



KEEPING YOUR FACILITY UP TO SPEED
— EVERY DAY SINCE 1946 —

LR Motor Shop Repairs

Job Number 102687

Prepared for Mondri

3501 Jefferson Pkway
Pine Bluff AR 71602

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

DC Repair Report

Mondi
3501 Jefferson Pkwy
Pine Bluff, AR 71602

FolderID: 102687
FormID: 19852963

DC Repair Report Rev. 2

Location: Maintenance Shop

Job Number: 102687

Description: 44.5 HP

Hi-Speed Job Number: 102687

Manufacturer: Siemens

HP/KW: 44.5 (kW)

RPM: 2400

Armature Voltage: 400 (Volts)

Armature Current: 125 (Amps)

Field Voltage: 340 (Volts)

Field Current : 1.7 (Amps)

J-Box Included: Yes

Date Received: 03/22/2024

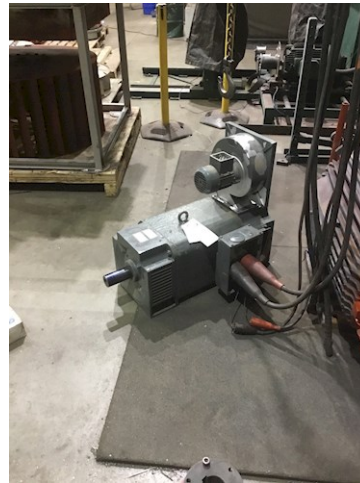
Priorities Found: ● 1 - High ● 8 - Good

Overall Condition

1. Describe the Overall Condition of the Equipment as Received

Serviceable

2. Nameplate Picture



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1.0



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1.1



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1.2



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1.3



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

1.5

1.5 inches so



Initial Mechanical/Electrical

4.	Does the Shaft Turn Freely?	(Y) Yes
5.	Does Shaft Have Visible Damage?	(No) No
6.	Assembled Shaft Runout	Inches
7.	Assembled Shaft End Play	Inches
8.	Air Gap Variation <10%	
9.	Lead Condition	(P) Pass

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1.4

10. Lead Length		
11. Frame Condition		(P) Pass
12. Fan Condition		(NA) Not Applicable
13. Brush Information		
Brush Number	Quantity	Condition
5791	12	pass

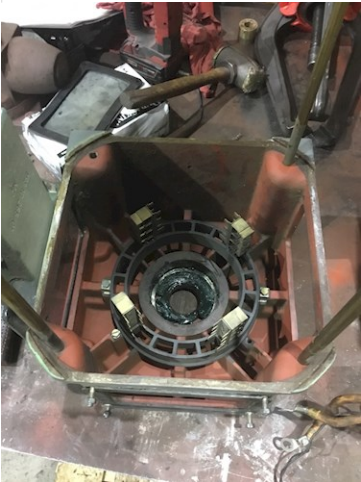


14. Brush Holder Condition - Verify proper gap to Commutator

Incoming Electrical Test

15. General Condition of the Armature/Commutator

good



16. Armature Insulation Resistance to Ground

Megohms



17. Field Circuit Insulation Resistance to Ground

Megohms



18. Interpole Circuit Insulation Resistance to Ground

Megohms



19. Total Field Ohms

147.4

20. Field Ohms

Between F1/F2

Between F3/F4

147.4

21. MegOhms between Fields and Series

22.	Series Drop Test 1&2		
	Series 1	Series 2	
	Na		
23.	Series Drop Test 3&4		
	Series 3	Series 4	
	Na		
24.	Field Drop Test Fields 1&2		
	Total AC Voltage	Field #1	Field #2
	340	2.845	2.856
25.	Field Drop Test Fields 3&4		
	Field #3	Field #4	Field #2
	2.81	2.86	
26.	Field Drop Test Fields 5&6		
	Field #5	Field #6	Field #2
	Na		
27.	Field Drop Test Fields 7&8		
	Field #7	Field #8	Field #2
	Na		
28.	Interpole Drop Test 1&2		
	Total AC Voltage	Interpole #1	Interpole #2
		21.72	21.52
29.	Interpole Drop Test 3&4		
	Interpole #3	Interpole #4	Field #2
	21.65	21.36	
30.	Interpole Drop Test 5&6		
	Interpole #5	Interpole #6	Field #2
	Na		
31.	Interpole Drop Test 7&8		
	Interpole #7	Interpole #8	Field #2
	Na		
32.	Armature Number of Bars - Bar to Bar Test		
	Number of Bars	Bar to Bar Test	
Mechanical Inspection			
33.	Shaft Runout Drive End		0.001 inches
34.	Shaft Runout Armature		
	Drive End Bearing Journal	Armature Core	ODE Bearing Journal

