

# LR Motor Shop Repairs

# **Job Number 100458**

Prepared for International Paper - Conway Graphics

730 Enterprise Ave Conway AR 72032

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DC Repair Report - Shop

DC Repair Report Rev. 2: 100458 - BB50R451018

1.0





**DC Repair Report** 

International Paper - Conway Graphics

730 Enterprise Ave Conway, AR 72032

FolderID: 100458 FormID: 14840320

DC Repair Report Rev. 2		
Location:	Shop	
Job Number:	100458	
Serial Number:	BB50R451018	
Status:	In For Repair	
Description:40HI	P GE DC 1750RPM AD328AT	

Hi-Speed Job Number:	100458
Manufacturer:	GE
Product Number :	BB50R451018
HP/KW:	40 (HP)
RPM:	1750
Frame:	AD328AT
Armature Voltage:	500 (Volts)
Field Voltage:	300 (Volts)
Field Current :	2 (Amps)
J-Box Included:	No
Bearing RTDS:	No
Winding RTDS:	No
Mounting Orientation :	Horizontal

Priorities Found: 3 - High

7 - Good

#### **Overall Condition**

1. Describe the Overall Condition of the Equipment as Received Serviceable

























Nameplate Picture



3. Distance From the End of the Shaft to the end of the Face of the Sheave/Coupling

0.125



#### **Initial Mechanical/Electrical**

4. Does the Shaft Turn Freely?
5. Does Shaft Have Visible Damage?
(Y) Yes
(No) No



6. Assembled Shaft Runout
7. Assembled Shaft End Play
8. Air Gap Variation <10%</li>
9. Lead Condition
(P) Pass





10. Lead Length 5 Inches

11. Frame Condition (P) Pass











12. Fan Condition(P) Pass

13.	Brush Information		
	Brush Number	Quantity	Condition
	T566	2	good
-	36A167402AAP02		



14. Brush Holder Condition - Verify proper gap to Commutator



## **Incoming Electrical Test**

15. General Condition of the Armature/Commutator



- 16. Armature Insulation Resistance to Ground
- 17. Field Circuit Insulation Resistance to Ground

18.	Interpole Circuit Insulation Resistance to Ground		
19.	Field Drop Test Fields 1&2		
	Total AC Voltage	Field #1	Field #2
	120	0.425	0.423
20.	Field Drop Test Fields 3&4		
	Field #3	Fleld #4	Field #2
21.	Field Drop Test Fields 5&6		
	Field #5	Fleld #6	Field #2
	F. 11B . T . F. 11 . TOO		
22.	Field Drop Test Fields 7&8	<b>5</b> 1.1.1.40	F1.1.1.10
	Field #7	Fleld #8	Field #2
23	Interpole Drop Test 1&2		
20.	Total AC Voltage	Interpole #1	Interpole #2
	Total AC Voltage	0.101	0.104
2/	Interpole Drop Test 3&4	0.101	0.104
۷٦.	Interpole #3	Interpole #4	Field #2
	interpole #3	interpole #4	Field #2
25.	Interpole Drop Test 5&6		
	Interpole #5	Interpole #6	Field #2
	e.peiee		
26.	Interpole Drop Test 7&8		
	Interpole #7	Interpole #8	Field #2
	·	·	
27.	Armature Number of Bars - Bar to Bar	Test	
	Number of Bars	Bar to Bar Test	



Mechanical Inspection			
28. Shaft Runout Drive End		0.001 inches	
29. Shaft Runout Armature			
Drive End Bearing Journal	Armature Core	ODE Bearing Journal	





31. Drive End Bearing Quantity	1
32. Drive End Bearing Type	(Ball) Ball Bearing
33. Drive End Lubrication Type	(Grease) Grease Lubricated
34. Drive End Bearing Insulation or Grounding Device?	(NA)
35. Drive End Wayy Washer/Snap-Ring Other Retention Device?	



