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

AC Inspection as Found

Phelps Fan Manufacturing Co.
10701 Interstate 30
Little Rock, AR 72209

FolderID: 103310
FormID: 21189491

AC Inspection - Rev. 2

Location:	MOTOR SHOP LR
Serial Number:	02-J15T0339NPI
Description:	125HP SIEMENS

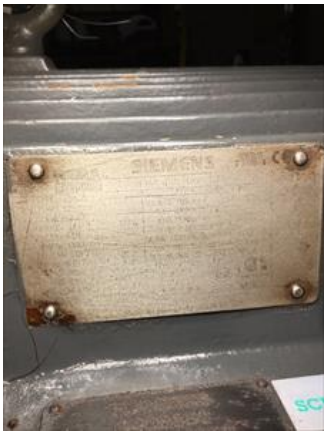
Hi-Speed Job Number:	103310
Manufacturer:	Siemens
Product Number:	TYPE: 6B103
Serial Number:	02-J15T0339NPI
HP/kW:	125 (HP)
Frame:	444L
Voltage:	460
Current:	143 (Amps)
Phase:	Three
Hz:	60 (Hz)
Enclosure:	TEFC
# of Leads:	6
J-box Included:	None
Coupling/Sheave:	None
Date Received:	08/02/2024
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	No
Shaft Machined Fit Repairs Required:	No
Bearing Housing Machined Fit Repairs Required:	No
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: **2 - High** **12 - Good**

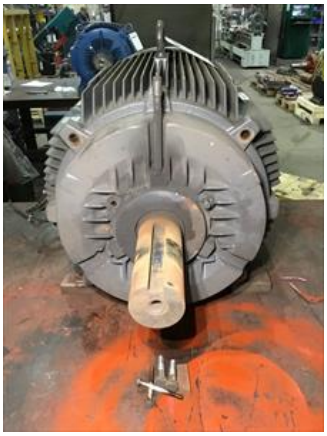
Overall Condition

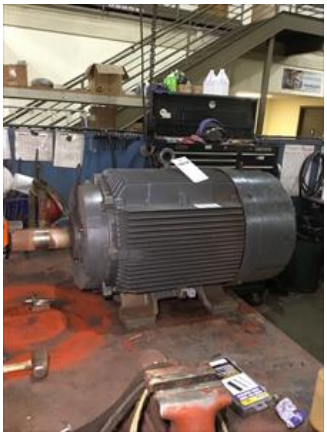
1.	Report Date	**08/02/2024**

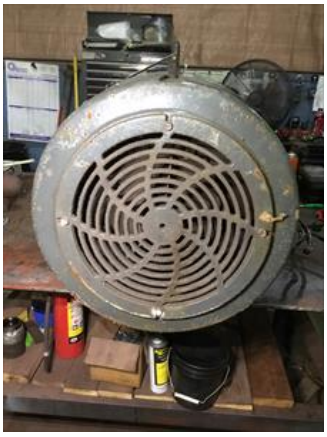
2. Nameplate Picture P37

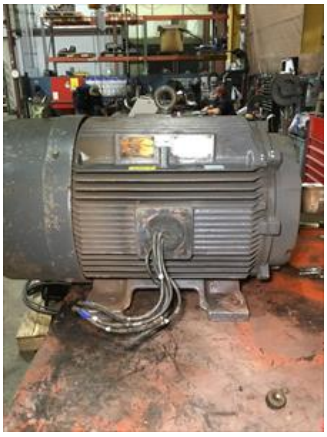


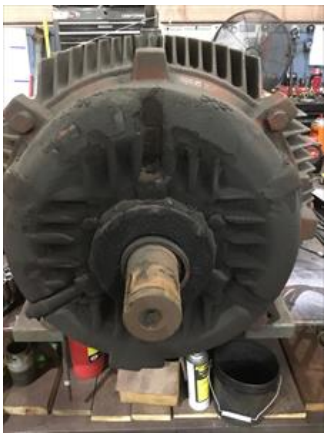
3. Photos of all six sides of the machine. P45

