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

DC Repair Report

KIMBERLY CLARK CORP
3461 COUNTY RD 100
CORINTH, MS 38834

FolderID: 153651
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DC Repair Report Rev. 2

Location:	Hi Speed
Job Number:	
Serial Number:	XB-2-45 XB
Status:	In For Repair
Description:	200 HP DC

Hi-Speed Job Number:	153651
Manufacturer:	GE
Product Number :	5CD445HA006C800
Serial Number:	XB-2-45 XB
HP/KW:	200 (HP)
RPM:	400.12
Armature Voltage:	500 (Volts)
Armature Current:	340 (Amps)
Field Voltage:	300.150 (Volts)
Field Current :	20 (Amps)
J-Box Included:	No
Date Received:	09/03/2024
Bearing RTDS:	No
Winding RTDS:	No
Mounting Orientation :	Horizontal

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

Overall Condition

1. Describe the Overall Condition of the Equipment as Received

   Motor is in great condition. Passed all electrical tests. Drive end bell needs bushing installed to repair bearing fit and com needs turned / polished. Both bearings contained electrical fluting. Recommend keeping insulated bearings and add aegis ring to drive end.

2. Nameplate Picture P2

3.	Distance From the End of the Shaft to the end of the Face of the Sheave/Coupling	**0**

Initial Mechanical/Electrical

4.	Does the Shaft Turn Freely?	**(Y) Yes**

5.	Does Shaft Have Visible Damage?	**(Yes) Yes**	P5

Slight faulting marks from pulling coupling.

6.	Assembled Shaft Runout	**0.002 Inches**
7.	Assembled Shaft End Play	**0.001 Inches**
8.	Air Gap Variation <10%	**No Provision for measurement**
9.	Lead Condition	**(P) Pass**
10.	Lead Length	**36 Inches** P10

From frame edge

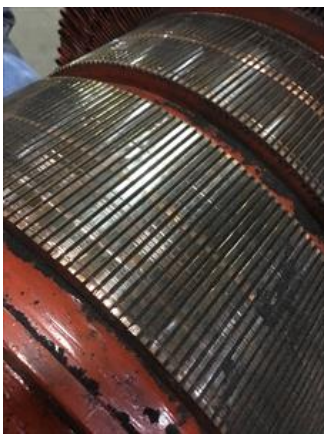
11.	Frame Condition	**(P) Pass**
12.	Fan Condition	**(NA) Not Applicable**

13.	Brush Information			P13
	Brush Number	Quantity	Condition	
		16	**Normal wear**	

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

Incoming Electrical Test

15.	General Condition of the Armature/Commutator	**groves and requires turning**	P15



16.	Armature Insulation Resistance to Ground	**650 Megohms**
17.	Field Circuit Insulation Resistance to Ground	**1000 Megohms**
18.	Interpole Circuit Insulation Resistance to Ground	**1000 Megohms**
19.	Total Field Ohms	**9.1**

20.	Field Ohms		
	Between F1/F2	Between F3/F4	
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
	122.5	**30.5**	**30.5**
25.	Field Drop Test Fields 3&4		
	Field #3	FIeld #4	
	30.6	**30.8**	
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
	197.1	**50.4**	**48.3**
29.	Interpole Drop Test 3&4		
	Interpole #3	Interpole #4	
	48.9	**49.3**	
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		P32

Number of Bars	Bar to Bar Test
248	**pass**

Mechanical Inspection

33.	Shaft Runout Drive End	**inches**
34.	Shaft Runout Armature	

Drive End Bearing Journal	Armature Core	ODE Bearing Journal

35.	Drive End Bearing Number	**6228 C3 Insulated**	P35

Insulated

36.	Drive End Bearing Quantity	**1**
37.	Drive End Bearing Type	**(Ball) Ball Bearing**
38.	Drive End Lubrication Type	**(Grease) Grease Lubricated**
39.	Drive End Bearing Insulation or Grounding Device?	**(Insulated) Insulated Bearing/Housing**
40.	Drive End Wavy Washer/Snap-Ring Other Retention Device?	**None**

