

# LR Motor Shop Repairs

# **Job Number 102309**

Prepared for MIDDLETON INCORPORATED

P.O. BOX 506 BRYANT AR 72089

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AC Inspection as Found - MOTOR SHOP LR

AC Inspection - Rev. 2: 1098C 0396

1.0



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### **AC Inspection as Found** MIDDLETON INCORPORATED

P.O. BOX 506 **BRYANT, AR 72089** 

AC Inspection - Rev. 2

Location: MOTOR SHOP LR

Serial Number: 1098C 0396

Description: 10HP BALDOR 1800RPM 254T

Hi-Speed Job Number:	102309
Manufacturer:	Baldor
Product Number:	EM2333T
Spec/ID #:	09P26W980G1
Serial Number:	1098C 0396
HP/kW:	10 (HP)
RPM:	1765 (RPM)
Frame:	254T
Voltage:	230 / 460
Current:	36/18
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
J-box Included:	Complete
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: 3 - High



8 - Good

### **Overall Condition**

- Report Date
- Nameplate Picture



3. Photos of all six sides of the machine.





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 Describe the Overall Condition of the Equipment as Received
 Dirty

		Dirty	
Ir	nitial	Mechanical/Electrical	
	5.	Does Shaft Turn Freely?	(Yes) Yes
	6.	Does Shaft Have Visible Damage?	(No) No
	7.	Assembled Shaft Runout	0.001 Inches
	8.	Assembled Shaft End Play	inches
	-	Na	
	9.	Air Gap Variation <10%	
	-	Na	
	10.	Lead Condition	(P) Pass
	11.	Lead Length	8 Inches
	12.	Lead Numbers	1-9
	13.	Frame Condition	pass





15. Broken or Missing Components

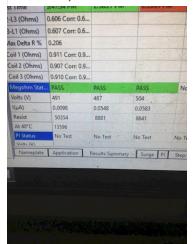
na

### **Initial Electrical Inspection**

16. Insulation Resistance/Megger

Megohms

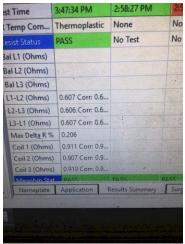
In picture



17. Winding Resistance

1-2 1-3 2-3

In picture



### 18. Perform Surge Test





19. Number of Stator Slots	48		
20. Stator Condition	dirty		
21. Stator Thermistors/Ohms	na		
22. Stator Overloads/Ohms	na		
Mechanical Inspection			
23. Drive End Bearing Brand	skf		



24. Drive End Bearing Number-	6309
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?	na
29. Drive End Wavy Washer/Snap-Ring Other Retention Device?	spacer nut

### 30. Drive End Bearing Condition

Signs of fluting



31. Opposite Drive End Bearing Brand





32. Opposite Drive End Bearing Number-	6208
33. Opposite Drive End Bearing Qty.	1
34. Opposite Drive End Bearing Type	(Ball) Ball Bearing
35. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
36. Opposite Drive End Bearing Insulation or Grounding Device?	na
37. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer
38. Opposite Drive End Bearing Condition	signs of fluting



