

EVERY DAY SINCE 1946

LR Motor Shop Repairs

Job Number 104402

Prepared for Arkansas Lime Company

600 Limedale Rd Batesville AR 72501

Table of Contents

AC Inspection as Found - LITTLE ROCK MOTOR SHOP



LITTLE ROCK MOTOR SHOP

AC Inspection as Found

Arkansas Lime Company 600 Limedale Rd

AC Inspection - Rev. 2

Description:250 HP TOSHIBA

Batesville, AR 72501

Serial Number:

Location:

Hi-Speed Job Number:	104402
Manufacturer:	Toshiba
Product Number:	E2506FLF4BM
HP/kW:	250 (HP)
RPM:	1185 (RPM)
Frame:	N587UZ
Voltage:	460
Current:	296 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
# of Leads:	12
J-box Included:	None
Coupling/Sheave:	Sheave
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final

FolderID: 104402 FormID: 23980593

		Rewind:	No
		Shaft Machined Fit Repairs Required:	No
		Bearing Housing Machined Fit Repairs Required:	Yes
		Heaters:	No
		Winding Type :	Random Wound
		Bearing Type:	Rolling Element
Priorities Found: 🛑 6 - High	🔵 2 - Low	🔵 13 - Good	
Overall Condition			
1. Report Date			

2. Nameplate Picture



3. Photos of all six sides of the machine.







































- Describe the Overall Condition of the Equipment as Received 4. Dirty
- 5. Distance from the end of the shaft to the Coupling/Sheave



2.0405 in

h	nitial	Mechanical/Electrical	
	6.	Does Shaft Turn Freely?	(Y) Yes
	7.	Does the shaft require T.I.R in Lathe to identify additional repairs?	(No) No

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1.4

8. Does Shaft Have Visible Damage?



	9.	Assembled Shaft Runout	0.001 Inches
	10.	Assembled Shaft End Play	inches
	11.	Air Gap Variation <10%	
•	12.	Lead Condition	(P) Pass
	13.	Lead Length	12 Inches
•	14.	Does it have Lugs?, If so what is the Stud Size?	(No) No
	15.	Lead Numbers	1-12
•	16.	Frame Condition	
	17.	Fan Condition	(P) Pass
•	18.	Does motor have internal fan?	(Yes) Yes
•	19.	Broken or Missing Components	
ų		J-box and bolts	
Init	tial	Electrical Inspection	
2	20.	Insulation Resistance/Megger	Megohms



1-2 1	-3 2-3
temp com rnermoplastic None	
esist Status PASS No Test	
ial L1 (Ohms)	
Bal L2 (Ohms) Bal L3 (Ohms)	
L1-L2 (Ohms) 0.01138 Corr	
L2-L3 (Ohms) 0.01138 Corr:	
L3-L1 (Ohms) 0.01156 Corr Max Delta R % 1.624	
Coll 1 (Ohms) 0.01697 Corr Coll 2 (Ohms) 0.01697 Corr	
Cod 3 (Ohms) 0.01753 Corr	
trameplata Application Results Sumimary	
22. Perform Surge Test	(P) Pass
104402 2	
Tending D (48N whitTR-1010/P Step) Edit Tent ID [Endek Calibration	
IN REV Worth Action 9 Sep	
Temperature Teatre	
Restance JLook(ov V	
077 500 Val.	
Sea Vidage Lativas	
23. Number of Stator Slots	72
24. Stator Condition	
25. Stator Thermistors/Ohms	
26. Stator Overloads/Ohms	
echanical Inspection	
27. Drive End Bearing Brand	ΚΟΥΟ
28. Drive End Bearing Number-	NU324
29. Drive End Bearing Qty.	1
30. Drive End Bearing Type	(Roller) Roller Bearing
31. Drive End Lubrication Type	(Grease) Grease Lubricated

- 32. Drive End Bearing Insulation or Grounding Device?
- 33. Drive End Wavy Washer/Snap-Ring Other Retention Device?

snap ring

34. Drive End Bearing Condition

Contamination



35.	Opposite Drive End Bearing Brand	KOYO
36.	Opposite Drive End Bearing Number-	6320
37.	Opposite Drive End Bearing Qty.	1
38.	Opposite Drive End Bearing Type	(Ball) Ball Bearing
39.	Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
40.	Opposite Drive End Bearing Insulation or Grounding Device?	
41.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	snap ring
42.	Opposite Drive End Bearing Condition	
	Normal wear	



43.	Drive End Seal				
44.	Opposite Drive End Seal				
Rotor	Rotor Inspection				
45.	Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast			
46.	Growler Test	(Pass) Pass			
47.	Number of Rotor Bars	60			
4 8.	Rotor Condition				
49.	List the Parts needed for the Repair Below				
	NU324 6320				

