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

AC Inspection as Found

Sage V Foods
5901 SLOAN DRIVE
LITTLE ROCK, AR 72206

FolderID: 102738
FormID: 19984313

AC Inspection - Rev. 2

Location:	MOTOR SHOP LR
Serial Number:	
Description:	10HP PUMP NO N/P

Hi-Speed Job Number:	102738
Voltage:	460
Current:	15 (Amps)
Phase:	Three
Enclosure:	Submersible
# of Leads:	9
J-box Included:	None
Repair Stage:	Final
Winding Type :	Random Wound

Priorities Found: **4 - High** **8 - Good**

Overall Condition

1. Report Date **04/08/2024**
2. Nameplate Picture

No plate.

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




4. Describe the Overall Condition of the Equipment as Received

Serviceable

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

Impeller sits on shaft shoulder.

Initial Mechanical/Electrical

6. Does Shaft Turn Freely? **(Y) Yes**

7. Does the shaft require T.I.R in Lathe to identify additional repairs? **(Yes) Yes**

Seal surfaces bad

8. Does Shaft Have Visible Damage? **(Yes) Yes** P26

D.E. Seal surfaces bad.

9. Assembled Shaft Runout

10.	Assembled Shaft End Play		
11.	Air Gap Variation <10%		
12.	Lead Condition		P69

13.	Lead Length	**Inches**	
14.	Does it have Lugs?, If so what is the Stud Size?	**(No) No**	
15.	Lead Numbers	**1-3**	
16.	Stator Temperature Detector Rating and Function		

