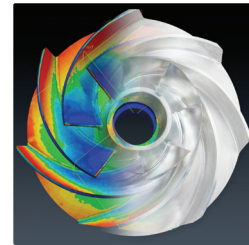
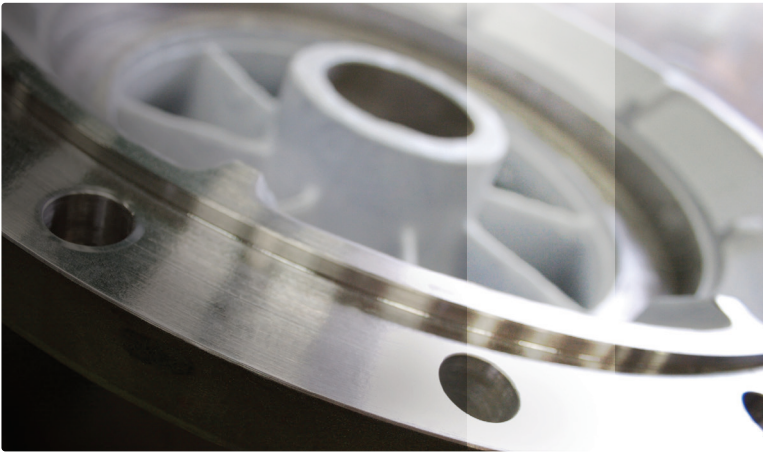
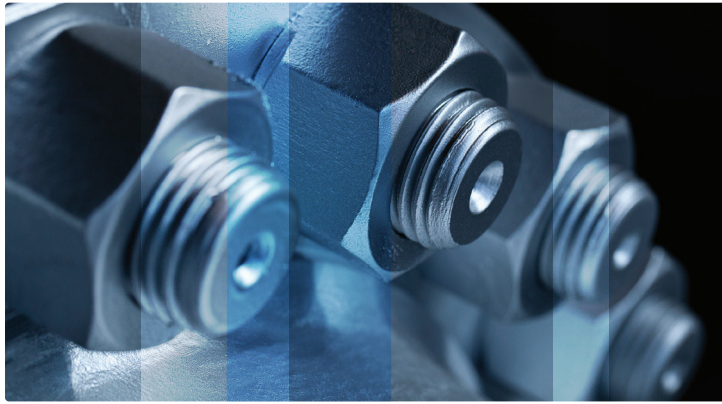


HYDRO SOUTH



Engineering Pumps for Better Performance and Longer Life – Since 1969





We Are Pump Experts

Engineering expertise is the foundation of our business. Our engineers and technical staff have extensive experience in the pump industry with a broad range of pumping equipment. Utilizing the latest manufacturing and design technologies, we not only repair pumps - we improve the design and reliability. With our broad knowledge-base and proven successes for more than 50 years, we are trusted by pump users around the world for better pump performance and longer life.

Our mission is to work hand in hand with our valued customers to optimize the performance and reliability of their pumping systems by evaluating and understanding root causes of pump degradation or failure and by providing unbiased engineering analysis, quality workmanship, and responsive field service for improved plant operation.



Worldwide Service Centers

24/7 Emergency Response

Field Service

Reliability Services

Quality Pump Repair

Engineering Services

Critical Parts Solutions

Certified Performance Testing

Condition Monitoring

Education & Training



Hydro provides engineering expertise and essential support to pump users around the world for better performance and longer life.



Hydro South – Powerful Capabilities

Hydro's 20,000 Sq. Ft. service center in Cumming, Georgia serves the Power Generation, Pulp & Paper, Steel, Pipeline, Petrochemical, Refining, Oil & Gas, Municipal, Mining, Industrial Manufacturing and other industries with innovative and customized solutions.

We get it right – the first time.



Our State-of-the-Art Equipment Includes:

Lathes

- 28" engine lathe with 144" bed
- 28" engine lathe with 156" bed
- 15" engine lathe with 84" bed
- 28" engine lathe with 120" bed with digital readout
- 24" Engine lathe with 72" bed with digital readout

Vertical

- Schiess vertical boring mill 54" table
- Shibaura TSS-16A High Column 63" table

Milling Machines

- Sharp vertical / horizontal milling machine with digital readout 56" table
- Maxmill milling machine 42" table

