

# PRO services

Building on more than 160 years of  
Goulds Pumps and Bornemann  
experience to provide plant  
performance solutions



# ITT

ENGINEERED FOR LIFE



# ITT PRO Services<sup>®</sup>

Reduce total cost of pump ownership and improve equipment availability

The initial purchase price of a pump is only a fraction of the total cost of ownership. Maintenance, energy, operational and downtime costs are your real concerns - year after year - over the life of the equipment. Together, they represent over 75 percent of your real costs and these are items you can address now and aggressively control.

## Improving Operations, Maximizing Savings

PRO Services can typically return savings of up to 25 percent annually. Depending upon your situation, significant savings are accrued by realizing some or all of the following:

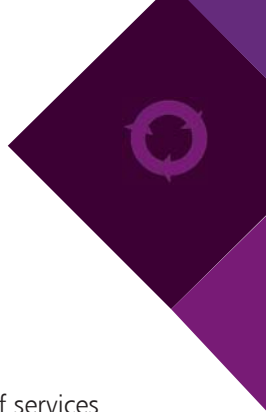
- Longer equipment life
- Lower maintenance costs
- Lower energy costs
- Improved technical support
- Increased equipment efficiency

## Addressing Needs

PRO Services has the experts to get the job done right. Each delivering the same passion and expertise we've put into manufacturing Goulds Pumps and Bornemann Pumps products and parts for more than 160 years. And we service every brand of pump and rotating equipment. Whether you need parts, upgrades, repairs, inventory services, condition monitoring or any other life cycle service, all you need to do is call your ITT PRO Services representative.

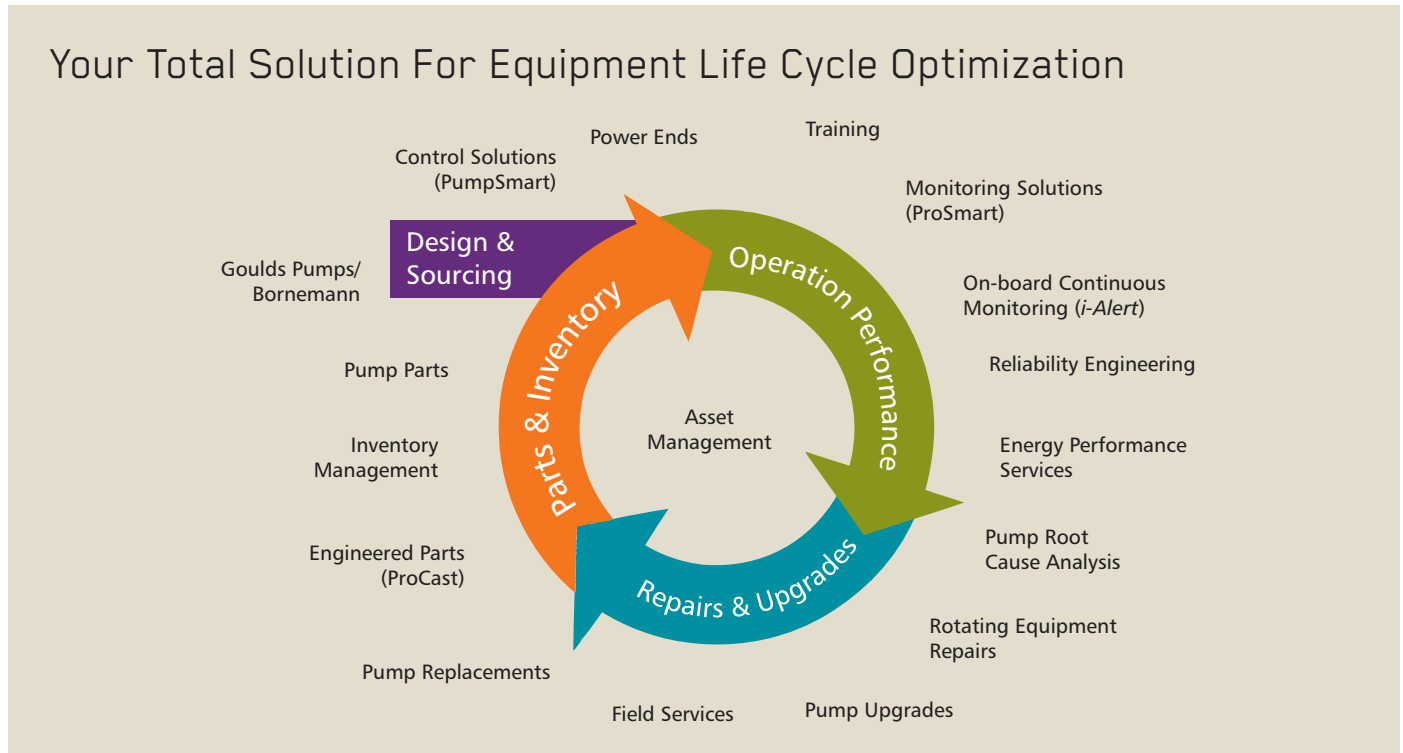
**ITT PRO Services, Goulds Pumps and Bornemann. A powerful combination.**

# ITT PRO Services



Reliability has no quitting time.

