

LR Motor Shop Repairs

Job Number 102406

Prepared for Ryerson (10858)

7701 Lindsey rd Little rock ar 72206

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AC Inspection as Found - MOTOR SHOP LR

AC Inspection - Rev. 2: E0807/5152657

1.0



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

> FolderID: 102406 FormID: 19183260

AC Inspection as Found

Ryerson (10858) 7701 Lindsey rd Little rock, ar 72206

Serial Number:

AC Inspection - Rev. 2

Location: MOTOR SHOP LR

Description:45KW SIEMENS 3600RPM 200L

E0807/5152657

Hi-Speed Job Number:	102406
Manufacturer:	Siemens
Product Number:	1LA9209-2AA99-ZT19
Serial Number:	E0807/5152657
HP/kW:	45 (kW)
RPM:	3570 (RPM)
Frame:	200L
Voltage:	460
Current:	72
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.19
Enclosure:	TEFC
# of Leads:	6
J-box Included:	Complete
Coupling/Sheave:	Gear
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	Yes
Shaft Machined Fit Repairs Required:	No
Bearing Housing Machined Fit Repairs Required:	No
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: 4 - High

8 - Good

Overall Condition

1. Report Date 02/06/2024

2. Nameplate Picture



3. Photos of all six sides of the machine.



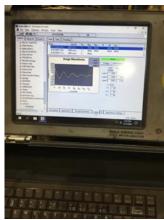








































(P) Pass

	4.	Describe the Overall Condition of the Equipment as Received Dirty		
	5.	Distance from the end of the shaft to the Coupling/Sheave	inches	
	-	Flush		
h	nitial	Mechanical/Electrical		
	6.	Does Shaft Turn Freely?	(No) No	
	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		
	12.	Lead Condition	(P) Pass	
	13.	Lead Length	54 Inches	
	14.	Lead Numbers	T1-T6	
	15.	Frame Condition	pass	



17. Broken or Missing Components	na	
18. Does it have Lugs?, If so what is the	e Stud Size? (No) No	

Initial Electrical Inspection

Fan Condition

19.	Insulation Resistance/Megger				Megohms
-	Na				
20.	Winding Resistance				
	1-2	1-3	2	2-3	
-	Na				
2 1.	Perform Surge Test			(NA) Not	Applicable
-	Blown in slot				
22.	Number of Stator Slots				36
23.	Stator Condition				pass
24.	Stator Thermistors/Ohms				
-	Na				
25.	Stator Overloads/Ohms				
-	Na				
Mach	anical Inspection				

Mechanical Inspection

26. Drive End Bearing Brand

na



27. Drive End Bearing Number-	NU212
28. Drive End Bearing Qty.	1
29. Drive End Bearing Type	(Roller) Roller Bearing
30. Drive End Lubrication Type	(Oil) Oil Lubricated
31. Drive End Bearing Insulation or Grounding Device?	na
32. Drive End Wavy Washer/Snap-Ring Other Retention Device?	snap ring

33. Drive End Bearing Condition





roller cage failed

34. Opposite Drive End Bearing Brand





35. Opposite Drive End Bearing Number-	6212
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?	snap ring
41. Opposite Drive End Bearing Condition	
Normal wear	



