

LR Motor Shop Repairs

Job Number 102265

Prepared for Almatis Inc/RCP Bauxite (10014)

4701 Alcoa Road Bauxite AR 72011

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AC Inspection as Found - LR Motor Shop

AC Inspection - Rev. 2: 41870

1.0





AC Inspection as Found Almatis Inc/RCP Bauxite (10014)

4701 Alcoa Road Bauxite, AR 72011

FolderID: 102265 FormID: 18854853

AC Inspection - Rev. 2

Location: LR Motor Shop

Serial Number: 41870

Description: 50HP RELIANCE 1200RPM 365T

Hi-Speed Job Number:	102265
Manufacturer:	Reliance
Serial Number:	41870
HP/kW:	50 (HP)
RPM:	1200 (RPM)
Frame:	365T
Voltage:	460
Current:	65
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
J-box Included:	Complete
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: **a** 2 - High

7 - Good

Overall Condition

1. Report Date

Nameplate Picture





Photos of all six sides of the machine.









 Describe the Overall Condition of the Equipment as Received Dirty

Initial Mechanical/Electrical

- 11	IIIIai	Wechanica/Electrical	
	5.	Does Shaft Turn Freely?	(Yes) Yes
	6.	Does Shaft Have Visible Damage?	(No) No
	7.	Assembled Shaft Runout	0.0015 Inches
	8.	Assembled Shaft End Play	inches
	-	Na	
	9.	Air Gap Variation <10%	
	-	Na	
	10.	Lead Condition	(P) Pass

11. Lead Length 18 Inches



12. Lead Numbers

Na

13. Frame Condition Pass

) 14. Fan Condition (P) Pass



15. Broken or Missing Components

fan cover bolt holes in end bell broke



Initial Electrical Inspection 16. Insulation Resistance/Megger 6780 Megohms 17. Winding Resistance 1-2 1-3 2-3 .250 .250 .251

18. Perform Surge Test







19. Number of Stator Slots

54

20. Stator Condition

windings are dark from being





Stator Thermistors/Ohms

Na

22. Stator Overloads/Ohms

-	Na			
Mech	Mechanical Inspection			
23.	Drive End Bearing Brand	SKF		
24.	Drive End Bearing Number-	6313		
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?			
-	Na			
29.	Drive End Wavy Washer/Snap-Ring Other Retention Device?			
-	Na			

30. Drive End Bearing Condition

The start of fluting





Start of fluting

31.	Opposite Drive End Bearing Brand	SKF
32.	Opposite Drive End Bearing Number-	6210
33. Opposite Drive End Bearing Qty.		1
34.	Opposite Drive End Bearing Type	(Ball) Ball Bearing
35.	Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
36.	Opposite Drive End Bearing Insulation or Grounding Device?	
	Na	
37.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	Wavy washer
38.	Opposite Drive End Bearing Condition	
-	Normal wear	

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39.	Drive End Seal	Na
40.	Opposite Drive End Seal	
-	Na	
Rotor	Inspection	
41.	Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
42.	Growler Test	(Pass) Pass

clean

43. Number of Rotor Bars 60





45.	List the Parts needed for the Repair Below
	6313 6210 Bearing

46. Signature of Technician that Disassembled Motor

RW

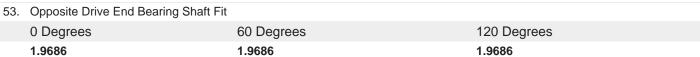


Mecha	Mechanical Fits- Rotor			
47.	Shaft Runout		0.0015 inches	
48.	Rotor Runout			
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing	
7	Na			
49.	Coupling Fit Closest to Bearing Housi	ng		
	0 Degrees	90 Degrees	120 Degrees	
-	Na			
50.	Coupling Fit Closest to the end of the	Shaft		
	0 Degrees	60 Degrees	120 Degrees	
-	Na			
51.	Drive End Bearing Shaft Fit			
	0 Degrees	60 Degrees	120 Degrees	
	2.5592	2.5592	2.5592	



52. Drive End Bearing Shaft Fit Condition

(P) Pass





T				
5 4.	Opposite Drive End Bearing Shaft Fit	Condition		(P) Pass
55.	Shaft Air Seal Fits			
	Drive End Air Seal	Opposite Drive End Air Seal		
-	Na			
Mech	Mechanical Fits- Bearing Housings			
56.	Drive End - Endbell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
	5.5164	5.5134	5.5128	



