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

AC Inspection as Found

North Little Rock Wastewater (10219)
7400 Baucum Pike
N. Little Rock, AR 72117

FolderID: 101814
FormID: 17813269

AC Inspection - Rev. 2

Location:	MOTOR SHOP LR
Serial Number:	Y 07 17700602-0001 M 0002

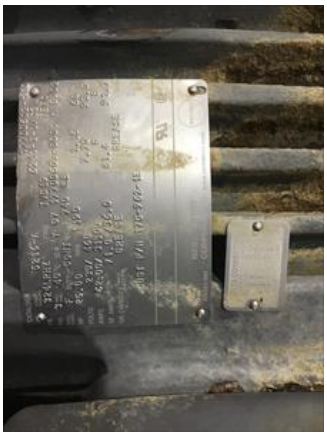
Description:25HP US MOTORS AERATOR 1200RPM 324LPZH

Hi-Speed Job Number:	101814
Manufacturer:	US Motors/Nidec
Product Number:	1770602-100
Serial Number:	Y 07 17700602-0001 M 0002
HP/kW:	25 (HP)
RPM:	1200 (RPM)
Frame:	324LPHZ
Voltage:	230 / 460
Current:	62/31
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
J-box Included:	Complete
Coupling/Sheave:	Propeller
Bearing RTDs:	No
Stator RTDs:	No
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

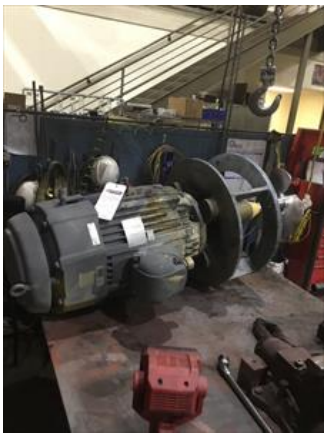
Priorities Found: **9 - Good**

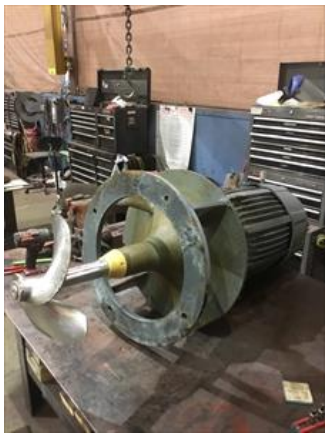
Overall Condition

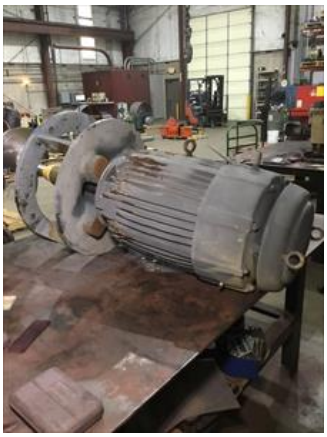
1. Report Date
2. Nameplate Picture P37

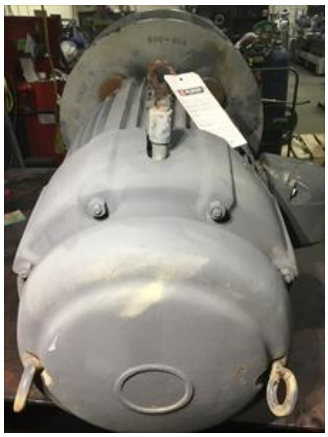


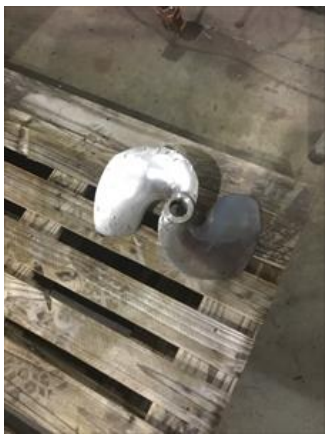
3. Photos of all six sides of the machine. P45

