

# 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														
Date: 26/03/2014 Assembled by: J110001 Chassis Manufacturer: DSI Site Manufacturer: DSI Section Size: 6 Time Required to Prime: 0					Observation: 2700 GPM: 1000 Pump Make: DSI Pump Model: CEP-300 Lift: 6					Date: 11/03/2014 Assembled by: J110001 Chassis Manufacturer: DSI Site Manufacturer: DSI Section Size: 6 Length: 27 Lift: 6				
CAPACITY TEST (100% Capacity) Nozzle Size: 1.5" / 40 + 100 GPM														
Pressure Protection System: 000 Transfer Valve Position: 0														
Time	Calc RPM	Pump Panel RPM	App. Gauge	Test Gauge	Nozzle Pressure	Flow	Temp	PSI	PSI	PSI	PSI	PSI	PSI	PSI
1:00	1750	1750	150	150	4	175	4	175	4	175	4	175	4	175
1:10	1750	1750	150	150	4	175	4	175	4	175	4	175	4	175
1:20	1750	1750	150	150	4	175	4	175	4	175	4	175	4	175
1:30	1750	1750	150	150	4	175	4	175	4	175	4	175	4	175
1:40	1750	1750	150	150	4	175	4	175	4	175	4	175	4	175
1:50	1750	1750	150	150	4	175	4	175	4	175	4	175	4	175
2:00	1750	1750	150	150	4	175	4	175	4	175	4	175	4	175
200 PSI TEST (70% Capacity) Nozzle Size: 1.5" / 60 + 70 GPM														
Pressure Protection System: 000 Transfer Valve Position: 0														
Time	Calc RPM	Pump Panel RPM	App. Gauge	Test Gauge	Nozzle Pressure	Flow	Temp	PSI	PSI	PSI	PSI	PSI	PSI	PSI
1:00	1600	1600	150	150	4	160	4	160	4	160	4	160	4	160
1:10	1600	1600	150	150	4	160	4	160	4	160	4	160	4	160
1:20	1600	1600	150	150	4	160	4	160	4	160	4	160	4	160
1:30	1600	1600	150	150	4	160	4	160	4	160	4	160	4	160
1:40	1600	1600	150	150	4	160	4	160	4	160	4	160	4	160
1:50	1600	1600	150	150	4	160	4	160	4	160	4	160	4	160
2:00	1600	1600	150	150	4	160	4	160	4	160	4	160	4	160
250 PSI TEST (50% Capacity) Nozzle Size: 1.5" / 90 + 50 GPM														
Pressure Protection System: 000 Transfer Valve Position: 0														
Time	Calc RPM	Pump Panel RPM	App. Gauge	Test Gauge	Nozzle Pressure	Flow	Temp	PSI	PSI	PSI	PSI	PSI	PSI	PSI
1:00	1500	1500	150	150	4	150	4	150	4	150	4	150	4	150
1:10	1500	1500	150	150	4	150	4	150	4	150	4	150	4	150
1:20	1500	1500	150	150	4	150	4	150	4	150	4	150	4	150
1:30	1500	1500	150	150	4	150	4	150	4	150	4	150	4	150
1:40	1500	1500	150	150	4	150	4	150	4	150	4	150	4	150
1:50	1500	1500	150	150	4	150	4	150	4	150	4	150	4	150
2:00	1500	1500	150	150	4	150	4	150	4	150	4	150	4	150
VACUUM TEST														
Time: 5 min. Result: PASS														
Time: 10 min. Result: PASS														
Time: 15 min. Result: PASS														
Time: 20 min. Result: PASS														
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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ISO 9001:2015  
 FS 695214  
 ISO 14001:2015  
 EMS 695213

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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.

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