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

AC Inspection as Found

acme brick
22145 US- 67
Malvern, AR 72104

FolderID: 102739
FormID: 19984342

AC Inspection - Rev. 2

Location:	MOTOR SHOP LR
Serial Number:	A2104132051
Description:	150HP BALDOR 1190RPM

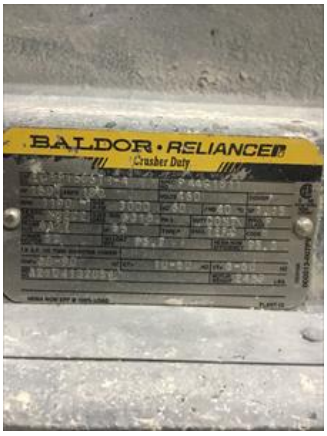
Hi-Speed Job Number:	102739
Manufacturer:	Baldor
Product Number:	CAT: ECR91506TR-4
Spec/ID #:	P44G1811
Serial Number:	A2104132051
HP/kW:	150 (HP)
RPM:	1190 (RPM)
Frame:	447T
Voltage:	460
Current:	180 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
# of Leads:	6
J-box Included:	None
Coupling/Sheave:	None
Date Received:	04/09/2024
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	Yes
Shaft Machined Fit Repairs Required:	No
Bearing Housing Machined Fit Repairs Required:	Yes
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

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

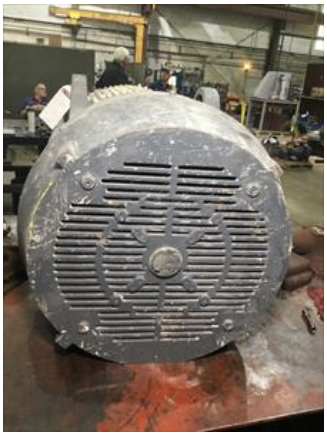
Overall Condition

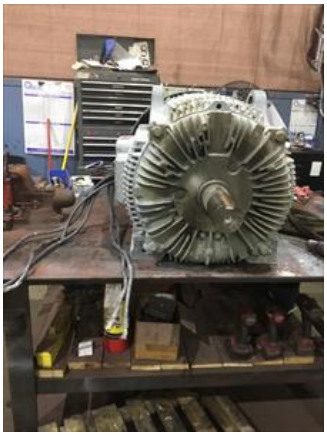
1. Report Date

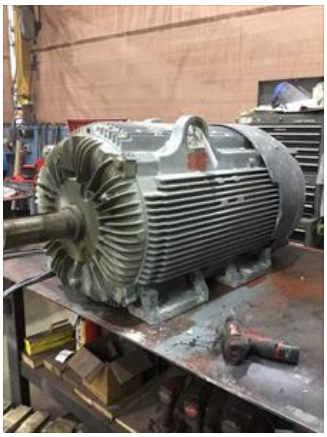
2. Nameplate Picture P37

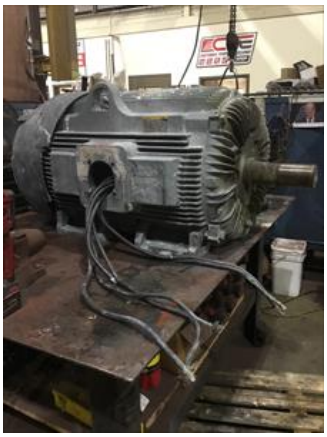


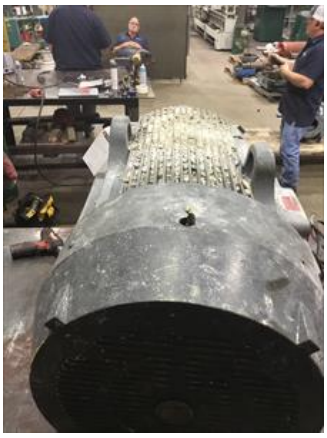
3. Photos of all six sides of the machine. P45