## 36. Drive End Bearing Condition

replace





37. Opposite Drive End Bearing Number

6210 2RS/C3



38. Opposite Drive End Bearing Quantity	1
39. Opposite Drive End Bearing Type	(Ball) Ball Bearing
40. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
41. Opposite Drive End Bearing Insulation or Grounding Device?	(NA)
42. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	none
43. Opposite Drive End Bearing Condition	replace





44. Signature of Technician who Performed Teardown

**Terrence Holland** 

45. List Parts Needed Prior to Reassembly

Bearings: 6211 & 6210. Aegis ring D.E. 2.455. Insulated 6210 sleeve.

## **Mechanical Fits - Armature**

46. Coupling Fit Closest to Bearing Housing

0 Degrees 60 degrees 120 degrees

47. Coupling Fit Closest to the End of the Shaft

0 Degrees 60 degrees 120 degrees

48.	Drive End Bearing Shaft Fit			
	0 Degrees	60 Degrees	120 Degrees	
	2.1656	2.1656	2.1656	
<b>4</b> 9.	Drive End Bearing Shaft Fit Condition			(P) Pass
50.	Opposite Drive End Bearing Shaft Fit			
	0 Degrees	60 Degrees	120 Degrees	
	1.9684	1.9684	1.9684	
<b>9</b> 51.	Opposite Drive End Bearing Shaft Fit	Condition		(F) Fail
52.	Shaft Air Seal Fits			
	Drive End Air Seal	Opposite Drive End Air Seal		
Mech	anical Fits- Bearing Housings			
53.	Drive End - End Bell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees	
	3.9381	3.9382		
<b>•</b> 54.	Drive End - Endbell Bearing Fit Condi	tion		(F) Fail
55.	Opposite Drive End - End Bell Bearing	g Fit		
	0 Degrees	60 Degrees	120 Degrees	



	56.	Opposite Drive End - Endbell Bearing Fit Condition		(F) Fail
	57.	Bearing Cap Condition		
		Drive End	Opposite Drive End	
		pass		
	58.	End Bell Air Seal Fits		
		Drive End Air Seal	Opposite Drive End Air Seal	
	59. List any Machine work Needed Below			O.D.E shaft bearing journal & housing fits.
	60.	Signature of Technician Performing M	easurements	Terrence Holland
R	Root Cause of Failure			

61.	61. Failure Locations  Both housing fits and ode shaft bearing journal. Polish comm.				
62.	. Root Cause of Failure				
Comn	nutator Data				
63.	Total Copper Segment Length				
64.	Number of Bars				
65.	Number of Wires Per Copper Bar and	Size			
	Number of Wires per Bar	Wire Size			
66.	Equalizers per Copper Bar and Equal	zer Wire Size			
	Equalizers per Bar	Wire Size			
67.	Document Commutator Diameter, Min				
	Current Comm Diameter	Minimum Comm Diameter	Maximum Comm Diameter		
68	Commutator Shaft Diameter				
00.	Front Shaft Diameter	Back Shaft Diameter			
	Front Shart Diameter	Back Shall Diameter			
69.	Commutator Type				
70.	Commutator Bore				
71.	Signature of Technician Recording Da	ata			
Dynar	nic Balance Report				
72.	Rotor Weight and Balance Grade				
	Rotor Weight	Balance Grade			
	-				
73.	Initial Balance Readings				
	Drive End Readings	Opposite Drive End Readings			
	.26	.18			



