BELZONA IMPROVES EFFICIENCY OF A FIRE TRUCK

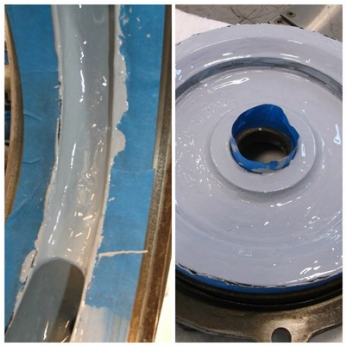
ID: 5662

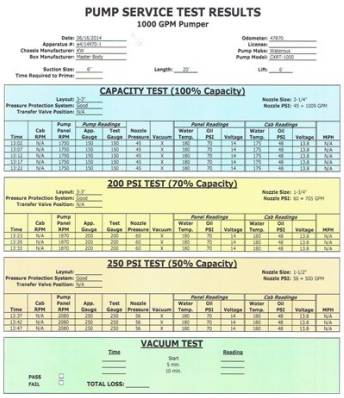
Industry: *Transport*
Application: *CEP-Centrifugal Pumps*
Substrate: *Cast iron*
Products: ** Belzona 1311 (Ceramic R-Metal) ,*
** Belzona 1341 (Supermetalglide) ,*

Customer Location: *Northeastern Washington, USA*
Application Date: *July 2015*

Problem

Cavitation on the cut-water in the pump.





PUMP SERVICE TEST RESULTS
1000 GPM Pumper

CAPACITY TEST (100% Capacity)

Time	Cab RPM	Pump Panel RPM	Pump Readings App. Gauge	Test Gauge	Nozzle Pressure	Vacuum	Panel Readings Water Temp.	Oil PSI	Voltage	Cab Readings Water Temp.	Oil PSI	Voltage	MPH
13:00	N/A	1790	150	150	45	X	180	70	14	175	48	13.8	N/A
13:07	N/A	1790	150	150	45	X	180	70	14	175	48	13.8	N/A
13:13	N/A	1790	150	150	45	X	180	70	14	175	48	13.8	N/A
13:17	N/A	1790	150	150	45	X	180	70	14	175	48	13.8	N/A
13:22	N/A	1790	150	150	45	X	180	70	14	175	48	13.8	N/A

200 PSI TEST (70% Capacity)

Time	Cab RPM	Pump Panel RPM	App. Gauge	Test Gauge	Nozzle Pressure	Vacuum	Panel Readings Water Temp.	Oil PSI	Voltage	Cab Readings Water Temp.	Oil PSI	Voltage	MPH
13:23	N/A	1830	200	200	60	X	180	70	14	180	48	13.8	N/A
13:28	N/A	1830	200	200	60	X	180	70	14	180	48	13.8	N/A
13:33	N/A	1830	200	200	60	X	180	70	14	180	48	13.8	N/A

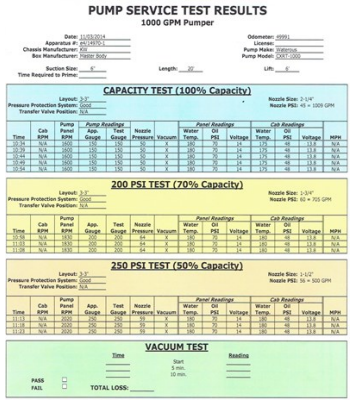
250 PSI TEST (50% Capacity)

Time	Cab RPM	Pump Panel RPM	App. Gauge	Test Gauge	Nozzle Pressure	Vacuum	Panel Readings Water Temp.	Oil PSI	Voltage	Cab Readings Water Temp.	Oil PSI	Voltage	MPH
13:37	N/A	2080	250	250	56	X	180	70	14	180	48	13.8	N/A
13:42	N/A	2080	250	250	56	X	180	70	14	180	48	13.8	N/A
13:47	N/A	2080	250	250	56	X	180	70	14	180	48	13.8	N/A

VACUUM TEST

Time	Reading
Start	
5 min.	
10 min.	

PASS ☐
FAIL ☐
TOTAL LOSS: _____



PUMP SERVICE TEST RESULTS
1000 GPM Pumper

CAPACITY TEST (100% Capacity)

Time	Cab RPM	Pump Panel RPM	Pump Readings App. Gauge	Test Gauge	Nozzle Pressure	Vacuum	Panel Readings Water Temp.	Oil PSI	Voltage	Cab Readings Water Temp.	Oil PSI	Voltage	MPH
10:24	N/A	2600	150	150	50	X	180	70	14	175	48	13.8	N/A
10:39	N/A	2600	150	150	50	X	180	70	14	175	48	13.8	N/A
10:44	N/A	2600	150	150	50	X	180	70	14	175	48	13.8	N/A
10:49	N/A	2600	150	150	50	X	180	70	14	175	48	13.8	N/A
10:54	N/A	2600	150	150	50	X	180	70	14	175	48	13.8	N/A

200 PSI TEST (70% Capacity)

Time	Cab RPM	Pump Panel RPM	App. Gauge	Test Gauge	Nozzle Pressure	Vacuum	Panel Readings Water Temp.	Oil PSI	Voltage	Cab Readings Water Temp.	Oil PSI	Voltage	MPH
10:58	N/A	1830	200	200	64	X	180	70	14	180	48	13.8	N/A
11:03	N/A	1830	200	200	64	X	180	70	14	180	48	13.8	N/A
11:08	N/A	1830	200	200	64	X	180	70	14	180	48	13.8	N/A

250 PSI TEST (50% Capacity)

Time	Cab RPM	Pump Panel RPM	App. Gauge	Test Gauge	Nozzle Pressure	Vacuum	Panel Readings Water Temp.	Oil PSI	Voltage	Cab Readings Water Temp.	Oil PSI	Voltage	MPH
11:13	N/A	2020	250	250	55	X	180	70	14	180	48	13.8	N/A
11:18	N/A	2020	250	250	55	X	180	70	14	180	48	13.8	N/A
11:23	N/A	2020	250	250	55	X	180	70	14	180	48	13.8	N/A

VACUUM TEST

Time	Reading
Start	
5 min.	
10 min.	

PASS ☐
FAIL ☐
TOTAL LOSS: _____

Photograph Descriptions

* Cavitation damage / Repaired cavitation damage ,
* Coated cut-water / Coated end plate ,
* Pre testing from the first pump showing 1750 rpm ,
* Post testing from the first pump showing 1600 rpm ,

Application Situation

Suction pump on a fire truck.

Application Method

The application was carried out in accordance with Belzona Know-How System Leaflets CEP-1 and CEP-3. The surface was grit blasted for preparation and Belzona 1311 applied to repair the cavitation damage, then Belzona 1341 was applied for protection and improved efficiency.

Belzona Facts

The alternative was to purchase a new pump for several thousand dollars. This pump was repaired and coated with US$550 worth

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of material. This is the second pump this fire department has repaired and coated. These pumps pump 1000 gpm. Prior to coating the pump ran at 1750 rpm to pump 1000 gpm. After coating, the pump only runs at 1600 rpm to pump 1000 gpm.

ISO 9001:2015
FS 695214
ISO 14001:2015
EMS 695213

Belzona products are manufactured under an ISO 9000 Registered Quality Management System.

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Repair • Protect • Improve

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