

LR Motor Shop Repairs

Job Number 99993

Prepared for Delta Plastics (11016)

8801 Frazier Pike Little Rock AR 72206

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AC Recondition - Rev. 2: 3G1P163500601

1.0



FolderID: 99993

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MOTOR SHOP LR

AC Recondition As Found

Delta Plastics (11016)

8801 Frazier Pike Little Rock, AR 72206

Location:

AC Recondition - Rev. 2

Serial Number: 3G1P163500601

Description:400KW ABB 1800RPM 355M

Hi-Speed Job Number:	99993
Manufacturer:	ABB
Product Number:	M3BP 355 MLA 4 IMB3/IM1001
Serial Number:	3G1P163500601
HP/kW:	400 (kW)
RPM:	1790 (RPM)
Frame:	355
Voltage:	460
Current:	635
Phase:	Three
Hz:	60 (Hz)
Enclosure:	TEFC
J-box Included:	Complete
Coupling/Sheave:	None
Date Received:	06/30/2022
Repair Stage:	Final
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: **2 - High**

3 - Good

Overall Condition

Report Date

Nameplate Picture























- 3. Describe the Overall Condition of the Equipment as Received
- 4. Photos of all six sides of the machine.
- 5. Photos of all six sides of the machine.

Initial Mechanical/Electrical

- 6. Does Shaft Turn Freely?
- 7. Does Shaft Have Visible Damage?
- 8. Assembled Shaft Runout
- 9. Assembled Shaft End Play
- 10. Air Gap Variation <10%
- 11. Lead Condition
- 12. Lead Length
- 13. Stator Temperature Detector Rating and Function

Quantity Rating Quantity Passed

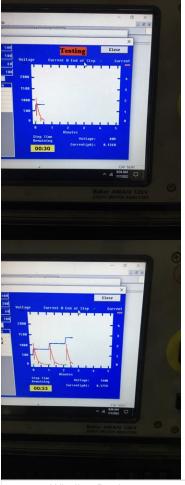
14. Bearing Temperature Detector Rating and Function

Quantity Rating Quantity Passed

- 15. Frame Condition
- 16. Fan Condition
- 17. Broken or Missing Components

Initial Electrical Inspection

18. Insulation Resistance/Megger





Megohms

NU 322EC

19. Winding Resistance

1-2 1-3 2-3

20. Perform Surge Test (F) Fail

21. Stator Condition rewind

Mechanical Inspection

Drive End Bearing Number-





23. Drive End Bearing Qty.

24. Drive End Bearing Type (Roller) Roller Bearing

25	Drive End Lubrication Type		(Grease) Grease Lubricated
26.		uding Device?	(Crouse) Crouse Lubricated
27.			spacer behind bearing
28.	Drive End Bearing Condition	Transfer in Device:	bad
29.			6316 Insucote
30.	Opposite Drive End Bearing Number-		1
31.			(Ball) Ball Bearing
			(Grease) Grease Lubricated
32.	••	or Crounding Dovice?	insulatedbearing
	Opposite Drive End Bearing Insulation	·	
34.	Opposite Drive End Wavy Washer/Sn	ap-Ring Other Retention Device?	stainless washer and snap ring
35.	Opposite Drive End Bearing Condition	ı	bad
36.	Drive End Seal		labyrinth (good)
37.	Opposite Drive End Seal		labyrinth (good)
Rotor	Inspection		
38.	Rotor Type/Material		(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
39.	Growler Test		(Pass) Pass
40.	Number of Rotor Bars		50
44	Rotor Condition		good
41.			
	List the Parts needed for the Repair B	elow	
42.	List the Parts needed for the Repair B Rewind, NU322, Insulated 6316, sleeve I Signature of Technician that Disassen	DE end bell	David Maclin
42.	Rewind, NU322, Insulated 6316, sleeve	DE end bell	David Maclin
42.	Rewind, NU322, Insulated 6316, sleeve	DE end bell	David Maclin
42. 43. Mech	Rewind, NU322, Insulated 6316, sleeve I	DE end bell	David Maclin
42. 43. Mech a	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor	DE end bell	David Maclin
42. 43. Mech a	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout	DE end bell	David Maclin Opposite Drive End Bearing
42. 43. Mech : 44. 45.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout	DE end bell inbled Motor Rotor Body	
42. 43. Mech : 44. 45.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit	DE end bell inbled Motor Rotor Body	
42. 43. Mech : 44. 45.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit Coupling Fit Closest to Bearing Housing O Degrees	Rotor Body 90 Degrees	Opposite Drive End Bearing
42. 43. Mech : 44. 45.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit Coupling Fit Closest to Bearing Housing O Degrees Coupling Fit Closest to the end of the	Rotor Body 90 Degrees Shaft	Opposite Drive End Bearing 120 Degrees
42. 43. Mech : 44. 45.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit Coupling Fit Closest to Bearing Housing O Degrees	Rotor Body 90 Degrees	Opposite Drive End Bearing
42. 43. Mech : 44. 45. 46.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit Coupling Fit Closest to Bearing Housing O Degrees Coupling Fit Closest to the end of the	Rotor Body 90 Degrees Shaft	Opposite Drive End Bearing 120 Degrees
42. 43. Mech : 44. 45. 46.	Rewind, NU322, Insulated 6316, sleeve It Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit Coupling Fit Closest to Bearing Housin 0 Degrees Coupling Fit Closest to the end of the 0 Degrees	Rotor Body 90 Degrees Shaft	Opposite Drive End Bearing 120 Degrees
42. 43. Mech : 44. 45. 46.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit Coupling Fit Closest to Bearing Housing O Degrees Coupling Fit Closest to the end of the O Degrees Drive End Bearing Shaft Fit	Rotor Body 90 Degrees Shaft 60 Degrees	Opposite Drive End Bearing 120 Degrees 120 Degrees
42. 43. Mech : 44. 45. 46.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit Coupling Fit Closest to Bearing Housing O Degrees Coupling Fit Closest to the end of the O Degrees Drive End Bearing Shaft Fit O Degrees 4.3312	Rotor Body ng 90 Degrees Shaft 60 Degrees	Opposite Drive End Bearing 120 Degrees 120 Degrees
42. 43. Mecha 44. 45. 46. 47. 48.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit Coupling Fit Closest to Bearing Housing O Degrees Coupling Fit Closest to the end of the O Degrees Drive End Bearing Shaft Fit O Degrees 4.3312	Rotor Body ng 90 Degrees Shaft 60 Degrees	Opposite Drive End Bearing 120 Degrees 120 Degrees 120 Degrees 4.3312
42. 43. Mecha 44. 45. 46. 47. 48.	Rewind, NU322, Insulated 6316, sleeve In Signature of Technician that Disassen anical Fits- Rotor Shaft Runout Rotor Runout Drive End Bearing Fit Coupling Fit Closest to Bearing Housing O Degrees Coupling Fit Closest to the end of the O Degrees Drive End Bearing Shaft Fit O Degrees 4.3312 Drive End Bearing Shaft Fit Condition	Rotor Body ng 90 Degrees Shaft 60 Degrees	Opposite Drive End Bearing 120 Degrees 120 Degrees 120 Degrees 4.3312