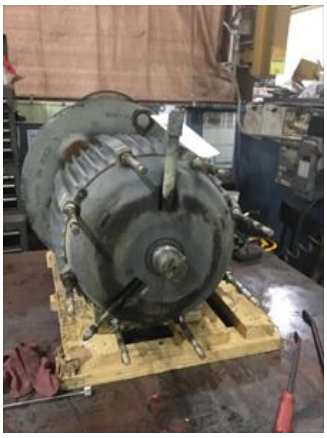


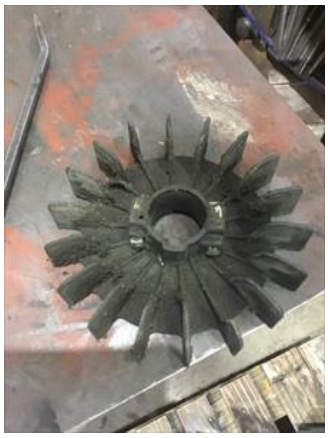


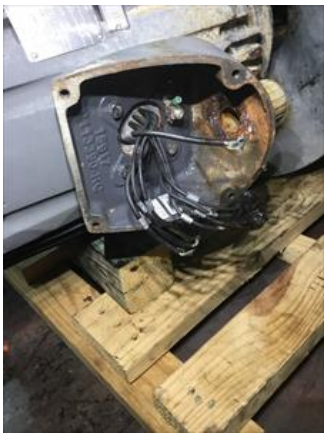


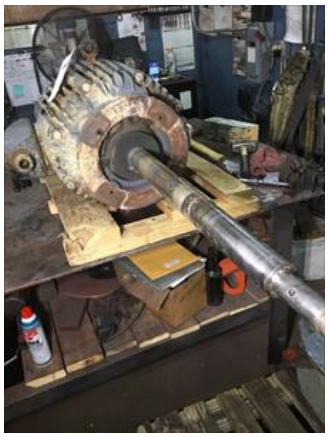


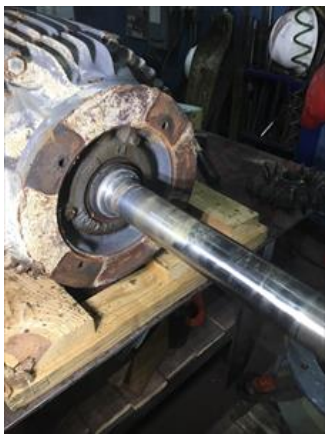


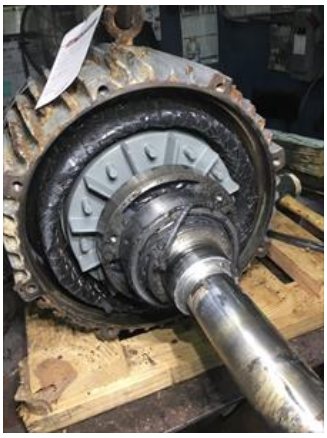


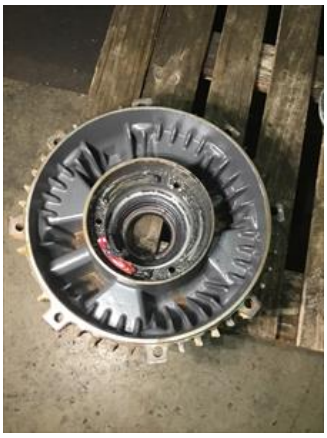


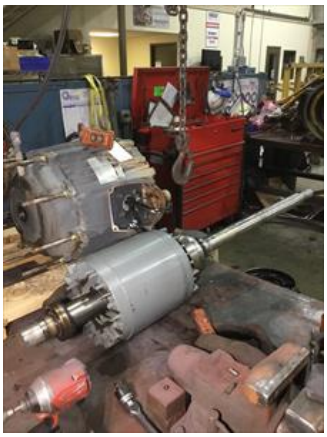


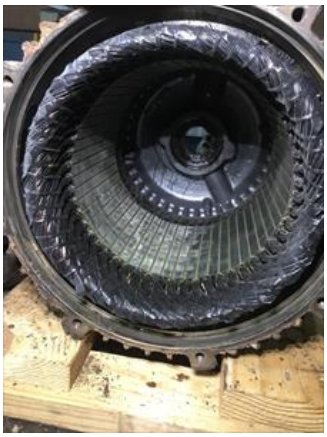


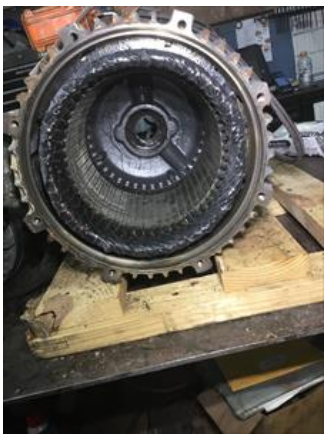






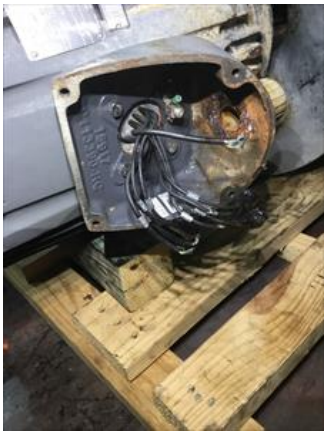




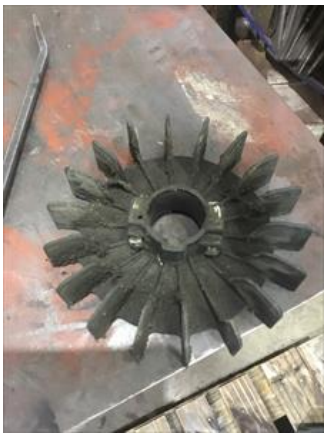


	4.	Describe the Overall Condition of the Equipment as Received	
	5.	Distance from the end of the shaft to the Coupling/Sheave	
Initial Mechanical/Electrical			
●	6.	Does Shaft Turn Freely?	**(Yes) Yes**
	7.	Does Shaft Have Visible Damage?	**(No) No**
●	8.	Assembled Shaft Runout	**0.003 Inches**
	9.	Assembled Shaft End Play	
	10.	Air Gap Variation <10%	

11.	Lead Condition	**(P) Pass**	P55



12.	Lead Length	**7 Inches**
