

# LR Motor Shop Repairs

**EVERY DAY SINCE 1946** 

## **Job Number 101978**

Prepared for Evergreen Packaging (10150)

Paper Mill Pine Bluff AR 71601

### **Table of Contents**

AC Inspection as Found - SHOP

AC Inspection - Rev. 2

1.0





#### **AC Inspection as Found Evergreen Packaging (10150)**

Paper Mill Pine Bluff, AR 71601

FolderID: 101978 FormID: 18129582

AC Inspection - Rev. 2		
Location:	SHOP	
Serial Number:		
Description:150 HP WEG		

Manufacturer: W	EG
Serial Number: 10	72596485
<b>HP/kW:</b> 15	0 (HP)
<b>RPM</b> : 11	85 (RPM)
Frame: 44	5/7T
Voltage: 46	0
Current: 17	6
Phase: Th	ree
<b>Hz:</b> 60	(Hz)
Service Factor: 1.	15
Enclosure: TE	FC
J-box Included: Co	omplete
Coupling/Sheave: No	ne
Date Received: 10	/11/2023
Repair Stage: Fin	nal

Priorities Found: 1 - High

8 - Good

### **Overall Condition**

10/20/2023 Report Date

Nameplate Picture





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	3.	Photos of all six sides of the machine.			
	4.	Describe the Overall Condition of the	Equipment as Received		
		Clean			
In	itial	Mechanical/Electrical			
	5.	Does Shaft Turn Freely?			(Yes) Yes
	6.	Does Shaft Have Visible Damage?			(No) No
	7.	Assembled Shaft Runout			0 Inches
	8.	Assembled Shaft End Play			0 inches
	9.	Air Gap Variation <10%			0
	10.	Lead Condition			(P) Pass
	11.	Lead Length			36 Inches
	12.	Lead Numbers			T1-T3
	13.	Stator Temperature Detector Rating a	nd Function		
		Quantity	Rating	Quantity Passed	
		0	0	0	
	14.	Bearing Temperature Detector Rating	and Function		
		Quantity	Rating	Quantity Passed	
		0	0	0	
	15.	Frame Condition			good
	16.	Fan Condition			(P) Pass

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17.	Heater Quantity, Ratings		
	Quantity	Volts/Watts	Pass/Fail
	0	0	0
18.	Broken or Missing Components		none
Initial	Electrical Inspection		
19.	Insulation Resistance/Megger		2000 Megohms
20.	Winding Resistance		
	1-2	1-3	2-3
	.0249	.0250	.0249
<b>2</b> 1.	Perform Surge Test		(P) Pass
22.	Number of Stator Slots		84
23.	Stator Condition		good
24.	Stator Thermistors/Ohms		none
25.	Stator Overloads/Ohms		none
Mecha	anical Inspection		
26.	Drive End Bearing Brand		SKF





27. Drive End Bearing Number-	6319
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 De	vice? none
32. Drive End Wavy Washer/Snap-Ring Other Re	tention Device? none
33. Drive End Bearing Condition	frosting
34. Opposite Drive End Bearing Brand	skf
35. Opposite Drive End Bearing Number-	6316
36. Opposite Drive End Bearing Qty.	1
37. Opposite Drive End Bearing Type	(Ball) Ball Bearing
38. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
39. Opposite Drive End Bearing Insulation or Grou	unding Device? none
40. Opposite Drive End Wavy Washer/Snap-Ring	Other Retention Device? spring cap
41. Opposite Drive End Bearing Condition	badly fluted
42. Drive End Seal	none
43. Opposite Drive End Seal	none

