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

# AC Inspection as Found

**ARKANSAS INDUSTRIAL MACHINERY**
**3804 N. NONA ST**
**NORTH LITTLE ROCK, AR 72118**

FolderID: 103825
FormID: 22442108

### AC Inspection - Rev. 2

| | |
|---|---|
| **Location:** | Shop |
| **Serial Number:** | A1702172084 |
| **Description:** | 250HP BALDOR 1785RPM |

| | |
|---|---|
| **Hi-Speed Job Number:** | 103825 |
| **Manufacturer:** | Baldor |
| **Product Number:** | TYPE: P |
| **Spec/ID #:** | A44-8935-0152 |
| **Serial Number:** | A1702172084 |
| **HP/kW:** | 250 (HP) |
| **RPM:** | 1785 (RPM) |
| **Frame:** | 449TDZ |
| **Voltage:** | 460 |
| **Current:** | 278 (Amps) |
| **Phase:** | Three |
| **Hz:** | 60 (Hz) |
| **Service Factor:** | 1.15 |
| **Enclosure:** | TEFC |
| **# of Leads:** | 6 |
| **J-box Included:** | None |
| **Coupling/Sheave:** | Gear |
| **Date Received:** | 12/03/2024 |
| **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 |

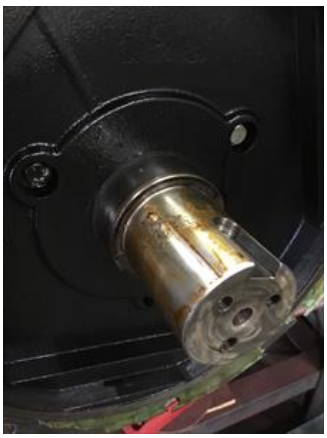
Priorities Found: **11 - Good**

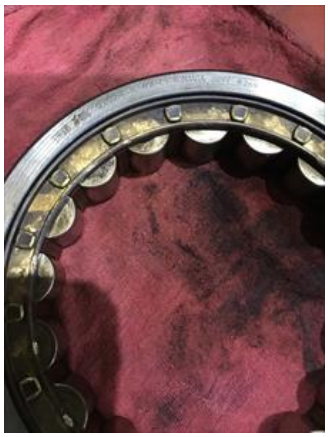
## Overall Condition

1. Report Date

2. Nameplate Picture P37


3. Photos of all six sides of the machine. P45





| | | | |
|---|---|---|---|
| | 4. | Describe the Overall Condition of the Equipment as Received | P55 |

| | | | |
|---|---|---|---|
| | 5. | Distance from the end of the shaft to the Coupling/Sheave | **inches** |
| **Initial Mechanical/Electrical** | | | |
| ● | 6. | Does Shaft Turn Freely? | **(Y) Yes** |
| ● | 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 | **0.003 Inches** |
| | 10. | Assembled Shaft End Play | **0 inches** |
| | 11. | Air Gap Variation <10% | |
| ● | 12. | Lead Condition | **(P) Pass** |
| | 13. | Lead Length | **75.09999999999999 Inches** |

| | | | |
|---|---|---|---|
| 14. | Does it have Lugs?, If so what is the Stud Size? | **(No) No** | P93 |

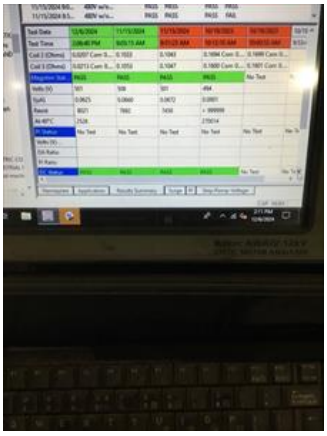
| | | | |
|---|---|---|---|
| 15. | Lead Numbers | **1-6** | P97 |

| | | | |
|---|---|---|---|
| 16. | Frame Condition | **serviceable** | |
| 17. | Fan Condition | **(P) Pass** | P115 |

| | | | |
|---|---|---|---|
| 18. | Broken or Missing Components | **ODE housing has broken off fan cover bolt** | |

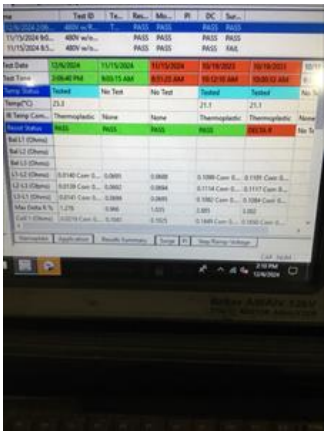
## Initial Electrical Inspection

| | | | |
|---|---|---|---|
| 19. | Insulation Resistance/Megger | **Megohms** | P8 |

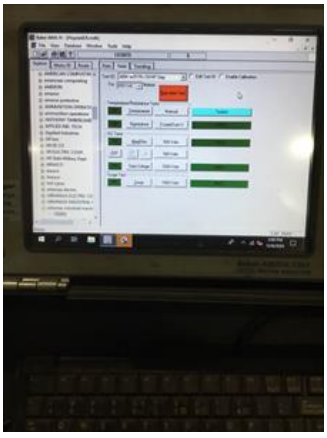


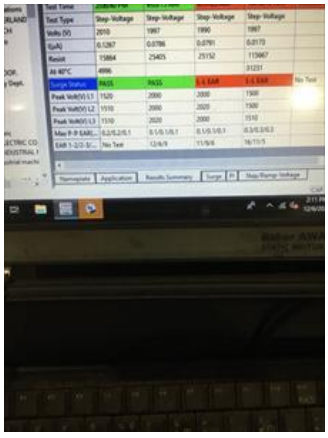
| | | | |
|---|---|---|---|
| 20. | Winding Resistance | | P20 |

