Blackmer®

S SERIES
Twin Screw Pumps

Where Innovation Flows

PSG®
a DOVER company

blackmer.com

Twin Screw Pump SERIES

A Safer, Greener, More Cost-Effective Pumping Solution

Blackmer, part of PSG®, a Dover company, is a global provider of innovative, high-quality industrial twin-screw and multi-phase pumps for the safe and efficient transfer of liquids. Blackmer is proud to offer the S Series. This durable screw pump line is perfectly suited to applications with the Process, Energy, Transport and Marine markets. Blackmer S Series pumps offer a wide range of highly customizable pumps and systems for the world's most demanding applications.

Our world-class distributor network ensures that you will have access to the pump you need when you need it. We are devoted to your business's success servicing your needs with world-class products, delivery and best of class expertise. Put us to the test today and contact your local distributor at blackmer.com

S Series Pumps are Ideally Suited For...

- Chemicals
- Caustics
- Adhesives
- Food and beverage
- Soap
- Petrochemicals
- Acids
- Polymers
- Crude oil
- Asphalt
- Diesel
- Seawater
- Lube oil
- Kerosene
- Oilfields
- Residuals
- Bulk transfer
- Loading/unloading
- Terminals
- Shipping
- Bilge and ballast
- Fire-suppression

How it Works

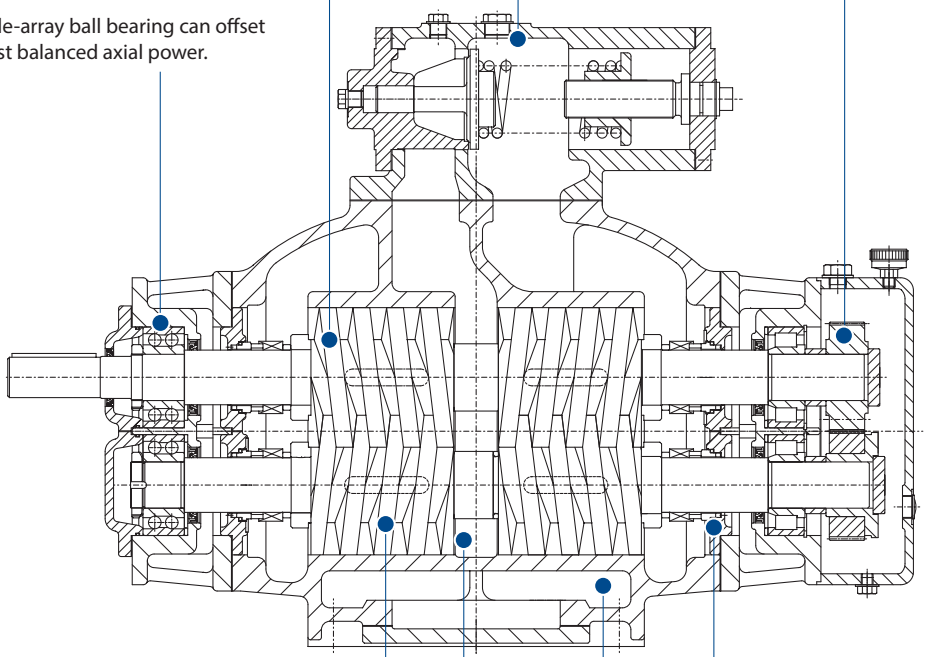
Blackmer Twin Screw Pumps are rotary, positive displacement pumps capable of handling various clean liquids that contain no solids. The pump is composed of two sets of opposed screws. During pump operation, the screws on the two shafts are engaged and form a sealed cavity with the surrounding pump casing. The pumped liquid is shifted axially as the screw shafts turn and steadily and constantly convey the liquid to the center of the pump where the discharge port is located. Since hydraulic forces on two screws are opposite and equal, the hydraulic axial stress on shafts is automatically balanced.

The special profile of the screw flanks with patented technology can ensure fluids pushed with high efficiency, nearly pulsation-free, continuation and good NPSH-values.

Relief valve installation can realize overload protection.