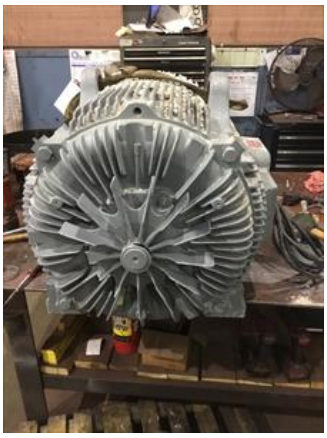


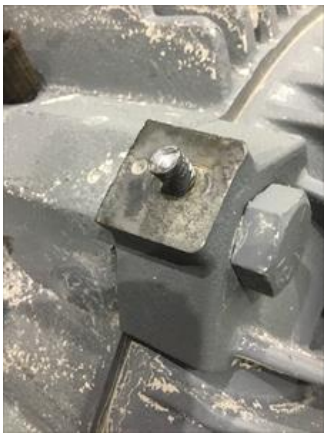


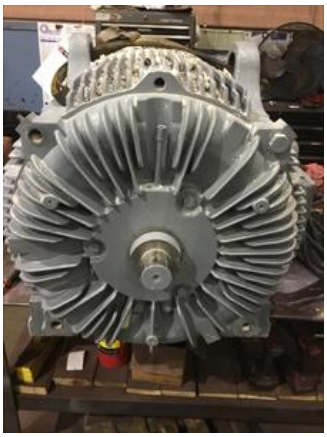


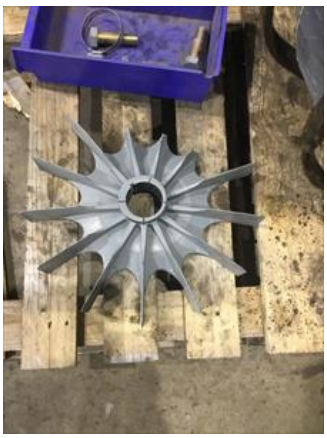


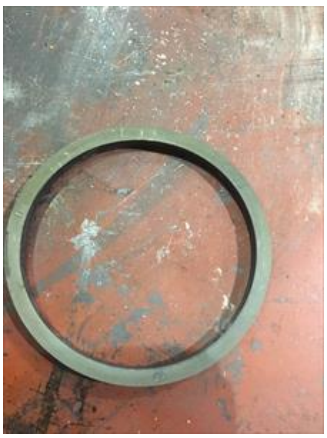


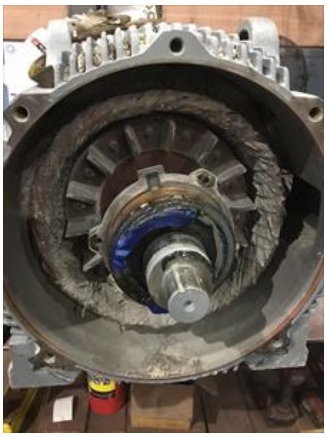


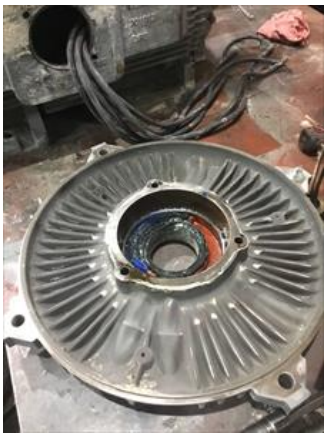


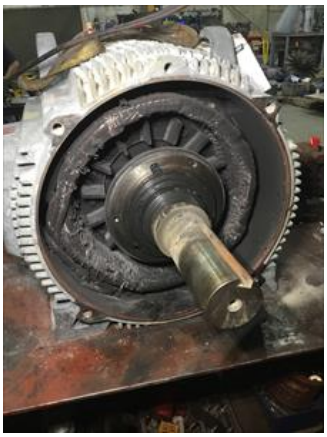


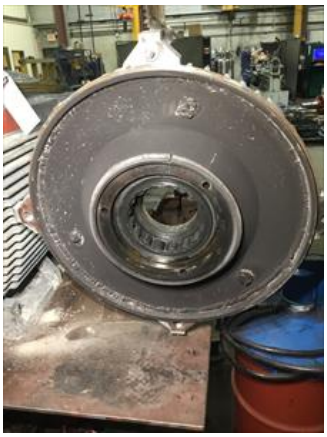


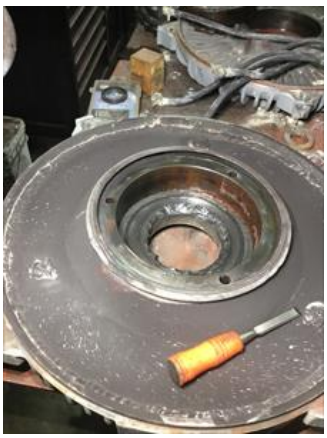


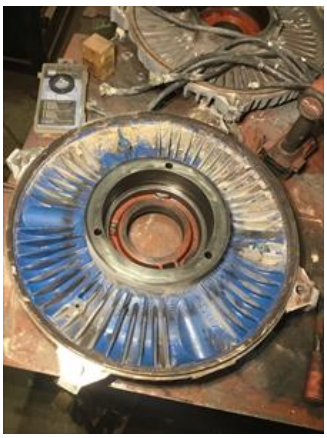


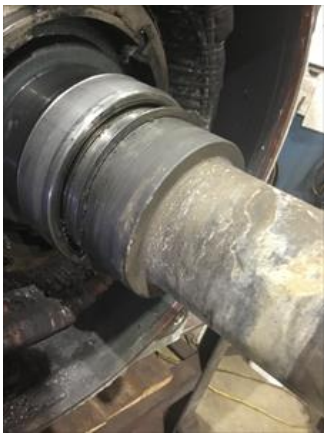


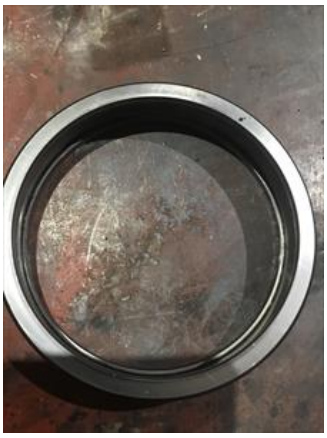


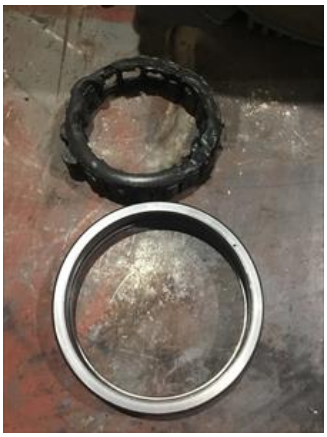


