



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

LR Motor Shop Repairs

Job Number 103308

Prepared for Phelps Fan Manufacturing Co.

10701 Interstate 30
Little Rock AR 72209

Table of Contents

AC Inspection as Found - *MOTOR SHOP LR*

AC Inspection - Rev. 2

1.0

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Printed on 8/16/2024

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

AC Inspection as Found
Phelps Fan Manufacturing Co.
10701 Interstate 30
Little Rock, AR 72209

FolderID: 103308
FormID: 21189108

AC Inspection - Rev. 2

Location: MOTOR SHOP LR

Serial Number:

Description: 25HP ABB 3528RPM

Hi-Speed Job Number: 103308

Manufacturer: ABB

HP/kW: 25 (HP)

RPM: 3528 (RPM)

Frame: 160L

Voltage: 460

Current: 27.5 (Amps)

Phase: Three

Hz: 60 (Hz)

Enclosure: TEFC

of Leads: 6

J-box Included: Complete

Coupling/Sheave: None

Bearing RTDs: No

Stator RTDs: No

Repair Stage: Final

Rewind: No

**Shaft Machined Fit Repairs
Required:** No

**Bearing Housing Machined
Fit Repairs Required:** Yes

Heaters: No

Winding Type : Random Wound

Bearing Type: Rolling Element

Priorities Found: 2 - High 9 - Good

Overall Condition

1. Report Date

08/02/2024

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1.0

2. Nameplate Picture



3. Photos of all six sides of the machine.





4.	Describe the Overall Condition of the Equipment as Received	
	<i>Serviceable</i>	
5.	Report Date [COPY]	08/02/2024
Initial Mechanical/Electrical		
6.	Does Shaft Turn Freely?	(Y) Yes
7.	Does the shaft require T.I.R in Lathe to identify additional repairs?	(No) No
8.	Does Shaft Have Visible Damage?	(No) No
9.	Assembled Shaft Runout	Inches
	Na	
10.	Assembled Shaft End Play	inches
	Na	
11.	Air Gap Variation <10%	
	Na	

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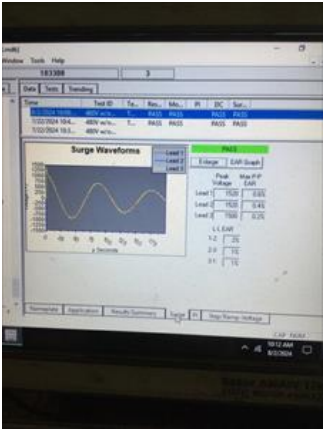
13. Lead Length	12 Inches
14. Does it have Lugs?, If so what is the Stud Size?	(Yes) Yes
15. Lead Numbers	1-6
16. Frame Condition	pass
17. Fan Condition	(F) Fail



18. Broken or Missing Components			na
Initial Electrical Inspection			
19. Insulation Resistance/Megger			7548 Megohms
20. Winding Resistance			
1-2	1-3	2-3	
.319	.319	.319	

21. Perform Surge Test

(P) Pass



22. Number of Stator Slots	36
23. Stator Condition	
Wash and bake	



24. Stator Thermistors/Ohms	na
25. Stator Overloads/Ohms	na
Mechanical Inspection	
26. Drive End Bearing Brand	FAG
27. Drive End Bearing Number-	6209ZZ



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28. Drive End Bearing Qty.	1
29. Drive End Bearing Type	(Ball) Ball Bearing
30. Drive End Lubrication Type	(Grease) Grease Lubricated
31. Drive End Bearing Insulation or Grounding Device?	NA
32. Drive End Wavy Washer/Snap-Ring Other Retention Device?	Na
33. Drive End Bearing Condition	starting to frost



34. Opposite Drive End Bearing Brand	FAG
35. Opposite Drive End Bearing Number-	6209ZZ



36. Opposite Drive End Bearing Qty.	1
37. Opposite Drive End Bearing Type	(Ball) Ball Bearing
38. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
39. Opposite Drive End Bearing Insulation or Grounding Device?	Na
40. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer
41. Opposite Drive End Bearing Condition	frosted

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42. Drive End Seal	Na
43. Opposite Drive End Seal	Na
Rotor Inspection	
44. Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast



45. Growler Test	(Pass) Pass
46. Number of Rotor Bars	28
47. Rotor Condition	pass
48. List the Parts needed for the Repair Below 2- 6209ZZ	
49. Signature of Technician that Disassembled Motor	RW

Mechanical Fits- Rotor	
50. Shaft Runout	0.0008 inches
51. Rotor Runout	
Drive End Bearing Fit	Rotor Body
	Opposite Drive End Bearing
Na	

52. Coupling Fit Closest to Bearing Housing			
0 Degrees	90 Degrees	120 Degrees	
Na			
53. Coupling Fit Closest to the end of the Shaft			
0 Degrees	60 Degrees	120 Degrees	
Na			
54. Drive End Bearing Shaft Fit			
0 Degrees	60 Degrees	120 Degrees	
1.7722	1.7723	1.7722	
55. Drive End Bearing Shaft Fit Condition			(P) Pass
56. Opposite Drive End Bearing Shaft Fit			
0 Degrees	60 Degrees	120 Degrees	
1.7722	1.7722	1.7722	
57. Opposite Drive End Bearing Shaft Fit Condition			(P) Pass
58. Shaft Air Seal Fits			
Drive End Air Seal	Opposite Drive End Air Seal		
pass			
Mechanical Fits- Bearing Housings			
59. Drive End - Endbell Bearing Fit			
0 Degrees	60 Degrees	120 Degrees	
3.3468	3.3467	3.3467	
60. Drive End - Endbell Bearing Fit Condition			(P) Pass



