

Motor Shop Repairs

Job Number 99918

Prepared for Phelps Fan Manufacturing Co.

10701 Interstate 30 Little Rock AR 72209

Table of Contents

AC Recondition As Found - MOTOR SHOP LR

AC Recondition - Rev. 2: P36G5234

1.0



FolderID: 99918

FormID: 13830095



AC Recondition As Found

Phelps Fan Manufacturing Co.

10701 Interstate 30 Little Rock, AR 72209



AC Recondition - Rev. 2

MOTOR SHOP LR Location:

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:	Final
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: 3 - High



7 - Good

Overall Condition

06/20/2022 Report Date

Nameplate Picture



3. Describe the Overall Condition of the Equipment as Received

Initial Mechanical/Electrical

4. Does Shaft Turn Freely? (Yes) Yes

(Yes) Yes

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	Initial Electrical Inspection				
14.	Insulation Resistance/Megger			20000 Megohms	
15.	Winding Resistance				
	1-2	1-3	2-3		
1 6.	Perform Surge Test			(P) Pass	

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



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



Opposite Drive End Lubrication Ty	ре
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(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 Inspection34. Rotor Type/Material(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast35. Growler Test(Pass) Pass36. Number of Rotor Bars4737. Rotor Condition



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

1-/Al

Mech	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 Housi	ng			
	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.	46. Opposite Drive End Bearing Shaft Fit		
	0 Degrees	60 Degrees	120 Degrees
	2.5598	2.5598	2.5598



47 .	7. Opposite Drive End Bearing Shaft Fit Condition			(P) Pass
48.	Shaft Air Seal Fits			
	Drive End Air Seal	Opposite Drive End Air Seal		
Mecha	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



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	



Rotor Weight



54. End Bell Air Seal Fits	
Drive End Air Seal	Opposite Drive End Air Seal
55. List Machine Work Needed Be	WC
Sleeve opposite drive end bell	
56. Technician	Trevor Hall
Dynamic Balance Report	
57. Rotor Weight and Balance Gra	de

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Balance Grade

58.	Initial Balance Readings				
	Drive End	Opposite Drive End			
59.	9. Final Balance Readings				
	Drive End	Opposite Drive End			
60.	Technician				
Rewir	Rewind				
61.	Core Test Results - Watts loss per Po	pund			
	Pre-Burnout	Post Burnout			
62.	Core Hot Spot Test				
	Pre-Burnout	Post-Burnout			
00	Deat Deviced Electrical Test Jacobsia	a Desistance			
	Post Rewind Electrical Test- Insulation	n Resistance			
	Post Rewind Polarization Index				
65.	Post Rewind Winding Resistance	4.0	0.0		
	1-2	1-3	2-3		
66	Post Rewind Surge Test		(Pass) Pass		
	Post Rewind Hi-Pot		(1 433) 1 433		
	Technician				
	Root Cause of Failure				
	Failure locations				
09.	Both end bells are oversized				
70	Root cause of failure				
	anical Fits- Rotor - Post Repair Shaft Runout Post Repair				
	·				
12.	Rotor Runout Post Repair	Deter Ded.	Opposite Drive Ford Bearing		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing		
73.	Coupling Fit Closest to Bearing Hous	ing Post Repair			
	0 Degrees	90 Degrees	120 Degrees		
	o Degrees	30 Degrees	120 Degrees		
74.	Coupling Fit Closest to the end of the	Shaft Post Repair			
	0 Degrees	60 Degrees	120 Degrees		
	Ū	· ·			
75.	Drive End Bearing Shaft Fit Post Rep	air			
	0 Degrees	60 Degrees	120 Degrees		
76.	Opposite Drive End Bearing Shaft Fit				
	0 Degrees	60 Degrees	120 Degrees		
77.	Shaft Air Seal Fits Post Repair				
	Drive End Air Seal	Opposite Drive End Air Seal			
	Shaft Repair Sign-off				
Mech	Mechanical Fits- Bearing Housings - Post Repair				

79. Drive End - Endbell Bearing Fit Post Repair		
0 Degrees	60 Degrees	120 Degrees
5.5122	5.5122	5.5123



80. Opposite Drive End - Endbell Bearing Fit Post Repair		
0 Degrees	60 Degrees	120 Degrees
5.5122	5.5121	5.5122



	460	460	460				
	Volts	Volts	Volts				
88	. Test Run Voltage						
87	. Assembled Shaft Runout			0.0005 inches			
86	. Assembled Shaft Endplay						
85	. Final Insulation Resistance Test						
84	. Photograph All Major Components p	otograph All Major Components prior to assembly					
Asse	Assembly						
83	. End Bell Repair Sign-off						
	Drive End Air Seal	Opposite Drive End Air Seal					
82	. End Bell Air Seal Fits Post Repair	Bell Air Seal Fits Post Repair					
	Brive End Bearing Cap	opposite Brive Life Bearing Cap					
	Drive End Bearing Cap	Opposite Drive End Bearing Cap					
81	Bearing Cap Condition Post Repair						

97.	Final Pics and QC Review			Trevor Hall		
96.	·					
95.	Final Test Run Sign-off					
	5 Minutes	10 Minutes	15 Minutes			
94.	Opposite Drive End Bearing Temps - Fahrenheit					
	5 Minutes	10 Minutes	15 Minutes			
93.	Drive End Bearing Temps - Fahrenheit					
92.	Ambient Temperature - Fahrenheit					
	HUHZUNIAI	verucai	Axiai			
91.	Opposite Drive End Vibration Rea Horizontal	Vertical	Axial			
01	Opposite Drive End Vibration Rea	dings Inches Per Second				
	Horizontal	Vertical	Axial			
90.	Drive End Vibration Readings - Inches Per Second					
	20	20	20			
	Amps	Amps	Amps			

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- 5. <u>DELIVERY OF GOODS AND/OR SERVICES.</u> 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.
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- 8. <u>WARRANTIES.</u> 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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