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

AC Inspection as Found

MIDDLETON INCORPORATED
P.O. BOX 506
BRYANT, AR 72089

FolderID: 103888
FormID: 22628784

AC Inspection - Rev. 2

Location:	MOTOR SHOP LR
Serial Number:	N2208270121-003

Description:HP 1.5

Hi-Speed Job Number:	103888
Product Number:	IE2-90S-2
Spec/ID #:	BARMESA
Serial Number:	0913021
HP/kW:	1.5 (HP)
RPM:	3485 (RPM)
Voltage:	230 / 460
Current:	5.52/2.76 (Amps)
Phase:	Three
Hz:	60 (Hz)
Enclosure:	TEFC
# of Leads:	9
J-box Included:	Complete
Coupling/Sheave:	None
Date Received:	12/17/2024
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	Yes
Shaft Machined Fit Repairs Required:	No
Bearing Housing Machined Fit Repairs Required:	No
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

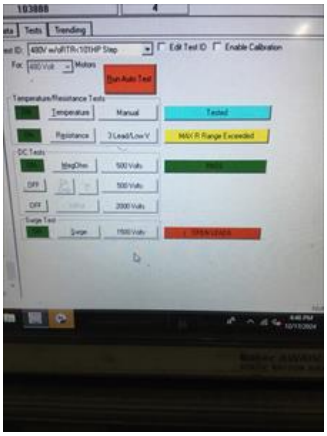
Priorities Found: **1 - High** **11 - Good**

Overall Condition

1.	Report Date	**12/18/2024**

2. Nameplate Picture P37

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



	4.	Describe the Overall Condition of the Equipment as Received ***Wet but 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	**0.002 Inches**
	9.	Assembled Shaft End Play	**0 inches**
	10.	Air Gap Variation <10%	
●	11.	Lead Condition	**(P) Pass**
	12.	Lead Length	**6 Inches**

13.	Does it have Lugs?, If so what is the Stud Size?	**(Yes) Yes**	
14.	Lead Numbers	**1-9**	
15.	Frame Condition	**pass**	
16.	Fan Condition	**(P) Pass**	P115

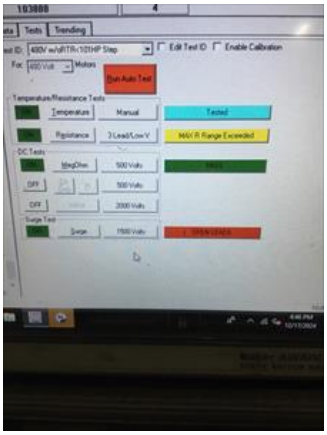
17.	Broken or Missing Components	**none**	

Initial Electrical Inspection

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

19.	Winding Resistance			
	1-2	1-3	2-3	

20.	Perform Surge Test	**(F) Fail**	P57



21.	Number of Stator Slots	**36**	
22.	Stator Condition	**rewind**	
23.	Stator Thermistors/Ohms		
24.	Stator Overloads/Ohms		

Mechanical Inspection

25.	Drive End Bearing Brand	**NSK**	P12

26.	Drive End Bearing Number-	**6305**	
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?	**none**	
31.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**snap ring**	
32.	Drive End Bearing Condition	**wet & rusted**	
33.	Opposite Drive End Bearing Brand	**NSK**	P92

34.	Opposite Drive End Bearing Number-	**6205**	
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	**wet & rusted**	
41.	Drive End Seal		P120

42.	Opposite Drive End Seal	P123

Rotor Inspection

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

44.	Growler Test	**(Pass) Pass**
45.	Number of Rotor Bars	**20**
46.	Rotor Condition	**good**
47.	List the Parts needed for the Repair Below ***6205 & 6305 2Z/C3*** ***Rewind stator***	
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
0.9845	**0.9846**	**0.9845**

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

55. Opposite Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
0.9845	**0.9847**	**0.9844000000000001**

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
2.4413	**2.4413**	**2.4415**

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

60. Opposite Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
1.5753	**1.5752**	**1.575**

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

62. Bearing Cap Condition

Drive End Bearing Cap	Opposite Drive End Bearing Cap
pass	**none**

63. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

64. List Machine Work Needed Below

None

65. Technician **Terrence Holland**

Co sign: DM

Root Cause of Failure

66. Failure locations

Connection box.

67. Root cause of failure

Connection box seal gasket improperly installed allowing moisture to saturate the stator windings.

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		

Rewind

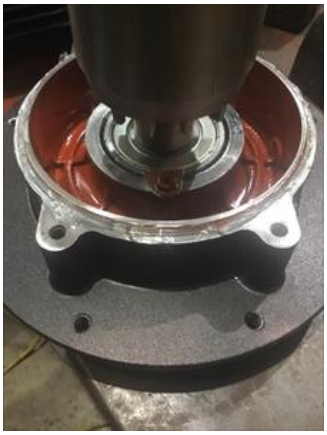
72.	Core Test Results - Watts loss per Pound		
	Pre-Burnout	Post Burnout	
73.	Core Hot Spot Test		
	Pre-Burnout	Post-Burnout	
74.	Post Rewind Electrical Test- Insulation Resistance		
75.	Post Rewind Polarization Index		
76.	Post Rewind Winding Resistance		
	1-2	1-3	2-3
77.	Post Rewind Surge Test		
78.	Post Rewind Hi-Pot		
79.	Technician		

Assembly

80. QC Check All Parts for Cleanliness Prior to Assembly **Terrence Holland**

81. Photograph All Major Components prior to assembly **(Complete) Complete** P17






82. Final Insulation Resistance Test **Megohms** P31

83.	Assembled Shaft Endplay		**0 inches**
84.	Assembled Shaft Runout		**0.002 inches**
85.	Test Run Voltage		P56

Volts	Volts	Volts
459	**457**	**459**

86. Test Run Amperage

Amps	Amps	Amps
1.2	**1.1**	**1.4**

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

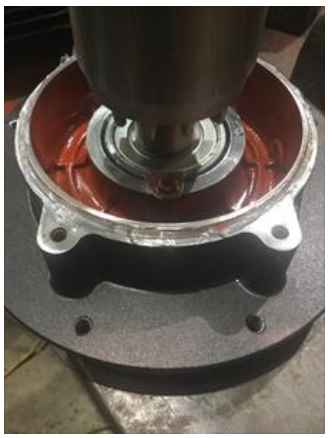
90. Drive End Bearing Temps - Fahrenheit

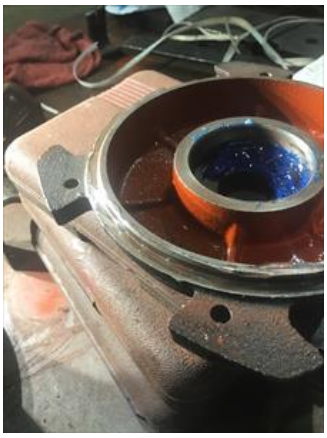
5 Minutes	10 Minutes	15 Minutes

91. Opposite Drive End Bearing Temps - Fahrenheit

5 Minutes	10 Minutes	15 Minutes

92. Document Final Condition with Pictures after paint P129





93. Final Pics and QC Review **Terrence Holland** P131