



## Submersible Pump Repair Report

Jacksonville Waste Water

248 Cloverdale Road  
Jacksonville, AR 72076

FolderID: 101828  
FormID: 17832903

### Submersible Pump Repair Report

Location: Shop

Serial Number: G95415

Description: 5HP HYDROMATIC PUMP

Make: HYDROMATIC

HP: 5 (HP)

Model: HRGF500M3-4

Serial: G95415

V: 230 (V)

A: 15.6 (A)

Hz: 60 (Hz)

Phase: 3

Impeller Diameter: 9.25 (in)

Priorities Found: ● 34 - Good

### General

- |                |                          |
|----------------|--------------------------|
| 1. Job Number  | 101828                   |
| 2. Report Date |                          |
| 3. Customer    | Jacksonville Waste Water |

### Initial Pump Inspection



- |                         |        |    |
|-------------------------|--------|----|
| 4. Power Cord Wire Size | 12 AWG | P7 |
|-------------------------|--------|----|





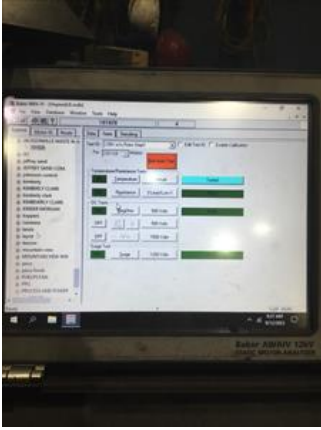


5.	Power Cord # of Conductors	4
6.	Power Cord Length	19.1 ft
7.	Power Cord Condition	(P) Pass
8.	Sensor Cord Wire Size	16 AWG
9.	Sensor Cord # of Conductors	4
10.	Sensor Cord Length	19.1 ft
11.	Sensor Cord Condition	(P) Pass
12.	Sensor Cord for Thermal Protection?	(Y) Yes
13.	Sensor Cord for Water Protection	(Y) Yes
14.	Bowl Condition	(P) Pass
15.	Impeller Condition	(P) Pass

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16.	Number of Wear Rings	
● 17.	Wear Ring Condition	(P) Pass
18.	Wear Ring Size	
19.	Wear Ring Clearance to Impeller	
20.	Wear Ring Material	
● 21.	Seal Surfaces Condition	(P) Pass
22.	Seal Type	
23.	Number of Seals	2
24.	Seal Material on Rotary Face	
25.	Seal Material on Stationary Seat	
26.	Elastic Component Material	
27.	Seal OD	1.8 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
<b>Initial Inspection</b>		
34.	Number of Leads	3
35.	Lead Length	8 Inches
36.	Lead Size	
● 37.	Lead Condition	(P) Pass
38.	Lead Markings	1-3
39.	Lead Size for Oil Filled Stator	AWG
40.	Lug Size, Condition, and Type	N/a
41.	Overload Required?	
42.	Winding RTD's	
43.	Winding Rtd's Condition	
44.	Shaft Run Out	
45.	Does Shaft Turn Freely	yes
46.	Does Shaft Have Visible Damage	no
47.	Bearing Rtd's	
48.	Bearing Rtd's Condition	
49.	Contamination	Yes
● 50.	Frame Condition	(P) Pass
● 51.	Fan Condition	(NA) Not Applicable
52.	Broken or missing components	None
<b>Initial Electric Test</b>		
53.	Resistance to Ground	
54.	Winding Resistance 1-2	
55.	Winding Resistance 2-3	
56.	Winding Resistance 1-3	
57.	Resistive Imbalance	
58.	Hi-Pot	

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60. Stator Condition **good**

61. Failure Location **seals**

### Initial Rotor Inspection



62. Rotor Type **squirrel cage aluminum**

P2



63. Air Gap <10% Variation

64. Number of Rotor Bars **48**

65. Number of Broken Rotor Bars **0**

66. Growler Test **(P) Pass**

67. Rotor Condition **(P) Pass**



### Mechanical Inspection



68. Bearing Manufacturer **FAG**





70. Bearing DE Type	regular ball bearing
71. DE Bearing Qty.	1
72. Bearing ODE Size	6303 Z
73. Bearing ODE Type	regular ball bearing
74. ODE Bearing Qty.	1
75. Insulated Bearing	no
76. Lubrication Type	oil
77. Grease Condition	(NA) Not Applicable
78. Bearing Retainers	(Y) Yes
 Snap rings	
79. Shaft Grounding Device	(NA) Not Applicable
80. DE Seal	(Y) Yes
81. DE Seal Type/Size	od 1.8858 id 1.2575
82. ODE Seal	(Y) Yes
83. ODE Seal Type/Size	od 1.8858 id 1.2575
<b>Root Cause of Failure</b>	
84. Component Failure	seals
85. Cause of Failure	Excessive wear
86. Comments	Seals failed due to contamination.
87. Service Technician	Terrence Holland
	
