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

AC Inspection as Found

Arauco-Malvern MDF (10298)
1275 Willamette Rd
Malvern, AR 72104

FolderID: 101975
FormID: 18127511

AC Inspection - Rev. 2

Location:	LR MOTORSHOP
Serial Number:	
Description:	100 HP RELIANCE

Hi-Speed Job Number:	101975
Manufacturer:	Reliance
Spec/ID #:	1MA460269-G1-1Y
HP/kW:	100 (HP)
RPM:	1770 (RPM)
Frame:	404TS
Voltage:	460
Current:	120
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	ODP
# of Leads:	3
J-box Included:	None
Coupling/Sheave:	None
Date Received:	10/11/2023
Repair Stage:	Final
Rewind:	Yes

Priorities Found: **3 - High** **7 - Good**

Overall Condition

1. Report Date **10/17/2023**
2. Nameplate Picture P37

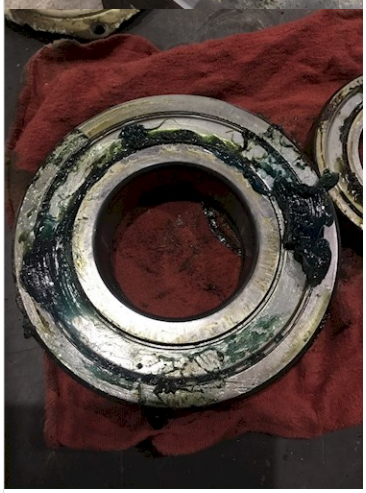
3. Photos of all six sides of the machine. P45



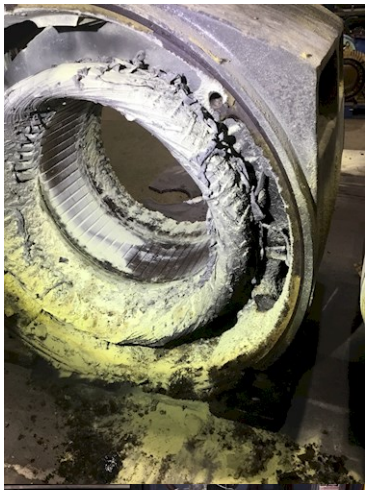












	4.	Describe the Overall Condition of the Equipment as Received ***Covered in fire extinguisher dust***	
Initial Mechanical/Electrical			
●	5.	Does Shaft Turn Freely?	**(Yes) Yes**
	6.	Does Shaft Have Visible Damage?	**(No) No**
●	7.	Assembled Shaft Runout	**0.002 Inches**
	8.	Assembled Shaft End Play ***Na***	**inches**
	9.	Air Gap Variation <10% ***Na***	

10.	Lead Condition			**(NA) Not Applicable**
	Rewind			
11.	Lead Length			**14 Inches**
12.	Lead Numbers			**1-3**
13.	Stator Temperature Detector Rating and Function			
	Quantity	Rating	Quantity Passed	
	Na			
14.	Bearing Temperature Detector Rating and Function			
	Quantity	Rating	Quantity Passed	
	Na			
15.	Frame Condition			**pass**
16.	Fan Condition			**(N) NA**
17.	Heater Quantity, Ratings			
	Quantity	Volts/Watts	Pass/Fail	
	Na			
18.	Broken or Missing Components			
	J-box and bolts for J-box			

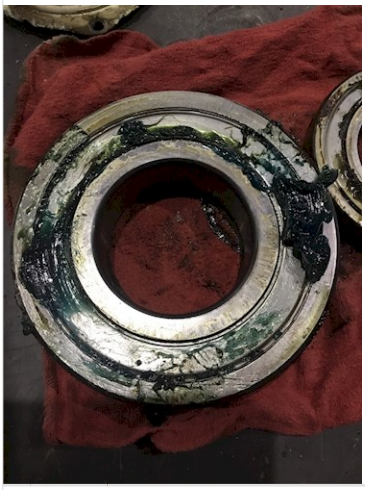
Initial Electrical Inspection

19.	Insulation Resistance/Megger			**Megohms**
	Na			
20.	Winding Resistance			
	1-2	1-3	2-3	
	Na			
21.	Perform Surge Test			**(NA) Not Applicable**
	Rewind			
22.	Number of Stator Slots			**60** P73

23.	Stator Condition			**pass**
24.	Stator Thermistors/Ohms			
	Na			
25.	Stator Overloads/Ohms			
	Na			

Mechanical Inspection

26.	Drive End Bearing Brand	**na**	
27.	Drive End Bearing Number-	**6316**	P28



28.	Drive End Bearing Qty.	**1**	
29.	Drive End Bearing Type	**(Ball) Ball Bearing**	
30.	Drive End Lubrication Type	**(Grease) Grease Lubricated**	
31.	Drive End Bearing Insulation or Grounding Device?		
	Na		
32.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**na**	
33.	Drive End Bearing Condition	**signs of wear**	P80

