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— EVERY DAY SINCE 1946 —

LR Motor Shop Repairs

Job Number 103355

Prepared for Ryerson (10858)

7701 Lindsey rd
Little rock ar 72206

Table of Contents



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

AC Inspection as Found

Ryerson (10858)

7701 Lindsey rd
Little rock, ar 72206

FolderID: 103355
FormID: 21278151

AC Inspection - Rev. 2

Location: MOTOR SHOP LR

Serial Number: TYPE: DP

Description: 50HP WEG 1770 RPM

Hi-Speed Job Number: 103355

Manufacturer: WEG

Serial Number: TYPE: DP

HP/kW: 50 (HP)

RPM: 1770 (RPM)

Frame: 326TSC

Voltage: 208-230/460

Phase: Three

Hz: 60 (Hz)

Service Factor: 1.15

Enclosure: ODP

of Leads: 3

J-box Included: Half

Coupling/Sheave: Coupling

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: ● 3 - High ● 6 - Good

Overall Condition

1. Report Date

08/15/2024

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4. Describe the Overall Condition of the Equipment as Received

Dirty

5. Distance from the end of the shaft to the Coupling/Sheave

inches



6. Report Date [COPY]		
Initial Mechanical/Electrical		
7. Does Shaft Turn Freely?		(Y) Yes
8. Does the shaft require T.I.R in Lathe to identify additional repairs?		(No) No
9. Does Shaft Have Visible Damage?		(No) No
10. Assembled Shaft Runout		Inches
11. Assembled Shaft End Play		inches
12. Air Gap Variation <10%		
13. Lead Condition		(NA) Not Applicable
Rewind		
14. Lead Length		12 Inches
15. Does it have Lugs?, If so what is the Stud Size?		(No) No
16. Lead Numbers		1-3
17. Frame Condition		pass
18. Fan Condition		(N) NA
19. Broken or Missing Components		J-box cover and the bolts
Initial Electrical Inspection		
20. Insulation Resistance/Megger		Megohms
21. Winding Resistance		
1-2	1-3	2-3
22. Perform Surge Test		(NA) Not Applicable
Rewind		
23. Number of Stator Slots		48
24. Stator Condition		covered in metal shavings
25. Stator Thermistors/Ohms		
26. Stator Overloads/Ohms		
Mechanical Inspection		
27. Drive End Bearing Brand		KBC
28. Drive End Bearing Number-		6312
29. Drive End Bearing Qty.		1
30. Drive End Bearing Type		(Ball) Ball Bearing
31. Drive End Lubrication Type		(Grease) Grease Lubricated
32. Drive End Bearing Insulation or Grounding Device?		
33. Drive End Wavy Washer/Snap-Ring Other Retention Device?		

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34. Drive End Bearing Condition

Contamination



35. Opposite Drive End Bearing Brand

KBC

36. Opposite Drive End Bearing Number-

6212

37. Opposite Drive End Bearing Qty.

1

38. Opposite Drive End Bearing Type

(Ball) Ball Bearing

39. Opposite Drive End Lubrication Type

(Grease) Grease Lubricated

40. Opposite Drive End Bearing Insulation or Grounding Device?

41. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?

wavy washer

42. Opposite Drive End Bearing Condition

Contamination



43. Drive End Seal

44. Opposite Drive End Seal

Rotor Inspection

45. Rotor Type/Material

(Squirrel Aluminum) Squirrel
Cage Aluminum Die Cast

46. Growler Test

(Pass) Pass

47. Number of Rotor Bars

40

48. Rotor Condition

pass

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49. List the Parts needed for the Repair Below