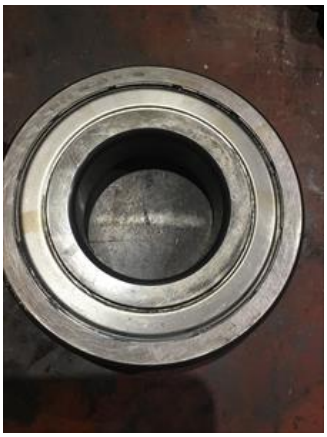


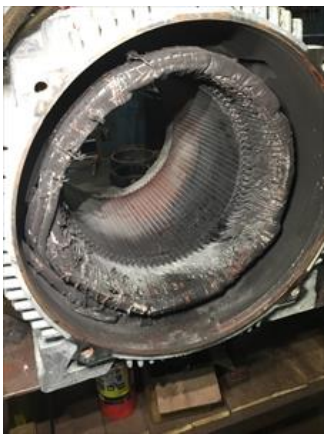


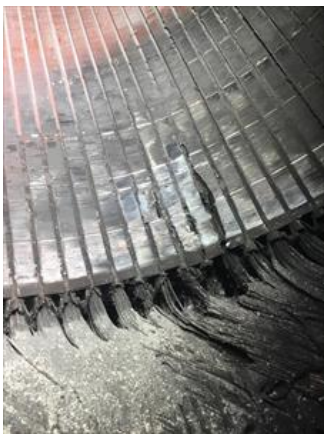


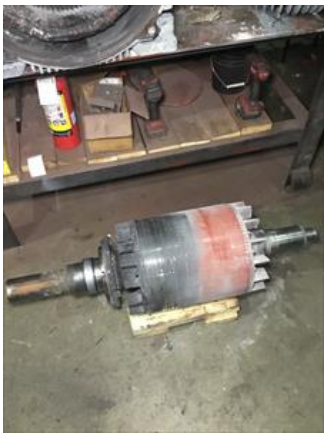


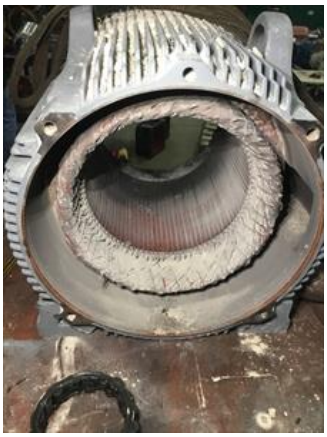


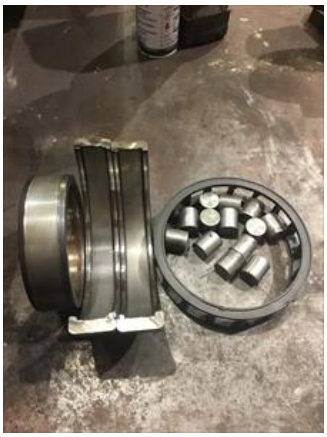


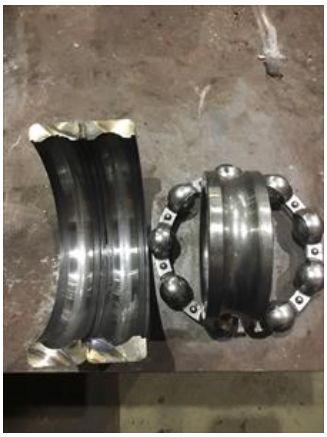






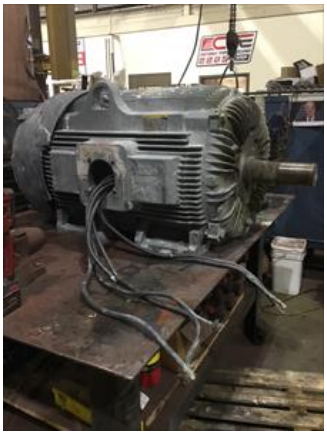


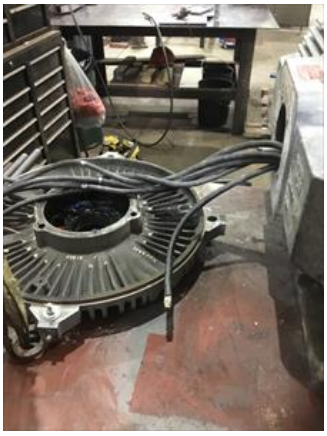


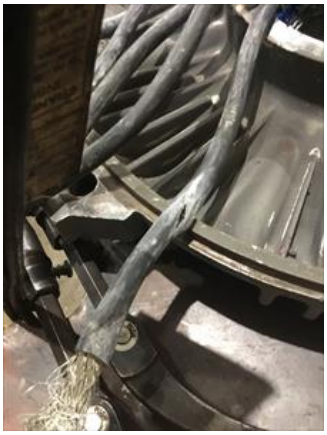


	4.	Describe the Overall Condition of the Equipment as Received ***Serviceable***	
Initial Mechanical/Electrical			
🔴	5.	Does Shaft Turn Freely?	**(N) No**
