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

AC Inspection as Found

NUCOR Memphis (003974-1)
3601 Paul R Lowry Road
Memphis, TN 38109

FolderID: 153776
FormID: 21751584

AC Inspection - Rev. 2

Location:	603
Serial Number:	

Hi-Speed Job Number:	153776
Manufacturer:	Marathon
HP/kW:	40 (HP)
RPM:	1780 (RPM)
Frame:	324T
Voltage:	230 / 460
Current:	95/47.5 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
# of Leads:	9
J-box Included:	Complete
Coupling/Sheave:	Coupling
Date Received:	09/25/2024
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Teardown Inspection
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: **1 - High** **50 - Good**

Overall Condition

1. Report Date **09/26/2024**
2. Nameplate Picture P2

3. Photos of all six sides of the machine. P3

4. Describe the Overall Condition of the Equipment as Received

5.	Distance from the end of the shaft to the Coupling/Sheave	**1.072 inches**	P5
	On the shaft		

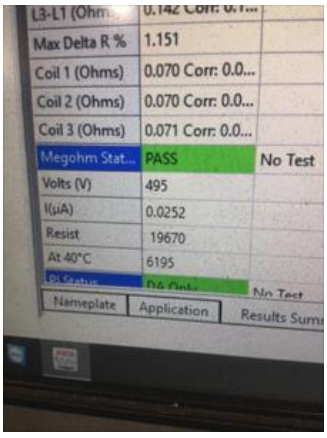
6.	Report Date [COPY]	**09/26/2024**	
Initial Mechanical/Electrical			
7.	Does Shaft Turn Freely?	**(Y) Yes**	
8.	Does the shaft require T.I.R in Lathe to identify additional repairs?	**(No) No**	
9.	Does Shaft Have Visible Damage?	**(No) No**	
10.	Assembled Shaft Runout	**0.001 Inches**	
11.	Assembled Shaft End Play		
12.	Air Gap Variation <10%	**no provision for measurement**	
13.	Lead Condition	**(P) Pass**	
14.	Lead Length	**12 Inches**	
15.	Does it have Lugs?, If so what is the Stud Size?	**(No) No**	
16.	Lead Numbers	**1-9**	
	1,2,3 power *4-7,5-8,6-9*		
17.	Frame Condition	**good**	
18.	Fan Condition	**(P) Pass**	P18
	2 set screws		

19. Broken or Missing Components **yes** P19

Break came apart

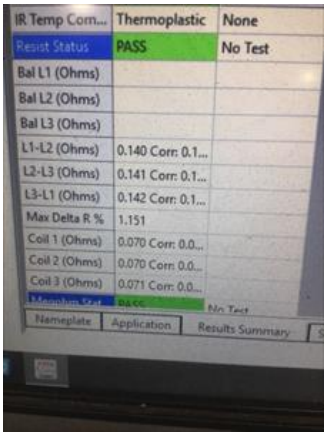
Initial Electrical Inspection

20. Insulation Resistance/Megger **6195 Megohms** P20

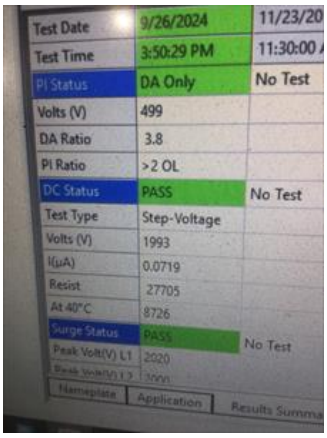


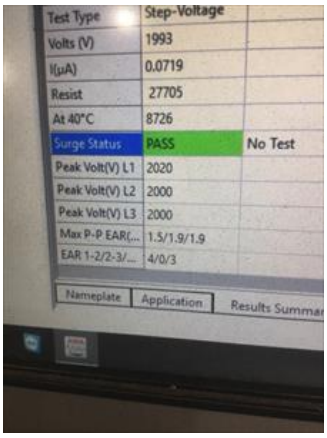
21. Winding Resistance P21

1-2	1-3	2-3
.070	**.070**	**.071**



22. Perform Surge Test **(P) Pass** P22





23.	Number of Stator Slots	**48**	
24.	Stator Condition	**good**	
25.	Stator Thermistors/Ohms	**none present**	
26.	Stator Overloads/Ohms	**none present**	

Mechanical Inspection

27.	Drive End Bearing Brand	**SKF**	
28.	Drive End Bearing Number-	**6312 zz c3**	P28

29.	Drive End Bearing Qty.	**1**	
30.	Drive End Bearing Type	**(Ball) Ball Bearing**	
31.	Drive End Lubrication Type	**(Grease) Grease Lubricated**	
32.	Drive End Bearing Insulation or Grounding Device?	**none present**	

33.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none present**	
34.	Drive End Bearing Condition	**normal wear**	P34

35.	Opposite Drive End Bearing Brand	**NTN**	
36.	Opposite Drive End Bearing Number-	**6311 zz c3**	P36

37.	Opposite Drive End Bearing Qty.	**1**	
38.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**	
39.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**	
40.	Opposite Drive End Bearing Insulation or Grounding Device?	**none present**	
41.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**wavy washer**	P41

42.	Opposite Drive End Bearing Condition	**normal wear**	P42

43.	Drive End Seal	**slinger outside endbell**	
44.	Opposite Drive End Seal	**none present**	

Rotor Inspection

45.	Rotor Type/Material	**(Aluminum Bar) Aluminum Barred Rotor**	
46.	Growler Test	**(Pass) Pass**	
47.	Number of Rotor Bars	**40**	
48.	Rotor Condition	**good**	
49.	List the Parts needed for the Repair Below ***1- CR-34256 lipseal*** ***1- 6312 2RS C3 bearing*** ***1- 6311 2RS C3 bearing***		P49

50.	Signature of Technician that Disassembled Motor	**Nigel Hill**	

Mechanical Fits- Rotor

51.	Shaft Runout	**0.001 inches**	
52.	Rotor Runout		

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

53. Coupling Fit Closest to Bearing Housing

0 Degrees	90 Degrees	120 Degrees

54. Coupling Fit Closest to the end of the Shaft

0 Degrees	60 Degrees	120 Degrees

55. Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
2.3627	**2.3627**	**2.3627**

Tol. 2.3628-2.3623

56. Drive End Bearing Shaft Fit Condition **(P) Pass**

57. Opposite Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
2.1658	**2.1655**	**2.1658**

Tol. 2.1660-2.1655

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

59. Shaft Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal
good	**good**

Mechanical Fits- Bearing Housings

60. Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
5.1688	**5.1687**	**5.1688**

Tol.5.1181-5.1191

61. Drive End - Endbell Bearing Fit Condition **(P) Pass**

62. Opposite Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
4.725	**4.7252**	**4.7252**

Tol. 4.7244-4.7253

63. Opposite Drive End - Endbell Bearing Fit Condition **(P) Pass**

64. Bearing Cap Condition

Drive End Bearing Cap	Opposite Drive End Bearing Cap
N/A	**N/A**

65. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal
good	**good**

66. List Machine Work Needed Below

No machine work needed

67. Technician

Root Cause of Failure

68. Failure locations

Brake

69. Root cause of failure