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

Submersible Pump Repair Report

Georges Inc
1810 S. St. Louis Street
Batesville, AR 72501

FolderID: 102317
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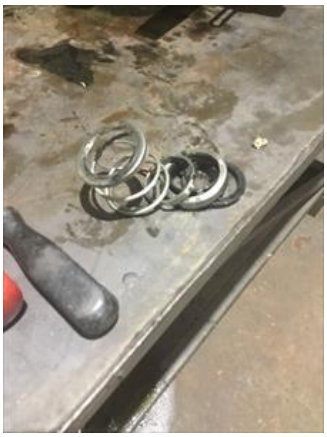
Submersible Pump Repair Report			
Location:	Shop	**HP:**	7.5 (HP)
Serial Number:	102317	**Serial:**	C1962403
Description:	SUBMERSIBLE PUMP NO NP	**V:**	230460 (V)
		RPM:	1750 (RPM)
		Phase:	3

Priorities Found: **6 - High** **18 - Good**

General

1.	Job Number	**102317**
2.	Report Date	P17



3.	Customer	**Georges**

Initial Pump Inspection

4.	Power Cord Wire Size	**12 AWG**

5.	Power Cord # of Conductors	**4**	P19
	Power & Sensor cord combined.		

6.	Power Cord Length	**29 ft**	
7.	Power Cord Condtion	**(F) Fail**	P37

8.	Sensor Cord Wire Size	**18 AWG**	
9.	Sensor Cord # of Conductors	**4**	
10.	Sensor Cord Length	**ft**	
	Combined with power cord.		
11.	Sensor Cord Condition	**(F) Fail**	
	Sensor cord and power cord combination		
12.	Sensor Cord for Thermal Protection?	**(Y) Yes**	P68

13.	Sensor Cord for Water Protection	**(Y) Yes**	
14.	Bowl Condition	**(P) Pass**	
15.	Impeller Condition	**(P) Pass**	
16.	Number of Wear Rings	**1**	
17.	Wear Ring Condition	**(P) Pass**	
18.	Wear Ring Size		
19.	Wear Ring Clearance to Impeller		
20.	Wear Ring Material	**brass**	
21.	Seal Surfaces Condition	**(F) Fail**	
22.	Seal Type	**Mechanical**	
23.	Number of Seals	**2**	
24.	Seal Material on Rotary Face	**sic and carbon**	
25.	Seal Material on Stationary Seat	**sic and ceramic**	
26.	Elastic Component Material		
27.	Seal OD	**2.1265 mm**	
	2 seals.		
28.	Seal ID	**in**	
	Shaft seal surface 1.5249 inner, and d 1.5241 outer		
29.	Seal Sleeve Material		P115

30.	Seal Plate Condition	**(P) Pass**
31.	Water Sensor in Seal Cavity?	**(Y) Yes**
32.	Oil Filled Seal Cavity?	**(Y) Yes**

33.	Oil Filled Stator?	**(Y) Yes**	

Initial Inspection

34.	Number of Leads		
35.	Lead Length	**Inches**	
	Power cord is 29 ft.		
36.	Lead Size		
37.	Lead Condition	**(F) Fail**	
38.	Lead Markings		
39.	Lead Size for Oil Filled Stator		
40.	Lug Size, Condition, and Type		
41.	Overload Required?	**(Y) Yes**	
42.	Winding RTD's		
43.	Winding Rtd's Condition		
44.	Shaft Run Out		
45.	Does Shaft Turn Freely	**no**	
46.	Does Shaft Have Visible Damage	**no**	
47.	Bearing Rtd's		
48.	Bearing Rtd's Condition		
49.	Contamination		
	Water contaminated		
50.	Frame Condition	**(P) Pass**	
51.	Fan Condition	**(NA) Not Applicable**	
52.	Broken or missing components		P108
	Power cord connection, and power cord connectors.		

Initial Electric Test

53.	Resistance to Ground	**Mohm**	
54.	Winding Resistance 1-2	**Ohm**	
55.	Winding Resistance 2-3	**Ohm's**	
56.	Winding Resistance 1-3	**Ohm's**	
57.	Resistive Imbalance	**%**	
58.	Hi-Pot	**Ua**	
59.	Surge Test	**(NA) Not Applicable**	

60. Stator Condition **rewind** P62

61. Failure Location P65

Initial Rotor Inspection

	62.	Rotor Type	**squirrel cage aluminum** P2

	63.	Air Gap <10% Variation	
	64.	Number of Rotor Bars	**43**
	65.	Number of Broken Rotor Bars	**0**
●	66.	Growler Test	**(P) Pass**
●	67.	Rotor Condition	**(P) Pass**

Mechanical Inspection

68.	Bearing Manufacturer	**FAG**	P9

69.	Bearing DE Size	**3308-BD-XL-TVH**	
70.	Bearing DE Type	**DBL wide, DBL row, ball bearing.**	
71.	DE Bearing Qty.	**1**	
72.	Bearing ODE Size	**6305**	P42

73.	Bearing ODE Type	**ball bearing**
74.	ODE Bearing Qty.	**1**
75.	Insulated Bearing	
	No	
76.	Lubrication Type	**oil**

77.	Grease Condition	**(NA) Not Applicable**	
78.	Bearing Retainers		
79.	Shaft Grounding Device	**(NA) Not Applicable**	
80.	DE Seal	**(Y) Yes**	P81

Outer seal

81.	DE Seal Type/Size	**Seal OD 2.1265.**	

Shaft seal surface is 1.5241. Carbon ceramic.