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44. DE Sleeve Bearing Inside Diameter   0 degrees   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4.4	DE Oleana Barrian India Dispositor		
0	44.		400.1	0.40
45. DE Sleeve Bearing Outside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 46. DE Sleeve Bearing Housing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 47. DE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 0 0 48. ODE Sleeve Bearing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 49. ODE Sleeve Bearing Outside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 49. ODE Sleeve Bearing Outside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 50. ODE Sleeve Bearing Housing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 50. ODE Sleeve Bearing Housing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 51. ODE Sleeve Bearing Housing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 51. ODE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 0 0  Rotor Inspection 52. Rotor Type/Material (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast (Pass) Pass 54. Number of Rotor Bars 58 55. Rotor Condition good 56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335* 57. Signature of Technician that Disassembled Motor David Maclin  Mechanical Fits- Rotor 58. Shaft Rumout 0 inches 59. Rotor Rumout Drive End Bearing Fit Rotor Body Opposite Drive End Bearing 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				_
0 degrees         120 degrees         240 degrees           0         0         0           46. DE Sleeve Bearing Housing Inside Diameter         0         0           0 degrees         120 degrees         240 degrees           0         0         0           47. DE Sleeve Bearing to Housing Clearance         0         0           0 degrees         120 degrees         240 degrees           0         0         0           48. ODE Sleeve Bearing Inside Diameter         0         0           0 degrees         120 degrees         240 degrees           0         0         0           90. ODE Sleeve Bearing Outside Diameter         0         0           0 degrees         120 degrees         240 degrees           0         0         0           0 DE Sleeve Bearing Housing Inside Diameter         0         0           0 degrees         120 degrees         240 degrees           0         0         0           10 DE Sleeve Bearing Housing Inside Diameter         0         0           0 degrees         240 degrees         240 degrees           0 degrees         120 degrees         240 degrees           0 degrees         120 deg		*	•	0
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0 degrees         120 degrees         240 degrees           0         0         0           47. DE Sleeve Bearing to Housing Clearance         240 degrees         240 degrees           0 degrees         120 degrees         240 degrees           0 DE Sleeve Bearing Inside Diameter         0         0           0 degrees         120 degrees         240 degrees           0 DE Sleeve Bearing Outside Diameter         0         0           0 degrees         120 degrees         240 degrees           0 ODE Sleeve Bearing Housing Inside Diameter         0         0           0 degrees         120 degrees         240 degrees           0 feeres         120 degrees         240 degrees           0 degrees         120 degrees         240 degrees           0 degrees         10 degrees         240 degrees           0 feeres         120 degrees         240 degrees           0 feeres         120 degrees         240 degrees           0 feeres		*	•	0
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47. DE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 0 0 48. ODE Sleeve Bearing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 49. ODE Sleeve Bearing Outside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 50. ODE Sleeve Bearing Housing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 50. ODE Sleeve Bearing Housing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 51. ODE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 0 0  8		0 degrees	120 degrees	240 degrees
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0         0         0           48. ODE Sleeve Bearing Inside Diameter         240 degrees         240 degrees           0         0         0           49. ODE Sleeve Bearing Outside Diameter         0 degrees         240 degrees           0         0         0           50. ODE Sleeve Bearing Housing Inside Diameter         0 degrees         240 degrees           0         0         0           51. ODE Sleeve Bearing to Housing Clearance         0 degrees         240 degrees           0         0         0           80 degrees         120 degrees         240 degrees           0         0         0           51. ODE Sleeve Bearing to Housing Clearance         0         0           0 degrees         120 degrees         240 degrees           0         0         0           Rotor Inspection         (Squirrel Aluminum) Squirrel Cage Aluminum) Squirrel Cage Aluminum Die Cast         Cage Aluminum Die Cast           53. Growler Test         (Pass) Pass         58           54. Number of Rotor Bars         58         58           55. Rotor Condition         good           56. List the Parts needed for the Repair Below Garden Strains (Asagis ring 3.3335")         David Maclin           57. Sig	47.	• •		
48. ODE Sleeve Bearing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 49. ODE Sleeve Bearing Outside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 50. ODE Sleeve Bearing Housing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 51. ODE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 0 0 51. ODE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 0 0 61. ODE Sleeve Bearing to Housing Clearance 120 degrees 240 degrees 0 0 0 0 0 62 degrees 120 degrees 240 degrees 0 0 0 0 0 63. Growler Test (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast (Pass) Pass 123. Growler Test (Pass) Pass 124. Number of Rotor Bars 125. Rotor Condition		0 degrees	120 degrees	240 degrees
0 degrees         120 degrees         240 degrees           0         0         0           49. ODE Sleeve Bearing Outside Diameter         240 degrees         240 degrees           0 degrees         120 degrees         240 degrees           0 ODE Sleeve Bearing Housing Inside Diameter         240 degrees         240 degrees           0 degrees         120 degrees         240 degrees           0 DE Sleeve Bearing to Housing Clearance         0         0           0 degrees         120 degrees         240 degrees           0 feart         (Pass) Pass         58           55. Rotor Tooldition         good         90           56. List the Parts needed for the Repair Below         6316, 6319, aegis ring 3.3335"         Degrees		•	0	0
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49. ODE Sleeve Bearing Outside Diameter  0 degrees 120 degrees 240 degrees  0 0 0  50. ODE Sleeve Bearing Housing Inside Diameter  0 degrees 120 degrees 240 degrees  0 0 0  51. ODE Sleeve Bearing to Housing Clearance  0 degrees 120 degrees 240 degrees  0 0 0  Rotor Inspection  52. Rotor Type/Material (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast  53. Growler Test (Pass) Pass  54. Number of Rotor Bars 58  55. Rotor Condition good  56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor David Maclin  Mechanical Fits- Rotor  58. Shaft Runout 0 inches  59. Rotor Runout  Drive End Bearing Fit Rotor Body Opposite Drive End Bearing  0 0 0  60. Coupling Fit Closest to Bearing Housing  0 Degrees 90 Degrees 120 Degrees		0 degrees	120 degrees	240 degrees
0 degrees   120 degrees   0   0   0   0   0   0   0   0   0		0	0	0
0 0 0 50. ODE Sleeve Bearing Housing Inside Diameter 0 degrees 120 degrees 240 degrees 0 0 0 0 51. ODE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 0 0  Rotor Inspection 52. Rotor Type/Material (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast 53. Growler Test (Pass) Pass 54. Number of Rotor Bars 58 55. Rotor Condition good 56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor David Maclin  Mechanical Fits- Rotor 58. Shaft Runout 0 inches 59. Rotor Runout 0 0 0 0 60. Coupling Fit Closest to Bearing Housing 0 Degrees 90 Degrees 120 Degrees	49.	ODE Sleeve Bearing Outside Diameter		
50. ODE Sleeve Bearing Housing Inside Diameter  0 degrees 120 degrees 240 degrees 0 0 0  51. ODE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 0  Rotor Inspection  52. Rotor Type/Material (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast 53. Growler Test (Pass) Pass 54. Number of Rotor Bars 58  55. Rotor Condition good  56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor David Maclin  Mechanical Fits- Rotor  58. Shaft Runout Opposite Drive End Bearing 0 0 0  60. Coupling Fit Closest to Bearing Housing 0 Degrees 90 Degrees 120 Degrees		0 degrees	120 degrees	240 degrees
0 degrees 120 degrees 0 0 0 0 51. ODE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 go 0 0  Rotor Inspection 52. Rotor Type/Material (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast (Pass) Pass 54. Number of Rotor Bars 58. Rotor Condition 58. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335" 57. Signature of Technician that Disassembled Motor David Maclin  Mechanical Fits- Rotor 59. Rotor Runout Drive End Bearing Fit Rotor Body Opposite Drive End Bearing 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		•	_	0
0 0 0 51. ODE Sleeve Bearing to Housing Clearance 0 degrees 120 degrees 240 degrees 0 0 0 0  Rotor Inspection 52. Rotor Type/Material (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast 53. Growler Test (Pass) Pass 54. Number of Rotor Bars 58 55. Rotor Condition good 56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor David Maclin  Mechanical Fits- Rotor 58. Shaft Runout 0 inches 59. Rotor Runout Drive End Bearing Fit Rotor Body Opposite Drive End Bearing 0 0 0 0 60. Coupling Fit Closest to Bearing Housing 0 Degrees 90 Degrees 120 Degrees	50.	ODE Sleeve Bearing Housing Inside	Diameter	
51. ODE Sleeve Bearing to Housing Clearance  0 degrees 120 degrees 240 degrees  0 0 0  Rotor Inspection  52. Rotor Type/Material (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast  53. Growler Test (Pass) Pass  54. Number of Rotor Bars 58  55. Rotor Condition good  56. List the Parts needed for the Repair Below  6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor David Maclin  Mechanical Fits- Rotor  58. Shaft Runout 0 inches  59. Rotor Runout  Drive End Bearing Fit Rotor Body Opposite Drive End Bearing  0 0 0 0  60. Coupling Fit Closest to Bearing Housing  0 Degrees 90 Degrees 120 Degrees		0 degrees	120 degrees	240 degrees
0 degrees 120 degrees 240 degrees 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0	0	0
Rotor Inspection  52. Rotor Type/Material  53. Growler Test  54. Number of Rotor Bars  55. Rotor Condition  56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor  Mechanical Fits- Rotor  58. Shaft Runout  Drive End Bearing Fit  Rotor Body  Opposite Drive End Bearing  O O  O  O  O  O  O  O  O  O  O  O  O	51.	ODE Sleeve Bearing to Housing Clea	rance	
Rotor Inspection  52. Rotor Type/Material  53. Growler Test  54. Number of Rotor Bars  55. Rotor Condition  56. List the Parts needed for the Repair Below  6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor  Mechanical Fits- Rotor  58. Shaft Runout  Drive End Bearing Fit  Rotor Body  Opposite Drive End Bearing  O O  O O  O O  O Degrees  90 Degrees  120 Degrees		0 degrees	120 degrees	240 degrees
52. Rotor Type/Material  (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast 53. Growler Test (Pass) Pass 54. Number of Rotor Bars 55. Rotor Condition good 56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor  Mechanical Fits- Rotor 58. Shaft Runout Drive End Bearing Fit Rotor Body Opposite Drive End Bearing O O O O O O O O O O O O O O O O O O O		0	0	0
Sample of Rotor Bars  53. Growler Test  54. Number of Rotor Bars  55. Rotor Condition  56. List the Parts needed for the Repair Below  6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor  Mechanical Fits- Rotor  58. Shaft Runout  59. Rotor Runout  Drive End Bearing Fit  Rotor Body  Opposite Drive End Bearing	Rotor	Inspection		
54. Number of Rotor Bars  55. Rotor Condition  56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor   Mechanical Fits- Rotor  58. Shaft Runout  59. Rotor Runout  Drive End Bearing Fit  Rotor Body  Opposite Drive End Bearing  O  Coupling Fit Closest to Bearing Housing  O Degrees  90 Degrees  120 Degrees	52.	Rotor Type/Material		(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
55. Rotor Condition good  56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor  Mechanical Fits- Rotor  58. Shaft Runout  59. Rotor Runout  Drive End Bearing Fit  Rotor Body  Opposite Drive End Bearing  O  Coupling Fit Closest to Bearing Housing O Degrees  90 Degrees	53.	Growler Test		(Pass) Pass
56. List the Parts needed for the Repair Below 6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor  Mechanical Fits- Rotor  58. Shaft Runout  59. Rotor Runout  Drive End Bearing Fit  O  O  O  O  Coupling Fit Closest to Bearing Housing  O Degrees  90 Degrees  120 Degrees	54.	Number of Rotor Bars		58
6316, 6319, aegis ring 3.3335"  57. Signature of Technician that Disassembled Motor  Mechanical Fits- Rotor  58. Shaft Runout  59. Rotor Runout  Drive End Bearing Fit  O  O  O  Coupling Fit Closest to Bearing Housing  O Degrees  90 Degrees  120 Degrees				good
57. Signature of Technician that Disassembled Motor  Mechanical Fits- Rotor  58. Shaft Runout  59. Rotor Runout  Drive End Bearing Fit  Rotor Body  Opposite Drive End Bearing  O  60. Coupling Fit Closest to Bearing Housing  O Degrees  90 Degrees  120 Degrees	56.	List the Parts needed for the Repair E	elow	
Mechanical Fits- Rotor  58. Shaft Runout  59. Rotor Runout  Drive End Bearing Fit  0  0  0  60. Coupling Fit Closest to Bearing Housing  0 Degrees  90 Degrees  120 Degrees				
58. Shaft Runout  59. Rotor Runout  Drive End Bearing Fit Rotor Body Opposite Drive End Bearing  0 0 0  60. Coupling Fit Closest to Bearing Housing  0 Degrees 90 Degrees 120 Degrees	57.	Signature of Technician that Disasser	nbled Motor	David Maclin
59. Rotor Runout  Drive End Bearing Fit Rotor Body Opposite Drive End Bearing  0 0 0  60. Coupling Fit Closest to Bearing Housing  0 Degrees 90 Degrees 120 Degrees	Mech	anical Fits- Rotor		
Drive End Bearing Fit Rotor Body Opposite Drive End Bearing  0 0  60. Coupling Fit Closest to Bearing Housing  0 Degrees 90 Degrees 120 Degrees	58.	Shaft Runout		0 inches
0060. Coupling Fit Closest to Bearing Housing0 Degrees90 Degrees120 Degrees	59.	Rotor Runout		
60. Coupling Fit Closest to Bearing Housing  0 Degrees 90 Degrees 120 Degrees		Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
0 Degrees 90 Degrees 120 Degrees		0	0	0
	60.	Coupling Fit Closest to Bearing Housi	ng	
3.3725 3.3723 3.3729		0 Degrees	90 Degrees	120 Degrees
		3.3725	3.3723	3.3729

