



ERA3

Engineered Services • Reliability & Performance • Aftermarket Support

In association with **Dynapumps®**
BUILDING FOR LIFE



Through Engineering Capability and Process Knowledge
our aim is to be a source of Business Advantage.

ENGINEERED SERVICES



- On-Site Pump & System Assessment
- Fire System Design & Upgrade
- API Pump Upgrades
- Root Cause Analysis
- Reverse Engineered Parts
- Instrumentation & Remote Monitoring
- Predictive Maintenance

RELIABILITY & PERFORMANCE



- Pump System Electrical Upgrades
- Mechanical Seal Upgrades
- Vertical Turbine Pump Re-Bowls
- MTBF improvement
- Energy Consumption Reduction
- Life Cycle Cost (LCC) Reduction

AFTERMARKET SUPPORT



- Commissioning and Testing
- Project Installation
- Pump, Mechanical Seal and Gearbox repairs to OEM standards
- Laser Alignment
- Condition Monitoring
- Spare Parts Management
- Training



On-Site Pump and System Assessment



Drawing on Dynapumps' expertise and experience, our technicians and engineers can audit site fluid systems (pumps and pipework) to detail findings and issues through the use of in-field measurements and review of existing information and designs.

Dynapumps can provide consultative services for resolution of issues and improvements in the safety, uptime and costs of the systems.

Benefits are:

- Foundation integrity check
- Nozzle load correction
- Stress reduction for pump casing
- Actual pump performance assessment in the system
- Comparison to the original design condition
- System audits for assessment on the potential pump and system improvements



Fire Pump System Design and Upgrade

Dynapumps can evaluate the existing system and determine the required demand and potential upgrades.

Services Provided:

- Site visits and inspections on existing fire pumps
- Maintenance and Testing in accordance with AS1851
- In-field performance measurements at hydrants
- Audit maintenance records
- Advice on upgrades to meet the requirements of safety audits
- Upgrade and overhaul of existing fire pump sets to meet latest standards



API Pump Upgrades



Dynapumps can upgrade your existing API process pumps to the latest standard edition design features to improve reliability reducing your Total Cost of Ownership (TCO). API upgrades typically involve mechanical seal upgrades, bearing bracket and rotor conversions.

We can provide a thorough report of components and a complete scope for repairs. We also provide the operational manual, cross-sectional drawings of the upgrade, a spare parts sheet, material certification and an 'As Shipped' report.



Root Cause Analysis

Dynapumps can conduct a root cause analysis to identify the underlying cause and contributor factors to your pumping equipment failures and help you define a strategy to eradicate/minimize the problems to improve your MTBF. It involves mechanical, structural, material and hydraulic modifications.



Reverse Engineering

Our specialised team can reverse engineer your obsolete pump or pump part when spares are no longer available.

Dynapumps utilise the latest solid modelling and scanning technology to provide a cost-effective alternative to purchasing a new pump and modifying the system.

Services Provided:

- Replication of worn or failed pump or pump parts of any model or make
- Development of a stock of spare parts for your discontinued equipment



Predictive Maintenance

We are experienced in predictive maintenance to determine the condition of in-service equipment and estimate the date for performing maintenance. Dynapumps can assist in preparing, developing and defining a maintenance schedule to indicate conceivable downtime.