13.	Lead Numbers	**1-9**
14.	Frame Condition	**pass**
15.	Fan Condition	**(P) Pass** P96



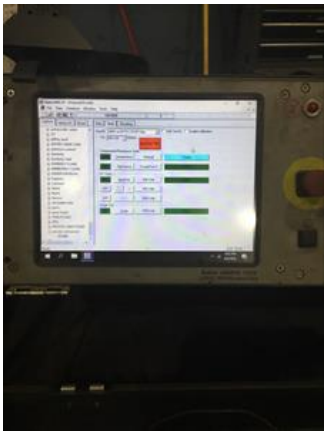
16.	Broken or Missing Components

Initial Electrical Inspection

17.	Insulation Resistance/Megger
18.	Winding Resistance

1-2	1-3	2-3

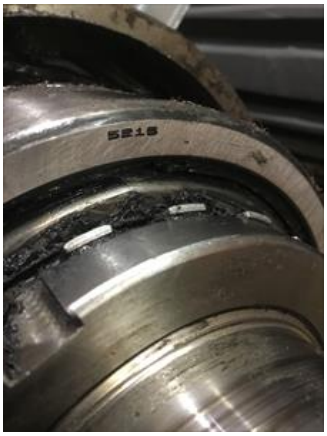
19.	Perform Surge Test	**(P) Pass**	P57

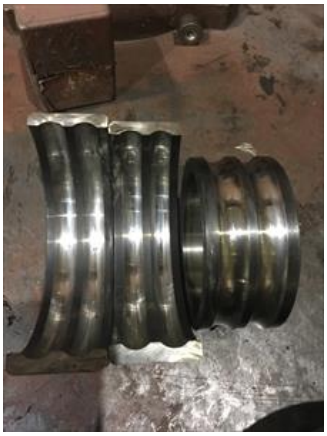


20.	Number of Stator Slots	**54**	
21.	Stator Condition	**pass**	
22.	Stator Thermistors/Ohms		
23.	Stator Overloads/Ohms		

Mechanical Inspection

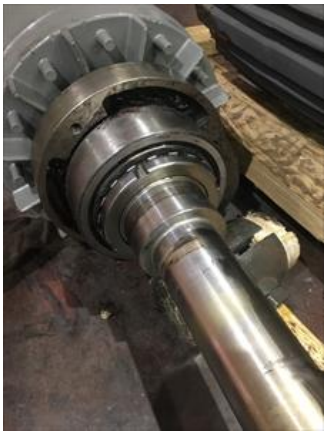
24.	Drive End Bearing Brand	**NSK**	
25.	Drive End Bearing Number-	**5216**	P30



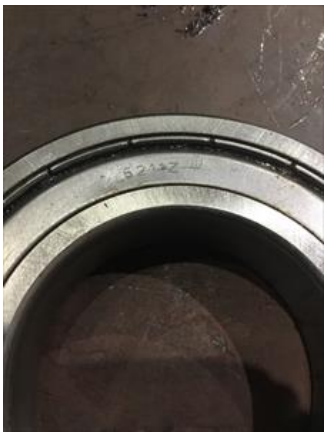


26.	Drive End Bearing Qty.	**1**	
27.	Drive End Bearing Type	**(Ball) Ball Bearing**	
28.	Drive End Lubrication Type	**(Grease) Grease Lubricated**	
29.	Drive End Bearing Insulation or Grounding Device?	**none**	