🟢	6.	Does the shaft require T.I.R in Lathe to identify additional repairs?	**(No) No**
	7.	Does Shaft Have Visible Damage?	**(No) No**
	8.	Assembled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

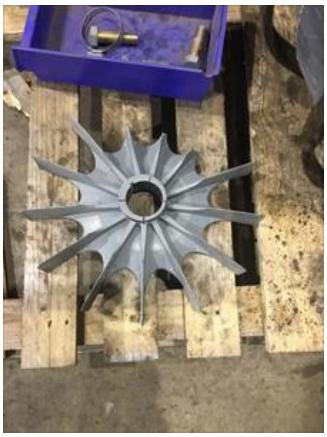
11.	Lead Condition		**(F) Fail**	P69



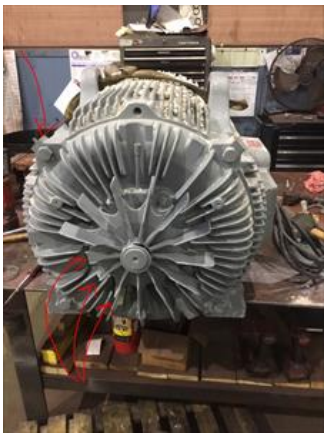




12.	Lead Length		**35 Inches**	
13.	Does it have Lugs?, If so what is the Stud Size?		**(No) No**	
14.	Lead Numbers		**1,2,3**	
	2 of each.			
15.	Frame Condition		**pass**	
16.	Fan Condition		**(F) Fail**	P115
	3 ea. blades broken.			



