



ITT

Engineered for life

Oil and Gas

Products and Services
for Production, Transport, and Refining





ITT

>> ITT'S CAPABILITIES AND TECHNOLOGY

From pump systems used to transport and refine petroleum, to watermakers used on offshore rigs, ITT fluid handling technologies are used in all areas of Oil and Gas Industry.

Expertise

For over 160 years, our engineers have worked closely with major energy producers worldwide to develop innovative products and technologies that optimize the life cycle of equipment required by this demanding industry. ITT is recognized as the premier supplier of pumps, valves, controls and monitoring, offshore R.O. desalination, and services to the Oil and Gas Industry.

Reliability

ITT is recognized worldwide for our brands such as Goulds, Fabri-Valve®, Dia-Flo®, and C'treat. We have developed engineered products for Oil and Gas applications and offer custom designs for critical services. The latest foundry and manufacturing technologies, combined with demanding quality control processes and procedures, ensure the highest quality products. We provide the greatest value in life cycle cost and performance.

Innovation

ITT is the world leader in technology and engineering expertise utilizing capabilities such as:

- Computational fluid dynamics
- Materials science
- Manufacturing technology
- Finite element analysis
- Efficiency optimization
- Controls and monitoring
- Rapid prototyping
- Hydraulic design
- Mechanical design

PumpSmart® controls and ProSmart® monitoring systems keep processes reliably on-line by automatically adjusting pump output to meet system needs; detecting and correcting problems before they disrupt the process.



ITT - API EXPERT <<



A 6000 HP / 4600 kW testing facility.



Model 3600 (BB3) in a water injection service located in a demanding western Australian Desert.



ITT Commitment

ITT is committed to the Oil and Gas market, which is the largest segment of our business. We have been investing in technology to continuously improve our products to meet ever demanding industry requirements.

Proven API Leadership

ITT Goulds Pumps is a proven leader in API pumps:
Over 20,000 units installed

- Over 17,000 OH2/OH3's
- Over 3,000 BB1/BB2/BB3 pumps

40+ years of API expertise

Participating member on API 610 and API 682 committees

Complete Portfolio of API Pumps

ITT Goulds Pumps has a complete portfolio of proven centrifugal API pumps

- Overhung pumps
- Single and two-stage between-bearing
- Multistage between-bearing pumps-axially split
- Barrel Multi-Stage pumps
- Vertical, double casing pumps
- Specialty pumps

Global Coverage

ITT Goulds Pumps has the global coverage needed to serve multi-national companies in any region.

Industry Leading Hydraulic Coverage

We offer extensive hydraulic coverage to meet your process needs.

Better hydraulic fits can mean improved efficiency and long-term reliability and parts life.

6000 HP / 4600 kW Testing Capability

Our expanded test facility can meet any of your test requirements. This allows us to test at rated speeds which is critical to assess the impact of dynamic conditions including vibration.

API Engineering Expertise

We are experts in packaging engineered pumps that meet your demanding applications – with true conformance to the latest API specifications. ITT is a world leader in technology and engineering including hydraulics, materials science, mechanical design, and fluid dynamics. We have extensive experience in nearly every type of driver, bearing, seal, piping configuration, nozzle configuration, flange and baseplate designs to meet your application needs.



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>> EXPLORATION AND PRODUCTION



Recognized as a premier supplier of products and services for the oil and gas industry, it's only natural that ITT provides the sophisticated, rugged, and reliable products necessary to extract and process oil and gas.

Oil sands, shale oil, and shale gas have become economically and technologically feasible energy sources. Our products serve them all.

Offshore

ITT offers extensive products and services to meet the demanding requirements of:

- Offshore exploration
- Offshore production platforms
- Floating production, storage and off loading vessels (FPSO)

This includes manufacturing in super duplex materials and focusing on reducing the footprint and weight of our equipment.

Onshore

ITT products are engineered for use in harsh environments including the desert and the Arctic in applications such as water injection, crude shipping, and firewater.

Oil Sands

ITT is active in the Oil Sands production segment including mining and Steam Assisted Gravity Drain (SAGD) technologies.

Shale Gas

As part of the hydrofracking process, ITT supplies pumps and valves for slurry handling as well as water treatment.



