

EXTENDING THE LIFE OF CRITICAL FIRE PROTECTION INFRASTRUCTURE



SERVICE MATTERS

AVTPUMP was engaged to overhaul a critical fire water pump forming part of an airport fire protection system. The asset was obsolete and no longer supported by the original equipment manufacturer, meaning replacement would typically be required if suitable spare components could not be sourced or manufactured.

The objective was to return the pump to full operational readiness, ensuring continued compliance with fire protection requirements while avoiding the cost, disruption, and long lead times associated with full pump replacement.



BEFORE

THE CHALLENGE

The pump provides the main water feed to the site's fire pump system, making it a safety-critical asset. Any unexpected failure would have compromised fire response capability and posed a serious operational and safety risk.

Due to the age of the pump, original OEM spares were no longer available. Key components including the pump shaft, casing wear rings, shaft sleeves, and bushes required reverse engineering and manufacture to restore the pump to its original performance and reliability.

The pump design dated back to the 1960s, meaning tight tolerances and precise machining were essential to ensure correct clearances and long-term serviceability.

OUR APPROACH

AVTPUMP engineers removed the pump from site and returned it to our Gloucester workshop for a full strip-down, inspection, and dimensional assessment.

All critical wear components were reverse engineered and manufactured in-house, including a new pump shaft, casing wear rings, shaft sleeves, and disaster bushes. The free-issued impeller was precision machined before assembly.



AFTER

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While no customer testimonial was provided, this project stands as a strong example of AVTPUMP's ability to support obsolete, safety-critical assets through advanced engineering and reverse manufacturing capabilities.

AVTPUMP Project Engineer

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Once rebuilt, the complete rotating assembly was dynamically balanced to G2.5 standard to minimise vibration and extend bearing and seal life. The pump was then pressure tested and performance tested to verify hydraulic performance and confirm compliance with original design specifications.

Following workshop testing, AVTPUMP engineers reinstalled the pump on site, carried out laser alignment, and completed full commissioning to return the asset safely to service.

THE RESULT

The pump was successfully installed and commissioned on time and on budget, restoring full functionality to a critical fire protection system.

Despite the age of the equipment, all internal clearances and tolerances were returned to the original manufacturer's specification, extending the operational life of the pump and avoiding the need for full replacement.

Only weeks after reinstallation, a well-publicised fire incident occurred at the airport. The fire protection system activated as designed, performing effectively to contain and extinguish the fire quickly, demonstrating the reliability and importance of the overhaul work.

AT A GLANCE

INDUSTRY: Aviation, Fire Protection

EQUIPMENT: 8/10 split case fire pump

PRODUCTS & SERVICES:

- » Pump overhaul
- » Reverse engineering of obsolete components
- » Dynamic balancing to G2.5
- » Pressure and performance testing
- » Installation and laser alignment
- » Commissioning

OUTCOME: Critical asset returned to service, full system integrity maintained.

FINANCIALS: Delivered on budget, significant cost avoidance versus full pump replacement.

Need help?

Contact our experts