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— EVERY DAY SINCE 1946 —

LR Motor Shop Repairs

**Job Number 102565**

Prepared for Searcy Water and Sewer System (11242)

300 N. Elm Street  
Searcy AR 72145

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

## AC Inspection as Found

### Searcy Water and Sewer System (11242)

300 N. Elm Street  
Searcy, AR 72145

FolderID: 102565  
FormID: 19554249

#### AC Inspection - Rev. 2

Location: MOTOR SHOP LR

Serial Number: TYPE: TVC9

Description: 5HP 1150RPM

Hi-Speed Job Number: 102565

Manufacturer: US Motors/Nidec

Spec/ID #: F12 02134993 100 F

Serial Number: TYPE: TVC9

HP/kW: 5 (HP)

RPM: 1150 (RPM)

Frame: 215HPZ

Voltage: 230 / 460

Current: 15.4 (Amps)

Phase: Three

Hz: 60 (Hz)

Service Factor: 1.15

Repair Stage: Final

Rewind: Yes

Winding Type : Random Wound

Priorities Found: ● 2 - High ● 8 - Good

#### Overall Condition

1. Report Date
2. Nameplate Picture



3. Photos of all six sides of the machine.

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1.0



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4. Describe the Overall Condition of the Equipment as Received	
<i>Dirty</i>	
5. Distance from the end of the shaft to the Coupling/Sheave	inches
<i>Na</i>	
<b>Initial Mechanical/Electrical</b>	
6. Does Shaft Turn Freely?	
<i>Yes</i>	
7. Does the shaft require T.I.R in Lathe to identify additional repairs?	
<i>No</i>	
8. Does Shaft Have Visible Damage?	(Yes) Yes
9. Assembled Shaft Runout	Inches
<i>Na</i>	
10. Assembled Shaft End Play	inches
<i>Na</i>	
11. Air Gap Variation <10%	
<i>Na</i>	
12. Lead Condition	(NA) Not Applicable
<i>Rewind</i>	
13. Lead Length	8 Inches
14. Does it have Lugs?, If so what is the Stud Size?	(No) No
15. Lead Numbers	1-3

16. Stator Temperature Detector Rating and Function		
Quantity	Rating	Quantity Passed
Na		
17. Bearing Temperature Detector Rating and Function		
Quantity	Rating	Quantity Passed
Na		
18. Frame Condition		pass
19. Fan Condition		(F) Fail
Blades are broke and hub is cracked		



20. Heater Quantity, Ratings		
Quantity	Volts/Watts	Pass/Fail
Na		
21. Broken or Missing Components		fan
<b>Initial Electrical Inspection</b>		
22. Insulation Resistance/Megger		Megohms
Na		
23. Winding Resistance		
1-2	1-3	2-3
Na		

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24. Perform Surge Test

(NA) Not Applicable





25. Number of Stator Slots	36
26. Stator Condition	pass
27. Stator Thermistors/Ohms	Na
28. Stator Overloads/Ohms	na
<b>Mechanical Inspection</b>	
29. Drive End Bearing Brand	skf
30. Drive End Bearing Number-	3211
31. Drive End Bearing Qty.	1
32. Drive End Bearing Type	(Ball) Ball Bearing
33. Drive End Lubrication Type	(Grease) Grease Lubricated
34. Drive End Bearing Insulation or Grounding Device?	Na
35. Drive End Wavy Washer/Snap-Ring Other Retention Device?	Spanner nut
36. Drive End Bearing Condition	normal signs of wear
37. Opposite Drive End Bearing Brand	fag
38. Opposite Drive End Bearing Number-	6206
39. Opposite Drive End Bearing Qty.	1
40. Opposite Drive End Bearing Type	(Ball) Ball Bearing
41. Opposite Drive End Lubrication Type	(Grease) Grease Lubricated
42. Opposite Drive End Bearing Insulation or Grounding Device?	Na
43. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	Na
44. Opposite Drive End Bearing Condition	normal signs of wear
45. Drive End Seal	labyrinth seal
46. Opposite Drive End Seal	na
47. DE Sleeve Bearing Inside Diameter	
0 degrees	120 degrees
	240 degrees
Na	