34.	Opposite Drive End Bearing Brand	**na**	

35.	Opposite Drive End Bearing Number-	**6213**	P97

36.	Opposite Drive End Bearing Qty.	**1**	
37.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**	
38.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**	
39.	Opposite Drive End Bearing Insulation or Grounding Device?	**na**	
40.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**na**	
41.	Opposite Drive End Bearing Condition	**signs of wear**	P116

42.	Drive End Seal	**na**	
43.	Opposite Drive End Seal	**na**	

44. DE Sleeve Bearing Inside Diameter

0 degrees	120 degrees	240 degrees

Na

45. DE Sleeve Bearing Outside Diameter

0 degrees	120 degrees	240 degrees

Na

46. DE Sleeve Bearing Housing Inside Diameter

0 degrees	120 degrees	240 degrees

Na

47. DE Sleeve Bearing to Housing Clearance

0 degrees	120 degrees	240 degrees

Na

48. ODE Sleeve Bearing Inside Diameter

0 degrees	120 degrees	240 degrees

Na

49. ODE Sleeve Bearing Outside Diameter

0 degrees	120 degrees	240 degrees

Na

50. ODE Sleeve Bearing Housing Inside Diameter

0 degrees	120 degrees	240 degrees

Na

51. ODE Sleeve Bearing to Housing Clearance

0 degrees	120 degrees	240 degrees

Na

Rotor Inspection

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

53. Growler Test — **(Pass) Pass**

54. Number of Rotor Bars — **58** P29

55. Rotor Condition — **pass**

56. List the Parts needed for the Repair Below

6316
6213
J-box
J-box bolts

57. Signature of Technician that Disassembled Motor — **Cw**

Mechanical Fits- Rotor

58.	Shaft Runout		**0.002 millimeters**
59.	Rotor Runout		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
	Na		
60.	Coupling Fit Closest to Bearing Housing		
	0 Degrees	90 Degrees	120 Degrees
	Na		
61.	Coupling Fit Closest to the end of the Shaft		
	0 Degrees	60 Degrees	120 Degrees
	Na		
62.	Drive End Bearing Shaft Fit		
	0 Degrees	60 Degrees	120 Degrees
	3.15	**3.1497**	**3.1499**
63.	Drive End Bearing Shaft Fit Condition		**(P) Pass**
64.	Opposite Drive End Bearing Shaft Fit		
	0 Degrees	60 Degrees	120 Degrees
	2.5597	**2.5597**	**2.5596**
65.	Opposite Drive End Bearing Shaft Fit Condition		**(P) Pass**
66.	Shaft Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	
	Na		

Mechanical Fits- Bearing Housings

67.	Drive End - Endbell Bearing Fit		
	0 Degrees	60 Degrees	120 Degrees
	6.6937	**6.6936**	**6.6938**
68.	Drive End - Endbell Bearing Fit Condition		**(P) Pass**
69.	Opposite Drive End - Endbell Bearing Fit		
	0 Degrees	60 Degrees	120 Degrees
	4.7252	**4.7252**	**4.7251**
70.	Opposite Drive End - Endbell Bearing Fit Condition		**(P) Pass**

71. Bearing Cap Condition

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

72. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

Na

73. List Machine Work Needed Below

Na

74. Technician **Cw**

Root Cause of Failure

75. Failure locations

Bearings and windings

76. Root cause of failure

Materials inside stator caught fire burning the windings and winding strings. Bearings have wear

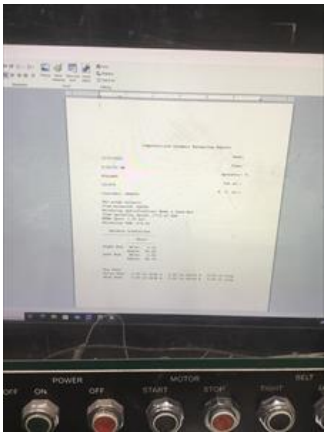
Dynamic Balance Report

77. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade

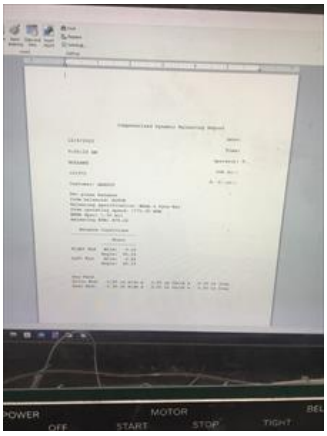
78. Initial Balance Readings P11

Drive End	Opposite Drive End



79. Final Balance Readings P27

Drive End	Opposite Drive End



80. Technician

Rewind

81. Core Test Results - Watts loss per Pound

Pre-Burnout	Post Burnout

Na

82. Core Hot Spot Test

Pre-Burnout	Post-Burnout

Na

83. Post Rewind Electrical Test- Insulation Resistance **552013 Megohms**

84. Post Rewind Polarization Index **Polarization Index**

Na

85. Post Rewind Winding Resistance

1-2	1-3	2-3
0.128	**0.133**	**.128**

86.	Post Rewind Surge Test	**(Pass) Pass**	P68

87.	Post Rewind Hi-Pot	**0.0197 micro-amps**	
88.	Technician	**MP**	P78

RHR

Mechanical Fits- Rotor - Post Repair

89. Shaft Runout Post Repair

90. Rotor Runout Post Repair

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

91. Coupling Fit Closest to Bearing Housing Post Repair

0 Degrees	90 Degrees	120 Degrees

92. Coupling Fit Closest to the end of the Shaft Post Repair

0 Degrees	60 Degrees	120 Degrees

93. Drive End Bearing Shaft Fit Post Repair

0 Degrees	60 Degrees	120 Degrees

94.	Opposite Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
95.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
96.	Shaft Repair Sign-off		