Building on over 160 years of Goulds Pumps and Bornemann experience, **PRO Services** provides an array of services focused on reducing equipment total cost of ownership (TCO) and increasing plant output, including predictive monitoring, maintenance contracts, field service, engineered upgrades, inventory management, and overhauls for pumps and other rotating equipment.



PRO Services provides OEM parts for Goulds Pumps, Bornemann Pumps, AC, Morris, Goynes, CB, HVC, UXN and ROV in a timely manner to meet end user requirements. Significant levels of inventory and quick response capability provide the necessary programs to meet all repair needs.

PRO Services provides programs of reliability services, energy assessments, asset management and training. These can be deployed as stand-alone or integrated solutions, tailored to the needs of your company.

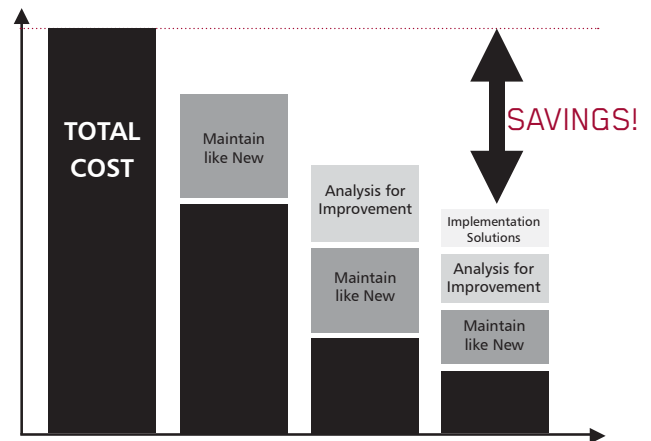
PRO Services provides an array of repairs and upgrades services to extend equipment life. PRO Services helps customers develop effective maintenance and asset management programs to lower maintenance costs, improve uptime, reduce inventory costs and extend equipment life.

# ITT PRO Services

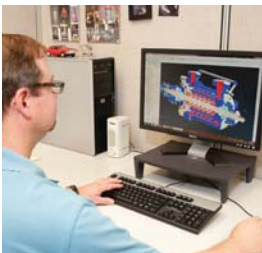
Reliability has no quitting time.

Depending on the issues and level of service needed, ITT PRO Services will tailor solutions along three levels that can be combined.

- **Level 1:** Maintain like New - keep your equipment in like-new condition
- **Level 2:** Analysis for Improvement - provide data and information that empower customers to improve equipment reliability and reduce cost
- **Level 3:** Implementation Solutions - deliver plant & equipment optimization



**Long Term Service Agreement:** PRO Services' overarching program involves the process of gathering critical equipment data, tracking changes over time, and analyzing for improvement opportunities in cost reduction and increased reliability. Provides 24/7 asset management year-round by pulling together individual programs to drive improvements in rotating equipment life-cycle costs and reliability.



# Programs

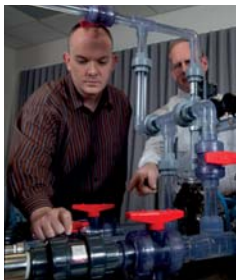

		<b>Level 1: Maintain like New</b>	<b>Level 2: Analysis for Improvement</b>	<b>Level 3: Implementation Solutions</b>
<b>Programs</b>		Keep Your Equipment in Like-New Condition	Information that Empowers Customers to Improve Equipment Reliability & Reduce Cost	Deliver Plant & Equipment Optimization
<b>Parts &amp; Inventory</b>	Quality OEM Parts	OEM parts for Goulds Pumps, Bornemann, AC, Morris, Goyne, CB, HVC, UXN, ROV		
	Inventory Management	Parts evaluation and storeroom optimization		Inventory optimization and management
	Engineered Parts	Orphaned and obsolete equipment		Replacement and upgrades
	Equipment Replacements	Power-end replacement/exchange programs		Custom drop-in replacements
	Asset Data	Information on equipment throughout lifecycle		
<b>Operation Performance</b>	Reliability Engineering		Mean Time Between Repair (MTBR), Bad Actors, failure mode reports, investigation & recommendations	Action plan development and project management
	Training	Operator training, maintenance training	Management Training; Asset Management; Six Sigma; Engineer Training	All training skills to improve capabilities
	Energy Performance Services		Efficiency & Hydraulic System Assessments	
	Control Solutions			Variable speed controls (PumpSmart) for pump protection & control
	Monitoring Solutions	Condition Monitoring Instrumentation (ProSmart, <i>i-ALERT</i> )	Condition Monitoring Service (ProAnalysis)	Condition Monitoring Service (ProAnalysis)
	Root Cause Analysis		Equipment health analysis. Identify source of poor reliability and recommend corrective action plans	
<b>Repairs &amp; Upgrades</b>	Field Services	Installation & Commissioning. Variable labor source for push/pull equipment		
	Failure Analysis	Identify source of failure with recommended plan of actions		
	Pump Upgrades			Pump modifications to meet current standards & process optimization
	Rotating Equipment Repairs	Repair to OEM standard		

