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

AC Inspection as Found

FUTURE FUEL CHEMICAL
2800 GAP RD HWY 394 SO
BATESVILLE, AR 72501

FolderID: 104368
FormID: 23893611

AC Inspection - Rev. 2

Location:	LR MOTOR SHOP
Serial Number:	A2109292022
Description:	75 HP BALDOR

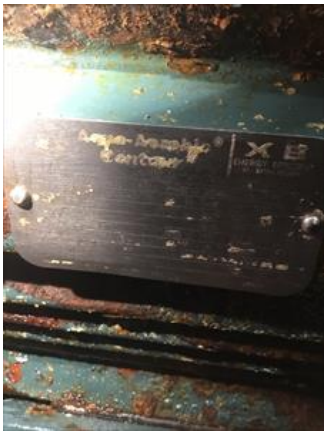
Hi-Speed Job Number:	104368
Manufacturer:	Baldor
Serial Number:	A2109292022
HP/kW:	75 (HP)
RPM:	1185 (RPM)
Voltage:	460
Current:	87.3 (Amps)
Phase:	Three
Hz:	60 (Hz)
Enclosure:	TEFC
# of Leads:	3
J-box Included:	Complete
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	Yes
Shaft Machined Fit Repairs Required:	Yes
Bearing Housing Machined Fit Repairs Required:	Yes
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

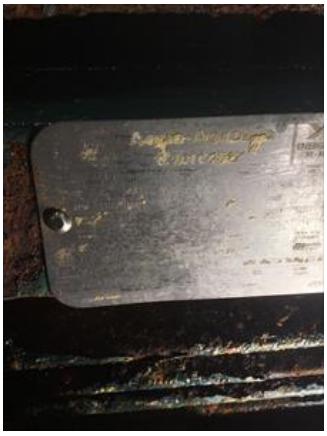
Priorities Found: **4 - High** **7 - Good**

