



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

Motor Shop Repairs

Job Number 97869

Prepared for Phelps Fan Manufacturing Co.

10701 Interstate 30
Little Rock AR 72209

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AC Recondition Repair Report

1.0

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901-873-5300

AC Recondition Repair Report

FolderID: 97869
FormID: 10005861

Phelps Fan Manufacturing Co.
10701 Interstate 30
Little Rock, AR 72209

Priorities Found: ● 2 - High ● 12 - Good

General

1. Job Number	97869
2. Report Date	
3. Customer	Phelps Fan

Name Plate Information

4. Manufacturer	Hyundai
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5. Model	HLS284SRTL5B
6. Serial Number	TYPE: PFP
7. Horsepower	25
8. KW	
9. Volts	
10. Amps	
11. RPM	3560
12. Frame	284T
13. Enclosure	TEFC
14. Cycles	60
15. Phase	
16. Service Factor	
17. Motor Mount Position	
Initial Inspection	
18. Number of Leads	9
19. Lead Length	12 Inches
20. Lead Size	10
21. Lead Condition	(P) Pass
22. Lead Markings	shrink wrap labels
23. Lug Size, Condition, and Type	
5/16 eyes	
24. Winding RTD's	(NA) Not Applicable

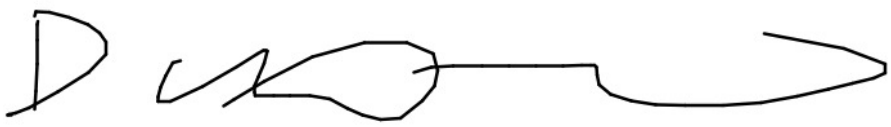
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25. Winding Rtd's Condition	
26. Shaft Run Out	
27. Does Shaft Turn Freely	no
28. Does Shaft Have Visible Damage	n
29. Bearing Rtd's	(NA) Not Applicable
30. Bearing Rtd's Condition	
31. Contamination	
32. Frame Condition	(P) Pass
33. Fan Condition	(F) Fail
34. Broken or missing components	
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	Ua
41. Surge Test	(P) Pass
42. Stator Condition	
43. Failure Location	
Initial Rotor Inspection	
44. Rotor Type	cast aluminum
45. Air Gap <10% Variation	
46. Number of Rotor Bars	58
47. Number of Broken Rotor Bars	
48. Growler Test	(P) Pass
49. Rotor Condition	(P) Pass
Mechanical Inspection	
50. Bearing Manufacture	SKF



51. Bearing DE Size	6310 2Z
52. Bearing DE Type	bal
53. DE Bearing Qty.	1
54. Bearing ODE Size	6310 2Z
55. Bearing ODE Type	ball

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56. ODE Bearing Qty.	1
57. Insulated Bearing	
58. Lubrication Type	polyrex
59. Grease Condition	(F) Fail
60. Bearing Retainers	(NA) Not Applicable
61. Shaft Grounding Device	(NA) Not Applicable
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>Contaminated / Thrust</i>	
68. Comments <i>Replace broken fan</i>	
69. Service Technician	David Maclin
	
Machine Fit Inspection Report	
70. Shaft Run Out	
71. Initial Shaft Run Out	
72. Final Shaft Run Out	
73. DE Bearing Shaft Fit	(P) Pass
74. DE Initial Shaft Bearing Fit Size 1	1.969 "
75. DE Initial Shaft Bearing Fit Size 2	1.9688 "
76. DE Initial Shaft Bearing Fit Size 3	1.9687 "
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	(P) Pass
81. ODE Initial Shaft Bearing Fit Size 1	1.9688 "
82. ODE Initial Shaft Bearing Fit Size 2	1.9688 "
83. ODE Initial Shaft Bearing Fit Size 3	1.9688 "
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
94. DE Initial Endbell Fit Size 1	4.3312 "

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95. DE Initial Endbell Fit Size 2	4.3312 "
96. DE Initial Endbell Fit Size 3	4.3312 "
97. DE Final Endbell Fit Size 1	
98. DE Final Endbell Fit Size 2	
99. DE Final Endbell Fit Size 3	
100. DE Endbell Fit Insulated	
101. DE Endbell Air Seal Fit	
102. Initial Endbell Air Seal Fit Size	
103. Final Endbell Air Seal Fit Size	
● 104. ODE Endbell Fit	(P) Pass
105. ODE Initial Endbell Fit Size 1	4.3312 "
106. ODE Initial Endbell Fit Size 2	4.3312 "
107. ODE Initial Endbell Fit Size 3	4.3312 "
108. ODE Final Endbell Fit Size 1	
109. ODE Final Endbell Fit Size 2	
110. ODE Final Endbell Fit Size 3	
111. ODE Endbell Fit Insulated	
112. ODE Endbell Air Seal Fit	
113. ODE Initial Endbell Seal Fit Size	
114. ODE Final Endbell Seal Fit Size	
● 115. Foot Flatness	(P) Pass
● 116. Foot Condition	(P) Pass
● 117. Flange Condition	(NA) Not Applicable
118. Service Technician	David Maclin
	

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



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

Volts

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

152. Temp at 35 minutes

153. Temp at 40 minutes

154. Temp at 45 minutes

155. Temp at 50 minutes

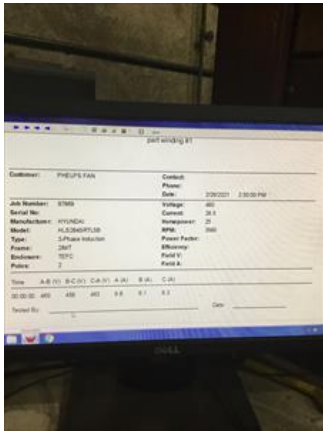
156. Temp at 55 minutes

157. Temp at 60 minutes

158. Motor Paint



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159. Service Technician

David Maclin

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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

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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.
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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, 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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