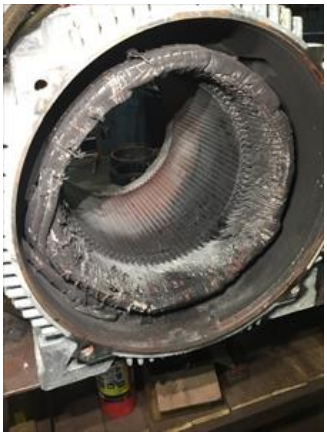
17.	Broken or Missing Components		**broken bolt on ode housing needs drill and tap.**	P122
	Fan blade needs replaced.			



Initial Electrical Inspection

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

Na



19.	Winding Resistance		

1-2	1-3	2-3

Na

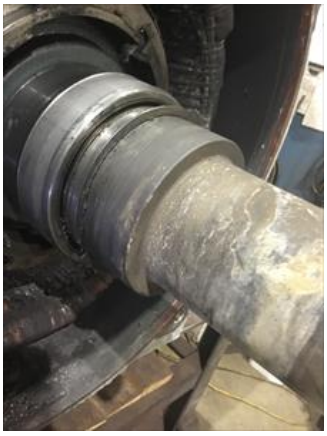
20.	Perform Surge Test	**(F) Fail**	
21.	Number of Stator Slots	**90**	
22.	Stator Condition	**rewind**	
23.	Stator Thermistors/Ohms	**na**	
24.	Stator Overloads/Ohms	**na**	

Mechanical Inspection

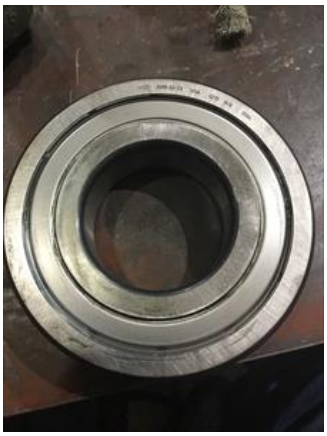
25.	Drive End Bearing Brand	**FAG**	
26.	Drive End Bearing Number-	**NU 222-E-XL-TVP2-C3**	
27.	Drive End Bearing Qty.	**1**	
28.	Drive End Bearing Type	**(Roller) Roller Bearing**	
29.	Drive End Lubrication Type	**(Grease) Grease Lubricated**	
30.	Drive End Bearing Insulation or Grounding Device?		

Na

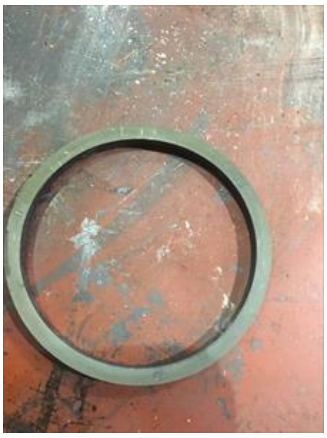
31.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**snap ring**	P77



32.	Drive End Bearing Condition	**replace**	
33.	Opposite Drive End Bearing Brand	**FAG**	
34.	Opposite Drive End Bearing Number-	**6318-2Z/C3**	P99

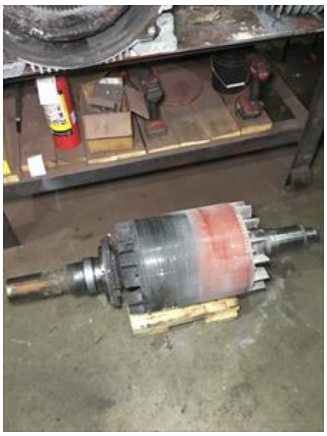


35.	Opposite Drive End Bearing Qty.	**1**	
36.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**	
37.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**	
38.	Opposite Drive End Bearing Insulation or Grounding Device?	**none**	
39.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**	
40.	Opposite Drive End Bearing Condition	**replace**	
41.	Drive End Seal		
42.	Opposite Drive End Seal	**VA-90**	P123

