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

AC Inspection as Found

Lexicon (10257)
8900 Fouche Dam Pike
Little Rock, AR

FolderID: 103398
FormID: 21348798

AC Inspection - Rev. 2

Location:	SHOP
Serial Number:	623471C-4
Description:	2HP REULAND EVAL

Hi-Speed Job Number:	103398
Manufacturer:	Reuland
Product Number:	16554-GG0655B
Serial Number:	623471C-4
HP/kW:	2 (HP)
RPM:	1800 (RPM)
Frame:	WE0-184/H4
Voltage:	230 / 460
Current:	6.0/3.0
Phase:	Three
Hz:	60 (Hz)
Enclosure:	TENV
J-box Included:	Complete
Date Received:	08/19/2024
Repair Stage:	Final

Priorities Found: **2 - High** **7 - Good**

Overall Condition

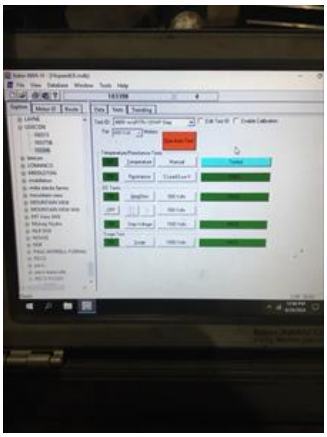
1. Report Date **08/20/2024**
2. Nameplate Picture P37

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

4.	Describe the Overall Condition of the Equipment as Received ***Dirty but serviceable***		
5.	Distance from the end of the shaft to the Coupling/Sheave ***3/16" shaft out***	**0.187 inches**	P76

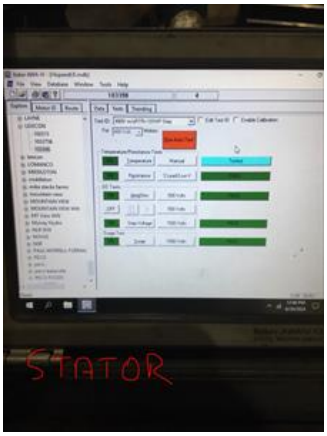
6.	Report Date [COPY]	**08/20/2024**
Initial Mechanical/Electrical		
7.	Does Shaft Turn Freely? ***Bearings sound rough.***	**(N) No**
8.	Does the shaft require T.I.R in Lathe to identify additional repairs?	**(No) No**
9.	Does Shaft Have Visible Damage?	**(No) No**
10.	Assembled Shaft Runout	**Inches**

	11.	Assembled Shaft End Play		**inches**	
	12.	Air Gap Variation <10%			
●	13.	Lead Condition		**(P) Pass**	
	14.	Lead Length		**6 Inches**	
●	15.	Does it have Lugs?, If so what is the Stud Size?		**(No) No**	
	16.	Lead Numbers		**1-9**	
	17.	Stator Temperature Detector Rating and Function			
		Quantity	Rating	Quantity Passed	
	18.	Bearing Temperature Detector Rating and Function			
		Quantity	Rating	Quantity Passed	
	19.	Frame Condition		**pass**	
	20.	Fan Condition		**(N) NA**	
	21.	Heater Quantity, Ratings			
		Quantity	Volts/Watts	Pass/Fail	
	22.	Broken or Missing Components		**missing several screws on brush covers**	
Initial Electrical Inspection					
	23.	Insulation Resistance/Megger		**1,000 Megohms**	
	24.	Winding Resistance			P20
		1-2	1-3	2-3	



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

Wound rotor passed surge bat failed Meg. Will retest after wash and bake. Stator passed all electrical tests.



26.	Number of Stator Slots		
27.	Stator Condition	**pass**	
28.	Stator Thermistors/Ohms		
29.	Stator Overloads/Ohms		

Mechanical Inspection

30.	Drive End Bearing Brand	**NTN**	
31.	Drive End Bearing Number-	**6205 z**	P32

32.	Drive End Bearing Qty.	**1**
33.	Drive End Bearing Type	**(Ball) Ball Bearing**
34.	Drive End Lubrication Type	**(Grease) Grease Lubricated**
35.	Drive End Bearing Insulation or Grounding Device?	**none**

36.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**three spacers**	P77

37.	Drive End Bearing Condition	**replace**	
38.	Opposite Drive End Bearing Brand	**NTN**	
39.	Opposite Drive End Bearing Number-	**6005 Z C3**	P100

40.	Opposite Drive End Bearing Qty.	**1**
41.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**
42.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**
43.	Opposite Drive End Bearing Insulation or Grounding Device?	**none**
44.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**snap ring**
45.	Opposite Drive End Bearing Condition	**replace**
46.	Drive End Seal	
47.	Opposite Drive End Seal	
48.	DE Sleeve Bearing Inside Diameter	

