

UPGRADING CRITICAL PUMP INFRASTRUCTURE

Correcting Legacy Installation Issues to Improve Long-Term Reliability

AVTPUMP was engaged to carry out the routine overhaul of a pump, motor, gearbox, and baseplate assembly operating within a chemical processing environment.

The customer has worked closely with AVTPUMP for several years and had previously implemented a number of engineering recommendations aimed at improving reliability and maintenance standards. The objective of this project was initially focused on overhaul and refurbishment, however further inspection identified an opportunity to future-proof the asset through a wider upgrade programme.



THE CHALLENGE

While all unplanned downtime carries operational and financial impact, this project highlighted several long-standing engineering issues that could affect reliability, alignment quality, and maintainability over time.

The motor and gearbox assembly was a particularly heavy arrangement, and the existing baseplate design did not allow for efficient adjustment during alignment activities. In addition, the installed centre heights between the pump and motor/gearbox were mismatched, creating unnecessary installation complications.

OUR FINDINGS

Inspection revealed that the pump itself was in poor condition and was ultimately deemed beyond economical repair due to excessive internal damage.

Further assessment identified that the gearbox was outside of manufacturers tolerances due to wear, preventing overhaul and requiring replacement. In addition, the original installation arrangement presented several engineering concerns:

The motor and gearbox centre height sat approximately 2mm higher than the pump centreline. Shimming under the pump is not best practice.

No horizontal adjustment screws had been incorporated into the original baseplate design, making alignment more difficult during installation and maintenance

OUR SOLUTION

Following review of the findings, the customer elected to replace the pump, motor, gearbox, and baseplate assembly rather than continue with refurbishment of the original equipment.

A new baseplate was designed and supplied to correct the centre height mismatch and improve maintainability. Horizontal adjustment screws were incorporated into the design to simplify future alignment activities and improve installation control.

The upgraded system included a replacement pump assembly, new motor and gearbox, bespoke engineering baseplate, and precision laser alignment using ATEX rated laser alignment equipment.

THE RESULT

Although the scope of work increased beyond the original overhaul plan, the customer recognised the long-term reliability benefits of addressing the wider installation issues identified during inspection.

The completed upgrade delivered a more maintainable, correctly aligned, and future-proofed pump system designed to improve operational reliability and reduce the likelihood of alignment and pipe strain related failures moving forward.

SERVICE MATTERS

AT A GLANCE

Industry: Chemical Processing

Application: Process pump system overhaul and upgrade

Services Provided:

- » Pump repair and replacement
- » Bespoke baseplate design
- » Motor and gearbox replacement
- » Laser alignment
- » Parts supply and installation support

Products Used:

- » Sliding vane pump
- » Baseplate
- » ATEX alignment system

Key Findings:

Incorrect centre height, failed flame path checks, poor maintainability

Outcome:

Fully upgraded and future-proofed pump system with improved alignment and maintainability.

OUR APPROACH

The pump, motor, gearbox, and baseplate were returned to AVTPUMP for strip-down, inspection, and overhaul assessment.

During inspection, AVTPUMP engineers identified multiple issues affecting the overall installation quality and long-term reliability of the system.

Rather than simply refurbishing the existing equipment, discussions were held with the customer regarding the opportunity to correct these issues as part of a wider upgrade.

The customer was receptive to the recommendations and recognised the long-term value of improving the overall asset arrangement.

Need help?

Contact our experts

W: avtpump.com | T: +44 (0)844 561 0551 | E: sales@avtpump.com