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39.	Drive End Seal		
-	Na		
40.	Opposite Drive End Seal		
-	Na		
Rotor	Inspection		
41.	Rotor Type/Material		(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
42.	Growler Test		(Pass) Pass
43.	Number of Rotor Bars		54
44.	Rotor Condition		pass
45.	List the Parts needed for the Repair E 6309 6208 Sleeve for ODE end bell bearing fit	elow	
46.		nbled Motor	Cw
	(how		
Mech	anical Fits- Rotor		
47.	Shaft Runout		0.001 inches
48	Rotor Runout		
10.	Trotor Trainout		
10.	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
•		Rotor Body	Opposite Drive End Bearing
	Drive End Bearing Fit	·	Opposite Drive End Bearing
-	Drive End Bearing Fit	·	Opposite Drive End Bearing  120 Degrees
-	Drive End Bearing Fit  Na  Coupling Fit Closest to Bearing Housi	ng	
49.	Na Coupling Fit Closest to Bearing Housi O Degrees Na	ng 90 Degrees	
49.	Na Coupling Fit Closest to Bearing House 0 Degrees Na	ng 90 Degrees	
49.	Na Coupling Fit Closest to Bearing House O Degrees  Na Coupling Fit Closest to the end of the	ng 90 Degrees Shaft	120 Degrees
49.	Na Coupling Fit Closest to Bearing House 0 Degrees  Na Coupling Fit Closest to the end of the 0 Degrees  Na	ng 90 Degrees Shaft	120 Degrees
49.	Drive End Bearing Fit  Na  Coupling Fit Closest to Bearing House 0 Degrees  Na  Coupling Fit Closest to the end of the 0 Degrees  Na  Drive End Bearing Shaft Fit	ng 90 Degrees Shaft 60 Degrees	120 Degrees 120 Degrees
49.	Drive End Bearing Fit  Na  Coupling Fit Closest to Bearing House 0 Degrees  Na  Coupling Fit Closest to the end of the 0 Degrees  Na  Drive End Bearing Shaft Fit 0 Degrees	ng 90 Degrees Shaft 60 Degrees 60 Degrees	120 Degrees  120 Degrees  120 Degrees
49. 50.	Drive End Bearing Fit  Na  Coupling Fit Closest to Bearing House 0 Degrees  Na  Coupling Fit Closest to the end of the 0 Degrees  Na  Drive End Bearing Shaft Fit 0 Degrees  1.772	ng 90 Degrees Shaft 60 Degrees 60 Degrees 1.7719	120 Degrees 120 Degrees 120 Degrees 1.7719
49. 50. 51.	Na Coupling Fit Closest to Bearing House 0 Degrees  Na Coupling Fit Closest to the end of the 0 Degrees  Na Drive End Bearing Shaft Fit 0 Degrees  1.772 Drive End Bearing Shaft Fit Condition	ng 90 Degrees Shaft 60 Degrees 60 Degrees 1.7719	120 Degrees  120 Degrees  120 Degrees
49. 50. 51.	Na Coupling Fit Closest to Bearing House 0 Degrees  Na Coupling Fit Closest to the end of the 0 Degrees  Na Drive End Bearing Shaft Fit 0 Degrees  1.772 Drive End Bearing Shaft Fit Condition Opposite Drive End Bearing Shaft Fit	ng 90 Degrees Shaft 60 Degrees 60 Degrees 1.7719	120 Degrees  120 Degrees  120 Degrees  1,7719  (P) Pass
49. 50. 51.	Drive End Bearing Fit  Na  Coupling Fit Closest to Bearing House 0 Degrees  Na  Coupling Fit Closest to the end of the 0 Degrees  Na  Drive End Bearing Shaft Fit 0 Degrees  1.772  Drive End Bearing Shaft Fit Condition Opposite Drive End Bearing Shaft Fit 0 Degrees	ng 90 Degrees Shaft 60 Degrees 1.7719 60 Degrees	120 Degrees  120 Degrees  120 Degrees  120 Degrees  1.7719  (P) Pass
49. 50. 51. • 52. 53.	Na Coupling Fit Closest to Bearing House 0 Degrees  Na Coupling Fit Closest to the end of the 0 Degrees  Na Drive End Bearing Shaft Fit 0 Degrees  1.772 Drive End Bearing Shaft Fit Condition Opposite Drive End Bearing Shaft Fit 0 Degrees  1.575	ng 90 Degrees Shaft 60 Degrees 1.7719 60 Degrees 1.5751	120 Degrees  120 Degrees  120 Degrees  1.7719  (P) Pass  120 Degrees 1.5751
49. 50. 51. • 52. 53.	Na Coupling Fit Closest to Bearing House 0 Degrees  Na Coupling Fit Closest to the end of the 0 Degrees  Na Drive End Bearing Shaft Fit 0 Degrees  1.772 Drive End Bearing Shaft Fit Condition Opposite Drive End Bearing Shaft Fit 0 Degrees  1.575 Opposite Drive End Bearing Shaft Fit	ng 90 Degrees Shaft 60 Degrees 1.7719 60 Degrees 1.5751	120 Degrees  120 Degrees  120 Degrees  120 Degrees  1.7719  (P) Pass
49. 50. 51. • 52. 53.	Na Coupling Fit Closest to Bearing House 0 Degrees  Na Coupling Fit Closest to the end of the 0 Degrees  Na Drive End Bearing Shaft Fit 0 Degrees  1.772 Drive End Bearing Shaft Fit Condition Opposite Drive End Bearing Shaft Fit 0 Degrees  1.575 Opposite Drive End Bearing Shaft Fit Shaft Air Seal Fits	ng 90 Degrees Shaft 60 Degrees 60 Degrees 1.7719 60 Degrees 1.5751 Condition	120 Degrees  120 Degrees  120 Degrees  1.7719  (P) Pass  120 Degrees 1.5751
49. 50. 51. 52. 53.	Na Coupling Fit Closest to Bearing House 0 Degrees  Na Coupling Fit Closest to the end of the 0 Degrees  Na Drive End Bearing Shaft Fit 0 Degrees  1.772 Drive End Bearing Shaft Fit Condition Opposite Drive End Bearing Shaft Fit 0 Degrees  1.575 Opposite Drive End Bearing Shaft Fit	ng 90 Degrees Shaft 60 Degrees 1.7719 60 Degrees 1.5751	120 Degrees  120 Degrees  120 Degrees  1.7719  (P) Pass  120 Degrees 1.5751

