

EVERY DAY SINCE 1946

LR Motor Shop Repairs

Job Number 100764

Prepared for Twin Rivers (12049)

1701 Jefferson Parkway White Hall AR 71602

Table of Contents

AC Recondition As Found - Shop



AC Recondition As Found

Twin Rivers (12049) 1701 Jefferson Parkway White Hall, AR 71602

AC Recondition - Rev. 2

Location:	Shop	
Serial Number:	EJ595 2116 01002	
Description: 1.5KW SIEMENS 1800RPM 90L		

Hi-Speed Job Number:	100764
Manufacturer:	Siemens
Product Number:	1 LA5096-4BA99-Z
Serial Number:	EJ595 2116 01002
HP/kW:	1.5 (kW)
RPM:	1735 (RPM)
Frame:	90L
Voltage:	230 / 460
Current:	6.2/3.1
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
J-box Included:	Complete
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	Yes
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: **6 - Good**

Overall Condition

- 1. Report Date
- 2. Nameplate Picture



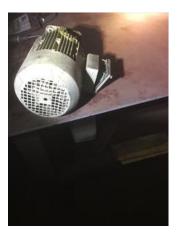
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Hi-Speed Industrial Service 7030 Ryburn Dr Millington, Tn 38053 901-873-5300

> FolderID: 100764 FormID: 15673239

3. Photos of all six sides of the machine.









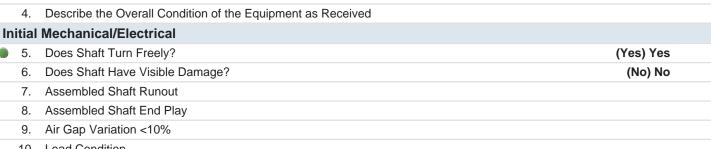












10. Lead Condition









12. Frame Condition

13. Fan Condition

(P) Pass



14	Broken or Missing Components		
Initial	Electrical Inspection		
15.	Insulation Resistance/Megger		
16.	Winding Resistance		
	1-2	1-3	2-3
17.	Perform Surge Test		
18.	Number of Stator Slots		

19. Stator Condition



Mechanical Inspection			
20.	Drive End Bearing Number-		6305
21.	Drive End Bearing Qty.		1
22.	Drive End Bearing Type		(Ball) Ball Bearing
23.	Drive End Lubrication Type		(Grease) Grease Lubricated
24.	Drive End Bearing Insulation or Grou	unding Device?	no
25.	Drive End Wavy Washer/Snap-Ring	Other Retention Device?	wavy washer
26.	Drive End Bearing Condition		
27.	Opposite Drive End Bearing Number	-	6004
28.	Opposite Drive End Bearing Qty.		1
29.	Opposite Drive End Bearing Type		(Ball) Ball Bearing
30.	Opposite Drive End Lubrication Type)	(Grease) Grease Lubricated
31.	Opposite Drive End Bearing Insulation	on or Grounding Device?	no
32.	Opposite Drive End Wavy Washer/S	nap-Ring Other Retention De	vice? snap ring
33.	Opposite Drive End Bearing Condition	n	
34.	Drive End Seal		25 40 7
35.	Opposite Drive End Seal		
Rotor	Inspection		
36.	Rotor Type/Material		
37.	Growler Test		(Pass) Pass
38.	Number of Rotor Bars		
39.	Rotor Condition		wash and bake
40.	List the Parts needed for the Repair	Below	
41.	Signature of Technician that Disasse	embled Motor	RW
Mecha	inical Fits- Rotor		
42.	Shaft Runout		
43.	Rotor Runout		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing

	44.	Coupling Fit Closest to Bearing Housing	ng		
		0 Degrees	90 Degrees	120 Degrees	
	45.	Coupling Fit Closest to the end of the	Shaft		
		0 Degrees	60 Degrees	120 Degrees	
	46.	Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		0.9847	0.9847	0.9847	
	47.	Drive End Bearing Shaft Fit Condition		(P) Pass	
	48.	Opposite Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		0.7879	0.7879	0.7879	
	49.	Opposite Drive End Bearing Shaft Fit	Condition	(P) Pass	
	50.	Shaft Air Seal Fits			
		Drive End Air Seal	Opposite Drive End Air Seal		
IV		anical Fits- Bearing Housings			
	51.	Drive End - Endbell Bearing Fit		100 5	
		0 Degrees	60 Degrees	120 Degrees	
	50	2.4415	2.4415	2.4415 (D) Doop	
		Drive End - Endbell Bearing Fit Condit		(P) Pass	
	53.	Opposite Drive End - Endbell Bearing			
		0 Degrees 1.6538	60 Degrees 1.6538	120 Degrees 1.6538	
	54	Opposite Drive End - Endbell Bearing		(P) Pass	
		Bearing Cap Condition		(г) газэ	
	55.	Drive End Bearing Cap	Opposite Drive End Bearing Cap		
		Drive Life Dearing Cap	Opposite Drive Lind Dearing Cap		
	56.	End Bell Air Seal Fits			
		Drive End Air Seal	Opposite Drive End Air Seal		
	57.	List Machine Work Needed Below			
	58.	Technician		RW	
	Ð				
D	-	nic Balance Report			
	59.	Rotor Weight and Balance Grade			
		Rotor Weight	Balance Grade		
	60.	Initial Balance Readings			
		Drive End	Opposite Drive End		
	<i>c i</i>				
	61.	9			
		Drive End	Opposite Drive End		

