

# LR Motor Shop Repairs

# **Job Number 102816**

Prepared for Union Pacific-Vine St 10945

1020 N. Vine Street North Liittle Rock AR

# **Table of Contents**

AC Inspection as Found - Shop

AC Inspection - Rev. 2

1.0



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> FolderID: 102816 FormID: 20130044

# **AC Inspection as Found** Union Pacific-Vine St 10945

Shop

1020 N. Vine Street North Liittle Rock, AR

AC Inspection - Rev. 2

Serial Number:

Location:

**Description:**GREEN PUMP

Hi-Speed Job Number:	102816
Serial Number:	1820
HP/kW:	3 (HP)
Voltage:	460
Enclosure:	Submersible
# of Leads:	9
J-box Included:	None
Coupling/Sheave:	Propeller
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	Yes
Shaft Machined Fit Repairs Required:	No
Bearing Housing Machined Fit Repairs Required:	No
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: 5 - High

8 - Good

## **Overall Condition**

1. Report Date 08/01/2024

Nameplate Picture



Photos of all six sides of the machine.





















4.	Describe the Overall Condition of the Equipment as Received  Dirty	
5.	Distance from the end of the shaft to the Coupling/Sheave	inches
-	Na	
Initial	Mechanical/Electrical	
<ul><li>6.</li></ul>	Does Shaft Turn Freely?	(N) No
<b>7</b> .	Does the shaft require T.I.R in Lathe to identify additional repairs?	(No) No
8.	Does Shaft Have Visible Damage?	(No) No
9.	Assembled Shaft Runout	Inches
10.	Assembled Shaft End Play	inches
11.	Air Gap Variation <10%	
12.	Lead Condition	(F) Fail
<ul><li>13.</li></ul>	Lead Length	Inches
-	21ft	
<b>1</b> 4.	Does it have Lugs?, If so what is the Stud Size?	(No) No
15.	Lead Numbers	
-	1-9	
16.	Frame Condition	ok
17.	Fan Condition	(N) NA
18.	Broken or Missing Components	ok
Initial	Electrical Inspection	

19. Insulation Resistance/Megg	er	2	000 Megohms
20. Winding Resistance			
1-2	1-3	2-3	
0	0	0	
21. Perform Surge Test		(NA) N	lot Applicable



	22.	Number of Stator Slots	24
	23.	Stator Condition	rewind
	24.	Stator Thermistors/Ohms	
	25.	Stator Overloads/Ohms	
	-	2 both bad	
M	echa	anical Inspection	
	26.	Drive End Bearing Brand	SKF
	27.	Drive End Bearing Number-	6306



28. Drive End Bearing Qty.	1
29. Drive End Bearing Type	(Ball) Ball Bearing
30. Drive End Lubrication Type	(Oil) Oil Lubricated
31. Drive End Bearing Insulation or Grounding Device?	na
32. Drive End Wavy Washer/Snap-Ring Other Retention Device?	na

## 33. Drive End Bearing Condition

## Contamination



. Opposite Drive End Bearing Brand	skf
. Opposite Drive End Bearing Number-	6203
. Opposite Drive End Bearing Qty.	1
. Opposite Drive End Bearing Type	(Ball) Ball Bearing
. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
. Opposite Drive End Bearing Insulation or Grounding Device?	none
. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer
. Opposite Drive End Bearing Condition	
Contamination	



	19.8	
42.	Drive End Seal	2 mechanical seals
43.	Opposite Drive End Seal	
-	O'rings	
Rotor	Inspection	
44.	Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
45.	Growler Test	(Pass) Pass
46.	Number of Rotor Bars	34
47.	Rotor Condition	pass

48. List the Parts needed for the Repair Below
6203
6306
2 mechanical seals

49. Signature of Technician that Disassembled Motor

Morin

64. End Bell Air Seal Fits
Drive End Air Seal

65. List Machine Work Needed Below

Cw

	\ /			
Mech	anical Fits- Rotor			
50.	Shaft Runout		0 i	nches
51.	Rotor Runout			
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bear	ring
	0			
52.	Coupling Fit Closest to Bearing Housi	ng		
	0 Degrees	90 Degrees	120 Degrees	
	0			
53.	Coupling Fit Closest to the end of the	Shaft		
	0 Degrees	60 Degrees	120 Degrees	
	0			
54.	Drive End Bearing Shaft Fit			
	0 Degrees	60 Degrees	120 Degrees	
	1.1813	1.1814	1.1813	
<b>5</b> 5.	Drive End Bearing Shaft Fit Condition		(P)	) Pass
56.	Opposite Drive End Bearing Shaft Fit			
	0 Degrees	60 Degrees	120 Degrees	
	0.6692	0.6693	0.6692	
<b>5</b> 7.	Opposite Drive End Bearing Shaft Fit	Condition	(P)	) Pass
58.	Shaft Air Seal Fits			
	Drive End Air Seal	Opposite Drive End Air Seal		
	ok	ok		
Mech	anical Fits- Bearing Housings			
59.	Drive End - Endbell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
	2.8347	2.8348	2.8347	
<b>6</b> 0.	Drive End - Endbell Bearing Fit Condi	tion	(P)	) Pass
61.	Opposite Drive End - Endbell Bearing	Fit		
	0 Degrees	60 Degrees	120 Degrees	
	1.5754	1.5753	1.5753	
	Opposite Drive End - Endbell Bearing	Fit Condition	(P)	) Pass
63.	Bearing Cap Condition			
	Drive End Bearing Cap	Opposite Drive End Bearing Cap		

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Opposite Drive End Air Seal

66. Technician Cw



David M

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

67. Failure locations

Seals, bearings, and windings

68. Root cause of failure

Contamination, wear, and turn to turn short

#### **Dynamic Balance Report**

69. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade
na	na
. Initial Balance Readings	
Drive End	Opposite Drive End
na	na
. Final Balance Readings	
Drive End	Opposite Drive End

72. Technician David Maclin



na

#### Rewind

70.

71.

na

73. Core Test Results - Watts loss per Pound

Pre-Burnout Post Burnout na

74. Core Hot Spot Test

Pre-Burnout Post-Burnout

na a

75. Post Rewind Electrical Test- Insulation Resistance 2000 Megohms

76. Post Rewind Polarization Index **0 Polarization Index** 

77. Post Rewind Winding Resistance

1-2 1-3 2-3 .078 .077 0.78

78. Post Rewind Surge Test (Pass) Pass

79. Post Rewind Hi-Pot **0 micro-amps** 

80. Technician David Maclin

#### **Assembly**

82. Photograph All Major Components prior to assembly













83.	Final Insulation Resistance Test	2000 Megohms
84.	Assembled Shaft Endplay	0 inches
85.	Assembled Shaft Runout	0 inches

86.	Test Run Voltage		
	Volts	Volts	Volts
	458	458	461
87.	Test Run Amperage		
	Amps	Amps	Amps
	1.6	1.6	1.5
88.	Drive End Vibration Readings - Inches	s Per Second	
	Horizontal	Vertical	Axial
	0.0185	0.0101	0.0259
89.	Opposite Drive End Vibration Reading	gs - Inches Per Second	
	Horizontal	Vertical	Axial
	0	0	0
90.	Ambient Temperature - Fahrenheit		75
91.	91. Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
	0	0	0
92. Opposite Drive End Bearing Temps - Fahrenheit			
	5 Minutes	10 Minutes	15 Minutes
	0	0	0
93.	Document Final Condition with Picture	es after paint	looks good
94.	Final Pics and QC Review		David Maclin











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