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

AC Inspection as Found

Reynolds Metals company
1333 highway 270
Malvern, AR 72104

FolderID: 103592
FormID: 21823772

AC Inspection - Rev. 2

Location:	Shop
Serial Number:	
Description:	Reliance

Hi-Speed Job Number:	103592
Manufacturer:	Reliance
Product Number:	M: 6300538
Voltage:	460
Current:	11 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1
Enclosure:	TENV
# of Leads:	3
J-box Included:	Half
Coupling/Sheave:	None
Date Received:	10/01/2024
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	No
Shaft Machined Fit Repairs Required:	Yes
Bearing Housing Machined Fit Repairs Required:	Yes
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

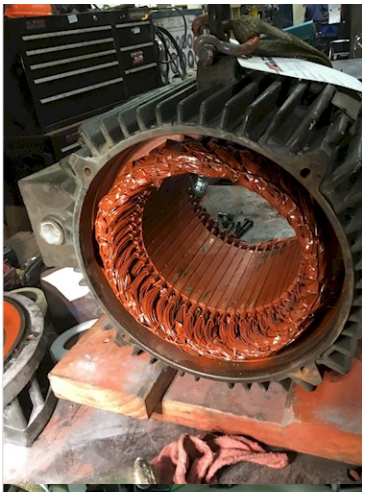
Priorities Found: **4 - High** **6 - Good**

Overall Condition

1. Report Date **10/07/2024**

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***	
Initial Mechanical/Electrical			
🔴	5.	Does Shaft Turn Freely?	**(N) No**
🟢	6.	Does the shaft require T.I.R in Lathe to identify additional repairs?	**(No) No**
	7.	Does Shaft Have Visible Damage?	**(Yes) Yes**
		Minor dings and scratches.	
	8.	Assembled Shaft Runout	**Inches**
	9.	Assembled Shaft End Play	**inches**
	10.	Air Gap Variation <10%	
🟢	11.	Lead Condition	**(P) Pass** P69

12.	Lead Length	**8.5 Inches**	
13.	Does it have Lugs?, If so what is the Stud Size?	**(No) No**	
14.	Lead Numbers	**1-3**	
15.	Frame Condition	**pass**	
16.	Fan Condition	**(N) NA**	
17.	Broken or Missing Components	**connection box top cover missing**	

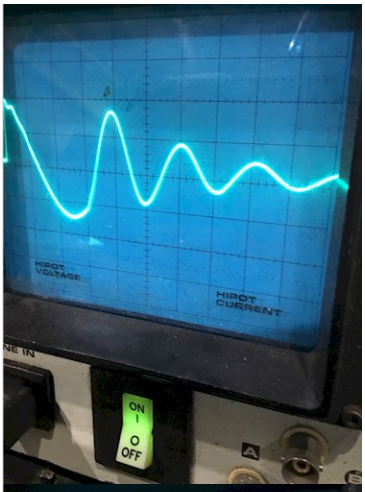
Initial Electrical Inspection

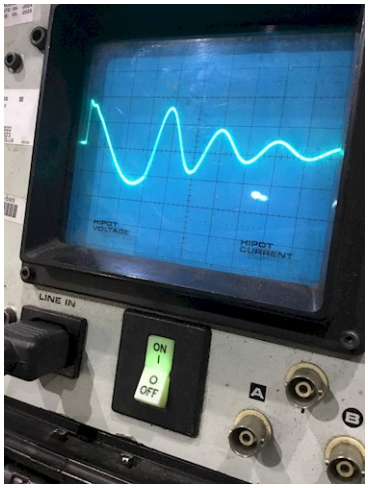
18.	Insulation Resistance/Megger	**Megohms**	P8

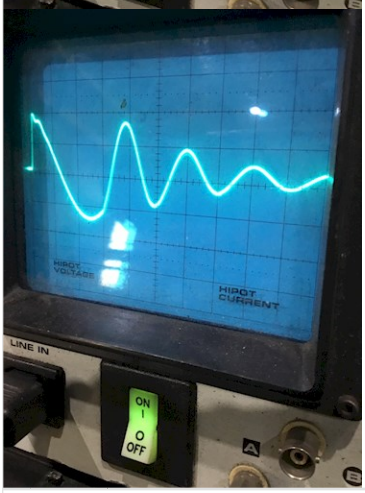
19.	Winding Resistance		P20

1-2	1-3	2-3

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







21.	Number of Stator Slots	**48**	
22.	Stator Condition	**pass**	
23.	Stator Thermistors/Ohms		
24.	Stator Overloads/Ohms		

Mechanical Inspection

25.	Drive End Bearing Brand	**FAG**	P12

26.	Drive End Bearing Number-	**6316 2Z**	P32

27.	Drive End Bearing Qty.	**1**	
28.	Drive End Bearing Type	**(Ball) Ball Bearing**	P51

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?	**wavy washer**	P77

32.	Drive End Bearing Condition	**replace**	
33.	Opposite Drive End Bearing Brand	**FAG**	
34.	Opposite Drive End Bearing Number-	**6316**	P100