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61	Coupling Fit Closest to the end of the	Shaft		
01.	· •		400 Danie	
	0 Degrees	60 Degrees	120 Degrees	
00	3.3746	3.3748	3.3749	
62.	Drive End Bearing Shaft Fit	00 Days	400 D	
	0 Degrees	60 Degrees	120 Degrees	
	3.7405	3.7405	3.7405	(D) D
	Drive End Bearing Shaft Fit Condition			(P) Pass
64.	Opposite Drive End Bearing Shaft Fit	00.5	100 D	
	0 Degrees	60 Degrees	120 Degrees	
<b>0</b>	3.1501	3.1502	3.1501	(D) D
	Opposite Drive End Bearing Shaft Fit Shaft Air Seal Fits	Condition		(P) Pass
66.		Occasion Director LAir Cont		
	Drive End Air Seal	Opposite Drive End Air Seal		
N4 I	ok	ok		
	anical Fits- Bearing Housings			
67.	Drive End - Endbell Bearing Fit	00 D	100 D	
	0 Degrees	60 Degrees	120 Degrees	
• 00	7.8743	7.8743	7.8743	(D) D
	Drive End - Endbell Bearing Fit Condi			(P) Pass
69.	Opposite Drive End - Endbell Bearing		400 D	
	0 Degrees	60 Degrees	120 Degrees	
<b>7</b> 0	6.6933	6.6933	6.6932	(D) D
<b>7</b> 0.	-11	Fit Condition		(P) Pass
71.	Bearing Cap Condition	Occasion Delica Fold Decision Occasion		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap		
70	ok End Bell Air Seal Fits	ok		
12.		Opposite Drive Ford Air Cool		
	Drive End Air Seal	Opposite Drive End Air Seal		
72	List Machine Work Needed Below	OK .		
73.	None			
74.				David. Maclin
	1		·	zavia: maomi
_	mic Balance Report			
75.	Rotor Weight and Balance Grade			
	Rotor Weight	Balance Grade		
76.	Initial Balance Readings			
	Drive End	Opposite Drive End		
77.	Final Balance Readings			
	Drive End	Opposite Drive End		
78.	Technician			