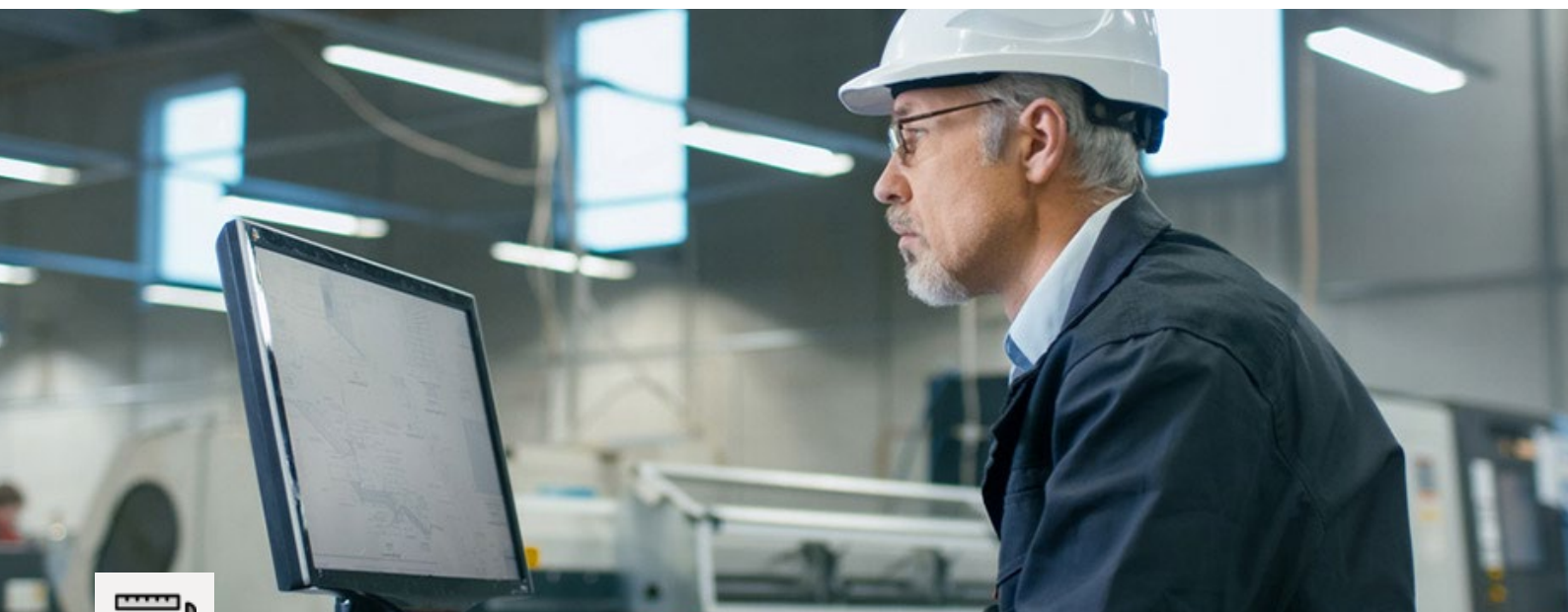
- Informed proactive decisions can be taken on individual machine maintenance
- A holistic view of the interconnected equipment is available enabling our customers to better predict potential downtime
- Overall plant life is extended while the risks associated with reactive and outdated techniques are reduced
- Audit and holdings of Spare Parts



Instrumentation and Remote Monitoring

Dynapumps can perform comprehensive monitoring and control solutions for access to real-time data. We can track and evaluate:

- Pump Flows & Pressures
- Running hours and downtime of equipment
- Running speeds
- Power consumption (kilowatts and amps)
- We can provide data for implementing maintenance strategies, asset life expectancy and proactive critical planning.



Pump System Electrical Upgrades



Dynapumps can carry out complete turn-key pump system upgrades.

Services Include:

- Instrumentation, Electrical and control upgrades
- Design and manufacture for harsh and corrosive operating environments
- Upgrade to meet latest Australian and legislative standards
- Guidance on reduction of overall system maintenance and running costs



Vertical Turbine Pump Re-bowls

Replacing the bowl assembly of your vertical turbine pump can be the most appropriate solution without disturbing the existing piping while keeping some of the original parts such as the driver, discharge head and column pipe. Our team will work on the best selection to ensure that your original hydraulic performance conditions are met or exceeded.

VTP re-bowl offer the following benefits:

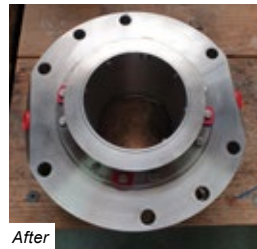
- Obsolete pump models are replaced
- OEM tolerances are restored on hydraulic parts
- Efficiency is increased
- Materials can be upgraded for better corrosion and cavitation resistance
- On-site installation service
- No change in piping or motor
- Quick turnaround
- New pump warranty on bowl assembly
- Less expensive than buying a new pump



Mechanical Seal Upgrades and Repairs

We provide Mechanical Seal refurbishment solutions to restore seals to new condition. Alternative low-cost options are available.

Dynapumps services cover all mechanical seals, makes and types. We have in-house facilities for the latest in machining, grinding and lapping such materials as tungsten carbide, silicon carbide, all grades of carbon and chrome oxide coating.