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	**replace**	
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	**64**	
46.	Rotor Condition	**pass**	
47.	List the Parts needed for the Repair Below ***(2) 6316 2Z / C3 Bearings***		

48. Signature of Technician that Disassembled Motor **Terrence Holland**

Mechanical Fits- Rotor

49. Shaft Runout

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
3.1492	**3.1493**	**3.1491**

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

Minimum allowed is 3.1496

55. Opposite Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
3.1503	**3.1503**	**3.1501**

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 P2

0 Degrees	60 Degrees	120 Degrees

Excessive pitting

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

60. Opposite Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees

Lip worn in.

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

62. Bearing Cap Condition

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

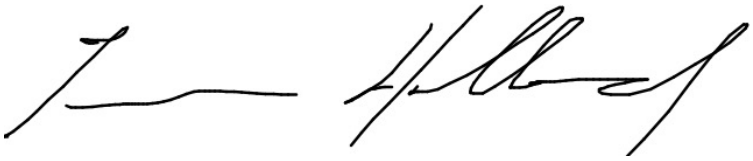
63. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

64. List Machine Work Needed Below

DE shaft fit measures too small. Both end bell housing fits worn.

65. Technician **Terrence Holland**



Root Cause of Failure

66. Failure locations

DE shaft fit, and both end bell housing fits.

67. Root cause of failure P18

ODE bearing suffered cage failure due to lack of lubrication.

Dynamic Balance Report

68. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade

69. Initial Balance Readings

Drive End	Opposite Drive End

70. Final Balance Readings

Drive End	Opposite Drive End

71. Technician

Mechanical Fits- Rotor - Post Repair

72.	Shaft Runout Post Repair	**0.001 inches**

73. Rotor Runout Post Repair

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
0.002	**0.002**	**0.003**

74. Coupling Fit Closest to Bearing Housing Post Repair

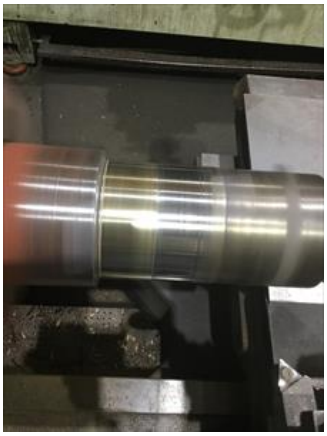
0 Degrees	90 Degrees	120 Degrees

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

0 Degrees	60 Degrees	120 Degrees

76. Drive End Bearing Shaft Fit Post Repair P49

0 Degrees	60 Degrees	120 Degrees
3.1502	**3.1502**	**3.1503**



77. Opposite Drive End Bearing Shaft Fit Post Repair

0 Degrees	60 Degrees	120 Degrees

78. Shaft Air Seal Fits Post Repair

Drive End Air Seal	Opposite Drive End Air Seal

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

Mechanical Fits- Bearing Housings - Post Repair

80. Drive End - Endbell Bearing Fit Post Repair P5

0 Degrees	60 Degrees	120 Degrees
6.6935	**6.6935**	**6.6934**

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

0 Degrees	60 Degrees	120 Degrees
6.693	**6.6931**	**6.6931**

82. Bearing Cap Condition Post Repair

Drive End Bearing Cap	Opposite Drive End Bearing Cap

83. End Bell Air Seal Fits Post Repair

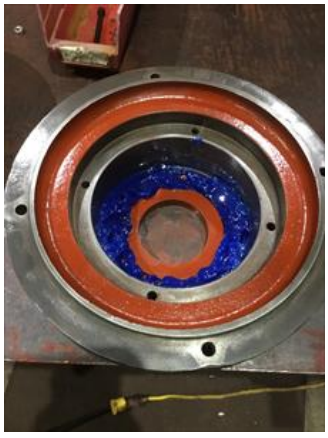
Drive End Air Seal	Opposite Drive End Air Seal

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

Assembly

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

86. Photograph All Major Components prior to assembly P17



87. Final Insulation Resistance Test **12.42 Gigohms** P31

88.	Assembled Shaft Endplay		**0 inches**
89.	Assembled Shaft Runout		**0.002 inches**
90.	Test Run Voltage		P56
	Volts	Volts	Volts

91.	Test Run Amperage		P65
	Amps	Amps	Amps
	7.3	**7.2**	**7.6**

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

93.	Opposite Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
94.	Ambient Temperature - Fahrenheit		
95.	Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
96.	Opposite Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
97.	Document Final Condition with Pictures after paint		
	See below		
98.	Final Pics and QC Review	**Terrence Holland**	P132

Co witness: RW