

Twin Screw Pumps Chemical Industry



ITT Bornemann - Expertise in Chemical Applications

Tools of Choice

Plastics and chemicals have become a major part of our surrounding. Chemicals abound in almost all walks of life. There's hardly an end product today that does not incorporate chemical additives. Production of base chemicals, petrochemicals, polymers and fine and specialty chemicals entails complex processes.

Hazardous substances, high pressures, and the risk of explosion are part and parcel of everyday work in the chemical industry and result in the highest safety requirements for people, plants, machines, and the environment.

Processes are constantly being optimized in regard to productivity and energy efficiency. In this field where Bornemann is your expert partner. Bornemann pumps meet the most stringent requirements even in complex processes and are always a profitable solution. They reliably deliver both low- and high-viscosity media, also with non-Newtonian viscosity and aggressive and abrasive media.

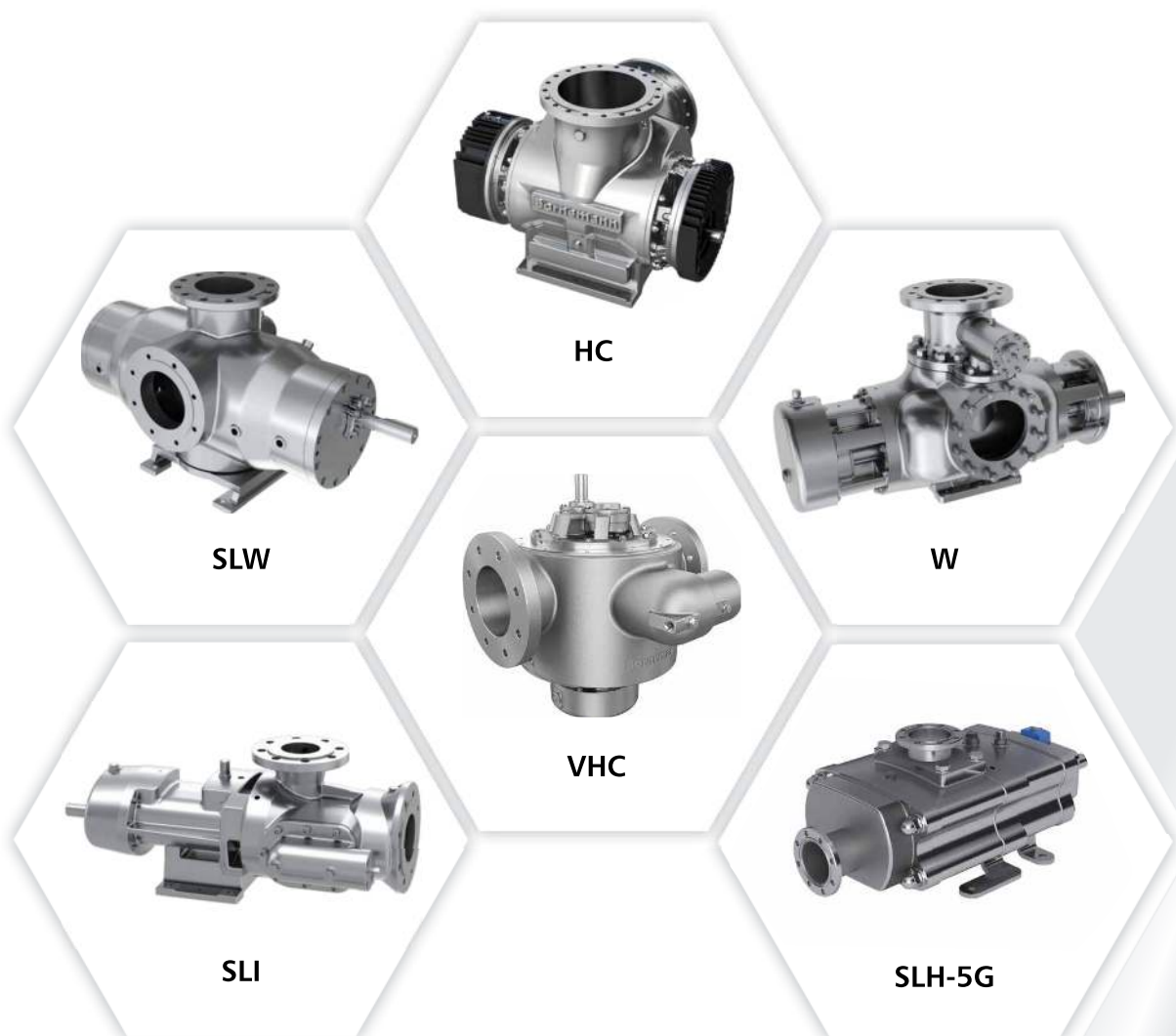


In the chemical industry, Bornemann pumps are employed in highly specialized fields of application. The properties of the media to be delivered often change over the course of the production process. It is in this field that Bornemann Twin Screw Pumps are renowned for their flexibility and uptime. Thanks to their speed control, they can be optimally adjusted to the respective consistency of the medium. New