51. Opposite Drive End Bearing Shaft Fit Condition

(P) Pass

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	6.695	6.695	6.695	
	0 Degrees	60 Degrees	120 Degrees	
55.	Opposite Drive End - Endbell Bearing	Fit		
• 54.	Drive End - Endbell Bearing Fit Condi	tion		(F) Fail
	0 Degrees	60 Degrees	120 Degrees	
53.	Drive End - Endbell Bearing Fit			
Mech	anical Fits- Bearing Housings			
		· ·		
	Drive End Air Seal	Opposite Drive End Air Seal		
52.	Shaft Air Seal Fits			



	56.	Opposite Drive End - Endbell Bearing	g Fit Condition	(P) Pass
	57.	Bearing Cap Condition		
		Drive End Bearing Cap	Opposite Drive End Bearing Cap	
	-	Good		
	58.	End Bell Air Seal Fits		
		Drive End Air Seal	Opposite Drive End Air Seal	
	59.			
		Sleeve DE end bell		
	60.	Technician		David Maclin
		M	4	
D	ynar	nic Balance Report		
	61.	Rotor Weight and Balance Grade		
		Rotor Weight	Balance Grade	
	62.	Rotor Weight and Balance Grade		
		Rotor Weight	Balance Grade	

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63.	Initial Balance Readings	
	Drive End	Opposite Drive End
64.	Initial Balance Readings	
	Drive End	Opposite Drive End
0.5	E. 15.1 5 !!	
65.	Final Balance Readings	
	Drive End	Opposite Drive End
66	Final Balance Readings	
00.	Drive End	Opposite Drive End
	Drive Life	Opposite Drive Life
67.	Technician	
68.	Technician	
Rewin	nd	
69.	Core Test Results - Watts loss per Po	und
	Pre-Burnout	Post Burnout
70.	Core Test Results - Watts loss per Po	und
	Pre-Burnout	Post Burnout
	0 11:0 17:	
/1.	Core Hot Spot Test	D 10
	Pre-Burnout	Post-Burnout
72.	Core Hot Spot Test	
	Pre-Burnout	Post-Burnout
73.	Post Rewind Electrical Test- Insulation	n Resistance
74.	Post Rewind Electrical Test- Insulation	n Resistance
75.	Post Rewind Polarization Index	
76.	Post Rewind Polarization Index	
77.	Post Rewind Winding Resistance	
	1-2	1-3 2-3
78.	Post Rewind Winding Resistance	
	1-2	1-3 2-3
79	Post Rewind Surge Test	
80.	Post Rewind Surge Test	
81.		
82.		
83.	Technician	
84.	Technician	
Root	Cause of Failure	
85.	Failure locations	
	Bearings	
86.	Root cause of failure	
	Improper lubrication	

Mechanical Fits- Rotor - Post Repair

87.	Shaft Runout Post Repair		
88.	Shaft Runout Post Repair		
89.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
90.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
91.	Coupling Fit Closest to Bearing Housi	ng Post Repair	
	0 Degrees	90 Degrees	120 Degrees
92.	Coupling Fit Closest to Bearing Housi	ng Post Repair	
	0 Degrees	90 Degrees	120 Degrees
93.	Coupling Fit Closest to the end of the	Shaft Post Repair	
	0 Degrees	60 Degrees	120 Degrees
94.	Coupling Fit Closest to the end of the	Shaft Post Repair	
	0 Degrees	60 Degrees	120 Degrees
95.	Drive End Bearing Shaft Fit Post Repa	air	
	0 Degrees	60 Degrees	120 Degrees
-	Cut snap ring groove in front of D.E. Be	earing fit.	



