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

DC Repair Report

FUTURE FUEL CHEMICAL
2800 GAP RD HWY 394 SO
BATESVILLE, AR 72501

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DC Repair Report Rev. 2

Location:	MOTOR SHOP LR
Job Number:	102566
Serial Number:	WP-8-139-WP
Status:	Quarantine for review
Description:	25HP 1150 RPM GE

Hi-Speed Job Number:	102566
Manufacturer:	GE
Product Number :	5CD184ZA877B800
Serial Number:	WP-8-139-WP
HP/KW:	75 (HP)
RPM:	1150
Armature Voltage:	92 (Volts)
Field Voltage:	160 (Volts)
J-Box Included:	Yes

Priorities Found: **2 - High** **7 - Good**

Overall Condition

1. Describe the Overall Condition of the Equipment as Received P1

   Serviceable

2. Nameplate Picture P17

	3.	Distance From the End of the Shaft to the end of the Face of the Sheave/Coupling	

Initial Mechanical/Electrical

●	4.	Does the Shaft Turn Freely?	**(Y) Yes**	
●	5.	Does Shaft Have Visible Damage?	**(No) No**	P22

	6.	Assembled Shaft Runout		
	7.	Assembled Shaft End Play		
	8.	Air Gap Variation <10%		
●	9.	Lead Condition	**(P) Pass**	P55

	10.	Lead Length	**6 Inches**
●	11.	Frame Condition	**(P) Pass**

12. Fan Condition **(P) Pass** P81

13. Brush Information P87

Brush Number	Quantity	Condition
36A167402AA	**4**	**replace**

14. Brush Holder Condition - Verify proper gap to Commutator **pass** P92

Incoming Electrical Test

15. General Condition of the Armature/Commutator P6

16. Armature Insulation Resistance to Ground **Megohms** P19

17. Field Circuit Insulation Resistance to Ground **Megohms** P30

18. Interpole Circuit Insulation Resistance to Ground **Megohms** P46

19. Total Field Ohms P60

20. Field Ohms P70

Between F1/F2	Between F3/F4
24.2	**24.2**

21. MegOhms between Fields and Series

22. Series Drop Test 1&2

Series 1	Series 2

23. Series Drop Test 3&4

Series 3	Series 4

24.	Field Drop Test Fields 1&2			
	Total AC Voltage	Field #1	Field #2	
	100	**0.506**	**0.507**	
25.	Field Drop Test Fields 3&4			
	Field #3	FIeld #4		
26.	Field Drop Test Fields 5&6			
	Field #5	FIeld #6		
27.	Field Drop Test Fields 7&8			
	Field #7	FIeld #8		
28.	Interpole Drop Test 1&2			
	Total AC Voltage	Interpole #1	Interpole #2	
		0.057	**0.057**	
29.	Interpole Drop Test 3&4			
	Interpole #3	Interpole #4		
30.	Interpole Drop Test 5&6			
	Interpole #5	Interpole #6		
31.	Interpole Drop Test 7&8			
	Interpole #7	Interpole #8		
32.	Armature Number of Bars - Bar to Bar Test			
	Number of Bars	Bar to Bar Test		
		pass		

Mechanical Inspection

33.	Shaft Runout Drive End		**0.002 inches**	
34.	Shaft Runout Armature			
	Drive End Bearing Journal	Armature Core	ODE Bearing Journal	
35.	Drive End Bearing Number		**6211**	
36.	Drive End Bearing Quantity		**1**	
37.	Drive End Bearing Type		**(Ball) Ball Bearing**	P47

38.	Drive End Lubrication Type	**(Grease) Grease Lubricated**	
39.	Drive End Bearing Insulation or Grounding Device?		
	None		
40.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**	
41.	Drive End Bearing Condition	**replace/frosting**	P79

42.	Opposite Drive End Bearing Number	**6210**	
43.	Opposite Drive End Bearing Quantity	**1**	
44.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**	P100

45.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**	
46.	Opposite Drive End Bearing Insulation or Grounding Device?		
	None		
47.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**none**	
48.	Opposite Drive End Bearing Condition	**replace/frosted**	P114

49.	Signature of Technician who Performed Teardown	**Terrence Holland**

50. List Parts Needed Prior to Reassembly

Mechanical Fits - Armature

51. Coupling Fit Closest to Bearing Housing

0 Degrees	60 degrees	120 degrees

52. Coupling Fit Closest to the End of the Shaft

0 Degrees	60 degrees	120 degrees

53. Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
2.1659	**2.1657**	**2.1658**

54. Drive End Bearing Shaft Fit Condition — **(P) Pass**

55. Opposite Drive End Bearing Shaft Fit

0 Degrees	60 Degrees	120 Degrees
1.9688	**1.9687**	**1.9687**

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 - End Bell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
3.939	**3.939**	

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

60. Opposite Drive End - End Bell Bearing Fit

0 Degrees	60 Degrees	120 Degrees

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

ODE housing fit requires insulated fit

62. Bearing Cap Condition P48

Drive End	Opposite Drive End
pass	**pass**

63. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal

64. List any Machine work Needed Below **D.E & ODE housing fits bad**

ODE housing fit requires insulated fit.

