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— EVERY DAY SINCE 1946 —

Motor Shop Repairs

Job Number 97562

Prepared for Arauco-Malvern MDF (10298)

1275 Willamette Rd
Malvern AR 72104

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AC Recondition Repair Report

1.0

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AC Recondition Repair Report

FolderID: 97562
FormID: 9375698

Arauco-Malvern MDF (10298)

1275 Willamette Rd
Malvern, AR 72104

Priorities Found: 1 - High 11 - Good

General		
1. Job Number	97562	
2. Report Date		
3. Customer	Arauco	
Name Plate Information		
4. Manufacturer	TOSHIBA	P5
5. Model	B0504FLFL3US01	
6. Serial Number	96700509	
7. Horsepower	50	
8. KW		
9. Volts	Volts	
10. Amps	Amps	
11. RPM	1760 RPM	
12. Frame		
13. Enclosure	TEFC	
14. Cycles	60	
15. Phase	3	
16. Service Factor	1.15	
17. Motor Mount Position	F1	
Initial Inspection		
18. Number of Leads	3	P13
19. Lead Length	11 Inches	
20. Lead Size		
21. Lead Condition	(P) Pass	P42
22. Lead Markings		
23. Lug Size, Condition, and Type		
24. Winding RTD's		
25. Winding Rtd's Condition		
26. Shaft Run Out		
27. Does Shaft Turn Freely	yes	
28. Does Shaft Have Visible Damage	no	P94
29. Bearing Rtd's	(NA) Not Applicable	
30. Bearing Rtd's Condition	(NA) Not Applicable	
31. Contamination		
<i>Water in grease inside d.e. end bell housing/bearing.</i>		
32. Frame Condition	(P) Pass	P106

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33.	Fan Condition	(P) Pass	P109
34.	Broken or missing components <i>No connection box</i>		P113
Initial Electric Test			
35.	Resistance to Ground		
36.	Winding Resistance 1-2		
37.	Winding Resistance 2-3		
38.	Winding Resistance 1-3		
39.	Resistive Imbalance		
40.	Hi-Pot		
41.	Surge Test	(P) Pass	P58
42.	Stator Condition	good	
43.	Failure Location		
Initial Rotor Inspection			
44.	Rotor Type	squirrel cage	P4
45.	Air Gap <10% Variation		
46.	Number of Rotor Bars	41	
47.	Number of Broken Rotor Bars		
48.	Growler Test	(P) Pass	
49.	Rotor Condition	(P) Pass	
Mechanical Inspection			
50.	Bearing Manufacture	SKF	P1
51.	Bearing DE Size	6312 2rs	P15
52.	Bearing DE Type	sealed ball bearing	
53.	DE Bearing Qty.	1	
54.	Bearing ODE Size	6312 2rs	P43
55.	Bearing ODE Type	sealed ball bearing	
56.	ODE Bearing Qty.	1	
57.	Insulated Bearing		
58.	Lubrication Type	grease	
59.	Grease Condition <i>Water/dirty</i>	(F) Fail	
60.	Bearing Retainers	(Y) Yes	P80
61.	Shaft Grounding Device <i>None</i>		
62.	DE Seal	(NA) Not Applicable	
63.	DE Seal Type/Size		
64.	ODE Seal	(NA) Not Applicable	
65.	ODE Seal Type/Size		
Root Cause of Failure			
66.	Component Failure	bearings	
67.	Cause of Failure <i>Dirty/contaminated grease.</i>		
68.	Comments		