Horizontal Boring Mills

- TOS 48" horizontal boring mill
- Knuth 5" horizontal boring mill

Balance Machines

- Schenck 500 LB
- Schenck 15,000 LB

Overhead Cranes

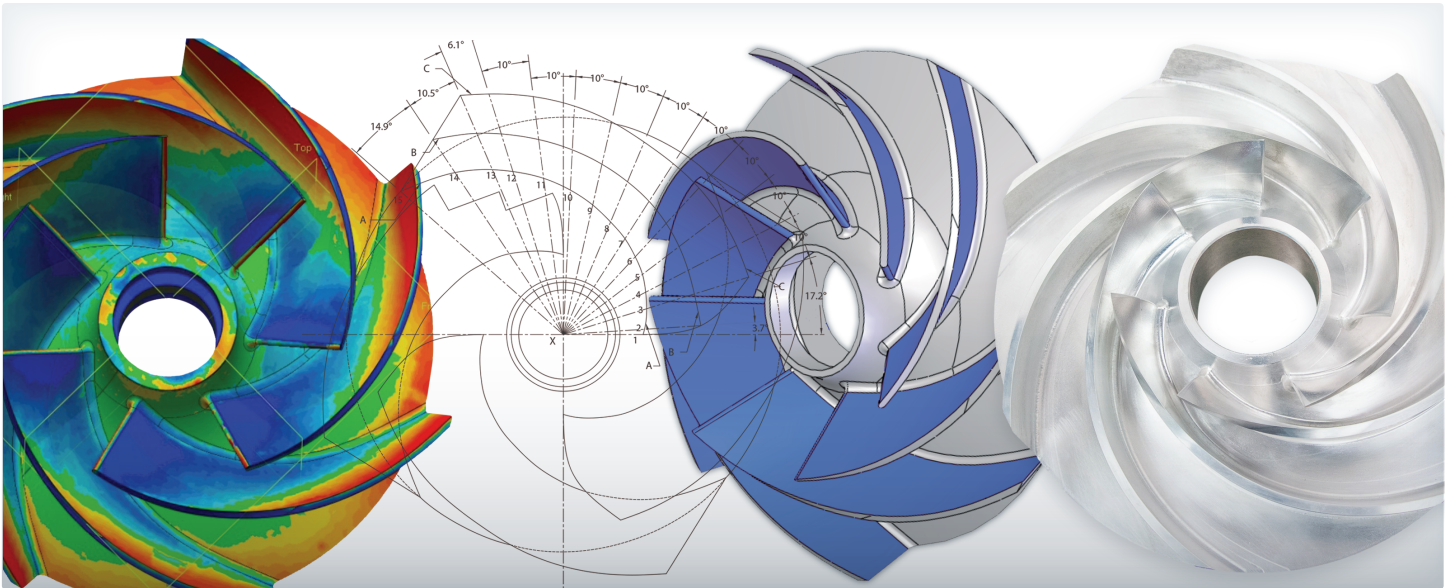
- Kone 3 ton
- (2) Kone 10 tons

Welding

- Miller welding machines GMAW, SMAW and GTAW
- 2 Welding positioners

Additional Equipment

- 14" Saws Well - band saw
- Mobile blasting capabilities
- Bridgeport 15" rotary table
- Belt and bench grinders
- Portable key cutter
- Vertical rack system
- Service Trucks: F-150 , F-650 Flatbed; F-150 XL Longbed
- 6 A/C Units in shop area; 20 ton



Engineering Makes All the Difference

Engineering expertise is the foundation of our business.

Hydro's engineers and technical staff have extensive experience in the pump industry and understand a broad spectrum of pumping equipment. By fully comprehending the unique characteristics of the customer's application and by applying their hydraulic, mechanical and materials knowledge, Hydro's engineers can make recommendations for restoring parts to achieve optimal pump performance and longer life.

An engineering review is a key element of our quality manufacturing process. Technical specifications are typically developed for parts via Hydro's proven reverse engineering practices.

Reverse engineering is quite different from "replicating." We are not interested in just replicating the existing component as it is, but also in evaluating the failure modes and defining the critical characteristics required to minimize the possibility of failure in the newly manufactured piece.

While accuracy, thoroughness, and technology are important elements of reverse engineering, it is Hydro's pump-specific engineering knowledge, understanding, and experience that distinguish and define our process.

Hydro's process for providing difficult-to-source cast parts, such as impellers, diffusers, discharge head casings, bowls and suction bells, may include:

- **Laser scanning and reverse engineering**
- **Solid modeling**
- **Hydraulic and metallurgical upgrades**
- **Solidification simulation**
- **Patternless casting / Precision sand mold printing**
- **Casting metals that you specify**
- **Testing to verify pump performance when required**

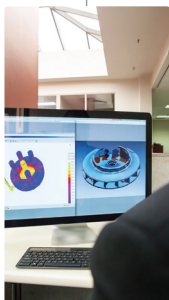
To achieve the best result for our customers, expert engineering is supported by the latest technology and proven process control procedures.



