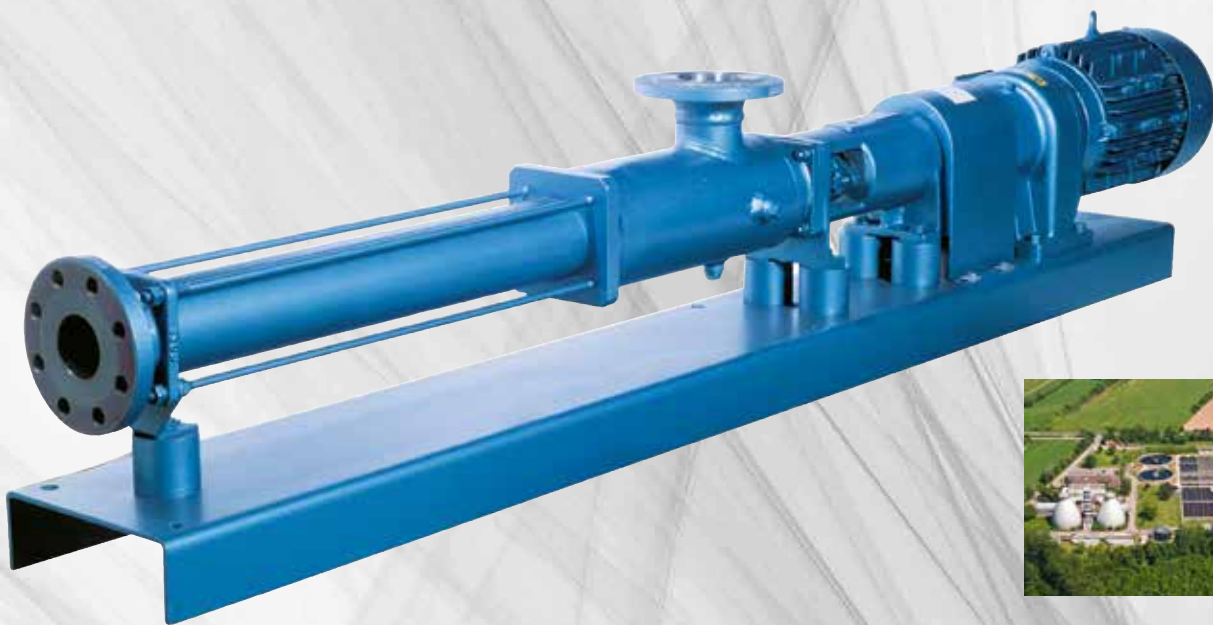


# Progressive cavity pumps

The security of premium quality  
in all industries



# Compact, sturdy, and powerful

For any task and every requirement



Regardless in which industry you are working in, high quality pumps are required to guarantee processes to run reliably and continuously.

Bornemann progressive cavity pumps provide this quality in a range of different versions. They are supported by Bornemann's expert advice and exceptional customer service. Bornemann is certified to DIN EN ISO 9001.

Bornemann progressive cavity pumps can convey a huge number of different media. In fact, they have an almost unlimited range of applications. They reliably convey everything from thin liquids to high

viscosity media, including non-Newtonian viscosity characteristics, as well as abrasive, neutral, and aggressive media. Media containing fibers or with very high solid content can be reliably conveyed, as well as those containing gas and even foaming compounds.

The exact design and choice of materials are specific to each individual application.

The fact that the pumps operate continuously means that the conveyed material is handled with the utmost care. The pumps operate with low pulsation and turbulence.

## Benefits for the user

- Wide range of operations
- Gentle and continuous conveying
- Dosing capability
- Long service life
- Various standard pump designs
- Tailor made designs
- Individual shaft seals possible
- High strength cardan joint as standard

## Type code

E 2 H 1500

### Size

### Series

H = Basic series of industrial pumps for general applications  
L = Block construction  
P = High pressure pump  
S = Rapid cleaning pump  
R = High consistency pump with upstream screw conveyor  
U = Stationary, vertical pump, submersible pump

