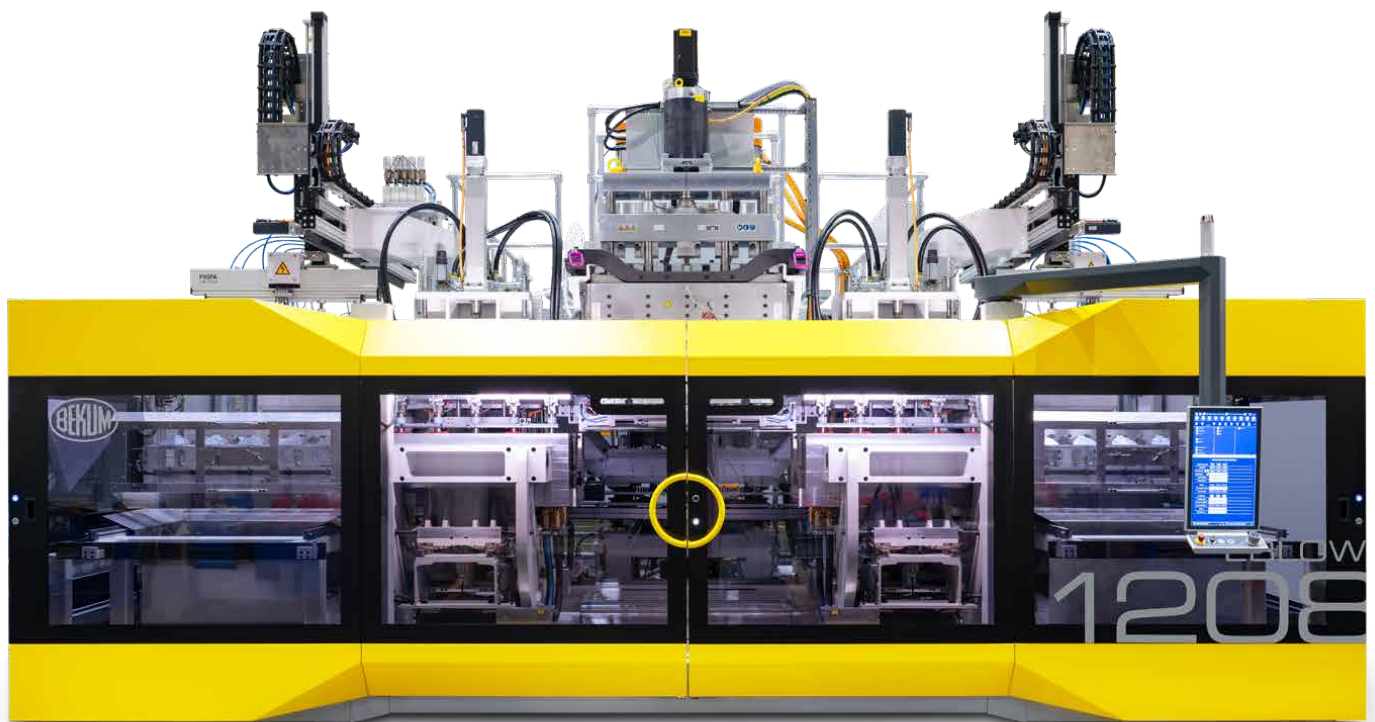




# Packaging Machines

High-Performance Blow Moulding Machines



HOUSEHOLD &  
PERSONAL CARE



PHARMA &  
MEDICAL



DAIRY &  
FOOD



PET  
HANDLED  
BOTTLES

OUR WIDEST RANGE  
OF INNOVATION

8  
SERIES

# THE NEW 8-SERIES - SMALL BLOW MOULDING MACHINES

## ELECTRIC. MORE ENERGY EFFICIENT. FASTER.

The newly developed machines of the 8-series set the benchmark for future extrusion blow moulding machines. With the outstanding, multi-award-winning black and yellow design, Bekum symbolizes the performance and quality of the entire platform. It is characterized by numerous new technologies creating added value.