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Mechanical Fits- Rotor 50. Shaft Runout Drive End Bearing Fit Coupling Fit Closest to the end of the Shaft Cou	12	Drive End Seal		failed
1.43 Opposite Drive End Seal Slinger needs replaced				raneu
Rotor Inspection 44. Rotor Type/Material (Squirrel Aluminum) Squirrel Cage Aluminum Die Cast 45. Growher Test (Pass) Pass 46. Number of Rotor Bars 2 23 47. Rotor Condition pass needs cleaning 48. List the Parts needed for the Repair Below ***********************************				slinger needs replaced
44. Rotor TyperMaterial 45. Growler Test (Pass) Pass 46. Number of Rotor Bars 23 47. Rotor Condition pass needs cleaning 48. List the Parts needed for the Repair Below Number of Technician that Disassembled Motor Cw 49. Signature of Technician that Disassembled Motor Cw 50. Shaft Runout 0,001 inches 51. Rotor Runout Drive End Bearing Fit Rotor Body Opposite Drive End Bearing 52. Coupling Fit Closest to Bearing Housing Degrees 90 Degrees 120 Degrees 53. Coupling Fit Closest to the end of the Shaft Degrees 60 Degrees 120 Degrees 54. Drive End Bearing Shaft Fit Condition Person Shaft Fit Opposite Drive End Bearing Shaft Fit Condition (P) Pass 55. Drive End Bearing Shaft Fit Condition (P) Pass 56. Opposite Drive End Bearing Shaft Fit Condition (P) Pass 57. Opposite Drive End Bearing Shaft Fit Condition (P) Pass 58. Shaft Air Seal Opposite Drive End Air Seal Machanical Fits- Bearing Housings Whetherical Fits- Bearing Housings 59. Drive End - Endbell Bearing Fit Opposite Drive End Air Seal		• •		Siniger needs replaced
Cage Aluminum Die Cast (Pass) Pass Pas		•		(Squirrel Aluminum) Squirrel
46. Number of Rotor Bars 47. Rotor Condition 48. List the Parts needed for the Repair Below **N2121** 6212		Trotol Typo/Matorial		Cage Aluminum Die Cast
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59. Drive End - Endbell Bearing Fit 0 Degrees 60 Degrees 120 Degrees	Mech			
0 Degrees 60 Degrees 120 Degrees				
	J.	-	60 Degrees	120 Degrees
		4.3319	4.3317	4.3321

00				
	Drive End - Endbell Bearing Fit Cond			(P) Pass
61.	Opposite Drive End - Endbell Bearing	ı Fit		
	0 Degrees	60 Degrees	120 Degrees	
	4.3317	4.3319	4.3322	
62.	Opposite Drive End - Endbell Bearing	Fit Condition		(P) Pass
63.	Bearing Cap Condition			
	Drive End Bearing Cap	Opposite Drive End Bearing Cap		
_	D			
-	Pass			
64.	End Bell Air Seal Fits			
	Drive End Air Seal	Opposite Drive End Air Seal		
-	Na			
65.	List Machine Work Needed Below			
	Na			
66.	Technician			Cw
66.	Technician Munician	•		Cw
		•		Cw
Root (Chris			Cw
Root (Cause of Failure	-		Cw
Root (67.	Cause of Failure Failure locations			Cw
Root (67.	Cause of Failure Failure locations Seals and DE bearing and windings Root cause of failure	o the DE bearing locking the rollers in place an	nd continuing to spin bl	
Root (67.	Cause of Failure Failure locations Seals and DE bearing and windings Root cause of failure Seal failed causing lack of lubrication to		nd continuing to spin bl	
67. 68.	Cause of Failure Failure locations Seals and DE bearing and windings Root cause of failure Seal failed causing lack of lubrication to windings in slot		nd continuing to spin bl	
67. 68.	Cause of Failure Failure locations Seals and DE bearing and windings Root cause of failure Seal failed causing lack of lubrication of windings in slot mic Balance Report		nd continuing to spin bl	
67. 68. Dynar 69.	Cause of Failure Failure locations Seals and DE bearing and windings Root cause of failure Seal failed causing lack of lubrication of windings in slot mic Balance Report Rotor Weight and Balance Grade Rotor Weight	o the DE bearing locking the rollers in place an	nd continuing to spin bl	
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Drive End

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Opposite Drive End

71. Final Balance Readings

Drive End

Opposite Drive End



72. Technician Cw

Men

Rewind

73. Core Test Results - Watts loss per Pound

Pre-Burnout Post Burnout

Na

74. Core Hot Spot Test

Pre-Burnout Post-Burnout

Na

75. Post Rewind Electrical Test- Insulation Resistance

Megohms

■ Na

76. Post Rewind Polarization Index

Polarization Index

■ Na

77. Post Rewind Winding Resistance

1-2 1-3 2-1

Na

78. Post Rewind Surge Test

Na

79. Post Rewind Hi-Pot

micro-amps

■ Na

80. Technician

RHR

81. QC Check All Parts for Cleanliness Prior to Assembly

Cw

82. Photograph All Major Components prior to assembly















83. Final Pass	nsulation Resistance Test			Megohms
84. Asser	bled Shaft Endplay			inches
85. Asser	bled Shaft Runout			inches
86. Test F	un Voltage			
Volts		Volts	Volts	