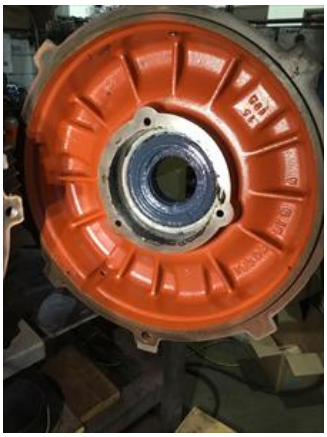


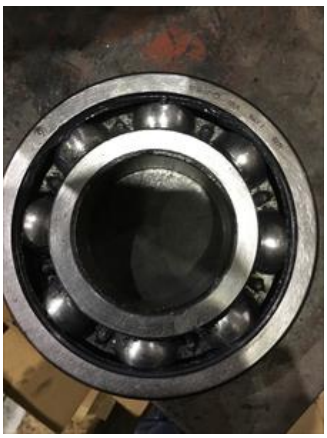


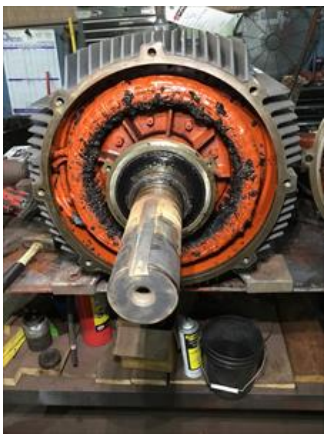


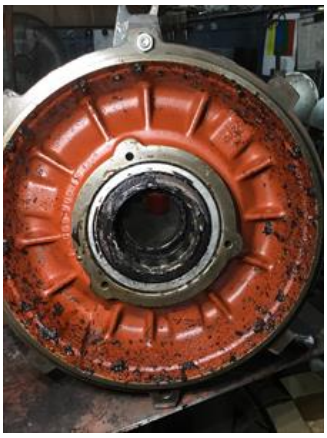












	4.	Describe the Overall Condition of the Equipment as Received ***Serviceable***	
	5.	Report Date [COPY]	**08/02/2024**

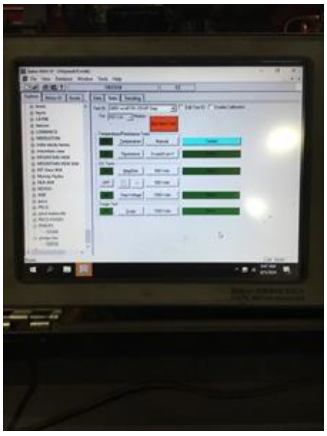
Initial Mechanical/Electrical

●	6.	Does Shaft Turn Freely?	**(Y) Yes**
●	7.	Does the shaft require T.I.R in Lathe to identify additional repairs?	**(No) No**
	8.	Does Shaft Have Visible Damage?	**(No) No**
●	9.	Assembled Shaft Runout	**0.002 Inches**
	10.	Assembled Shaft End Play	**0 inches**
●	11.	Air Gap Variation <10%	
●	12.	Lead Condition	**(P) Pass**
	13.	Lead Length	**15 Inches**
●	14.	Does it have Lugs?, If so what is the Stud Size?	**(No) No**
	15.	Lead Numbers	**1-3**
	16.	Frame Condition	**pass**
●	17.	Fan Condition	**(P) Pass** P116

