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

AC Inspection as Found

Premier Technical Plastics
2120 Queensway
Searcy, Arkan 72143

FolderID: 103286
FormID: 21125497

AC Inspection - Rev. 2

Location:	LR Motor Shop
Serial Number:	25MN440719 G 004 FA
Description:	100HP RELIANCE 1185RPM

Hi-Speed Job Number:	103286
Manufacturer:	Reliance
Product Number:	PN: 339431
Spec/ID #:	M: P44G0719C
Serial Number:	26MN440719 G 004 FA
HP/kW:	100 (HP)
RPM:	1185 (RPM)
Frame:	445TSC
Voltage:	230 / 460
Current:	226/113 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	DP
# of Leads:	9
J-box Included:	Complete
Coupling/Sheave:	None
Date Received:	07/27/2024
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: **2 - High** **14 - Good**

Overall Condition

1.	Report Date	**07/27/2024**

2. Nameplate Picture P37

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

	4.	Describe the Overall Condition of the Equipment as Received ***Serviceable but dirty***	
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	**0.003 Inches**
	9.	Assembled Shaft End Play	**0 inches**
	10.	Air Gap Variation <10%	
	11.	Lead Condition	**(P) Pass**
	12.	Lead Length	**17 Inches**
	13.	Does it have Lugs?, If so what is the Stud Size?	**(Yes) Yes** P93

	14.	Lead Numbers	**1-9**
	15.	Frame Condition	
	16.	Fan Condition	
	17.	Broken or Missing Components	**none**
Initial Electrical Inspection			
	18.	Insulation Resistance/Megger	**Megohms**
		Na	
	19.	Winding Resistance	

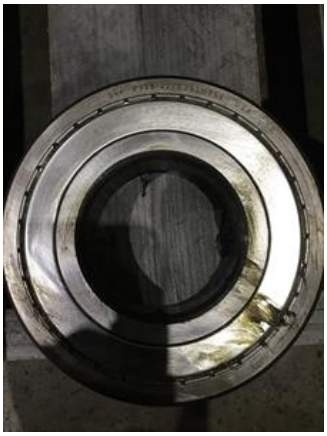
1-2	1-3	2-3

Na

20.	Perform Surge Test	**(F) Fail**	
	Passed surge tests but windings have burnt strings. Rewind recommended		
21.	Number of Stator Slots	**90**	
22.	Stator Condition	**rewind**	
23.	Stator Thermistors/Ohms		
	Na		
24.	Stator Overloads/Ohms	**1.3**	

Mechanical Inspection

25.	Drive End Bearing Brand	**SKF**	
26.	Drive End Bearing Number-	**6318-2Z/C3**	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?	**none**	
31.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**	
32.	Drive End Bearing Condition	**worn**	P82

33.	Opposite Drive End Bearing Brand	**SKF**	

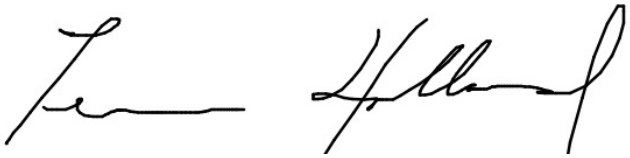
34.	Opposite Drive End Bearing Number-	**6318 2Z/C3**	P99

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?	**none**
40.	Opposite Drive End Bearing Condition	P118

41.	Drive End Seal	
42.	Opposite Drive End Seal	

Rotor Inspection

43.	Rotor Type/Material	**(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast**
44.	Growler Test	**(Pass) Pass**
45.	Number of Rotor Bars	**71**
46.	Rotor Condition	**pass**
47.	List the Parts needed for the Repair Below ***Bearings***	
48.	Signature of Technician that Disassembled Motor	**Terrence Holland**



Mechanical Fits- Rotor

49.	Shaft Runout			**0.003 inches**
	Both ends			
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	
	3.5434	**3.5434**	**3.5434**	
54.	Drive End Bearing Shaft Fit Condition			**(P) Pass**
55.	Opposite Drive End Bearing Shaft Fit			
	0 Degrees	60 Degrees	120 Degrees	
	35434	**35435**	**35435**	
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	
	7.4806	**7.4806**	**7.4807**	
59.	Drive End - Endbell Bearing Fit Condition			**(P) Pass**
60.	Opposite Drive End - Endbell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
	7.4807	**7.4809**	**7.4808**	
61.	Opposite Drive End - Endbell Bearing Fit Condition			**(P) Pass**
62.	Bearing Cap Condition			
	Drive End Bearing Cap	Opposite Drive End Bearing Cap		
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**

Root Cause of Failure

66. Failure locations

Windings showed signs of excessive heat, and had burnt winding strings

67. Root cause of failure

Motor experienced excessive heat on windings possibly due to excessive dirt and grease.

Dynamic Balance Report

68. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade

69. Initial Balance Readings

Drive End	Opposite Drive End
1.68	**3.02**

70. Final Balance Readings P27

Drive End	Opposite Drive End
.06	**.38**

71. Technician **Terrence Holland**

Rewind

72. Core Test Results - Watts loss per Pound

Pre-Burnout	Post Burnout

Na

73. Core Hot Spot Test

Pre-Burnout	Post-Burnout

Na

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

Na

75. Post Rewind Polarization Index **Polarization Index**

Na

76.	Post Rewind Winding Resistance		
	1-2	1-3	2-3

Na

77.	Post Rewind Surge Test	**(Pass) Pass**
78.	Post Rewind Hi-Pot	**micro-amps**

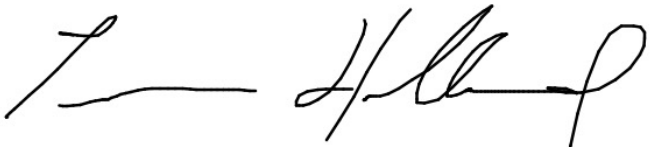
Na

79. Technician

Na

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

86.	Test Run Amperage				P65
	Amps	Amps	Amps		

87.	Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
	0.002	**0.003**	**0.002**
88.	Opposite Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
	0.003	**0.002**	**0.001**
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		**see pics below**
93.	Final Pics and QC Review		**Terrence Holland**

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Witness RRW