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

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:	15018EP3GBB445T
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

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

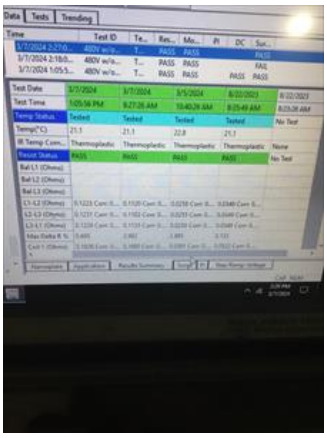
2,4,8,10
5,9,3,11
1,6,7,12

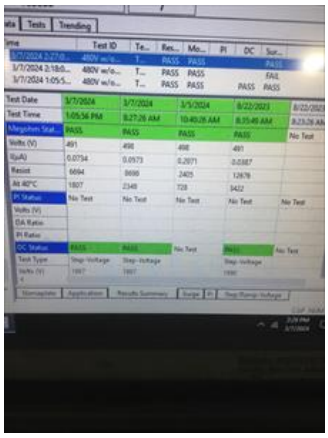
15.	Frame Condition	**pass**	
16.	Fan Condition	**(P) Pass**	P115

17.	Broken or Missing Components	**none**	

Initial Electrical Inspection

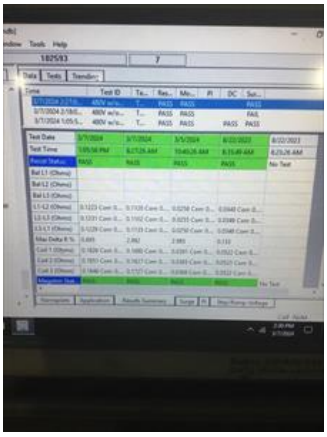
18.	Insulation Resistance/Megger	**Megohms**	P8



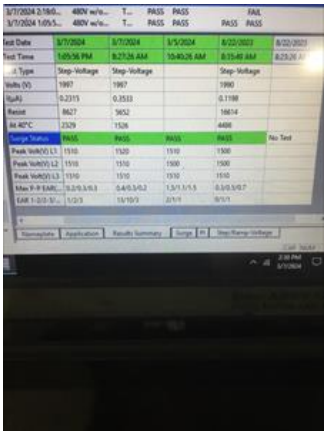


19. Winding Resistance — P20

1-2	1-3	2-3



20.	Perform Surge Test	**(P) Pass**	P57



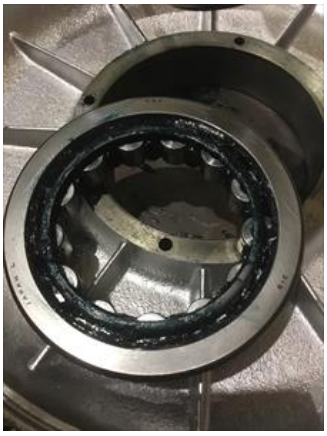
21.	Number of Stator Slots	**72**	
22.	Stator Condition	**pass**	
	Wash and bake		
23.	Stator Thermistors/Ohms	**254.7**	P90

24.	Stator Overloads/Ohms	
	Na	

Mechanical Inspection

25.	Drive End Bearing Brand	**NSK**

26.	Drive End Bearing Number-	**NU 319 C3**	P32



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**	P82

33.	Opposite Drive End Bearing Brand	**SKF**	
34.	Opposite Drive End Bearing Number-	**6316 2Z/C3**	P99

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**	

44.	Growler Test	**(Pass) Pass**
45.	Number of Rotor Bars	**58**
46.	Rotor Condition	**pass**
47.	List the Parts needed for the Repair Below ***NU 319 roller bearing.*** ***6316 2Z / C3 ball bearing***	
48.	Signature of Technician that Disassembled Motor	**Terrence Holland**

Witness: RW

Mechanical Fits- Rotor

49.	Shaft Runout	**0.002 inches**
50.	Rotor Runout	

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

Na

51.	Coupling Fit Closest to Bearing Housing	

0 Degrees	90 Degrees	120 Degrees

Na

52.	Coupling Fit Closest to the end of the Shaft	

0 Degrees	60 Degrees	120 Degrees

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
3.1496	**3.1492**	**3.149**

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

69. Initial Balance Readings

Drive End	Opposite Drive End

70. Final Balance Readings

Drive End	Opposite Drive End

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

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		