

# LR Motor Shop Repairs

# **Job Number 102768**

Prepared for Miller Spectacular Shows (12776)

79 Mountain Drive Greenbrier AR 72058

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1.0



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

> FolderID: 102768 FormID: 20121649

# **AC Inspection as Found**

Miller Spectacular Shows (12776)

79 Mountain Drive Greenbrier, AR 72058

#### AC Inspection - Rev. 2

LITTLE ROCK MOTOR SHOP Location:

Serial Number: 132

Description: 4.5KW ROWAN ELECTRONICA

Hi-Speed Job Number:	102768
Manufacturer:	Other
Product Number:	M: 45295
Spec/ID #:	45295
Serial Number:	132
HP/kW:	4.5 (kW)
RPM:	700 (RPM)
Voltage:	Other
Current:	33 (Amps)
Phase:	Three
Hz:	60 (Hz)
# of Leads:	6
J-box Included:	Complete
Date Received:	04/23/2024
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	Yes
Shaft Machined Fit Repairs Required:	Yes
Bearing Housing Machined Fit Repairs Required:	Yes
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: 6 - High





3 - Good

### **Overall Condition**

04/23/2024 1. Report Date

## 2. Nameplate Picture



3. Photos of all six sides of the machine.



















10-300 ASS		
4.	Describe the Overall Condition of the Equipment as Received Serviceable	
5.	Distance from the end of the shaft to the Coupling/Sheave Na	inches
Initial	Mechanical/Electrical	
<b>6</b> .	Does Shaft Turn Freely?	(Y) Yes
<b>7</b> .	Does the shaft require T.I.R in Lathe to identify additional repairs?	(Yes) Yes
-	Both shaft fits bad.	
8.	Does Shaft Have Visible Damage?	(No) No
9.	Assembled Shaft Runout	0.001 Inches
10.	Assembled Shaft End Play	0 inches
11.	Air Gap Variation <10%	
-	Na	
12.	Lead Condition	(P) Pass
13.	Lead Length	Inches



<b>国际政党</b> 发展		
14. I	Does it have Lugs?, If so what is the Stud Size?	(Yes) Yes
15. I	Lead Numbers	1-6
16. I	Frame Condition	pass
17. l	Fan Condition	(N) NA
18. I	Broken or Missing Components	tach broken
Initial E	Electrical Inspection	

19.	Insulation Resistance/Megger			Megohms
-	Na			
20.	Winding Resistance			
	1-2	1-3	2-3	
-	Na			
21.	Perform Surge Test			
-	Na			
22.	Number of Stator Slots			36
23.	Stator Condition			rewind
24.	Stator Thermistors/Ohms			na
25.	Stator Overloads/Ohms			na
Mech	anical Inspection			
26.	Drive End Bearing Brand			SKF
27.	Drive End Bearing Number-	_		6209





28. Drive End Bearing Qty.	1
29. Drive End Bearing Type	(Ball) Ball Bearing
30. Drive End Lubrication Type	(Grease) Grease Lubricated
31. Drive End Bearing Insulation or Grounding Device?	none
32. Drive End Wavy Washer/Snap-Ring Other Retention Device?	snap rings
33. Drive End Bearing Condition	replace
34. Opposite Drive End Bearing Brand	nsk

36. Opposite Drive End Bearing Qty.



37. Opposite Drive End Bearing Type	(Ball) Ball Bearing
38. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
39. Opposite Drive End Bearing Insulation or Grounding Device?	none
40. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer
41. Opposite Drive End Bearing Condition	replace
42. Drive End Seal	na
43. Opposite Drive End Seal	na

## **Rotor Inspection**

- 44. Rotor Type/Material
- Solid rotor with no bars



- 45. Growler Test
- Na
- 46. Number of Rotor Bars
- Na
- 47. Rotor Condition
- Pass
- 48. List the Parts needed for the Repair Below

New tach needed. Rewind stator. Re-sleeve both housing fits.

	49.	Signature of Technician that Disassem	abled Motor	Terrence H	olland
M	echa	anical Fits- Rotor	·		
	50.	Shaft Runout		0.002	inches
	51.	Rotor Runout			
		Drive End Bearing Fit	Rotor Body	Opposite Drive End Bea	aring
	-	Na			
	52.	Coupling Fit Closest to Bearing Housing	ng		
		0 Degrees	90 Degrees	120 Degrees	
		Na			
	53.		Shaft		
		0 Degrees	60 Degrees	120 Degrees	
				<del>-</del>	
	7	Na			
	54.	Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		1.771	1.771	1.7711	
	55. •	Drive End Bearing Shaft Fit Condition  Minimum allowed is 1.7718			(F) Fail
	56.	Opposite Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		1.3778	1.3777	1.3777	
	57. •	Opposite Drive End Bearing Shaft Fit ( Minimum allowed is 1.3781	Condition		(F) Fail
	58.	Shaft Air Seal Fits			
		Drive End Air Seal	Opposite Drive End Air Seal		
	-	Na			
M	echa	anical Fits- Bearing Housings			

#### 59. Drive End - Endbell Bearing Fit

0 Degrees 60 Degrees 120 Degrees





(F) Fail

(F) Fail

60. Drive End - Endbell Bearing Fit Condition

Excessive wear.

