



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

LR Motor Shop Repairs

Job Number 103669

Prepared for Union Pacific-Vine St 10945

1020 N. Vine Street
North Little Rock AR

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

AC Inspection as Found
Union Pacific-Vine St 10945
1020 N. Vine Street
North Little Rock, AR

FolderID: 103669
FormID: 22042520

AC Inspection - Rev. 2

Location: Shop

Serial Number:

Description: 40HP MAGNETEK

Hi-Speed Job Number: 103669

Manufacturer: Other

Product Number: MODEL TVL364THTS18887ANW

Serial Number: WAA118152

HP/kW: 40 (HP)

RPM: 1200 (RPM)

Frame: 364TZ

Voltage: 460

Current: 48 (Amps)

Phase: Three

Hz: 60 (Hz)

Enclosure: TENV

of Leads: 3

J-box Included: None

Coupling/Sheave: None

Date Received: 10/24/2024

Bearing RTDs: No

Stator RTDs: No

Repair Stage: Final

Rewind: Yes

Shaft Machined Fit Repairs
Required: No

Bearing Housing Machined
Fit Repairs Required: No

Heaters: No

Winding Type : Random Wound

Bearing Type: Rolling Element

Priorities Found: 3 - High 8 - Good

Overall Condition

1. Report Date 10/24/2024

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1.0

2. Nameplate Picture



3. Photos of all six sides of the machine.



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| | |
|--|---------------|
| 4. Describe the Overall Condition of the Equipment as Received | |
| Serviceable | |
| 5. Report Date [COPY] | 10/24/2024 |
| Initial Mechanical/Electrical | |
| 6. Does Shaft Turn Freely? | (N) No |
| 7. Does the shaft require T.I.R in Lathe to identify additional repairs? | (No) No |
| 8. Does Shaft Have Visible Damage? | (No) No |
| 9. Assembled Shaft Runout | 0.0004 Inches |
| 10. Assembled Shaft End Play | inches |

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| | |
|--|------------|
| 11. Air Gap Variation <10% | |
| 12. Lead Condition | (P) Pass |
| 13. Lead Length | 16 Inches |
| 14. Does it have Lugs?, If so what is the Stud Size? | (Yes) Yes |
| 15. Lead Numbers | 1/3 |
| 16. Frame Condition | pass |
| 17. Fan Condition | (N) NA |
| 18. Broken or Missing Components | |
| Initial Electrical Inspection | |
| 19. Insulation Resistance/Megger | 10 Megohms |
| 20. Winding Resistance | |
| 1-2 | 1-3 2-3 |
| Na | |
| 21. Perform Surge Test | (F) Fail |
| Rewind | |
| 22. Number of Stator Slots | 72 |
| 23. Stator Condition | |



| | |
|------------------------------|-----|
| 24. Stator Thermistors/Ohms | |
| 25. Stator Overloads/Ohms | yes |
| Mechanical Inspection | |
| 26. Drive End Bearing Brand | NSK |



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| | |
|---|---|
| 27. Drive End Bearing Number- | 6314 |
| 28. Drive End Bearing Qty. | 1 |
| 29. Drive End Bearing Type | (Ball) Ball Bearing |
| 30. Drive End Lubrication Type | (Grease) Grease Lubricated |
| 31. Drive End Bearing Insulation or Grounding Device? | |
| 32. Drive End Wavy Washer/Snap-Ring Other Retention Device? | |
| 33. Drive End Bearing Condition |  Normal wear |



| | |
|--------------------------------------|-----|
| 34. Opposite Drive End Bearing Brand | NSK |
|--------------------------------------|-----|



| | |
|--|----------------------------|
| 35. Opposite Drive End Bearing Number- | 6312 |
| 36. Opposite Drive End Bearing Qty. | 1 |
| 37. Opposite Drive End Bearing Type | (Ball) Ball Bearing |
| 38. Opposite Drive End Lubrication Type | (Grease) Grease Lubricated |
| 39. Opposite Drive End Bearing Insulation or Grounding Device? | |
| 40. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device? | Wavy washer |
| 41. Opposite Drive End Bearing Condition | normal wear |



- 42. Drive End Seal
- 43. Opposite Drive End Seal

Rotor Inspection

- 44. Rotor Type/Material

(Squirrel Aluminum) Squirrel
Cage Aluminum Die Cast



- 45. Growler Test
- 46. Number of Rotor Bars
- 47. Rotor Condition
- 48. List the Parts needed for the Repair Below
6314-6312 and all brake parts
- 49. Signature of Technician that Disassembled Motor

