



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

LR Motor Shop Repairs

Job Number 100357

Prepared for ARKANSAS INDUSTRIAL MACHINERY

3804 N. NONA ST
NORTH LITTLE ROCK AR 72118

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

AC Recondition As Found
ARKANSAS INDUSTRIAL MACHINERY
3804 N. NONA ST
NORTH LITTLE ROCK, AR 72118

FolderID: 100357
FormID: 14670634

AC Recondition - Rev. 2

Location: Shop
Serial Number: 130217
Description: 4kW Ingersoll Rand 1800RPM 112M

Hi-Speed Job Number:	100357
Manufacturer:	Ingersoll-Rand
Product Number:	FF112M-4 0012
Serial Number:	130217
HP/kW:	4 (kW)
RPM:	1453 (RPM)
Frame:	112M
Voltage:	460
Current:	7.76
Phase:	Three
Hz:	50 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
J-box Included:	Complete
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Teardown Inspection
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: ● 1 - High ● 8 - Good

Overall Condition

1. Report Date
2. Nameplate Picture



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3. Photos of all six sides of the machine.		
4. Describe the Overall Condition of the Equipment as Received		
Initial Mechanical/Electrical		
<input checked="" type="radio"/> 5. Does Shaft Turn Freely?	(Yes) Yes	
6. Does Shaft Have Visible Damage?	(No) No	

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7. Assembled Shaft Runout	0.0003 Inches
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8. Assembled Shaft End Play	
9. Air Gap Variation <10%	
10. Lead Condition	(P) Pass



11. Lead Length	6 Inches
12. Frame Condition	pass
13. Fan Condition	(P) Pass



14. Broken or Missing Components	na
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Initial Electrical Inspection

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15. Insulation Resistance/Megger	6412 Megohms	
16. Winding Resistance		
1-2	1-3	2-3
1.612	1.612	1.615
17. Perform Surge Test	(P) Pass	
18. Stator Condition	wash and bake	



Mechanical Inspection

19. Drive End Bearing Number-

6206ZZ



Frosted

20. Drive End Bearing Qty.	1
21. Drive End Bearing Type	(Ball) Ball Bearing
22. Drive End Lubrication Type	(Grease) Grease Lubricated
23. Drive End Bearing Insulation or Grounding Device?	na
24. Drive End Wavy Washer/Snap-Ring Other Retention Device?	snap ring
25. Drive End Bearing Condition	frosted grease burnt

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26. Opposite Drive End Bearing Number-

6205ZZ



Frosted

27. Opposite Drive End Bearing Qty.	1
28. Opposite Drive End Bearing Type	(Ball) Ball Bearing
29. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
30. Opposite Drive End Bearing Insulation or Grounding Device?	na
31. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer
32. Opposite Drive End Bearing Condition	frosted grease burnt
33. Drive End Seal	
34. Opposite Drive End Seal	
Rotor Inspection	
35. Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
36. Growler Test	(Pass) Pass
37. Number of Rotor Bars	32
38. Rotor Condition	pass



39. List the Parts needed for the Repair Below

1-6206 bearing 2-6205 bearing

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40. Signature of Technician that Disassembled Motor

RW

RW

Mechanical Fits- Rotor

41. Shaft Runout **0.0003 inches**

42. Rotor Runout

Drive End Bearing Fit

Rotor Body

Opposite Drive End Bearing

43. Coupling Fit Closest to Bearing Housing

0 Degrees

90 Degrees

120 Degrees

44. Coupling Fit Closest to the end of the Shaft

0 Degrees

60 Degrees

120 Degrees

45. Drive End Bearing Shaft Fit

0 Degrees

60 Degrees

120 Degrees

1.1814

1.1814

1.1814



46. Drive End Bearing Shaft Fit Condition

(P) Pass

47. Opposite Drive End Bearing Shaft Fit

0 Degrees

0.9845

60 Degrees

0.9845

120 Degrees

0.9845



48. Opposite Drive End Bearing Shaft Fit Condition

(P) Pass

49. Shaft Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

Mechanical Fits- Bearing Housings

50. Drive End - Endbell Bearing Fit

0 Degrees

2.4411

60 Degrees

2.4411

120 Degrees

2.4411



51. Drive End - Endbell Bearing Fit Condition


(P) Pass

52. Opposite Drive End - Endbell Bearing Fit		
0 Degrees	60 Degrees	120 Degrees
2.0474	2.0474	2.0474



53. Opposite Drive End - Endbell Bearing Fit Condition		(P) Pass
54. Bearing Cap Condition		
Drive End Bearing Cap	Opposite Drive End Bearing Cap	
pass		



55. End Bell Air Seal Fits		
Drive End Air Seal		Opposite Drive End Air Seal
56. List Machine Work Needed Below <i>Aegis ring shaft size 1.482</i>		
57. Technician		RW
		
Root Cause of Failure		
58. Failure locations		
59. Root cause of failure		

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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.
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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