runout			
Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing	
44. Coupling Fit Closest to Bearing Housing			
0 Degrees	90 Degrees	120 Degrees	
45. Coupling Fit Closest to the end of the Shaft			
0 Degrees	60 Degrees	120 Degrees	
46. Drive End Bearing Shaft Fit			
0 Degrees	60 Degrees	120 Degrees	
3.9382	3.9382	3.9383	
47. Drive End Bearing Shaft Fit Condition	(P) Pass		
48. Opposite Drive End Bearing Shaft Fit			
0 Degrees	60 Degrees	120 Degrees	
2.9534	2.9534	2.9534	
49. Opposite Drive End Bearing Shaft Fit Condition	(P) Pass		
50. Shaft Air Seal Fits			
Drive End Air Seal	Opposite Drive End Air Seal		
<b>Mechanical Fits- Bearing Housings</b>			



51. Drive End - Endbell Bearing Fit		
0 Degrees	60 Degrees	120 Degrees
8.464600000000001	8.464600000000001	8.464600000000001



52. Drive End - Endbell Bearing Fit Condition (P) Pass		
53. Opposite Drive End - Endbell Bearing Fit		
0 Degrees	60 Degrees	120 Degrees
6.3001	6.3001	6.3002



54.	Opposite Drive End - Endbell Bearing Fit Condition		(P) Pass
55.	Bearing Cap Condition		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
	pass	pass	
56.	End Bell Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	
57.	List Machine Work Needed Below		
	New shaft		



58. Technician

Trevor Hall

#### Root Cause of Failure

59. Failure locations

*Drive end shaft broke at snap ring groove.*

60. Root cause of failure

*Possibly over tightened belts or unbalanced load. Possible combination of both.*



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