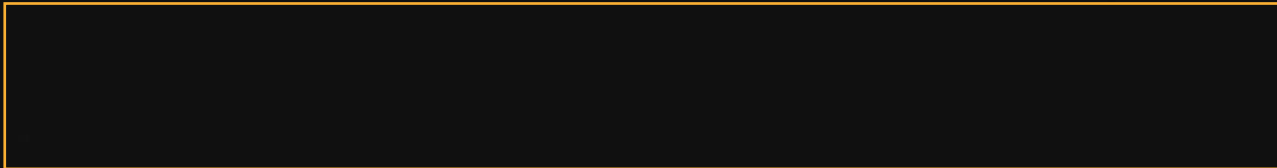




ITT

Oil and Gas

Products and Services
for Production, Transport, and Refining



motralec

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48
Demande de prix / e-mail : service-commercial@motralec.com
www.motralec.com

Engineered for life



ITT OIL & GAS

From desalination systems used on offshore rigs, to submersible mixers used on offshore supply vessels carrying drilling mud, to pump systems used to transport and refine petroleum, ITT fluid handling technologies are used in all areas of Oil and Gas Processing.

EXPERTISE

For 150 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, mixers, 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, Flygt, 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.



TECHNOLOGICAL LEADERSHIP

ITT, the largest pump manufacturer in the world, is synonymous with technological leadership. We invest research and development funds to design for reliability, ease of maintenance, and safety.

We offer cutting edge API pump designs for:

- Single Stage process (horizontal and vertical)
- Between Bearing (single and multi-stage, radially and axially split)
- Vertical (in-line, turbine and axial flow)

We also offer extensive process range:

- ANSI and ISO pump designs (sealed and sealless)
- Wear resistant pumps (hard metal, rubber lined or submersible)
- Submersible pumps and agitators
- Fabri-Valve® gate valves and Dia-Flo® diaphragm valves

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.

COMMITMENT TO SAFETY AND ENVIRONMENT

As member of API-610 and participation on API committees, we actively address the Oil and Gas drive for increased safety, reliability and emissions containment.

CUSTOMER FOCUS

ITT's market, product and service teams create and implement technical and commercial solutions. Our teams provide applications, support, and technical assistance, encompassing reliability, innovation and global support.



OFFSHORE

ITT OFFERS EXTENSIVE PRODUCTS AND SERVICES TO MEET THE DEMANDING REQUIREMENTS OF OFFSHORE PLATFORMS, OFFSHORE EXPLORATION, FLOATING PRODUCTION, STORAGE AND OFFLOADING FACILITIES (FPSO'S).



R.O. 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.



PRESSURE SET AND UV SYSTEMS

Sets, UV Sterilization Systems, and other water handling equipment can be designed and built for offshore applications by C'treat.



VERTICAL PUMPS

Goulds and Flygt supply vertical and submersible pumps for seawater, fire, and ballast services.



SUBMERSIBLE DRILLING MUD AGITATORS

Flygt's submersible agitators are used in drilling mud tanks to keep the mud in suspension and to guarantee a homogeneous blend.



API PROCESS PUMPS

Goulds Pumps carries a wide variety of API-610 pumps used on offshore platforms; from Injection Pumps, Booster Pumps, and Fire Pumps, to a wide variety of miscellaneous Transfer, Circulating and Cooling Water Pumps.



SLURRY PUMPS

Goulds Slurry Pumps and Flygt wear resistant submersible pumps are also used in drilling mud production, storage tanks, and mud recycling operations.

SYNFUELS

OIL SANDS, SHALE OIL, ETHANOL, BIODIESEL AND A HOST OF EMERGING ENERGY TECHNOLOGIES ARE SWIFTLY BECOMING ECONOMICALLY AND TECHNOLOGICALLY FEASIBLE ALTERNATE ENERGY SOURCES.



SUBMERSIBLE PUMPS

Flygt's lightweight portable dewatering and drainage pumps are designed for long life under tough working conditions, while providing maximum efficiency. These pumps are robust, abrasion resistant and available in stainless steel, or aluminum. Their compact design and assembly ensures easy installation and operational reliability.



