

LR Motor Shop Repairs

Job Number 102417

Prepared for Searcy Water and Sewer System (11242)

300 N. Elm Street Searcy AR 72145

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AC Inspection as Found - MOTOR SHOP LR

AC Inspection - Rev. 2

1.0



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

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AC Inspection as Found

Searcy Water and Sewer System (11242)

300 N. Elm Street Searcy, AR 72145

AC Inspection - Rev. 2

Completed by: Motor Shop LR 3 on 04/22/2024

MOTOR SHOP LR Location:

Serial Number:

Description: 40 HP AERATOR

Hi-Speed Job Number:	102417
Manufacturer:	Reliance
Spec/ID #:	6835071-1
Serial Number:	L002FH
HP/kW:	40 (HP)
RPM:	1180 (RPM)
Frame:	364LPZ
Current:	49.4
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
# of Leads:	3
J-box Included:	Half
Coupling/Sheave:	Propeller
Date Received:	02/01/2024
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: 3 - High

6 - Good

Overall Condition

1. Report Date

2. Nameplate Picture



3. Photos of all six sides of the machine.





















1		
4.	Describe the Overall Condition of the Equipment as Received	
	Dirty	
5.	Distance from the end of the shaft to the Coupling/Sheave	inches
Initial	Mechanical/Electrical	
6.	Does Shaft Turn Freely?	
-	Yes.	
7.	Does the shaft require T.I.R in Lathe to identify additional repairs?	
8.	Does Shaft Have Visible Damage?	(Yes) Yes
9.	Assembled Shaft Runout	0.003 Inches
10.	Assembled Shaft End Play	inches
11.	Air Gap Variation <10%	

12. Lead Condition



13.	Lead Length	15.75 Inches
14.	Lead Numbers	1-3
15.	Frame Condition	pass
16.	Fan Condition	(P) Pass



17. Broken or Missing Components

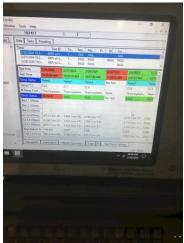
connection box top cover missing

18. Does it have Lugs?, If so what is the Stud Size?

(No) No

Initial Electrical Inspection

19. Insulation Resistance/Megger Megohms



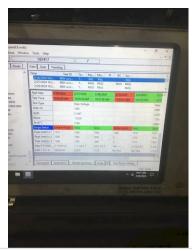
1-2 1-3 2-3



21. Perform Surge Test



(F) Fail



22. Number of Stator Slots 72

23. Stator Condition rusted internally

24. Stator Thermistors/Ohms

25. Stator Overloads/Ohms

Mechanical Inspection

26. Drive End Bearing Brand

SKF

Double wide double row.





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?	none
33. Drive End Bearing Condition	replace
34. Opposite Drive End Bearing Brand	FAG
35. Opposite Drive End Bearing Number-	6313 2Z - C3





36. Opposite Drive End Bearing Qty.	1
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	in pro seal
43.	Opposite Drive End Seal	dust seal

Rotor Inspection

44. Rotor Type/Material

(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast



45. Growler Test	(Pass) Pass
46. Number of Rotor Bars	58
47. Rotor Condition	pass
48. List the Parts needed for the Repair Below	
49. Signature of Technician that Disassembled Motor	Terrence Holland

Mechanical Fits- Rotor

50. Shaft Runout 0.002 inches

51. Rotor Runout

Drive End Bearing Fit Rotor Body Opposite Drive End Bearing

	52.	Coupling Fit Closest to Bearing Housi	ng		
		0 Degrees	90 Degrees	120 Degrees	
	53.	Coupling Fit Closest to the end of the	Shaft		
		0 Degrees	60 Degrees	120 Degrees	
	5 4	Date - Ford Decade - Ober 5			
	54.	Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		2.9532	2.9533	2.9531	
	55.	Drive End Bearing Shaft Fit Condition			(P) Pass
	56.	Opposite Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		2.559	2.5591	2.5592	
	57.	Opposite Drive End Bearing Shaft Fit	Condition		(P) Pass
	58.	Shaft Air Seal Fits			
		Drive End Air Seal	Opposite Drive End Air Seal		
M	lecha	anical Fits- Bearing Housings			
	59.	Drive End - Endbell Bearing Fit			
		0 Degrees	60 Degrees	120 Degrees	





60.	. Drive End - Endbell Bearing Fit Condition			(F) Fail
61.	Opposite Drive End - Endbell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
	5.5126	5.1125	5.5126	
62.	Opposite Drive End - Endbell Bearing	Fit Condition		(P) Pass

63. Bearing Cap Condition

Drive End Bearing Cap

Opposite Drive End Bearing Cap

pass





64. End Bell Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

65. List Machine Work Needed Below

Shaft seal surface worn. Drill and tap multiple ode housing fan cover mount bolt holes.