SMALL PACKAGING  
MACHINES

### New all-electric small blow moulding machines for small packages

The EBLow 208, 308 and 408 sizes form a self-contained modular system within the 8-series platform and are available as single-station (S) and double-station (D) machines. The production focus of these exceptionally flexible and compact small blow moulding machines is directed at smaller packaging for the pharmaceutical, cosmetics and consumer industries.

ular system within the 8-series platform and are available as single-station (S) and double-station (D) machines. The production focus of these exceptionally flexible and compact small blow moulding machines is directed at smaller packaging for the pharmaceutical, cosmetics and consumer industries.

- Closing forces from 60 to 150 kN
- Minimum dry cycle times 1.4 - 1.8 sec
- Proven C-frame clamping unit for high platen parallelism
- Short clamping force build-up time < 100 ms
- Highly efficient electric drives
- Parison cutting with pre-pinch, spear cutting or hot trimming device
- Punching device attached to the clamping platen
- Linear take-off with article conveyor running on the rear side of the press section
- Continued use of proven Bekum blow pin holders



C-Frame



blowpin holder

### Energy efficiency class 10

Bekum uses energy-saving drives that feed their braking energy back into a DC link, allowing it to be used in the extruder drive, a permanent consumer.

- The effective energy consumption for carriage and clamping platen movement equals approximately 1 kWh per operating hour
- In combination with the new energy-optimized HiPEX extruders, this makes a specific energy consumption of 0.26 kWh/kg possible (depending on production) configuration- (demonstration value of fair production)
- Exceeds the most efficient Class 10, according to EUROMAP 46.1

## New maintenance and disassembly concept

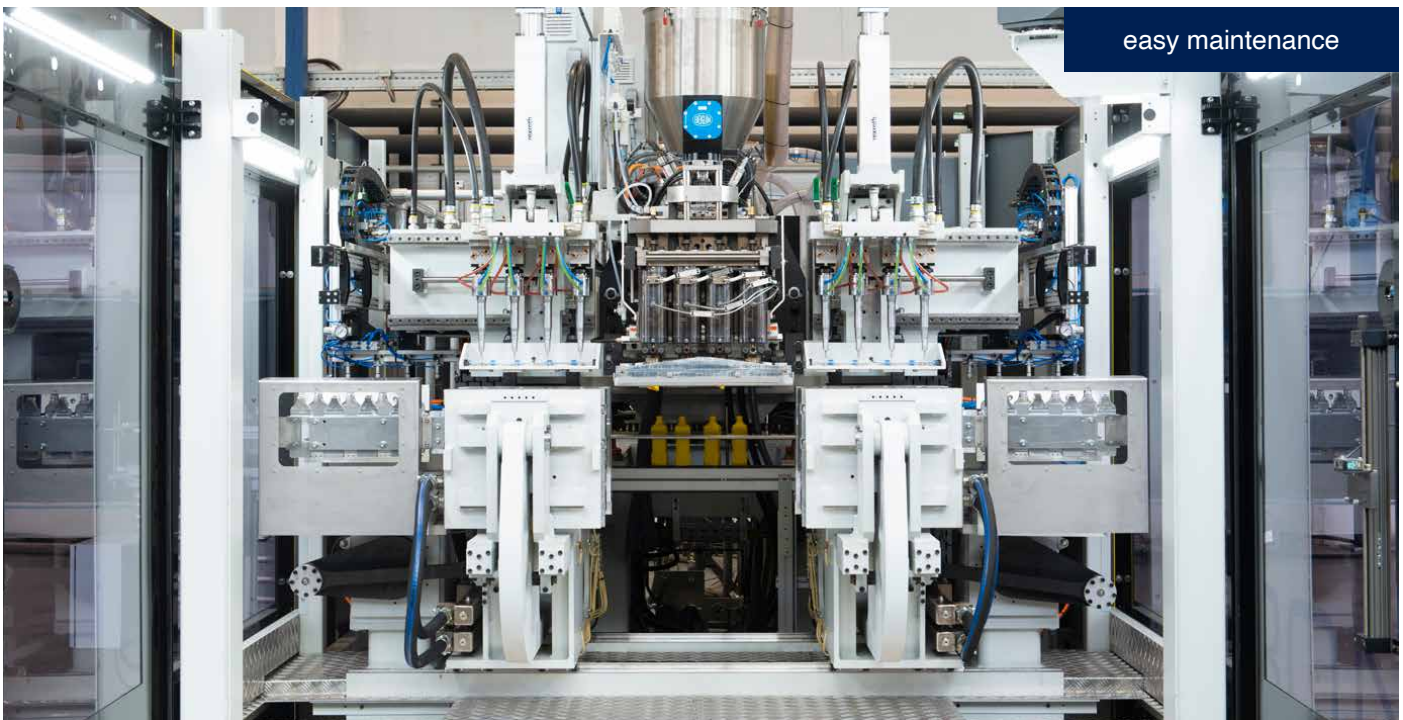
With the front doors open, you have free access to the head for maintenance and disassembly purposes.