With WTG pumps, the timing gear is adopted to transfer the torque from power screw to idler screw, ensuring no metallic contact and dynamic transfer between the screws, reliable rotation and no danger to the pump even when dry-running for a short time.

Double-array ball bearing can offset against balanced axial power.



Separate construction between shaft and screw allows for a choice of materials for each.

The single mechanical seal is lubricated by pumped medium.

Axial forces are balanced through double-entry screws.

Heating of the pump foot is by means of vapor or transfer-heat oil.

TECHNOLOGY: SCREW

WTG Series Twin Screw with Timing Gears

Blackmer's Twin Screw Pumps are offered with a double-suction design configuration. Twin screw pumps with timing gear (WTG) transmissions are perfectly suited for transferring low-lubricity fluids, or even abrasive media. The WTG pump series offers no metal contact between the hydraulic components and automatic axial balancing. Blackmer WTG Series pumps can be applied in a variety of different operating conditions with fluids that include, but are not limited to: corrosive and non-corrosive, low or high viscosities, clean or abrasive.

Applications

- Petroleum
- Petrochemical
- Refineries
- Chemicals
- Storage and transportation
- Shipping
- Oil terminals
- Food and beverage
- Lubricating oil

Features and Benefits:

- Low noise
- Overload protection
- Nearly pulsation-free
- Increased reliability
- Direct drive
- No fluid agitation
- No emulsified shear
- Suitable for a wide range of viscosities

Certifications & Associations:

2HE Horizontal General Twin Screw Pump

TECHNOLOGY: SCREW

2HE Horizontal General Twin Screw Pumps, WTG

The 2HE series is designed for conveying lubrication mediums. This series is a double-suction, self-priming Twin Screw pump with internal bearings and timing gears. With only one seal, it is easy to maintain and is more reliable. It can replace a Triple Screw pump at larger flow conditions.

Applications

- Petroleum
- Petrochemical
- Lubricating oil
- Storage and transportation
- Loading/unloading

Features and Benefits:

- Meshed power screw shaft and idle screw shaft in the pump casing form sealed chambers
- Torque is safely transferred by the timing gears
- No metal contact
- Convenient to change the location of the suction and discharge

Technical Data:

- Pump Casing: Cast iron/ductile iron/cast steel/cast stainless steel
- Shaft: Alloy steel/stainless steel
- Screws: Ductile iron/alloy steel/ stainless steel
- Bearing Housing: Grey cast iron
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN80-DN300
- Two casing constructions to select:
  1. Side inlet, side outlet
  2. Side Inlet, up outlet

Certifications & Associations:

TECHNOLOGY: SCREW

2HC Twin Screw Pumps, WTG

The 2HC series is designed for marine applications where space is highly confined. Its compact, lightweight design can be used to transfer liquid without solid contents, including lubricating or non-lubricating liquids, low- or high-viscosity liquids, and corrosive liquids. It features a high flow rate, strong self-suction capability, smooth operation, and is simple to operate and maintain.

2HC Twin Screw Pump, WTG

Applications

- Petrochemical
- Chemicals
- Oil terminals
- Shipping

Features and Benefits:

- Meshed power screw shaft and idle screw shaft in the pump casing form sealed chambers
- Torque is safely transferred by the timing gears
- No metal-to-metal contact
- Convenient to change the location of the suction and discharge

Technical Data:

- Pump Casing: Cast iron/ductile iron/cast steel/cast stainless steel
- Shaft: Alloy steel/stainless steel
- Screws: Ductile iron/alloy steel/ stainless steel
- Bearing Housing: Grey cast iron
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN125-DN300

Certifications & Associations:

TECHNOLOGY: SCREW

2HM Horizontal General Twin Screw Pumps, WTG

These double-suction, self-priming twin screw pumps have external bearings and timing gear transmission. They are especially suitable for the delivery of various fluids in a wide range of viscosities that are free of solid substances or with a little abrasiveness and at a moderate temperature.