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48. DE Sleeve Bearing Outside Diameter		
0 degrees	120 degrees	240 degrees
Na		
49. DE Sleeve Bearing Housing Inside Diameter		
0 degrees	120 degrees	240 degrees
Na		
50. DE Sleeve Bearing to Housing Clearance		
0 degrees	120 degrees	240 degrees
Na		
51. ODE Sleeve Bearing Inside Diameter		
0 degrees	120 degrees	240 degrees
Na		
52. ODE Sleeve Bearing Outside Diameter		
0 degrees	120 degrees	240 degrees
Na		
53. ODE Sleeve Bearing Housing Inside Diameter		
0 degrees	120 degrees	240 degrees
Na		
54. ODE Sleeve Bearing to Housing Clearance		
0 degrees	120 degrees	240 degrees
Na		
<b>Rotor Inspection</b>		
55. Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast	
56. Growler Test	(Pass) Pass	
57. Number of Rotor Bars	45	
58. Rotor Condition	needs cleaned	
59. List the Parts needed for the Repair Below		
3211 6206 2 CR LIP SEALS -CR20070 Fan- 399408 Bushings		
60. Signature of Technician that Disassembled Motor	Cw	
		
<b>Mechanical Fits- Rotor</b>		
61. Shaft Runout	0.003 inches	



62. Rotor Runout			
Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing	
Na			
63. Coupling Fit Closest to Bearing Housing			
0 Degrees	90 Degrees	120 Degrees	
Na			
64. Coupling Fit Closest to the end of the Shaft			
0 Degrees	60 Degrees	120 Degrees	
Na			
65. Drive End Bearing Shaft Fit			
0 Degrees	60 Degrees	120 Degrees	
2.1656	2.166	2.1658	
66. Drive End Bearing Shaft Fit Condition			(P) Pass
67. Opposite Drive End Bearing Shaft Fit			
0 Degrees	60 Degrees	120 Degrees	
1.1813	1.1813	1.1813	
68. Opposite Drive End Bearing Shaft Fit Condition			(P) Pass
69. Shaft Air Seal Fits			
Drive End Air Seal	Opposite Drive End Air Seal		
Na			
<b>Mechanical Fits- Bearing Housings</b>			
70. Drive End - Endbell Bearing Fit			
0 Degrees	60 Degrees	120 Degrees	
3.9375	3.9376	3.9375	
71. Drive End - Endbell Bearing Fit Condition			(P) Pass
72. Opposite Drive End - Endbell Bearing Fit			
0 Degrees	60 Degrees	120 Degrees	
2.441	2.4411	2.4411	
73. Opposite Drive End - Endbell Bearing Fit Condition			(P) Pass

74. Bearing Cap Condition		
Drive End Bearing Cap		Opposite Drive End Bearing Cap
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #28a745; border-radius: 50%; margin-right: 5px;"></div> <span>Pass</span> </div>		
		
75. End Bell Air Seal Fits		
Drive End Air Seal		Opposite Drive End Air Seal
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #6c757d; border-radius: 50%; margin-right: 5px;"></div> <span>Na</span> </div>		
76. List Machine Work Needed Below		
<i>Bushing and bushing fit on shaft and seal surfaces</i>		
77. Technician		Cw
		
<b>Root Cause of Failure</b>		
78. Failure locations		
<i>Windings single fazed</i>		
79. Root cause of failure		
<i>One leg lost power and over heated</i>		
<b>Dynamic Balance Report</b>		
80. Rotor Weight and Balance Grade		
Rotor Weight		Balance Grade
81. Initial Balance Readings		
Drive End		Opposite Drive End
82. Final Balance Readings		
Drive End		Opposite Drive End
83. Technician		
<b>Rewind</b>		
84. Core Test Results - Watts loss per Pound		
Pre-Burnout		Post Burnout

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85.	Core Hot Spot Test		
	Pre-Burnout	Post-Burnout	
86.	Post Rewind Electrical Test- Insulation Resistance		Megohms
87.	Post Rewind Polarization Index		Polarization Index
88.	Post Rewind Winding Resistance		
	1-2	1-3	2-3
89.	Post Rewind Surge Test		(Pass) Pass
90.	Post Rewind Hi-Pot		micro-amps
91.	Technician		
Mechanical Fits- Rotor - Post Repair			
92.	Shaft Runout Post Repair		inches
93.	Rotor Runout Post Repair		
	Drive End Bearing Fit	Rotor Body	Opposite Drive End Bearing
94.	Coupling Fit Closest to Bearing Housing Post Repair		
	0 Degrees	90 Degrees	120 Degrees
95.	Coupling Fit Closest to the end of the Shaft Post Repair		
	0 Degrees	60 Degrees	120 Degrees
96.	Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees
97.	Opposite Drive End Bearing Shaft Fit Post Repair		
	0 Degrees	60 Degrees	120 Degrees