74.	Final Balance Readings	
	Drive End Readings	Opposite Drive End Readings
	.26	.18

75.	Signature of the Balance Technician		RW	
F	2			
Post /	Armature Rewind Testing			
76.	Post Rewind Armature Insulation Resi	stance to Ground		
77.	Post Rewind Field Circuit Measure the	Insulation Resistance to Ground		
78.	Post Rewind Armature Number of Bar	s - Bar to Bar Test		
	Number of Bars	Bar to Bar Test		
79.	Post Rewind Field Circuit Insulation R	esistance to Ground		
	Post Rewind Interpole Circuit Insulation			
	Post Rewind Field Drop Test Fields 18			
	Total AC Voltage	Field #1	Field #2	
	ű			
82.	Post Rewind Field Drop Test Fields 38	<b>3</b> 4		
	Field #3	Fleld #4	Field #2	
83.	Post Rewind Field Drop Test Fields 58	<b>3</b> 6		
	Field #5	Fleld #6	Field #2	
84.	Post Rewind Field Drop Test Fields 78			
	Field #7	Fleld #8	Field #2	
85.	Post Rewind Interpole Drop Test 1&2			
	Total AC Voltage	Interpole #1	Interpole #2	
86.	Post Rewind Interpole Drop Test 3&4			
	Interpole #3	Interpole #4	Field #2	
87.	Post Rewind Interpole Drop Test 5&6			
	Interpole #5	Interpole #6	Field #2	
88.	' '			
	Interpole #7	Interpole #8	Field #2	
Post I	Mechanical Repair			
	Post Repair Coupling Fit Closest to Bearing Housing			
	0 Degrees	60 degrees	120 degrees	
	3	3	3	
90.	Post Repair Coupling Fit Closest to the	e End of the Shaft		
	0 Degrees	60 degrees	120 degrees	
91.	Post Repair Drive End Bearing Shaft I		100 5	
	0 Degrees	60 Degrees	120 Degrees	

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92. Post Repair Drive End Bearing Shaft Fit Condition

93.	93. Post Repair Drive End Opposite Drive End Bearing Shaft Fit				
	0 Degrees	60 Degrees	120 Degrees		
94.	Post Repair Drive End Opposite Drive End Bearing Shaft Fit Condition				
95.	Post Repair Drive End - End Bell Bear	st Repair Drive End - End Bell Bearing Fit			
	0 Degrees	60 Degrees	120 Degrees		
96.	Post Repair Drive End - Endbell Bearing Fit Condition				
97.	Post Repair Opposite Drive End - End Bell Bearing Fit				
	0 Degrees	60 Degrees	120 Degrees		
98.	Post Repair Opposite Drive End - Endbell Bearing Fit Condition				
99.	Post Repair Bearing Cap Condition				
	Drive End	Opposite Drive End			
100.	Post Repair End Bell Air Seal Fits				
	Drive End Air Seal	Opposite Drive End Air Seal			
101.	101. Signature of Tech Performing Mechanical Repairs				
Assembly					

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103. Verify Brush Box Holders Have the Proper Clearance, and Brushes have been Seated Properly (P) Pass

104. Assembled Shaft End Play and Runout

Shaft Endplay

Shaft Runout

### 105. Perform No-Load Test Run, Record Armature Voltage and Current

Voltage Current 496.7 1.9



# 106. Perform No-Load Test Run, Record Field Voltage and Current Voltage Current 299 2.8



107. Document Vibration Readings Drive End					
Horizontal	Vertical	Axial			
108. Document Vibration Reading	s. Document Vibration Readings Opposite Drive End				
Horizontal	Vertical	Axial			
109. Perform Full-Load Test Run	09. Perform Full-Load Test Run, Record Armature Voltage and Current				
Voltage	Current				
110. Perform Full-Load Test Run, Record Field Voltage and Current					
Voltage	Current				
111. Document Vibration Readings Under Full Load Drive End					
Horizontal	Vertical	Axial			
.01	.01	.01			

112. Document Vibration Read	12. Document Vibration Readings Under Full Load Opposite Drive End				
Horizontal	Vertical	Axial			
.01	.01	.01			
113. Ambient Temperature	. Ambient Temperature				
114. Drive End Bearing Temps	Drive End Bearing Temps Under Full Load				
5 Minutes	10 Minutes	15 Minutes			
115. Opposite Drive End Beari	Opposite Drive End Bearing Temps Under Full Load				
5 Minutes	10 Minutes	15 Minutes			
116. Final Test Run Sign-Off					
117. Document Final Condition	117. Document Final Condition With Pictures				







118. Final QC Sign-Off RW





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- 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.
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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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- 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. <u>ASSIGNMENT.</u> 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.