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

AC Inspection as Found

Twin Rivers
1701 Jefferson Parkway
White Hall, AR 71602

FolderID: 101649
FormID: 17422817

AC Inspection - Rev. 2

Location:	MOTOR SHOP LR
Serial Number:	
Description:	25 HP TEFC

Hi-Speed Job Number:	101649
Manufacturer:	US Motors/Nidec
HP/kW:	25 (HP)
RPM:	1190 (RPM)
Frame:	324ZLPZ
Voltage:	230 / 460
Current:	62 / 31
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
# of Leads:	3
J-box Included:	Half
Coupling/Sheave:	Propeller
Date Received:	07/24/2023
Repair Stage:	Final

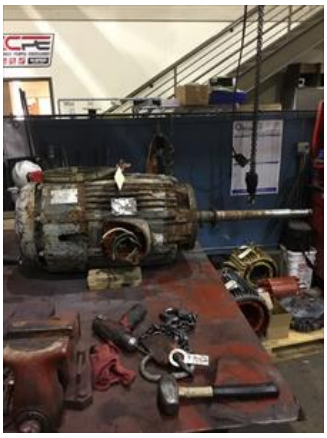
Priorities Found: **5 - High** **2 - Good**

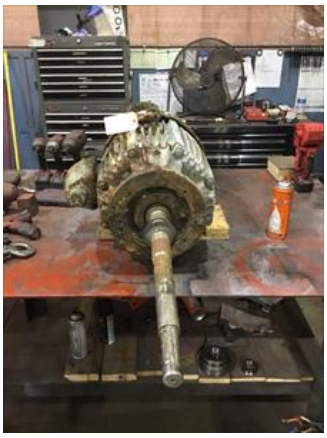
Overall Condition

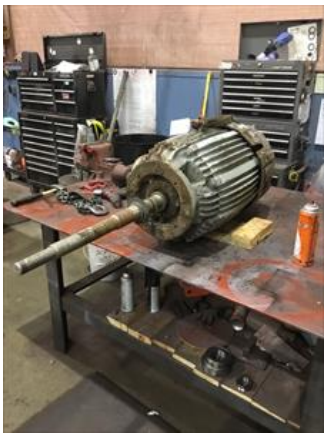
1. Report Date

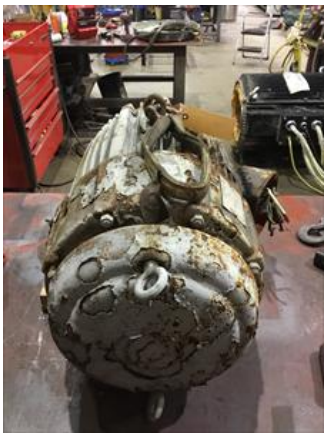
2. Nameplate Picture P37

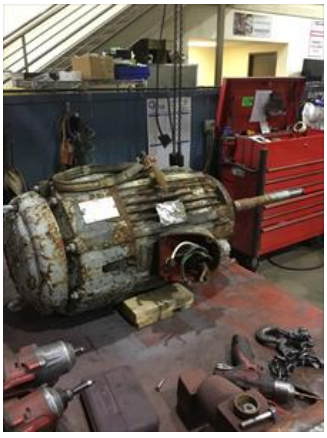
3. Photos of all six sides of the machine. P45