Pump and System Hydraulic Re-rates

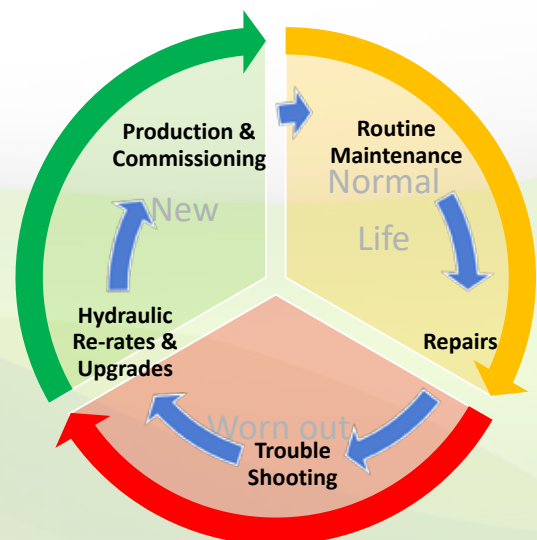
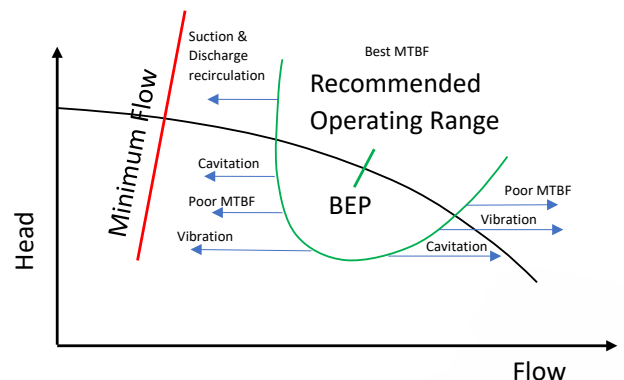
Due to an incorrect definition of design parameters when the pump was originally specified and/or a change in process or pumping system conditions as the plant ages, many pumps do not match the process requirements.

This mismatch causes them to run inefficiently, affects reliability and reduces the life of your equipment. All of which unnecessarily increases your operating costs.

Dynapumps can audit your pumping system and quantify the energy waste caused by pump/system mismatch.

After studying the specifics of your pump and system design, Dynapumps will provide you with a complete economic report indicating the expected savings and a modification proposal with the following benefits:

- Lower operating costs due to reduced energy consumption and increased reliability
- No changes to the baseplate, pump footprint or piping interface
- Short downtime
- Cost-effective with a fast return on investment compared to purchasing a new OEM pump
- New life for your equipment



Commissioning and Testing



Our technicians can supervise the installation of pumping equipment and commission the system to ensure the operational requirements while protecting customer's assets.

Service Includes:

- Local(site) and metropolitan assistance
- Preparation of a detailed report including all relevant information
- Supply of alignment and monitoring equipment, flow meter, checklists and supporting information
- Test plan and pre-works planning with the customer
- On-site customer familiarisation during the commissioning process



Project Installation

We can offer all installation services, from small to even large installations, this service can include:

- Mobilisation of plant and machinery to all locations throughout Australia
- Supply of all lifting equipment with certifications and approvals
- Civil works including concrete plinths/slabs
- Electrical services and modifications
- Experienced pump technicians
- Specialised equipment
- Operational Support
- Complete turnkey solution



Pump and Gearbox repairs to OEM standards

Dynapumps can recondition, maintain, repair and overhaul all types of pumps, gearboxes back to OEM specifications.

Our process starts with a detailed stripping and assessment to find the pump's condition. We follow the disassembly instructions and document the condition of each component on the pump to identify all issues. Our experienced team of service technicians to determine the root cause of the pump equipment failure.



Before



After

Condition Monitoring

Condition Monitoring solutions with multiple options:

Passive (Non-electrical devices)

Entry level solution only allowing for local monitoring

Local

- Electrical monitoring devices including temperature, vibration, gyroscopic and stores data locally. Some options such as IFM offer local storage and analysis

Remote

- Multiple options of monitoring from multiple vendors including multi-axis accelerometers, combined temperature, humidity, UV level, proximity and power consumption.

Active

- Local and cloud based analysis of pump, motor, and other asset operations, with active front end systems that allow the protection and prevention of the asset

Augmented Reality

- Allowing for remote or local augmented reality analysis and monitoring of assets, with the allowance for creating work and maintenance procedures that can be shown real time for trainers/maintainers

Training

Our team can train end-users who want to learn more about their on-site pump equipment and technology to build their skills and prevent support costs.

Our topics cover centrifugal pump fundamentals, system optimisation, vibration, failure modes and much more. We strive to provide pump users with the knowledge to troubleshoot problems or optimise pump operations.





In association with



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