	18.	Broken or Missing Components ***1 ea. DE mount bolt.***	

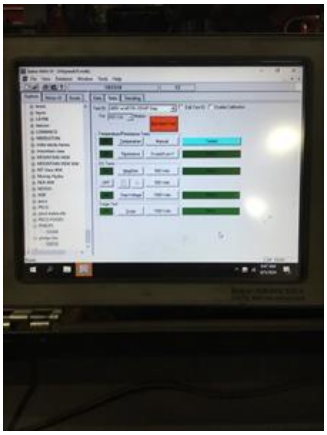
Initial Electrical Inspection

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

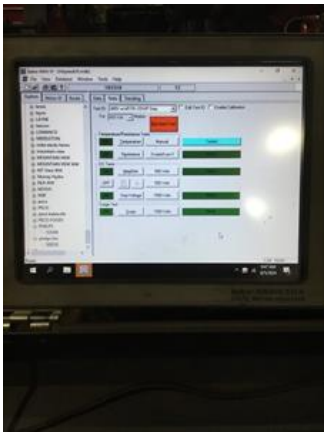


20.	Winding Resistance		P20

1-2	1-3	2-3



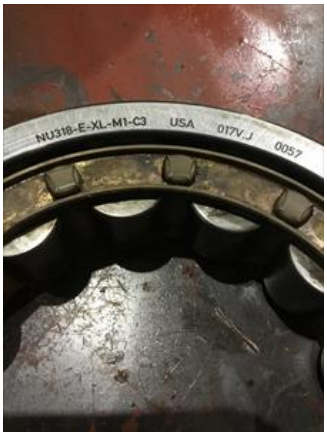
21.	Perform Surge Test	**(P) Pass**	P57

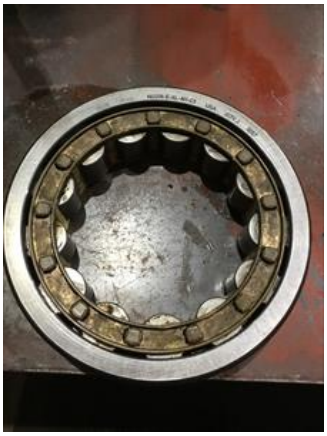


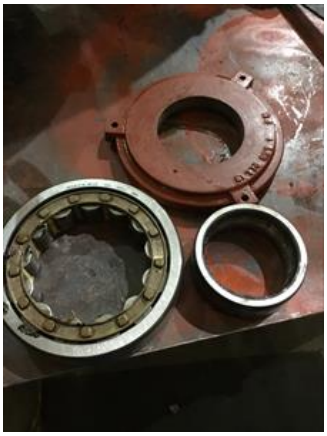
22.	Number of Stator Slots	**48**
23.	Stator Condition	**excessive grease but tests good**
24.	Stator Thermistors/Ohms	
25.	Stator Overloads/Ohms	

Mechanical Inspection

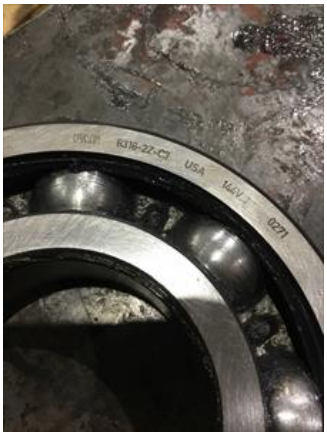
26.	Drive End Bearing Brand	**FAG**	
27.	Drive End Bearing Number-	**NU 318-E-XL-M1-C3**	P32





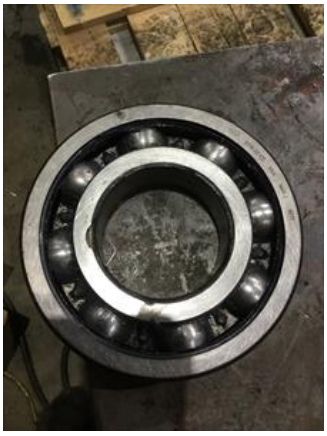


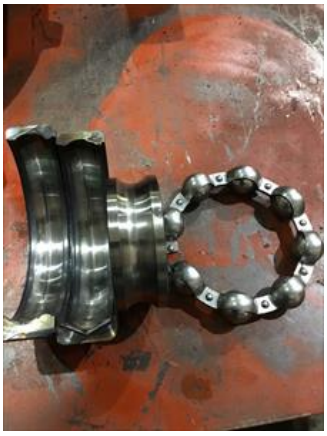
28.	Drive End Bearing Qty.	**1**
29.	Drive End Bearing Type	**(Roller) Roller Bearing**
30.	Drive End Lubrication Type	**(Grease) Grease Lubricated**
31.	Drive End Bearing Insulation or Grounding Device?	
32.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**
33.	Drive End Bearing Condition	**worn.**
34.	Opposite Drive End Bearing Brand	**FAG**
35.	Opposite Drive End Bearing Number-	P100



36.	Opposite Drive End Bearing Qty.	**1**

37.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**	P107

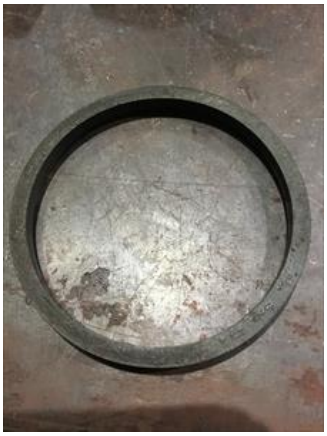




38.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**
39.	Opposite Drive End Bearing Insulation or Grounding Device?	**none**
40.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**snap ring**
41.	Opposite Drive End Bearing Condition	**worn with signs of frosting**