PIPELINES <<

Whether you are talking short distances between storage tank and truck, or long barren stretches between pumping stations, ITT has the right solution

Transporting crude or refined product demands absolute care. ITT has dependable, efficient products that are crucial to managing your pipelines and transport requirements.

ITT's offerings include:

- Booster pumps
- Mainline pumps
- Pumps for terminals and tank farms
- Hydraulic rerates of existing pumps
- Remote monitoring





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>> LNG (LIQUID NATURAL GAS)



Liquefaction

ITT supplies pumps for LNG liquefaction plants including acid gas removal, Natural Gas Liquids (NGL) and utilities like cooling water and steam generation.

Regasification

ITT manufactures large horizontal and vertical water pumps used to convert the LNG back into a gas as well as other pumps for balance-of-plant requirements.

REFINING / PETROCHEMICAL <<

An oil refinery requires high temperatures and pressures as well as reliable equipment to convert crude into usable products. ITT offers a wide range of safe, reliable products and services designed for these demanding requirements.

We make highly engineered pumps that range from charge pumps, HF acid pumps, and reflux pumps to simple cooling water and sump pumps. For temperatures up to 800°F (426°C) and pressures up to 4000 PSI (275 Bar), we cover it all.

Our global services support ensure around-the-clock operation of your facility.

In petrochemical plants using refinery feedstock, we offer a full range of API, ANSI and ISO pump models including exotic metallurgies to handle corrosive applications.



Model 3620 (BB2) boiler feedwater service located in a refinery in Asia.



ITT

>> PRODUCTS



3700 (OH2)

Single-Stage, Overhung

- Capacity: 8,500 GPM (1930 m3/h)
- Head: 1,200 feet (360 m)
- Temperature: 800°F (425°C)
- Pressure: 870 PSIG (60 Bar)



3910 (OH3)

Vertical In-Line

- Capacity: 6,000 GPM (1360 m3/h)
- Head: 750 feet (230 m)
- Temperature: 650°F (340°C)
- Pressure: 600 PSIG (42 Bar)



3610 (BB1)

Axial Split Case, Double Suction

- Capacity: 50,000 GPM (11355 m3/h)
- Head: 700 feet (215 m)
- Temperature: 300°F (150°C)
(Center Line Mount Option: 400°F (200°C))
- Pressure: 300 PSIG (21 Bar)



3171 API (VS4)

Vertical Sump

- Capacity: 3,180 GPM (722 m3/h)
- Head: 525 feet (160 m)
- Temperature: 450°F (232°C)
- Pit depth: 20 feet (6m)



VIT (VS1)

Vertical Turbine

- Flows to 70,000 GPM (4760 m3/Hr)
- Heads to 3,500 feet (1060m)
- Pressures to 2500 psi (75 Bar)
- Bowl sizes from (6" to 55")
- Temperatures to 500° F (260° C)



VIC (VS6)

Vertical Turbine, Can-Type Pumps

- Capacity: 80,000 GPM (18100 m3/h)
- Head: 3,500 feet (1070 m)
- Temperature: Cryogenic to 700°F (371 °C)



PRESSURE SETS and UV SYSTEMS

Pressure Sets, UV Sterilization Systems, and other water handling equipment can be designed and built for offshore application.



Watermakers

C'treat, builds a complete range of Reverse Osmosis (R.O.) watermakers to meet the wide variety of demands of the offshore drilling and production industry. Each packaged system is designed and built for simple operation and ease of maintenance. Many special system components have been developed and optimized for use in the offshore environment.

PRODUCTS <<



3620 (BB2)

Single-Stage Between Bearing, Radially Split Pumps

- Capacity: 20,000 GPM (4540 m3/h)
- Head: 1,500 feet (455 m)
- Temperature: 850°F (455°C)
- Pressure: 1,000 PSIG (70 Bar)



3640 (BB2)

Two-Stage Between Bearings, Radially Split Pumps

- Capacity: 7,500 GPM (1700 m3/h)
- Head: 2,500 feet (760 m)
- Temperature: 850°F (455°C)
- Pressure: 1130 PSIG (75 Bar)



3600 (BB3)

