

# LR Motor Shop Repairs

## **Job Number 100371**

Prepared for Union Pacific-Vine St 10945

1020 N. Vine Street North Liittle Rock AR

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### **AC Recondition As Found**

**Union Pacific-Vine St 10945** 

1020 N. Vine Street North Liittle Rock, AR

Location:

AC Recondition - Rev. 2

Serial Number: LV464022

Description:60HP GE 1200RPM 405Z

Shop

Hi-Speed Job Number:	100371
Manufacturer:	GE
Product Number:	5MR405SN3227
Serial Number:	LV464022
HP/kW:	60 (HP)
RPM:	1160 (RPM)
Frame:	405Z
Voltage:	460
Current:	71.5
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.0
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: 1 - High



6 - Good

#### **Overall Condition**

- 1. Report Date
- 2. Nameplate Picture



Photos of all six sides of the machine.

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4.	Describe the Overall Condition of the Equipment as Received	
	Dirty	
Initial	Mechanical/Electrical	
5.	Does Shaft Turn Freely?	(Yes) Yes
6.	Does Shaft Have Visible Damage?	(No) No
7.	Assembled Shaft Runout	
8.	Assembled Shaft End Play	
9.	Air Gap Variation <10%	
10.	Lead Condition	(P) Pass
11.	Lead Length	10 Inches
12.	Frame Condition	pass
13.	Fan Condition	(N) NA
14.	Broken or Missing Components	brush rigging leads
Initial	Electrical Inspection	
15.	Insulation Resistance/Megger	
16.	Winding Resistance	
	1-2 1-3	2-3
17.	Perform Surge Test	(F) Fail
-	Windings shorted at the edge of iron	
18.	Stator Condition	good
Mecha	anical Inspection	
19.	Drive End Bearing Number-	6316
20.	Drive End Bearing Qty.	1
21.	Drive End Bearing Type	(Ball) Ball Bearing
22.	Drive End Lubrication Type	(Grease) Grease Lubricated
-	Red grease	
23.	Drive End Bearing Insulation or Grounding Device?	na
24.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	na
25.	Drive End Bearing Condition	worn
26.	Opposite Drive End Bearing Number-	6314
27.	Opposite Drive End Bearing Qty.	1
28.	Opposite Drive End Bearing Type	(Ball) Ball Bearing
29.	Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
-	Red grease	

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30	Opposite Drive End Bearing Insulation	or Grounding Device?		na
	Opposite Drive End Wavy Washer/Sn	<del>-</del>		na
32.				worn
33.				na
34.	Opposite Drive End Seal			na
Rotor	Inspection			
35.	Rotor Type/Material			
-	Wound rotor			
36.	Growler Test			
37.	Number of Rotor Bars			
38.				pass
39.	List the Parts needed for the Repair B	elow		
	6316 6314			
40.	Signature of Technician that Disasser	mbled Motor		Cw
Mecha	anical Fits- Rotor			
41.	Shaft Runout			
42.	Rotor Runout			
	Drive End Bearing Fit	Rotor Body	Opposite Drive End	Bearing
43.	Coupling Fit Closest to Bearing Housi	ng		
	0 Degrees	90 Degrees	120 Degrees	
44.	Coupling Fit Closest to the end of the	Shaft		
	0 Degrees	60 Degrees	120 Degrees	
45.	Drive End Bearing Shaft Fit	00.5	100 5	
	0 Degrees	60 Degrees	120 Degrees	
	3.1501	3.1501	3.1502	(D) D
46.	<u>_</u>			(P) Pass
47.	Opposite Drive End Bearing Shaft Fit		400 D	
	0 Degrees	60 Degrees	120 Degrees	
40	2.7564	2.7563	2.7563	(D) D
48.	11	Condition		(P) Pass
49.	Shaft Air Seal Fits	Opposite Drive Ford Air Cool		
	Drive End Air Seal	Opposite Drive End Air Seal		
Mecha	anical Fits- Bearing Housings			
	anical Fits- Bearing Housings Drive End - Endbell Bearing Fit			
		60 Degrees	120 Degrees	
	Drive End - Endbell Bearing Fit	60 Degrees	120 Degrees	

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52.	Opposite Drive End - Endbell Bearing	g Fit		
	0 Degrees	60 Degrees	120 Degrees	
	5.9064	5.9063	5.9065	
<b>5</b> 3.	Opposite Drive End - Endbell Bearing	g Fit Condition		(P) Pass
54.	Bearing Cap Condition			
	Drive End Bearing Cap	Opposite Drive End Bearing Cap		
-	Pass			
55.	End Bell Air Seal Fits			
	Drive End Air Seal	Opposite Drive End Air Seal		
56.	List Machine Work Needed Below			
	ODE end bell bearing fit			
٥٢.	Technician			Cw
Dyna	mic Balance Report			
58.	Rotor Weight and Balance Grade			
	Rotor Weight	Balance Grade		
59	Initial Balance Readings			
00.	Drive End	Opposite Drive End		
	DIIVO LIIG	Opposite Drive Life		
60.	Final Balance Readings			
	Drive End	Opposite Drive End		
		11		