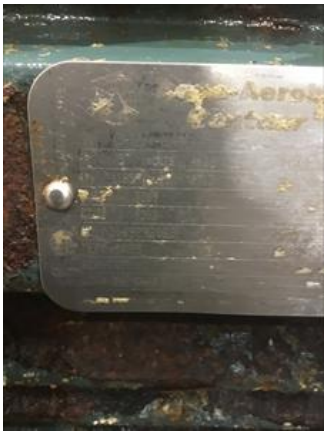
Overall Condition

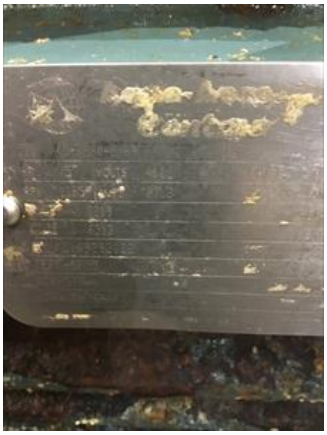
1.	Report Date	**03/28/2025**

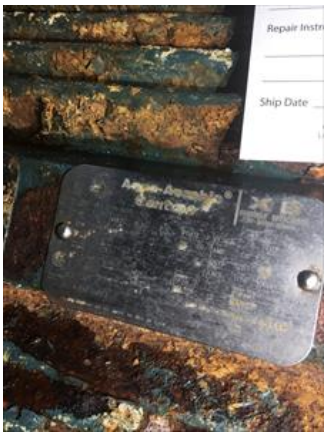
2. Nameplate Picture P37



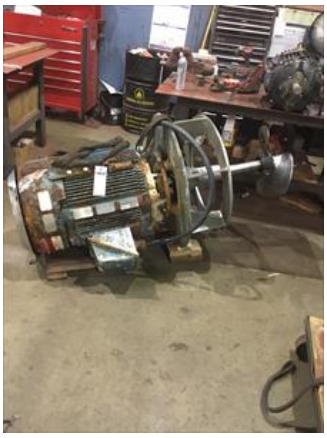


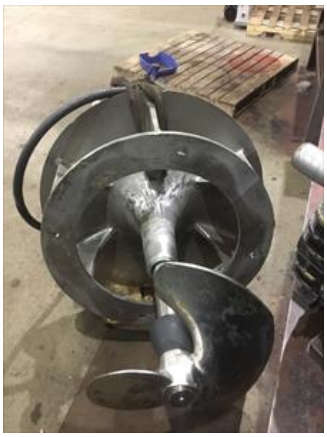


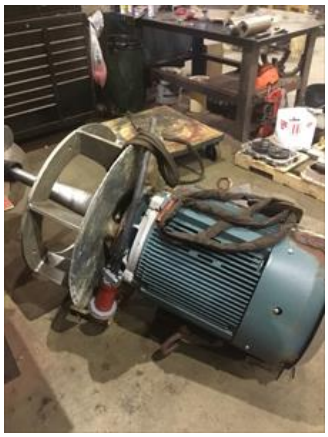


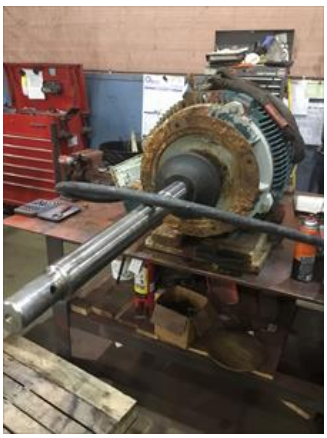


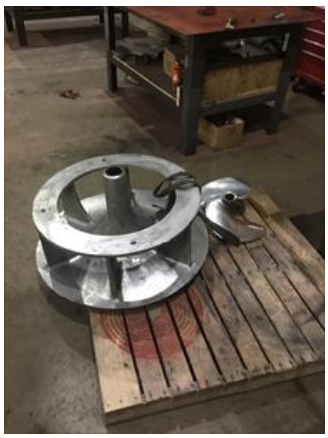
3. Photos of all six sides of the machine. P45