35. Drive End Bearing Number

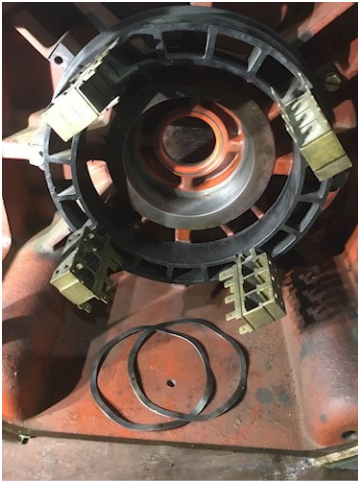
6212 2Z



36. Drive End Bearing Quantity	1
37. Drive End Bearing Type	(Ball) Ball Bearing
38. Drive End Lubrication Type	(Grease) Grease Lubricated
39. Drive End Bearing Insulation or Grounding Device?	(NA)
40. Drive End Wavy Washer/Snap-Ring Other Retention Device?	none
41. Drive End Bearing Condition	replace
42. Opposite Drive End Bearing Number	6309 2Z



43. Opposite Drive End Bearing Quantity	1
44. Opposite Drive End Bearing Type	(Ball) Ball Bearing
45. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
46. Opposite Drive End Bearing Insulation or Grounding Device?	(NA)
47. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer



48. Opposite Drive End Bearing Condition

replace

49. Signature of Technician who Performed Teardown

Terrence Holland

[Handwritten signature of Terrence Holland]

50. List Parts Needed Prior to Reassembly

Bearings

Mechanical Fits - Armature

51. Coupling Fit Closest to Bearing Housing

0 Degrees

60 degrees

120 degrees

52. Coupling Fit Closest to the End of the Shaft

0 Degrees

60 degrees

120 degrees

53. Drive End Bearing Shaft Fit

0 Degrees

60 Degrees

120 Degrees

2.3625

2.3624

2.3624

54. Drive End Bearing Shaft Fit Condition

(P) Pass

55. Opposite Drive End Bearing Shaft Fit

0 Degrees

60 Degrees

120 Degrees

1.7714

1.7714

1.7715

56. Opposite Drive End Bearing Shaft Fit Condition

(F) Fail

57. Shaft Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

Mechanical Fits- Bearing Housings

58. Drive End - End Bell Bearing Fit

0 Degrees

60 Degrees

120 Degrees

4.331

4.3312

4.3313

59. Drive End - Endbell Bearing Fit Condition

(P) Pass

60. Opposite Drive End - End Bell Bearing Fit

0 Degrees

60 Degrees

120 Degrees

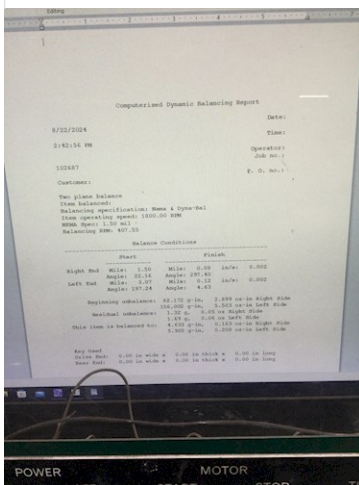
3.9378

3.9379


3.9378




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61. Opposite Drive End - Endbell Bearing Fit Condition			
62. Bearing Cap Condition			
Drive End		Opposite Drive End	
63. End Bell Air Seal Fits			
Drive End Air Seal		Opposite Drive End Air Seal	
64. List any Machine work Needed Below			
65. Signature of Technician Performing Measurements			
Root Cause of Failure			
66. Failure Locations			
67. Root Cause of Failure <i>Interpole</i>			
Commutator Data			
68. Total Copper Segment Length			
69. Number of Bars			
70. Number of Wires Per Copper Bar and Size			
Number of Wires per Bar		Wire Size	
71. Equalizers per Copper Bar and Equalizer Wire Size			
Equalizers per Bar		Wire Size	
72. Document Commutator Diameter, Minimum and Max			
Current Comm Diameter	Minimum Comm Diameter	Maximum Comm Diameter	
73. Commutator Shaft Diameter			
Front Shaft Diameter	Back Shaft Diameter		
74. Commutator Type			
75. Commutator Bore			
76. Signature of Technician Recording Data			
Dynamic Balance Report			
77. Rotor Weight and Balance Grade			
Rotor Weight		Balance Grade	