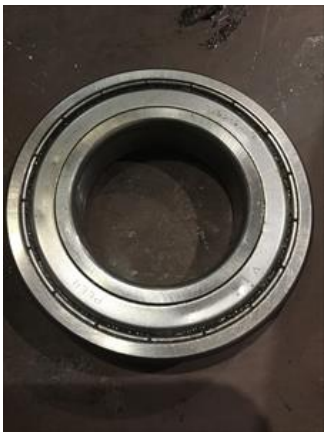
30.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**star washer and lock ring**	P73

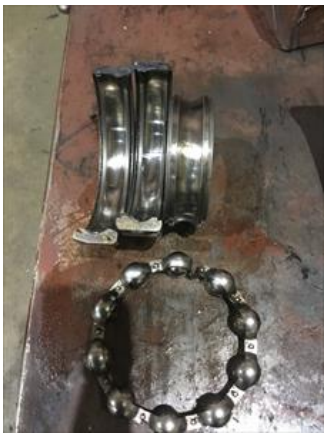


31.	Drive End Bearing Condition	**replace**	
32.	Opposite Drive End Bearing Brand	**PEER**	
33.	Opposite Drive End Bearing Number-	**6211 Z**	P90

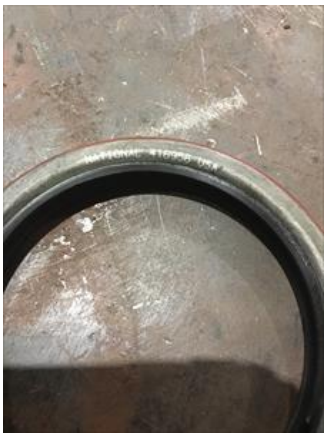


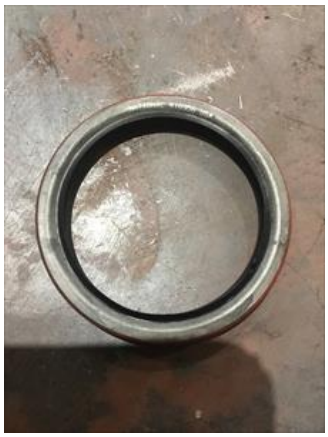
34.	Opposite Drive End Bearing Qty.	**1**	
35.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**	P93





36.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**	
37.	Opposite Drive End Bearing Insulation or Grounding Device?	**none**	
38.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**	
39.	Opposite Drive End Bearing Condition	**replace**	
40.	Drive End Seal	**National 416956**	P102

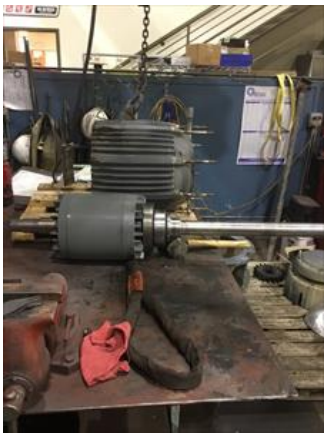




41.	Opposite Drive End Seal	**none**	

Rotor Inspection

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



43.	Growler Test	**(Pass) Pass**	
44.	Number of Rotor Bars	**66**	

45.	Rotor Condition	**good**
46.	List the Parts needed for the Repair Below	
47.	Signature of Technician that Disassembled Motor	**Terrence. Holland**