42.	Drive End Seal		P121

Dry rotted. Dust seal

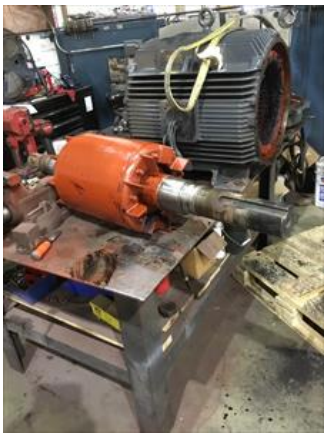


43.	Opposite Drive End Seal	**Dry rotted**

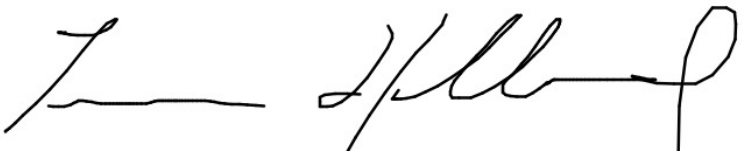
Dust seal

Rotor Inspection

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



45.	Growler Test	**(Pass) Pass**
46.	Number of Rotor Bars	**36**
47.	Rotor Condition	**pass**
48.	List the Parts needed for the Repair Below ***Bearings/recondition***	
49.	Signature of Technician that Disassembled Motor	**Terrence. Holland**



Mechanical Fits- Rotor

50.	Shaft Runout	**0.003 inches**
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

53.	Coupling Fit Closest to the end of the Shaft

0 Degrees	60 Degrees	120 Degrees

54.	Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
3.5441	**3.5441**	**3.5441**

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

0 Degrees	60 Degrees	120 Degrees
3.15	**3.15**	**3.1499**

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

Drive End Air Seal	Opposite Drive End Air Seal

Mechanical Fits- Bearing Housings

59. Drive End - Endbell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
7.4805	**7.4804**	**7.4806**

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

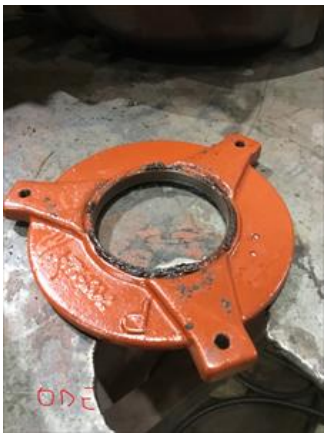
61. Opposite Drive End - Endbell Bearing Fit

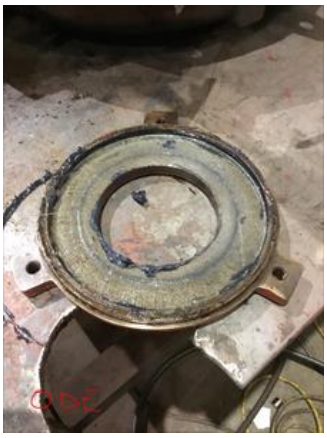
0 Degrees	60 Degrees	120 Degrees
6.693	**6.6931**	**6.6932**

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

63. Bearing Cap Condition P52

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





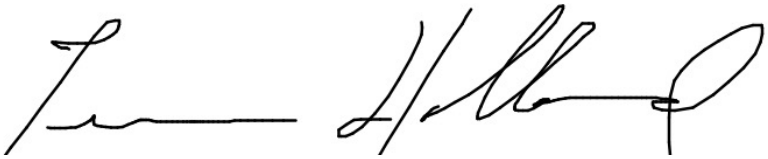
64. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

65. List Machine Work Needed Below

None

66. Technician **Terrence Holland**



Root Cause of Failure

67. Failure locations

Bearings.

68. Root cause of failure

Contaminated bearing grease. Motor was over greased. ODE, bearing showed signs of misalignment

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		

Assembly

73.	QC Check All Parts for Cleanliness Prior to Assembly		
74.	Photograph All Major Components prior to assembly		
75.	Final Insulation Resistance Test		
76.	Assembled Shaft Endplay		
77.	Assembled Shaft Runout		
78.	Test Run Voltage		
	Volts	Volts	Volts
79.	Test Run Amperage		
	Amps	Amps	Amps
80.	Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
81.	Opposite Drive End Vibration Readings - Inches Per Second		
	Horizontal	Vertical	Axial
82.	Ambient Temperature - Fahrenheit		
83.	Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
84.	Opposite Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
85.	Document Final Condition with Pictures after paint		
86.	Final Pics and QC Review		