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— EVERY DAY SINCE 1946 —

Motor Shop Repairs

Job Number 99918

Prepared for Phelps Fan Manufacturing Co.

10701 Interstate 30
Little Rock AR 72209

Table of Contents



Hi-Speed Industrial Service
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AC Recondition As Found

Phelps Fan Manufacturing Co.

10701 Interstate 30
Little Rock, AR 72209

FolderID: 99918
FormID: 13830095



AC Recondition - Rev. 2

Location: MOTOR SHOP LR

Serial Number: P36G5234

Description: 60HP RELIANCE 1800RPM 364T

Hi-Speed Job Number: 99918

Manufacturer: Reliance

Product Number: P36G5234B

Serial Number: P36G5234

HP/kW: 60 (HP)

RPM: 1780 (RPM)

Frame: 364T

Voltage: 460

Current: 68

Phase: Three

Hz: 60 (Hz)

Service Factor: 1.15

Enclosure: TEFC

J-box Included: Complete

Coupling/Sheave: None

Date Received: 06/13/2022

Bearing RTDs: No

Stator RTDs: No

Repair Stage: Teardown Inspection

Heaters: No

Winding Type: Random Wound

Bearing Type: Rolling Element

Priorities Found: ☒ 3 - High

☐ 6 - Good

Overall Condition

1. Report Date 06/20/2022

2. Nameplate Picture







3. Describe the Overall Condition of the Equipment as Received

Initial Mechanical/Electrical

☒ 4. Does Shaft Turn Freely? (Yes) Yes

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5. Does Shaft Have Visible Damage?	(No) No
	
6. Assembled Shaft Runout	0.0005 Inches
7. Assembled Shaft End Play	inches
8. Air Gap Variation <10%	
9. Lead Condition	(P) Pass
	
10. Lead Length	10 Inches
11. Frame Condition	
	
12. Fan Condition	(P) Pass
	
13. Broken or Missing Components	
Initial Electrical Inspection	
14. Insulation Resistance/Megger	20000 Megohms
15. Winding Resistance	
1-2	1-3 2-3
16. Perform Surge Test	(P) Pass

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17. Stator Condition

Recondition



Mechanical Inspection

18. Drive End Bearing Number-

6313 c3



19. Drive End Bearing Qty.

1

20. Drive End Bearing Type

(Ball) Ball Bearing



21. Drive End Lubrication Type

(Grease) Grease Lubricated

22. Drive End Bearing Insulation or Grounding Device?

23. Drive End Wavy Washer/Snap-Ring Other Retention Device?

no

24. Drive End Bearing Condition

worn





25. Opposite Drive End Bearing Number-

6313 c3



26. Opposite Drive End Bearing Qty.

1

27. Opposite Drive End Bearing Type	(Ball) Ball Bearing
	
28. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
29. Opposite Drive End Bearing Insulation or Grounding Device?	no
30. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer
	
31. Opposite Drive End Bearing Condition	worn
32. Drive End Seal	end pro
	
33. Opposite Drive End Seal	end pro
	
Rotor Inspection	
34. Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
35. Growler Test	(Pass) Pass
36. Number of Rotor Bars	47

37. Rotor Condition



38. List the Parts needed for the Repair Below
2-6313 c3 bearings

39. Signature of Technician that Disassembled Motor

Trevor Hall

Mechanical Fits- Rotor

40. Shaft Runout **0.0005 inches**

41. Rotor Runout

Drive End Bearing Fit

Rotor Body

Opposite Drive End Bearing

42. Coupling Fit Closest to Bearing Housing

0 Degrees

90 Degrees

120 Degrees

2.3749

2.3749

2.3749

43. Coupling Fit Closest to the end of the Shaft

0 Degrees

60 Degrees

120 Degrees

2.3749

2.3749

2.3749

44. Drive End Bearing Shaft Fit

0 Degrees

60 Degrees

120 Degrees

2.5599






2.5599




2.5598



45. Drive End Bearing Shaft Fit Condition

(P) Pass

46. Opposite Drive End Bearing Shaft Fit			
0 Degrees		60 Degrees	120 Degrees
2.5598		2.5598	2.5598
			
47. Opposite Drive End Bearing Shaft Fit Condition			(P) Pass
48. Shaft Air Seal Fits			
Drive End Air Seal		Opposite Drive End Air Seal	
Mechanical Fits- Bearing Housings			
49. Drive End - Endbell Bearing Fit			
0 Degrees		60 Degrees	120 Degrees
5.5132		5.5129	5.5131
 Egg shaped and oversized			
			
50. Drive End - Endbell Bearing Fit Condition			(F) Fail
51. Opposite Drive End - Endbell Bearing Fit			
0 Degrees		60 Degrees	120 Degrees
5.5143		5.5143	5.5143
 Oversized			
			
52. Opposite Drive End - Endbell Bearing Fit Condition			(F) Fail

53. Bearing Cap Condition	
Drive End Bearing Cap	Opposite Drive End Bearing Cap
pass	pass
	
54. End Bell Air Seal Fits	
Drive End Air Seal	Opposite Drive End Air Seal
55. List Machine Work Needed Below <i>Sleeve opposite drive end bell</i>	
56. Technician	Trevor Hall
	
Root Cause of Failure	
57. Failure locations <i>Both end bells are oversized</i>	
58. Root cause of failure	



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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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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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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.
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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.