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78. Initial Balance Readings			
Drive End Readings		Opposite Drive End Readings	
1.5		3.07	
79. Final Balance Readings			
Drive End Readings		Opposite Drive End Readings	
0.08		0.12	
80. Signature of the Balance Technician			RW
			
Post Armature Rewind Testing			
81. Post Rewind Armature Insulation Resistance to Ground			
82. Post Rewind Field Circuit Measure the Insulation Resistance to Ground			
83. Post Rewind Armature Number of Bars - Bar to Bar Test			
Number of Bars		Bar to Bar Test	
84. Post Rewind Field Circuit Insulation Resistance to Ground			
85. Post Rewind Interpole Circuit Insulation Resistance to Ground			
86. Post Rewind Field Drop Test Fields 1&2			
Total AC Voltage	Field #1	Field #2	
87. Post Rewind Field Drop Test Fields 3&4			
Field #3	Field #4	Field #2	
88. Post Rewind Field Drop Test Fields 5&6			
Field #5	Field #6	Field #2	
89. Post Rewind Field Drop Test Fields 7&8			
Field #7	Field #8	Field #2	
90. Post Rewind Interpole Drop Test 1&2			
Total AC Voltage	Interpole #1	Interpole #2	
91. Post Rewind Interpole Drop Test 3&4			
Interpole #3	Interpole #4	Field #2	
92. Post Rewind Interpole Drop Test 5&6			
Interpole #5	Interpole #6	Field #2	
93. Post Rewind Interpole Drop Test 7&8			
Interpole #7	Interpole #8	Field #2	
Post Mechanical Repair			
94. Post Repair Coupling Fit Closest to Bearing Housing			
0 Degrees	60 degrees	120 degrees	

95. Post Repair Coupling Fit Closest to the End of the Shaft		
0 Degrees	60 degrees	120 degrees
96. Post Repair Drive End Bearing Shaft Fit		
0 Degrees	60 Degrees	120 Degrees
97. Post Repair Drive End Bearing Shaft Fit Condition		
98. Post Repair Drive End Opposite Drive End Bearing Shaft Fit		
0 Degrees	60 Degrees	120 Degrees
99. Post Repair Drive End Opposite Drive End Bearing Shaft Fit Condition		
100. Post Repair Drive End - End Bell Bearing Fit		
0 Degrees	60 Degrees	120 Degrees
4.3314	4.3314	4.3313
<div>  <i>Installed insulated sleeve.</i> </div>		
		
101. Post Repair Drive End - Endbell Bearing Fit Condition		
102. Post Repair Opposite Drive End - End Bell Bearing Fit		
0 Degrees	60 Degrees	120 Degrees
103. Post Repair Opposite Drive End - Endbell Bearing Fit Condition		
104. Post Repair Bearing Cap Condition		
Drive End	Opposite Drive End	
105. Post Repair End Bell Air Seal Fits		
Drive End Air Seal	Opposite Drive End Air Seal	
106. Signature of Tech Performing Mechanical Repairs		Gary
		
Assembly		
107. Take Pictures of all Major Components Prior to Reassembly		

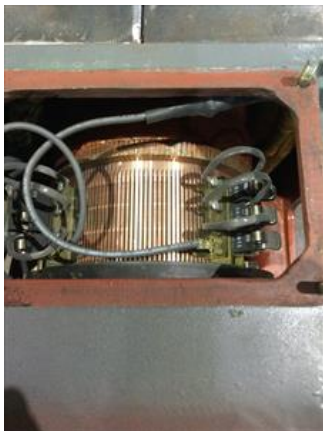


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1.14




108. Verify Brush Box Holders Have the Proper Clearance, and Brushes have been Seated Properly		(P) Pass
109. Assembled Shaft End Play and Runout		
Shaft Endplay	Shaft Runout	
	.001	
110. Perform No-Load Test Run, Record Armature Voltage and Current		
Voltage	Current	
396.1	3.2	



Co sign Trevor hall

111. Perform No-Load Test Run, Record Field Voltage and Current		
Voltage	Current	
340	2.1	



112. Document Vibration Readings Drive End			
Horizontal		Vertical	Axial
113. Document Vibration Readings Opposite Drive End			
Horizontal		Vertical	Axial
114. Perform Full-Load Test Run, Record Armature Voltage and Current			
Voltage		Current	
115. Perform Full-Load Test Run, Record Field Voltage and Current			
Voltage		Current	
116. Document Vibration Readings Under Full Load Drive End			
Horizontal		Vertical	Axial
117. Document Vibration Readings Under Full Load Opposite Drive End			
Horizontal		Vertical	Axial
118. Ambient Temperature			Fahrenheit
119. Drive End Bearing Temps Under Full Load			
5 Minutes		10 Minutes	15 Minutes
120. Opposite Drive End Bearing Temps Under Full Load			
5 Minutes		10 Minutes	15 Minutes
121. Final Test Run Sign-Off			RW
			