technologies and processes, shifting demands, and intense competition – increasing your knowledge is a constant necessity.

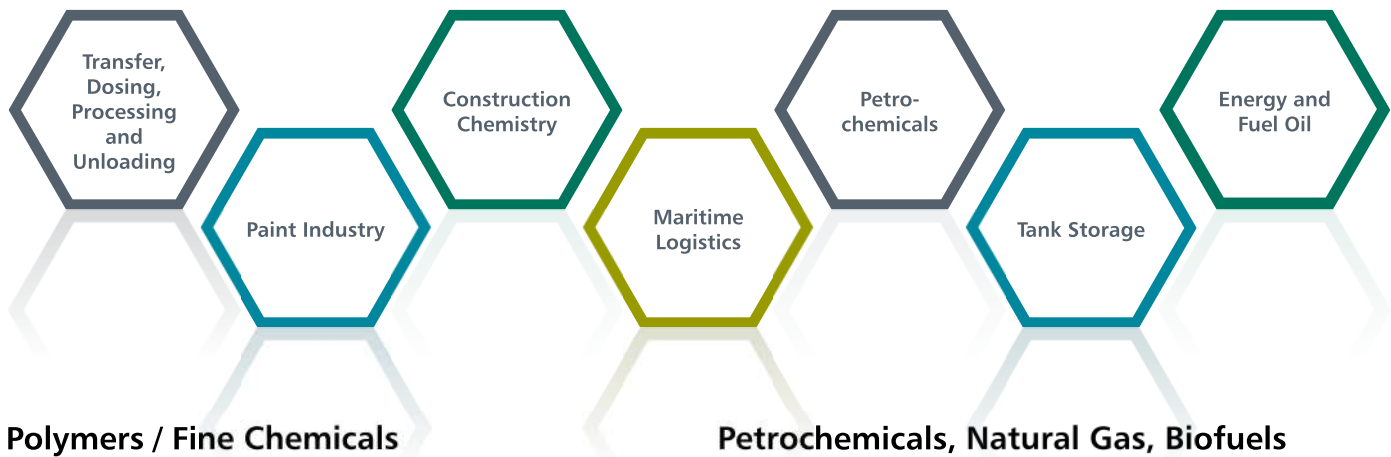
Bornemann is your expert partner when it comes to exploring even the most unconventional solutions – the insider's choice among specialists!

Twin Screw Pumps Series



	Max. Flow		Max. Differential Pressure		Max. Viscosity		Max. Product Temperature	
	m ³ h	gpm	bar	psi	mm ² /s	cSt	°C	°F
W/V	2.800	12.300	40	600	200.000		350	660
HC/VHC	6.000	26.400	16	230	20.000		120	250
SLH-5G	250	1.100	25	360	1.000.000		180	350
SLW	1.000	4.400	40	580	100.000		300	572
SLI	180	790	16	230	100.000		120	250

Markets and Selected Applications



Country: United States
 Pump Type: W10.6zk
 Product: 1-octene with 4,5% melted polymers - flash recirculation
 Capacity: 450 m³/h
 Pressure: 40 bar
 Viscosity: 2 - 1,000 cSt



Country: The Netherlands
 Pump Type: SLI 80
 Product: Gasoil / Naphtha
 Capacity: 17 m³/h
 Pressure: 4 bar
 Viscosity: 1 - 10 cSt

Paint Industry



Country: Austria
 Pump Type: SLH
 Product: Binder, Paint
 Capacity: 13-35 m³/h
 Pressure: 6-9 bar
 Viscosity: 4,000 - 22,000 cSt

