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: 103242
FormID: 21038768

Submersible Pump Repair Report	
Location:	Shop
Serial Number:	39264
Description:	7.5HP ZOELLER PUMP

HP:	7.5 (HP)
Model:	G7112-A
Serial:	39264
V:	460 (V)
A:	11 (A)
RPM:	3450 (RPM)
Hz:	60 (Hz)
Phase:	3

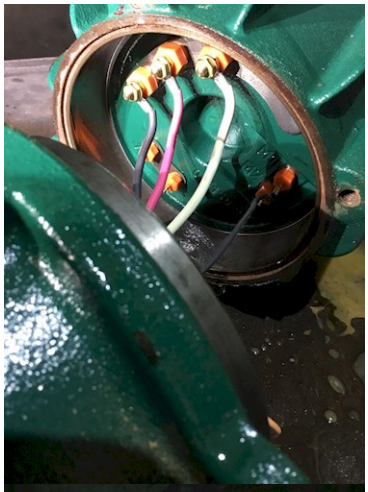
Priorities Found: **2 - High** **31 - Good**

General

1. Job Number **103242** P1





2.	Report Date	**07/19/2024**	
3.	Customer	**Georges**	P27

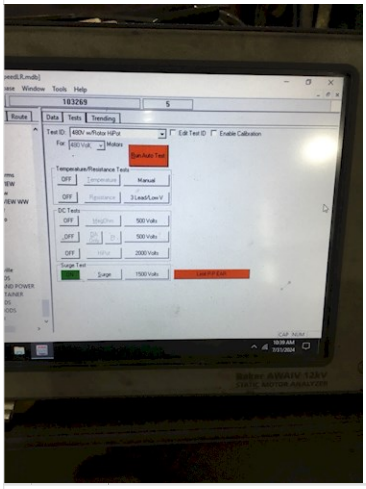
Initial Pump Inspection

	4.	Power Cord Wire Size	**12 AWG**	
	5.	Power Cord # of Conductors	**4**	
	6.	Power Cord Length	**25 ft**	
●	7.	Power Cord Condtion	**(P) Pass**	
	8.	Sensor Cord Wire Size	**18 AWG**	
	9.	Sensor Cord # of Conductors	**5**	
	10.	Sensor Cord Length	**25 ft**	
●	11.	Sensor Cord Condition	**(P) Pass**	
●	12.	Sensor Cord for Thermal Protection?	**(Y) Yes**	
●	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	**in**	
	19.	Wear Ring Clearance to Impeller	**in**	
	20.	Wear Ring Material		
●	21.	Seal Surfaces Condition	**(F) Fail**	P98

	22.	Seal Type	**Mechanical**	
	23.	Number of Seals	**2**	
	24.	Seal Material on Rotary Face	**carbon**	

	25.	Seal Material on Stationary Seat	**ceramic**
	26.	Elastic Component Material	**Buna**
	27.	Seal OD	**1.8775 in**
	28.	Seal ID	**1.25 in**
	29.	Seal Sleeve Material	
●	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	**9**
	35.	Lead Length	**6 Inches**
	36.	Lead Size	
●	37.	Lead Condition	**(P) Pass**
	38.	Lead Markings	**1-9**
	39.	Lead Size for Oil Filled Stator	**AWG**
●	40.	Lug Size, Condition, and Type	
	41.	Overload Required?	
	42.	Winding RTD's	**(NA) Not Applicable**
●	43.	Winding Rtd's Condition	**(NA) Not Applicable**
	44.	Shaft Run Out	**0.002**
	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***	
●	50.	Frame Condition	**(P) Pass**
	51.	Fan Condition	
	52.	Broken or missing components ***None***	
Initial Electric Test			
	53.	Resistance to Ground	**0.11 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	**(F) Fail**	P56



60.	Stator Condition	**rewind**	
61.	Failure Location		P65

Initial Rotor Inspection		
62.	Rotor Type	**squirrel cage**
63.	Air Gap <10% Variation	
64.	Number of Rotor Bars	**34**
65.	Number of Broken Rotor Bars	**0**
66.	Growler Test	**(P) Pass**
67.	Rotor Condition	**(P) Pass**
Mechanical Inspection		
68.	Bearing Manufacturer	**WJB**