2HM Horizontal General Twin Screw Pump, WTG

Applications

- Petrochemical
- Chemicals
- Paint and coatings
- Oil terminals
- Storage and transportation
- Food and beverage
- Loading/unloading
- Shipping

Features and Benefits:

- Meshed power screw shaft and idle screw shaft in the pump casing form sealed chambers
- Torque is safely transferred by the timing gears
- No metal-to-metal contact
- Convenient to change the location of the suction and discharge

Technical Data:

- Pump Casing: Cast iron/ductile iron/cast steel/cast stainless steel
- Shaft: Alloy steel/stainless steel
- Screws: Ductile iron/alloy steel/ stainless steel
- Bearing Housing: Grey cast iron
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN50-DN300

Certifications & Associations:

2VM Vertical General Twin Screw Pumps, WTG

TECHNOLOGY: SCREW

2VM Vertical General Twin Screw Pumps, WTG

Applications

- Suitable for handling various media without solids, including various oil products, chemical products and high-polymer media
- Also suitable for clean liquids with entrained gas content less than 60%
- Primarily used in ship-building and other applications where installation space is limited

Technical Data:

- Pump Casing: Grey cast iron/ductile iron/cast steel/cast stainless steel
- Shaft: Alloy steel/stainless steel;
- Screw: Ductile iron/alloy steel/ stainless steel
- Bearing Housing: Grey cast iron/ carbon steel
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN80-DN300

2VE Vertical General Twin Screw Pumps, WTG

TECHNOLOGY: SCREW

2VE Vertical General Twin Screw Pumps, WTG

Applications

- Mainly used in ship-building and other applications where installation space is limited
- Delivers various oil products with lubricating qualities and no solids

Technical Data:

- Pump Casing: Grey cast iron/ductile iron/cast steel/cast stainless steel;
- Shaft: Alloy steel/stainless steel
- Screw: Ductile iron/alloy steel/ stainless steel
- Bearing Housing: Grey cast iron
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN80-DN300

2VR Vertical General Twin Screw Pumps, WTG

TECHNOLOGY: SCREW

2VR Vertical Twin Screw Pumps, WTG

Applications

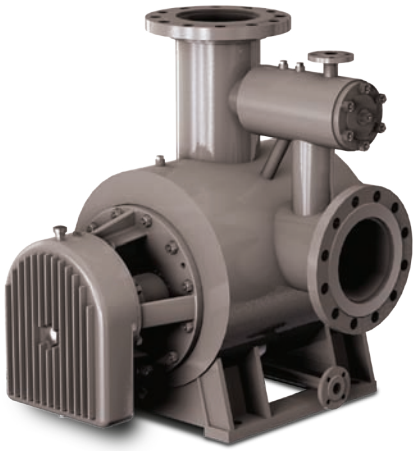
- Especially suitable for the delivery of various fluids that are free of solid substances or with a little abrasiveness at higher temperature, or the fluid needs to be heated
- Primarily used in ship-building and other applications where installation space is limited

Technical Data:

- Pump Casing: Carbon steel/ stainless steel
- Shaft: Alloy steel/stainless steel
- Screw: Ductile iron/alloy steel/ stainless steel
- Bearing Housing: Carbon steel
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN80-DN500

TECHNOLOGY: SCREW

2HR Horizontal, High-Temperature, High-Viscosity Twin Screw Pumps, WTG



Applications

- Installed in applications where the median temperature is much higher than 120°C (248°F) or needs to be heated to maintain high temperatures
- Suitable for applications where the viscosity is ultra-high and can accept a wide range of mechanical seal types
- This pump casing construction is suitable for applications requiring heating jacket

Technical Data:

- Pump Casing: Carbon steel/stainless steel
- Liner: Ductile iron/nickel cast iron
- Shaft: Alloy steel/stainless steel
- Screws: Alloy steel/stainless steel
- Bearing Housing: Grey cast iron/ carbon steel
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN80-DN500

TECHNOLOGY: SCREW

2HH High-Pressure Twin Screw Pumps, WTG

Applications

- Used as a long-distance delivery pump for high-pressure applications or as main filling pumps for high-pressure units
- Suitable to deliver various fluids with viscosities higher than 100 mm^2/s (cSt)