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**Mechanical Fits- Bearing Housings** 

56.	56. Drive End - Endbell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
	3.9378	3.9379	3.9379	
57.	Drive End - Endbell Bearing Fit Condi	tion		(P) Pass
58.	Opposite Drive End - Endbell Bearing			
	0 Degrees	60 Degrees	120 Degrees	
	0 = 0g. 000			



59. Opposite Drive End - Endbell Bearing Fit Condition
 60. Bearing Cap Condition
 Drive End Bearing Cap
 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		
	ODE end bell bearing fit		
63.	Technician		Cw



# Root Cause of Failure 64. Failure locations Bearings and ODE bearing fit 65. Root cause of failure Fluting and contamination in the bearings and wear for the bearing fit Dynamic Balance Report 66. Rotor Weight and Balance Grade Rotor Weight Balance Grade

.2

Opposite Drive End

68. Final Balance Readings

Drive End

Opposite Drive End

2

69. Technician

Trevor Hall

### Rewind

Na

Na

76. Post Rewind Hi-Pot

Na

.2

67. Initial Balance Readings

Drive End

70.	Care Test Desulte - Wette less nor De			
	Core Test Results - Watts loss per Po			
	Pre-Burnout	Post Burnout		
-	Na			
71.	Core Hot Spot Test			
	Pre-Burnout	Post-Burnout		
-	Na			
72.	Post Rewind Electrical Test- Insulation	n Resistance		Megohms
-	Na			
73.	Post Rewind Polarization Index		Polariza	tion Index
	Post Rewind Polarization Index Na		Polariza	tion Index
-			Polariza	tion Index
74.	Na	1-3	Polariza 2-3	tion Index
74.	Na Post Rewind Winding Resistance	1-3		tion Index
74.	Na Post Rewind Winding Resistance	1-3		tion Index
71.	Core Hot Spot Test	Post-Burnout		

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micro-amps

77. Technician **Trevor Hall** Mechanical Fits- Rotor - Post Repair 78. Shaft Runout Post Repair inches Na 79. Rotor Runout Post Repair Opposite Drive End Bearing Drive End Bearing Fit Rotor Body Na 80. Coupling Fit Closest to Bearing Housing Post Repair 120 Degrees 0 Degrees 90 Degrees Na 81. Coupling Fit Closest to the end of the Shaft Post Repair 0 Degrees 60 Degrees 120 Degrees 82. Drive End Bearing Shaft Fit Post Repair 0 Degrees 60 Degrees 120 Degrees Na 83. Opposite Drive End Bearing Shaft Fit Post Repair 0 Degrees 60 Degrees 120 Degrees Na 84. Shaft Air Seal Fits Post Repair Drive End Air Seal Opposite Drive End Air Seal Na 85. Shaft Repair Sign-off Na Mechanical Fits- Bearing Housings - Post Repair 86. Drive End - Endbell Bearing Fit Post Repair 0 Degrees 60 Degrees 120 Degrees

Na

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88.	Bearing Cap Condition Post Repair	
	Drive End Bearing Cap	Opposite Drive End Bearing Cap
-	Na	
89.	End Bell Air Seal Fits Post Repair	
	Drive End Air Seal	Opposite Drive End Air Seal
-	Na	
90.	End Bell Repair Sign-off	Gary
	.9	

### **Assembly**

91. QC Check All Parts for Cleanliness Prior to Assembly Trevor Hall

92. Photograph All Major Components prior to assembly



















93.	Final Insulation Resistance Test		2000 Megohms	
94.	Assembled Shaft Endplay		0.001 inches	
95.	Assembled Shaft Runout		inches	
-	Na			
96.	Test Run Voltage			
	Volts	Volts	Volts	
	460	460	460	
97.	Test Run Amperage			
	Amps	Amps	Amps	
	7	7	7	
98.	Drive End Vibration Readings - Inches	s Per Second		
	Horizontal	Vertical	Axial	
	0.02	0.03	0.03	
99.	Opposite Drive End Vibration Reading	gs - Inches Per Second		
	Horizontal	Vertical	Axial	
	0.02	0.03	0.03	
100.	Ambient Temperature - Fahrenheit		75	
101.	Drive End Bearing Temps - Fahrenhe	it		
	5 Minutes	10 Minutes	15 Minutes	
-	Na			
102.	Opposite Drive End Bearing Temps -	Fahrenheit		

Na

103. Document Final Condition with Pictures after paint







104. Final Pics and QC Review

**Trevor Hall** 

Co-sign: Chris W.





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