



CASE STUDY

IMPELLER UPGRADE EXTENDS OPERATIONAL LIFE OF WATER PUMPS

- 50% increase in pump operational life
- 6% increase in performance
- ROI of 2 years

CHALLENGE

The customer was concerned about reduced performance on four Uniglide pumps that had not received any major maintenance since they were installed seven years previously. ClydeUnion Pumps, a Celeros Flow Technology brand, was the original pump manufacturer. We sent our Aftermarket Services team to the site to conduct a comprehensive health check of the pumps.



Hole in impeller blade



CLYDEUNION®
PUMPS

Industry: Water
Region: Americas
Category: Site investigation
API Type: BB1

SOLUTION

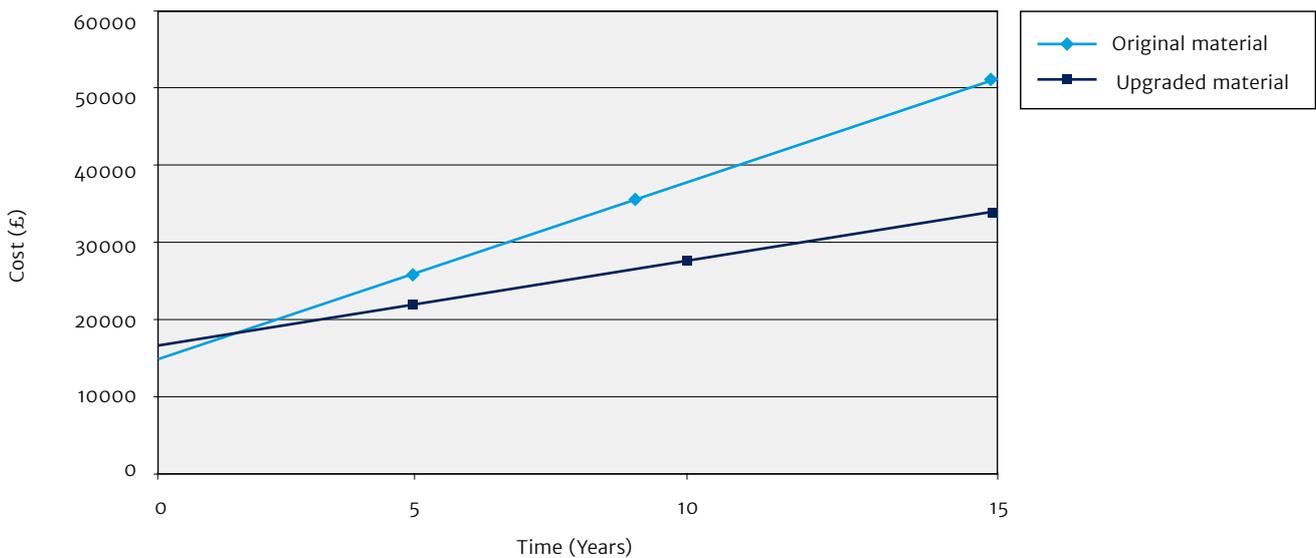
During testing, it became apparent that the performance of the Uniglide pumps was significantly down on original design parameters. The top half casing was removed and it was discovered that the impellers were badly damaged and the wear rings were severely worn. Upon investigating the root cause of the damage, we determined that the supply tank often dropped to a low level and cavitation occurred. This had caused holes to develop in the impeller's inlet vanes over time. The client advised that the low tank levels could not be prevented and therefore the impellers would have to be replaced every 6 years.

In order to prolong impeller life and reduce maintenance frequency, we proposed a material upgrade from cast iron to aluminium bronze (material BS 1400 AB2), which is more resistant to cavitation damage. The client accepted this recommendation. We manufactured new impellers, complete with new wear rings, for the four pumps.

OUTCOMES

Replacing the impellers complete with new wear rings on the Uniglide pumps achieved an immediate 6% increase in performance. The new aluminium bronze impellers have a design life in excess of 15 years, more than doubling the Mean Time Between Failures (MTBF). Return on investment for this project was calculated to be 2 years.

Cost saving per pump over 15 years



Aberdeen Service Center
P: +44 1224 756 100

Abu Dhabi Service Center
P: +971 02 4081900

Anncy Service Center
P: +49 405 220 2401

Baton Rouge Service Center
P: +1 225 778 3310

Battle Creek Service Center
P: +1 269 966 4782

Burlington Service Center
P: +1 905 315 3813

Calgary Service Center
P: +1 800 352 8294

Corpus Christi Center
P: +1 361 371 6519

Downey Service Center
P: +1 562 622 2371

Glasgow Service Center
P: +44 141 637 7141

Jenks Service Center
P: +1 281 217 6359

Odessa Service Center
P: +1 704 808 3780

Penistone Service Center
P: +44 1226 763 311

Singapore Service Center
P: +65 6513 9276

Zhengzhou Service Center
P: +86 371 8665 2391

E: cu.sales@celerosft.com
www.celerosft.com



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