

# EVERY DAY SINCE 1946

LR Motor Shop Repairs

## Job Number 103209

Prepared for CINTAS (10704)

102 CHAMPS BLVD MAUMELLE AR 72113

### Table of Contents

AC Inspection as Found - MOTOR SHOP LR



**AC Inspection as Found** 

CINTAS (10704) 102 CHAMPS BLVD MAUMELLE, AR 72113

#### AC Inspection - Rev. 2

Location:	MOTOR SHOP LR
Serial Number:	16893

Description:13.2KW KUEENLE EVAL

Hi-Speed Job Number:	103209
Manufacturer:	Other
Serial Number:	16893
HP/kW:	13.2 (kW)
RPM:	3470 (RPM)
Voltage:	460
Current:	20.5A
Phase:	Three
Hz:	60 (Hz)
Enclosure:	TEFC
# of Leads:	6
J-box Included:	Half
Coupling/Sheave:	None
Date Received:	07/11/2024
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	No
Shaft Machined Fit Repairs Required:	Yes
Bearing Housing Machined Fit Repairs Required:	Yes
Heaters:	No
Winding Type :	Random Wound
Bearing Type:	Rolling Element

Priorities Found: 🔵 6 - High

🔵 3 - Good

#### **Overall Condition**

1. Report Date

07/12/2024

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

> FolderID: 103209 FormID: 20963719

#### 2. Nameplate Picture



3. Photos of all six sides of the machine.















4. Describe the Overall Condition of the Equipment as Received Serviceable

#### **Initial Mechanical/Electrical**

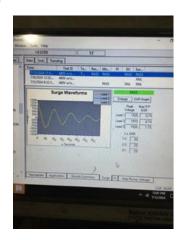
- 5. Does Shaft Turn Freely?
- 6. Does the shaft require T.I.R in Lathe to identify additional repairs?

(N) No (Yes) Yes



7.	Does Shaft Have Visible Damage?	(Yes) Yes
8.	Assembled Shaft Runout	Inches
9.	Assembled Shaft End Play	inches
10.	Air Gap Variation <10%	

• 11.	Lead Condition		(P) Pass
12.	Lead Length		8 Inches
13.	Does it have Lugs?, If so what is the	Stud Size?	(Yes) Yes
14.	Lead Numbers		1-6
15.	Frame Condition		pass
16.	Fan Condition		(N) NA
	Fan missing		
17.	Broken or Missing Components		fan cover fan and connection box cover
	And hardware		
Initial	Electrical Inspection		
18.	Insulation Resistance/Megger		6636 Megohms
19.	Winding Resistance		
	1-2	1-3	2-3
	0.633	0.634	0.631



- 21. Number of Stator Slots
- 22. Stator Condition





23.	Stator Thermistors/Ohms	196.8
24.	Stator Overloads/Ohms	
Mecha	anical Inspection	
25.	Drive End Bearing Brand	SKF

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wash and bake

26. Drive End Bearing Number-	6309 2RS
27. Drive End Bearing Qty.	1
28. Drive End Bearing Type	(Ball) Ball Bearing
29. Drive End Lubrication Type	(Grease) Grease Lubricated
30. Drive End Bearing Insulation or Grounding Device?	na
31. Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer
32. Drive End Bearing Condition	bad





34. Opposite Drive End Bearing Number-



35. Opposite Drive End Bearing Qty.	1
36. Opposite Drive End Bearing Type	(Ball) Ball Bearing
37. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
38. Opposite Drive End Bearing Insulation or Grounding Device?	
39. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	na
40. Opposite Drive End Bearing Condition	

Contamination

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SKF

6308 2RS



41.	Drive End Seal	Na
42.	Opposite Drive End Seal	Na
Rotor	Inspection	

43. Rotor Type/Material

(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast



44.	Growler Test	(Pass) Pass		
45.	Number of Rotor Bars		28	
46.	Rotor Condition		wash	
47.	List the Parts needed for the	Repair Below		
	6309 2RS 6308 2RS			
48.	Signature of Technician that	Disassembled Motor	RW	
(	GLI			
Mecha	Mechanical Fits- Rotor			
49.	Shaft Runout		inches	
	Na			
50.	50. Rotor Runout			
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing	

51.	51. Coupling Fit Closest to Bearing Housing			
	0 Degrees	90 Degrees	120 Degrees	
52.	52. Coupling Fit Closest to the end of the Shaft			
	0 Degrees	60 Degrees	120 Degrees	
53.	Drive End Bearing Shaft Fit			
	0 Degrees	60 Degrees	120 Degrees	
54.	Drive End Bearing Shaft Fit Condition			(F) Fail

