



Bornemann pumps and more

Introducing a global system partner



ITT

ENGINEERED FOR LIFE

From Pump Pioneer to Partner for

ITT Bornemann has achieved and secured a leading position worldwide with its numerous ground-breaking pump developments over the decades. Our pumps and systems are the ideal solution for tank terminals, oil production and processing. The areas are the industrial, petrochemical, marine and shipbuilding as well as the food and pharmaceutical industries. We are also a leader in the field of Multiphase and Subsea Technology. Systematic research and development will lead to innovative solutions for the future.

About ITT

ITT is a diversified leading manufacturer of highly engineered critical components and customized technology solutions for the energy, transportation and industrial markets. Building on its heritage of innovation, ITT partners with its customers to deliver enduring solutions to the key industries that underpin our modern way of life. Founded in 1920, ITT is headquartered in White Plains, N.Y., with employees in more than 35 countries and sales in a total of approximately 125 countries. The company generated 2012 revenues of \$2.2 billion. For more information, visit www.itt.com.

Customer satisfaction as part of the company strategy

Honest and constructive relationships with clients, employees and suppliers are essential to our strategy and represent the foundation of our company culture. ITT Bornemann's policy is to be an innovative, qualified and reliable partner to its customers every step of the way while providing a truly unique service.

The needs of our customers are the focus of our research and development, manufacturing, sales and service.

Another important factor in ITT Bornemanns success are our employees, whose dedication and qualifications are constantly being cultivated. Environmentally-friendly manufacturing combined with an above-average occupational health and safety policy for employees at all our facilities are vital to the ITT Bornemann culture.



Onshore Terminal in India

System-Solutions

Bornemann is active on an international level

Being an integrated part of the ITT Corporation now, has even fortified the global presence of ITT Bornemann and guarantees fast and professional support in all phases of our work with you.

Focus on customer satisfaction

In addition to product quality, reliable and competent service is the decisive factor in customer satisfaction. Our service team therefore looks after each installation with its full dedication and attention. From the very beginning of the installation, Bornemann pumps and systems are accompanied by a capable service. Advisory and supporting. Expediently and friendly. Dedicated and reliable. No matter what service a user needs – the ITT Bornemann service team provides you with individually tailored consultation, documentation, delivery of spare parts, maintenance, repair, retooling, exchange, general overhaul, and more. Wherever in the world Bornemann pumps and systems are in use: the Bornemann service is available.

Bornemann pumps are available from stock for different fields of application. In addition to this, specific pump types are available in single components and can be combined individually corresponding to their application and operating conditions. Here as well we grant you full guarantee and a quick availability.

With experienced specialists, the ITT Bornemann logistics team handles the complete shipment of all products worldwide and is also responsible for the import of all purchased products from consumables through to machines.



Subsea – the resources are in the ocean



Quality service guarantees your investment

Unique Solutions for All Industries

Oil & Gas

As displacement pumps, Bornemann twin screw pumps are ideal for pumping mixtures of crude oil, gas, water and the finest solids. They can be used onshore, offshore and subsea. The dry running capability also allows the presence of gases. The compact construction and the special profile of the feed screws allow high conveying pressures for operation in pipelines with long distances.

Multiphase boosting technology

The core of the multiphase boosting systems is formed by twin screw pumps. The two engineered rotor sets work with no metal-to-metal contact. They deliver a close to constant capacity against the downstream backpressure. The pressure is not dependent on the speed of the pump and the characteristics of the fluid being transferred. Fluid mixtures of up to 97% gas content, 100% on short term basis, may be pumped without overheating the machine. The necessary liquid is stored in the enlarged housing and partly recirculated to the inlet, assuring an equal distribution of the heat and heat transfer to the ambience. Sudden changes from high gas contents to pure liquid flow – normally called slugs – are handled. The patented technical design in connection with outstanding solutions in details guarantee highest availability with minimized maintenance necessary.

Bornemann multiphase boosting systems are applicable for oil and gas fields

- on-and offshore
- with small discharge capacities
- with tail-end production
- new field developments
- aside of the existing infrastructure, where an exchange of separators and associated equipment is required

Product applications:

Crude oil with gas and water, very heavy crude oil, thermal operations, wet gas compression.



Marine

Bornemann twin screw pumps have proven their value internationally as loading pumps on tankers, transfer pumps for heavy-duty HFO qualities and as lubricating pumps for supplying the main engine.