96.	Drive End Bearing Shaft Fit Post Rep	air	
	0 Degrees	60 Degrees	120 Degrees
97.	Opposite Drive End Bearing Shaft Fit	Post Repair	
	0 Degrees	60 Degrees	120 Degrees
98.	Opposite Drive End Bearing Shaft Fit	Post Repair	
	0 Degrees	60 Degrees	120 Degrees
99.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	

100. Shaft Air Seal Fits Post Repair				
Drive End Air Seal	Opposite Drive End Air Seal			
101. Shaft Repair Sign-off				
102. Shaft Repair Sign-off		Gary Moore		
Mechanical Fits- Bearing Housin	Mechanical Fits- Bearing Housings - Post Repair			
103. Drive End - Endbell Bearing Fi	t Post Repair			
0 Degrees	60 Degrees	120 Degrees		
104. Drive End - Endbell Bearing Fi	t Post Repair			
0 Degrees	60 Degrees	120 Degrees		
9.44919999999999	9.44919999999999	9.4491		



105. Opposite Drive End - Endbe	ell Bearing Fit Post Repair	
0 Degrees	60 Degrees	120 Degrees
106. Opposite Drive End - Endbe	ell Bearing Fit Post Repair	
0 Degrees	60 Degrees	120 Degrees
6.6935	6.6935	6.6936



Drive End Bearing Cap Opposite I	Drive End Bearing Cap

108. Bearing Cap Condition Post Repair
Drive End Bearing Cap

Opposite Drive End Bearing Cap

109. End Bell Air Seal Fits Post Repair
Drive End Air Seal

Opposite Drive End Air Seal

110. End Bell Air Seal Fits Post Repair
Drive End Air Seal

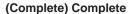
Opposite Drive End Air Seal

111. End Bell Repair Sign-off

112. End Bell Repair Sign-off

Assembly

- 113. Photograph All Major Components prior to assembly
- 114. Photograph All Major Components prior to assembly































115. Final Insulation Resistance Test

21,470 Megohms



116. Final Insulation Resistance	Test		
117. Assembled Shaft Endplay			
118. Assembled Shaft Endplay			
119. Assembled Shaft Runout			
120. Assembled Shaft Runout			
121. Test Run Voltage			
Volts	Volts	Volts	
457	455	459	



122. Test Run Voltage			
Volts	Volts	Volts	
123. Test Run Amperage			
Amps	Amps	Amps	
124. Test Run Amperage			
Amps	Amps	Amps	
207	195	200	



125. Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 126. Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 127. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 128. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit 130. Ambient Temperature - Fahrenheit				
126. Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 127. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 128. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit	125. Drive End Vibration Readings - Inches Per Second			
Horizontal Vertical Axial 127. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 128. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit	Horizontal	Vertical	Axial	
Horizontal Vertical Axial 127. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 128. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit				
127. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 128. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit	126. Drive End Vibration Readings - Inches Per Second			
Horizontal Vertical Axial 128. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit	Horizontal	Vertical	Axial	
Horizontal Vertical Axial 128. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit				
128. Opposite Drive End Vibration Readings - Inches Per Second Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit	127. Opposite Drive End Vibration Readings - Inches Per Second			
Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit	Horizontal	Vertical	Axial	
Horizontal Vertical Axial 129. Ambient Temperature - Fahrenheit				
129. Ambient Temperature - Fahrenheit	128. Opposite Drive End Vibration Readings - Inches Per Second			
	Horizontal	Vertical	Axial	
130. Ambient Temperature - Fahrenheit	129. Ambient Temperature - Fahrenheit			
	130. Ambient Temperate	ure - Fahrenheit		

131. Drive End Bearing Temps	Fahrenheit			
5 Minutes	10 Minutes	15 Minutes		
132. Drive End Bearing Temps - Fahrenheit				
5 Minutes	10 Minutes	15 Minutes		
133. Opposite Drive End Bearing Temps - Fahrenheit				
5 Minutes	10 Minutes	15 Minutes		
134. Opposite Drive End Bearin	g Temps - Fahrenheit			
5 Minutes	10 Minutes	15 Minutes		
135. Final Test Run Sign-off				
136. Final Test Run Sign-off				
137. Document Final Condition	with Pictures after paint			







138. Document Final Condition with Pictures after paint
139. Final Pics and QC Review
140. Final Pics and QC Review
RW

















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- 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.