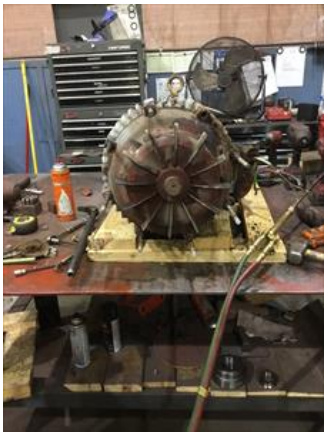


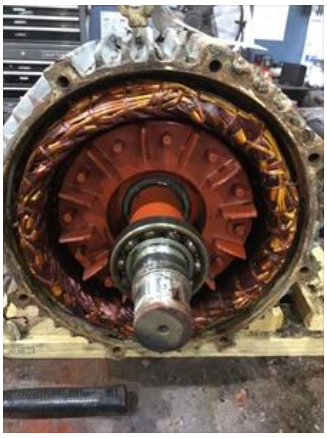


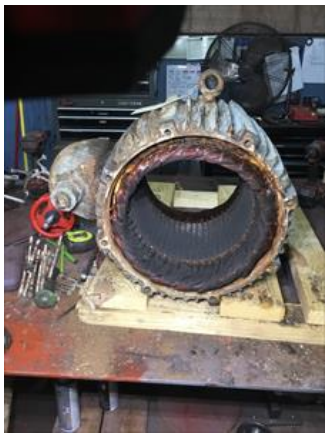


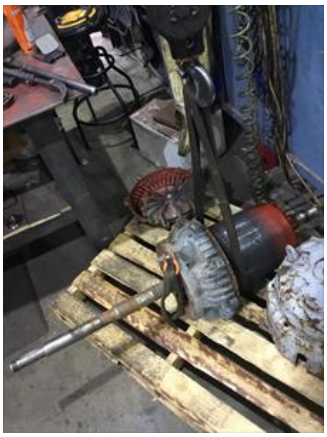


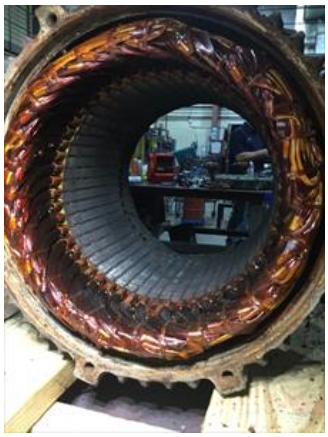


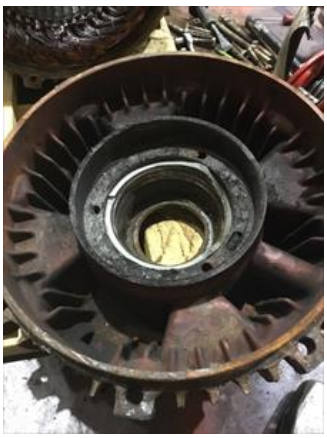


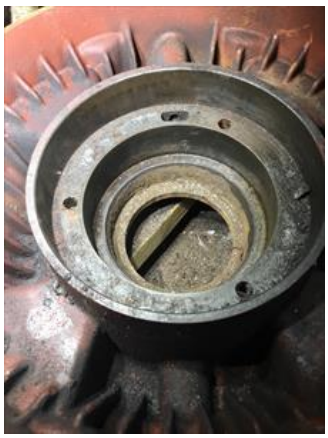












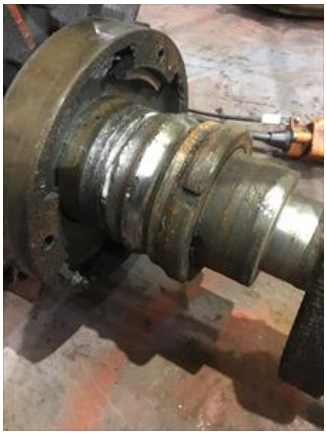
4. Describe the Overall Condition of the Equipment as Received

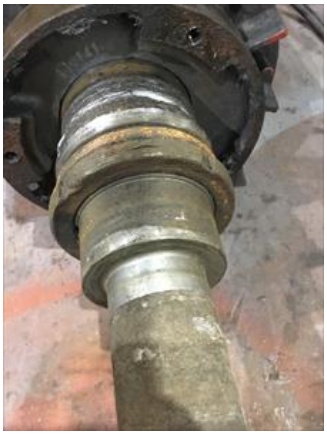
5. Distance from the end of the shaft to the Coupling/Sheave

Initial Mechanical/Electrical

6. Does Shaft Turn Freely? **(No) No**

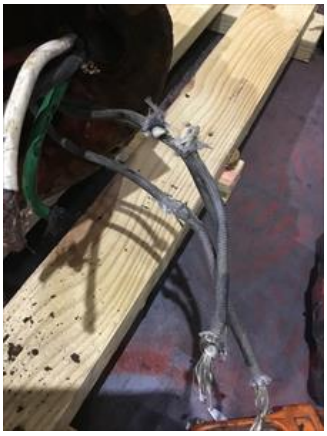
7.	Does Shaft Have Visible Damage?	**(Yes) Yes**	P17





8.	Assembled Shaft Runout		
9.	Assembled Shaft End Play		
10.	Air Gap Variation <10%		
11.	Lead Condition	**(F) Fail**	P57

Insulation worn



12.	Lead Length	**11.5 Inches**
13.	Lead Numbers	**1-3**
14.	Stator Temperature Detector Rating and Function	

Quantity	Rating	Quantity Passed

15.	Bearing Temperature Detector Rating and Function	

Quantity	Rating	Quantity Passed

16.	Frame Condition	
17.	Fan Condition	**(P) Pass**
18.	Heater Quantity, Ratings	

Quantity	Volts/Watts	Pass/Fail

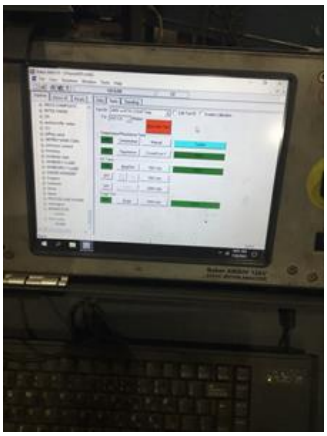
19.	Broken or Missing Components	**top connection box cover missing**