Heavy-Duty Multi-Stage Axially Split Pumps

- Capacity: 8,500 GPM (1930 m3/h)
- Head: 9,000 feet (2740 m)
- Temperature: 400°F (205°C)
- Pressure: 4,000 PSIG (275 Bar)



7200CB (BB5)

Barrel Multi-Stage Pumps

- Capacity: 4,000 GPM (910 m3/h)
- Head: 9,000 feet (2740 m)
- Temperature: 800°F (425°C)
- Pressure: 4,000 PSIG (275 Bar)



XHD

Severe Duty Slurry

- Capacity: 13,000 GPM (2950 m3/h)
- Head: 280 feet (85 m)
- Pressures to 750 PSIG (52 Bar)



3196 i-FRAME™ / IC (OH1)

Process Pumps (ANSI / ISO)

- Capacity: 6,000 GPM (1364 m3/h)
- Head: 730 feet (350 m)
- Temperature: 500°F (427°C)
- Pressure: 375 PSIG (26 Bar)



ProSmart®

The ProSmart® System is a continuous machinery monitoring system designed for multi-plant predictive maintenance programs. Automatic notification of machinery issues with advanced diagnostic tools and ITT hosted solution enables to minimize process downtime and significantly reduce equipment lifecycle costs.



Cam-Tite®

Tefzel Lined Trunnion Ball Valve

- Sizes: ½" ~6"
- Pressure: ANSI Class 150/300/600 Flanges
- Temperature: Up to 550°F (290°C) (Pressure dependent)
- Shutoff Performance: Bubble tight per MSS-SP-72 and ANSI B16.34



Cam-Line®

Tefzel Lined Trunnion Ball Valve

- Sizes: ¾" ~6"
- Pressure: ANSI Class 150 Flanges
- Temperature: Up to 250°F (120°C) (Pressure dependent)
- Shutoff Performance: Bubble tight per MSS-SP-72



HD150 & HD300

Heavy Duty Knife Gate Valve

- Sizes: 6" - 60" (DN150-DN1,500)
- Pressure: ANSI Class 150/300
- Temperature: ANSI Class 150/300
- Shutoff Performance: Class IV or better; For initial start-up they have bidirectional bubble tight shut off.



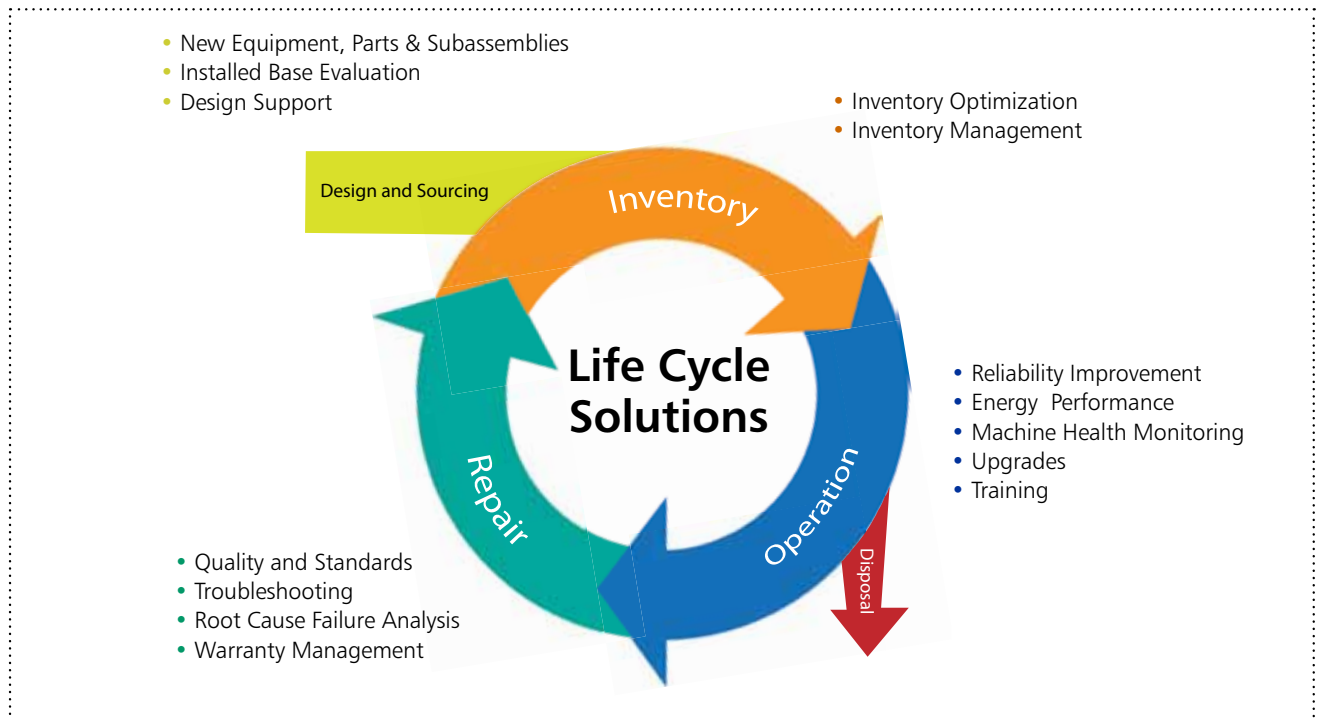
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>> PERFORMANCE SERVICES