62.	Technician			
Rewin	nd			
63.	Core Test Results - Watts loss per Po	und		
	Pre-Burnout	Post Burnout		
64.	Core Hot Spot Test			
	Pre-Burnout	Post-Burnout		
65.	Post Rewind Electrical Test- Insulation	n Resistance		
66.	Post Rewind Polarization Index			
67.	Post Rewind Winding Resistance			
	1-2	1-3	2-3	
68.	Post Rewind Surge Test			
69.	Post Rewind Hi-Pot			micro-amps



70.	Technician				
Root	Root Cause of Failure				
71.	Failure locations				
	De seal				
72.	Root cause of failure				
	De seal failed letting oil inside of motor	causing damage to winding			
Mecha	anical Fits- Rotor - Post Repair				
73.	Shaft Runout Post Repair				
74.	Rotor Runout Post Repair				
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing		
75.	Coupling Fit Closest to Bearing Housi	ng Post Repair			
	0 Degrees	90 Degrees	120 Degrees		
76.	Coupling Fit Closest to the end of the	Shaft Post Repair			
	0 Degrees	60 Degrees	120 Degrees		
77.	Drive End Bearing Shaft Fit Post Repa	air			
	0 Degrees	60 Degrees	120 Degrees		

78.	Opposite Drive End Bearing Shaft Fit	Post Repair	
	0 Degrees	60 Degrees	120 Degrees
79.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
	Shaft Repair Sign-off		
Mecha	anical Fits- Bearing Housings - P	ost Repair	
81.	Drive End - Endbell Bearing Fit Post F	Repair	
	0 Degrees	60 Degrees	120 Degrees
82.	Opposite Drive End - Endbell Bearing	Fit Post Repair	
	0 Degrees	60 Degrees	120 Degrees
83.	Bearing Cap Condition Post Repair		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
84.	End Bell Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
05			
	End Bell Repair Sign-off		
Asser	nbly		

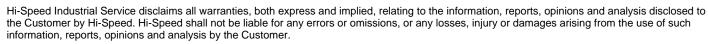
86. Photograph All Major Components prior to assembly







- 87. Final Insulation Resistance Test
- 88. Assembled Shaft Endplay
- 89. Assembled Shaft Runout



90.	Test Run Voltage		
	Volts	Volts	Volts
	460	459	458
	PHENIX		



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91.	Test Run Amperage		
	Amps	Amps	Amps
	2.1	2.2	2.1



92.	Drive End Vibration Readings - Inches	Per Second	
	Horizontal	Vertical	Axial
93.	Opposite Drive End Vibration Reading	s - Inches Per Second	
	Horizontal	Vertical	Axial
94.	Ambient Temperature - Fahrenheit		
95.	Drive End Bearing Temps - Fahrenhei	t	
	5 Minutes	10 Minutes	15 Minutes
96.	Opposite Drive End Bearing Temps - I	Fahrenheit	
	5 Minutes	10 Minutes	15 Minutes
97.	Final Test Run Sign-off		
98.	Document Final Condition with Picture	s after paint	
99.	Final Pics and QC Review		



STANDARD TERMS AND CONDITIONS FOR PURCHASE OF GOOD AND/OR SERVICES

- 1. <u>APPLICABILITY.</u> 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.
- 2. PRICE. All quoted prices shall remain firm and binding for a period of thirty (30) days from the date of quotation or for the period specifically stated in the quotation. The price for any and all goods and/or services ordered or approved by Buyer after thirty (30) days from the date of any quotation are subject to any increase in price that may occur after the expiration of thirty (30) days from the issuance of the quotation and the date the Buyer releases any shipment.
- 3. <u>SCOPE OF GOODS AND/OR SERVICES.</u> 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. <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. 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 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 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

TermsAndConditions

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- 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. <u>GOVERNING LAW AND JURISDICTION.</u> 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. <u>ASSIGNMENT.</u> 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. <u>NO INDIVIDUAL LIABILITY</u>. 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.