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

# AC Inspection as Found

**US Zinc**
**3380 Fite Rd**
**Millington, Tennessee 38053**

FolderID: 154137
FormID: 22263998

## AC Inspection - Rev. 2

| | |
|---|---|
| **Location:** | ML SHOP |
| **Serial Number:** | 20121634 |

| | |
|---|---|
| **Hi-Speed Job Number:** | 154137 |
| **Manufacturer:** | Other |
| **HP/kW:** | 50 (HP) |
| **RPM:** | 1780 (RPM) |
| **Frame:** | 326 T |
| **Voltage:** | 208-230/460 |
| **Current:** | 58.3 (Amps) |
| **Phase:** | Three |
| **Hz:** | 60 (Hz) |
| **Service Factor:** | 1.15 |
| **Enclosure:** | TEFC |
| **# of Leads:** | 12 |
| **J-box Included:** | Half |
| **Coupling/Sheave:** | None |
| **Date Received:** | 11/13/2024 |
| **Bearing RTDs:** | No |
| **Stator RTDs:** | No |
| **Repair Stage:** | Teardown Inspection |
| **Heaters:** | No |
| **Winding Type :** | Random Wound |
| **Bearing Type:** | Rolling Element |

Priorities Found: **2 - High** **10 - Good**

## Overall Condition

1. Report Date **11/13/2024**
2. Nameplate Picture P2

3. Photos of all six sides of the machine. P3






| | | | |
|---|---|---|---|
| | 4. | Describe the Overall Condition of the Equipment as Received<br>***Dirty***<br>***Needs standard reconditioning*** | |
| **Initial Mechanical/Electrical** | | | |
| ● | 5. | Does Shaft Turn Freely? | **(Y) Yes** |
| | 6. | Does the shaft require T.I.R in Lathe to identify additional repairs? | |
| | 7. | Does Shaft Have Visible Damage? | **(No) No** |
| | 8. | Assembled Shaft Runout | **0.002 Inches** |
| | 9. | Assembled Shaft End Play | **0.001 inches** |
| | 10. | Air Gap Variation <10% | |
| ● | 11. | Lead Condition | **(P) Pass** |

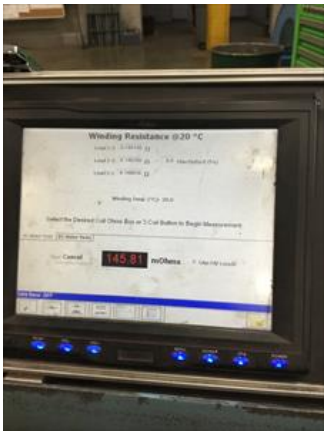
| | | | |
|---|---|---|---|
| | 12. | Lead Length | **10 Inches** |
| ● | 13. | Does it have Lugs?, If so what is the Stud Size? | **(No) No** |
| | 14. | Lead Numbers | **1-12** |
| | 15. | Frame Condition | **acceptable** |
| ● | 16. | Fan Condition | **(P) Pass** |
| | 17. | Broken or Missing Components | **no** |

## Initial Electrical Inspection

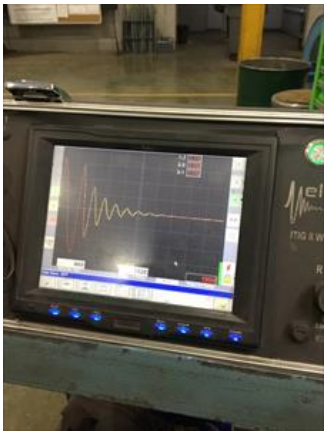
| | | | |
|---|---|---|---|
| | 18. | Insulation Resistance/Megger | **23000 Megohms** P22 |

| | | | |
|---|---|---|---|
| | 19. | Winding Resistance | P23 |

| 1-2 | 1-3 | 2-3 |
|---|---|---|
| **.1457** | **.1457** | **.1458** |



| | | | |
|---|---|---|---|
| 20. | Perform Surge Test | **(P) Pass** | P24 |



| | | |
|---|---|---|
| 21. | Number of Stator Slots | **48** |
| 22. | Stator Condition | **acceptable** |
| 23. | Stator Thermistors/Ohms | **none** |
| 24. | Stator Overloads/Ohms | **none** |

