

LR Motor Shop Repairs

Job Number 100540

Prepared for MEC (011337)

P.O. Box 1680 Heber Springs AR 72543

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AC Recondition As Found

1829355

MEC (011337) P.O. Box 1680

Heber Springs, AR 72543

Serial Number:

MF11X-106N166P85006E

99600

52292491

10 (kW)

20

AC Recondition - Rev. 2

Location: Shop Hi-Speed Job Number:

Product Number:

Description:10KW 15ton Hoist Motor 3600/450 **Serial Number:** 1829355

Spec/ID #:

HP/kW:

Current:

 RPM:
 3250 (RPM)

 Voltage:
 480

Phase: Three

Hz: 60 (Hz)
Enclosure: TEFC

J-box Included: None

Date Received: 04/04/2022

Repair Stage: Final
Heaters: No

Winding Type: Random Wound

Bearing Type: Rolling Element

Priorities Found: 7 - Good

Overall Condition

1. Report Date

2. Nameplate Picture



















	3.	Photos of all six sides of the machine			
	4.	Describe the Overall Condition of the	Equipment as Received		
	5.	Distance from the end of the shaft to	the Coupling/Sheave		
In	itial	Mechanical/Electrical			
	6.	Does Shaft Turn Freely?			(Yes) Yes
	7.	Does Shaft Have Visible Damage?			(No) No
	8.	Assembled Shaft Runout			
	9.	Assembled Shaft End Play			
	10.	Air Gap Variation <10%			
	11.	Lead Condition			(P) Pass
	12.	Lead Length			24 Inches
	13.	Stator Temperature Detector Rating a	and Function		
		Quantity	Rating	Quantity Passed	
	14.	Bearing Temperature Detector Rating	and Function		
		Quantity	Rating	Quantity Passed	
	15.	Frame Condition			pass
	16.	Fan Condition			(P) Pass



17. Broken or Missing Components

Initial Electrical Inspection

18. Insulation Resistance/Megger







22. Number of Stator Slots

Mechanical Inspection

23. Drive End Bearing Number-

6206 2RS



24. Drive End Bearing Qty.	1
25. Drive End Bearing Type	(Ball) Ball Bearing
26. Drive End Lubrication Type	(Grease) Grease Lubricated
27. Drive End Bearing Insulation or Grounding Device?	na
28. Drive End Wavy Washer/Snap-Ring Other Retention Device?	na
29. Drive End Bearing Condition	



31. Opposite Drive End Bearing Qty.	1
32. Opposite Drive End Bearing Type	(Ball) Ball Bearing
33. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
34. Opposite Drive End Bearing Insulation or Grounding Device?	na
35. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	wavy washer



36.	Opposite Drive End Bearing Condition	
37.	Drive End Seal	
38.	Opposite Drive End Seal	
Rotor	Inspection	
39.	Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
40.	Growler Test	(Pass) Pass
41.	Number of Rotor Bars	44

42. Rotor Condition pass



43. List the Parts needed for the Repair Below

44. Signature of Technician that Disassembled Motor

RW



Mechanical Fits- Rotor

45.	Sk	naft	R	un	out	

46.	Rotor	Runout
- 10.	NOLOI	Numbut

Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
-----------------------	------------	----------------------------

47. Coupling Fit Closest to Bearing Housing

0 Daggara	00 Daggara	100 Daggas
0 Degrees	90 Degrees	120 Degrees
0 2 0 g. 0 0 0	00 B 0 g 1 0 0 0	120 20g.000

48. Coupling Fit Closest to the end of the Shaft

0 Degrees	60 Degrees	120 Degrees
0 Dedices	00 Deglees	120 Degrees

49. Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees

1.1814 1.1814 1.1814





51. Opposite Drive End Bearing Shaft Fit			
0 Degrees	60 Degrees	120 Degrees	
1.3873	1.3873	1.3873	
 52. Opposite Drive End Beari 	ng Shaft Fit Condition	(P) Pass	



53.	Shaft Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	
Mecha	anical Fits- Bearing Housings		
54.	Drive End - Endbell Bearing Fit		
	0 Degrees	60 Degrees	120 Degrees
	2.4413	2.4413	2.4413



55.	Drive End - Endbell Bearing Fit Condi	tion		(P) Pass
56.	Opposite Drive End - Endbell Bearing	Fit		
	0 Degrees	60 Degrees	120 Degrees	
	2.4415	2.4415	2.4415	



58.	Bearing Cap Condition		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
	na	na	
59.	End Bell Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	
60.	List Machine Work Needed Below		
61.	Technician	R	RW
	\cap		

