



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

LR Motor Shop Repairs

**Job Number 104430**

Prepared for AMERICAN SILICA

389 LAWRENCE COUNTY ROAD 210  
BLACK ROCK AR 72415

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AC Inspection as Found - *LR MOTOR SHOP*

AC Inspection - Rev. 2: *SG2-4730*

**1.0**

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Hi-Speed Industrial Service  
7030 Ryburn Dr  
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901-873-5300

**AC Inspection as Found**  
**AMERICAN SILICA**  
389 LAWRENCE COUNTY ROAD 210  
BLACK ROCK, AR 72415

FolderID: 104430  
FormID: 24059338

**AC Inspection - Rev. 2**

Location: LR MOTOR SHOP

Serial Number: SG2-4730

Description: 2.5 HP DERRICK

Hi-Speed Job Number:	104430
Product Number:	SG-238-18-460/480-6-001
Serial Number:	SG2-4730
HP/kW:	2.5 (HP)
RPM:	1800 (RPM)
Voltage:	460
Current:	4.1 / 2 (Amps)
Phase:	Three
Hz:	60 (Hz)
Service Factor:	1.0
Enclosure:	TENV
# of Leads:	3
J-box Included:	Complete
Coupling/Sheave:	None
Bearing RTDs:	No
Stator RTDs:	No
Repair Stage:	Final
Rewind:	No
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: 2 - High 2 - Medium 18 - Good

**Overall Condition**

1. Report Date

**04/22/2025**

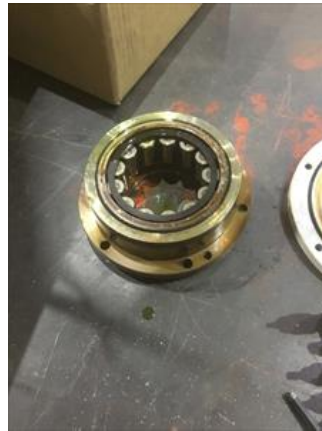
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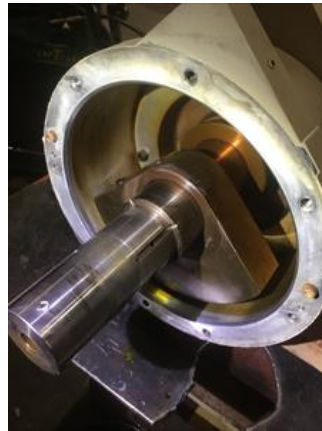
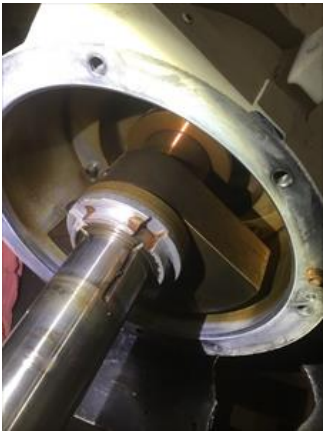
## 2. Nameplate Picture



## 3. Photos of all six sides of the machine.





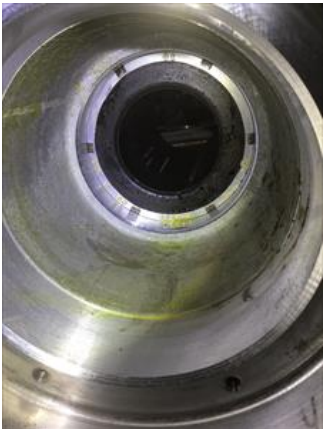












4. Describe the Overall Condition of the Equipment as Received		
<i>Dirty</i>		
<input checked="" type="radio"/>	5. Is this a UL Listed Motor	(No) No
<input checked="" type="radio"/>	6. Is the motor water cooled or can be pressure checked before teardown	(No) No
<b>Initial Mechanical/Electrical</b>		
<input checked="" type="radio"/>	7. Does Shaft Turn Freely?	(Y) Yes
<input checked="" type="radio"/>	8. Does the shaft require T.I.R in Lathe to identify additional repairs?	(No) No
	9. Does Shaft Have Visible Damage?	(No) No
	10. Assembled Shaft Runout	Inches

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11. Assembled Shaft End Play	inches
12. Air Gap Variation <10%	
13. Lead Condition	(P) Pass
14. Lead Length	8 Inches
15. Does it have Lugs?, If so what is the Stud Size?	(Yes) Yes
16. Lead Numbers	1-3
17. Are the Leads insulated with Chico or other material	(No) No
18. Frame Condition	
19. Fan Condition	(N) NA
20. Does motor have internal fan?	(No) No
21. Broken or Missing Components	
DE oil cavity has a hole in it	



## Initial Electrical Inspection

22. Insulation Resistance/Megger

Megohms

Coil 3 (Ohms)	3.671 Corr: 3.7...	
Megohm Stat...	PASS	No Test
Volts (V)	491	
I(μA)	1.145	
Resist	429	
At 40°C	115	
PLSaters	No Test	No Test
Nameplate	Application	Results Summary

