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

AC Inspection as Found

CERTAINTEED (10520)
2701 E ROOSEVELT ROAD
LITTLE ROCK, AR 72206

FolderID: 104045
FormID: 23119581

AC Inspection - Rev. 2

Location:	LR Motor Shop
Serial Number:	E3-1064
Description:	2.5 HP DERRICK

Hi-Speed Job Number:	104045
Serial Number:	E3-1064
HP/kW:	2.5 (HP)
RPM:	3600 (RPM)
Frame:	NA
Voltage:	460
Current:	4.1 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.0
Enclosure:	TENV
# of Leads:	3
J-box Included:	Complete
Coupling/Sheave:	None
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** **9 - Good**

Overall Condition

1.	Report Date	**02/03/2025**
2.	Nameplate Picture	P37

3. Photos of all six sides of the machine.






	4.	Describe the Overall Condition of the Equipment as Received ***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 ***Na***	**Inches**
	9.	Assembled Shaft End Play ***Na***	**inches**
	10.	Air Gap Variation <10% ***Na***	
	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		**1-3**	P97
	60 " of 14/4 power cord			

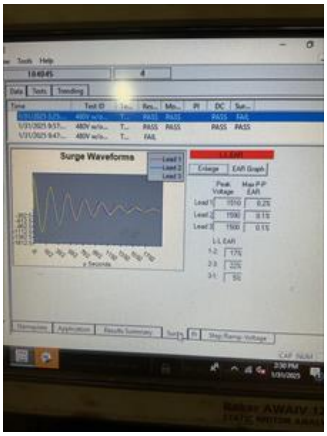
15.	Frame Condition		**pass**
16.	Fan Condition		**(N) NA**
17.	Does motor have internal fan?		**(No) No**
18.	Broken or Missing Components		**no**

Initial Electrical Inspection

19.	Insulation Resistance/Megger		**5870 Megohms**
20.	Winding Resistance		

1-2	1-3	2-3
5.424	**5.427**	**5.424**

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



22.	Number of Stator Slots	**36**

23.	Stator Condition		P84
	Rewind		

24.	Stator Thermistors/Ohms	**na**	
25.	Stator Overloads/Ohms	**yes**	

Mechanical Inspection

26.	Drive End Bearing Brand	**FAG**	
27.	Drive End Bearing Number-	**NJ2213-E-XL-TVP2-C4**	P32

28.	Drive End Bearing Qty.	**1**	
29.	Drive End Bearing Type	**(Roller) Roller 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	**dry and rough**	P82

34.	Opposite Drive End Bearing Brand	**FAG**	
35.	Opposite Drive End Bearing Number-	**NJ2213-E-XL-TVP2-C4**	
36.	Opposite Drive End Bearing Qty.	**1**	
37.	Opposite Drive End Bearing Type	**(Roller) Roller 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?	**a**	
41.	Opposite Drive End Bearing Condition	**normal wear**	P118

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

Rotor Inspection

44.	Rotor Type/Material	**(Copper Barred) Copper Barred Rotor**	
45.	Growler Test	**(Pass) Pass**	
46.	Number of Rotor Bars	**44**	
47.	Rotor Condition	**pass**	
48.	List the Parts needed for the Repair Below ***2213***		

49.	Signature of Technician that Disassembled Motor		**RW**	

Mechanical Fits- Rotor

50.	Shaft Runout		**0 inches**	
51.	Rotor Runout			
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing	
	0			
52.	Coupling Fit Closest to Bearing Housing			
	0 Degrees	90 Degrees	120 Degrees	
	Na			
53.	Coupling Fit Closest to the end of the Shaft			
	0 Degrees	60 Degrees	120 Degrees	
	Na			
54.	Drive End Bearing Shaft Fit			
	0 Degrees	60 Degrees	120 Degrees	
	2.5599	**2.5599**	**2.5599**	
55.	Drive End Bearing Shaft Fit Condition		**(P) Pass**	
56.	Opposite Drive End Bearing Shaft Fit			
	0 Degrees	60 Degrees	120 Degrees	
	2.5599	**2.5599**	**2.5599**	
57.	Opposite Drive End Bearing Shaft Fit Condition		**(P) Pass**	
58.	Shaft Air Seal Fits			
	Drive End Air Seal	Opposite Drive End Air Seal		
	pass			

Mechanical Fits- Bearing Housings

59.	Drive End - Endbell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
	4.7244	**4.7244**	**4.7244**	
60.	Drive End - Endbell Bearing Fit Condition		**(P) Pass**	P15

61. Opposite Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
4.7243	**4.7243**	**4.7243**

62. Opposite Drive End - Endbell Bearing Fit Condition **(P) Pass** P39

63. Bearing Cap Condition

Drive End Bearing Cap	Opposite Drive End Bearing Cap

Na

64. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal
pass	

65. List Machine Work Needed Below

None

66. Technician **RW**

Co witness. TRH

Root Cause of Failure

67. Failure locations

Winding and bearings

68. Root cause of failure

Winding shorted bearings dry and rough

Dynamic Balance Report

69. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade

70. Initial Balance Readings

Drive End	Opposite Drive End

71. Final Balance Readings

Drive End	Opposite Drive End

72. Technician

Rewind

73. Core Test Results - Watts loss per Pound

Pre-Burnout	Post Burnout

74. Core Hot Spot Test

Pre-Burnout	Post-Burnout

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

76. Post Rewind Polarization Index **Polarization Index**

77. Post Rewind Winding Resistance

1-2	1-3	2-3

78. Post Rewind Surge Test

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

80. Technician

Assembly

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

82. Photograph All Major Components prior to assembly P17

83.	Final Insulation Resistance Test			**Megohms**
84.	Assembled Shaft Endplay			**inches**
85.	Assembled Shaft Runout			**inches**
86.	Test Run Voltage			
	Volts	Volts	Volts	
87.	Test Run Amperage			
	Amps	Amps	Amps	
88.	Drive End Vibration Readings - Inches Per Second			
	Horizontal	Vertical	Axial	
89.	Opposite Drive End Vibration Readings - Inches Per Second			
	Horizontal	Vertical	Axial	
90.	Ambient Temperature - Fahrenheit			
91.	Drive End Bearing Temps - Fahrenheit			
	5 Minutes	10 Minutes	15 Minutes	
92.	Opposite Drive End Bearing Temps - Fahrenheit			
	5 Minutes	10 Minutes	15 Minutes	
93.	Document Final Condition with Pictures after paint			**see below**
94.	Final Pics and QC Review		**Terrence Holland**	P131