Quantity	Rating	Quantity Passed

Na

17.	Bearing Temperature Detector Rating and Function	

Quantity	Rating	Quantity Passed

Na

18.	Frame Condition	**pass**
19.	Fan Condition	**(N) NA**
20.	Heater Quantity, Ratings	

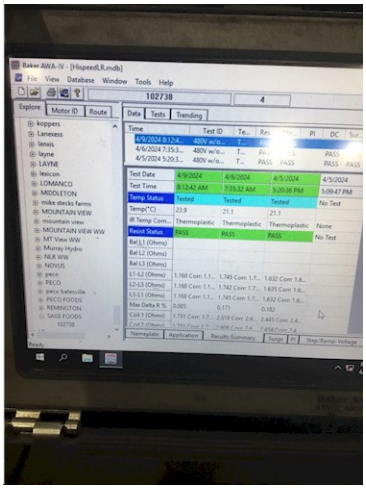
Quantity	Volts/Watts	Pass/Fail

Na

21.	Broken or Missing Components	

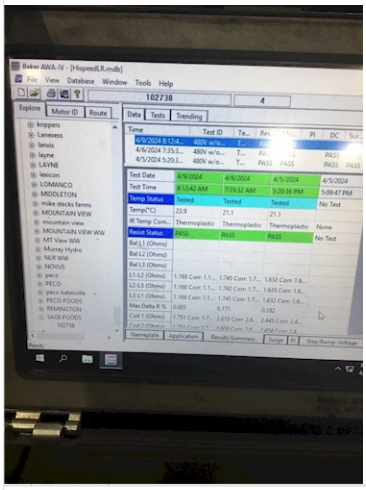
Initial Electrical Inspection

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

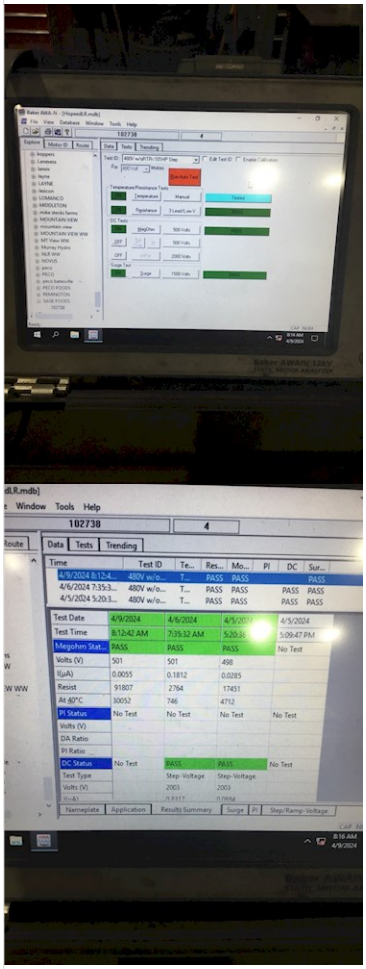


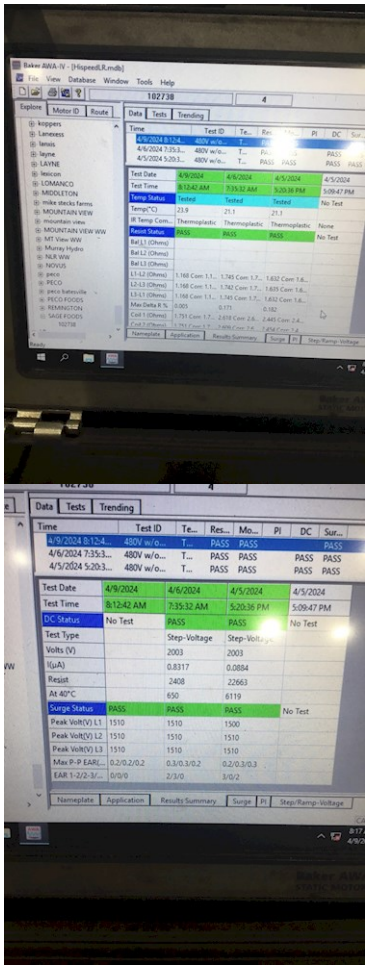
23. Winding Resistance P20

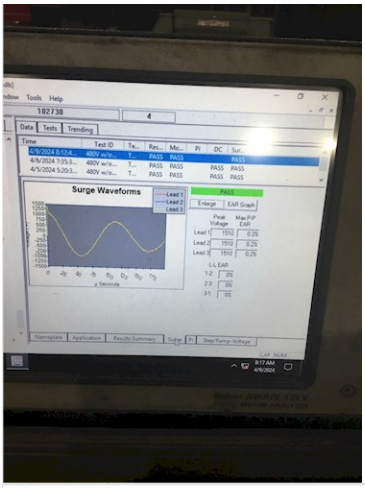
1-2	1-3	2-3



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







25.	Number of Stator Slots	**24**
26.	Stator Condition	P84

Possible rewind due to winding strings being brittle and cracked in multiple places.

27.	Stator Thermistors/Ohms	**na**
28.	Stator Overloads/Ohms	**p1&p2**

0.6 ohms

Mechanical Inspection

29.	Drive End Bearing Brand	**Poland**
30.	Drive End Bearing Number-	**6307**
31.	Drive End Bearing Qty.	**2**

32.	Drive End Bearing Type	**(Ball) Ball Bearing**	P51

33.	Drive End Lubrication Type	**(Oil) Oil Lubricated**	
34.	Drive End Bearing Insulation or Grounding Device?		
	None		
35.	Drive End Wavy Washer/Snap-Ring Other Retention Device?		
	None		
36.	Drive End Bearing Condition	**replace**	P82

37.	Opposite Drive End Bearing Brand	**unknown**	
38.	Opposite Drive End Bearing Number-	**6305 C3**	
39.	Opposite Drive End Bearing Qty.	**1**	
40.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**	P106

41.	Opposite Drive End Lubrication Type	**(Oil) Oil Lubricated**	
42.	Opposite Drive End Bearing Insulation or Grounding Device?	**none**	
43.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**wavy washer**	P114

Deformed

44.	Opposite Drive End Bearing Condition	**replace**	
45.	Drive End Seal	**replace**	

Proprietary double seal.