Dynamic Balance Report

62. Rotor Weight and Balance Grade

Rotor Weight Balance Grade

63. Initial Balance Readings

Drive End Opposite Drive End

64. Final Balance Readings

Drive End Opposite Drive End

65. Technician

Rewind

66. Core Test Results - Watts loss per Pound
Pre-Burnout Post Burnout

67. Core Hot Spot Test

Pre-Burnout Post-Burnout

- 68. Post Rewind Electrical Test- Insulation Resistance
- 69. Post Rewind Polarization Index

70.	Post Rewind Winding Resistance		
	1-2	1-3	2-3
71.	Post Rewind Surge Test		
72.	Post Rewind Hi-Pot		
73.	Technician		
Root	Cause of Failure		
74.	Failure locations		
	Brake pad needs replaced brake gear a	lso needs replaced	
75.	Root cause of failure		
	Factory balance weight came off and sh	norted high speed winding	
	anical Fits- Rotor - Post Repair		
	Shaft Runout Post Repair		
//.	Rotor Runout Post Repair	Datas Dadu	One saits Deive Fuel Bearing
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
78.	Coupling Fit Closest to Bearing Housi	ng Post Repair	
	0 Degrees	90 Degrees	120 Degrees
		13 13	
79.	Coupling Fit Closest to the end of the	Shaft Post Repair	
	0 Degrees	60 Degrees	120 Degrees
00	D: E ID : 01 (15) D . D		
80.	Drive End Bearing Shaft Fit Post Rep		400 D
	0 Degrees	60 Degrees	120 Degrees
81.	Opposite Drive End Bearing Shaft Fit	Post Repair	
	0 Degrees	60 Degrees	120 Degrees
	ŭ	3	3
82.	Shaft Air Seal Fits Post Repair		
	Drive End Air Seal	Opposite Drive End Air Seal	
00	01 (10 : 0: (1		
	Shaft Repair Sign-off	and Damain	
	anical Fits- Bearing Housings - P	-	
84.	Drive End - Endbell Bearing Fit Post F	•	420 Daggara
	0 Degrees	60 Degrees	120 Degrees
85.	Opposite Drive End - Endbell Bearing	Fit Post Repair	
	0 Degrees	60 Degrees	120 Degrees
		13 13	
86.	Bearing Cap Condition Post Repair		
	Drive End Bearing Cap	Opposite Drive End Bearing Cap	
0.7	Fod Boll Air Cool Fite Book Borne		
87.	End Bell Air Seal Fits Post Repair	Opposite Drive End Air Cool	
	Drive End Air Seal	Opposite Drive End Air Seal	
88.	End Bell Repair Sign-off		
Asser	· · · · · · · · · · · · · · · · · · ·		
	Photograph All Major Components pri	or to assembly	(Complete) Complete











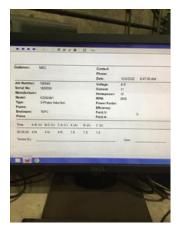






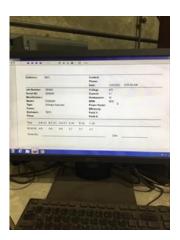


92.	Assembled Shaft Endplay Assembled Shaft Runout		
93.	Test Run Voltage		
	Volts	Volts	Volts
	415	414	415











94.	Test Run Amperage		
	Amps	Amps	Amps
	3.7	3.8	3.2
95.	Drive End Vibration Readings - Inches	s Per Second	
	Horizontal	Vertical	Axial
96.	Opposite Drive End Vibration Reading	gs - Inches Per Second	
	Horizontal	Vertical	Axial
97.	Ambient Temperature - Fahrenheit		
98.	Drive End Bearing Temps - Fahrenhe	it	
	5 Minutes	10 Minutes	15 Minutes
99.	Opposite Drive End Bearing Temps -		
	5 Minutes	10 Minutes	15 Minutes
100.	Final Test Run Sign-off		David Maclin
l		<i>-/ / }</i>	
101	Document Final Condition with Picture	es after paint	