65. Signature of Technician Performing Measurements **Terrence Holland**

Root Cause of Failure

66. Failure Locations P8

D.e and ode bearings, and comm requires polishing.

67. Root Cause of Failure P14

Motor has no shaft current protection i.e. aegis shaft grounding ring or insulated housing fit or bearing. Both bearings show evidence of electrical discharge machining in the form of frosting.

Commutator Data

68. Total Copper Segment Length

69. Number of Bars

70. Number of Wires Per Copper Bar and Size

Number of Wires per Bar	Wire Size

71. Equalizers per Copper Bar and Equalizer Wire Size

Equalizers per Bar	Wire Size

72. Document Commutator Diameter, Minimum and Max

Current Comm Diameter	Minimum Comm Diameter	Maximum Comm Diameter

73. Commutator Shaft Diameter

Front Shaft Diameter	Back Shaft Diameter

74. Commutator Type

75. Commutator Bore

76. Signature of Technician Recording Data

Dynamic Balance Report

77. Rotor Weight and Balance Grade

Rotor Weight	Balance Grade

78. Initial Balance Readings

Drive End Readings	Opposite Drive End Readings

79. Final Balance Readings

Drive End Readings	Opposite Drive End Readings

80. Signature of the Balance Technician

Post Armature Rewind Testing

81. Post Rewind Armature Insulation Resistance to Ground

82. Post Rewind Field Circuit Measure the Insulation Resistance to Ground

83.	Post Rewind Armature Number of Bars - Bar to Bar Test		
	Number of Bars	Bar to Bar Test	
84.	Post Rewind Field Circuit Insulation Resistance to Ground		
85.	Post Rewind Interpole Circuit Insulation Resistance to Ground		
86.	Post Rewind Field Drop Test Fields 1&2		
	Total AC Voltage	Field #1	Field #2
87.	Post Rewind Field Drop Test Fields 3&4		
	Field #3	FIeld #4	
88.	Post Rewind Field Drop Test Fields 5&6		
	Field #5	FIeld #6	
89.	Post Rewind Field Drop Test Fields 7&8		
	Field #7	FIeld #8	
90.	Post Rewind Interpole Drop Test 1&2		
	Total AC Voltage	Interpole #1	Interpole #2
91.	Post Rewind Interpole Drop Test 3&4		
	Interpole #3	Interpole #4	
92.	Post Rewind Interpole Drop Test 5&6		
	Interpole #5	Interpole #6	
93.	Post Rewind Interpole Drop Test 7&8		
	Interpole #7	Interpole #8	

Post Mechanical Repair

94.	Post Repair Coupling Fit Closest to Bearing Housing		
	0 Degrees	60 degrees	120 degrees
95.	Post Repair Coupling Fit Closest to the End of the Shaft		
	0 Degrees	60 degrees	120 degrees
96.	Post Repair Drive End Bearing Shaft Fit		
	0 Degrees	60 Degrees	120 Degrees
97.	Post Repair Drive End Bearing Shaft Fit Condition		
98.	Post Repair Drive End Opposite Drive End Bearing Shaft Fit		
	0 Degrees	60 Degrees	120 Degrees
99.	Post Repair Drive End Opposite Drive End Bearing Shaft Fit Condition		
100.	Post Repair Drive End - End Bell Bearing Fit		
	0 Degrees	60 Degrees	120 Degrees

101.	Post Repair Drive End - Endbell Bearing Fit Condition		
102.	Post Repair Opposite Drive End - End Bell Bearing Fit		
	0 Degrees	60 Degrees	120 Degrees
103.	Post Repair Opposite Drive End - Endbell Bearing Fit Condition		
104.	Post Repair Bearing Cap Condition		
	Drive End	Opposite Drive End	
105.	Post Repair End Bell Air Seal Fits		
	Drive End Air Seal	Opposite Drive End Air Seal	
106.	Signature of Tech Performing Mechanical Repairs		

Assembly

107.	Take Pictures of all Major Components Prior to Reassembly		
108.	Verify Brush Box Holders Have the Proper Clearance, and Brushes have been Seated Properly		
109.	Assembled Shaft End Play and Runout		
	Shaft Endplay	Shaft Runout	
110.	Perform No-Load Test Run, Record Armature Voltage and Current		
	Voltage	Current	
111.	Perform No-Load Test Run, Record Field Voltage and Current		
	Voltage	Current	
112.	Document Vibration Readings Drive End		
	Horizontal	Vertical	Axial
113.	Document Vibration Readings Opposite Drive End		
	Horizontal	Vertical	Axial
114.	Perform Full-Load Test Run, Record Armature Voltage and Current		
	Voltage	Current	
115.	Perform Full-Load Test Run, Record Field Voltage and Current		
	Voltage	Current	
116.	Document Vibration Readings Under Full Load Drive End		
	Horizontal	Vertical	Axial
117.	Document Vibration Readings Under Full Load Opposite Drive End		
	Horizontal	Vertical	Axial
118.	Ambient Temperature		
119.	Drive End Bearing Temps Under Full Load		
	5 Minutes	10 Minutes	15 Minutes

120.	Opposite Drive End Bearing Temps Under Full Load		
	5 Minutes	10 Minutes	15 Minutes
121.	Final Test Run Sign-Off		
122.	Document Final Condition With Pictures		
123.	Final QC Sign-Off		