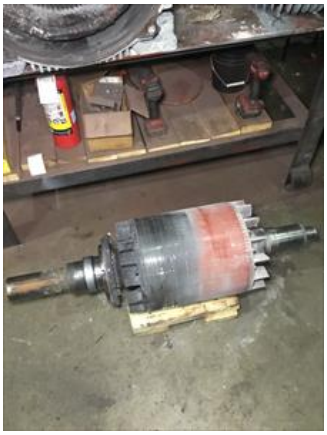


Rotor Inspection

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



44.	Growler Test	**(Pass) Pass**	
45.	Number of Rotor Bars	**71**	
46.	Rotor Condition	**pass**	P41



47. List the Parts needed for the Repair Below

Replace bearings, rewind stator. Stator core requires core test due to damage from rotor drop. Fan blade has 3 broken blades. Re-sleeve both housing fits.

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

Mechanical Fits- Rotor

49. Shaft Runout — **0.002 inches**

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

Na

52. Coupling Fit Closest to the end of the Shaft

0 Degrees	60 Degrees	120 Degrees

A

53. Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
4.3318	**4.3317**	**4.3317**

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

55. Opposite Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
3.5436	**3.5435**	**3.5434**

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

57. Shaft Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

Na

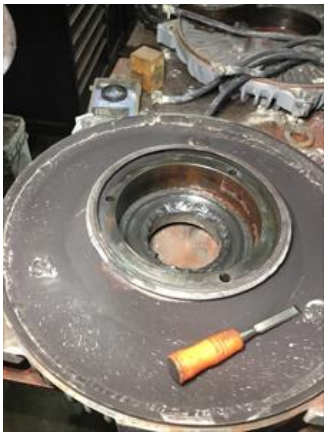
Mechanical Fits- Bearing Housings

58. Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
7.8754	**7.8755**	**7.7875**

59. Drive End - Endbell Bearing Fit Condition **(F) Fail** P15

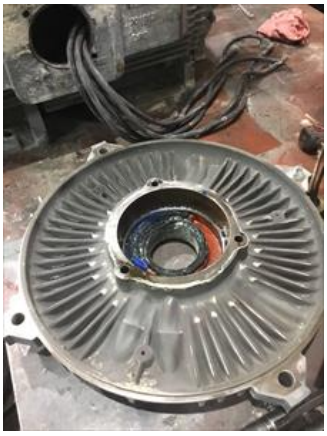
Excessive wear and pitting.



60. Opposite Drive End - Endbell Bearing Fit P30

0 Degrees	60 Degrees	120 Degrees

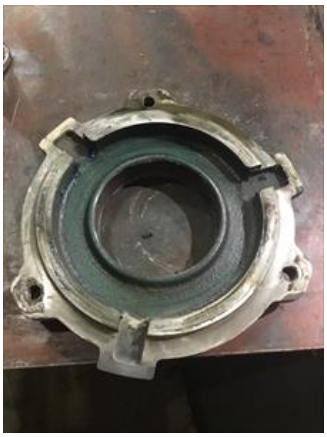
Excessive pitting and wear.