41.	Drive End Bearing Condition	**Electrical fluting/frosting**	P41

42.	Opposite Drive End Bearing Number	**6224 C3 insulated**	P42

43.	Opposite Drive End Bearing Quantity	**1**
44.	Opposite Drive End Bearing Type	**(Ball) Ball Bearing**
45.	Opposite Drive End Lubrication Type	**(Grease) Grease Lubricated**
46.	Opposite Drive End Bearing Insulation or Grounding Device?	**(Insulated) Insulated Bearing/Housing**
47.	Opposite Drive End Wavy Washer/Snap-Ring Other Retention Device?	**Snap Ring**
48.	Opposite Drive End Bearing Condition	**electrical fluting present.** P48

49.	Signature of Technician who Performed Teardown	**Brandon Woodard**

50. List Parts Needed Prior to Reassembly

6228 C3 insulated
6224 C3 insulated
16 Southland Carbon GE 1115 brushes
Aegis ring SGR-138.2-3FH [Mfr# SGR-138.2-167.6-3FH]

Mechanical Fits - Armature

51. Coupling Fit Closest to Bearing Housing

0 Degrees	60 degrees	120 degrees
5.3735	**5.3735**	**5.3735**

52. Coupling Fit Closest to the End of the Shaft

0 Degrees	60 degrees	120 degrees
5.3735	**5.3735**	**5.3735**

53. Drive End Bearing Shaft Fit P53

0 Degrees	60 Degrees	120 Degrees
5.512	**5.5121**	**5.5121**

Tolerance is 5.5124-5.5131. .0003" under tolerance. Still a press fit. Recommend no machine work and adding loctite during assembly.

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

55. Opposite Drive End Bearing Shaft Fit P55

0 Degrees	60 Degrees	120 Degrees
4.7248	**4.7248**	**4.7248**

Tolerance is 4.7249-4.7255. .0001 under tolerance recommend no machine work.

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

57. Shaft Air Seal Fits

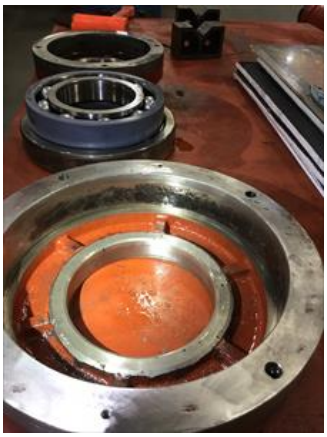
Drive End Air Seal	Opposite Drive End Air Seal
Pass	**Pass**

Mechanical Fits- Bearing Housings

58. Drive End - End Bell Bearing Fit P58

0 Degrees	60 Degrees	120 Degrees
9.8447	**9.8451**	**9.8448**

Tolerance is 9.8425-9.8436. Out of tolerance and requires bore and bushing installed.



59. Drive End - Endbell Bearing Fit Condition **(P) Pass**

60. Opposite Drive End - End Bell Bearing Fit

0 Degrees	60 Degrees	120 Degrees
8.4657	**8.4658**	**8.5659**

Tolerance is 8.4646-8.4657. .0002 out of tolerance recommend no machine work.

61. Opposite Drive End - Endbell Bearing Fit Condition — **(P) Pass**

62. Bearing Cap Condition

Drive End	Opposite Drive End
Pass	**Pass**

63. End Bell Air Seal Fits

Drive End Air Seal	Opposite Drive End Air Seal
Pass	**Pass**

64. List any Machine work Needed Below — **Yes**

Bore and bush drive end end bell.
Turn /Polish com

65. Signature of Technician Performing Measurements — **Brandon Woodard**

Root Cause of Failure

66. Failure Locations

67. Root Cause of Failure

Commutator Data

68. Total Copper Segment Length **inches** P68

7.75 total

3.5" each row

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		