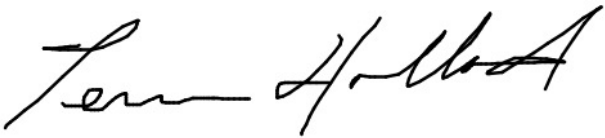


Machine Fit Inspection Report



70. Shaft Run Out		
71. Initial Shaft Run Out		
72. Final Shaft Run Out		
73. DE Bearing Shaft Fit		
74. DE Initial Shaft Bearing Fit Size 1		
75. DE Initial Shaft Bearing Fit Size 2		
76. DE Initial Shaft Bearing Fit Size 3		
77. DE Finial Shaft Bearing Fit Size 1		
78. DE Finial Shaft Bearing Fit Size 2		
79. DE Finial Shaft Bearing Fit Size 3		
80. ODE Bearing Shaft Fit		
81. ODE Initial Shaft Bearing Fit Size 1		
82. ODE Initial Shaft Bearing Fit Size 2		
83. ODE Initial Shaft Bearing Fit Size 3		
84. ODE Finial Shaft Bearing Fit Size 1		
85. ODE Finial Shaft Bearing Fit Size 2		
86. ODE Finial Shaft Bearing Fit Size 3		
87. DE Air Seal Shaft Fit		
88. DE Initial Air Seal Shaft Size		
89. DE Final Air Seal Shaft Size		
90. ODE Air Seal Shaft Fit		
91. ODE Initial Air Seal Shaft Size		
92. ODE Final Air Seal Shaft Size		
93. DE Endbell Fit	(P) Pass	P129
94. DE Initial Endbell Fit Size 1	5.1186 "	
95. DE Initial Endbell Fit Size 2	5.1187 "	
96. DE Initial Endbell Fit Size 3	5.1187 "	
97. DE Final Endbell Fit Size 1		
98. DE Finial Endbell Fit Size 2		
99. DE Final Endbell Fit Size 3		
100. DE Endbell Fit Insulated	(NA) Not Applicable	
101. DE Endbell Air Seal Fit	(NA) Not Applicable	
102. Initial Endbell Air Seal Fit Size	"	
103. Finial Endbell Air Seal Fit Size		
104. ODE Endbell Fit	(P) Pass	P145
105. ODE Initial Endbell Fit Size 1	5.1188 "	
106. ODE Initial Endbell Fit Size 2	5.1186 "	
107. ODE Initial Endbell Fit Size 3	5.1188 "	
108. ODE Final Endbell Fit Size 1	"	
109. ODE Final Endbell Fit Size 2		
110. ODE Final Endbell Fit Size 3		

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111. ODE Endbell Fit Insulated	
112. ODE Endbell Air Seal Fit	
113. ODE Initial Endbell Seal Fit Size	
114. ODE Finial Endbell Seal Fit Size	
● 115. Foot Flatness	(P) Pass
● 116. Foot Condition	(P) Pass
117. Flange Condition	(NA) Not Applicable
118. Service Technician	Terrence Holland
	

Balancing Report

119. Balance Type
120. Balance Operating Speed
121. Start Left End
122. Start Right End
123. Balancing Specification
124. Finish Left End
125. Finish Right End
126. Service Technician

Assembly and Final Test

127. Meggar Testing Reading
128. Surge Test
129. Hi-Pot
130. Winding Resistance 1-2
131. Winding Resistance 2-3
132. Winding Resistance 1-3
133. Test Run Voltage Phase A
134. Test Run Amps A
135. Test Run Voltage Phase B
136. Test Run Amps B
137. Test Run Voltage Phase C
138. Test Run Amps C
139. DE Horizontal Vibration Reading
140. DE Vertical Vibration Reading
141. DE Axial Vibration Reading
142. ODE Horizontal Vibration Reading
143. ODE Vertical Vibration Reading
144. ODE Axial Vibration Reading
145. Ambient Temp at start of Test Run
146. Temp at 5 minutes
147. Temp at 10 minutes
148. Temp at 15 minutes
149. Temp at 20 minutes
150. Temp at 25 minutes
151. Temp at 30 minutes

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152. Temp at 35 minutes
153. Temp at 40 minutes
154. Temp at 45 minutes
155. Temp at 50 minutes
156. Temp at 55 minutes
157. Temp at 60 minutes
158. Motor Paint
159. Service Technician



P1.1



P4.2



P5.3



P5.4



P5.5



P5.6



P5.7



P5.8



P5.9



P5.10



P5.11



P5.12

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P5.13



P5.14



P5.15



P5.16



P13.17



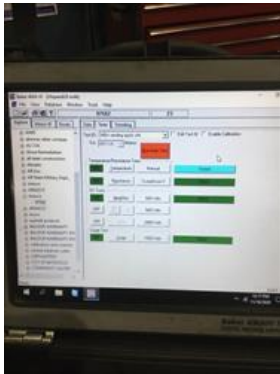
P15.18



P42.19



P43.20



P58.21



P80.22



P94.23



P106.24



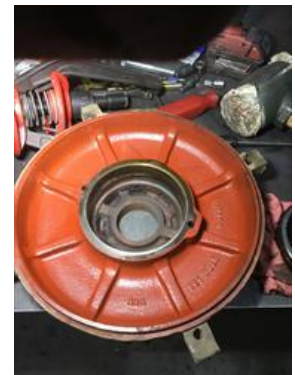
P109.25



P113.26



P129.27



P145.28

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2. **PRICE.** All quoted prices shall remain firm and binding for a period of thirty (30) days from the date of quotation or for the period specifically stated in the quotation. The price for any and all goods and/or services ordered or approved by Buyer after thirty (30) days from the date of any quotation are subject to any increase in price that may occur after the expiration of thirty (30) days from the issuance of the quotation and the date the Buyer releases any shipment.
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.
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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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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.
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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.