Product applications:

Low to very high viscosity oil products such as bitumen, tar, chemicals, light and heavy fuel oil, crude oil, mazut and storage water.



Tank terminals

ITT Bornemann has a large worldwide installed base of pumps in tank terminals. They can be used wherever a large suction capacity is required. Bornemann pumps can be found for loading and unloading of ships, tank wagons, tanker trucks as well as storage tanks and pipelines everyday of the year. They perform these duties under challenging conditions including high viscosities and pressures.

Product applications:

Low to very high viscosity oil products such as bitumen, tar, chemicals, light and heavy fuel oil, mazut and storage water.



Nearly 80 pumps in operation

Petrochemical Industry / Refinery

Bornemann twin screw pumps are the ideal solution for transfer within terminals where both low and high viscosity products have to be moved or metered. All fluids whether neutral, alkaline or acid and aggressive, abrasive or gaseous are sucked up safely, dosed and pumped.

Product applications:

Mazut, bitumen, tar, heavy fuel, naphta and chemical products.

Industry

Bornemann twin screw pumps solve a variety of conveyance challenges in a range of industries including chemicals, power generation, wastewater and environmental technology, and construction. Regardless of low or high viscosity, or aggressive, solid or shear-sensitive materials – there is an appropriate pump for nearly every application. All Bornemann pumps are self-priming and ATEX-compliant.

Product applications:

Polymers, paints, slurry, pastes, liquid sulfur, and chemical process pumps.



Food & Pharma

The twin screw pump SLH has been especially developed for the application in the Food and Pharmaceutical Industry. The 2-in-1 principle conveys and cleans in one pump. Due to the wide range of pump speeds – up to a maximum of 3,600 rpm, process cycles as well as CIP and SIP procedures are possible with just one pump.

Product applications:

Beverage industry, convenience, dairy products, sweets, meat products and pharmaceutical industry.



Proven Pump Solutions

Bornemann twin screw pumps -

Proven pump solutions in a range of industries for nearly any medium

Twin screw pumps

Bornemann twin screw pumps are rotating displacement pumps; the gear-wheels and roller bearings are outside the pump space. Around 80 models are available. Various materials, sizes and forms make application-optimized solutions possible.

Bornemann pumps cover a wide range of performance in the pressure, conveyed volume, temperature and viscosity of the conveyed media. Nearly all media can be conveyed, i.e. thin liquids such as petrol, hydrocarbons, seawater, liquids with high viscosity such as bitumen, tar, glue, molasses, and aggressive media such as acids and bases.

Advantages

- Self-priming
- High viscosities possible
- Low pulsations
- Low noise level
- Dry running possible
- Constant flow at varying pressures and volumes
- Suction lift up to 8.5m (25 feet)



W/V universal pump



HC/VHC high capacity pump



SLH hygienic pump



SLI compact pump



HP high pressure pump

| | Capacity | | Differential Pressure | | Viscosity | Max. Product temperature | |
|---------------------------|------------------|--------------|-----------------------|---------------|--------------------------|--------------------------|-----------|
| | m ³ h | gpm | bar | psi | mm ² /s cSt | °C | °F |
| W/V universal pump | 10 - 2,800 | 50 - 12,300 | up to 40/60 | up to 600/900 | 0,5 - 200,000 | up to 350 | up to 660 |
| HC/VHC high capacity pump | up to 4,500 | up to 19,800 | up to 16 | up to 230 | 1 - 20,000 | up to 120 | up to 250 |
| HP high pressure pump | 20 - 1,500 | 100 - 6,600 | up to 100 | up to 1,500 | 1 - 10,000 | up to 120 | up to 250 |
| SLI compact pump | up to 180 | up to 790 | up to 16 | up to 230 | up to 100,000 | up to 120 | up to 250 |
| SLH hygienic pump | up to 180 | up to 790 | up to 16 | up to 230 | up to 100,000 | up to 130 | up to 270 |

Proven Pump Solutions

Bornemann multiphase pumps - from pumps to systems to solutions



MSL single well multiphase pump



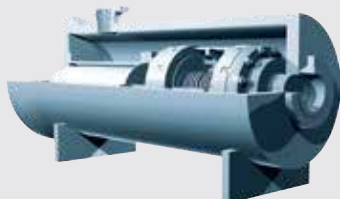
SLM single line multiphase pump



MPC multiphase pump compressor



MW classic multiphase pump



SMPC subsea multiphase pump compressor

Complete multiphase pumping systems

With our experience in research & development, engineering, production and commissioning all over the world we are able to supply complete system solutions – for a wide range of performance conditions and harsh ambient environmental conditions.