0 degrees	120 degrees	240 degrees

49.	DE Sleeve Bearing Outside Diameter	

0 degrees	120 degrees	240 degrees

50.	DE Sleeve Bearing Housing Inside Diameter	

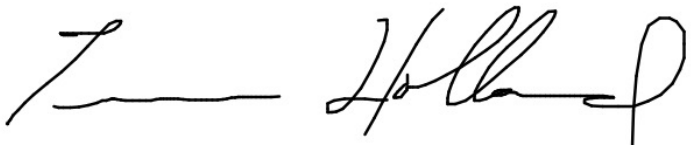
0 degrees	120 degrees	240 degrees

51.	DE Sleeve Bearing to Housing Clearance		
	0 degrees	120 degrees	240 degrees
52.	ODE Sleeve Bearing Inside Diameter		
	0 degrees	120 degrees	240 degrees
53.	ODE Sleeve Bearing Outside Diameter		
	0 degrees	120 degrees	240 degrees
54.	ODE Sleeve Bearing Housing Inside Diameter		
	0 degrees	120 degrees	240 degrees
55.	ODE Sleeve Bearing to Housing Clearance		
	0 degrees	120 degrees	240 degrees

Rotor Inspection

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

57.	Growler Test	
58.	Number of Rotor Bars	
59.	Rotor Condition	
60.	List the Parts needed for the Repair Below	
61.	Signature of Technician that Disassembled Motor	**Terrence Holland**



Mechanical Fits- Rotor

62.	Shaft Runout		**0.002 inches**
63.	Rotor Runout		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

64. Coupling Fit Closest to Bearing Housing

0 Degrees	90 Degrees	120 Degrees

65. Coupling Fit Closest to the end of the Shaft

0 Degrees	60 Degrees	120 Degrees

66. Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
0.9847	**0.9847**	**0.9846**

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

68. Opposite Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees

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

70. Shaft Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

Mechanical Fits- Bearing Housings

71. Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
2.0481	**2.048**	**2.048**

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

73. Opposite Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
1.8505	**1.8506**	**1.8505**

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

75. Bearing Cap Condition

Drive End Bearing Cap	Opposite Drive End Bearing Cap

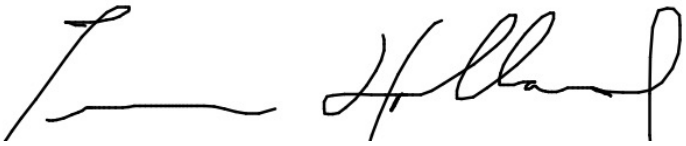
76. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

77. List Machine Work Needed Below

DE housing fit

78. Technician **Terrence Holland**



Root Cause of Failure

79. Failure locations

Bearings worn and rotor megs low.

80. Root cause of failure

Bearing grease hardened and not providing lubrication to bearings.
Low megs possibly due to excessive amounts of carbon from the brushes inside the rotor windings.

Dynamic Balance Report

81.	Rotor Weight and Balance Grade		
	Rotor Weight	Balance Grade	
82.	Initial Balance Readings		
	Drive End	Opposite Drive End	
83.	Final Balance Readings		
	Drive End	Opposite Drive End	
84.	Technician		

Rewind

85.	Core Test Results - Watts loss per Pound		
	Pre-Burnout	Post Burnout	
86.	Core Hot Spot Test		
	Pre-Burnout	Post-Burnout	
87.	Post Rewind Electrical Test- Insulation Resistance		
88.	Post Rewind Polarization Index		
89.	Post Rewind Winding Resistance		
	1-2	1-3	2-3
90.	Post Rewind Surge Test		
91.	Post Rewind Hi-Pot		
92.	Technician		

Mechanical Fits- Rotor - Post Repair

93.	Shaft Runout Post Repair		
94.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
95.	Coupling Fit Closest to Bearing Housing Post Repair		
	0 Degrees	90 Degrees	120 Degrees
96.	Coupling Fit Closest to the end of the Shaft Post Repair		
	0 Degrees	60 Degrees	120 Degrees
97.	Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
98.	Opposite Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
99.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
100.	Shaft Repair Sign-off		

Mechanical Fits- Bearing Housings - Post Repair

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

Assembly

114.	QC Check All Parts for Cleanliness Prior to Assembly
115.	Photograph All Major Components prior to assembly

116.	Final Insulation Resistance Test	**Megohms**

117.	Assembled Shaft Endplay		
118.	Assembled Shaft Runout		
119.	Test Run Voltage		
	Volts	Volts	Volts
120.	Test Run Amperage		
	Amps	Amps	Amps
121.	Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
122.	Opposite Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
123.	Ambient Temperature - Fahrenheit		
124.	Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
125.	Drive End Bearing Temps - Fahrenheit 20-30 Minutes		
	20 Minutes	25 Minutes	30 Minutes

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

35 Minutes	40 Minutes	45 Minutes

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

50 Minutes	55 Minutes	60 Minutes

128. Opposite Drive End Bearing Temps - Fahrenheit

5 Minutes	10 Minutes	15 Minutes

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

20 Minutes	25 Minutes	30 Minutes

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

35 Minutes	40 Minutes	45 Minutes

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

50 Minutes	55 Minutes	60 Minutes

132. Stator Temperatures- Fahrenheit

5 Minutes	10 Minutes	15 Minutes

133. Stator Temperatures- Fahrenheit 20-30 Minutes

20 Minutes	25 Minutes	30 Minutes

134. Stator Temperatures- Fahrenheit 35-45 Minutes

35 Minutes	40 Minutes	45 Minutes

135. Stator Temperatures- Fahrenheit 50-60 Minutes

50 Minutes	55 Minutes	60 Minutes

136. Document Final Condition with Pictures after paint

137. Final Pics and QC Review **Terrence Holland** P132