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

AC Inspection as Found

Flywheel Energy (12096)
1408 Hwy 124 E
Damascus,, AR 72039

FolderID: 101504
FormID: 17044936

AC Inspection - Rev. 2

Location:	MOTOR SHOP LR
Serial Number:	L102AC2544069J
Description:	15HP EMERSON 1800RPM 254T

Hi-Speed Job Number:	101504
Manufacturer:	US Motors/Nidec
Product Number:	ELT15E2D
Serial Number:	L102AC2544069J
HP/kW:	15 (HP)
RPM:	1750 (RPM)
Frame:	254T
Voltage:	208-230/460
Current:	38.3/19.4
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
J-box Included:	Complete
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: **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	
	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	
	9.	Assembled Shaft End Play	
	10.	Air Gap Variation <10%	

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

12.	Lead Length	**6 Inches**
13.	Frame Condition	**pass**
14.	Fan Condition	**(P) Pass** P94

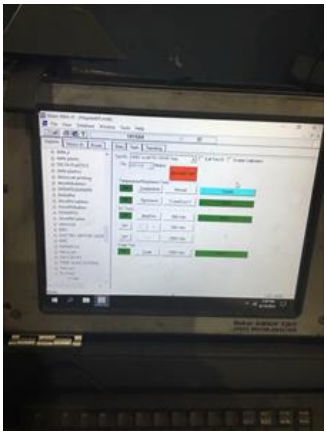
15.	Broken or Missing Components

Initial Electrical Inspection

16.	Insulation Resistance/Megger
17.	Winding Resistance

1-2	1-3	2-3

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

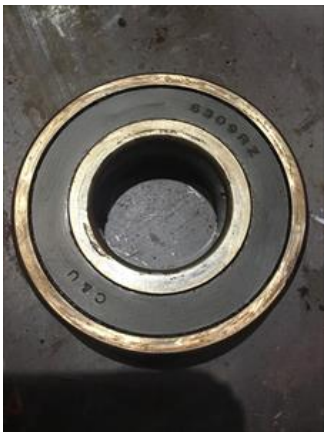


19.	Number of Stator Slots		
20.	Stator Condition		
21.	Stator Thermistors/Ohms		
22.	Stator Overloads/Ohms		

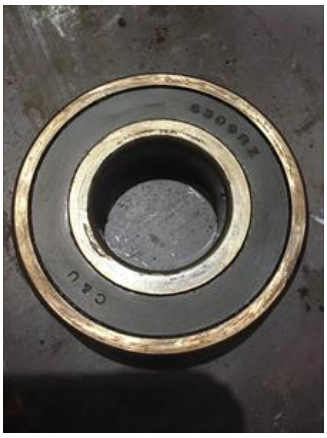
Mechanical Inspection

23.	Drive End Bearing Brand		
24.	Drive End Bearing Number-	**6309**	
25.	Drive End Bearing Qty.	**1**	
26.	Drive End Bearing Type	**(Ball) Ball Bearing**	
27.	Drive End Lubrication Type	**(Grease) Grease Lubricated**	
28.	Drive End Bearing Insulation or Grounding Device?	**none**	
29.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**yes**	P73

30.	Drive End Bearing Condition	**replace**	
31.	Opposite Drive End Bearing Brand	**C & U**	P86



32.	Opposite Drive End Bearing Number-	**6309RZ**	
33.	Opposite Drive End Bearing Qty.	**1**	
34.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**	P93



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

Rotor Inspection

41.	Rotor Type/Material
42.	Growler Test
43.	Number of Rotor Bars
44.	Rotor Condition
45.	List the Parts needed for the Repair Below
46.	Signature of Technician that Disassembled Motor

Mechanical Fits- Rotor

47.	Shaft Runout
48.	Rotor Runout

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

49.	Coupling Fit Closest to Bearing Housing

0 Degrees	90 Degrees	120 Degrees

50.	Coupling Fit Closest to the end of the Shaft		
	0 Degrees	60 Degrees	120 Degrees
51.	Drive End Bearing Shaft Fit		
	0 Degrees	60 Degrees	120 Degrees
52.	Drive End Bearing Shaft Fit Condition		
53.	Opposite Drive End Bearing Shaft Fit		
	0 Degrees	60 Degrees	120 Degrees
54.	Opposite Drive End Bearing Shaft Fit Condition		
55.	Shaft Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	

Mechanical Fits- Bearing Housings

56.	Drive End - Endbell Bearing Fit		
	0 Degrees	60 Degrees	120 Degrees
57.	Drive End - Endbell Bearing Fit Condition		
58.	Opposite Drive End - Endbell Bearing Fit		
	0 Degrees	60 Degrees	120 Degrees
59.	Opposite Drive End - Endbell Bearing Fit Condition		
60.	Bearing Cap Condition		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
61.	End Bell Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	
62.	List Machine Work Needed Below		
63.	Technician		

Dynamic Balance Report

64.	Rotor Weight and Balance Grade		
	Rotor Weight	Balance Grade	
65.	Initial Balance Readings		
	Drive End	Opposite Drive End	
66.	Final Balance Readings		
	Drive End	Opposite Drive End	
67.	Technician		

Rewind

68.	Core Test Results - Watts loss per Pound		
	Pre-Burnout	Post Burnout	

69.	Core Hot Spot Test		
	Pre-Burnout	Post-Burnout	
70.	Post Rewind Electrical Test- Insulation Resistance		
71.	Post Rewind Polarization Index		
72.	Post Rewind Winding Resistance		
	1-2	1-3	2-3
73.	Post Rewind Surge Test		
74.	Post Rewind Hi-Pot		
75.	Technician		

Root Cause of Failure

76.	Failure locations		
77.	Root cause of failure		

Mechanical Fits- Rotor - Post Repair

78.	Shaft Runout Post Repair		
79.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
80.	Coupling Fit Closest to Bearing Housing Post Repair		
	0 Degrees	90 Degrees	120 Degrees
81.	Coupling Fit Closest to the end of the Shaft Post Repair		
	0 Degrees	60 Degrees	120 Degrees
82.	Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
83.	Opposite Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
84.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
85.	Shaft Repair Sign-off		

Mechanical Fits- Bearing Housings - Post Repair

86.	Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
87.	Opposite Drive End - Endbell Bearing Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
88.	Bearing Cap Condition Post Repair		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	

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