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Danie	1				
	ewind				
79.	Core Test Results - Watts loss per Po				
	Pre-Burnout	Post Burnout			
90	Core Hot Spot Test				
80.	Pre-Burnout	Post-Burnout			
	Pre-burnout	Post-Burnout			
81.	Post Rewind Electrical Test- Insulation	n Resistance			
82.	Post Rewind Polarization Index				
	Post Rewind Winding Resistance				
	1-2	1-3	2-3		
		. 0			
84.	Post Rewind Surge Test				
85.	Post Rewind Hi-Pot				
86.	Technician				
Root	Cause of Failure				
87.	Failure locations				
88.	Root cause of failure				
Mecha	anical Fits- Rotor - Post Repair				
89.	Shaft Runout Post Repair				
90.	Rotor Runout Post Repair				
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing		
	<u> </u>		•		
91.	Coupling Fit Closest to Bearing Housi	ng Post Repair			
	0 Degrees	90 Degrees	120 Degrees		
00	On the Fit Olandate that and of the	Ob -44 D4 D			
92.	Coupling Fit Closest to the end of the	·	400 Damasa		
	0 Degrees	60 Degrees	120 Degrees		
93.	Drive End Bearing Shaft Fit Post Repa	air			
	0 Degrees	60 Degrees	120 Degrees		
		-5			
94.	Opposite Drive End Bearing Shaft Fit	Post Repair			
	0 Degrees	60 Degrees	120 Degrees		
95.	Shaft Air Seal Fits Post Repair				
	Drive End Air Seal	Opposite Drive End Air Seal			
96	Shaft Repair Sign-off				
	anical Fits- Bearing Housings - P	ost Ponair			
	Drive End - Endbell Bearing Fit Post F				
57.	0 Degrees	60 Degrees	120 Degrees		
	o Degrees	00 Degrees	120 Degrees		
98.	Opposite Drive End - Endbell Bearing	Fit Post Repair			
	0 Degrees	60 Degrees	120 Degrees		
99.	Bearing Cap Condition Post Repair				
	Drive End Bearing Cap	Opposite Drive End Bearing Cap			