Initial Electrical Inspection

20.	Insulation Resistance/Megger	

21.	Winding Resistance		
	1-2	1-3	2-3

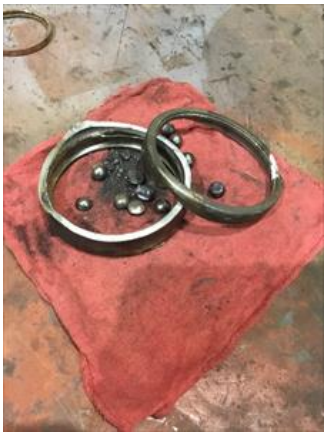
22.	Perform Surge Test	**(P) Pass**	P58



23.	Number of Stator Slots	**54 Megohms**	
24.	Stator Condition	**core test needed.**	
25.	Stator Thermistors/Ohms		
26.	Stator Overloads/Ohms		

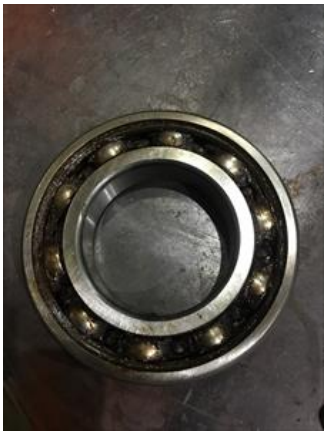
Mechanical Inspection

27.	Drive End Bearing Brand		
28.	Drive End Bearing Number-		
29.	Drive End Bearing Qty.	**1**	
30.	Drive End Bearing Type	**(Ball) Ball Bearing**	
31.	Drive End Lubrication Type	**(Grease) Grease Lubricated**	
32.	Drive End Bearing Insulation or Grounding Device?		
33.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**	
34.	Drive End Bearing Condition	**destroyed**	P83



35.	Opposite Drive End Bearing Brand		

36.	Opposite Drive End Bearing Number-	**6211**	P100



37.	Opposite Drive End Bearing Qty.	**1**
38.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**
39.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**
40.	Opposite Drive End Bearing Insulation or Grounding Device?	
41.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	
42.	Opposite Drive End Bearing Condition	**replace**
43.	Drive End Seal	
44.	Opposite Drive End Seal	

45. DE Sleeve Bearing Inside Diameter

0 degrees	120 degrees	240 degrees

46. DE Sleeve Bearing Outside Diameter

0 degrees	120 degrees	240 degrees

47. DE Sleeve Bearing Housing Inside Diameter

0 degrees	120 degrees	240 degrees

48. DE Sleeve Bearing to Housing Clearance

0 degrees	120 degrees	240 degrees

49. ODE Sleeve Bearing Inside Diameter

0 degrees	120 degrees	240 degrees

50. ODE Sleeve Bearing Outside Diameter

0 degrees	120 degrees	240 degrees

51. ODE Sleeve Bearing Housing Inside Diameter

0 degrees	120 degrees	240 degrees

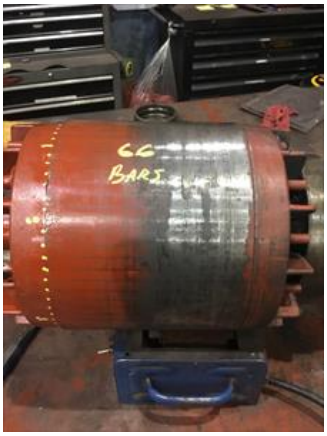
52. ODE Sleeve Bearing to Housing Clearance

0 degrees	120 degrees	240 degrees

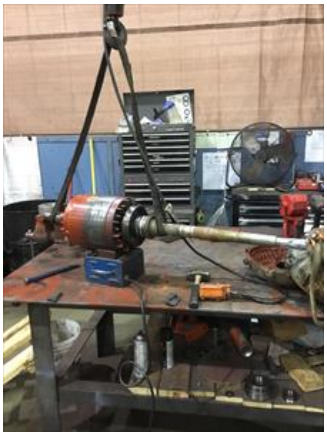
Rotor Inspection

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

54.	Growler Test	**(Pass) Pass**	
55.	Number of Rotor Bars	**66**	P30



56.	Rotor Condition	**pass**	P40



57. List the Parts needed for the Repair Below

New shaft needed

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

Mechanical Fits- Rotor

59. Shaft Runout **inches**

60. Rotor Runout

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

61. Coupling Fit Closest to Bearing Housing

0 Degrees	90 Degrees	120 Degrees

62. Coupling Fit Closest to the end of the Shaft

0 Degrees	60 Degrees	120 Degrees

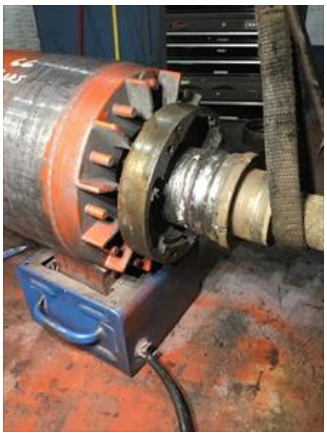
63. Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees

Locknut & inner race welded to shaft.