61. Opposite Drive End - Endbell Bearing Fit

0 Degrees 60 Degrees





120 Degrees

■ 62. Opposite Drive End - Endbell Bearing Fit Condition

Excessive wear and pitting.

63. Bearing Cap Condition

Drive End Bearing Cap Opposite Drive End Bearing Cap

na na

64. End Bell Air Seal Fits

Drive End Air Seal Opposite Drive End Air Seal

Na

65. List Machine Work Needed Below

Sleeve both housing fits and shaft bearing journals. Remove 2 ea. broken bolts on tach connection box cover.

66. Technician Terrence Holland



Witness: D. Macklin

#### **Root Cause of Failure**

67. Failure locations

Both shaft bearing journals bad. Both housing fits bad. Re- attach broken end bell piece. Rewind stator.

68. Root cause of failure

Bearing grease contaminated. Winding strings are all broken and dry rotted.

#### **Dynamic Balance Report**

69. Rotor Weight and Balance Grade

Rotor Weight Balance Grade

70. Initial Balance Readings

Drive End Opposite Drive End

71. Final Balance Readings

Drive End Opposite Drive End

72. Technician

#### Rewind

73. Core Test Results - Watts loss per Pound

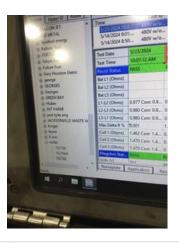
Pre-Burnout Post Burnout

74. Core Hot Spot Test

Pre-Burnout Post-Burnout

75. Post Rewind Electrical Test-Insulation Resistance





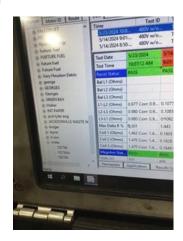


76. Post Rewind Polarization Index

**Polarization Index** 

# 77. Post Rewind Winding Resistance

1-2 1-3 2-3



# 78. Post Rewind Surge Test

(Pass) Pass



79.	Post Rewind Hi-Pot		micro-amps
80.	Technician		
Mecha	anical Fits- Rotor - Post Repair		
81.	Shaft Runout Post Repair		0.0005999999999999999999999999999999999
82.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
	0.001	0.002	0.001
83.	Coupling Fit Closest to Bearing Housing	ng Post Repair	
	0 Degrees	90 Degrees	120 Degrees
84.	Coupling Fit Closest to the end of the	Shaft Post Repair	
	0 Degrees	60 Degrees	120 Degrees

85.	. Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
	1.7722	1.7722	1.7722



86.	86. Opposite Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
	1.3784	1.3783	1.3783



87.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
88.	Shaft Repair Sign-off		Gary
Mecha	anical Fits- Bearing Housings - F	Post Repair	





90.	90. Opposite Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
	2.8346	2.8346	2.8346



91.					
	Drive End Bearing Cap	Opposite Drive End Bearing Cap			
92.	End Bell Air Seal Fits Post Repair				
	Drive End Air Seal	Opposite Drive End Air Seal			
93.	End Bell Repair Sign-off		Gary		
Assembly					
94.	QC Check All Parts for Cleanliness P	rior to Assembly	RW		
	4 W				
95.	95. Photograph All Major Components prior to assembly				
96.	Final Insulation Resistance Test		Megohms		
-	Passed hi pot				

97.	Assembled Shaft Endplay			inches
98.	Assembled Shaft Runout			inches
99.	Test Run Voltage			
	Volts	Volts	Volts	
	375	375	377	



#### Co witness TRH

100. Test Run Amperage	Test Run Amperage			
Amps	Amps	Amps		
18	17.8	14.7		



101. Drive End Vibration Readings - Inches Per Second					
Horizontal	Vertical	Axial			
102. Opposite Drive End Vibration Readings - Inches Per Second					
Horizontal	Vertical	Axial			
103. Ambient Temperature - Fahrenheit					
104. Drive End Bearing Temps	104. Drive End Bearing Temps - Fahrenheit				
5 Minutes	10 Minutes	15 Minutes			
105. Opposite Drive End Bearing Temps - Fahrenheit					
5 Minutes	10 Minutes	15 Minutes			

## 106. Document Final Condition with Pictures after paint







107. Final Pics and QC Review

RW

Co witness CRW



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