122. Document Final Condition With Pictures			



123. Final QC Sign-Off

RW

Co sign TH



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

DC Rewind Repair Report

FolderID: 102687
FormID: 21051513

Mondi
3501 Jefferson Pkway
Pine Bluff, AR 71602

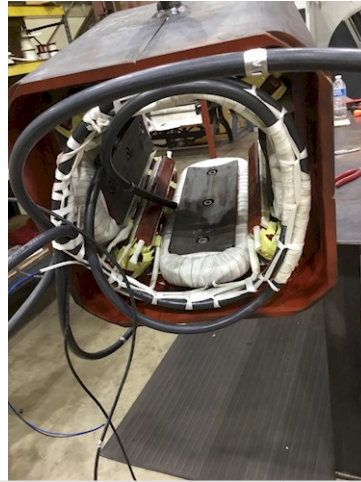
Maintenance Shop
Winding

Priorities Found:

General

1. Job Number

102687



2. Report Date

07/19/2024

3. Customer

Monsignor

Name Plate Information

4. Manufacturer

Siemens



5. Model

s

6. Serial Number

GG5164-OZH90

7. Horsepower

HP

8. KW

41 KW

9. Armature Volts



Volts

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2.0

10. Armature Amps	
11. Field Voltage	
12. Field Amps	
13. RPM	
14. Frame	IP23
15. Enclosure	
16. Service Factor	
17. Motor Mount Position	
Initial Inspection	
18. Lead Length	15 Inches
<div style="display: flex; justify-content: space-around;">   </div>	
19. Lead Size	
20. Lead Condition	
21. Lead Markings	
22. Lug Size, Condition, and Type	
23. Winding RTD's	
24. Winding Rtd's Condition	
25. Shaft Run Out	
26. Does Shaft Turn Freely	
27. Does Shaft Have Visible Damage	
28. Bearing Rtd's	
29. Bearing Rtd's Condition	
30. Contamination	
31. Frame Condition	
32. Fan Condition	
33. Brush Condition	
34. Quantity of brushes	
35. Brush Holder Assembly Condition	
36. Broken or missing components	
Initial Electric Test	
37. Armature Resistance to Ground	
38. Field Resistance to Ground	
39. Armature Hi-Pot	
40. Field Hi-Pot	
41. Armature Bar to Bar Test	

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42. DC field frame Drop Test
43. DC Field Frame Polarity Check
44. Field Frame Condition
45. Field Frame Failure Location
Initial Armature Inspection
46. Air Gap <10% Variation
47. Number of Commutator Bars
48. Growler Test
49. Commutator Condition
50. Armature Condition
51. Armature Failure Location
Mechanical Inspection
52. Bearing Manufacture
53. Bearing DE Size
54. Bearing DE Type
55. Bearing ODE Size
56. Bearing ODE Type
57. Insulated Bearing
58. Lubrication Type
59. Grease Condition
60. Bearing Retainers
61. Shaft Grounding Device
62. DE Seal
63. DE Seal Type/Size
64. ODE Seal
65. ODE Seal Type/Size
Root Cause of Failure
66. Component Failure
67. Cause of Failure
68. Comments
69. Service Technician
Commutator Data
70. Front V Ring Ext.
71. Total Copper Segment Length
72. Length Brush Surface
73. Rear V Ring Ext.
74. Max Comm Dia.
75. Comm Dia.
76. Dia Over V Ring
77. Front Bore Dia.
78. Rear Bore Dia.
79. Dia. Over V Ring
80. Riser Dia.
81. Number of Copper Segments
82. Wire Size
83. Mica Segment Thickness
84. Wires/riser slot

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85. Equalizer Size
86. Equalizer/riser slot
87. Equalizer seq. on comm.
88. Commutator Type
89. Shaft Diameter Keyway alignment with center line of
90. Key way size
91. Riser Type
92. Commutator Condition
93. Riser to Core dimension
94. Armature Core Length
95. Comm End Coil Ext
96. Knuckle End Coil Ext
97. Armature Core Diameter
98. Armature Throw
99. Service Technician
Armature Winding Sheet
100. Slots
101. Wire Size
102. Bars
103. Turns per coil
104. Wires in Mult
105. Slot span 1 to
106. Coil per slot
107. Wire Type
108. Comm Span 1 to
109. Wire Weight
110. Number of Equalizers
111. Span 1 to
112. Equalizers Wire Size
113. Compensating Winding Wire Size
114. Compensating Turns per slot
115. Compensating or Face Winding
116. Wave Winding Leads from Slot 1 to Bar
117. Lap Winding leads from slot 1 to bar
118. Total Slot Depth
119. Slot Depth under wedge
120. Slot Width
121. Coil Knuckle Type
122. Service Technician
Field Frame Winding Sheet
123. Winding Type
124. Coils Wound on Flat or Edge
125. Coils would left or right handed
126. Interpoles
127. Permanent Magnet
128. Shunt Coil Dimensions
129. Number of Shunt Coils

