



AC Inspection as Found

Novus Arkansas, LLC (11612)

7920 Sloan Drive
Little Rock, AR 72206

FolderID: 102593
FormID: 19644628

AC Inspection - Rev. 2

Location: LR Motor Shop

Serial Number:

Description: 150HP 1780RPM WEG

Hi-Speed Job Number: 102593

Manufacturer: WEG

Product Number: 15018EP3GGB445T

Spec/ID #: ET

HP/kW: 150 (HP)

RPM: 1780 (RPM)

Frame: 444/5T

Voltage: 460

Current: 168 (Amps)

Phase: Three

Hz: 60 (Hz)

Service Factor: 1.15

Enclosure: TEFC

of Leads: 12

J-box Included: Complete

Coupling/Sheave: None

Bearing RTDs: No

Stator RTDs: No

Repair Stage: Final

Rewind: No

Shaft Machined Fit Repairs
Required: Yes

Bearing Housing Machined
Fit Repairs Required: No

Heaters: No

Winding Type : Random Wound

Bearing Type: Rolling Element

Priorities Found:  2 - High  10 - Good

Overall Condition



1. Report Date

2. Nameplate Picture

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3. Photos of all six sides of the machine.

P45







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4. Describe the Overall Condition of the Equipment as Received

Serviceable

Initial Mechanical/Electrical



5. Does Shaft Turn Freely?

(Y) Yes
6. Does the shaft require T.I.R in Lathe to identify additional repairs?

(Yes) Yes
- ODE bearing journal egg shaped

7. Does Shaft Have Visible Damage?

(No) No

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Some minor rust



8. Assembled Shaft Runout 0.001 Inches

9. Assembled Shaft End Play 0 inches

10. Air Gap Variation <10% pass

11. Lead Condition (P) Pass

P69



12. Lead Length 12 Inches

13. Does it have Lugs?, If so what is the Stud Size? (No) No

14. Lead Numbers

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2,4,8,10
5,9,3,11
1,6,7,12



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pass

(P) Pass

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none

Initial Electrical Inspection



Megohms

P8

[illegible]

Site	Tests	Threshold							
Area	Test ID	Y...	Res...	Mo...	Pl	DC	Sur...		
3/7/2024 3/7/2024	400V w/o...	T...	PASS	PASS			PASS		
3/7/2024 3/7/2024	400V w/o...	T...	PASS	PASS			FAIL		
3/7/2024 3/7/2024	400V w/o...	T...	PASS	PASS			PASS	PASS	
Test Date	3/7/2024	3/7/2024	3/7/2024	8/22/2023	8/22/2023	8/22/2023	8/22/2023		
Test Time	1:05:56 PM	7:27:28 AM	10:40:19 AM	8:35:40 AM	8:35:40 AM	8:35:40 AM	8:35:40 AM		
Magnitude Stat	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	No Test	
Vault (V)	491	498	498	491	491	491	491	No Test	
Isp4d	0.0734	0.0973	0.2071	0.0387	0.0387	0.0387	0.0387	No Test	
Resist	5684	8600	2425	12678	12678	12678	12678	No Test	
IR Ratio	1807	2340	720	1422	1422	1422	1422	No Test	
IR Ratio	No Test	No Test	No Test	No Test	No Test	No Test	No Test	No Test	
Vault (V)								No Test	
IR Ratio								No Test	
IR Ratio								No Test	
Test Type	Open-Voltage	Open-Voltage	Open-Voltage	Open-Voltage	Open-Voltage	Open-Voltage	Open-Voltage	No Test	
Vault (V)	1207	1207	1207	1207	1207	1207	1207	No Test	
Observations	Apply Notes	Record Summary	Image	Test Results	Test Results	Test Results	Test Results	No Test	

19. Winding Resistance

P20

1-2

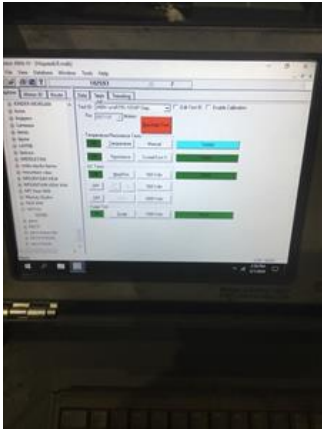
1-3

2-3

[illegible]

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8/7/2024 2:16:05	480V w/o...	T...	PASS	PASS	FAIL
8/7/2024 1:05:55	480V w/o...	T...	PASS	PASS	PASS
Test Date	8/7/2024	8/7/2024	8/9/2024	8/22/2023	8/22/2023
Test Time	1:05:56 PM	8:27:26 AM	10:45:26 AM	8:55:49 AM	8:25:20 AM
Test Type	Step-Voltage	Step-Voltage	Step-Voltage	Step-Voltage	
Voltage (V)	1967	1967	1967	1967	
Current (A)	0.2315	0.2533		0.1708	
Resist	8627	5652		18614	
At 40°C	1329	1528		4688	
Surge Status	PASS	PASS	PASS	PASS	No Test
Peak Voltage L1	1910	1930	1910	1908	
Peak Voltage L2	1910	1910	1908	1908	
Peak Voltage L3	1910	1910	1910	1910	
Min V-P-Factor	8.2/0.5/0.3	5.4/0.5/0.3	1.3/1.1/1.5	0.5/0.5/0.7	
EAR 1-2/3-V	1/2/3	15/15/0	2/1/0	0/1/1	