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100	End Bell Air Seal Fits Post Repair			
100.	·	Opposite Drive Ford Air Cool		
	Drive End Air Seal	Opposite Drive End Air Seal		
101	DE Sleeve Bearing Inside ID Post Repair			
101.	Measure 1	Measure 2	Measure 3	
	weasure i	Measure 2	ivieasure 3	
102	DE Sleeve Bearing Outside ID Post Ro	enair		
	Measure 1	Measure 2	Measure 3	
	Wodou's T	Wodou o Z	Modedie 6	
103.	DE Sleeve Bearing Inside OD Post Re	pair		
	Measure 1	Measure 2	Measure 3	
104.	DE Sleeve Bearing Outside OD Post F	Repair		
	Measure 1	Measure 2	Measure 3	
	End Bell Repair Sign-off			
106.	ODE Sleeve Bearing Inside ID Post Ro			
	Measure 1	Measure 2	Measure 3	
407	ODE Classic Bassins Outside ID Book	Danair		
107.	ODE Sleeve Bearing Outside ID Post		Marana	
	Measure 1	Measure 2	Measure 3	
108	ODE Sleeve Bearing Inside OD Post F	Renair		
100.	Measure 1	Measure 2	Measure 3	
	ivieasure i	ivieasure 2	ivieasure 3	
109.	ODE Sleeve Bearing Outside OD Post	t Repair		
	Measure 1	Measure 2	Measure 3	
Assen	nbly			
110.	QC Check All Parts for Cleanliness Pri	ior to Assembly		
111.	Photograph All Major Components price	or to assembly		
112.	Final Insulation Resistance Test			
113.	Assembled Shaft Endplay			
114.	Assembled Shaft Runout			
115.	Test Run Voltage			
	Volts	Volts	Volts	
116.	Test Run Amperage			
	Amps	Amps	Amps	
	D: 5 107 0 5 0	D 0		
117.	Drive End Vibration Readings - Inches			
	Horizontal	Vertical	Axial	
110	118. Opposite Drive End Vibration Readings - Inches Per Second			
116.	• • • • • • • • • • • • • • • • • • • •		Avial	
	Horizontal	Vertical	Axial	
119.	Ambient Temperature - Fahrenheit			

Hi-Speed Industrial Service disclaims all warranties, both express and implied, relating to the information, reports, opinions and analysis disclosed to the Customer by Hi-Speed. Hi-Speed shall not be liable for any errors or omissions, or any losses, injury or damages arising from the use of such information, reports, opinions and analysis by the Customer.

120. Drive End Bearing Temps - Fahrenheit	0. Drive End Bearing Temps - Fahrenheit		
5 Minutes	10 Minutes	15 Minutes	
121. Drive End Bearing Temps - Fahrenheit	20-30 Minutes		
20 Minutes	25 Minutes	30 Minutes	
400 B: E IB : T E I I ::	05.45.45		
122. Drive End Bearing Temps - Fahrenheit			
35 Minutes	40 Minutes	45 Minutes	
123. Drive End Bearing Temps - Fahrenheit	50-60 Minutes		
- ·	55 Minutes	60 Minutes	
30 Millates	33 Millutes	oo wiii lates	
124. Opposite Drive End Bearing Temps - Fa	ahrenheit		
5 Minutes	10 Minutes	15 Minutes	
125. Opposite Drive End Bearing Temps - Fa	ahrenheit 20-30 Minutes		
20 Minutes	25 Minutes	30 Minutes	
126. Opposite Drive End Bearing Temps - Fa			
35 Minutes	40 Minutes	45 Minutes	
407 Opposite Drive Ford Decrine Terror F	ahaanhait 50 CO Minutas		
127. Opposite Drive End Bearing Temps - Fa		00 Min. 14-	
50 Minutes	55 Minutes	60 Minutes	
128. Stator Temperatures- Fahrenheit			
	10 Minutes	15 Minutes	
o windes	TO WITHIUGS	10 Iviii lutes	
129. Stator Temperatures- Fahrenheit 20-30	) Minutes		
20 Minutes	25 Minutes	30 Minutes	
130. Stator Temperatures- Fahrenheit 35-45	5 Minutes		
35 Minutes	40 Minutes	45 Minutes	
131. Stator Temperatures- Fahrenheit 50-60			
50 Minutes	55 Minutes	60 Minutes	
122 Decument Final Condition with Bistone	a often point		
132. Document Final Condition with Pictures	s arter paint		
133. Final Pics and QC Review			