Cosmetic Raw Materials



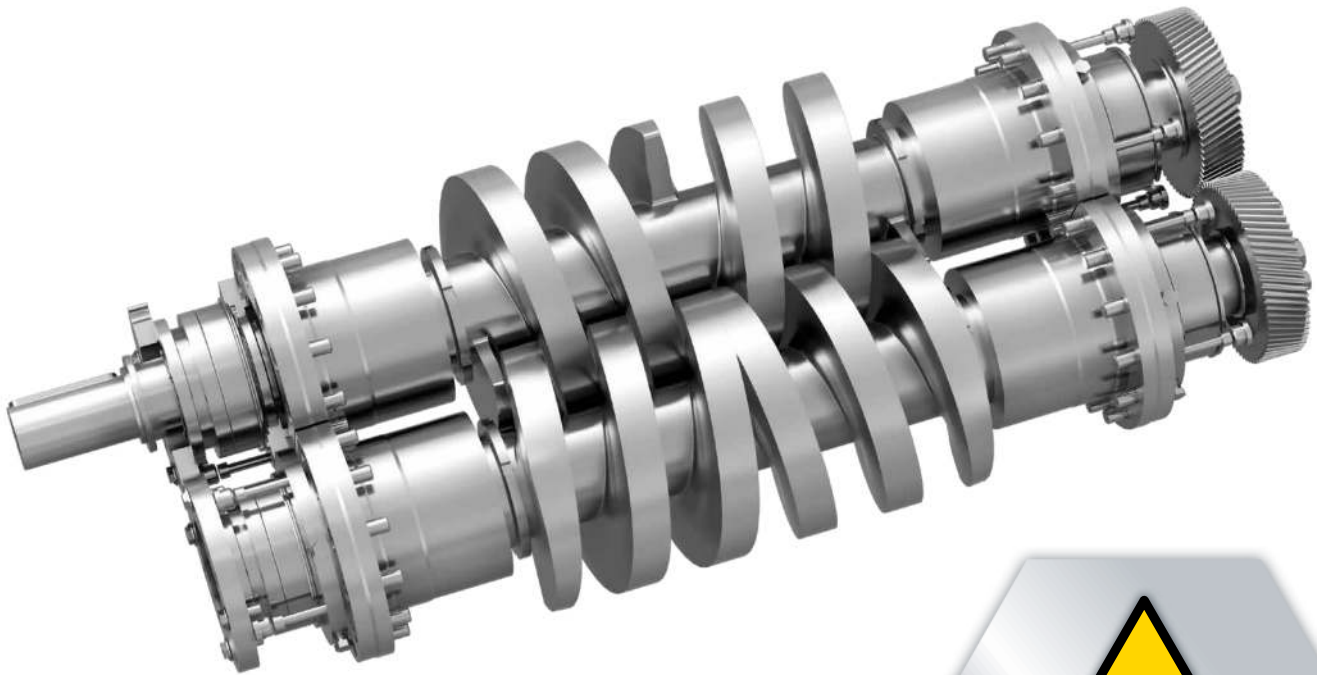
Country: Germany
 Pump Type: SLH
 Product: Raw Chemicals
 Capacity: 18 m³/h
 Pressure: 4 bar
 Viscosity: 10,000 cSt

Operating Principles

Non-Product Lubricated Synchronisation

Twin Screw Pumps are rotating positive displacement pumps, using two screws to convey the product along the screw axis. The contact-free intermeshing screws and the housing form closed chambers, constantly moving product from suction to discharge. Due to the arrangement of the pump elements, the delivery direction is reversible

simply by reversing the shaft rotation. Axial delivery results in smooth, low-pulsation pumping. Products sensitive to shear are subjected to hardly any stresses during delivery, thus ensuring that the media retain their volumes, look, and properties.



Twin Screw Pump
ATEX Zone 0 Inside

User Advantages - Made by Bornemann

- ATEX inside and outside
- ATEX Zone 0 inside certification available
- Non-contact pump elements
- Dry operation possible
- Bornemann Twin Screw Pumps are equally suited to delivering high- and low-viscosity products
- Low-pulsation and low product stresses
- Adaptation to changing process parameters thanks to speed control
- TA Luft compliant designs available
- Self-priming, outstanding aspiration power
- High delivery rate and pressure range
- Less wear parts

Safety Regulations - ATEX, TA Luft

Requirements of ATEX Directive

According to the European Directive 2014/34/EU, manufacturers are obliged to design their products suitable for the safe use in the explosive atmosphere when placing a product on the European Single Market.

The Directive for example covers the classification of a product and appoints essential health and safety requirements for the design and construction of products for potentially explosive atmosphere.