21. Number of Stator Slots 72

22. Stator Condition pass

Wash and bake

23. Stator Thermistors/Ohms 254.7 P90



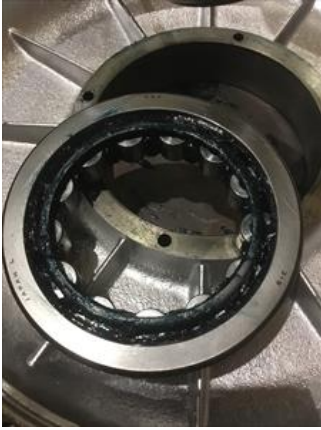
24. Stator Overloads/Ohms

Na

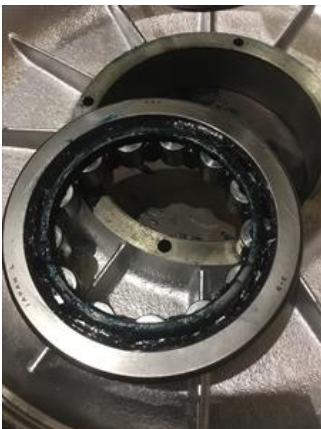
Mechanical Inspection



25. Drive End Bearing Brand NSK



27. Drive End Bearing Qty.	1
28. Drive End Bearing Type	(Roller) Roller Bearing
29. Drive End Lubrication Type	(Grease) Grease Lubricated
30. Drive End Bearing Insulation or Grounding Device?	none
31. Drive End Wavy Washer/Snap-Ring Other Retention Device?	snap ring
32. Drive End Bearing Condition	replace



33. Opposite Drive End Bearing Brand	SKF
34. Opposite Drive End Bearing Number-	6316 2Z/C3



35. Opposite Drive End Bearing Qty.	1	
36. Opposite Drive End Bearing Type	(Ball) Ball Bearing	
37. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated	
38. Opposite Drive End Bearing Insulation or Grounding Device?	none	
39. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	snap ring	
40. Opposite Drive End Bearing Condition	replace	P118









41. Drive End Seal	dust seal	
42. Opposite Drive End Seal	none	

Rotor Inspection

43. Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast	
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44.	Growler Test	(Pass) Pass
45.	Number of Rotor Bars	58
46.	Rotor Condition	pass
47.	List the Parts needed for the Repair Below <i>NU 319 roller bearing. 6316 2Z / C3 ball bearing</i>	
48.	Signature of Technician that Disassembled Motor	Terrence Holland
		
 <i>Witness: RW</i>		
Mechanical Fits- Rotor		
49.	Shaft Runout	0.002 inches
50.	Rotor Runout	
	Drive End Bearing Fit	Rotor Body Opposite Drive End Bearing
 <i>Na</i>		
51.	Coupling Fit Closest to Bearing Housing	
	0 Degrees 90 Degrees 120 Degrees	
 <i>Na</i>		
52.	Coupling Fit Closest to the end of the Shaft	
	0 Degrees 60 Degrees 120 Degrees	
 <i>Na</i>		
53.	Drive End Bearing Shaft Fit	
	0 Degrees 60 Degrees 120 Degrees	
	3.7409 3.7407 3.7409	
54.	Drive End Bearing Shaft Fit Condition	(P) Pass
55.	Opposite Drive End Bearing Shaft Fit	
	0 Degrees 60 Degrees 120 Degrees	
	3.1496 3.1492 3.149	
 <i>Egg shaped.</i>		
56.	Opposite Drive End Bearing Shaft Fit Condition	(F) Fail
57.	Shaft Air Seal Fits	
	Drive End Air Seal Opposite Drive End Air Seal	
	good good	
Mechanical Fits- Bearing Housings		
58.	Drive End - Endbell Bearing Fit	
	0 Degrees 60 Degrees 120 Degrees	
	7.474 7.4738 7.4738	
59.	Drive End - Endbell Bearing Fit Condition	(P) Pass
60.	Opposite Drive End - Endbell Bearing Fit	
	0 Degrees 60 Degrees 120 Degrees	
	6.6935 6.6932 6.6933	
61.	Opposite Drive End - Endbell Bearing Fit Condition	(P) Pass

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62. Bearing Cap Condition

Drive End Bearing Cap

Opposite Drive End Bearing Cap
pass



63. End Bell Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

pass

pass

64. List Machine Work Needed Below

Repair ODE shaft bearing journal. It is egg shaped.

65. Technician

Terrence Holland



Co witness RRW

Root Cause of Failure



66. Failure locations

Opposite drive end shaft bearing journal out of tolerance. Egg shaped. Bearing grease dirty/contaminated.



67. Root cause of failure

Both bearings had contaminated grease inside them and the ODE shaft bearing journal was out of allowable tolerance.

Dynamic Balance Report

68. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade
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69. Initial Balance Readings

Drive End	Opposite Drive End
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70. Final Balance Readings

Drive End	Opposite Drive End
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71. Technician

Mechanical Fits- Rotor - Post Repair

72. Shaft Runout Post Repair

73. Rotor Runout Post Repair

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
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74.	Coupling Fit Closest to Bearing Housing Post Repair		
	0 Degrees	90 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 Repair		
	0 Degrees	60 Degrees	120 Degrees
77.	Opposite Drive End Bearing Shaft Fit Post Repair		
	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		
Assembly			
80.	QC Check All Parts for Cleanliness Prior to Assembly		
81.	Photograph All Major Components prior to assembly		
82.	Final Insulation Resistance Test		
83.	Assembled Shaft Endplay		
84.	Assembled Shaft Runout		
85.	Test Run Voltage		
	Volts	Volts	Volts
86.	Test Run Amperage		
	Amps	Amps	Amps
87.	Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
88.	Opposite Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
89.	Ambient Temperature - Fahrenheit		
90.	Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
91.	Opposite Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
92.	Document Final Condition with Pictures after paint		
93.	Final Pics and QC Review		