Technical Data:

- Pump Casing: Carbon steel/stainless steel
- Liner: Ductile iron/nickel cast iron
- Shaft: Alloy steel/stainless steel
- Screws: Alloy steel/stainless steel
- Bearing Housing: Carbon steel
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN80-DN300

TECHNOLOGY: SCREW

2H Single-End Twin Screw Pumps, WTG

Applications

- Especially suitable for the small capacity and quick flashing applications where operating pressure is up to 16.0 bar (230 psi) and capacity is up to 40 m^3/h (180 gpm)
- Suitable for various low-, middle- and high-viscosity fluids without solids
- Pump can be provided in mobile configurations, whether or not the medium is lubricating or corrosive

Technical Data:

- Pump Casing: Grey cast iron/ductile iron/stainless steel
- Shaft: Alloy steel/stainless steel
- Screws: Ductile iron/alloy steel/stainless steel
- Bearing Housing: Grey cast iron
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN50-DN80

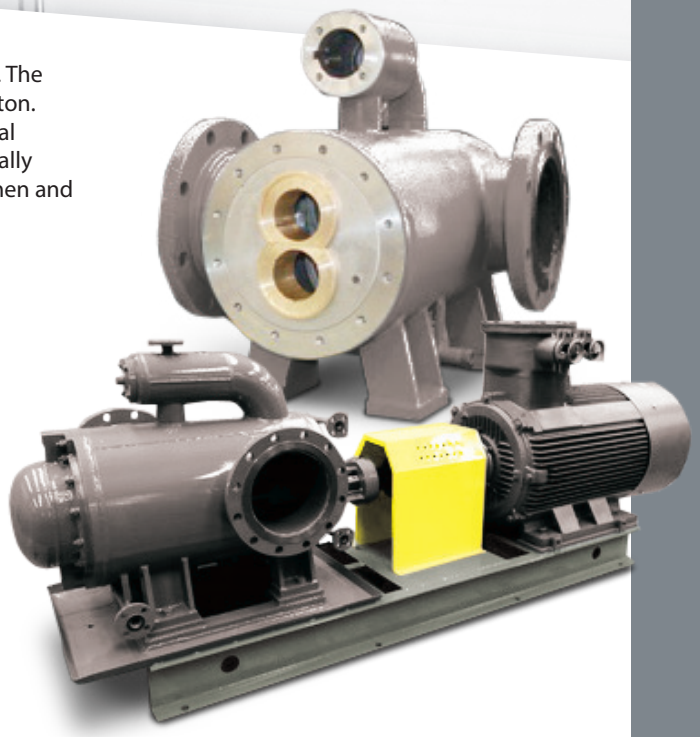
Twin Screw Pumps

	Capacity		Diff. Pressure		Viscosity	Max. Temperature	
Series	m^3/h	gpm	bar	psi	mm^2/s (cSt)	°C	°F
2HM/2VM	2-2,500	10-11,000	up to 40	up to 580	0.5-200,000	120	248
2HR/2VR	2-2,500	10-11,000	up to 40.0	up to 580	0.5-200,000	350	662
2HE/2VE	2-2,500	10-11,000	up to 25.0	up to 360	20-3,000	100	212
2HH	10-1,000	50-4,400	up to 60.0	up to 870	1-10,000	120	248
2HC	35-750	150-3,300	up to 16.0	up to 230	1-10,000	120	248
2H	1-40	5-180	up to 16.0	up to 230	1-100,000	100	212

TECHNOLOGY: SCREW

NTG Series Twin Screw Pumps

The twin screw non-timing gear (NTG) pumps are a single-suction design. The axial hydraulic force on the components is compensated by a balance piston. Metal contact exists between the screw profiles; however, there is no metal contact between the screws and casing. The NTG series pumps are especially suitable to deliver various lubricating fluids with high viscosity, e.g., bitumen and residual oil, at medium or high temperatures.