<b>Machine Fit Inspection Report</b>	
88. Shaft Run Out	(P) Pass
89. Initial Shaft Run Out	0.001 "
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
	<b>1.3783</b>	<b>1.3783</b>	<b>1.3782</b>
93.	DE Final Shaft Bearing Fit Size		
	Measure 1	Measure 2	Measure 3
94.	ODE Bearing Shaft Fit		<b>(P) Pass</b>
95.	ODE Initial Shaft Bearing Fit Size		
	Measure 1	Measure 2	Measure 3
	<b>0.6694</b>	<b>0.06691999999999999</b>	<b>0.6693</b>
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		<b>(P) Pass</b>
102.	DE Initial Endbell Fit Size		
	Measure 1	Measure 2	Measure 3
	<b>3.1497</b>	<b>3.1459</b>	<b>3.1458</b>
103.	DE Final Endbell Fit Size		
	Measure 1	Measure 2	Measure 3
104.	DE Endbell Fit Insulated		<b>(NA) Not Applicable</b>
105.	DE Endbell Air Seal Fit		
106.	DE Endbell Air Seal Fit Size		
	Initial	Final	
107.	ODE Endbell Fit		<b>(P) Pass</b>
108.	ODE Initial Endbell Fit Size		
	Measure 1	Measure 2	Measure 3
	<b>1.8507</b>	<b>1.8506</b>	<b>1.8508</b>
109.	ODE Final Endbell Fit Size		
	Measure 1	Measure 2	Measure 3
110.	ODE Endbell Fit Insulated		<b>(NA) Not Applicable</b>
111.	ODE Endbell Air Seal Fit		
112.	ODE Endbell Air Seal Fit Size		
	Initial	Final	
113.	Foot Flatness		<b>(NA) Not Applicable</b>
114.	Foot Condition		
115.	Flange Condition		

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### 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 (P) Pass  
 Per housing.

- 128. Seal Cavity Pressure Test (P) Pass P35



- 129. Time Under Pressure 15 min
- 130. Overload Continuity (P) Pass
- 131. Water Sensor Open? (Y) Yes

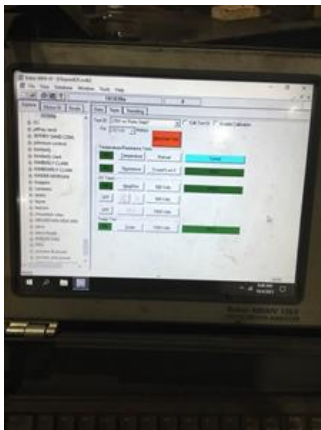


Time	Test ID	Test	Rel.	Min.	PI	DC	Sur.
9/15/2023 4:00...	480V w/...	T...	FAIL	PASS	PASS	PASS	PASS
9/15/2023 10:3...	4180V w/...	T...	PASS	PASS	PASS	PASS	PASS
Test Date	10/4/2023	9/15/2023	9/15/2023	9/15/2023			
Test Time	9:38:28 AM	10:05:55 PM	10:25:40 AM	10:22:12 AM			
Megohm Stat.	PASS	PASS	PASS	No Test			
Volts (V)	494	498	498				
µA	0.0538	0.0012	0.1848				
Resist	9189	420103	30385				
Air 40°C	3207	140137	8199				
PI Ratio	No Test	No Test	No Test	No Test			
Volts (V)							
PI Ratio	No Test	No Test	PASS	No Test			
DC Status	No Test	No Test	PASS	No Test			
Test Type			Step Voltage				
Test (V)			500				
Result			0.000				

## 133. Surge Test

(P) Pass

P67



Time	Test ID	Test	Rel.	Min.	PI	DC	Sur.
9/15/2023 10:3...	4180V w/...	T...	PASS	PASS	PASS	PASS	PASS
Test Date	10/4/2023	9/15/2023	9/15/2023	9/15/2023			
Test Time	9:38:28 AM	10:05:55 PM	10:25:40 AM	10:22:12 AM			
Test Type	No Test	No Test	PASS	No Test			
Volts (V)			9295				
µA			0.2108				
Resist			42985				
Air 40°C			11514				
Peak Voltage L1	1500	1500	7000				
Peak Voltage L2	1500	1500	7000				
Peak Voltage L3	1500	1500	7000				
Max R-F S&B	0.3/0.5/0.3	1.8/1.1/1.8	1.6/0.7/0.5				
DAF 3-210-S	No Test	0/2/2	0/1/1				

## 134. Hi-Pot

## 135. Winding Resistance

P77

1-2

2-3

3-1

Time	Test ID	Test	Rel.	Min.	PI	DC	Sur.
9/15/2023 4:00...	480V w/...	T...	FAIL	PASS	PASS	PASS	PASS
9/15/2023 10:3...	4180V w/...	T...	PASS	PASS	PASS	PASS	PASS
Test Date	10/4/2023	9/15/2023	9/15/2023	9/15/2023			
Test Time	9:38:28 AM	10:05:55 PM	10:25:40 AM	10:22:12 AM			
Temp (°C)	Tested	Tested	Tested	No Test			
Temp Comp.	Thermoplastic	Thermoplastic	Thermoplastic	None			
Rel L1 (Ohms)	PASS	PASS	PASS	No Test			
Rel L2 (Ohms)							
Rel L3 (Ohms)							
L1-L2 (Ohms)	1.322 Conn 1.3...	1.855 Conn 3.8...	0.283 Conn 0.2...				
L2-L3 (Ohms)	1.316 Conn 1.3...	1.846 Conn 3.8...	0.283 Conn 0.2...				
L3-L1 (Ohms)	1.316 Conn 1.3...	1.887 Conn 3.7...	0.283 Conn 0.2...				
Max Delta R %	0.445	4.433	0.140				
Coil 1 (Ohms)	1.987 Conn 1.9...	5.588 Conn 5.8...	0.424 Conn 0.4...				
Coil 2 (Ohms)	1.970 Conn 1.9...	5.581 Conn 5.9...	0.471 Conn 0.4...				

## 136. Test Run

(P) Pass

P90

RW, TRH



### 137. Test Run Voltage

P95

Phase A

Phase B

Phase C

230

229

230



### 138. Test Run Current

P99

Phase A

Phase B

Phase C

6.1

6.2

6.3



### 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			P141











155. Service Technician

Terrence Holland

P142

 RHR

