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

# AC Inspection as Found

**Tokai Carbon**
**3931 Carbon Plant Road**
**Ozark, AR 72949**

FolderID: 101287
FormID: 16610760

### AC Inspection - Rev. 2

| | |
|---|---|
| **Location:** | MOTOR SHOP LR |
| **Serial Number:** | 8004 |
| **Description:** | 40/10HP WESTINGHOUSE 1800/900RPM 326T |

| | |
|---|---|
| **Hi-Speed Job Number:** | 101286 |
| **Manufacturer:** | Other |
| **Product Number:** | 80C16346 |
| **Serial Number:** | 8004 |
| **HP/kW:** | 40 (HP) |
| **RPM:** | 1750 (RPM) |
| **Frame:** | 326T |
| **Voltage:** | 460 |
| **Current:** | 46.5/17.5 |
| **Phase:** | Three |
| **Hz:** | 60 (Hz) |
| **Service Factor:** | 1.0 |
| **Enclosure:** | TEFC |
| **J-box Included:** | Complete |
| **Coupling/Sheave:** | Sheave |
| **Bearing RTDs:** | No |
| **Stator RTDs:** | No |
| **Repair Stage:** | Final |
| **Heaters:** | No |
| **Winding Type :** | Random Wound |
| **Bearing Type:** | Rolling Element |

Priorities Found: **5 - High** **3 - 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

5. Distance from the end of the shaft to the Coupling/Sheave

## Initial Mechanical/Electrical

6. Does Shaft Turn Freely? **(Yes) Yes**

| | | | |
|---|---|---|---|
| 7. | Does Shaft Have Visible Damage? | **(No) No** | P20 |

| | | | |
|---|---|---|---|
| 8. | Assembled Shaft Runout | | |
| 9. | Assembled Shaft End Play | | |
| 10. | Air Gap Variation <10% | | |
| 11. | Lead Condition | **(P) Pass** | |
| 12. | Lead Length | **17 Inches** | |
| 13. | Frame Condition | **pass** | |
| 14. | Fan Condition | **(P) Pass** | P94 |

| | | | |
|---|---|---|---|
| 15. | Broken or Missing Components | | |

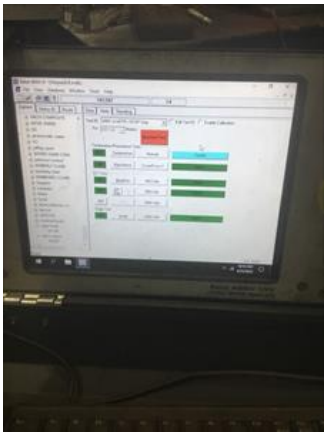
## Initial Electrical Inspection

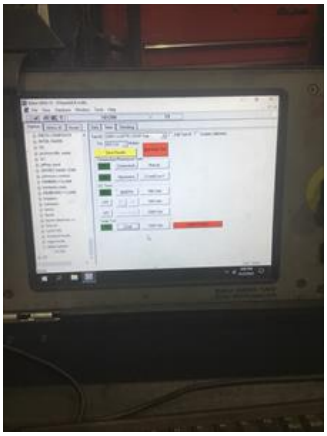
| | | | |
|---|---|---|---|
| 16. | Insulation Resistance/Megger | **Megohms** | |
| 17. | Winding Resistance | | |

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

| | | | |
|---|---|---|---|
| 18. | Perform Surge Test | **(F) Fail** | P57 |

*Low speed side failed surge test.*





| | | | |
|---|---|---|---|
| 19. | Number of Stator Slots | | |
| 20. | Stator Condition | | |
| 21. | Stator Thermistors/Ohms | | |
| 22. | Stator Overloads/Ohms | | |

## Mechanical Inspection

| | | | |
|---|---|---|---|
| 23. | Drive End Bearing Brand | **FAG** | |
| 24. | Drive End Bearing Number- | **6312** | P32 |

| | | | |
|---|---|---|---|
| 25. | Drive End Bearing Qty. | **1** | |
| 26. | Drive End Bearing Type | **(Ball) Ball Bearing** | |
| 27. | Drive End Lubrication Type | **(Grease) Grease Lubricated** | |
| 28. | Drive End Bearing Insulation or Grounding Device? | **none** | |
| 29. | Drive End Wavy Washer/Snap-Ring Other Retention Device? | **none** | |
| 30. | Drive End Bearing Condition | **replace** | |
| 31. | Opposite Drive End Bearing Brand | **FAG** | |

| | | | |
|---|---|---|---|
| 32. | Opposite Drive End Bearing Number- | **6311** | P89 |

| | | |
|---|---|---|
| 33. | Opposite Drive End Bearing Qty. | **1** |
| 34. | Opposite Drive End Bearing Type | **(Ball) Ball Bearing** |
| 35. | Opposite Drive End Lubrication Type | **(Grease) Grease Lubricated** |
| 36. | Opposite Drive End Bearing Insulation or Grounding Device? | **none** |
| 37. | Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device? | **none** |
| 38. | Opposite Drive End Bearing Condition | **replace** |
| 39. | Drive End Seal | **none** |
| 40. | Opposite Drive End Seal | **none** |