Applications

- Asphalt
- Heavy fuel oil
- Petrochemical
- Chemical fiber
- Chemicals
- Oil terminals
- Lubricating oil
- Shipping

Features and Benefits:

- Low noise
- Low pulsation reliability
- No fluid agitation
- No emulsified shear
- Suitable for wide range of viscosities

Certifications & Associations:

TECHNOLOGY: SCREW

2LA Horizontal Twin Screw Pumps, NTG

Applications

- Self-priming, single-suction twin screw pump especially suitable to deliver various lubricating fluids with high viscosity at medium or high temperature

Features and Benefits:

- Two series pump, typical non-timing gear transmission
- Strong self-priming capability
- Low pulsation
- Low noise level
- No agitation of the fluids and no emulsified shear
- Suitable for high temperature applications

Technical Data:

- Pump Casing: Carbon steel/ stainless steel
- Shaft: Alloy steel/stainless steel
- Bearing Housing: Grey cast iron/ carbon steel
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN80-DN300
- Two casing constructions to select:
  1. Side inlet, side outlet
  2. Side Inlet, up outlet

TECHNOLOGY: SCREW

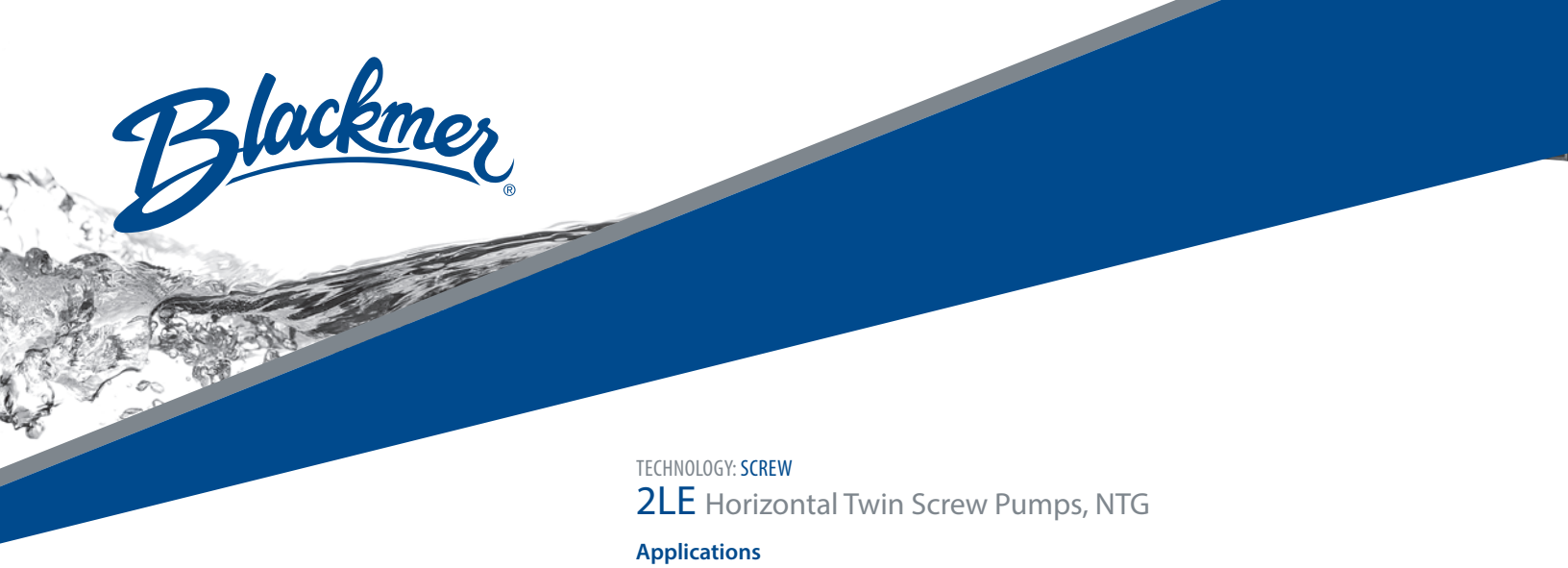
2KA Vertical Twin Screw Pumps, NTG

Applications

- Self-priming, single-suction twin screw pump especially suitable to deliver various lubricating fluids with high viscosity at medium or high temperature
- Primarily used in applications where installation space is limited