The Industrial Safety Regulation encourages Operators to operate equipment of specific categories to ensure safe operation.

Fields of Application

Especially during the emptying process in tanks, tank storages, vessels or tank wagons, temporary conveyance of hydrocarbon-air-mixtures appears.

Bornemann pumps, specifically designed for these processes, can perform the complete emptying process safely, cost-effective and without complex processing technology (e.g. flow sensor, nitrogen pendulum system).

Bornemann pumps meet highest standards, operate in complex processes and ensure economic and efficient solutions. The Technical Guideline for Air Pollution Control.



Technical Execution

Twin Screw Pumps are used in various Industrial Sectors where flammable liquids are pumped.

Flammable liquid-/gas-/air-mixtures can arise.

TA Luft

The Technical Guideline for Air Pollution Control (TA Luft) has been approved according to the German Federal Law on the Prevention of Immissions (BImSchG).

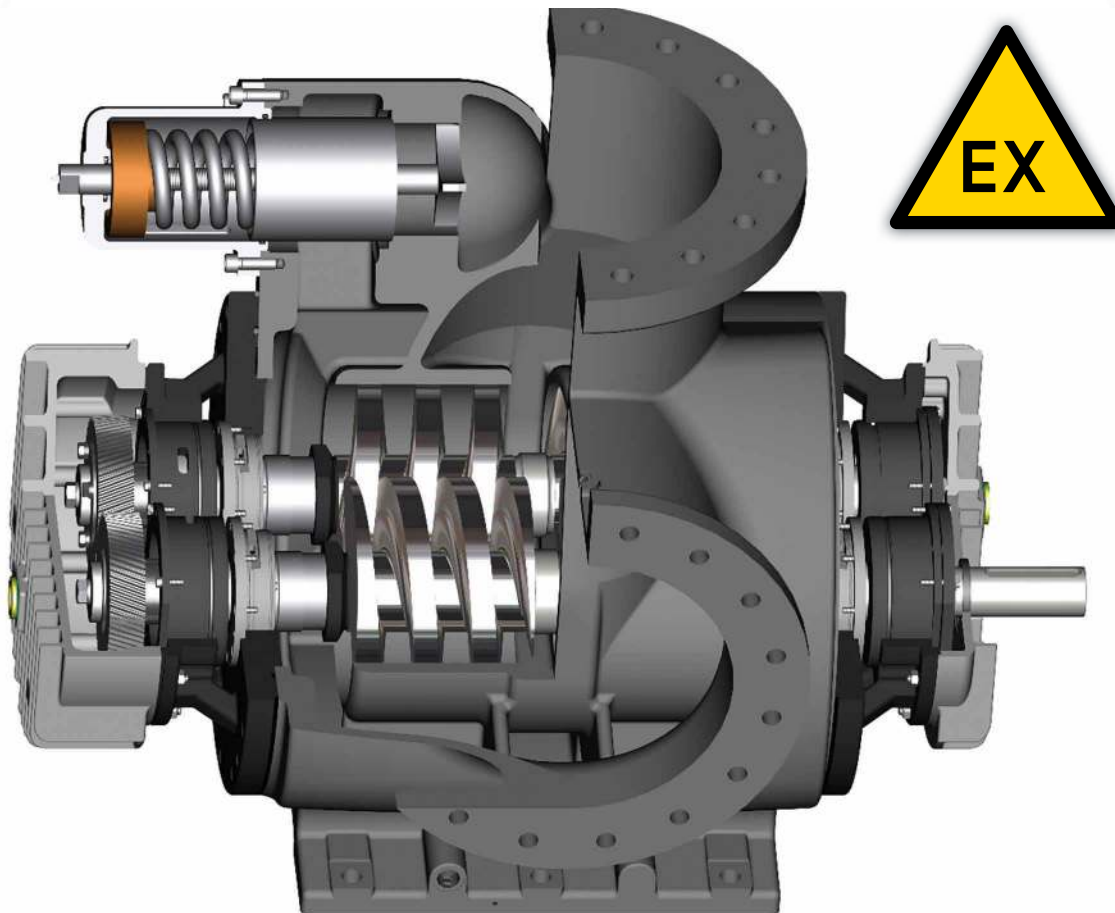
TA-Luft applies in cases of conveyance of harmful media in classified installations as this guideline limits the handling of fluids to technically sealed installations.