Mechanical Fits- Bearing Housings - Post Repair

97.	Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
98.	Opposite Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
99.	Bearing Cap Condition Post Repair		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
100.	End Bell Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
101.	DE Sleeve Bearing Inside ID Post Repair		
	Measure 1	Measure 2	Measure 3
102.	DE Sleeve Bearing Outside ID Post Repair		
	Measure 1	Measure 2	Measure 3
103.	DE Sleeve Bearing Inside OD Post Repair		
	Measure 1	Measure 2	Measure 3
104.	DE Sleeve Bearing Outside OD Post Repair		
	Measure 1	Measure 2	Measure 3
105.	End Bell Repair Sign-off		
106.	ODE Sleeve Bearing Inside ID Post Repair		
	Measure 1	Measure 2	Measure 3
107.	ODE Sleeve Bearing Outside ID Post Repair		
	Measure 1	Measure 2	Measure 3
108.	ODE Sleeve Bearing Inside OD Post Repair		
	Measure 1	Measure 2	Measure 3
109.	ODE Sleeve Bearing Outside OD Post Repair		
	Measure 1	Measure 2	Measure 3

Assembly

110.	QC Check All Parts for Cleanliness Prior to Assembly	P4

111. Photograph All Major Components prior to assembly

112. Final Insulation Resistance Test

113. Assembled Shaft Endplay

114. Assembled Shaft Runout

115. Test Run Voltage P55

Volts	Volts	Volts
460	**460**	**462**

RHR

116. Test Run Amperage P65

Amps	Amps	Amps
41.9	**41.6**	**41.9**

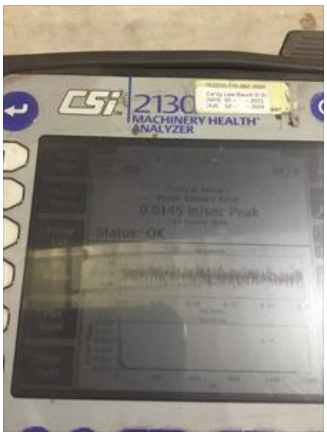
117. Drive End Vibration Readings - Inches Per Second

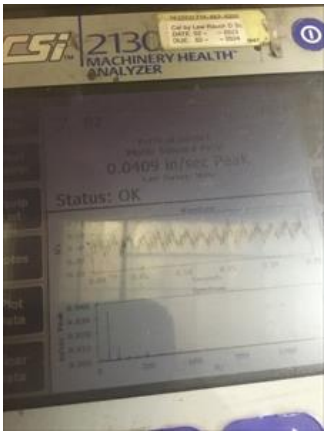
Horizontal	Vertical	Axial
0.04	**0.02**	**0.03**

118. Opposite Drive End Vibration Readings - Inches Per Second

P83

Horizontal	Vertical	Axial
		0





119. Ambient Temperature - Fahrenheit

120. Drive End Bearing Temps - Fahrenheit

5 Minutes	10 Minutes	15 Minutes

121.	Drive End Bearing Temps - Fahrenheit 20-30 Minutes		
	20 Minutes	25 Minutes	30 Minutes
122.	Drive End Bearing Temps - Fahrenheit 35-45 Minutes		
	35 Minutes	40 Minutes	45 Minutes
123.	Drive End Bearing Temps - Fahrenheit 50-60 Minutes		
	50 Minutes	55 Minutes	60 Minutes
124.	Opposite Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
125.	Opposite Drive End Bearing Temps - Fahrenheit 20-30 Minutes		
	20 Minutes	25 Minutes	30 Minutes
126.	Opposite Drive End Bearing Temps - Fahrenheit 35-45 Minutes		
	35 Minutes	40 Minutes	45 Minutes
127.	Opposite Drive End Bearing Temps - Fahrenheit 50-60 Minutes		
	50 Minutes	55 Minutes	60 Minutes
128.	Stator Temperatures- Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
129.	Stator Temperatures- Fahrenheit 20-30 Minutes		
	20 Minutes	25 Minutes	30 Minutes
130.	Stator Temperatures- Fahrenheit 35-45 Minutes		
	35 Minutes	40 Minutes	45 Minutes
131.	Stator Temperatures- Fahrenheit 50-60 Minutes		
	50 Minutes	55 Minutes	60 Minutes
132.	Document Final Condition with Pictures after paint		
133.	Final Pics and QC Review	**Terrence Holland**	P128

RRW