ITT Performance Services provides an array of services focused on reducing Total Cost of Ownership (TCO) and increasing plant output.

From upgrading your pumps to the latest API standard to repairs and machine health monitoring, ITT customize solutions will help you maximize the life and efficiency of your assets.

ITT Aftermarket Services and Solutions



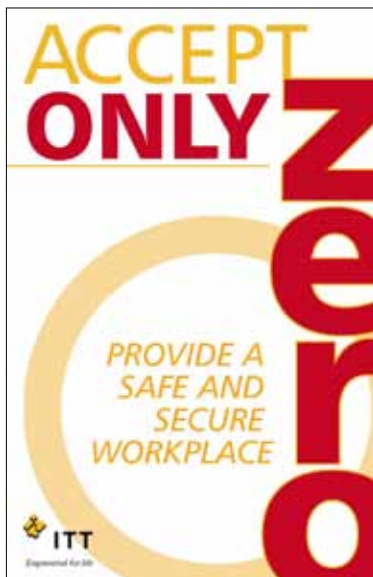
Original Pump



10th Edition Upgrade

Example of ITT's engineered upgrade capability. Two-stage API BB2 Model 3640 upgraded from an old edition of API 610 to the latest (10th) edition of API.

ITT'S VISION & VALUES <<



ITT Corporation is a global company with a portfolio of highly-engineered products and solutions that serve all industrial segments including oil and gas, chemical and petrochemical, mining, power generation, and pulp and paper.

Be it pumps, valves and control systems, we strive to provide the best products and services to meet our customers' needs. Backed by our rich heritage of innovation for over 160 years, ITT Goulds Pumps has placed extraordinary focus on providing technical and commercial solutions that are innovative, reliable and safe.

Do the Right Thing – Always

Our business success is built on a solid foundation of our corporate vision and values. At ITT, we are firmly committed to doing the right thing always. We accomplish this through transparency in governance, a dedication to creating value with the right values, and fair competition in the marketplace. Grounded in our values of respect, responsibility and integrity, we expect our people, processes, policies and systems to be fair and accountable.

Environment, Safety and Health

ITT is proud to be a leader in protecting our employees, customers and the communities where we operate. The ITT Environment, Safety and Health Management System provides for the systematic control of environmental, safety and health (ESH) risks. Using this system, operational, administrative and cultural ESH processes are standardized and applied to continually improve environmental and occupational safety and health performance.

Eco-footprint

ITT is acting to preserve and enhance our environment. We are striving to shrink our eco-footprint by further reducing the use of natural resources and hazardous materials in production, lowering emissions and cutting energy use in operations, and by improving product design.

Through our involvement in API-610 and its committees, we actively address and participate in the drive for increased safety, reliability and emissions containment in the oil and gas industry.

ITT Production and Service Locations



For more than 160 years, ITT has helped oil and gas customers make incredible discoveries, streamline refining processes and achieve efficient transportation in the most demanding environments across the planet.

Visit our website at www.ittoilgas.com



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