- Moulds can be removed upwards
- Sufficient ground clearance to handle with forklift trucks
- Standard quick-release levers on the rear clamping platen
- For frequent mould changes, a mechanical quick-change system is offered as an option

## Pack and Go

Furthermore, these small blow moulding machines are designed in such a way that it is possible to lift and deliver the machine as a whole into a transport container.

- Reduced installation and commissioning times
- Reduced packaging and shipping costs



## Bekum Control 8.0

- New machine control Bekum Control 8.0 facilitates machine operation
- Intuitive user interface
- Industry 4.0 ready
- Clear and up-to-date information overview in a customizable dashboard
- Visualization of throughput values and energy consumption
- Display of electricity, water and air consumption as well as the pressures of all supplied media
- Generously sized, portrait-oriented 24" full HD touch-screen control panel
- Reduction of switching elements on the control panel
- In conjunction with the new control system, an optional hand operating device for quick set-up



# THE NEW 8-SERIES - PACKAGING MACHINES

## MORE PACKAGING. MORE FLEXIBILITY.



PACKAGING  
MACHINES

### New blow moulding machines concept up to 12 L

The modular 8-series extrusion blow moulding machines for flexible configuration include the machine sizes 508, 608, 708, 808, 1008 and 1208, all of which are available as double-station machines. The 508, 608 and 708 sizes are also available as single-station models. At the heart of the clamping units in the new EBLow 8-series, is the mould clamping system developed and patented by Bekum. It guarantees outstanding closing platen parallelism, as well as uniform clamping force distribution. It is important to Bekum that the clamping units ensure a short clamping force build-up time in order to meet the process engineering requirements of all blow-moulded articles.

- Award-winning, functional and ergonomic machine design
- Generously sized access and viewing area
- Clamping forces from 150 to 500 kN
- Dry cycle times 1.8 - 3.7 sec
- Patented C-frame of the clamping unit for high clamping platen parallelism and uniform clamping force distribution across the mould width
- Short clamping force build-up time < 100 ms
- Highly efficient electric drives
- Parison cutting with pre-pinch, spear cutting or hot trimming device
- Linear take-out system with rear article conveyor belts
- Mechanical quick mould clamping system;



### New e-Twin-Toggle clamping drive

This unique e-Twin-Toggle drive system, available exclusively from Bekum, is a double crank drive system comprised of a combination of a crank drive and a mechanically coupled load lever system.

- Load on the drives and counter bearing of the crank drive is released when the closing force is reached
- This ensures an exceptionally long service life
- Mould thicknesses that deviate slightly from the nominal dimension, or are subject to thermal changes, are compensated for by an automated servomotor system
- In automatic mode, the clamping force is continuously monitored and readjustments are fully automatic
- Adaptive adjustment ensures high process stability and therefore consistent article quality
- Fast-acting, precise application of force during the pinch-off process when closure of the blow mould is completed, can significantly improve the quality of the blow moulded products
- Materials requiring an exact production process, such as PP, PC and PET, benefit from the perfect formation of pinch-off seams, which is an important prerequisite for clean trimming results



## Electromechanical drives for very short dry cycle times

The movement axes used for the clamping units, and to open and close the mould, features an electromechanical drive as standard.

- The axes for bobbing the extruder platform, the take-out devices, and for the calibrating and punching systems and their precise, powerful movements are also electromechanically driven
- The wall thickness control system can utilize either an electromechanical or hydraulic drive
- Calibration, punching and mould function systems can also be optionally equipped with hydraulic drives



## Removal systems

The machines are equipped with linear transport systems for article removal as standard compared to those with other take-out systems.