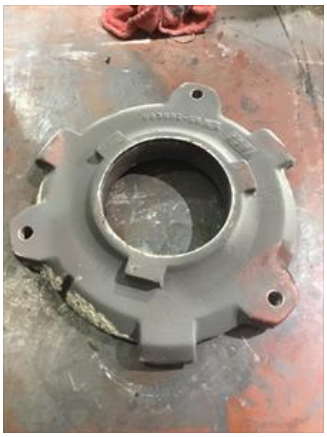


61. Opposite Drive End - Endbell Bearing Fit Condition **(F) Fail**

62. Bearing Cap Condition P52

Drive End Bearing Cap	Opposite Drive End Bearing Cap
good	





63. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

64. List Machine Work Needed Below

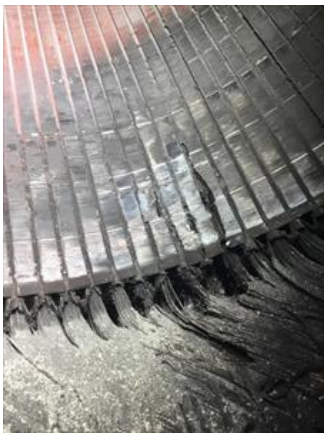
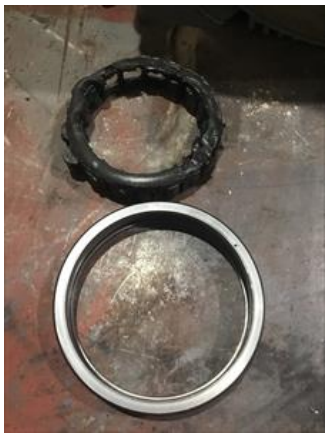
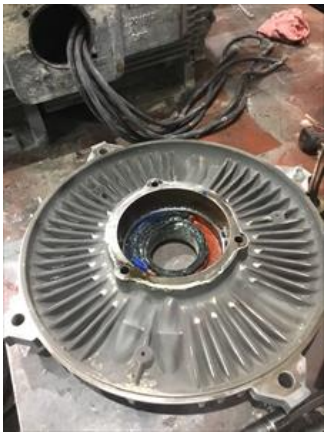
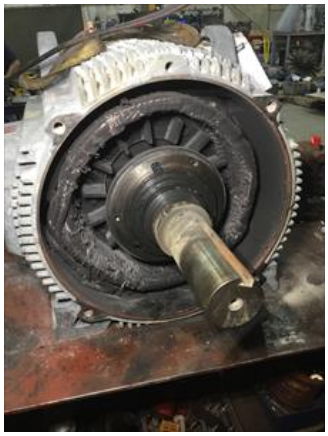
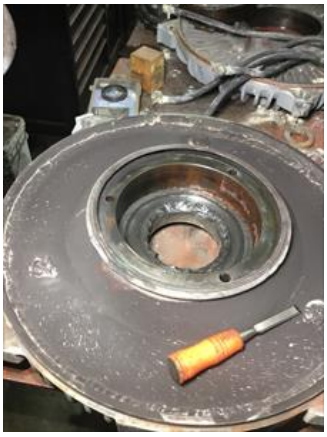
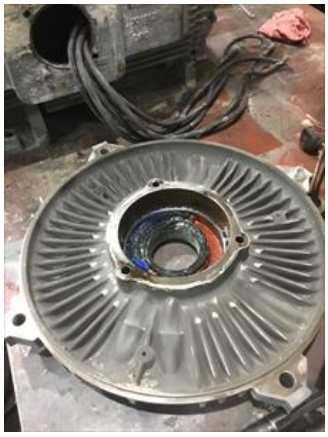
Sleeve both housing fits.

65. Technician **Terrence Holland**

Root Cause of Failure

66. Failure locations

NU, D.E. bearing suffered catastrophic failure from contaminated hardened grease. This caused the rotor to drop onto the stator core and windings resulting in shorted windings and a damaged core. Both housing fits show excessive wear and requires re-sleeve.

67. Root cause of failure

Contaminated hardened grease, resulting in premature DE bearing failure.

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		

Rewind

72.	Core Test Results - Watts loss per Pound		
	Pre-Burnout	Post Burnout	
73.	Core Hot Spot Test		
	Pre-Burnout	Post-Burnout	
74.	Post Rewind Electrical Test- Insulation Resistance		
75.	Post Rewind Polarization Index		
76.	Post Rewind Winding Resistance		
	1-2	1-3	2-3
77.	Post Rewind Surge Test		
78.	Post Rewind Hi-Pot		
79.	Technician		

Mechanical Fits- Bearing Housings - Post Repair

80.	Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
81.	Opposite Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
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		

Assembly

85.	QC Check All Parts for Cleanliness Prior to Assembly		
86.	Photograph All Major Components prior to assembly		
87.	Final Insulation Resistance Test		
88.	Assembled Shaft Endplay		
89.	Assembled Shaft Runout		
90.	Test Run Voltage		
	Volts	Volts	Volts
91.	Test Run Amperage		
	Amps	Amps	Amps

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		
98.	Final Pics and QC Review		