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#### STANDARD TERMS AND CONDITIONS FOR PURCHASE OF GOOD AND/OR SERVICES

- 1. APPLICABILITY. The sale of any and all goods and/or services by Mock, Inc. d/b/a Hi-Speed Industrial Service ("Hi-Speed") shall be specifically conditioned upon and subject to the following terms and conditions which are incorporated by reference into any contracts and purchase orders with Hi-Speed, and which shall form and become a part of any agreement related thereto. Buyer's acceptance of any offer or quotation made by Hi-Speed for sale of any goods or services is expressly made subject to the terms and conditions set forth herein and to be so effective, Buyer need not sign or approve these Terms and Conditions to be bound hereunder provided a copy of same is provided to Buyer through any means. None of the terms and conditions contained herein may be added to, expanded, changed, modified, superseded or otherwise altered except as revised in writing and duly executed by Hi-Speed, and all orders received by Hi-Speed shall be governed only by the terms and conditions contained herein, notwithstanding any terms, conditions or provisions of any purchase order, release order, authorization or any other form issued by the Buyer. Hi-Speed hereby objects to any additional, modified, changed, deleted, altered or other terms and conditions not contained herein and notifies Buyer that any such terms or provisions are expressly rejected by Hi-Speed.
- 2. PRICE. All quoted prices shall remain firm and binding for a period of thirty (30) days from the date of quotation or for the period specifically stated in the quotation. The price for any and all goods and/or services ordered or approved by Buyer after thirty (30) days from the date of any quotation are subject to any increase in price that may occur after the expiration of thirty (30) days from the issuance of the quotation and the date the Buyer releases any shipment.
- 3. SCOPE OF GOODS AND/OR SERVICES. The goods and/or services provided by Hi-Speed pursuant to any quotation shall be limited exclusively to those goods and/or services expressly identified therein. Hi-Speed does not assume any responsibility and/or liability for the failure to provide any other goods and/or services not identified in any quotation. Modifications, additions or deletions to or from the scope referenced in any quotation shall only bee effective if evidenced in writing and signed by Hi-Speed. The sale of any of all goods and/or services affected by such modification, addition or deletion shall be subject to these same Standard Terms and Conditions whether or not referenced therein.
- 4. <u>BILLING AND PAYMENT TERMS.</u> Hi-Speed shall invoice Buyer for all goods and/or services as same are rendered at the address listed on the quotation. Payments for all goods and/or services shall be due thirty (30) days from the date of the current invoice or as otherwise set forth in the quotation. Late payments are subject to a late fee of 5% of the total invoice amount. Recurring late payments may lead to a deposit requirement on future services or sale of goods. Buyer shall be liable to Hi-Speed for any and all fees and expenses incurred by Hi-Speed to collect any invoices or to enforce these Standard Terms and Conditions, including but not limited to, attorney's fees.
- 5. <u>DELIVERY OF GOODS AND/OR SERVICES.</u> Unless otherwise identified in the quotation, all shipments are F.O.B. Hi-Speed's warehouse and the title to and all risk of loss with respect to any goods shipped shall pass to Buyer when such goods are delivered to the carrier at Hi-Speed's warehouse. Hi-Speed will use its best efforts to affect delivery by the date or dates specified in the quotation. However, Hi-Speed shall not be liable for delay in or failure to make shipment, or to perform services, by any identified date for any reason whatsoever, including but not limited to, causes beyond its reasonable control, such as strikes, fires, floods, epidemics, quarantines, restrictions, severe weather, embargos, acts of God, or public enemy, war, riot, delays in transportation or the inability to obtain necessary labor, materials or manufacturing facilities.
- **DELIVERY SITE AND TIME FOR PERFORMANCE.** Hi-Speed and Buver agree that time is of the essence for the purchase order and that Buyer shall fully cooperate with Hi-Speed in order to allow Hi-Speed full access to prosecute its work diligently and in an orderly manner. Buyer shall assist Hi-Speed in every way possible to avoid delaying, disrupting or interfering with the progress of Hi-Speed's work at the project site. In the event Hi-Speed's work is delayed, hindered, suspended, disrupted, re-sequenced or interfered with or rendered less efficient or more costly or adversely affected in any way as a result of acts or omissions of Buyer or other contractors or employees of Buyer or by any other reason beyond Hi-Speed's control and without the fault of Hi-Speed, then, in such event, Buyer shall be liable to Hi-Speed for any damages, additional costs, expenses, labor, materials, man hours, acceleration costs, overtime, additional jobsite overhead, extended home office overhead, and any and all other direct and indirect expenses of whatsoever nature or kind, caused in whole or in part, as a result of any of the above-referenced occurrences. Hi-Speed's project records will be the basis for computing the additional costs and damages of Hi-Speed's labor, materials, expenses and overhead related to such changes. BUYER WARRANTS THAT THE SITE FOR DELIVERY OR INSTALLATION OF ANY GOODS AND/OR FOR THE PERFORMANCE OF ANY SERVICES SHALL BE READY AND ADEQUATE FOR HI-SPEED'S DELIVERY OF GOODS AND/OR PERFORMANCE OF SERVICES AND THAT HI-SPEED SHALL HAVE FULL ACCESS THERETO, FREE OF ALL OBSTRUCTIONS. BUYER SHALL ASSUME ALL EXTRA COSTS ASSOCIATED WITH HI-SPEED'S INABILITY TO INSTALL ANY GOODS OR PERFORM ANY SERVICES AS A RESULT OF BUYER'S FAILURE TO COMPLY WITH THIS PROVISION. HI-SPEED MAY NOT INSPECT THE SITE PRIOR TO DELIVERY AND/OR INSTALLATION OF GOODS AND/OR PERFORMANCE OF SERVICES AND MAKES NO WARRANTY AS TO THE SUFFICIENCY OF THE SITE FOR THE DELIVERY AND/OR INSTALLATION OF GOODS AND/OR THE PERFORMANCE OF SERVICES AT SUCH SITE.
- 7. INSPECTION/ACCEPTANCE. All goods and services ordered pursuant to any quotation shall be subject to inspection by Buyer after delivery or performance to determine conformity with the quotation and/or purchase order and Hi-Speed's advertised or published specifications. Buyer shall have a period of thirty (30) days from shipment of goods at the delivery destination specified in the quotation within which to inspect the goods for conformity with the quotation, order and/or Hi-Speed's advertised and published specifications and to provide Hi-Speed with written notice of any discrepancy or rejection. Buyer shall have a period of thirty (30) days following completion of any services within which to inspect the services for conformity with the quotation, purchase order and/or Hi-Speed's advertised and published specifications and to provide Hi-Speed with written notice of any discrepancy or rejection. If the goods delivered or services performed do not so conform, upon delivery of notice to Hi-Speed of any discrepancy, nonconformance or rejection, Hi-Speed shall have sixty (60) days to cure the alleged discrepancy and/or nonconformance. If Hi-Speed fails to cure in this time period, Buyer shall have the right to reject such goods or services. After the cure period, goods that have been delivered and rejected, in whole or in part, shall be returned to Hi-Speed. Buyer shall notify Hi-Speed and arrange for the return of the goods as required. Should such non-conforming services be rejected Hi-Speed shall, at its sole cost, re-perform the non-conforming services. Inspection or failure to inspect on any occasion shall not affect Buyer's rights under the warranty provisions herein.
- 8. WARRANTIES. Hi-Speed warrants that all goods shall conform in all material aspects to the goods identified in the quotation to Buyer and/or purchase order, and Hi-Speed makes to Buyer the manufacturer's express warranty for any goods sold to Buyer, which is offered by the manufacturer at the time of acceptance of any quotation by Buyer. This warranty is conditioned upon the installation, operation, and maintenance of the goods in accordance with the manufacturer's recommendations and/or standard industry practice and the goods at all times being operated or used under normal operating conditions for which they were designed. Hi-Speed, at its sole option, will repair or