- Small footprint
- The articles are removed in the punching position before linear transport to the rear of the machine
- They can optionally be cooled or checked for leaks during the linear transport

## Canister Production with 3 Station Take-out System

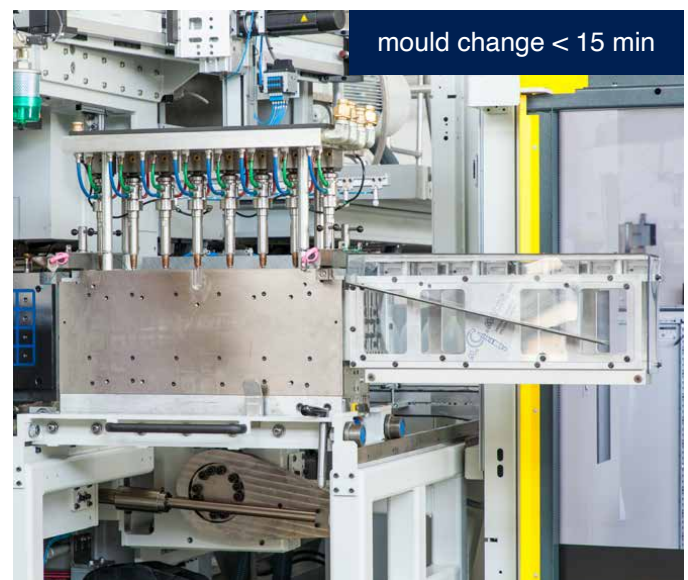
As you would expect from Bekum, the machine types 508, 608 and 708, which are particularly suitable for canister production, can also be optionally equipped with 3-station removal, as well as with a bottom calibration station.

- The Bekum 3-station removal allows special cooling and correction measures to be carried out
- Enabling the production of canisters of the highest geometric quality

## Straightforward mould change-over in < 15 minutes per side

Moulds are mounted on the respective closing platens by means of mechanical couplings or optionally by using magnet systems.

- For mould changing, all machines offer excellent access from the front
- Safety gates can be fully opened
- A mould for (dis)assembly can be removed in the extrusion position from the center of the machine by means of a hoist
- Optionally, it can also be removed and installed in the calibration position using a roller conveyor in the clamping unit
- A mould change can be carried out safely in less than 15 minutes per side



## Highest energy efficiency classification

Bekum also installs high energy-efficient synchronous reluctance motors with permanent magnet support in its extruder drives, which achieve the highest energy efficiency class IE5 (Ultra Premium) in accordance with the IEC TS 60034-30-2 standard.

- Electrical losses are almost completely avoided in the slip-free rotor of the reluctance motor
- The heat generation is kept at a very low level
- Ferrite magnets used in the rotor instead of rare earth magnets also represent excellent sustainability and environmental protection
- Excellent equipment for extruder motors
- The 8-series machines are the new benchmark in energy efficiency in class 10 according to EUROMAP 46.1.

## OUR WIDEST RANGE OF INNOVATION

# 8

SERIES

### Bekum extrusion heads

- Long service life and high operational reliability
- Reduced material and color change times
- Reduced adjustment effort
- Wall thickness control is either electromechanical or hydraulic

### Highest energy efficiency

- Energy-saving drives
- Use of Ultra Premium extrusion drives (IE5)
- Energy efficiency class 10 according to Euromap 46.1

### Removal systems

- Small footprint
- Linear article transport
- Article cooling or leak testing device option