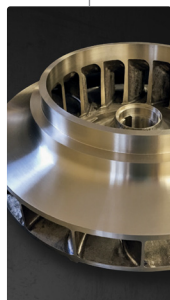
24/7 FIELD & EMERGENCY SERVICES



RELIABILITY SERVICES



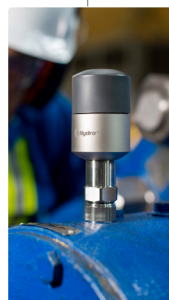
QUALITY REPAIR & ENGINEERING SERVICES



CRITICAL PARTS SOLUTIONS



CERTIFIED PERFORMANCE TESTING



CONDITION MONITORING



EDUCATION & TRAINING

A Trusted Partner for Lasting Solutions

Quality repair ensures reliability – on time and on budget

A major utility company had a Foster Wheeler 60 DF horizontal split case circulating water pump that required repair. They decided to complete the refurbishment during a 14-day unit outage by using the Hydro South service center.

The plant had a spare impeller, shaft, and shaft sleeves in inventory. The availability of spare parts usually facilitates an efficient and trouble-free repair. Unfortunately, it was discovered that the parts available were not properly designed for use in the existing pump.

Before the pump was pulled for the outage, the spare parts were sent to the Hydro South facility for inspection. This is where the first problem was discovered- the threaded shaft and shaft sleeves were designed for the incorrect rotation. If they had been installed as-is, the rotation of the pump would have resulted in displacement of the sleeves. The plant elected to modify the parts to prevent the sleeves from backing off during operation. Hydro South accomplished this by drilling and tapping the sleeves for set screws and dimpling the shaft.

The second problem was discovered when the rotating element arrived at the Hydro South shop. During the dimensional inspection, it became clear that the spare impeller was much larger than the original impeller. Not only would performance be affected, but the larger suction eye of the spare impeller could not be accommodated in the existing casing. The only option available was to reuse the old impeller, which required extensive repair to the vanes.

By leveraging their experience with complex pump repair and keeping an open line of communication with the plant, the Hydro South shop developed a work scope that addressed the problem. They completed the refurbishment within 8 days, which allowed the plant to maintain their 14-day outage schedule. Because the problem was identified and addressed quickly and efficiently, the plant can expect reliable operation of their pump for the rest of the plant operating life.





Pump Performance Testing – Smart and Fast

The highest standard of testing in a fraction of the time.

A faulty pump can cause entire plant failures and cost thousands in maintenance and downtime. That's why Hydro designed and built a state-of-the-art test lab, dedicated to the needs and requirements of the pump aftermarket. And because Hydro is independent, we offer unbiased recommendations in every test situation.

Our testing capabilities enable us to work with our customers to develop and implement engineering modifications for improving the performance of critical pumps and then to verify that performance in the lab. And because our test lab is dedicated to the aftermarket, we have the flexibility to schedule tests to meet our customers' needs. We test day and night so you get the highest standard of testing in a fraction of the time.

Test Lab Key Features

Designed in compliance with API 610 and Hydraulic Institute Standards

Capable of testing horizontal, vertical and submersible pumps

Maximum of 5,000 HP

Variable Frequency Drive; 2,300 - 4,160 volts

Flows of up to 35,000 GPM on the horizontal loop and 42,000 GPM on the vertical loop

State-of-the-art data collection system

Emergency testing in 7 days



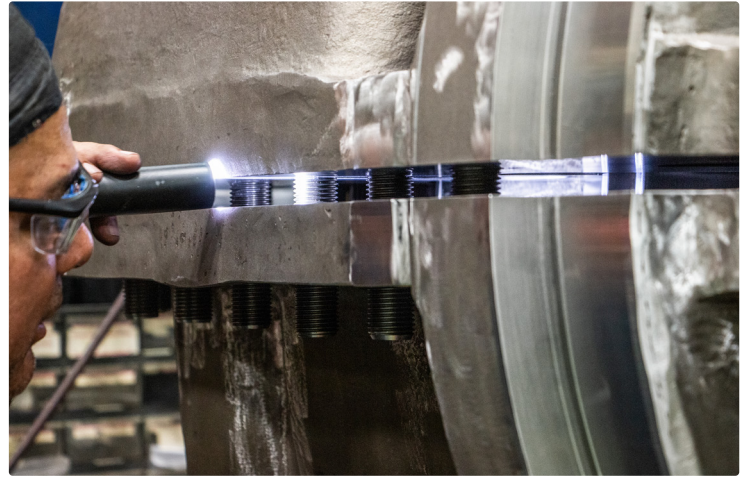
**Certified by
the Hydraulic Institute**