API PROCESS PUMPS

Goolds full range of API-610 pumps to meet your demanding applications: BB1/BB2 Between Bearings axially split pumps, BB3 multi-Stage pumps, and Overhung OH2/OH3 process pumps.



KNIFE GATE VALVES

Fabri-Valve® ANSI Class 150 & ANSI Class 300 valves are designed specifically to withstand abrasive, high pressure slurries. Field experience, valve design and material selection ensure performance reliability and ease of maintenance.



SUBMERSIBLE AGITATORS

Flygt submersible agitators have proved their high efficiency and flexibility in digesters for biological material and storage tanks for Bio Diesel and vegetable oils i.e. Palm oil. The agitator can be installed where ever it is required on the floor, on a guide bar or in a man hole.



SLURRY PUMPS

Goolds slurry pumps, and Flygt's submersibles - dry installed with rubber lined hydraulics, or hydraulics made of high chrome - are designed to handle very abrasive and corrosive slurries. The submersible pumps can be supplied with an agitator and an internal cooling system which allows pumping down to low levels and avoids sediment build-up.



PIPELINES & TERMINALS

WHETHER YOU ARE TALKING SHORT DISTANCES BETWEEN STORAGE TANK AND TRUCK OR LONG BARREN STRETCHES BETWEEN PUMPING STATIONS, ITT HAS THE RIGHT PRODUCT.



PUMPSMART®

ITT PumpSmart® are designed to help improve the reliability and the efficiency of your pumping systems. By leveraging variable speed technology PumpSmart® allows the pump to be right-sized for the pump system, eliminating wasted energy. Our patented Pump Protection algorithms provide guaranteed protection from process upset conditions that can ultimately lead to failure of your pump.



MULTISTAGE PUMPS

Goulds 3600 API-610 BB3 Between Bearings, axially split, multi-stage pumps are reliable and efficient for water injection and transporting hot fuel, oil or other products.



PORTABLE TANK CLEANING SYSTEM

Goulds portable refinery tank cleaning system that offers time saving, effective cleaning, safety with significant cost savings.

Benefits:

- Saves time
- Protects the environment
- Better cleaning
- Safer work environment
- Easier maintenance
- Highly flexible
- Lower costs



BETWEEN BEARING PUMPS

Goulds API-610 BB2 Between Bearings, radially split, single and double stage pumps for high temp and pressure applications.



API VERTICAL PUMPS

Goulds vertical can-type turbines have a wide range of hydraulics, almost all which allow to meet requirements for your pumping needs.

REFINING

REFINING AND PRODUCTION PRESENT A HOST OF UNIQUE FLOW CONTROL CHALLENGES. ITT OFFERS EXTENSIVE PRODUCTS AND SERVICES TO SATISFY THE NEEDS AND SPECIFIC REQUIREMENTS OF TODAY'S REFINERIES.



KNIFE GATE VALVES

For catalyst hoppers, flair lines, scrubbers, and specialty application, Fabri-Valve® offers a complete line of knife gate valves.



DIAPHRAGM VALVES

Dia-Flo® diaphragm valves have been proven the most reliable design for demineralizers for more than fifty years. The plastic lined weir body diaphragm valve is the valve of choice because of its clean and versatile design, and ease of operation.



API VERTICAL PUMPS

For high pressure, high lift requirements, Goulds offers a complete line of submersible, can, and vertical turbine pump models.



VERTICAL SUMP PUMPS

Goulds API 3171 is fully compliant with the latest edition of API-610, and with proven hydraulics.



API PROCESS PUMPS

Goulds full range of API-610 pumps to meet your demanding applications: BB1/BB2 Between Bearings axially split pumps, BB3 Multi Stage pumps, and Overhung OH2/OH3 process pumps.



BUTTERFLY VALVES

The rubber seated butterfly valve design platform is extremely flexible and can meet a multitude of face-to-face dimensions and pressure ratings. Computer-aided design is utilized allowing for accurate, cost effective designs.