“Plug and pump”

The skid mounted pump is equipped with all necessary instrumentation and piping and valves. You will get a complete system incl. electrical drive system with motor, variable frequency converter and control cabinet. It will undergo a complete system factory acceptance test prior to shipment, thus saving time while commissioning.

Safety first!

The Bornemann system guarantees full safety and automatic operation under all circumstances.

| | Capacity | | Differential Pressure | | Viscosity | Max. Product temperature | |
|--|------------------|-----------------|-----------------------|-------------|--------------------------|--------------------------|-----------|
| | m ³ h | BPD | bar | psi | mm ² /s cSt | °C | °F |
| MSL single well multiphase pump | 1 - 110 | 137 - 16,800 | up to 16 | up to 230 | 0,5 - 100,000 | up to 160 | up to 320 |
| SLM single line multiphase pump | 1 - 130 | 150 - 20,000 | up to 16 | up to 230 | 0,5 - 100,000 | up to 100 | up to 210 |
| MW classic multiphase pump | 1 - 8,000 | up to 1,206,000 | up to 50 | up to 725 | 0,5 - 100,000 | up to 160 | up to 320 |
| MPC multiphase pump compressor | 1 - 8,000 | up to 1,206,000 | up to 70 | up to 1,000 | 0,5 - 100,000 | up to 160 | up to 320 |
| SMPC subsea multiphase pump compressor | 1 - 8,000 | up to 1,206,000 | up to 70 | up to 1,000 | 0,5 - 100,000 | up to 160 | up to 320 |

Selected Applications

Tank Terminals



Country: U.A.E
 Pump Type: W9
 Medium: Fuel oil, 55°C/130°F,
 380 cSt
 Capacity: 120-1,400 m³h
 530-6,200 gpm
 Pressure: 10 bar / 145 psi
 Speed: 200-1,470 rpm
 Shaft power: 95-630 kW / 128 - 848 HP

Refinery



Country: Germany
 Pump Type: W7T
 Medium: Molasses, 220-250°C /
 430-480°F, 350 cSt
 Capacity: 110-240-370 m³h
 480-1,060-1,600 gpm
 Pressure: 11 bar / 160 psi
 Speed: 600-1,200-1,800 rpm
 Shaft power: 190 kW / 256 HP

Offshore



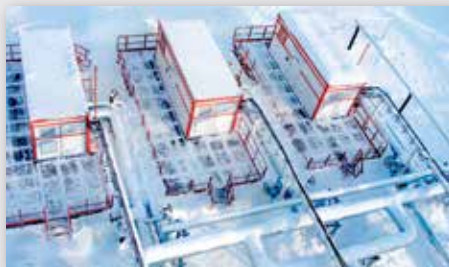
Country: Germany
 Pump Type: MPC 268
 Medium: Fluid Multiphase Mixture
 Capacity: 610 m³h / 2,686 gpm
 Pressure: 25 bar / 363 psi
 Speed: 1,765 rpm
 Shaft power: 450 kW / 612 HP
 Gas content: 99%

Marine



Country: China
 Pump Type: W7
 Medium: Crude oil, 85°C/185°F,
 130 cSt
 Capacity: 210 m³h / 950 gpm
 Pressure: 8 bar / 120 psi
 Speed: 1,450 rpm
 Shaft power: 70 kW / 95 HP

Oil Production



Country: Russian
 Pump Type: MPC 208
 Medium: Fluid Multiphase Mixture
 Capacity: up to 500 m³h
 75,757 BPD
 Pressure: 21 bar / 305 psi
 Speed: 2,000 rpm
 Shaft power: 276 kW / 370 HP
 Gas content: 96%

Chemical



Country: Germany
 Pump Type: W7
 Medium: Water, solvent, silicon
 acrylate, polyether,
 20-130°C / 70-270°F,
 1-15,000 cSt
 Capacity: 4-100 m³h
 18-440 gpm
 Pressure: 1-5 bar / 14-73 psi
 Speed: 300-1,400 rpm
 Shaft power: 55 kW / 74 HP

Notes





Notes

Notes



Unique solutions made by the specialist

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