



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

P37



3. Photos of all six sides of the machine.

P45









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

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7.	Does Shaft Have Visible Damage?	(No) No	P26
	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		P97
	2,4,8,10 5,9,3,11 1,6,7,12		
			

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pass

(P) Pass

P115



17. Broken or Missing Components

none

Initial Electrical Inspection



18. Insulation Resistance/Megger

Megohms

P8

Time	Tests	Trendings								
Test ID	Pa.	Res.	Abn.	#1	DC	Sur.				
1/7/2024 2:27A	ABO/Rh type						PA			
1/7/2024 2:18A	ABO w/ r/s	1	PA/IS	PA/IS			PA			
1/7/2024 2:15A	ABO w/ r/s	1	PA/IS	PA/IS			PA			
Test Date	7/7/2024	7/7/2024	5/7/2024	8/3/2023						
Test Time	10:55:36 PM	9:37:26 AM	1944:29 AM	8:25:49 AM						
Sample ID	2111	2111	2111	2111						
Tested By			Tested	Tested						
Tested On										
By Sample Count	Thrombocytes	Thrombocytes	Thrombocytes	Thrombocytes						
Test Result	PA/IS	PA/IS	PA/IS	PA/IS						
Test Result	PA/IS	PA/IS	PA/IS	PA/IS						
Bar 1.0 (mm)										
Bar 2.0 (mm)										
Bar 3.0 (mm)										
CL 4.0 (mm)	1.4233 Cans R	1.1429 Cans R	1.0178 Cans R	1.0148 Cans R						
CL 4.5 (mm)	1.4237 Cans R	1.1433 Cans R	1.0187 Cans R	1.0148 Cans R						
CL 5.0 (mm)	1.1218 Cans R	1.1218 Cans R	1.0219 Cans R	1.0147 Cans R						
Max Data R %	1.445	1.442	1.441	1.435						
Count (1/mm)	1.1818 Cans R	1.1818 Cans R	1.0178 Cans R	1.0147 Cans R						
Abnormalities	Agglutination	Agglutination	Agglutination	Agglutination						

Site	Tests	Threshold							
Test ID	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			PASS		
3/7/2024 3/7/2024	400V w/o...	T...	PASS	PASS			PASS		
Test Date	3/7/2024	3/7/2024	3/7/2024	3/7/2024	3/7/2024	3/7/2024	3/7/2024		
Test Time	1:05:56 PM	1:27:28 AM	10:40:19 AM	8:55:49 AM	8:55:49 AM	8:55:49 AM	8:55:49 AM		
Magnitude Stat	PASS	PASS	PASS	PASS	PASS	PASS	PASS		
Vault (V)	491	498	498	491	491	491	491		
ImpA	0.0734	0.0973	0.2071	0.0387	0.0387	0.0387	0.0387		
Resist	6684	8600	2425	12678	12678	12678	12678		
IR Ratio	1807	2340	720	1422	1422	1422	1422		
IR Ratio	No Test	No Test	No Test	No Test	No Test	No Test	No Test		
Vault (V)									
IR Ratio									
IR Ratio									
Test Type	Open Voltage	Open Voltage	No Test	Open Voltage	Open Voltage	Open Voltage	No Test		
Vault (V)	1267	1267		1267	1267	1267			
Observations	Apply Notes	Results Summary	Image	Test Results Summary	Test Results Summary	Test Results Summary	Test Results Summary		

19. Winding Resistance

P20

1-2

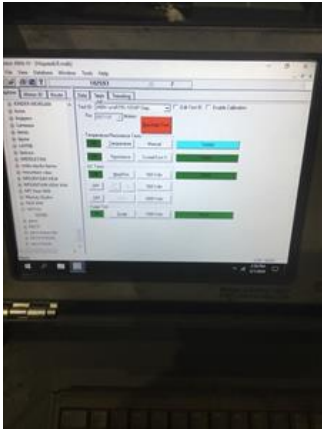
1-3

2-3

Date	Tests	Standards										
12/25/13			7									
Time	Test ID	Ta.	Ma.	Me.	Th.	Fr.	Sa.	Su.				
7:00-7:30 AM	MOV	Ta.	Ma.	Me.	Th.	Fr.	Sa.	Su.				
7:30-8:00 AM	MOV	Ta.	Ma.	Me.	Th.	Fr.	Sa.	Su.				
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4:30-5:00 AM	MOV	Ta.	Ma.	Me.	Th.							

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8/7/2024 2:16:05	480V w/o...	T...	PASS	PASS	FAIL
8/7/2024 1:05:5...	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	Surge Voltage	Surge Voltage	Surge Voltage	Surge Voltage	
Volts (V)	1967	1967	1967	1967	
Volts (V)	0.2315	0.2533		0.1708	
Resist	8627	5652		19614	
At 40°C	1529	1528		4888	
Surge Station	PASS	PASS	PASS	PASS	No Test
Peak Volts (V)	1910	1930	1910	1908	
Peak Volts (V)	1188	1910	1588	1908	
Peak Volts (V)	1910	1910	1910	1910	
Min V-P Ratio	8.2/0.5/0.3	5.4/0.5/0.3	1.3/1.1/1.5	0.3/0.5/0.7	
EAR 1-2/3-V	1/2/3	15/10/9	2/1/9	9/1/1	



21. Number of Stator Slots 72

22. Stator Condition pass

Wash and bake

23. Stator Thermistors/Ohms 254.7 P90



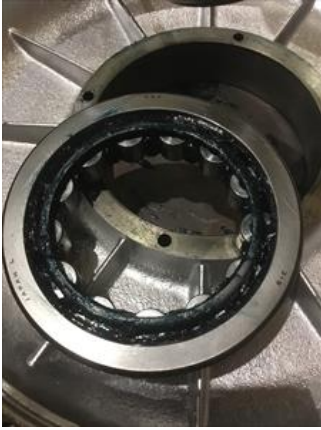
24. Stator Overloads/Ohms

Na

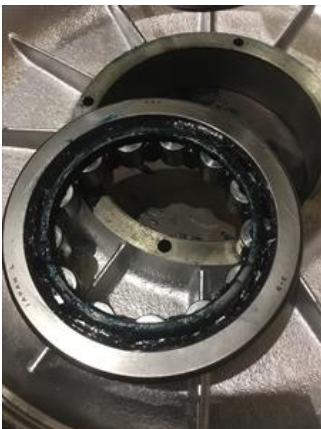
Mechanical Inspection



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	
			
Mechanical Fits- Rotor			
49.	Shaft Runout	0.002 inches	
50.	Rotor Runout		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
	<input type="checkbox"/> Na		
51.	Coupling Fit Closest to Bearing Housing		
	0 Degrees	90 Degrees	120 Degrees
	<input type="checkbox"/> Na		
52.	Coupling Fit Closest to the end of the Shaft		
	0 Degrees	60 Degrees	120 Degrees
	<input type="checkbox"/> Na		
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
	3.15	3.1497	3.1443
	<input type="checkbox"/> Egg shaped.		
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	

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		