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130. Number of Circuits
131. Turns per coil
132. Wire Size
133. Lbs. Per Coil
134. Series Coil Dimensions
135. Number of Series Coils
136. Number of Series Coil Circuits
137. Series Turns per coil
138. Series Coil Wire Size
139. Series coil lbs per coil
140. Interpole Coil Dimensions
141. Number of Interpole Coils
142. Number of Interpole Circuits
143. Interpole Turns per coil
144. Interpole wire size
145. Interpole lbs per coil
146. Service Technician
Machine Fit Inspection Report
147. Shaft Run Out
148. Initial Shaft Run Out
149. Final Shaft Run Out
150. DE Bearing Shaft Fit
151. DE Initial Shaft Bearing Fit 1
152. DE Finial Shaft Bearing Fit 1
153. DE Initial Shaft Bearing Fit 2
154. DE Finial Shaft Bearing Fit 2
155. DE Initial Shaft Bearing Fit 3
156. DE Finial Shaft Bearing Fit 3
157. ODE Bearing Shaft Fit
158. ODE Initial Shaft Bearing Fit 1
159. ODE Finial Shaft Bearing Fit 1
160. ODE Initial Shaft Bearing Fit 2
161. ODE Finial Shaft Bearing Fit 2
162. ODE Initial Shaft Bearing Fit 3
163. ODE Finial Shaft Bearing Fit 3
164. DE Air Seal Shaft Fit
165. DE Initial Air Seal Shaft Size
166. DE Final Air Seal Shaft Size
167. ODE Air Seal Shaft Fit
168. ODE Initial Air Seal Shaft Size
169. ODE Final Air Seal Shaft Size
170. DE Endbell Fit
171. DE Initial Endbell Fit Size 1
172. DE Final Endbell Fit Size 1
173. DE Initial Endbell Fit Size 2
174. DE Finial Endbell Fit Size 2
175. DE Initial Endbell Fit Size 3

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176. DE Final Endbell Fit Size 3
177. DE Endbell Fit Insulated
178. DE Endbell Air Seal Fit
179. Initial Endbell Air Seal Fit Size
180. Final Endbell Air Seal Fit Size
181. ODE Endbell Fit
182. ODE Endbell Fit Insulated
183. ODE Endbell Air Seal Fit
184. ODE Initial Endbell Seal Fit Size
185. ODE Final Endbell Seal Fit Size
186. Foot Flatness
187. Foot Condition
188. Flange Condition
189. Turn and Under Cut Armature
190. Service Technician
Balancing Report
191. Balance Type
192. Balance Operating Speed
193. Start Left End
194. Start Right End
195. Balancing Specification
196. Finish Left End
197. Finish Right End
198. Service Technician
Assembly and Final Test
199. Armature Meggar Testing Reading
200. Armature Hi-Pot
201. Field Frame Meggar Testing Reading
202. Field Frame Hi-Pot
203. Test Run Field Voltage
204. Test Run Field Amps
205. Test Run Armature Voltage
206. Test Run Armature Amps
207. Brushes seated
208. DE Horizontal Vibration Reading
209. DE Vertical Vibration Reading
210. DE Axial Vibration Reading
211. ODE Horizontal Vibration Reading
212. ODE Vertical Vibration Reading
213. ODE Axial Vibration Reading
214. Ambient Temp at start of Test Run
215. Temp at 5 minutes
216. Temp at 10 minutes
217. Temp at 15 minutes
218. Temp at 20 minutes
219. Temp at 25 minutes
220. Temp at 30 minutes

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221. Temp at 35 minutes
222. Temp at 40 minutes
223. Temp at 45 minutes
224. Temp at 50 minutes
225. Temp at 55 minutes
226. Temp at 60 minutes
227. Motor Paint
228. Service Technician



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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 be 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. **BILLING AND PAYMENT TERMS.** 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. **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.
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 PARTICULAR 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. **LIMITATION OF DAMAGES.** 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. **SEVERABILITY.** 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, earthquake, 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. **NONWAIVER.** 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.