69.	Bearing DE Size	**7308B**	P18

70.	Bearing DE Type	**thrust**	
71.	DE Bearing Qty.	**1**	
72.	Bearing ODE Size	**6303**	P42

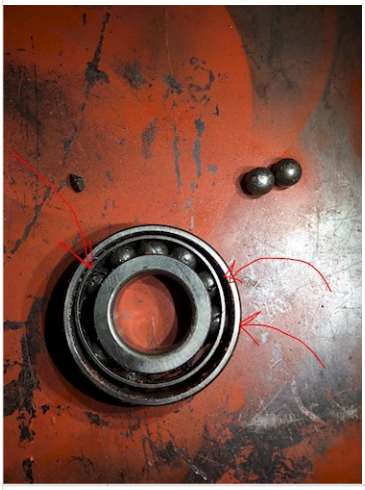
73.	Bearing ODE Type	**open ball bearing**	
74.	ODE Bearing Qty.	**1**	
75.	Insulated Bearing	**no**	
76.	Lubrication Type	**oil**	
77.	Grease Condition		
78.	Bearing Retainers	**(NA) Not Applicable**	
79.	Shaft Grounding Device		
80.	DE Seal	**(Y) Yes**	
81.	DE Seal Type/Size	**carbon ceramic**	
	Seal OD - 1.8775 ***Shaft ID - 1.2750***		
82.	ODE Seal	**(Y) Yes**	
83.	ODE Seal Type/Size	**carbon ceramic**	
	Same as DE seal		

Root Cause of Failure

84.	Component Failure	**DE and ODE Brearing and seal failure**	

85. Cause of Failure

DE seal failed allowing water to penetrate the housing. This caused the bearing lubrication to fail resulting in multiple cracked balls in the DE thrust bearing and the ODE bearing to lock up. Bearing fragments imbedded themselves into the windings resulting in a short circuit.



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 **(P) Pass**

92. DE Initial Shaft Bearing Fit Size

Measure 1	Measure 2	Measure 3
1.575	**1.5749**	**1.575**

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
0.6695	**0.6694**	**0.6694**

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			**(P) Pass**
102.	DE Initial Endbell Fit Size			
	Measure 1	Measure 2	Measure 3	
	3.545	**3.5452**	**3.5452**	
103.	DE Final Endbell Fit Size			
	Measure 1	Measure 2	Measure 3	
	See above			
104.	DE Endbell Fit Insulated			**(N) No**
105.	DE Endbell Air Seal Fit			
106.	DE Endbell Air Seal Fit Size			
	Initial	Final		
107.	ODE Endbell Fit			**(P) Pass**
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			**(NA) Not Applicable**
111.	ODE Endbell Air Seal Fit			
112.	ODE Endbell Air Seal Fit Size			
	Initial	Final		
113.	Foot Flatness			
114.	Foot Condition			
115.	Flange Condition			**(P) Pass**
116.	Service Technician			**Terrence Holland**

Balancing Report

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

Assembly and Final Test

	125. Rotor and Impeller Balanced	**(NA) Not Applicable**	
●	126. Stator Housing Refilled with Oil (if required)	**(Y) Yes**	
	Witness:		
●	127. Stator Pressure Test	**(P) Pass**	
	See below		
●	128. Seal Cavity Pressure Test	**(P) Pass**	P35

Bottom

Top

	129. Time Under Pressure	**15 min**	
●	130. Overload Continuity	**(P) Pass**	
	131. Water Sensor Open?	**(NA) Not Applicable**	
	132. Meggar Testing Reading	**498 Mohm**	P61

	133. Surge Test	P67

134.	Hi-Pot			**Ua**	
135.	Winding Resistance				
	1-2	2-3	3-1		
136.	Test Run			**(P) Pass**	
	Witness: CW				
137.	Test Run Voltage				P95
	Phase A	Phase B	Phase C		
	459	**459**	**460**		

138.	Test Run Current				
	Phase A	Phase B	Phase C		
	3.6	**3.8**	**3.9**		
139.	DE Vibration Reading				
	Horizontal	Vertical	Axial		
140.	ODE Vibration Reading				
	Horizontal	Vertical	Axial		
141.	Ambient Temp at start of Test Run			**Degrees F.**	
142.	Temp at 5 minutes			**Degrees F.**	
143.	Temp at 10 minutes			**Degrees F.**	
144.	Temp at 15 minutes			**Degrees F.**	
145.	Temp at 20 minutes			**Degrees F.**	

146.	Temp at 25 minutes	**Degrees F.**
147.	Temp at 30 minutes	**Degrees F.**
148.	Temp at 35 minutes	**Degrees F.**
149.	Temp at 40 minutes	**Degrees F.**
150.	Temp at 45 minutes	**Degrees F.**
151.	Temp at 50 minutes	**Degrees F.**
152.	Temp at 55 minutes	**Degrees F.**
153.	Temp at 60 minutes	**Degrees F.**

154. Motor Paint P141

155. Service Technician **Terrence Holland**