**Long Term Service Agreement:** Providing Customers with maintenance solutions, 24/7, year-round

# Programs

<b>Parts &amp; Inventory</b>	<b>Quality OEM Parts</b>	<p>Genuine replacement parts are provided to OEM quality and performance standards and are delivered worldwide through a global distribution network.</p> <ul style="list-style-type: none"> <li>• Goulds Pumps, Bornemann Pumps</li> <li>• AC Pump products</li> <li>• Pumps acquired from IDP/Pacific                             <ul style="list-style-type: none"> <li>- CB (multistage BB5), upgraded Goulds model 7200CB</li> <li>- UXN (multistage BB3), upgraded to Goulds model 3600</li> <li>- HVC (single stage BB2), upgraded to Goulds model 3620</li> <li>- ROV (two stage BB2), upgraded to Goulds model 3640</li> </ul> </li> <li>• Morris models: CKX, RX, JC, HS, VJC, VHS, JCU, HSU, HSUC</li> <li>• Goyne models: 5000, 5050, 5100 and 5150</li> </ul>	
	<b>Inventory Management</b>	Utilizes extensive pump system experience to collect, analyze and implement inventory and supply chain improvements.	
	<b>Engineered Parts</b>	Performance engineered replacement parts for industrial pumps and rotating equipment. Laser 3D scanning and digital imaging is employed to reverse engineer complex cast components. A highly flexible steel alloy foundry features rapid casting technology. Castings are machined with state-of-the-art machine tool technology to provide quality components quickly and reliably.	
	<b>Equipment Replacements</b>	Equipment replacements in the same form, fit, function to quickly replace underperforming units. Programs are offered to provide subassembly exchanges, inventory or repair of equipment power ends, liquid ends, motors and other critical components.	
	<b>Asset Data</b>	The data you need, when and where you need it, is provided through barcode-enabled, smartphone/tablet access to a plant asset database. Information includes equipment location, condition and specifications (e.g., pump curves, parts lists, product manuals, maintenance history and repair reports).	
<b>Repairs &amp; Upgrades</b>	<b>Failure Analysis</b>	Identify source of failure with recommended actions and solutions.	
	<b>Engineered Upgrades</b>	Upgrades engineering delivers performance improvements through hydraulic, mechanical and material modifications. Pump and system improvements create attractive ROI and breakeven justifications. Programs include hydraulic re-rates to operate at best efficiency point, mechanical changes to latest standards including API, and materials improvement to increase life.	 <p><b>Multistage Between Bearing (BB5) pump - before and after upgrade</b></p>
	<b>Rotating Equipment Repairs</b>	Remanufacturing equipment to OEM or better condition. Repair involves all types of rotating equipment including pumps, blowers, gearboxes, fans, fluid drives, etc. Repairs increase quality of repairable assets, extend equipment life, provide root cause failure analysis (RCFA), and improve turnaround and availability.	
	<b>Field Services</b>	Field Services provides on-site equipment capability to end-user facilities. Expert technicians are factory trained and certified with all the necessary tools and instrumentation to do the job right, the first time. Services include on-site repair supervision, labor coordination, vibration analysis and root cause failure analysis.	