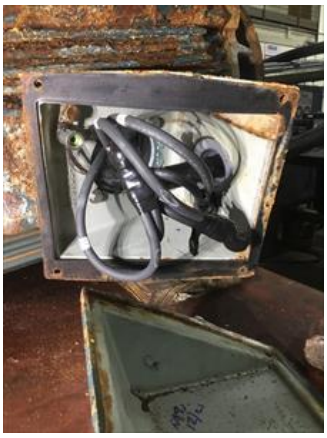


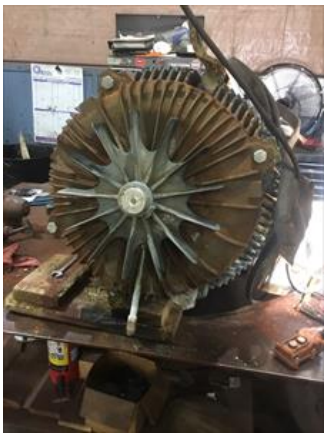


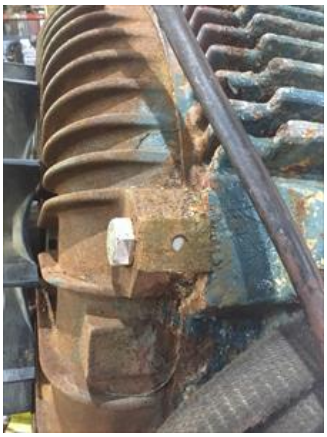


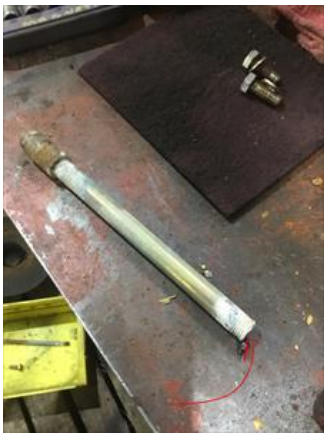






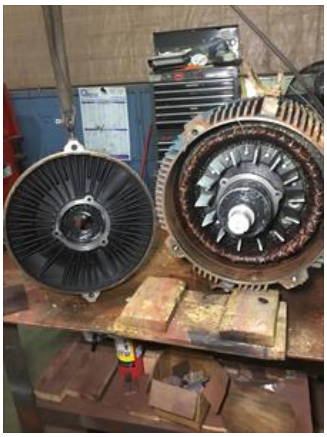


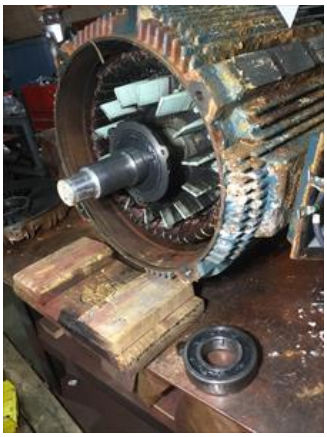


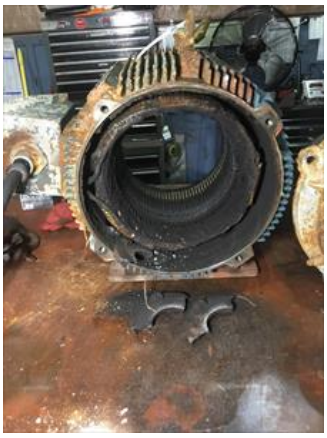


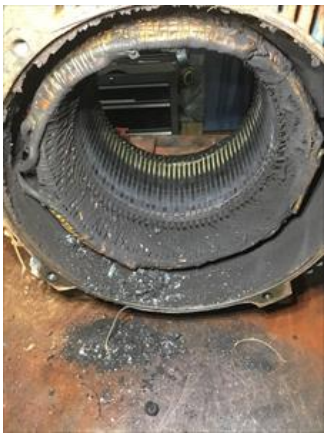
Broken bolt

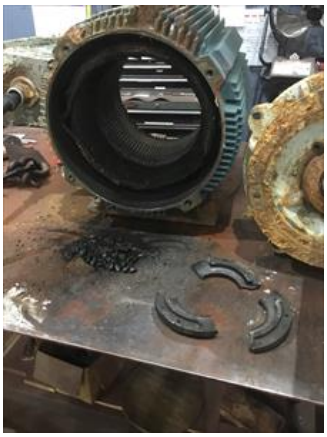
Part Broken off in housing.

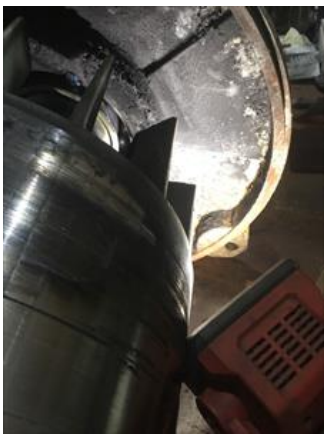


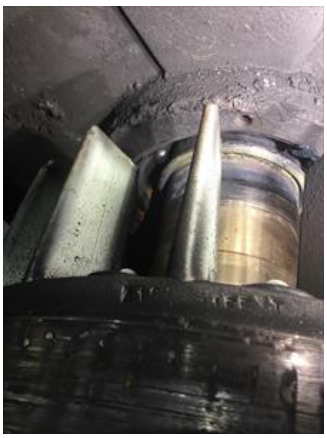






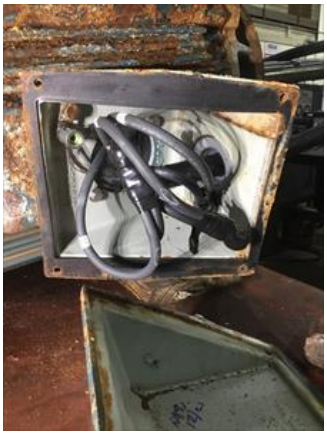




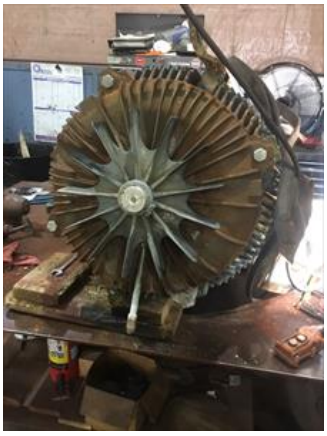


4.	Describe the Overall Condition of the Equipment as Received ***Dirty***	
Initial Mechanical/Electrical		
5.	Does Shaft Turn Freely?	**(N) No**
6.	Does the shaft require T.I.R in Lathe to identify additional repairs?	
7.	Does Shaft Have Visible Damage?	**(Yes) Yes**
8.	Assembled Shaft Runout ***Unable to perform due to locked up shaft***	**Inches**
9.	Assembled Shaft End Play	**0 inches**
10.	Air Gap Variation <10%	

11.	Lead Condition	**(P) Pass**	P69

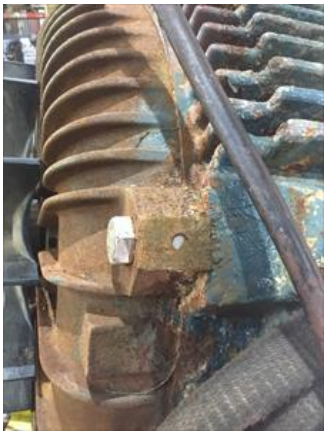


12.	Lead Length	**15 Inches**	
13.	Does it have Lugs?, If so what is the Stud Size?	**(Yes) Yes**	
14.	Lead Numbers	**1-3**	
15.	Frame Condition	**pass**	
16.	Fan Condition	**(P) Pass**	P115



