



## 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**



- |  |   |
|--|---|
| <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: green; border-radius: 50%; margin-right: 10px;"></div> <div>5. Does Shaft Turn Freely?</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; border-radius: 50%; margin-right: 10px;"></div> <div>6. Does the shaft require T.I.R in Lathe to identify additional repairs?</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: gray; border-radius: 50%; margin-right: 10px;"></div> <div><i>ODE bearing journal egg shaped</i></div> </div> | <div>(Y) Yes</div> <div>(Yes) Yes</div> |
|--|---|



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



**none**

## Initial Electrical Inspection



**Megohms**

P8

Time	Tests	Trendings							
Test Date	Test ID	Pa.	Res.	Abn.	#1	DC	Sur.		
1/7/2024 2:27A	ABO/Rh							PA	
1/7/2024 2:18A	ABO w/n	1	PAIS	PAIS				PA	
1/7/2024 2:15A	ABO w/n	1	PAIS	PAIS				PA	
Test Date	7/7/2024	7/7/2024	5/7/2024	8/3/2024				9/10/2027	
Test Time	10:55:36 PM	9:27:26 AM	19:44:26 PM	8:25:49 AM				8:23:28 AM	
Sample ID	2111	2111	2111	2111					
Tested	Not Test	Not Test	Not Test	Not Test					
W. Sample Cons.	Chemistry	Chemistry	Thermoplastic	Thermoplastic	Thermoplastic				
Test Result	PAIS	PAIS	PAIS	PAIS					
Test Date	7/7/2024	7/7/2024	5/7/2024	8/3/2024				9/10/2027	
Test Time	10:55:36 PM	9:27:26 AM	19:44:26 PM	8:25:49 AM				8:23:28 AM	
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Sample ID	2111	2111	2111	2111					
Tested	Not Test	Not Test	Not Test	Not Test					
W. Sample Cons.	Chemistry	Chemistry	Thermoplastic	Thermoplastic	Thermoplastic				
Test Result	PAIS	PAIS							

Site	Tests	Threshold							
Test ID	Test ID	Y...	Res...	Mo...	Pl	DC	Sur...		
3/7/2024 3/7/2024	480V w/o...	T...	PASS	PASS			PASS		
3/7/2024 3/7/2024	480V w/o...	T...	PASS	PASS			FAIL		
3/7/2024 3/7/2024	480V w/o...	T...	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		
Measuring Stat.	PASS	PASS	PASS	PASS	PASS	PASS	No Test		
Volt (V)	491	498	498	491	491	491	No Test		
ImpA	0.0734	0.0973	0.2071	0.0387	0.0387	0.0387	No Test		
Resist	5684	8600	2425	12678	12678	12678	No Test		
IR Ratio	1807	2340	720	1422	1422	1422	No Test		
IR Ratio	No Test	No Test	No Test	No Test	No Test	No Test	No Test		
Volt (V)									
IR Ratio									
IR Ratio									
Test Type	Open Voltage	Open Voltage	No Test	Open Voltage	Open Voltage	Open Voltage	No Test		
Volt (V)	1207	1207		1080	1080	1080			
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

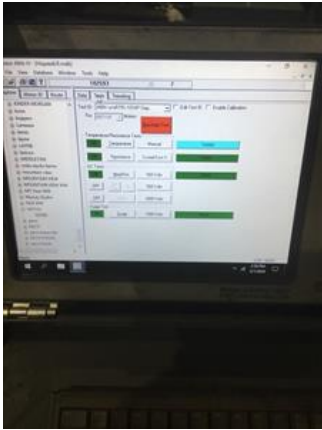
2-3

12/25/23									
Date	Tests	Standards							
Time	Test ID	Ta.	Ma.	Me.	Th.	Fr.	Sa.	Su.	
7:00-7:30 AM	MOV w/ve	Ta.	Pa22	Pa25	Pa22	Pa25	Pa22		
7:30-7:55 AM	MOV w/ve	Ta.	Pa22	Pa25	Pa22	Pa25	Pa22		
8:00-8:25 AM	MOV w/ve	Ta.	Pa22	Pa25	Pa22	Pa25	Pa22		
Test Date	3/7/2009	3/7/2008	3/30/2008	4/22/2008	5/22/2008				
Test Time	10:00 PM	6:15 AM	10:00 AM	6:15 AM	6:15 AM				
Test Date	3/7/2008	3/7/2008	3/7/2008	3/7/2008	3/7/2008				
Test Time	10:00 PM	6:15 AM	6:15 AM	6:15 AM	6:15 AM				
Test Date	3/7/2008	3/7/2008	3/7/2008	3/7/2008	3/7/2008				
Test Time	10:00 PM	6:15 AM	6:15 AM	6:15 AM	6:15 AM				
Test Date	3/7/2008	3/7/2008	3/7/2008	3/7/2008	3/7/2008				
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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	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	1910	1910	1908	
Peak Volts (V)	1188	1910	1908	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	19/19/9	27/9	9/1/1	
Template	Application	Results Summary	Surge	Surge Voltage	



21. Number of Stator Slots 72

22. Stator Condition pass

Wash and bake

23. Stator Thermistors/Ohms 254.7 P90



24. Stator Overloads/Ohms

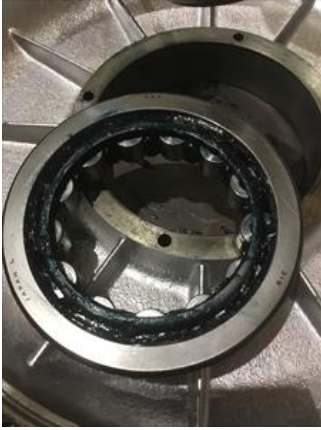
Na

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>			
<b>Mechanical Fits- Rotor</b>			
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	
<b>Mechanical Fits- Bearing Housings</b>			
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
--------------	---------------

Na

69. Initial Balance Readings

Drive End	Opposite Drive End
-----------	--------------------

Na

70. Final Balance Readings

Drive End	Opposite Drive End
-----------	--------------------

Na

71. Technician

Na

Mechanical Fits- Rotor - Post Repair

72. Shaft Runout Post Repair
- inches



Na

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84. Assembled Shaft Runout	inches		
Na			
85. Test Run Voltage	P56		
Volts	Volts	Volts	
			
86. Test Run Amperage	P65		
Amps	Amps	Amps	
			
87. Drive End Vibration Readings - Inches Per Second	Horizontal	Vertical	Axial
Na			
88. Opposite Drive End Vibration Readings - Inches Per Second	Horizontal	Vertical	Axial
Na			
89. Ambient Temperature - Fahrenheit	Na		
90. Drive End Bearing Temps - Fahrenheit	5 Minutes	10 Minutes	15 Minutes
Na			



91. Opposite Drive End Bearing Temps - Fahrenheit

5 Minutes

10 Minutes

15 Minutes

Na

92. Document Final Condition with Pictures after paint

93. Final Pics and QC Review

Terrence Holland

P131



Witness: RHR











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