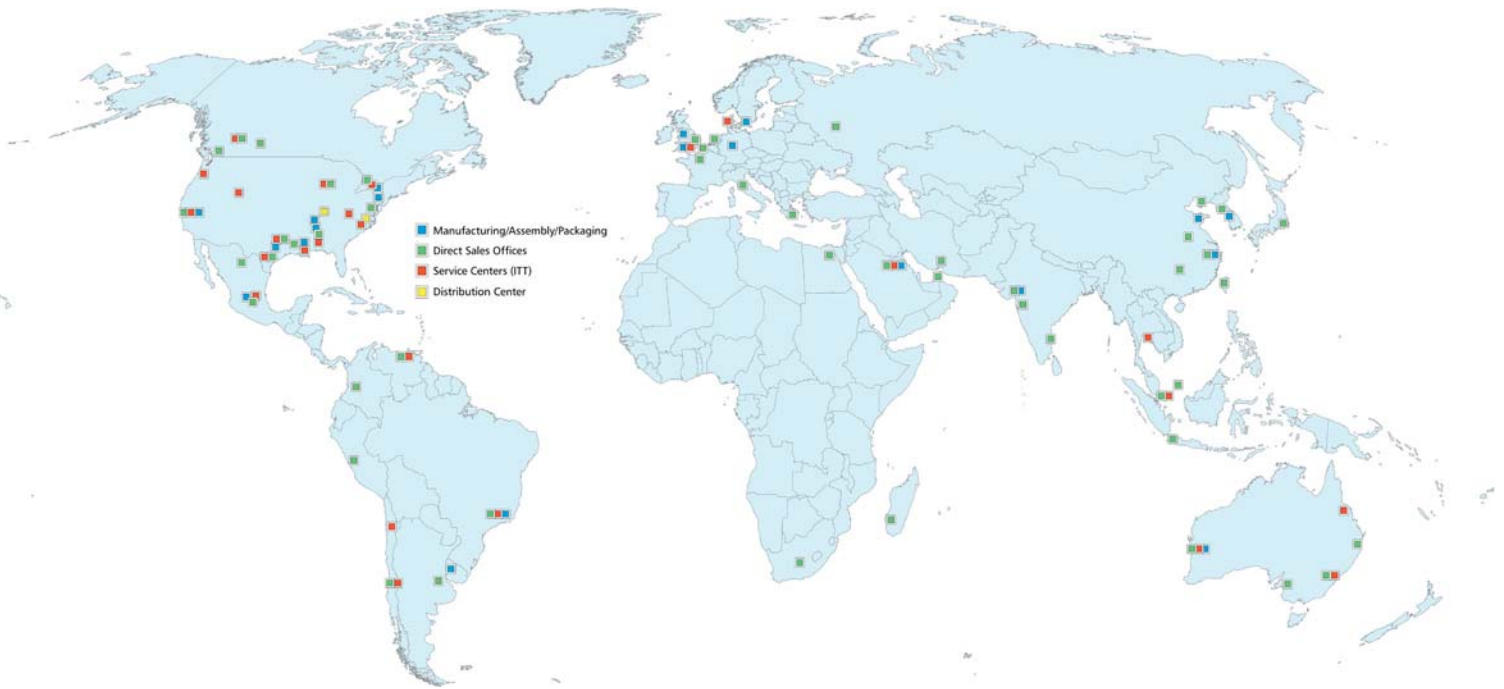
# Programs

<b>Operation Performance</b>	<b>Reliability Engineering</b>	<p>A program identifying and eliminating bad actors and increasing Mean Time Between Repair (MTBR). Reliability assessments of pump systems are conducted and include analysis of on-site interviews, maintenance history review, vibration data analysis and physical system evaluation. The completed reliability assessment is utilized to generate and present an improvement recommendation report.</p>	
	<b>Training &amp; Development</b>	<p>An offering of courses that develop reliability competencies in operation, maintenance, optimization and design of pump systems. This program offers open enrollment courses including: Fundamentals of Pump Operation, Pump System Maintenance for Reliability, Fundamentals of Pump System Troubleshooting, Driver to Pump Alignment, Lubrication for Reliability, Introduction/Basic Vibration Analysis, Critical Elements of Asset Management and Linking Lean with Reliability. Additional training is offered through private courses at customer sites with a hands-on interactive pumping system.</p>	
	<b>Energy Performance Services</b>	<p>Energy Performance Services optimize the efficiency of pump systems through mechanical and control modifications. Initial screening assessments involve collecting system and enterprise data which is analyzed based on industry developed standards. Detailed system review is conducted including on-site interviews, system data collection and analysis of system optimization alternatives.</p>	
	<b>Control Solutions</b>	<p>Pump control systems that provide real-time control and protection of pumps while delivering critical process knowledge normally obtained through the addition of expensive sensors.</p>	
	<b>Monitoring Solutions</b>	<p>A program of continuous monitoring and periodic reporting of machinery health, inspection requirements and corrective maintenance to prevent premature degradation of major components. Different levels of monitoring include on-board equipment monitoring with visual notification and wireless condition monitoring with web-based alerts and analysis.</p>	
	<b>Root Cause Analysis</b>	<p>Equipment health analysis which identifies sources of poor reliability and recommends corrective action plans. Root cause analysis provides the necessary process to eliminate bad actor equipment and to increase MTBR.</p>	

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we're there too.



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240 Fall Street  
Seneca Falls, NY 13148  
[www.itt.com](http://www.itt.com)

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