82.	ODE Seal	**(Y) Yes**	P89

Inner seal.

83.	ODE Seal Type/Size	**SIC / SIC**	

2.1265 OD. Of seal. Shaft seal surface is 1.5249

Root Cause of Failure

84.	Component Failure	**seals**	

85. Cause of Failure

Pump impeller was locked up with what appears to be an excessive amount of feathers. Additionally the power cord was forcibly yanked out of its receptacle, allowing moisture inside the stator causing the windings to short out. The drive end bearing was also locked up from contaminated lubrication.

86. Comments

87. Service Technician **Terrence Holland**

Machine Fit Inspection Report

88. Shaft Run Out

89. Initial Shaft Run Out

90. Final Shaft Run Out

91.	DE Bearing Shaft Fit	**(F) Fail**	P38

92.	DE Initial Shaft Bearing Fit Size		
	Measure 1	Measure 2	Measure 3
	1.5745	**1.5746**	**1.5745**
93.	DE Final Shaft Bearing Fit Size		
	Measure 1	Measure 2	Measure 3
94.	ODE Bearing Shaft Fit		**(P) Pass**
95.	ODE Initial Shaft Bearing Fit Size		
	Measure 1	Measure 2	Measure 3
	0.9845	**0.9845**	**0.9844000000000001**
96.	ODE Final Shaft Bearing Fit Size		
	Measure 1	Measure 2	Measure 3
97.	DE Air Seal Shaft Fit		
98.	DE Air Seal Shaft Size		
	Initial	Final	
99.	ODE Air Seal Shaft Fit		
100.	ODE Air Seal Shaft Size		
	Initial	Final	
101.	DE Endbell Fit		
102.	DE Initial Endbell Fit Size		
	Measure 1	Measure 2	Measure 3
103.	DE Final Endbell Fit Size		
	Measure 1	Measure 2	Measure 3
104.	DE Endbell Fit Insulated		
105.	DE Endbell Air Seal Fit		
106.	DE Endbell Air Seal Fit Size		
	Initial	Final	
107.	ODE Endbell Fit		

108.	ODE Initial Endbell Fit Size		
	Measure 1	Measure 2	Measure 3
109.	ODE Final Endbell Fit Size		
	Measure 1	Measure 2	Measure 3
110.	ODE Endbell Fit Insulated		
111.	ODE Endbell Air Seal Fit		
112.	ODE Endbell Air Seal Fit Size		
	Initial	Final	
113.	Foot Flatness		
114.	Foot Condition		
115.	Flange Condition		
116.	Service Technician		

Balancing Report

117.	Balance Type		
118.	Balance Operating Speed		
119.	Start Left End		
120.	Start Right End		
121.	Balancing Specification		
122.	Finish Left End		
123.	Finish Right End		
124.	Service Technician		

Assembly and Final Test

125.	Rotor and Impeller Balanced		
126.	Stator Housing Refilled with Oil (if required)		
127.	Stator Pressure Test		
128.	Seal Cavity Pressure Test		
129.	Time Under Pressure		
130.	Overload Continuity		
131.	Water Sensor Open?		
132.	Meggar Testing Reading		
133.	Surge Test		
134.	Hi-Pot		
135.	Winding Resistance		
	1-2	2-3	3-1
136.	Test Run		
137.	Test Run Voltage		
	Phase A	Phase B	Phase C
138.	Test Run Current		
	Phase A	Phase B	Phase C
139.	DE Vibration Reading		
	Horizontal	Vertical	Axial

140.	ODE Vibration Reading		
	Horizontal	Vertical	Axial
141.	Ambient Temp at start of Test Run		
142.	Temp at 5 minutes		
143.	Temp at 10 minutes		
144.	Temp at 15 minutes		
145.	Temp at 20 minutes		
146.	Temp at 25 minutes		
147.	Temp at 30 minutes		
148.	Temp at 35 minutes		
149.	Temp at 40 minutes		
150.	Temp at 45 minutes		
151.	Temp at 50 minutes		
152.	Temp at 55 minutes		
153.	Temp at 60 minutes		
154.	Motor Paint		
155.	Service Technician		