61. Technician

#### Rewind

62. Core Test Results - Watts loss per Pound

Pre-Burnout Post Burnout

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63	Core Hot Spot Test		
00.	Pre-Burnout	Post-Burnout	
	The Bulliout	1 ost Burnout	
64.	Post Rewind Electrical Test- Insulation	n Resistance	
65.	Post Rewind Polarization Index		
66.	Post Rewind Winding Resistance		
	1-2	1-3	2-3
	Post Rewind Surge Test		
	Post Rewind Hi-Pot		
	Technician		
	Cause of Failure		
70.	Failure locations		
	ODE end bell bearing fit and stator wind	lings are shorted at the edge of iron	
71.	Root cause of failure		
	Wear and short of the stator windings of	lo to carbon buildup	
	anical Fits- Rotor - Post Repair		
	Shaft Runout Post Repair		
73.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
74	Coupling Fit Closest to Bearing Housi	ng Post Renair	
74.	0 Degrees	90 Degrees	120 Degrees
	o Degrees	30 Degrees	120 Degrees
75.	Coupling Fit Closest to the end of the	Shaft Post Repair	
	0 Degrees	60 Degrees	120 Degrees
			_
76.	Drive End Bearing Shaft Fit Post Repa	air	
	0 Degrees	60 Degrees	120 Degrees
77	Opposite Daire Ford Decrine Chaft Fit	Doet Donois	
77.	11 0	·	120 Dagger
	0 Degrees	60 Degrees	120 Degrees
78.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
79.	Shaft Repair Sign-off		
Mechanical Fits- Bearing Housings - Post Repair			
80.	Drive End - Endbell Bearing Fit Post F	Repair	
	0 Degrees	60 Degrees	120 Degrees
		EVD . D	
81.	Opposite Drive End - Endbell Bearing		100 5
	0 Degrees	60 Degrees	120 Degrees
82	Bearing Cap Condition Post Repair		
02.	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
	Drive Life Dearing Cap	Opposite Drive Life Dealing Cap	

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83.	End Bell Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
84.	End Bell Repair Sign-off		
Asser	nbly		
85.	Photograph All Major Components pri	or to assembly	
86.	Final Insulation Resistance Test		
87.	Assembled Shaft Endplay		
88.	Assembled Shaft Runout		
89.	Test Run Voltage		
	Volts	Volts	Volts
90.	Test Run Amperage		
	Amps	Amps	Amps
0.4	D: 5 1)/// ( D   1 1 1	D 0 1	
91.	Drive End Vibration Readings - Inches		
	Horizontal	Vertical	Axial
92.	Opposite Drive End Vibration Reading	s - Inches Per Second	
	Horizontal	Vertical	Axial
93.	Ambient Temperature - Fahrenheit		
94.	Drive End Bearing Temps - Fahrenhei	t	
	5 Minutes	10 Minutes	15 Minutes
95.	Opposite Drive End Bearing Temps -		
	5 Minutes	10 Minutes	15 Minutes
96.	Final Test Run Sign-off		
	Document Final Condition with Picture	es after paint	
		•	

























98. Final Pics and QC Review



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

> FolderID: 100371 FormID: 14695349

### **AC Random Coil Rewind Report**

Union Pacific-Vine St 10945 1020 N. Vine Street

North Liittle Rock, AR

Priorities Found: 2 - Good

General		
1. Job Number	100371	
2. Report Date	09/29/2022	
3. Customer	Union Pacific	





Stato	r Winding	
4.	Core Length	7.625 "
5.	Core ID	12.5 "
6.	Back Iron Depth	1.137 "
7.	Slot Depth	1 "
8.	Tooth Width	0.248 "
9.	Number of Vents	
10.	Vent Width	
11.	Before Burnout Core loss	
12.	Flux Before Burnout	
13.	Watts before burnout	
14.	Watts loss per lb. before burnout	
15.	After Burnout Core Loss	
16.	Flux After burnout	
17.	Watts After Burnout	
18.	Watts loss per lb After Burnout	
<b>1</b> 9.	Core Iron Condition	(P) Pass
20.	RTD's	
21.	RTD's Reading	
22.	Motor Heaters	

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23.	Heater Qty.	
	Heater Voltage	
	Heater Wattage	
26.	Thermistors	
_	Number of Poles	6
28.		54
	Number of Coils	54
	Coil Weight	3 Lbs.
	Lead Markings	
	Grouping	
	18 of 4	
<ul><li>33.</li></ul>	Multiple Wires	(Y) Yes
34.	Wire Size	
	3 #17s	
35.	Turns per coil	15
36.	Pitch 1 to:	11
37.	Connection	
	3 Delta	
38.	Lead Length	16 "
39.	Lead Size	
40.	Number of Leads	3
41.	Megger Reading After Rewind	
42.	Coil Machine Slot	
43.	Coil Machine Tip	
44.	Coil Machine Pitch	
45.	ŭ	
46.	Surge Pattern After Rewind	
47.	Service Technician	Robert R, Trent
	11/1	

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