replace any defective or non-conforming goods in accordance with the applicable manufacturer's warranty. Warranty for any defective or incorrect parts is limited to the repair or replacement of those parts. Hi-Speed warrants that all services will conform in all material respects to the description of services identified in the quotation and will be performed in a good and workmanlike manner in accordance with industry practices and standards. Should the services be reasonably rejected or not conform with the foregoing warranties, Hi-Speed shall, at its sole cost, re-perform the defective or nonconforming services. Notwithstanding the foregoing, these warranties do not extend to goods or services to the extent that such goods have been subject to misuse, neglect or abuse not caused by Hi-Speed or have been used in violation of the approved written instructions furnished to Buyer. THE FOREGOING REPRESENTS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY HI-SPEED WITH RESPECT TO ALL GOODS SOLD AND IS IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESS OR IMPLIED. HI-SPEED EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICLAR USE OR PURPOSE. BUYER WAIVES ANY CLAIM THAT THESE EXCLUSIONS OR LIMITATIONS DEPRIVE IT OF AN ADEQUATE REMEDY AT EQUITY OR LAW OR CAUSE THIS AGREEMENT TO FAIL IN ITS ESSENTIAL PURPOSE. BUYER SHALL BE ENTITLED TO NO OTHER REMEDY OTHER THAN AS SET FORTH HEREIN, REGARDLESS OF THE CLAIM OR CAUSE OF ACTION, WHETHER BASED IN CONTRACT, TORT, NEGLIGENCE, GOODS LIABILITY, STRICT LIABILITY OR OTHERWISE.