46.	Opposite Drive End Seal	**na**	P123

47. DE Sleeve Bearing Inside Diameter

0 degrees	120 degrees	240 degrees

Na

48. DE Sleeve Bearing Outside Diameter

0 degrees	120 degrees	240 degrees

Na

49. DE Sleeve Bearing Housing Inside Diameter

0 degrees	120 degrees	240 degrees

Na

50. DE Sleeve Bearing to Housing Clearance

0 degrees	120 degrees	240 degrees

Na

51. ODE Sleeve Bearing Inside Diameter

0 degrees	120 degrees	240 degrees

Na

52. ODE Sleeve Bearing Outside Diameter

0 degrees	120 degrees	240 degrees

Na

53. ODE Sleeve Bearing Housing Inside Diameter

0 degrees	120 degrees	240 degrees

Na

54. ODE Sleeve Bearing to Housing Clearance

0 degrees	120 degrees	240 degrees

Na

Rotor Inspection

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

56. Growler Test — **(Pass) Pass**

57.	Number of Rotor Bars	**27**
58.	Rotor Condition	**pass**
59.	List the Parts needed for the Repair Below	
	Seal and o-ring kit. Repair D.E. Seal surfaces. Re-sleeve D.E and ODE housing fits. Repair ODE shaft bearing journal. Possible rewind due to brittle winding strings in stator housing.	
60.	Signature of Technician that Disassembled Motor	**Terrence Holland**

Mechanical Fits- Rotor

61.	Shaft Runout	**0.002 inches**
62.	Rotor Runout	

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

63.	Coupling Fit Closest to Bearing Housing	

0 Degrees	90 Degrees	120 Degrees

64.	Coupling Fit Closest to the end of the Shaft	

0 Degrees	60 Degrees	120 Degrees

65.	Drive End Bearing Shaft Fit	

0 Degrees	60 Degrees	120 Degrees
1.3782	**1.3782**	**1.3782**

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

0 Degrees	60 Degrees	120 Degrees
0.9851	**0.9854000000000001**	**0.9854000000000001**

Bad

68.	Opposite Drive End Bearing Shaft Fit Condition	**(F) Fail**

Oversized, and out the f round

69.	Shaft Air Seal Fits	

Drive End Air Seal	Opposite Drive End Air Seal

Na

Mechanical Fits- Bearing Housings

70.	Drive End - Endbell Bearing Fit	

0 Degrees	60 Degrees	120 Degrees

Bad. Has Lip groove worn in.

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

Lip worn in housing

72.	Opposite Drive End - Endbell Bearing Fit	

0 Degrees	60 Degrees	120 Degrees
2.4418	**2.4419**	**2.4419**

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

74. Bearing Cap Condition

Drive End Bearing Cap	Opposite Drive End Bearing Cap
na	**na**

75. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

76. List Machine Work Needed Below

Sleeve DE & ODE housings. Repair DE housing fit.

77. Technician **Terrence. Holland**

Root Cause of Failure

78. Failure locations

Both housing fits, ode shaft bearing fit bad and seal surfaces excessively worn. Possible rewind due to brittle and cracked strings on windings.

79. Root cause of failure

Seal failure allowed moisture to penetrate the housing and additionally compromise lubrication for both bearings.