#### 54. Drive End Bearing Shaft Fit Condition



	55.	Opposite Drive End Bearing Shaft Fit			
		0 Degrees	60 Degrees	120 Degrees	
		1.5751	1.5751	1.5751	
	56.	Opposite Drive End Bearing Shaft Fit	Condition		(P) Pass
	57.	Shaft Air Seal Fits			
		Drive End Air Seal	Opposite Drive End Air Seal		
	-	Pass			
Μ	lecha	anical Fits- Bearing Housings			
	58.	Drive End - Endbell Bearing Fit			
		0 Degrees	60 Degrees	120 Degrees	
		3.9527	3.9527	3.9527	
	59.	Drive End - Endbell Bearing Fit Condit	ion		(F) Fail
	60.	Opposite Drive End - Endbell Bearing	Fit		
		0 Degrees	60 Degrees	120 Degrees	
		3.5457	3.5457	3.5457	
	61.	Opposite Drive End - Endbell Bearing	Fit Condition		(F) Fail
	62.	Bearing Cap Condition			
		Drive End Bearing Cap	Opposite Drive End Bearing Cap		
		NA			
	63.	End Bell Air Seal Fits			
		Drive End Air Seal	Opposite Drive End Air Seal		
	_	D			
		Pass			

#### 64. List Machine Work Needed Below Both end bell bearing fit bad .Shaft de bearing fit bad



65. (	Technician		RW
Root	Cause of Failure		
66.	Failure locations Bearings shaft and end bells		
67.	Root cause of failure <i>No lubricant</i>		
Dynai	mic Balance Report		
68.	Rotor Weight and Balance Grade		
	Rotor Weight	Balance Grade	
69.	Initial Balance Readings		
	Drive End	Opposite Drive End	
70.	Final Balance Readings		
	Drive End	Opposite Drive End	
71.	Technician		
Mecha	anical Fits- Rotor - Post Repair		
	Shaft Runout Post Repair		
73.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
74.	Coupling Fit Closest to Bearing Housi	ng Post Repair	
	0 Degrees	90 Degrees	120 Degrees
75.	Coupling Fit Closest to the end of the	Shaft Post Repair	
	0 Degrees	60 Degrees	120 Degrees

76.	Drive End Bearing Shaft Fit Post Rep			
	0 Degrees	60 Degrees	120 Degrees	
77.	Opposite Drive End Bearing Shaft Fit	•		
	0 Degrees	60 Degrees	120 Degrees	
70	Shaft Air Seal Fits Post Repair			
70.	· ·	One sette Drive Fred Air Cool		
	Drive End Air Seal	Opposite Drive End Air Seal		
79	Shaft Repair Sign-off			
	Mechanical Fits- Bearing Housings - Post Repair			
	Drive End - Endbell Bearing Fit Post I			
00.	-	•	120 Degrees	
	0 Degrees	60 Degrees	120 Degrees	
81.	Opposite Drive End - Endbell Bearing Fit Post Repair			
0.11	0 Degrees	60 Degrees	120 Degrees	
		55 Dog1000	Dog.000	
82.	Bearing Cap Condition Post Repair			
	Drive End Bearing Cap	Opposite Drive End Bearing Cap		
	÷ .			
83.	End Bell Air Seal Fits Post Repair			
	Drive End Air Seal	Opposite Drive End Air Seal		
	End Bell Repair Sign-off			
	Assembly			
85.	QC Check All Parts for Cleanliness Prior to Assembly			
86.				
	Final Insulation Resistance Test			
	Assembled Shaft Endplay			
89.	Assembled Shaft Runout			
90.	Test Run Voltage			
	Volts	Volts	Volts	
91.	Test Run Amperage			
	Amps	Amps	Amps	
02	Drive End Vibration Readings - Inche	s Par Second		
52.	Horizontal	Vertical	Axial	
	Honzontai	ventical	Axiai	
93.	. Opposite Drive End Vibration Readings - Inches Per Second			
	Horizontal	Vertical	Axial	
94.	Ambient Temperature - Fahrenheit			
95.	Drive End Bearing Temps - Fahrenheit			
	5 Minutes	10 Minutes	15 Minutes	
96.	Opposite Drive End Bearing Temps -	Fahrenheit		
	5 Minutes	10 Minutes	15 Minutes	
	e minatee			

- 97. Document Final Condition with Pictures after paint
- 98. 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.
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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

**TermsAndConditions** 

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- 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.
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- 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.