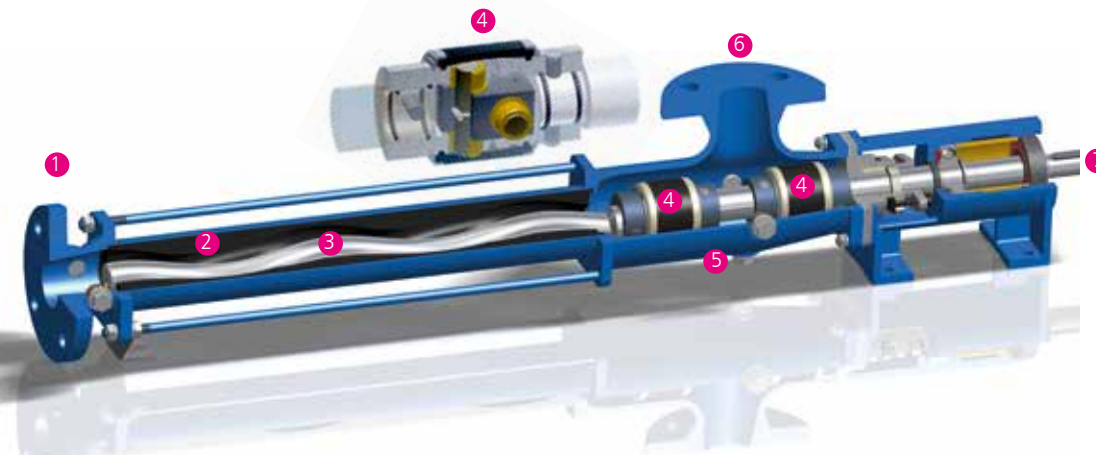
### Number of stages

Not specified = Single stage  
2 = Two stage  
4 = Four stage

### Progressive cavity pumps



- 1 Pressure fitting
- 2 Stator
- 3 Rotor
- 4 Cardan joint
- 5 Pump housing
- 6 Intake fitting
- 7 Drive shaft



### Function

Bornemann progressive cavity pumps are self-priming, rotating, and valve-free positive displacement pumps. They have two conveying elements - the rotating eccentric screw (rotor) and the stationary housing insert (stator). The rotor is wound in a screw shape and has a circular cross-section. Its center point coils around its longitudinal axis with rotating oscillation at the distance of the eccentricity in the fixed stator. The fixed stator

corresponds to the geometry of the rotor. It has an additional thread turn, 180° offset and twice the pitch of the rotor. The diameters, pitches and eccentricity are different depending on the pump size and determine the dimensions of the individual feed chambers and thus the delivery volume.

When the rotor rotates, the different number of threads results in a series of

feed chambers, which move continuously from the intake to the delivery side.

If the number of stages is increased, the pressure which the pump can create rises proportionally. The construction allows material to be conveyed in both directions, high suction capacity and gentle conveying. Thanks to the large number of material combinations for the rotor and stator and the gentle conveying with extremely low shearing strain, progressive cavity pumps are ideally suited for measuring and dosing applications.

Bornemann progressive cavity pumps are produced in single and multi-stage designs. The number of stages determines the maximum delivery pressure. This is up to 6 bar for single stage, up to 12 bar for two stages, and up to 24 bar for four stages. For example, the E geometry can reach 6 bar, and the E2 geometry 12 bar with the same rotor/stator length.

## Materials

Pump housing**	EH, EL, ER	GG-25
	EH, EL, ER	1.4408, (1.4581)
	EU, ER	1.4571
	EU, EP	Stahl St. 37
	EH, EL, EU, EP	1.4462
	ES, ELS	1.4404, 1.4571

Rotor**	C45 hard chrome
	1.4571
	1.4462

Shaft**	1.4021
	1.4571
	1.4462

Stator**	SBR (Buna)
	NBR* (Perbunan)
	HNBR (Therban)
	FPM (Viton)
	IIR (Butyl rubber)
	EPDM*
	CSM* (Hypalon)

\* also available in material in line with FDA standards  
\*\* other materials on request  
( ) similar to materials with this trade or product name  
other materials on request

## Product benefits

- Can be employed anywhere
- Delivery up to 300 m³/h
- Differential pressure up to 80 bar
- Viscosity | 1,000,000 mm²/s
- Solid particle size < 75 mm
- Medium temperature up to 140 °C

# Which pump is the right one for your production?

Six power classes provide optimum flexibility



## EH, the robust pump

This series is the basic design for all other versions. It is primarily installed horizontally and can be combined with all drive types.