Mi

		0			
Μ	echa	anical Fits- Rotor			
	51.	Shaft Runout		ir	nches
	52.	Rotor Runout			
		Drive End Bearing Fit	Rotor Body	Opposite Drive End Bear	ing
	53.	Coupling Fit Closest to Bearing Housing			
		0 Degrees	90 Degrees	120 Degrees	
	54	Coupling Fit Closest to the end of the	Shaft		
	J -1 .	0 Degrees		120 Degrees	
		U Degrees	60 Degrees	120 Degrees	
	55.	Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		5	5	0	
	•	4.7251-4.7253-4.7254			
	56.	Drive End Bearing Shaft Fit Condition		(P)	Pass
	•	Recommend new shaft due to gouging			
	57.	11 5			
		0 Degrees	60 Degrees	120 Degrees	
	_	3.9370-3.9372-3.9372			
	58		Condition	(D)	Pass
	58. 59	Opposite Drive End Bearing Shaft Fit (Shaft Air Seal Fits	Condition	(٢)	Fd33
	59.	Drive End Air Seal	Opposite Drive End Air Seal		
		Drive Enu Ali Sedi	Opposite Drive End All Seal		
Μ	echa	anical Fits- Bearing Housings			
		Drive End - Endbell Bearing Fit			
		0 Degrees	60 Degrees	120 Degrees	
		5	5	Ŭ	
	•	Excessive pitting and gouge marks			
	61.	Drive End - Endbell Bearing Fit Condit	ion	(F	^F) Fail
	62.	Opposite Drive End - Endbell Bearing	Fit		
		0 Degrees	60 Degrees	120 Degrees	
	_				
	•	Excessive pitting and gouge marks		·	-\
	63.	Opposite Drive End - Endbell Bearing	Fit Condition	(F	F) Fail
	64.	Bearing Cap Condition			
		Drive End Bearing Cap	Opposite Drive End Bearing Cap		
	65.	End Bell Air Seal Fits			
	00.	Drive End Air Seal	Opposite Drive End Air Seal		
			opposite Drive End All Oedi		

Cw

	Both end bell bearing fits and recomm	end new shaft due to damage on DE shaft bea	arina fit	
67.	Technician		anny ne	Cw
	Co sign: DM			
Root	Cause of Failure			
68.	Failure locations			
	Bearings and bearing fits			
69.	Root cause of failure			
	Excessive wear and contamination due	e to mixing of grease		
Dynar	mic Balance Report			
70.	Rotor Weight and Balance Grade			
	Rotor Weight	Balance Grade		
71	Initial Balance Readings			
71.	Drive End	Opposite Drive End		
	Drive Eria	Opposite Drive End		
72.	Final Balance Readings			
	Drive End	Opposite Drive End		
73.	Technician			
	anical Fits- Bearing Housings - F			
74.	Drive End - Endbell Bearing Fit Post	Repair		
	0 Degrees	60 Degrees	120 Degrees	
75	Opposite Drive End - Endbell Bearing	n Fit Post Repair		
10.	0 Degrees	60 Degrees	120 Degrees	
	0 209.000	00 2091000	120 2091000	
76.	Bearing Cap Condition Post Repair			
	Drive End Bearing Cap	Opposite Drive End Bearing Cap		
77	End Bell Air Seal Fits Post Repair			
11.	Drive End Air Seal	Opposite Drive End Air Seal		
	Drive Erid Ali Seal	Opposite Drive End All Seal		
78.	End Bell Repair Sign-off			
Asser	nbly			
79.	QC Check All Parts for Cleanliness P	rior to Assembly		
80.	Photograph All Major Components pr	ior to assembly		
81.	Final Insulation Resistance Test			
82.	Assembled Shaft Endplay			
83.	Assembled Shaft Runout			
84.	Test Run Voltage			
	Volts	Volts	Volts	

85.	Test Run Amperage		
	Amps	Amps	Amps
86.	Drive End Vibration Readings - Inches	Per Second	
	Horizontal	Vertical	Axial
87.	Opposite Drive End Vibration Reading	s - Inches Per Second	
	Horizontal	Vertical	Axial
88.	Ambient Temperature - Fahrenheit		
89.	. Drive End Bearing Temps - Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes
90.	Opposite Drive End Bearing Temps -	Fahrenheit	
	5 Minutes	10 Minutes	15 Minutes
91.	Document Final Condition with Picture	es after paint	
92.	Final Pics and QC Review		



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- 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 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.