Dynamic Balance Report

80. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade

81. Initial Balance Readings

Drive End	Opposite Drive End

82. Final Balance Readings

Drive End	Opposite Drive End

83. Technician

Rewind

84. Core Test Results - Watts loss per Pound

Pre-Burnout	Post Burnout

85. Core Hot Spot Test

Pre-Burnout	Post-Burnout

86. Post Rewind Electrical Test- Insulation Resistance **Megohms**

87. Post Rewind Polarization Index **Polarization Index**

88. Post Rewind Winding Resistance

1-2	1-3	2-3

89. Post Rewind Surge Test

90. Post Rewind Hi-Pot **micro-amps**

91. Technician

Mechanical Fits- Rotor - Post Repair

92.	Shaft Runout Post Repair		**0.002 inches**
93.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
	0.001	**0.002**	**0.002**
94.	Coupling Fit Closest to Bearing Housing Post Repair		
	0 Degrees	90 Degrees	120 Degrees
95.	Coupling Fit Closest to the end of the Shaft Post Repair		
	0 Degrees	60 Degrees	120 Degrees
96.	Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
97.	Opposite Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
98.	Shaft Air Seal Fits Post Repair		P70
	Drive End Air Seal	Opposite Drive End Air Seal	
	1.2605		

Repaired D.E. Seal surface

99.	Shaft Repair Sign-off	**Gary**

Mechanical Fits- Bearing Housings - Post Repair

100. Drive End - Endbell Bearing Fit Post Repair P5

0 Degrees	60 Degrees	120 Degrees
3.1498	**3.1497**	**3.1497**

101. Opposite Drive End - Endbell Bearing Fit Post Repair P19

0 Degrees	60 Degrees	120 Degrees
2.4415	**2.4415**	**2.4415**

102. Bearing Cap Condition Post Repair

Drive End Bearing Cap	Opposite Drive End Bearing Cap

103. End Bell Air Seal Fits Post Repair

Drive End Air Seal	Opposite Drive End Air Seal

104. DE Sleeve Bearing Inside ID Post Repair

Measure 1	Measure 2	Measure 3

105. DE Sleeve Bearing Outside ID Post Repair

Measure 1	Measure 2	Measure 3

106. DE Sleeve Bearing Inside OD Post Repair

Measure 1	Measure 2	Measure 3

107. DE Sleeve Bearing Outside OD Post Repair

Measure 1	Measure 2	Measure 3

108. End Bell Repair Sign-off **Gary**

109. ODE Sleeve Bearing Inside ID Post Repair

Measure 1	Measure 2	Measure 3

110. ODE Sleeve Bearing Outside ID Post Repair

Measure 1	Measure 2	Measure 3

111. ODE Sleeve Bearing Inside OD Post Repair

Measure 1	Measure 2	Measure 3

112. ODE Sleeve Bearing Outside OD Post Repair

Measure 1	Measure 2	Measure 3

Assembly

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

114. Photograph All Major Components prior to assembly P17

115.	Final Insulation Resistance Test	**Megohms**	
116.	Assembled Shaft Endplay	**inches**	
117.	Assembled Shaft Runout	**inches**	
118.	Test Run Voltage		P56
	Volts	Volts	Volts

119.	Test Run Amperage		P65
	Amps	Amps	Amps

120.	Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial

121. Opposite Drive End Vibration Readings - Inches Per Second

Horizontal	Vertical	Axial

122. Ambient Temperature - Fahrenheit

123. Drive End Bearing Temps - Fahrenheit

5 Minutes	10 Minutes	15 Minutes

124. Drive End Bearing Temps - Fahrenheit 20-30 Minutes

20 Minutes	25 Minutes	30 Minutes

125. Drive End Bearing Temps - Fahrenheit 35-45 Minutes

35 Minutes	40 Minutes	45 Minutes

126. Drive End Bearing Temps - Fahrenheit 50-60 Minutes

50 Minutes	55 Minutes	60 Minutes

127. Opposite Drive End Bearing Temps - Fahrenheit

5 Minutes	10 Minutes	15 Minutes

128. Opposite Drive End Bearing Temps - Fahrenheit 20-30 Minutes

20 Minutes	25 Minutes	30 Minutes

129. Opposite Drive End Bearing Temps - Fahrenheit 35-45 Minutes

35 Minutes	40 Minutes	45 Minutes

130. Opposite Drive End Bearing Temps - Fahrenheit 50-60 Minutes

50 Minutes	55 Minutes	60 Minutes

131. Document Final Condition with Pictures after paint

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

Witness: CRW