- 9. <u>LIMITATION OF DAMAGES.</u> HI-SPEED SHALL HAVE NO LIABILITY TO BUYER WITH RESPECT TO THE SALE OR DELIVERY OF ANY GOODS OR THE REPAIR THEREOF OR WITH RESPECT TO THE SALE OR PERFORMANCE OF ANY SERVICES, FOR LOST PROFITS, SPECIAL, CONSEQUENTIAL, EXEMPLARY, PUNITIVE OR INCIDENTAL DAMAGES OF ANY KIND OR NATURE WHETHER ARISING IN CONTRACT, TORT, GOODS LIABILITY OR OTHERWISE, EVEN IF HI-SPEED WAS ADVISED OF THE POSSIBILITY OF SUCH LOSS OR DAMAGES. HI-SPEED SHALL NOT BE LIABLE FOR ANY DAMAGES OR DELAYS CAUSED BY ANY FAILURE TO MAKE ANY DELIVERY OF GOODS BY ANY EXPECTED TIME OR DATE OR THE FAILURE TO PROVIDE OR COMPLETE ANY SERVICES BY ANY EXPECTED DATE OR TIME. IN NO EVENT SHALL HI-SPEED BE LIABLE TO BUYER FOR ANY DAMAGES WHATSOEVER IN EXCESS OF THE TOTAL PRICE PAID FOR ALL GOODS AND/OR SERVICES HEREUNDER OR REFERENCED IN ANY QUOTATION OR THE PURCHASE ORDER.
- 10. <u>SEVERABILITY.</u> The partial or complete invalidity of any provision of these Standard Terms and Conditions shall not affect the enforceability of the remainder of these Standard Terms and Conditions. If any provision is found to be invalid or unenforceable, that portion shall be modified to make it enforceable or shall be stricken and the remainder of these Standard Terms and Conditions shall enforced.
- 11. **GOVERNING LAW AND JURISDICTION.** Any controversy arising out of any quotation, the purchase order, the goods sold or delivered, repair or replacement thereof, or any services provided pursuant to any quotation or any purchase order, or these Standard Terms and Conditions shall be governed by the laws of the state of Tennessee without regard to any choice of law provisions and any cause of action related in any manner thereto shall be brought only in the state or federal courts of Shelby County, Tennessee.
- 12. ABANDONED EQUIPMENT. Hi-Speed requires that Buyer promptly pick up or provide shipment instructions for Buyer equipment or other Buyer property in Hi-Speed's possession. If equipment or other Buyer property is left with Hi-Speed and not picked up within six (6) months after Hi-Speed's final action related to the applicable property (e.g. evaluation, teardown, estimate, completion of services), Hi-Speed will consider such property abandoned and may dispose of it in accordance with applicable law. Buyer agrees to hold Hi-Speed harmless for any damage or claim for such abandoned property and acknowledges that Hi-Speed may discard or recycle it at Hi-Speed's sole and absolute discretion. Specifically, Hi-Speed may sell Buyer's abandoned property at a private or public sale and retain the proceeds to offset Hi-Speed's storage, inspection and servicing costs. For the avoidance of doubt, Hi-Speed reserves its statutory and other lawful liens for unpaid charges related to abandoned property.
- 13. FORCE MAJEURE. Neither party shall be responsible for any delay or failure in performance of any party of the quotation, purchase order or these Standard Terms and Conditions to the extent that such delays or failures are caused by fire, flood, earth quake, explosion, war, embargo, government requirement, civil or military authority, acts of God, or any other circumstances beyond its reasonable control and not involving any fault or negligence on the party affected ("Condition"). If any such Condition occurs, the party delayed or unable to perform shall promptly give written notice to the other party and, if such Condition remains at the end of thirty (30) days, the party affected by the other party's delay and inability to perform may elect to (i) terminate such order or part thereof, or (ii) suspend the order for the duration of the Condition, if the Buyer is the suspending party, buy elsewhere comparable material to be sold under the order and apply to any commitment the purchase price of such purchase, and resume performance of the order once the Condition ceases, with an option in the affected party to extend the period of this order up to the length of the time the Condition endures.
- 14. <u>NONWAIVER.</u> No course of dealing or failure of either party to strictly enforce any term, right, or condition of these Standard Terms and Conditions will be construed as a waiver of such term, right or condition. Any waiver by Hi-Speed will only be in writing and will waive no succeeding breach of a term, right or condition.
- 15. **ASSIGNMENT.** The rights and obligations of the parties shall neither be assigned nor delegated without the prior written consent of the other party. However, any party may assign or delegate its respective rights and obligations, in whole or in part, (i) to any subsidiary, (ii) pursuant to other financing, merger or reorganization or (iii) pursuant to any sale or transfer of substantially all of the assets of the assigning party. These Standard Terms and Conditions shall bind the heirs, successors and assigns of the parties hereto.
- 16. NO INDIVIDUAL LIABILITY. Notwithstanding any other agreement to the contrary, the Buyer agrees that in no event will the Buyer hold and HI-Speed owner, director, officer or employee personally liable for unintentional tortious conduct or conduct that constitutes the breach of any contract between HI-Speed and the Buyer, even if the HI-Speed owner, director, officer or employee is or could be construed to be a party to such contract.