## Mechanical Inspection

| | | | |
|---|---|---|---|
| 25. | Drive End Bearing Brand | **C&U** | |
| 26. | Drive End Bearing Number- | **6312 C3 ZZ** | |
| 27. | Drive End Bearing Qty. | **1** | |
| 28. | Drive End Bearing Type | **(Ball) Ball Bearing** | |
| 29. | Drive End Lubrication Type | **(Grease) Grease Lubricated** | |
| 30. | Drive End Bearing Insulation or Grounding Device? | **none** | |
| 31. | Drive End Wavy Washer/Snap-Ring Other Retention Device? | **none** | |
| 32. | Drive End Bearing Condition | **worn** | P36 |

| | | |
|---|---|---|
| 33. | Opposite Drive End Bearing Brand | **C&U** |
| 34. | Opposite Drive End Bearing Number- | **6312 ZZ C3** |
| 35. | Opposite Drive End Bearing Qty. | **1** |
| 36. | Opposite Drive End Bearing Type | **(Ball) Ball Bearing** |
| 37. | Opposite Drive End Lubrication Type | **(Grease) Grease Lubricated** |
| 38. | Opposite Drive End Bearing Insulation or Grounding Device? | **none** |
| 39. | Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device? | **snap ring** |

| | | | |
|---|---|---|---|
| 40. | Opposite Drive End Bearing Condition | **worn** | P44 |

| | | | |
|---|---|---|---|
| 41. | Drive End Seal | | P45 |

| | | |
|---|---|---|
| 42. | Opposite Drive End Seal | **yes** |

## Rotor Inspection

| | | |
|---|---|---|
| 43. | Rotor Type/Material | **(Squirrel Aluminum) Squirrel Cage Aluminum Die Cast** |
| 44. | Growler Test | **(Pass) Pass** |
| 45. | Number of Rotor Bars | **44** |
| 46. | Rotor Condition | **acceptable** |
| 47. | List the Parts needed for the Repair Below<br>***(2) 6312ZZ C3 bearings*** | |
| 48. | Signature of Technician that Disassembled Motor | **Brian Goines** |

## Mechanical Fits- Rotor

| | | | |
|---|---|---|---|
| 49. | Shaft Runout | | |
| 50. | Rotor Runout | | |
| | Drive End Bearing Fit | Rotor Body | Opposite Drive End Bearing |

| | | | |
|---|---|---|---|
| 51. | Coupling Fit Closest to Bearing Housing | | |
| | 0 Degrees | 90 Degrees | 120 Degrees |
| | **2.1245** | **2.1245** | **2.1245** |
| 52. | Coupling Fit Closest to the end of the Shaft | | |
| | 0 Degrees | 60 Degrees | 120 Degrees |
| | **2.1245** | **2.1245** | **2.1245** |
| 53. | Drive End Bearing Shaft Fit | | P65 |
| | 0 Degrees | 60 Degrees | 120 Degrees |
| | **2.3625** | **2.3625** | **2.3625** |

***60mm = 2.3622  Pressfit tolerance is from 2.3623 to 2.3628***

| | | | |
|---|---|---|---|
| 54. | Drive End Bearing Shaft Fit Condition | **(P) Pass** | P66 |

55. Opposite Drive End Bearing Shaft Fit P67

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|
| **2.3625** | **2.3627** | **2.3625** |

*60mm = 2.3622  Pressfit tolerance is from 2.3623 to 2.3628*



56. Opposite Drive End Bearing Shaft Fit Condition **(P) Pass**

57. Shaft Air Seal Fits

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

## Mechanical Fits- Bearing Housings

58. Drive End - Endbell Bearing Fit P70

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|
| **5.1205** | **5.1207** | **5.1207** |

*130mm = 5.1181  Tolerance is from 5.1181 to 5.1191*

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

60. Opposite Drive End - Endbell Bearing Fit

| 0 Degrees | 60 Degrees | 120 Degrees |
|---|---|---|
| **5.1208** | **5.121** | **5.1207** |

*130mm = 5.1181  Tolerance is from 5.1181 to 5.1191*

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

62. Bearing Cap Condition

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

63. End Bell Air Seal Fits

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

64. List Machine Work Needed Below

*Again both endbells need to be bored and bushed*

65. Technician **Roger Ventrini**

## Root Cause of Failure

66. Failure locations

67. Root cause of failure