Mechanical Fits- Rotor

48.	Shaft Runout	**0.004 inches**
49.	Rotor Runout	

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

50.	Coupling Fit Closest to Bearing Housing	

0 Degrees	90 Degrees	120 Degrees

51.	Coupling Fit Closest to the end of the Shaft	

0 Degrees	60 Degrees	120 Degrees

52.	Drive End Bearing Shaft Fit	

0 Degrees	60 Degrees	120 Degrees
3.1507	**3.1507**	**3.1508**

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

0 Degrees	60 Degrees	120 Degrees
2.1661	**2.166**	**2.166**

55.	Opposite Drive End Bearing Shaft Fit Condition	**(P) Pass**
56.	Shaft Air Seal Fits	

Drive End Air Seal	Opposite Drive End Air Seal

Mechanical Fits- Bearing Housings

57.	Drive End - Endbell Bearing Fit	

0 Degrees	60 Degrees	120 Degrees
5.5122	**5.512**	**5.5119**

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

0 Degrees	60 Degrees	120 Degrees
3.9374	**3.9375**	**3.9375**

60.	Opposite Drive End - Endbell Bearing Fit Condition	**(P) Pass**
61.	Bearing Cap Condition	

Drive End Bearing Cap	Opposite Drive End Bearing Cap
pass	**n/a**

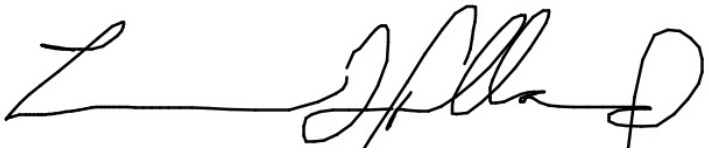
62.	End Bell Air Seal Fits	

Drive End Air Seal	Opposite Drive End Air Seal

63.	List Machine Work Needed Below	

None

64. Technician **Terrence Holland**



Dynamic Balance Report

65. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade

66. Initial Balance Readings

Drive End	Opposite Drive End

67. Final Balance Readings

Drive End	Opposite Drive End

68. Technician

Rewind

69. Core Test Results - Watts loss per Pound

Pre-Burnout	Post Burnout

70. Core Hot Spot Test

Pre-Burnout	Post-Burnout

71. Post Rewind Electrical Test- Insulation Resistance

72. Post Rewind Polarization Index

73. Post Rewind Winding Resistance

1-2	1-3	2-3

74. Post Rewind Surge Test

75. Post Rewind Hi-Pot

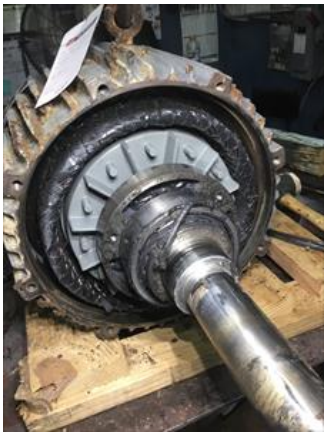
76. Technician

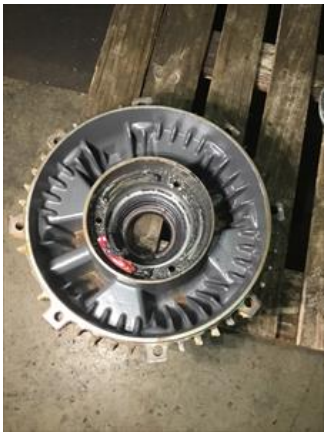
Root Cause of Failure

77. Failure locations

78. Root cause of failure P16

Contaminated bearings from grease.





Mechanical Fits- Rotor - Post Repair

79. Shaft Runout Post Repair

80. Rotor Runout Post Repair

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

81. Coupling Fit Closest to Bearing Housing Post Repair

0 Degrees	90 Degrees	120 Degrees

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

0 Degrees	60 Degrees	120 Degrees

83. Drive End Bearing Shaft Fit Post Repair

0 Degrees	60 Degrees	120 Degrees

84. Opposite Drive End Bearing Shaft Fit Post Repair

0 Degrees	60 Degrees	120 Degrees

85. Shaft Air Seal Fits Post Repair

Drive End Air Seal	Opposite Drive End Air Seal

86. Shaft Repair Sign-off

Mechanical Fits- Bearing Housings - Post Repair

87. Drive End - Endbell Bearing Fit Post Repair

0 Degrees	60 Degrees	120 Degrees

88. Opposite Drive End - Endbell Bearing Fit Post Repair

0 Degrees	60 Degrees	120 Degrees

89. Bearing Cap Condition Post Repair

Drive End Bearing Cap	Opposite Drive End Bearing Cap

90.	End Bell Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
91.	End Bell Repair Sign-off		
Assembly			
92.	QC Check All Parts for Cleanliness Prior to Assembly		
93.	Photograph All Major Components prior to assembly		
94.	Final Insulation Resistance Test		
95.	Assembled Shaft Endplay		
96.	Assembled Shaft Runout		
97.	Test Run Voltage		
	Volts	Volts	Volts
98.	Test Run Amperage		
	Amps	Amps	Amps
99.	Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
100.	Opposite Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
101.	Ambient Temperature - Fahrenheit		
102.	Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
103.	Opposite Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
104.	Document Final Condition with Pictures after paint		
105.	Final Pics and QC Review		