

# LR Motor Shop Repairs

# **Job Number 100624**

Prepared for 3M-Main Plant (10001)

310 Walter Road Little Rock AR 72216

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1.0



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### **AC Recondition As Found**

3M-Main Plant (10001)

310 Walter Road Little Rock, AR 72216



#### AC Recondition - Rev. 2

Serial Number:

MOTOR SHOP LR Location:

Description:100HP GE 600RPM 509Z

YKG484004

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:	Final
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

#### 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

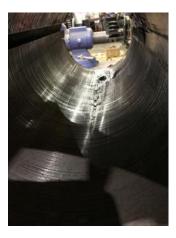
#### **Initial Mechanical/Electrical**

5. Does Shaft Turn Freely?
(No) No

6. Does Shaft Have Visible Damage?

(Yes) Yes

Drive end shaft is broken



Rotor After pressing shaft out



e il	

7.	Assembled Shaft Runout	Inches
_	A 11 101 (F 1D)	to a to a a

8. Assembled Shaft End Play inches



10. Lead Condition

(P) Pass



11.	Lead Length	12 Inches
12.	Frame Condition	
13.	Fan Condition	(P) Pass



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	
<ul><li>17.</li></ul>	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	e? snap ring
26. Drive End Bearing Condition	grease looks mixed







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28.	Opposite Drive End Bearing Qty.	1
29.	Opposite Drive End Bearing Type	(Ball) Ball Bearing
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	e? snap ring
33.	Opposite Drive End Bearing Condition	grease looks mixed
34.	Drive End Seal	
35.	Opposite Drive End Seal	
36.	Drive End Bearing Brand	
37.	Opposite Drive End Bearing Brand	
Rotor	Inspection	
38.	Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
39.	Growler Test	(Pass) Pass
40.	Number of Rotor Bars	105
41.	Rotor Condition	
42.	List the Parts needed for the Repair Below	
	NU 320 c3 6315 c3 New shaft	
43.	Signature of Technician that Disassembled Motor	Trevor Hall

//-/M/

# Mechanical Fits- Rotor 44. Shaft Runout inches 45. Rotor Runout Drive End Bearing Fit Rotor Body Opposite Drive End Bearing 46. Coupling Fit Closest to Bearing Housing 0 Degrees 90 Degrees 120 Degrees

	47.	Coupling Fit Closest to the end of the	Shaft		
		0 Degrees	60 Degrees	120 Degrees	
	48.	Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		3.9382	3.9382	3.9383	
	49.	Drive End Bearing Shaft Fit Condition			(P) Pass
	50.	Opposite Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		2.9534	2.9534	2.9534	
	51.	Opposite Drive End Bearing Shaft Fit	Condition		(P) Pass
	52.	Shaft Air Seal Fits			
		Drive End Air Seal	Opposite Drive End Air Seal		
N	lecha	anical Fits- Bearing Housings			
	53.	Drive End - Endbell Bearing Fit			
		9			
		0 Degrees	60 Degrees	120 Degrees	
		•	60 Degrees 8.464600000000001	120 Degrees 8.464600000000001	



<b>5</b> 4	54. Drive End - Endbell Bearing Fit Condition			(P) Pass
55	55. Opposite Drive End - Endbell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
	6.3001	6.3001	6.3002	



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



60. Technician Trevor Hall

The The

#### **Dynamic Balance Report**

61. Rotor Weight and Balance Grade

Rotor Weight Balance Grade

62. Initial Balance Readings

Drive End Opposite Drive End

63. Final Balance Readings

Drive End Opposite Drive End

64. Technician

#### Rewind

65. Core Test Results - Watts loss per Pound

Pre-Burnout Post Burnout

66. Core Hot Spot Test

Pre-Burnout Post-Burnout

- 67. Post Rewind Electrical Test- Insulation Resistance
- 68. Post Rewind Polarization Index

69.	Post Rewind Winding Resistance		
	1-2	1-3	2-3
70.	Post Rewind Surge Test		
71.			
	Technician		
	Cause of Failure		
73.	Failure locations		
74	Drive end shaft broke at snap ring groo  Root cause of failure	ve.	
74.		nced load. Possible combination of both.	
Mach	anical Fits- Rotor - Post Repair	nced load. I ossible combination of both.	
	Shaft Runout Post Repair		
	Rotor Runout Post Repair		
70.	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
	Divo Ena Boaring Fix	Note: Body	opposite Billo Ella Boalling
77.	Coupling Fit Closest to Bearing Housi	ng Post Repair	
	0 Degrees	90 Degrees	120 Degrees
78.	Coupling Fit Closest to the end of the	·	
	0 Degrees	60 Degrees	120 Degrees
79	Drive End Bearing Shaft Fit Post Repa	air	
70.	0 Degrees	60 Degrees	120 Degrees
	o Degrees	oo begiees	120 Degrees
80.	Opposite Drive End Bearing Shaft Fit	Post Repair	
	0 Degrees	60 Degrees	120 Degrees
81.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
82.	Shaft Repair Sign-off		
	anical Fits- Bearing Housings - P	ost Repair	
	Drive End - Endbell Bearing Fit Post F	-	
	0 Degrees	60 Degrees	120 Degrees
	1.0	3	5 19 111
84.	Opposite Drive End - Endbell Bearing	Fit Post Repair	
	0 Degrees	60 Degrees	120 Degrees
85.	Bearing Cap Condition Post Repair		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
86	End Bell Air Seal Fits Post Repair		
50.	Drive End Air Seal	Opposite Drive End Air Seal	
	Z Z Elia / III Coal	opposite bitto Lita All Godi	
87.	End Bell Repair Sign-off		
Asser	nbly		
88.	Photograph All Major Components pri	or to assembly	























89.	Final Insulation Resistance Test		
90.	Assembled Shaft Endplay		
91.	Assembled Shaft Runout		
92.	Test Run Voltage		
	Volts	Volts	Volts
93.	Test Run Amperage		
	Amps	Amps	Amps
94.	Drive End Vibration Readings - Inches	s Per Second	

	Axial	Vertical	Horizontal	
Opposite Drive End Vibration Readings - Inches Per Second				95.
	Axial	Vertical	Horizontal	
Ambient Temperature - Fahrenheit				96.
	Drive End Bearing Temps - Fahrenheit			
	15 Minutes	10 Minutes	5 Minutes	
	Opposite Drive End Bearing Temps - Fahrenheit			
	15 Minutes	10 Minutes	5 Minutes	
. QC Check All Parts for Cleanliness Prior to Assembly				99.
	Document Final Condition with Pictures after paint			
			01. Final Pics and QC Review	101.
		10 Minutes  - Fahrenheit 10 Minutes  Prior to Assembly	<ol> <li>Drive End Bearing Temps - Fahrenhe</li> <li>Minutes</li> <li>Opposite Drive End Bearing Temps -</li> <li>Minutes</li> <li>QC Check All Parts for Cleanliness P</li> <li>Document Final Condition with Picture</li> </ol>	97. 98. 99. 100.



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