87.	Test Run Amperage		
	Amps	Amps	Amps
-	Witnessed by Trever Hall		



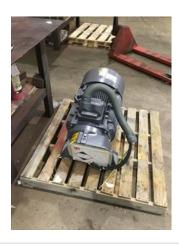
88.	Drive End Vibration Readings - Inches	s Per Second	
	Horizontal	Vertical	Axial
-	Na		
89.	Opposite Drive End Vibration Reading	s - Inches Per Second	
	Horizontal	Vertical	Axial
-	Na		
90.	Ambient Temperature - Fahrenheit		
-	Na		
91.	Drive End Bearing Temps - Fahrenhei	t	
	5 Minutes	10 Minutes	15 Minutes
-	Na		
92.	Opposite Drive End Bearing Temps - I	Fahrenheit	
	5 Minutes	10 Minutes	15 Minutes
-	Na		

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93. Document Final Condition with Pictures after paint







94. Final Pics and QC Review

"den

Cw

Sign off: TRH



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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 bee 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. <u>BILLING AND PAYMENT TERMS.</u> 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. <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.
- **DELIVERY SITE AND TIME FOR PERFORMANCE.** Hi-Speed and Buver 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

replace any defective or non-conforming goods in accordance with the applicable manufacturer's warranty. Warranty for any defective or incorrect parts is limited to the repair or replacement of those parts. Hi-Speed warrants that all services will conform in all material respects to the description of services identified in the quotation and will be performed in a good and workmanlike manner in accordance with industry practices and standards. Should the services be reasonably rejected or not conform with the foregoing warranties, Hi-Speed shall, at its sole cost, re-perform the defective or nonconforming services. Notwithstanding the foregoing, these warranties do not extend to goods or services to the extent that such goods have been subject to misuse, neglect or abuse not caused by Hi-Speed or have been used in violation of the approved written instructions furnished to Buyer. THE FOREGOING REPRESENTS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY HI-SPEED WITH RESPECT TO ALL GOODS SOLD AND IS IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESS OR IMPLIED. HI-SPEED EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICLAR USE OR PURPOSE. BUYER WAIVES ANY CLAIM THAT THESE EXCLUSIONS OR LIMITATIONS DEPRIVE IT OF AN ADEQUATE REMEDY AT EQUITY OR LAW OR CAUSE THIS AGREEMENT TO FAIL IN ITS ESSENTIAL PURPOSE. BUYER SHALL BE ENTITLED TO NO OTHER REMEDY OTHER THAN AS SET FORTH HEREIN, REGARDLESS OF THE CLAIM OR CAUSE OF ACTION, WHETHER BASED IN CONTRACT, TORT, NEGLIGENCE, GOODS LIABILITY, STRICT LIABILITY OR OTHERWISE.

- 9. <u>LIMITATION OF DAMAGES.</u> HI-SPEED SHALL HAVE NO LIABILITY TO BUYER WITH RESPECT TO THE SALE OR DELIVERY OF ANY GOODS OR THE REPAIR THEREOF OR WITH RESPECT TO THE SALE OR PERFORMANCE OF ANY SERVICES, FOR LOST PROFITS, SPECIAL, CONSEQUENTIAL, EXEMPLARY, PUNITIVE OR INCIDENTAL DAMAGES OF ANY KIND OR NATURE WHETHER ARISING IN CONTRACT, TORT, GOODS LIABILITY OR OTHERWISE, EVEN IF HI-SPEED WAS ADVISED OF THE POSSIBILITY OF SUCH LOSS OR DAMAGES. HI-SPEED SHALL NOT BE LIABLE FOR ANY DAMAGES OR DELAYS CAUSED BY ANY FAILURE TO MAKE ANY DELIVERY OF GOODS BY ANY EXPECTED TIME OR DATE OR THE FAILURE TO PROVIDE OR COMPLETE ANY SERVICES BY ANY EXPECTED DATE OR TIME. IN NO EVENT SHALL HI-SPEED BE LIABLE TO BUYER FOR ANY DAMAGES WHATSOEVER IN EXCESS OF THE TOTAL PRICE PAID FOR ALL GOODS AND/OR SERVICES HEREUNDER OR REFERENCED IN ANY QUOTATION OR THE PURCHASE ORDER.
- 10. <u>SEVERABILITY.</u> 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. <u>ABANDONED EQUIPMENT.</u> 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, earth quake, 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.
- 14. <u>NONWAIVER.</u> No course of dealing or failure of either party to strictly enforce any term, right, or condition of these Standard Terms and Conditions will be construed as a waiver of such term, right or condition. Any waiver by Hi-Speed will only be in writing and will waive no succeeding breach of a term, right or condition.
- 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.