



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

LR Motor Shop Repairs

Job Number 100494

Prepared for Kimberly Clark (10176-KCM)

500 Murphy Dr.
Maumelle AR 72113

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AC Recondition As Found - *Shop*

AC Recondition - Rev. 2: 01MAN27793 G 001 VX

1.0

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AC Recondition As Found

Kimberly Clark (10176-KCM)

500 Murphy Dr.
Maumelle, AR 72113

FolderID: 100494
FormID: 14919702

AC Recondition - Rev. 2

Location: Shop
Serial Number: 01MAN27793 G 001 VX
Description: 150HP RELIANCE 1800RPM
445TSC

Hi-Speed Job Number:	100494
Manufacturer:	Reliance
Serial Number:	01MAN27793 G 001 VX
HP/kW:	150 (HP)
RPM:	1785 (RPM)
Frame:	445TSC
Voltage:	460
Current:	170
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.15
Enclosure:	TEFC
J-box Included:	Half
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Teardown Inspection
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

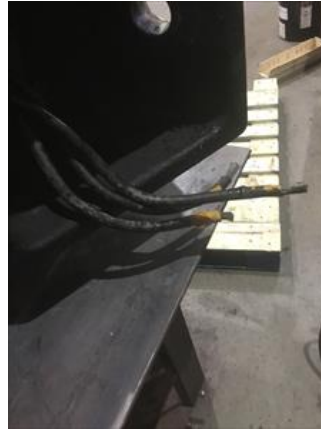
Priorities Found: ● 4 - High ● 5 - Good

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

0.0002 Inches



8. Assembled Shaft End Play

9. Air Gap Variation <10%

10. Lead Condition

(P) Pass



11. Lead Length

16 Inches

12. Frame Condition



13. Fan Condition

(P) Pass

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14. Broken or Missing Components			
Initial Electrical Inspection			
15. Insulation Resistance/Megger			0 Megohms
16. Winding Resistance			
1-2	1-3	2-3	
17. Perform Surge Test			(F) Fail
<div><div></div><div>Rewind</div></div>			

18. Stator Condition

rewind

Found copper balls in bottom of motor



Blew out on end turn

Mechanical Inspection

19. Drive End Bearing Number-

6318



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

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24. Drive End Wavy Washer/Snap-Ring Other Retention Device?	na
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25. Drive End Bearing Condition	
<div></div> Discoloration chemical	



26. Opposite Drive End Bearing Number-	6318
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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?	na
32. Opposite Drive End Bearing Condition	
<div></div> Discoloration chemical	



- 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 | 58 |
| 38. Rotor Condition | wash |



- 39. List the Parts needed for the Repair Below
2-6318ZZ BEARINGS 2-318 Sleeves Rewind
- 40. Signature of Technician that Disassembled Motor

RW

RW

Mechanical Fits- Rotor

- 41. Shaft Runout
- 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	
3.5438	3.5437	3.5438	
46. Drive End Bearing Shaft Fit Condition			(P) Pass




47. Opposite Drive End Bearing Shaft Fit			
0 Degrees	60 Degrees	120 Degrees	
3.5436	3.5436	3.5437	
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		120 Degrees	
7.482		7.4818	

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51.	Drive End - Endbell Bearing Fit Condition	(F) Fail
	Resleeve	
52.	Opposite Drive End - Endbell Bearing Fit	
	0 Degrees	60 Degrees
	7.4812	7.4812
		120 Degrees
		7.4821
53.	Opposite Drive End - Endbell Bearing Fit Condition	(F) Fail
	Resleeve	
54.	Bearing Cap Condition	
	Drive End Bearing Cap	Opposite Drive End Bearing Cap
	pass	pass
55.	End Bell Air Seal Fits	
	Drive End Air Seal	Opposite Drive End Air Seal
56.	List Machine Work Needed Below	
	DE and ODE End Bell Bearing Fits Bad	
57.	Technician	RW
		
Root Cause of Failure		
58.	Failure locations	
59.	Root cause of failure	
	Over Heated	



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1. **APPLICABILITY.** 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. **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.
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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 PARTICULAR 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.

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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.
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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.