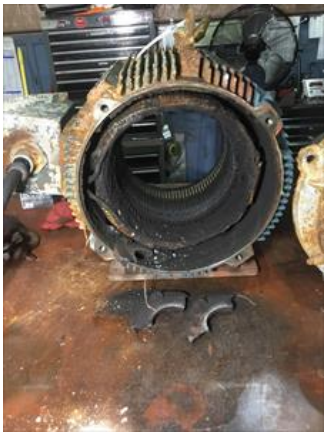
17.	Does motor have internal fan?	**(No) No**	
18.	Broken or Missing Components	**p**	P124

Broken of fan cover mount bolt on ODE.



Initial Electrical Inspection

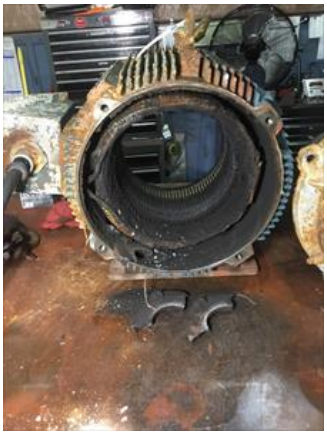
19.	Insulation Resistance/Megger	**Megohms**	P8
	See item 21		



20.	Winding Resistance		

1-2	1-3	2-3

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

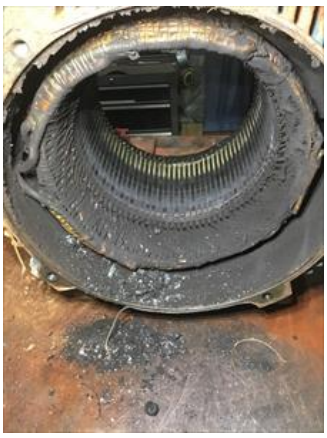


22.	Number of Stator Slots	**90**
23.	Stator Condition	**rewind**
24.	Stator Thermistors/Ohms	**none**
25.	Stator Overloads/Ohms	**none**

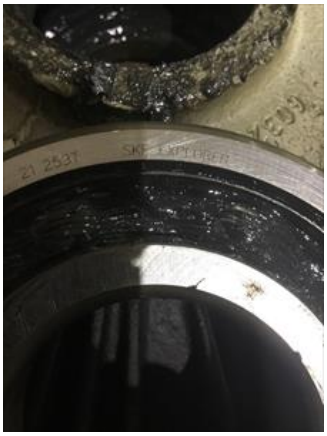
Mechanical Inspection

26.	Drive End Bearing Brand	
	Unknown	
27.	Drive End Bearing Number-	**7219**
28.	Drive End Bearing Qty.	**1**
29.	Drive End Bearing Type	**(Ball) Ball Bearing**
30.	Drive End Lubrication Type	**(Grease) Grease Lubricated**
31.	Drive End Bearing Insulation or Grounding Device?	**none**
32.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**

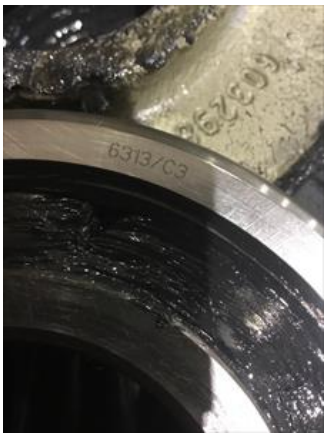
33.	Drive End Bearing Condition	**destroyed**	P82



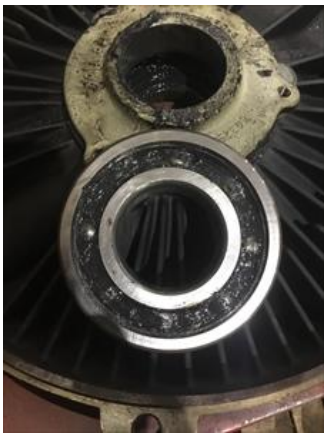
34.	Opposite Drive End Bearing Brand	**SKF**	P92