57. Drive End - Endbell Bearing Fit Condition			(F) Fail	
58. Opposite Drive End - Endbell Bearing Fit				
	0 Degrees	60 Degrees	120 Degrees	
	3.5434	3.5434	3.5434	



	• .	
	Drive End Bearing Cap	Opposite Drive End Bearing Cap
-	Na	
61	End Bell Air Seal Fits	

61. End Bell Air Seal Fits

60. Bearing Cap Condition

Drive End Air Seal Opposite Drive End Air Seal

■ Na

62. List Machine Work Needed Below

De end bell bearing fit .fan cover bolt hole broke out of end bell

63. Technician RW

Root Cause of Failure

64. Failure locations

DE end bell bearing shows the start of fluting also de bearing fit bad

65. Root cause of failure

Na

Dynamic Balance Report

66. Rotor Weight and Balance Grade

Rotor Weight Balance Grade

Na

67. Initial Balance Readings

Drive End Opposite Drive End
0.17 0.33

0.17

68. Final Balance Readings

Drive End

Opposite Drive End



Na

information, reports, opinions and analysis by the Customer.

69. Technician RW Rewind 70. Core Test Results - Watts loss per Pound Pre-Burnout Post Burnout Na 71. Core Hot Spot Test Pre-Burnout Post-Burnout Na 72. Post Rewind Electrical Test-Insulation Resistance Megohms 73. Post Rewind Polarization Index **Polarization Index** 74. Post Rewind Winding Resistance 2-3 1-3 Na 75. Post Rewind Surge Test (Pass) Pass 76. Post Rewind Hi-Pot micro-amps Na 77. Technician Na Mechanical Fits- Rotor - Post Repair 78. Shaft Runout Post Repair inches

Type End Bearing Fit Rotor Body Opposite Drive End Bearing Na 80. Coupling Fit Closest to Bearing Housing Post Repair 0 Degrees 90 Degrees 120 Degrees Na 81. Coupling Fit Closest to the end of the Shaft Post Repair 0 Degrees 60 Degrees 120 Degrees Na 82. Drive End Bearing Shaft Fit Post Repair 0 Degrees 60 Degrees 120 Degrees Na 83. Opposite Drive End Bearing Shaft Fit Post Repair 0 Degrees 60 Degrees 120 Degrees Na 84. Shaft Air Seal Fits Post Repair Drive End Air Seal Opposite Drive End Air Seal Na 85. Shaft Repair Sign-off Na Na 86. Drive End - Endbell Bearing Fit Post Repair 0 Degrees 60 Degrees 120 Degrees				
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•	86.	Drive End - Endbell Bearing Fit Post F	Repair	
5.5125 5.5126 5.5125		0 Degrees	60 Degrees	120 Degrees
		5.5125	5.5126	5.5125



87.	Opposite Drive End - Endbell Bearing	g Fit Post Repair	
	0 Degrees	60 Degrees	120 Degrees
-	N/A		

88.	Bearing Cap Condition Post Repair		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
-	N/A		
89.	End Bell Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
-	N/A		
90.	End Bell Repair Sign-off	Gary	
	,		
	/		

Assembly

91. QC Check All Parts for Cleanliness Prior to Assembly

RW

aw

92. Photograph All Major Components prior to assembly

(Complete) Complete





















93. Final Insulation Resistance Test

18,670 Megohms



94.	Assembled Shaft Endplay		inches
-	Na		
95.	Assembled Shaft Runout		
96.	Test Run Voltage		
	Volts	Volts	Volts
	457	456	455
-	458-457-457		





With out fan With fan

97. Test Run Amperage

Amps
Amps
Amps
19.7
19.8
20





With out fan With fan

98.	Drive End Vibration Readings - Inches Per Second				
	Horizontal	Vertical	Axial		
	0.02	0.02	0.0089999999999999		
99.	Opposite Drive End Vibration Readings - Inches Per Second				
	Horizontal	Vertical	Axial		
	0.03	0.03	0.02		
100. Ambient Temperature - Fahrenheit					
-	Na				
101.	Drive End Bearing Temps - Fahrenheit				
	5 Minutes	10 Minutes	15 Minutes		
-	Na				
102.	Opposite Drive End Bearing Temps - Fahrenheit				
	5 Minutes	10 Minutes	15 Minutes		
-	Na				
103.	Document Final Condition with Picture	es after paint			







104. Final Pics and QC Review

RW

4

Co witness CRW



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- 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.