## 23. Winding Resistance

1-2

1-3

2-3

Resist Status	PASS	No Te
Bal L1 (Ohms)		
Bal L2 (Ohms)		
Bal L3 (Ohms)		
L1-L2 (Ohms)	7.342 Corr: 7.4...	
L2-L3 (Ohms)	7.342 Corr: 7.4...	
L3-L1 (Ohms)	7.342 Corr: 7.4...	
Max Delta R %	0.005	
Coil 1 (Ohms)	3.671 Corr: 3.7...	
Coil 2 (Ohms)	3.671 Corr: 3.7...	
Coil 3 (Ohms)	3.671 Corr: 3.7...	
Application		
Results Summary		

## 24. Perform Surge Test

(P) Pass



## 25. Number of Stator Slots

## 26. Stator Condition

## 27. Stator Thermistors/Ohms

## 28. Stator Overloads/Ohms

0.2

## Mechanical Inspection

29. Drive End Bearing Brand	SKF
30. Drive End Bearing Number-	2311
31. Drive End Bearing Qty.	1
32. Drive End Bearing Type	(Roller) Roller Bearing
33. Drive End Lubrication Type	(Oil) Oil Lubricated
34. Drive End Bearing Insulation or Grounding Device?	
35. Drive End Wavy Washer/Snap-Ring Other Retention Device?	

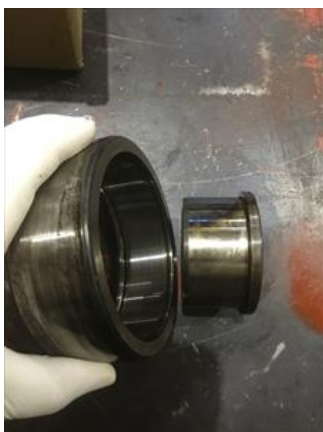
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36. Drive End Bearing Condition
- Signs of false brinelling that turned into metal fatigue



37. Opposite Drive End Bearing Brand	SKF
38. Opposite Drive End Bearing Number-	2311
39. Opposite Drive End Bearing Qty.	1
40. Opposite Drive End Bearing Type	(Roller) Roller Bearing
41. Opposite Drive End Lubrication Type	(Oil) Oil Lubricated
42. Opposite Drive End Bearing Insulation or Grounding Device?	
43. Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	
44. Opposite Drive End Bearing Condition	

Contamination



45. Drive End Seal	labyrinth seal
46. Opposite Drive End Seal	labyrinth seal
<b>Rotor Inspection</b>	
47. Rotor Type/Material	(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast
48. Growler Test	(Pass) Pass
49. Number of Rotor Bars	
50. Rotor Condition	
51. List the Parts needed for the Repair Below	
2311x2	

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52. Signature of Technician that Disassembled Motor

Cw



### Mechanical Fits- Rotor

53. Shaft Runout inches

54. Rotor Runout

Drive End Bearing Fit

Rotor Body

Opposite Drive End Bearing

55. Coupling Fit Closest to Bearing Housing

0 Degrees

90 Degrees

120 Degrees

56. Coupling Fit Closest to the end of the Shaft

0 Degrees

60 Degrees

120 Degrees

57. Drive End Bearing Shaft Fit

0 Degrees

60 Degrees

120 Degrees

2.1654-2.1653-2.1654

58. Drive End Bearing Shaft Fit Condition

(P) Pass

59. Opposite Drive End Bearing Shaft Fit

0 Degrees

60 Degrees

120 Degrees

2.1654-2.1654-2.1654

60. Opposite Drive End Bearing Shaft Fit Condition

(P) Pass

61. Shaft Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

### Mechanical Fits- Bearing Housings

62. Drive End - Endbell Bearing Fit

0 Degrees

60 Degrees

120 Degrees

4.7234-4.7236-4.7235

63. Drive End - Endbell Bearing Fit Condition

(P) Pass

64. Opposite Drive End - Endbell Bearing Fit

0 Degrees

60 Degrees

120 Degrees

4.7233-4.7233-4.7234

65. Opposite Drive End - Endbell Bearing Fit Condition

(P) Pass

66. Bearing Cap Condition

Drive End Bearing Cap

Opposite Drive End Bearing Cap

67. End Bell Air Seal Fits

Drive End Air Seal

Opposite Drive End Air Seal

68. List Machine Work Needed Below





Co sign: CRW

### Root Cause of Failure

70. Failure locations

*Bearings*

71. Root cause of failure

*False brinelling lead to metal fatigue*

### Dynamic Balance Report

72. Rotor Weight and Balance Grade

Rotor Weight

Balance Grade

73. Initial Balance Readings

Drive End

Opposite Drive End

74. Final Balance Readings

Drive End

Opposite Drive End

75. Technician

### Assembly

76. QC Check All Parts for Cleanliness Prior to Assembly

77. Photograph All Major Components prior to assembly

78. Final Insulation Resistance Test

79. Assembled Shaft Endplay

80. Assembled Shaft Runout

81. Test Run Voltage

Volts

Volts

Volts

82. Test Run Amperage

Amps

Amps

Amps

83. Drive End Vibration Readings - Inches Per Second

Horizontal

Vertical

Axial

84. Opposite Drive End Vibration Readings - Inches Per Second

Horizontal

Vertical

Axial

85. Ambient Temperature - Fahrenheit

86. Drive End Bearing Temps - Fahrenheit

5 Minutes

10 Minutes

15 Minutes

87. Opposite Drive End Bearing Temps - Fahrenheit

5 Minutes

10 Minutes

15 Minutes

88. Document Final Condition with Pictures after paint





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