A Dedication to Quality and Commitment to Excellence

Systems and processes – high standards for every step

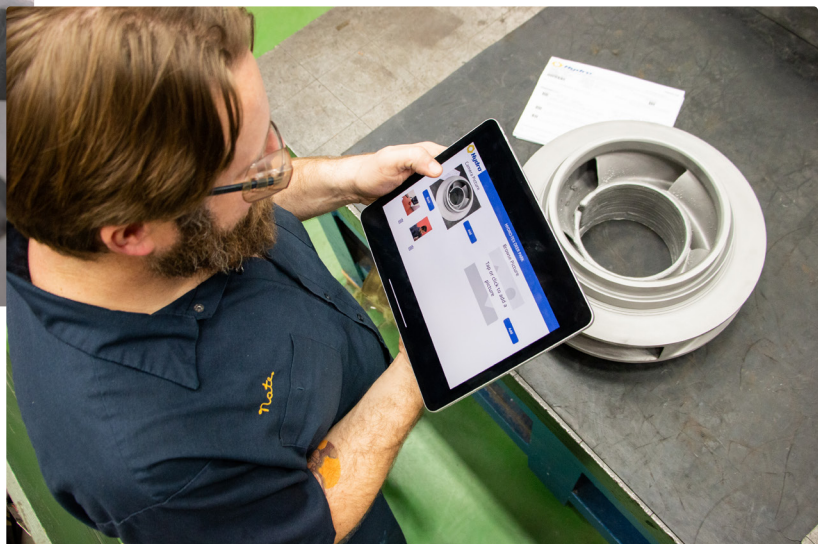
For over half a century Hydro has worked closely with our valued customers to provide industry-leading quality standards, customer-focused responsiveness, and unparalleled turn-around time to pump users around the world, across all industries.

Our global aftermarket service network is dedicated to providing its customers with high quality, engineered solutions to complex pump problems and implementing creative solutions within an expedited time frame. Our three-hundred-and-sixty degree total support framework has been made achievable through decades of accumulated expertise and commitment to a rigorously developed and carefully implemented Enterprise Resource Planning System.



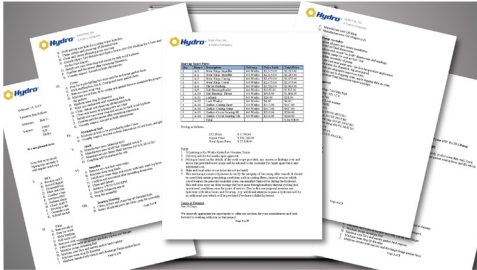
Hydro's ERP System was specifically configured for the pump building aftermarket process and provides an integrated and continuously updated view of core business processes using network-wide databases. These databases allow us to share vital engineering data across our entire network of service centers, and generate consistent, uniform parts lists for every pump that comes into one of our shops, ensuring consistent quality and faster turn-around time.

At the root of a quality job is a quality process. Our ERP system allows us to digitize each and every step of our workflow. From the initial inspection to final billing, every aspect of every project is turned into a datapoint, and is available to the customer.

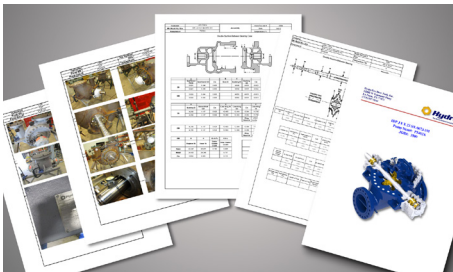




As-Found Inspection Documentation – Providing high-quality information and assets in regard to the unit's problem areas, breakage, signs of degradation, and other issues examined upon receiving.



Customer Data Management and Processes – All aspects of the work scope are processed through Hydro's ERP systems. This enhances transparency, quality assurance, accountability, traceability, consistency, and 2-way communication during the repair process.



As-Built Documentation – When a unit leaves the shop, customers are provided with a full spectrum of documentation post-repair, highlighting all aspects of the servicing, engineering support, and forensics, as well as documentation on further improvements, optimized operation suggestions, and support services.

Our ERP system continues to evolve; Increasing in efficiency, guaranteeing optimal turn-around times, and streamlining in scalability, to leverage the resources and wealth of knowledge across the global network of Hydro Facilities.

At Hydro, it's about more than quality, it's about our commitment to **consistent quality and ensuring that our customers are provided with a superior product, and optimized mean time between repair for years to come.**



ATLANTA | BEAUMONT | CHICAGO | DEER PARK | DENVER | HOUSTON | LOS ANGELES | PHILADELPHIA
AUSTRALIA | CANADA | CURAÇAO | ENGLAND | FRANCE | INDIA | KOREA | OMAN | UNITED ARAB EMIRATES | VIETNAM



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