66. Technician Terrence Holland

Root Cause of Failure

67. Failure locations

Windings shorted to ground due to excessive amount of water penetration.

68. Root cause of failure *Water in housing.*





Dynamic Balance Report

69. Rotor Weight and Balance Grade

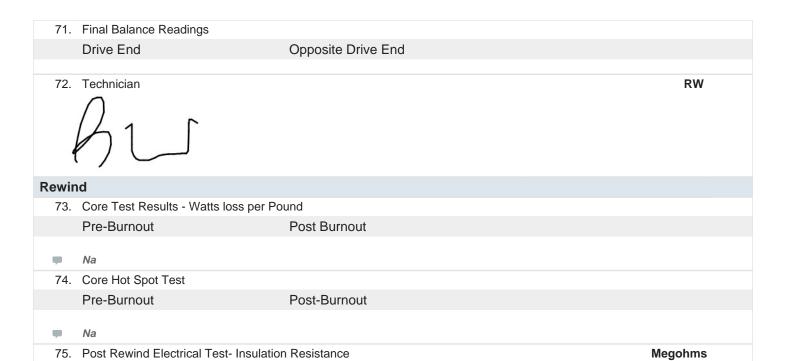
Rotor Weight Balance Grade

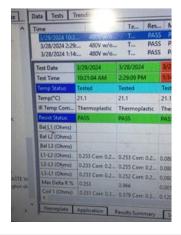
70. Initial Balance Readings

Drive End Opposite Drive End

0.25 0.30







76. Post Rewind Polarization Index

Polarization Index



77. Post Rewind Winding Resistance 1-2 1-3



78. Post Rewind Surge Test

(Pass) Pass

2-3



79.	Post Rewind Hi-Pot		micro-amps
-	Na		
80.	Technician		
-	Na		
Mecha	anical Fits- Rotor - Post Repair		
81.	Shaft Runout Post Repair		0.002 inches
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 Housi	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
0.5	D: 5 10 : 01 (15:00 10		
85.	3		
	0 Degrees	60 Degrees	120 Degrees





88. Shaft Repair Sign-off Gary

89. Drive End - Endbell Bearing Fit Post Repair

0 Degrees 60 Degrees 120 Degrees

5.119 5.119 5.119

90. Opposite Drive End - Endbell Bearing Fit Post Repair

0 Degrees 60 Degrees 120 Degrees

91. Bearing Cap Condition Post Repair

Drive End Bearing Cap Opposite Drive End Bearing Cap

92. End Bell Air Seal Fits Post RepairDrive End Air SealOpposite Drive End Air Seal

93. End Bell Repair Sign-off

AL

Assembly



95. Photograph All Major Components prior to assembly

(Complete) Complete

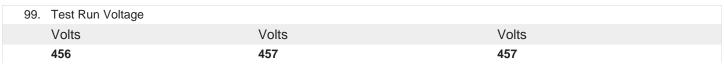








96.	Final Insulation Resistance Test	Megohms
-	High Pot passed	
97.	Assembled Shaft Endplay	inches
-	Na	
98.	Assembled Shaft Runout	inches



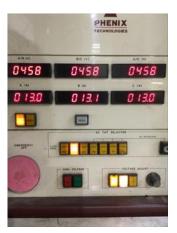




Assemble co witness TRH

100. Test Run Amperage		
Amps	Amps	Amps
12.8	12.9	13.2





Assemble with impeller .co witness TRH

101.	101. Drive End Vibration Readings - Inches Per Second				
	Horizontal	Vertical	Axial		
	0.05	0.05	0.05		
102.	. Opposite Drive End Vibration Readings - Inches Per Second				
	Horizontal	Vertical	Axial		
	0.05	0.05	0.02		
103.	. Ambient Temperature - Fahrenheit				
-	NA				
104.	Drive End Bearing Temps - Fahrenheit				
	5 Minutes	10 Minutes	15 Minutes		
-	NA				

105. Opposite Drive End Bearing Temps - Fahrenheit

5 Minutes 10 Minutes 15 Minutes

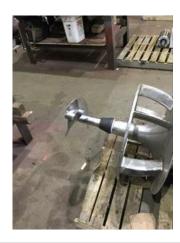
■ NA

106. Document Final Condition with Pictures after paint









107. Final Pics and QC Review

RW

Co witness TRH



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