### Technical data

Capacity up to 300 m<sup>3</sup>/h  
Differential pressure up to 24 bar.  
Single stage (6 bar), two stage (12 bar) and four stage (24 bar) available.

### Applications

Suitable for all sectors of industry for **conveying** and **dosing** thin to high viscosity, neutral, or aggressive media, with or without solid or fiber content.

## EL, the compact pump

On this pump, the drive is fitted directly on the pump itself, eliminating the need for a separate base plate. Short design.

### Technical data

Capacity up to 80 m<sup>3</sup>/h  
Differential up to 12 bar.  
Single stage (6 bar), two stage (12 bar) available.

### Applications

Suitable for all sectors of industry for **conveying** and **dosing** thin to high viscosity, neutral, or aggressive media, with or without solid or fiber content.

## EU, the submersible pump

This series is installed exclusively vertically and is directly connected to the drive. It is fitted directly onto the containers and pits to be drained.

### Technical data

Capacity up to 300 m<sup>3</sup>/h  
Differential up to 24 bar.  
Single stage (6 bar), two stage (12 bar) and four stage (24 bar) available.

### Applications

Suitable for all sectors of industry for **draining** containers, pits, sedimentation basins, tanks, etc. with thin to high viscosity, neutral, or aggressive media, with or without solid or fiber content.

## EP, the high pressure pump

This series has been developed for continuous operation in high pressure applications. The construction corresponds to the robust universal EH series.

### Technical data

Capacity up to 45 m<sup>3</sup>/h  
Differential up to 80 bar.

### Applications

Suitable for all sectors of industry for conveying thin to high viscosity, neutral, or aggressive media, **including those with gas pockets**, and with or without solid or fiber content. **Also suitable for use in oil or gas fields, e.g. as transfer pumps, and for water reinjection.**

## ES, the food pump

This series is equipped with dairy and aseptic couplings and can be fully dismantled very quickly and easily. The individual elements can be cleaned to stringent biological standards.

### Technical data

Capacity up to 50 m<sup>3</sup>/h  
Differential up to 12 bar.  
Single stage (6 bar), two stage (12 bar)  
Stationary and mobile version available  
four stage (24 bar) on demand.

### Applications

In the food industry, the pharmaceuticals and cosmetics industry, the paint industry and many other industrial sectors where **flawless cleaning** of all components in a system is critical (CIP nozzle as needed centrally or tangentially).

## ER, the open hopper pump

This series is equipped with a special articulated shaft, on which a screw conveyor is mounted. For highly concentrated sludge, the pump housing can be supplemented with a hopper attachment.

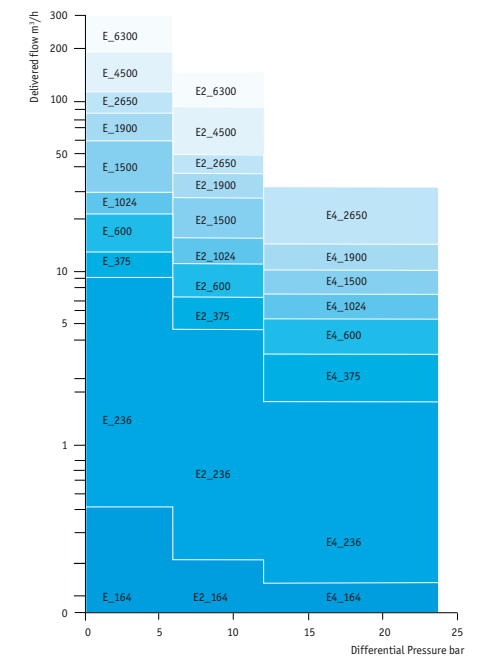
### Technical data

Capacity up to 200 m<sup>3</sup>/h  
Differential up to 24 bar.  
Single stage (6 bar), two stage (12 bar) available.