(Pass) Pass

wash

RW

Mechanical Fits- Rotor

- 50. Shaft Runout
- 51. Rotor Runout

0.0004 inches

Drive End Bearing Fit

Rotor Body

Opposite Drive End Bearing

| | | |
|--|-----------------|---------------|
| 52. Coupling Fit Closest to Bearing Housing | | |
| 0 Degrees | 90 Degrees | 120 Degrees |
| 53. Coupling Fit Closest to the end of the Shaft | | |
| 0 Degrees | 60 Degrees | 120 Degrees |
| 54. Drive End Bearing Shaft Fit | | |
| 0 Degrees | 60 Degrees | 120 Degrees |
| 2.7562 | 2.7562 | 2.7562 |
| 55. Drive End Bearing Shaft Fit Condition | (P) Pass | |



| | | |
|--|-----------------|---------------|
| 56. Opposite Drive End Bearing Shaft Fit | | |
| 0 Degrees | 60 Degrees | 120 Degrees |
| 2.3627 | 2.3627 | 2.3627 |
| 57. Opposite Drive End Bearing Shaft Fit Condition | (P) Pass | |



| | | |
|-------------------------------------|-----------------------------|-------------|
| 58. Shaft Air Seal Fits | | |
| Drive End Air Seal | Opposite Drive End Air Seal | |
| pass | | |
| Mechanical Fits- Bearing Housings | | |
| 59. Drive End - Endbell Bearing Fit | | |
| 0 Degrees | 60 Degrees | 120 Degrees |
| 5.9061 | 5.9061 | 5.9061 |

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60. Drive End - Endbell Bearing Fit Condition

(P) Pass



61. Opposite Drive End - Endbell Bearing Fit

0 Degrees

60 Degrees

120 Degrees

5.1189

5.1189

5.1189

62. Opposite Drive End - Endbell Bearing Fit Condition

(P) Pass



63. Bearing Cap Condition

Drive End Bearing Cap

Opposite Drive End Bearing Cap

pass

64. End Bell Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

pass

65. List Machine Work Needed Below

None

66. Technician

RW



Co sign David Maclin

Root Cause of Failure

67. Failure locations

Brake and winding

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68. Root cause of failure
Water and dirt caused the winding to short to ground

Dynamic Balance Report

69. Rotor Weight and Balance Grade

| Rotor Weight | Balance Grade |
|--------------|---------------|
|--------------|---------------|



70. Initial Balance Readings

| Drive End | Opposite Drive End |
|-----------|--------------------|
| .09 | .42 |

71. Final Balance Readings

| Drive End | Opposite Drive End |
|-----------|--------------------|
| .09 | .42 |

72. Technician David Maclin

Rewind

73. Core Test Results - Watts loss per Pound

| Pre-Burnout | Post Burnout |
|-------------|--------------|
|-------------|--------------|

74. Core Hot Spot Test

| Pre-Burnout | Post-Burnout |
|-------------|--------------|
|-------------|--------------|

75. Post Rewind Electrical Test- Insulation Resistance

Megohms

76. Post Rewind Polarization Index

Polarization Index

77. Post Rewind Winding Resistance

| 1-2 | 1-3 | 2-3 |
|-----|-----|-----|
|-----|-----|-----|

78. Post Rewind Surge Test

(Pass) Pass

79. Post Rewind Hi-Pot

micro-amps

80. Technician

Assembly

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81. QC Check All Parts for Cleanliness Prior to Assembly

RW



82. Photograph All Major Components prior to assembly

(Complete) Complete





| | | | |
|--------------------------------------|-------|-------|----------|
| 83. Final Insulation Resistance Test | | | Megohms |
| Pass the Hi pot | | | |
| 84. Assembled Shaft Endplay | | | inches |
| 85. Assembled Shaft Runout | | | 0 inches |
| 86. Test Run Voltage | | | |
| Volts | Volts | Volts | |
| 456 | 457 | 458 | |



Co sign DM

| |
|-----------------------|
| 87. Test Run Amperage |
|-----------------------|

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| | | |
|------|------|------|
| Amps | Amps | Amps |
| 23.1 | 23.1 | 23.4 |



| | | |
|---|------------|------------|
| 88. Drive End Vibration Readings - Inches Per Second | | |
| Horizontal | Vertical | Axial |
| 0.05 | 0.05 | 0.02 |
| 89. Opposite Drive End Vibration Readings - Inches Per Second | | |
| Horizontal | Vertical | Axial |
| 0.02 | 0.01 | 0.02 |
| 90. Ambient Temperature - Fahrenheit | | |
| 91. Drive End Bearing Temps - Fahrenheit | | |
| 5 Minutes | 10 Minutes | 15 Minutes |
| 92. Opposite Drive End Bearing Temps - Fahrenheit | | |
| 5 Minutes | 10 Minutes | 15 Minutes |
| 93. Document Final Condition with Pictures after paint | | |

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94. Final Pics and QC Review

RW

A handwritten signature in black ink, consisting of stylized letters, is written over the signature line.