6312

6212

A 6212 sleeve for ode end bell

50. Signature of Technician that Disassembled Motor

Cw



Mechanical Fits- Rotor

51. Shaft Runout inches

52. Rotor Runout

Drive End Bearing Fit

Rotor Body

Opposite Drive End Bearing

53. Coupling Fit Closest to Bearing Housing

0 Degrees

90 Degrees

120 Degrees

54. Coupling Fit Closest to the end of the Shaft

0 Degrees

60 Degrees

120 Degrees

55. Drive End Bearing Shaft Fit

0 Degrees

60 Degrees

120 Degrees

Fit is worn down to a lip

56. Drive End Bearing Shaft Fit Condition (F) Fail

57. Opposite Drive End Bearing Shaft Fit

0 Degrees

60 Degrees

120 Degrees

2.3625

2.3626

2.3625

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

59. Shaft Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

Mechanical Fits- Bearing Housings

60. Drive End - Endbell Bearing Fit

0 Degrees

60 Degrees

120 Degrees

5.1191

5.119

5.1191

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

62. Opposite Drive End - Endbell Bearing Fit

0 Degrees

60 Degrees

120 Degrees

4.332

4.3318

4.332

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

64. Bearing Cap Condition

Drive End Bearing Cap

Opposite Drive End Bearing Cap

65. End Bell Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

66. List Machine Work Needed Below

ODE shaft bearing fit

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67. Technician

Cw



Root Cause of Failure

68. Failure locations

Bearings, windings, bearing fits

69. Root cause of failure

Metal contamination and wear

Dynamic Balance Report

70. Rotor Weight and Balance Grade

Rotor Weight

Balance Grade

71. Initial Balance Readings

Drive End

Opposite Drive End

72. Final Balance Readings

Drive End

Opposite Drive End

73. Technician

Rewind

74. Core Test Results - Watts loss per Pound

Pre-Burnout

Post Burnout

75. Core Hot Spot Test

Pre-Burnout

Post-Burnout

76. Post Rewind Electrical Test- Insulation Resistance

77. Post Rewind Polarization Index

78. Post Rewind Winding Resistance

1-2

1-3

2-3

79. Post Rewind Surge Test

80. Post Rewind Hi-Pot

81. Technician

Mechanical Fits- Rotor - Post Repair

82. Shaft Runout Post Repair

83. Rotor Runout Post Repair

Drive End Bearing Fit

Rotor Body

Opposite Drive End Bearing

84. Coupling Fit Closest to Bearing Housing Post Repair

0 Degrees

90 Degrees

120 Degrees

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

0 Degrees

60 Degrees

120 Degrees

86. Drive End Bearing Shaft Fit Post Repair		
0 Degrees	60 Degrees	120 Degrees
87. Opposite Drive End Bearing Shaft Fit Post Repair		
0 Degrees	60 Degrees	120 Degrees
88. Shaft Air Seal Fits Post Repair		
Drive End Air Seal	Opposite Drive End Air Seal	
89. Shaft Repair Sign-off		
Mechanical Fits- Bearing Housings - Post Repair		
90. Drive End - Endbell Bearing Fit Post Repair		
0 Degrees	60 Degrees	120 Degrees
91. Opposite Drive End - Endbell Bearing Fit Post Repair		
0 Degrees	60 Degrees	120 Degrees
92. Bearing Cap Condition Post Repair		
Drive End Bearing Cap	Opposite Drive End Bearing Cap	
93. End Bell Air Seal Fits Post Repair		
Drive End Air Seal	Opposite Drive End Air Seal	
94. End Bell Repair Sign-off		
Assembly		
95. QC Check All Parts for Cleanliness Prior to Assembly		
96. Photograph All Major Components prior to assembly		
97. Final Insulation Resistance Test		
98. Assembled Shaft Endplay		
99. Assembled Shaft Runout		
100. Test Run Voltage		
Volts	Volts	Volts
101. Test Run Amperage		
Amps	Amps	Amps
102. Drive End Vibration Readings - Inches Per Second		
Horizontal	Vertical	Axial
103. Opposite Drive End Vibration Readings - Inches Per Second		
Horizontal	Vertical	Axial
104. Ambient Temperature - Fahrenheit		
105. Drive End Bearing Temps - Fahrenheit		
5 Minutes	10 Minutes	15 Minutes
106. Opposite Drive End Bearing Temps - Fahrenheit		
5 Minutes	10 Minutes	15 Minutes

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107. Document Final Condition with Pictures after paint
108. Final Pics and QC Review



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5. **DELIVERY OF GOODS AND/OR SERVICES.** 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.
6. **DELIVERY SITE AND TIME FOR PERFORMANCE.** Hi-Speed and Buyer 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.
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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

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