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

> FolderID: 100540 FormID: 15263594

AC Random Coil Rewind Report

MEC (011337) P.O. Box 1680 Heber Springs, AR 72543

Priorities Found: 2 - Good

General 1. Job Number 2. Report Date 3. Customer Stator Winding 4. Core Length 5. Core ID 6. Back Iron Depth 7. Slot Depth 8. Tooth Width 9. Number of Vents 10. Vent Width 11. Before Burnout Core loss 12. Flux Before Burnout 13. Watts before burnout 14. Watts loss per lb. before burnout 15. After Burnout Core Loss 16. Flux After burnout 17. Watts After Burnout 18. Watts loss per lb After Burnout 19. Core Iron Condition 20. RTD's 21. RTD's Reading 22. Motor Heaters 23. Heater Otly. 24. Heater Voltage 25. Heater Wattage 26. Thermistors (Y) Yes 27. Number of Poles	Priorities	s Found: 0 2 - Good	
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4. Core Length 5. Core ID 6. Back Iron Depth 7. Slot Depth 8. Tooth Width 9. Number of Vents 10. Vent Width 11. Before Burnout Core loss 12. Flux Before Burnout 13. Watts before burnout 14. Watts loss per lb. before burnout 15. After Burnout Core Loss 16. Flux After burnout 17. Watts After Burnout 18. Watts Oss per lb After Burnout 19. Core Iron Condition 20. RTD's 21. RTD's Reading 22. Motor Heaters 23. Heater Cty. 24. Heater Voltage 25. Heater Wattage	3.	Customer	
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6. Back Iron Depth 7. Slot Depth 8. Tooth Width 9. Number of Vents 10. Vent Width 11. Before Burnout Core loss 12. Flux Before Burnout 13. Watts before burnout 14. Watts loss per lb. before burnout 15. After Burnout Core Loss 16. Flux After burnout 17. Watts After Burnout 18. Watts loss per lb After Burnout 19. Core Iron Condition 20. RTD's 21. RTD's Reading 22. Motor Heaters 23. Heater Qty. 24. Heater Voltage 25. Heater Wattage	4.	Core Length	
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8. Tooth Width 9. Number of Vents 10. Vent Width 11. Before Burnout Core loss 12. Flux Before Burnout 13. Watts before burnout 14. Watts loss per lb. before burnout 15. After Burnout Core Loss 16. Flux After burnout 17. Watts After Burnout 18. Watts loss per lb After Burnout 19. Core Iron Condition 20. RTD's 21. RTD's Reading 22. Motor Heaters 23. Heater Qty. 24. Heater Voltage 25. Heater Wattage	6.	Back Iron Depth	
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17. Watts After Burnout 18. Watts loss per lb After Burnout 19. Core Iron Condition 20. RTD's 21. RTD's Reading 22. Motor Heaters 23. Heater Qty. 24. Heater Voltage 25. Heater Wattage 26. Thermistors (Y) Yes	15.	After Burnout Core Loss	
18. Watts loss per lb After Burnout 19. Core Iron Condition 20. RTD's 21. RTD's Reading 22. Motor Heaters 23. Heater Qty. 24. Heater Voltage 25. Heater Wattage 26. Thermistors (Y) Yes	16.	Flux After burnout	
19. Core Iron Condition 20. RTD's 21. RTD's Reading 22. Motor Heaters 23. Heater Qty. 24. Heater Voltage 25. Heater Wattage 26. Thermistors (Y) Yes	17.	Watts After Burnout	
20. RTD's 21. RTD's Reading 22. Motor Heaters 23. Heater Qty. 24. Heater Voltage 25. Heater Wattage 26. Thermistors (Y) Yes	18.	Watts loss per lb After Burnout	
21. RTD's Reading 22. Motor Heaters 23. Heater Qty. 24. Heater Voltage 25. Heater Wattage 26. Thermistors (Y) Yes	19.	Core Iron Condition	
 22. Motor Heaters 23. Heater Qty. 24. Heater Voltage 25. Heater Wattage 26. Thermistors (Y) Yes 	20.	RTD's	
23. Heater Qty. 24. Heater Voltage 25. Heater Wattage 26. Thermistors (Y) Yes	21.	RTD's Reading	
 24. Heater Voltage 25. Heater Wattage 26. Thermistors (Y) Yes 	22.	Motor Heaters	
25. Heater Wattage 26. Thermistors (Y) Yes	23.	Heater Qty.	
26. Thermistors(Y) Yes	24.	Heater Voltage	
	25.	Heater Wattage	
27. Number of Poles	2 6.	Thermistors	(Y) Yes
28. Slots 36			36
29. Number of Coils 18	29.	Number of Coils	18
30. Coil Weight 12 Lbs.		•	12 Lbs.
31. Lead Markings	31.	Lead Markings	

32. Grouping 60f3 180f1



33.	Multiple Wires
34.	Wire Size
35.	Turns per coil
36.	Pitch 1 to:
37.	Connection
38.	Lead Length
39.	Lead Size
40.	Number of Leads
41.	Megger Reading After Rewind
42.	Coil Machine Slot
43.	Coil Machine Tip
44.	Coil Machine Pitch
45.	Hi Pot Reading After Rewind
4 6.	Surge Pattern After Rewind (P) Pass











47. Service Technician RW



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- 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.
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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 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. 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.
- 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. 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.