Features and Benefits:

- Two series pump, typical non-timing gear transmission
- Strong self-priming capability
- Low pulsation
- Low noise Level
- No agitation of the fluids and no emulsified shear
- Suitable for high temperature applications



TECHNOLOGY: SCREW

2LE Horizontal Twin Screw Pumps, NTG

Applications

- Self-priming, single-suction twin screw pump especially suitable to deliver various lubricating fluids with high viscosity at medium temperature

Technical Data:

- Two series pump, typical non-timing gear transmission
- Strong self-priming capability
- Low pulsation
- Low noise level
- No agitation of the fluids and no emulsified shear

TECHNOLOGY: SCREW

2KE Vertical Twin Screw Pumps, NTG

Applications

- Self-priming, single-suction twin screw pump especially suitable to deliver various lubricating fluids with high viscosity at medium temperature
- Primarily used in applications where installation space is limited

Technical Data:

- Two series pump, typical non-timing gear transmission
- Strong self-priming capability
- Low pulsation
- Low noise Level
- No agitation of the fluids and no emulsified shear

Twin Screw Pumps

	Capacity		Diff. Pressure		Viscosity	Max. Temperature	
Series	m^3/h	gpm	bar	psi	mm^2/s (cSt)	°C	°F
2LE/2KE	1-480	5-2,200	16	230	≤3,000	80	176
2LA/2KA	1-480	5-2,000	16	230	≤200,000	350	662

TECHNOLOGY: SCREW

Multi-phase Twin Screw Pumps

Designed for medium- to low-pressure applications, the Multi-phase Twin Screw Pumps are robust, reliable and built to last within the Water and Oil & Gas industries. Blackmer multi-phase pumps are commonly used in the oilfields that have untreated streams. The 2MP Series is designed for higher differential pressure and higher suction pressure applications.

Applications

- Crude oil
- Desert oilfield
- Beach-sea oilfield
- Offshore platform
- Wellhead

Features and Benefits:

- Reduces backpressure
- Increased production
- Quick installation
- Reduces downtime
- Unique materials for extreme operating conditions

Certifications & Associations:

TECHNOLOGY: SCREW

2MPS Multi-phase Twin Screw Pumps, WTG

Multi-phase pumps are boost and delivery equipment, commonly used in oilfields that have untreated streams. In order to satisfy multi-phase delivery of oil, gas and water, containing small particulates, Blackmer multi-phase pumps adopt a unique screw profile and design along with a special pump casing chamber to achieve boosting for gas in mixture and heat distribution.

In order to meet a variety of adverse operating conditions in the field, Blackmer multi-phase pumps use specially selected materials, hardening treatment and specialty seals. To allow our customers simple, convenient and quick installation Blackmer can provide a multi-phase skid system that includes filter, valve, connecting pipeline and control equipment.

Applications

- Crude oil
- Desert oilfield
- Beach-sea oilfield
- Offshore platform
- Wellhead

Technical Data:

- Pump Casing: Carbon steel/stainless steel
- Shaft: Alloy steel/stainless steel
- Screws: Alloy steel/stainless steel
- Bearing Housing: Grey cast iron/carbon steel
- Pump Nozzle Flange: GB/DIN/ANSI
- Flange: DN150-DN500

Multi-phase Pumps

	Capacity		Diff. Pressure		Max. Product Temperature		GVF
Series	m^3/h	gpm	bar	psi	°C	°F	%
2MPS...B	30-1,500	130-6,500	up to 30.0	up to 430	120	248	up to 80%
2MPS...H	30-1,000	130-4,400	up to 36.0	up to 520	120	248	up to 97%
2MP	30-800	130-3,500	up to 60.0	up to 870	120	248	up to 97%

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