PUMPS, VALVES, MIXERS & WATER



3620

Single-Stage Between Bearing,
Radially Split Pumps (API BB2)

Capacity: 19,300 GPM (4,380 m³/h)
Head: 1,500 feet (450 m)
Temperature: 850°F (455°C)
Pressure: 1,000 PSIG (70 kg/cm²)



3640

Two-Stage Between Bearings,
Radially Split Pumps (API BB2)

Capacity: 7,500 GPM (1,700 m³/h)
Head: 2,500 feet (760 m)
Temperature: 850°F (455°C)
Pressure: 750 PSIG (50 kg/cm²)



3400 API SERIES

Axial Split Case, Double Suction (API BB1)

Capacity: 50,000 GPM (11,355 m³/h)
Head: 700 feet (215 m)
Temperature: 350°F (175°C)
Pressure: 300 PSIG (21 kg/cm²)
Suction sizes to 36"
Discharge sizes to 30"



3196 / IC

Process Pumps (ANSI / ISO)

Capacity: 6,000 GPM (1,364 m³/h)
Head: 730 feet (350 m)
Temperature: 500°F (427°C)
Pressure: 375 PSIG (2,586 kPa)



DRILLING FLUID VALVE

Double Replaceable Polyurethane
Seated Knife Gate Valve

Sizes: 2" - 24" (DN50 - DN600)
Pressure: 150 PSI (1034 kPa)
Temperature: 220°F (104°C)
Shutoff Performance: Zero leakage



Figure 134

Bonneted Knife Gate Valve

Sizes: 1 1/2" - 96" (DN40 - DN2400)
Pressure: Up to ANSI Class 150/300
Temperature: ANSI Class 150/300
Designs up to 2000°F (1,093 °C)
Shutoff Performance: From Class IV to zero leakage (depends of seat configuration)



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 bi-directional bubble tight shut off.



H 5000

Submersible Slurry Pumps

Capacity: 300 l/s 50Hz, 6,000 GPM 60Hz
Head: 80m 50Hz, 330 feet 60Hz 60Hz
Temperature: 70°C (158°F)
Discharge sizes: 4" to 8"
Hydraulic parts made of High Chrome (60 HRC).
Available as explosion proofed version ATEX.



SR 4600

Submersible Agitator

Power: 0,75KW at 50Hz to 40HP at 60Hz
Nominal thrust from 0,2KN (50 lb) to 7,0KN (1600 lb)
Temperature: 90°C (194°F)
Propeller diameter: 210mm (8 1/2") to 766mm (30 1/4")
Material of Propeller blades:
AISI 316 or High Chrome (60 HRC). Available as explosion proofed version ATEX Engineered selection tool (MIDS) for any application available.



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.

SYSTEMS FOR THE OIL & GAS INDUSTRY

3600

*Heavy-Duty Multi-Stage
Axially Split Pumps (API BB3)*

Capacity: 4,500 GPM (1020 m³/h)
Head: 6,000 feet (1,825 m)
Temperature: 400°F (205°C)
Pressure: 2,500 PSIG (175 kg/cm²)



3700

*Single-Stage, Overhung,
API Process Pumps (API OH2)*

Capacity: 6,500 GPM (1,475 m³/h)
Head: 1,200 feet (360 m)
Temperature: 800°F (427°C)
Pressure full vacuum to 870 PSIG
(60 kg/cm²)



VIC

*Vertical Turbine, Can-Type Pumps
(API VS6)*

Capacity: 80,000 GPM (18,100 m³/h)
Head: 3,500 feet (1,070 m)
Temperature: Cryogenic to 700°F
(371°C)



3910

Bearing Frame In-Line (API OH3)

Capacity: 7,500 GPM (1,700 m³/h)
Head: 750 feet (225 m)
Temperature: 650°F (340°C)
Pressure: 595 PSIG (40 kg/cm²)



3171 API

Vertical Sump (API VS4)

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



DIAPHRAGM VALVE

The diaphragm valve is dependable, cost effective, versatile and is installed across the world in virtually every type of process plant.

Options: Weir or straightway valve, Manual or pneumatic actuator

Sizes: 1/2" - 12"

Positioners, switches, solenoids, filter regulators, transducers adjustable opening stop, adjustable travel stop, adjustable closing stop, and position indicator.