64. Drive End Bearing Shaft Fit Condition **(F) Fail** P81

Locking nut and inner bearing race welded to shaft.



65. Opposite Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees

66. Opposite Drive End Bearing Shaft Fit Condition

67. Shaft Air Seal Fits

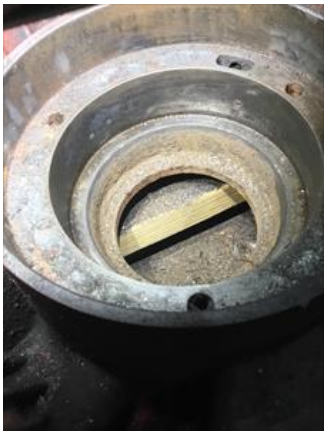
Drive End Air Seal	Opposite Drive End Air Seal

Mechanical Fits- Bearing Housings

68. Drive End - Endbell Bearing Fit P2

0 Degrees	60 Degrees	120 Degrees

Bad



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

70. Opposite Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees

Bad

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

Excessive pitting.

72. Bearing Cap Condition

Drive End Bearing Cap	Opposite Drive End Bearing Cap

Shaft opening require sleeve form excessive wear.

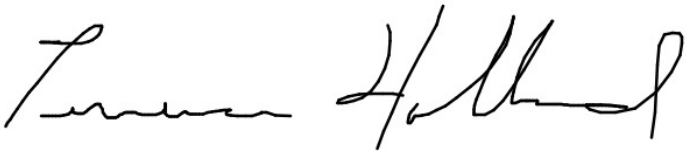
73. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

74. List Machine Work Needed Below

Sleeve both housing fits and drive end bearing cap. Replace shaft assembly because of locking nut and inner race welded to shaft bearing journal. Also shaft worn where bushing rides.

75. Technician **Terrence Holland**



Dynamic Balance Report

76. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade

77. Initial Balance Readings

Drive End	Opposite Drive End

78. Final Balance Readings

Drive End	Opposite Drive End

79. Technician

Rewind

80. Core Test Results - Watts loss per Pound

Pre-Burnout	Post Burnout

81. Core Hot Spot Test

Pre-Burnout	Post-Burnout

82. Post Rewind Electrical Test- Insulation Resistance

83. Post Rewind Polarization Index

84. Post Rewind Winding Resistance

1-2	1-3	2-3

85. Post Rewind Surge Test

86. Post Rewind Hi-Pot

87. Technician

Root Cause of Failure

88. Failure locations

89. Root cause of failure

Mechanical Fits- Rotor - Post Repair

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

Mechanical Fits- Bearing Housings - Post Repair

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

107.	ODE Sleeve Bearing Inside ID Post Repair		
	Measure 1	Measure 2	Measure 3
108.	ODE Sleeve Bearing Outside ID Post Repair		
	Measure 1	Measure 2	Measure 3
109.	ODE Sleeve Bearing Inside OD Post Repair		
	Measure 1	Measure 2	Measure 3
110.	ODE Sleeve Bearing Outside OD Post Repair		
	Measure 1	Measure 2	Measure 3

Assembly

111.	QC Check All Parts for Cleanliness Prior to Assembly		
112.	Photograph All Major Components prior to assembly		
113.	Final Insulation Resistance Test		
114.	Assembled Shaft Endplay		
115.	Assembled Shaft Runout		
116.	Test Run Voltage		
	Volts	Volts	Volts
117.	Test Run Amperage		
	Amps	Amps	Amps
118.	Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
119.	Opposite Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
120.	Ambient Temperature - Fahrenheit		
121.	Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
122.	Drive End Bearing Temps - Fahrenheit 20-30 Minutes		
	20 Minutes	25 Minutes	30 Minutes
123.	Drive End Bearing Temps - Fahrenheit 35-45 Minutes		
	35 Minutes	40 Minutes	45 Minutes
124.	Drive End Bearing Temps - Fahrenheit 50-60 Minutes		
	50 Minutes	55 Minutes	60 Minutes
125.	Opposite Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes

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