61. Opposite Drive End - Endbell Bearing Fit			
0 Degrees	60 Degrees	120 Degrees	
3.3483	3.3483	3.478	

62. Opposite Drive End - Endbell Bearing Fit Condition

(F) Fail

Resleeve



63. Bearing Cap Condition

Drive End Bearing Cap

Opposite Drive End Bearing Cap

pass

64. End Bell Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

pass

65. List Machine Work Needed Below

Ode end bell bearing fit bad

66. Technician

RW

Co sign: CRW

Root Cause of Failure

67. Failure locations

Bell housing and frosted bearing

68. Root cause of failure

Ode end bell bearing fit bad

Dynamic Balance Report

69. Rotor Weight and Balance Grade

Rotor Weight

Balance Grade



70. Initial Balance Readings

Drive End

Opposite Drive End

0.08

0.26

71. Final Balance Readings

Drive End

Opposite Drive End

0.08

0.26

72. Technician

RW

Mechanical Fits- Bearing Housings - Post Repair

73. Drive End - Endbell Bearing Fit Post Repair

0 Degrees

60 Degrees

120 Degrees

74. Opposite Drive End - Endbell Bearing Fit Post Repair

0 Degrees

60 Degrees



120 Degrees

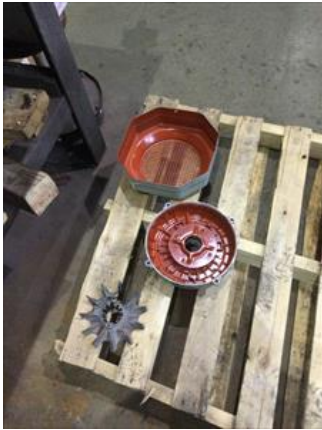
3.3468

3.3468

3.3468



75. Bearing Cap Condition Post Repair		
Drive End Bearing Cap	Opposite Drive End Bearing Cap	
76. End Bell Air Seal Fits Post Repair		
Drive End Air Seal	Opposite Drive End Air Seal	
77. End Bell Repair Sign-off		Gary
		
Assembly		
78. QC Check All Parts for Cleanliness Prior to Assembly		RW
		
79. Photograph All Major Components prior to assembly		(Complete) Complete





80. Final Insulation Resistance Test	Megohms		
Pass the Hi pot			
81. Assembled Shaft Endplay	inches		
Na			
82. Assembled Shaft Runout	0.0002 inches		
83. Test Run Voltage			
Volts	Volts	Volts	
457	456	459	



Co sign DM

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84. Test Run Amperage

Amps

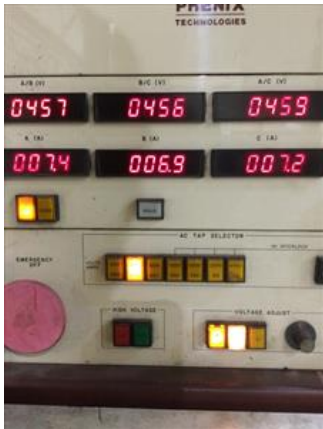
7.4

Amps

6.9

Amps

7.2



85. Drive End Vibration Readings - Inches Per Second

Horizontal

Vertical

Axial

86. Opposite Drive End Vibration Readings - Inches Per Second

Horizontal

Vertical

Axial

87. Ambient Temperature - Fahrenheit

88. Drive End Bearing Temps - Fahrenheit

5 Minutes

10 Minutes

15 Minutes

89. Opposite Drive End Bearing Temps - Fahrenheit

5 Minutes

10 Minutes

15 Minutes

90. Document Final Condition with Pictures after paint





91. Final Pics and QC Review

RW

RW

Co sign DM



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1. **APPLICABILITY.** The sale of any and all goods and/or services by Mock, Inc. d/b/a Hi-Speed Industrial Service ("Hi-Speed") shall be specifically conditioned upon and subject to the following terms and conditions which are incorporated by reference into any contracts and purchase orders with Hi-Speed, and which shall form and become a part of any agreement related thereto. Buyer's acceptance of any offer or quotation made by Hi-Speed for sale of any goods or services is expressly made subject to the terms and conditions set forth herein and to be so effective, Buyer need not sign or approve these Terms and Conditions to be bound hereunder provided a copy of same is provided to Buyer through any means. None of the terms and conditions contained herein may be added to, expanded, changed, modified, superseded or otherwise altered except as revised in writing and duly executed by Hi-Speed, and all orders received by Hi-Speed shall be governed only by the terms and conditions contained herein, notwithstanding any terms, conditions or provisions of any purchase order, release order, authorization or any other form issued by the Buyer. Hi-Speed hereby objects to any additional, modified, changed, deleted, altered or other terms and conditions not contained herein and notifies Buyer that any such terms or provisions are expressly rejected by Hi-Speed.
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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.
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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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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.