 Co sign DM



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

AC Random Coil Rewind Report

FolderID: 103669
FormID: 22047558

Union Pacific-Vine St 10945

1020 N. Vine Street
North Little Rock, AR

Shop
Winding

Priorities Found: ● 3 - High ● 5 - Good

General

| | |
|----------------|---------------|
| 1. Job Number | 103669 |
| 2. Report Date | 10/24/2024 |
| 3. Customer | Union Pacific |

Stator Winding

| | |
|---|--------------|
| 4. Core Length | 7.75 " |
| ■ 4.25 head | |
| 5. Core ID | 10 " |
| 6. Back Iron Depth | 1.3125 " |
| 7. Slot Depth | 1.4375 " |
| 8. Tooth Width | 0.25 " |
| 9. Number of Vents | |
| 10. Vent Width | " |
| ● 11. Before Burnout Core loss | (P) Pass |
| 12. Flux Before Burnout | |
| 13. Watts before burnout | |
| 14. Watts loss per lb. before burnout | 2.097 W/lbs. |
| ● 15. After Burnout Core Loss | (P) Pass |
| 16. Flux After burnout | |
| 17. Watts After Burnout | |
| 18. Watts loss per lb After Burnout | 1.98 W/lbs. |
| ● 19. Core Iron Condition | (P) Pass |
| ● 20. RTD's | (N) No |
| 21. RTD's Reading | |
| ● 22. Motor Heaters | (N) No |
| 23. Heater Qty. | 0 |
| 24. Heater Voltage | Volts |
| 25. Heater Wattage | Watts |
| ● 26. Thermistors | (N) No |
| 27. Number of Poles | 6 |
| 28. Slots | 72 |
| 29. Number of Coils | 72 |
| 30. Coil Weight | 80 Lbs. |
| 31. Lead Markings | |
| 1-3 | |

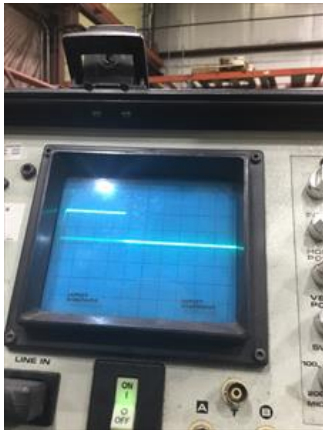
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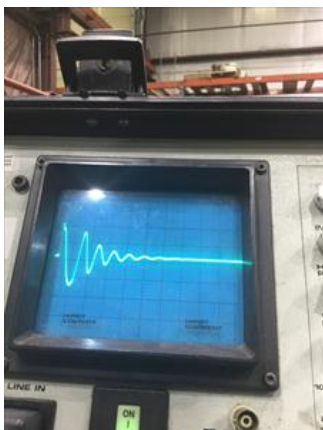
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2.0

| | |
|--|---------------------------|
| 32. Grouping <i>18g 4c</i> | |
| 33. Multiple Wires | (Y) Yes |
| 34. Wire Size <i>5 #17</i> | |
| 35. Turns per coil | 10 |
| 36. Pitch 1 to: | 11 |
| 37. Connection <i>3 Wye</i> | |
| 38. Lead Length | 9 " |
| 39. Lead Size | 10 Black Silicone Braided |
| 40. Number of Leads <i>3 klixon</i> | 3 |
| 41. Megger Reading After Rewind | |
| 42. Coil Machine Slot | |
| 43. Coil Machine Tip | |
| 44. Coil Machine Pitch | |
| 45. Hi Pot Reading After Rewind | Ua |



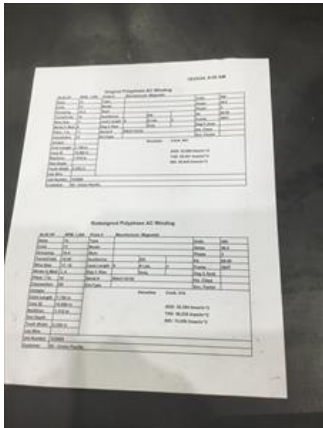
| | |
|--------------------------------|----------|
| 46. Surge Pattern After Rewind | (P) Pass |
|--------------------------------|----------|



| | |
|------------------------|--|
| 47. Service Technician | |
|------------------------|--|

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60 Lbs of 3#17
 20 Lbs 1# 16
 12' #10 Silicone Braided 600 Volt
 6' # 16 Silicone Braided 600 Volt
 3 Overloads





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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.
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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.
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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

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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, earthquake, 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. **NONWAIVER.** 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. **ASSIGNMENT.** 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.