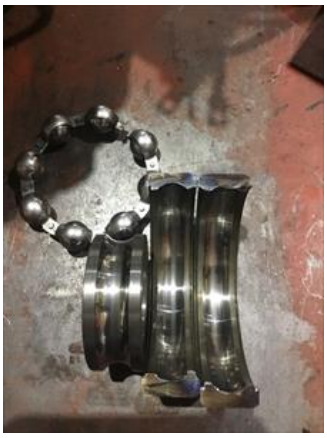


35.	Opposite Drive End Bearing Number-	**6313 C3**	P99



36.	Opposite Drive End Bearing Qty.	**1**	
37.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**	P106





38.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**
39.	Opposite Drive End Bearing Insulation or Grounding Device?	**none**
40.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**
41.	Opposite Drive End Bearing Condition	**replace**
	Normal wear.	
42.	Drive End Seal	
43.	Opposite Drive End Seal	

Rotor Inspection

44.	Rotor Type/Material	**(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast**
45.	Growler Test	**(Pass) Pass**
46.	Number of Rotor Bars	**70**
47.	Rotor Condition	**pass**
48.	List the Parts needed for the Repair Below	
	New shaft. Rewind stator & major core repair. ***Replace broken DE bearing*** ***Sleeve for 7219 housing fit.*** ***6313 and 7219 bearings.***	
49.	Signature of Technician that Disassembled Motor	**Terrence Holland**

Mechanical Fits- Rotor

50.	Shaft Runout	**inches**
	Needs new shaft	
51.	Rotor Runout	

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

52.	Coupling Fit Closest to Bearing Housing

0 Degrees	90 Degrees	120 Degrees

See item 50

53. Coupling Fit Closest to the end of the Shaft

0 Degrees	60 Degrees	120 Degrees

See item 50

54. Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees

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

56. Opposite Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
2.5592	**2.5593**	**2.5593**

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

58. Shaft Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

See item 50

Mechanical Fits- Bearing Housings

59. Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees

Fit bad because of both bearings suffering catastrophic failure!

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

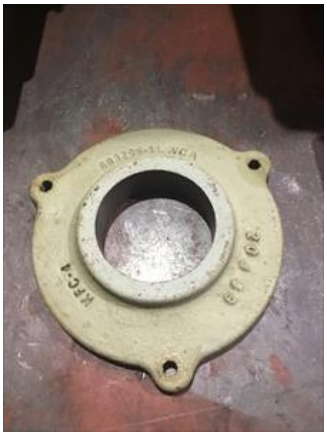
61. Opposite Drive End - Endbell Bearing Fit

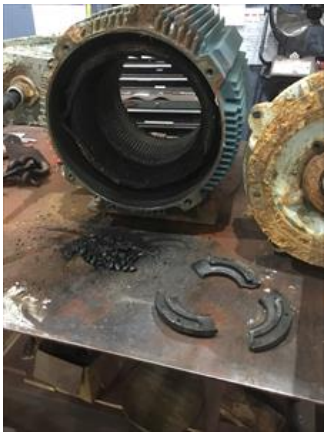
0 Degrees	60 Degrees	120 Degrees
5.5126	**5.5126**	**5.5127**

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

63. Bearing Cap Condition

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





64. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal
bad	**good**

65. List Machine Work Needed Below

Replace shaft
Machine DE housing bearing it and repair shaft air seal

66. Technician **Terrence Holland**

Root Cause of Failure

67. Failure locations

Windings shorted. DE bearing cap destroyed. D.E housing fit bad.
Core repair on stator required. Shaft repair required on DE from excessive wear.

68. Root cause of failure

DE bearing suffered catastrophic cage failure due to contaminated lubrication. This caused the rotor to drop onto the stator core and particles from the failed bearing, and broken bearing cap impacted the windings causing a short circuit.

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

76. Post Rewind Polarization Index

77. Post Rewind Winding Resistance

1-2	1-3	2-3

78. Post Rewind Surge Test

79. Post Rewind Hi-Pot

80. Technician

Mechanical Fits- Rotor - Post Repair

81. Shaft Runout Post Repair

82. Rotor Runout Post Repair

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

83. Coupling Fit Closest to Bearing Housing Post Repair

0 Degrees	90 Degrees	120 Degrees

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

0 Degrees	60 Degrees	120 Degrees

85. Drive End Bearing Shaft Fit Post Repair

0 Degrees	60 Degrees	120 Degrees

86. Opposite Drive End Bearing Shaft Fit Post Repair

0 Degrees	60 Degrees	120 Degrees

87. Shaft Air Seal Fits Post Repair

Drive End Air Seal	Opposite Drive End Air Seal

88. Shaft Repair Sign-off

Mechanical Fits- Bearing Housings - Post Repair

89.	Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
90.	Opposite Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
91.	Bearing Cap Condition Post Repair		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
92.	End Bell Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
93.	End Bell Repair Sign-off		

Assembly

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