Figure 60

Rubber Seated Butterfly Valve

Sizes: 36" - 96" (DN900-DN2400)

Pressure: 400 PSI (2,758 kPa)

Temperature: 400°F (204°C)

Shutoff Performance: Zero Leakage



B/D 2600 & 2700

Submersible Pumps

Capacity: 80 l/s 50Hz, 1,300 GPM 60Hz

Head: 65m 50Hz, 230 feet 60Hz 60Hz

Temperature: 40°C (104°F)

Discharge sizes: 2" (50mm) to 6" (150mm)

Material:

2600: Hydraulic parts made of High Chrome with rubber diffuser

2700: Complete made of Stainless Steel AISI 316 with rubber diffuser



C/N 3000

Submersible Slurry Pumps

Capacity: 300 l/s 50Hz, 48,000 GPM 60Hz

Head: 100m 50Hz, 450 feet 60Hz 60Hz

Temperature: 70°C (158°F)

Discharge sizes: 2" (50mm) to 6" (150mm)

Complete made of Cast Iron. Impeller available in Stainless Steel ASTM 329. Available as explosion proofed version ATEX.



ITT

PRODUCT MATRIX

Product Type		API Type	Production	Offshore	Distribution	Storage	Oil Sands	Synfuels	Gas Production
Single Stage	5500		X	X	X	X	X	X	X
	SRL		X	X	X	X	X	X	X
	3700	OH2	X	X	X	X	X	X	X
	3910	OH3	X	X	X	X	X	X	X
	API 3171	V54	X	X	X	X	X	X	X
	3620	BB2	X	X	X	X	X	X	X
	API 3400	BB1	X	X	X	X	X	X	X
	JC		X	X	X	X	X	X	X
Two Stage	3640	BB2	X	X	X	X	X	X	X
Axially Split Multi-Stage	3600	BB3	X	X	X	X	X	X	X
Vertical Pumps	VIC	VS6	X	X	X	X	X	X	X
	VIT	VS1	X	X	X	X	X	X	X
Reverse Osmosis	Watermaker			X					
Valves	Knife Gate		X	X	X	X	X	X	X
	DFV		X						X
	Butterfly		X						X
Mixers	SR 4600		X	X				X	
Submersibles	H 5000		X	X				X	
	C/N 3800		X	X				X	
	B/D 2600 & 2700		X	X				X	

SERVICES

ITT PRO SERVICES PROVIDES TOTALLY INTEGRATED MAINTENANCE AND RELIABILITY SOLUTIONS THROUGH ITS WORLDWIDE NETWORK OF SERVICE CENTERS. THEY OFFER A COMPLETE RANGE OF LIFE CYCLE MANAGEMENT OPTIONS TO OPTIMIZE YOUR OIL AND GAS PUMPING EFFICIENCIES - REPAIRS, FIELD SERVICE, UPGRADES, AND INVENTORY PROGRAMS. THEIR GOAL IS TO REDUCE THE COST OF OWNERSHIP, IMPROVE RELIABILITY, AND INCREASE PROFITABILITY FOR THE CUSTOMERS.



UPGRADES

Your local PRO Service Center offers solutions to lowering Total Cost of Ownership of our pumping systems. This can be achieved by upgrading your older style API process pumps to today's high performance standard of the latest API editions.



RELIABILITY

ITT ProSmart® condition monitoring systems can improve the effectiveness of your reliability maintenance program by continually monitoring your rotating equipment health and automatically notifying you of changes or conditions that require maintenance.



REPAIR

PRO Services® centers are equipped and trained to perform all of your industrial repairs. Our ISO 9001 Certified PRO Service centers have the experience and expertise to repair your equipment.



RE-RATES

Older designs waste energy and efficiency. PRO Services® can re-rate your hydraulics to increase production while saving electricity. Re-rating can be performed on most OH2, BB1, and BB2 pumps.



PUMP OPTIMIZATION

ITT PumpSmart® products are designed to help improve the profitability and reliability of your pumping systems. Our patented pump protection algorithms provide continuous monitoring of system conditions and will protect the pumps against the process upsets that typically lead to failure.



CUSTOM DROP-INS

Replace your old or obsolete pump with a custom drop-in unit featuring proven Goulds hydraulics. This new pump will fit your existing dimensional envelope with no change to piping or baseplate.



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