## Rotor Inspection

| | | | |
|---|---|---|---|
| 41. | Rotor Type/Material | **(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast** | P3 |

| | |
|---|---|
| 42. | Growler Test |
| 43. | Number of Rotor Bars |
| 44. | Rotor Condition |
| 45. | List the Parts needed for the Repair Below<br>***6312 & 6311 sleeves for both housing fits. Rewind stator, and hand Polish both shaft fits.*** |
| 46. | Signature of Technician that Disassembled Motor **Terrence Holland** |

## Mechanical Fits- Rotor

47. Shaft Runout — **0.001 inches**

48. Rotor Runout

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

49. Coupling Fit Closest to Bearing Housing

| 0 Degrees | 90 Degrees | 120 Degrees |
|---|---|---|

50. Coupling Fit Closest to the end of the Shaft

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|

51. Drive End Bearing Shaft Fit

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|

*Slightly oversized, and needs to be hand polished.*

52. Drive End Bearing Shaft Fit Condition — **(F) Fail**

*Hand Polish. Slightly oversized*

53. Opposite Drive End Bearing Shaft Fit

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|

54. Opposite Drive End Bearing Shaft Fit Condition — **(F) Fail**

*Slightly oversized. Needs to be hand polished*

55. Shaft Air Seal Fits

| Drive End Air Seal | Opposite Drive End Air Seal |
|---|---|

## Mechanical Fits- Bearing Housings

56. Drive End - Endbell Bearing Fit

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|

57. Drive End - Endbell Bearing Fit Condition — **(F) Fail**

*Housing sleeve loose.*

58. Opposite Drive End - Endbell Bearing Fit

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|

59. Opposite Drive End - Endbell Bearing Fit Condition — **(F) Fail**

*Housing sleeve loose.*

60. Bearing Cap Condition

| Drive End Bearing Cap | Opposite Drive End Bearing Cap |
|---|---|

*None*

61. End Bell Air Seal Fits

| Drive End Air Seal | Opposite Drive End Air Seal |
|---|---|

62. List Machine Work Needed Below

*Sleeve both housing fits. Polish both shaft bearing fits.*

63. Technician **Terrence. Holland**

## Dynamic Balance Report

64. Rotor Weight and Balance Grade

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

65. Initial Balance Readings

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

66. Final Balance Readings

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

67. Technician

## Rewind

68. Core Test Results - Watts loss per Pound

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

69. Core Hot Spot Test

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

70. Post Rewind Electrical Test- Insulation Resistance

71. Post Rewind Polarization Index

72. Post Rewind Winding Resistance

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

73. Post Rewind Surge Test

74. Post Rewind Hi-Pot

75. Technician

## Root Cause of Failure

76. Failure locations

77. Root cause of failure

## Mechanical Fits- Rotor - Post Repair

78. Shaft Runout Post Repair

79. Rotor Runout Post Repair

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

80. Coupling Fit Closest to Bearing Housing Post Repair

| 0 Degrees | 90 Degrees | 120 Degrees |
|---|---|---|
| | | |

81. Coupling Fit Closest to the end of the Shaft Post Repair

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|
| | | |

| | | | |
|---|---|---|---|
| 82. | Drive End Bearing Shaft Fit Post Repair | | |
| | 0 Degrees | 60 Degrees | 120 Degrees |
| 83. | Opposite Drive End Bearing Shaft Fit Post Repair | | |
| | 0 Degrees | 60 Degrees | 120 Degrees |
| 84. | Shaft Air Seal Fits Post Repair | | |
| | Drive End Air Seal | Opposite Drive End Air Seal | |
| 85. | Shaft Repair Sign-off | | |
| **Mechanical Fits- Bearing Housings - Post Repair** | | | |
| 86. | Drive End - Endbell Bearing Fit Post Repair | | |
| | 0 Degrees | 60 Degrees | 120 Degrees |
| 87. | Opposite Drive End - Endbell Bearing Fit Post Repair | | |
| | 0 Degrees | 60 Degrees | 120 Degrees |
| 88. | Bearing Cap Condition Post Repair | | |
| | Drive End Bearing Cap | Opposite Drive End Bearing Cap | |
| 89. | End Bell Air Seal Fits Post Repair | | |
| | Drive End Air Seal | Opposite Drive End Air Seal | |
| 90. | End Bell Repair Sign-off | | |
| **Assembly** | | | |
| 91. | QC Check All Parts for Cleanliness Prior to Assembly | | |
| 92. | Photograph All Major Components prior to assembly | | |
| 93. | Final Insulation Resistance Test | | |
| 94. | Assembled Shaft Endplay | | |
| 95. | Assembled Shaft Runout | | |
| 96. | Test Run Voltage | | |
| | Volts | Volts | Volts |
| 97. | Test Run Amperage | | |
| | Amps | Amps | Amps |
| 98. | Drive End Vibration Readings - Inches Per Second | | |
| | Horizontal | Vertical | Axial |
| 99. | Opposite Drive End Vibration Readings - Inches Per Second | | |
| | Horizontal | Vertical | Axial |
| 100. | Ambient Temperature - Fahrenheit | | |
| 101. | Drive End Bearing Temps - Fahrenheit | | |
| | 5 Minutes | 10 Minutes | 15 Minutes |

| | | | |
|---|---|---|---|
| 102. | Opposite Drive End Bearing Temps - Fahrenheit | | |
| | 5 Minutes | 10 Minutes | 15 Minutes |
| 103. | Document Final Condition with Pictures after paint | | |
| 104. | Final Pics and QC Review | | |