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



| | | | |
|---|---|---|---|
| 21. | Perform Surge Test | **(P) Pass** | P57 |





| | | |
|---|---|---|
| 22. | Number of Stator Slots | **72** |
| 23. | Stator Condition | **pass** |
| 24. | Stator Thermistors/Ohms | |
| 25. | Stator Overloads/Ohms | |

## Mechanical Inspection

| | | | |
|---|---|---|---|
| 26. | Drive End Bearing Brand | **FAG** | P12 |

| | | | |
|---|---|---|---|
| 27. | Drive End Bearing Number- | **NU222-E-XL-MIA-C3** | P32 |

| | | | |
|---|---|---|---|
| 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? | **none** | |
| 32. | Drive End Wavy Washer/Snap-Ring Other Retention Device? | **snap ring** | P77 |

| | | | |
|---|---|---|---|
| 33. | Drive End Bearing Condition | **replace** | |
| 34. | Opposite Drive End Bearing Brand | **SKF** | P92 |

| | | | |
|---|---|---|---|
| 35. | Opposite Drive End Bearing Number- | **6318 2Z/C3** | |
| 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? | **none** | |
| 40. | Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device? | | |
| | ***Snap ring.*** | | |
| 41. | Opposite Drive End Bearing Condition | **replace** | |
| 42. | Drive End Seal | **VA 110** | P120 |

*04160234-3264833*
*(89292445)*

| | | |
|---|---|---|
| 43. | Opposite Drive End Seal | **VA 090** |

## Rotor Inspection

| | | |
|---|---|---|
| 44. | Rotor Type/Material | **(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast** |
| 45. | Growler Test | **(Pass) Pass** |
| 46. | Number of Rotor Bars | **56** |
| 47. | Rotor Condition | **pass** |
| 48. | List the Parts needed for the Repair Below<br>***Bearings: NU 222-E-XL-M1A-C3 & 6318-2Z/C3***<br>***VA 110 & VA 090 seals.*** | |
| 49. | Signature of Technician that Disassembled Motor | **Terrence Holland** |

## Mechanical Fits- Rotor

| | | |
|---|---|---|
| 50. | Shaft Runout | **0.002 inches** |

51. Rotor Runout

| 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 |
|---|---|---|
| **3.4986** | **3.4986** | **3.4987** |

54. Drive End Bearing Shaft Fit

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|
| **4.3319** | **4.332** | **4.3318** |

| | | |
|---|---|---|
| 55. | Drive End Bearing Shaft Fit Condition | **(P) Pass** |

56. Opposite Drive End Bearing Shaft Fit

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|
| **3.544** | **3.544** | **3.544** |

| | | |
|---|---|---|
| 57. | Opposite Drive End Bearing Shaft Fit Condition | **(P) Pass** |

| | | | |
|---|---|---|---|
| 58. | Shaft Air Seal Fits | | |
| | Drive End Air Seal | Opposite Drive End Air Seal | |

## Mechanical Fits- Bearing Housings

| | | | | |
|---|---|---|---|---|
| 59. | Drive End - Endbell Bearing Fit | | | |
| | 0 Degrees | 60 Degrees | 120 Degrees | |
| | **7.8743** | **7.8741** | **7.874** | |
| 60. | Drive End - Endbell Bearing Fit Condition | | | **(P) Pass** |
| 61. | Opposite Drive End - Endbell Bearing Fit | | | |
| | 0 Degrees | 60 Degrees | 120 Degrees | |
| | **7.481** | **7.4809** | **7.481** | |
| 62. | Opposite Drive End - Endbell Bearing Fit Condition | | | **(P) Pass** |
| 63. | Bearing Cap Condition | | | P52 |
| | Drive End Bearing Cap | Opposite Drive End Bearing Cap | | |
| | **pass** | **pass** | | |


*ODE*


*ODR*


*DE*

*DE*

| | | | |
|---|---|---|---|
| 64. | End Bell Air Seal Fits | | |
| | Drive End Air Seal | Opposite Drive End Air Seal | |

65. List Machine Work Needed Below

***Fan cover has broken bolt.***

66. Technician **Terrence Holland**

## Root Cause of Failure

67. Failure locations

***Bearings.***

68. Root cause of failure

***DE seal and bearings failed due to contaminated grease.***

## Dynamic Balance Report

69. Rotor Weight and Balance Grade

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

70. Initial Balance Readings

| Drive End | Opposite Drive End |
|---|---|
| | |

71. Final Balance Readings

| Drive End | Opposite Drive End |
|---|---|
| | |

72. Technician

## Assembly

73. QC Check All Parts for Cleanliness Prior to Assembly

74. Photograph All Major Components prior to assembly

75. Final Insulation Resistance Test

76. Assembled Shaft Endplay

77. Assembled Shaft Runout

78. Test Run Voltage

| Volts | Volts | Volts |
|---|---|---|
| | | |

79. Test Run Amperage

| Amps | Amps | Amps |
|---|---|---|
| | | |

80. Drive End Vibration Readings - Inches Per Second

| Horizontal | Vertical | Axial |
|---|---|---|
| | | |

81. Opposite Drive End Vibration Readings - Inches Per Second

| Horizontal | Vertical | Axial |
|---|---|---|
| | | |

82. Ambient Temperature - Fahrenheit

83. Drive End Bearing Temps - Fahrenheit

| 5 Minutes | 10 Minutes | 15 Minutes |
|---|---|---|
| | | |

84. Opposite Drive End Bearing Temps - Fahrenheit

| 5 Minutes | 10 Minutes | 15 Minutes |
|---|---|---|
| | | |

| | |
|---|---|
| 85. | Document Final Condition with Pictures after paint |
| 86. | Final Pics and QC Review |