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

AC Inspection as Found

PRODUCERS RICE STUTTGART
603 N. PARK AVE
STUTTGART, AR 72160

FolderID: 103042
FormID: 20521950

AC Inspection - Rev. 2

Location:	MOTOR SHOP LR
Serial Number:	WAA127255
Description:	500HP Marathon 2800RPM

Hi-Speed Job Number:	103042
Manufacturer:	Marathon
Product Number:	VN5011LHFS16049AAW
Spec/ID #:	TYPE: TFS
Serial Number:	WAA127255
HP/kW:	500 (HP)
RPM:	2800 (RPM)
Frame:	5011L
Voltage:	460
Current:	555 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.00
Enclosure:	TEFC
# of Leads:	12
J-box Included:	None
Coupling/Sheave:	None
Date Received:	05/09/2024
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	No
Shaft Machined Fit Repairs Required:	No
Bearing Housing Machined Fit Repairs Required:	Yes
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: **2 - High** **8 - Good**

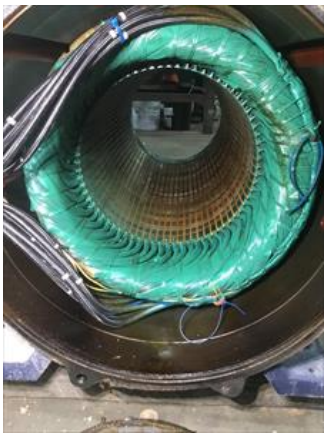
Overall Condition

1.	Report Date	**06/03/2024**

2. Nameplate Picture P37

3. Photos of all six sides of the machine. P45

P1 & P2



	4.	Describe the Overall Condition of the Equipment as Received ***Serviceable***	

Initial Mechanical/Electrical

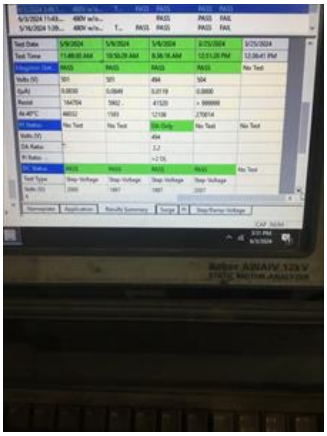
●	5.	Does Shaft Turn Freely?	**(Y) Yes**	
●	6.	Does the shaft require T.I.R in Lathe to identify additional repairs?	**(No) No**	
	7.	Does Shaft Have Visible Damage?	**(No) No**	
●	8.	Assembled Shaft Runout	**0.001 Inches**	
	9.	Assembled Shaft End Play	**0 inches**	
	10.	Air Gap Variation <10%		
●	11.	Lead Condition	**(P) Pass**	P69

	12.	Lead Length	**15.5 Inches**
●	13.	Does it have Lugs?, If so what is the Stud Size?	**(Yes) Yes**
	14.	Lead Numbers	**1, 2, 3**
	15.	Frame Condition	**pass**
	16.	Fan Condition	**(N) NA**

17. Broken or Missing Components **tac mount bracket** P122

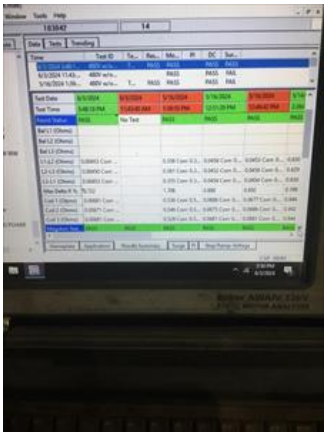
Initial Electrical Inspection

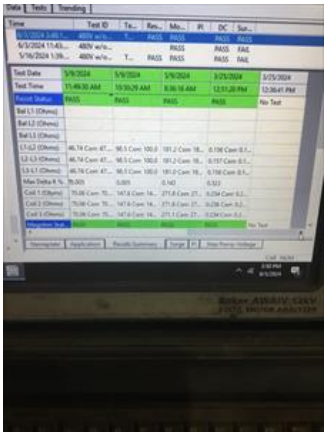
18. Insulation Resistance/Megger **Megohms** P8