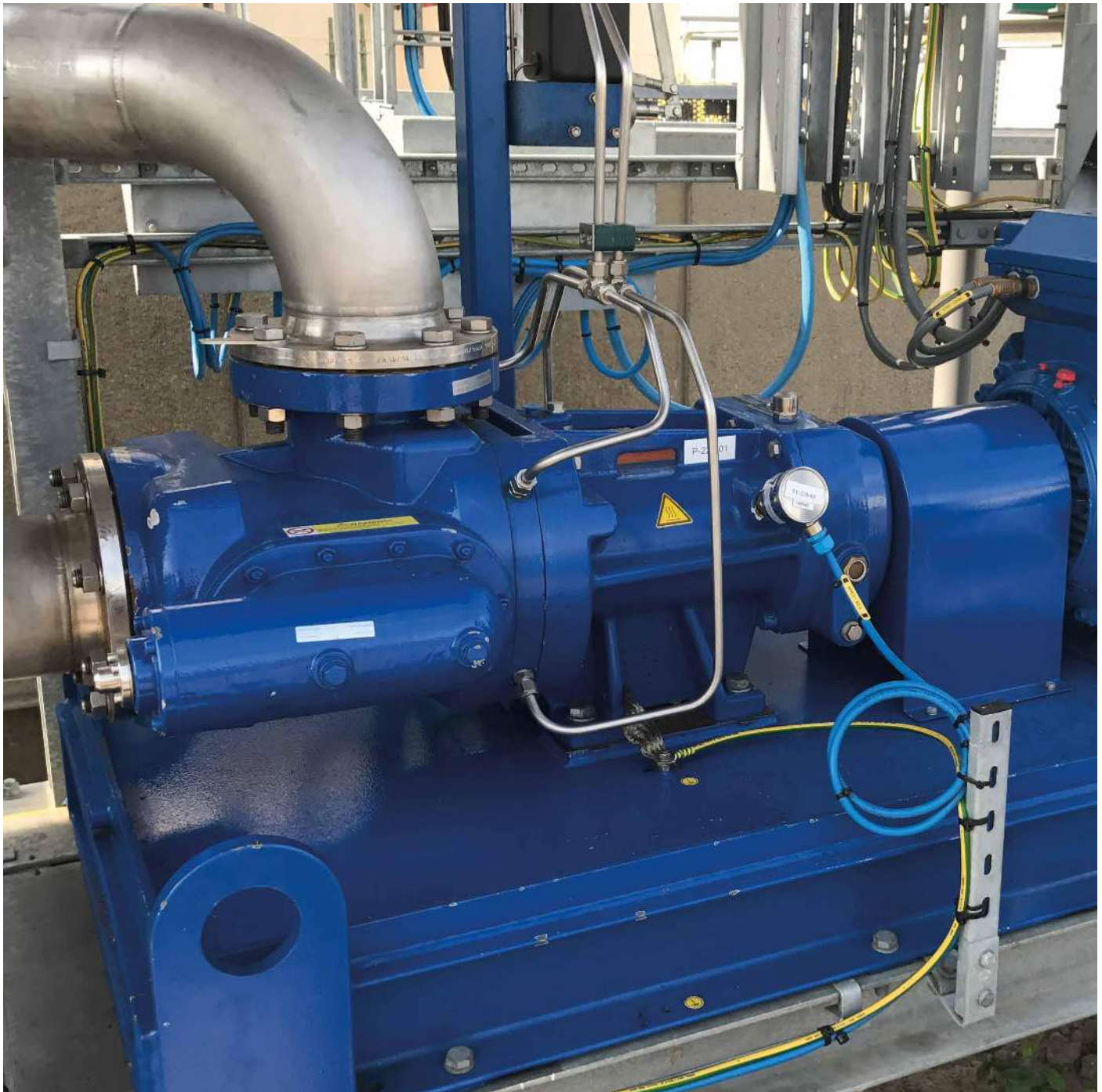
Pumps are a central component, such as magnetic drive pumps, pumps with double mechanical seal and sealing medium. The Bornemann product portfolio includes pump executions that meet these requirements. Retrofitting solutions available on request.

ATEX Zone 0 - Inside a Twin Screw Pump

Model-specific advantages of the Twin Screw Pump can be fully utilized. The pumps are suitable for conveyance of intermittent explosive mixtures and can be operated in areas where explosive atmospheres may occur.

Bornemann offers pump types that are approved for conveyance of flammable mixtures, ATEX Zone 0 inside certification available.





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