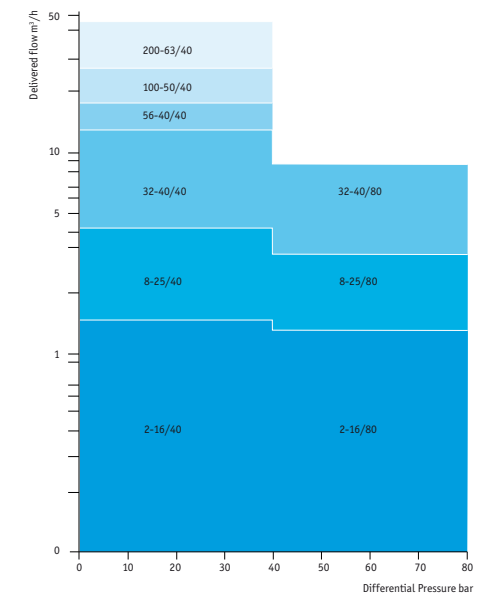
### Applications

Conveying **highly viscous or pasty media**, or those with a high solid content (up to 60% DS) in all industrial sectors.

Series E\_H, E\_L, E\_U, E\_S, E\_R



Serie EP



	Capacity		Differential pressure		Viscosity		Max. Product temperature	
	m <sup>3</sup> /h	gpm	bar	psi	mm <sup>2</sup> /s	cSt	°C	°F
EH	1 - 300	4 - 1,320	up to 24	up to 360	1 - 1,000,000		up to 140	up to 280
EL	1 - 80	4 - 350	up to 12	up to 180	1 - 1,000,000		up to 140	up to 280
EU	1 - 300	4 - 1,320	up to 24	up to 360	1 - 1,000,000		up to 140	up to 280

	Capacity		Differential pressure		Viscosity		Max. Product temperature	
	m <sup>3</sup> /h	gpm	bar	psi	mm <sup>2</sup> /s	cSt	°C	°F
EP	1 - 45	4 - 200	up to 80	up to 1.160	1 - 1,000,000		up to 140	up to 280
ES	1 - 50	4 - 220	up to 12	up to 180	1 - 1,000,000		up to 140	up to 280
ER	1 - 200	4 - 880	up to 24	up to 360	1 - 1,000,000		up to 140	up to 280



## Optimum service for reliable pump performance

Enabling your company to work without interruptions

In addition to product quality, reliability and expert service is the decisive factor in customer satisfaction.

Our Service Team looks after every installation with commitment and attention. Whatever service the user wants, the Bornemann Service Team provides it: Consulting, documentation, parts delivery, maintenance, service, retooling, replacement, general overhaul and much more. Wherever in the world Bornemann pumps and systems are in use, Bornemann Service is available.

**On site service. Inspection, maintenance and repairs.**  
When you buy a Bornemann product, you are purchasing much more than just a pump or system. Bornemann Service supports you throughout the product's life. If you need help, a Bornemann specialist is always available to provide it. They can advise you and coordinate any servicing - worldwide.

**In-house repair. Making sure an old pump delivers new performance.**  
Overhauling a pump in the factory is designed to achieve the best cost/benefit

ratio. It is carried out with the utmost care and in line with the quality guidelines for new pumps. Our know-how and the many years' experience of our highly qualified staff guarantee perfect repairs.

**Spare and wearing parts.**  
If you ever need a spare part for your Bornemann pump or system, or even for a pump from another manufacturer, you need to get hold of the right part as quickly as possible. Our expert spare parts service provides you with immediate assistance.

### On site

- Service hotline, order acceptance and advice
- Installation and commissioning
- Maintenance and maintenance planning
- On site repairs
- Customized user training
- Arrangement of authorized service providers

### Inhouse

- Spare parts in manufacturer quality
- Advice
- Quotations
- Order handling



## Our progressive cavity pumps are at home in a variety of industries

No matter what kind of solution you are looking for, we can provide it



Marine and shipbuilding



Waste water and sludge treatment / municipal waste water



Oil and gas



Plant engineering



Industrial sewage



Paint industry



Chemical industry, petrochemicals



Food and beverage industry, brewing



Paper and cellulose processing



Construction



Biogas



Environmental engineering

# Unique solutions made by the specialist



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