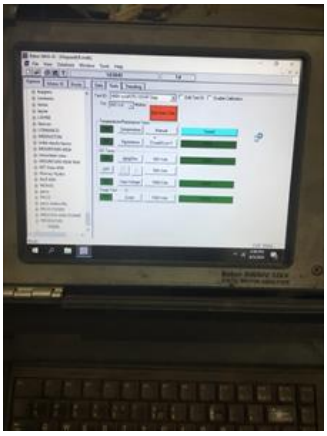
19. Winding Resistance P20

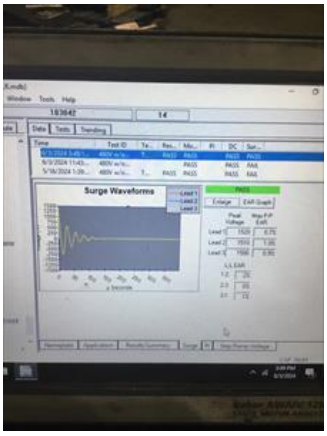
1-2	1-3	2-3

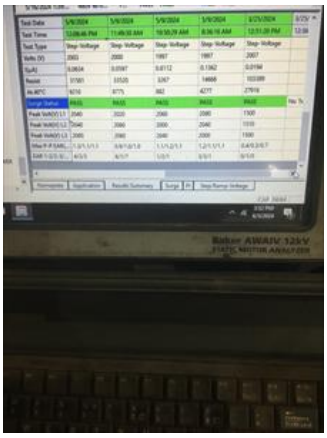




20. Perform Surge Test **(P) Pass** P57







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

24.	Stator Overloads/Ohms		

Mechanical Inspection

25.	Drive End Bearing Brand	**FAG**	

26.	Drive End Bearing Number-	**6324 M/C3 VL0241**	P32

27.	Drive End Bearing Qty.	**1**
28.	Drive End Bearing Type	**(Ball) Ball Bearing**
29.	Drive End Lubrication Type	**(Grease) Grease Lubricated**
30.	Drive End Bearing Insulation or Grounding Device?	**grounding brush**
31.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**
32.	Drive End Bearing Condition	**replace**
33.	Opposite Drive End Bearing Brand	**FAG**
34.	Opposite Drive End Bearing Number-	**6318 M/C3 VL0241** 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?	**wavy washer**	
40.	Opposite Drive End Bearing Condition	**replace**	
41.	Drive End Seal	**9000-A-16968-0**	P120

42.	Opposite Drive End Seal		P123

Replace o-rings

Rotor Inspection

43.	Rotor Type/Material	**(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast**	P3

44.	Growler Test	**(Pass) Pass**

45.	Number of Rotor Bars	**55**
46.	Rotor Condition	**pass**
47.	List the Parts needed for the Repair Below	

Replace bearings & sleeve both housing fits. Opposite drive end fit needs to be insulated and opposite driven bearing needs to be a hybrid insulated bearing. Replace broken tach mounting bracket. Install aegis grounding ring internally on drive end bearing cap.

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

51.	Coupling Fit Closest to Bearing Housing	

0 Degrees	90 Degrees	120 Degrees

52.	Coupling Fit Closest to the end of the Shaft	

0 Degrees	60 Degrees	120 Degrees

53.	Drive End Bearing Shaft Fit	

0 Degrees	60 Degrees	120 Degrees
4.7257	**4.7258**	**4.7258**

54.	Drive End Bearing Shaft Fit Condition	**(P) Pass**
55.	Opposite Drive End Bearing Shaft Fit	

0 Degrees	60 Degrees	120 Degrees
3.5435	**3.5436**	**3.5437**

56.	Opposite Drive End Bearing Shaft Fit Condition	**(P) Pass**
57.	Shaft Air Seal Fits	

Drive End Air Seal	Opposite Drive End Air Seal

Mechanical Fits- Bearing Housings

58.	Drive End - Endbell Bearing Fit	

0 Degrees	60 Degrees	120 Degrees
10.2382	**10.238**	**10.2382**

59.	Drive End - Endbell Bearing Fit Condition	**(F) Fail**

Out of tolerance. Max allowed is 10.2375

60.	Opposite Drive End - Endbell Bearing Fit	

0 Degrees	60 Degrees	120 Degrees
7.4822	**7.4821**	**7.4823**

61.	Opposite Drive End - Endbell Bearing Fit Condition	**(F) Fail**

Max allowed is 7.4814

62.	Bearing Cap Condition	

Drive End Bearing Cap	Opposite Drive End Bearing Cap
pass	**pass**

63. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

64. List Machine Work Needed Below

Sleeve both housing fits. ODE housing fit needs to be insulated.

65. Technician **Terrence Holland**

Witness: ROW

Root Cause of Failure

66. Failure locations

Both housing fits out of tolerance. Replace broken tach mount bracket.

67. Root cause of failure P18

D.E shaft grounding brush was worn and had minimal contact with shaft. Both bearings showed signs of frosting from electrical discharge to ground causing the blackened grease to lose its lubrication qualities.

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- Bearing Housings - Post Repair

72.	Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
73.	Opposite Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
74.	Bearing Cap Condition Post Repair		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
75.	End Bell Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
76.	End Bell Repair Sign-off		

Assembly

77.	QC Check All Parts for Cleanliness Prior to Assembly		
78.	Photograph All Major Components prior to assembly		
79.	Final Insulation Resistance Test		
80.	Assembled Shaft Endplay		
81.	Assembled Shaft Runout		
82.	Test Run Voltage		
	Volts	Volts	Volts
83.	Test Run Amperage		
	Amps	Amps	Amps
84.	Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
85.	Opposite Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
86.	Ambient Temperature - Fahrenheit		
87.	Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
88.	Opposite Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
89.	Document Final Condition with Pictures after paint		

90.	Final Pics and QC Review