98. Shaft Air Seal Fits Post Repair

Drive End Air Seal

Opposite Drive End Air Seal



99. Shaft Repair Sign-off

RW

RW

**Mechanical Fits- Bearing Housings - Post Repair**

100. Drive End - Endbell Bearing Fit Post Repair

0 Degrees

60 Degrees

120 Degrees

101. Opposite Drive End - Endbell Bearing Fit Post Repair

0 Degrees

60 Degrees

120 Degrees

102. Bearing Cap Condition Post Repair

Drive End Bearing Cap


Opposite Drive End Bearing Cap

103. End Bell Air Seal Fits Post Repair

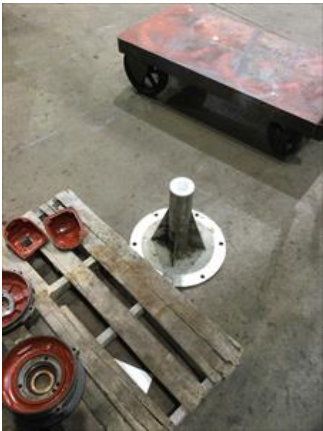
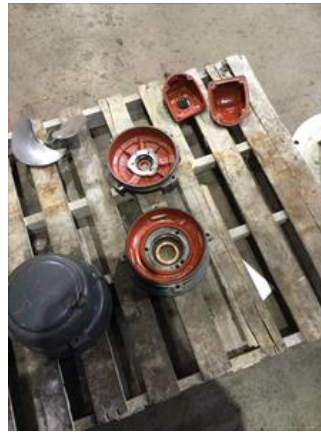
Drive End Air Seal

Opposite Drive End Air Seal



104. DE Sleeve Bearing Inside ID Post Repair		
Measure 1	Measure 2	Measure 3
105. DE Sleeve Bearing Outside ID Post Repair		
Measure 1	Measure 2	Measure 3
106. DE Sleeve Bearing Inside OD Post Repair		
Measure 1	Measure 2	Measure 3
107. DE Sleeve Bearing Outside OD Post Repair		
Measure 1	Measure 2	Measure 3
108. End Bell Repair Sign-off		
109. ODE Sleeve Bearing Inside ID Post Repair		
Measure 1	Measure 2	Measure 3
110. ODE Sleeve Bearing Outside ID Post Repair		
Measure 1	Measure 2	Measure 3
111. ODE Sleeve Bearing Inside OD Post Repair		
Measure 1	Measure 2	Measure 3
112. ODE Sleeve Bearing Outside OD Post Repair		
Measure 1	Measure 2	Measure 3
<b>Assembly</b>		
113. QC Check All Parts for Cleanliness Prior to Assembly		RW
		
114. Photograph All Major Components prior to assembly		(Complete) Complete





115. Final Insulation Resistance Test			Megohms
HP passed			
116. Assembled Shaft Endplay			inches
117. Assembled Shaft Runout			inches
118. Test Run Voltage			
Volts	Volts	Volts	
457	455	457	
Co witness DM			

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Co witness DM

119. Test Run Amperage		
Amps	Amps	Amps
3.8	3.7	3.8



Co witness DM



120. Drive End Vibration Readings - Inches Per Second		
Horizontal	Vertical	Axial
0.05	0.05	0.03

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121. Opposite Drive End Vibration Readings - Inches Per Second		
Horizontal	Vertical	Axial
<b>0.05</b>	<b>0.05</b>	<b>0.04</b>
122. Ambient Temperature - Fahrenheit		
123. Drive End Bearing Temps - Fahrenheit		
5 Minutes	10 Minutes	15 Minutes
124. Drive End Bearing Temps - Fahrenheit 20-30 Minutes		
20 Minutes	25 Minutes	30 Minutes
125. Drive End Bearing Temps - Fahrenheit 35-45 Minutes		
35 Minutes	40 Minutes	45 Minutes
126. Drive End Bearing Temps - Fahrenheit 50-60 Minutes		
50 Minutes	55 Minutes	60 Minutes
127. Opposite Drive End Bearing Temps - Fahrenheit		
5 Minutes	10 Minutes	15 Minutes
128. Opposite Drive End Bearing Temps - Fahrenheit 20-30 Minutes		
20 Minutes	25 Minutes	30 Minutes
129. Opposite Drive End Bearing Temps - Fahrenheit 35-45 Minutes		
35 Minutes	40 Minutes	45 Minutes
130. Opposite Drive End Bearing Temps - Fahrenheit 50-60 Minutes		
50 Minutes	55 Minutes	60 Minutes
131. Document Final Condition with Pictures after paint		







132. Final Pics and QC Review

RW

h u



Co witness DM



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

## AC Random Coil Rewind Report

FolderID: 102565  
FormID: 19923109

Searcy Water and Sewer System  
(11242)

300 N. Elm Street  
Searcy, AR 72145

Priorities Found:

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 Qty.
24. Heater Voltage
25. Heater Wattage
26. Thermistors
27. Number of Poles
28. Slots
29. Number of Coils
30. Coil Weight
31. Lead Markings
32. Grouping
33. Multiple Wires
34. Wire Size

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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
46. Surge Pattern After Rewind
47. Service Technician



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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.
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.