### To the Videos



### Patented C-frame

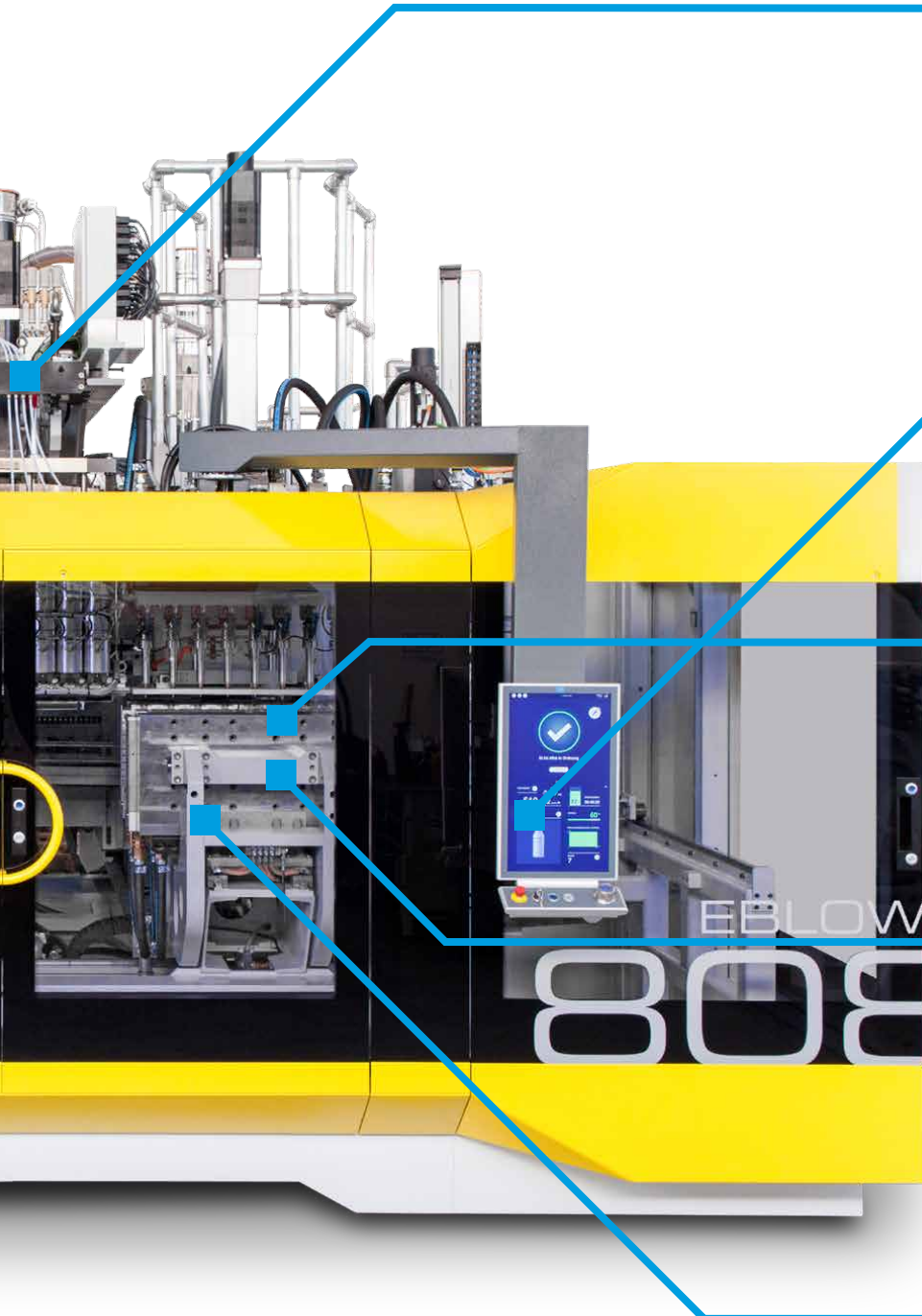
- High clamping platen parallelism
- Uniform clamping force distribution across the mould width



GOOD  
DESIGN



DESIGN  
AWARD  
2021



### HiPex - High Performance Extruder 36D

- Energy savings of 20 %
- Very good melt homogeneity
- Low-shear processing of plastics

### Bekum Control 8.0

- Industry 4.0 capable
- Intuitive user interface
- Remote maintenance with secured router

### Short drying cycle times

- Between 1.8 and 3.7 s depending on the machine
- Electromechanical drive of all movement axes

### Mould change < 15 min

- Easy access from the front
- Safety gates can be opened wide
- Mechanical locking
- Mould change without tools

### New e-Twin-Toggle clamping drive

- Load on the drives is released when the closing force is reached
- Exceptionally long service life
- The clamping force is continuously monitored
- Fast-acting, precise application of force during the pinch-off process



**GERMAN  
DESIGN  
AWARD  
WINNER  
2022**

# EXTRUSION SYSTEM ACCORDING TO YOUR NEEDS

## FROM ONE SOURCE. COORDINATED.

## REPRODUCIBLE PRODUCT QUALITY.

Bekum is the technology leader in extrusion blow moulding. For this reason, it is important to have the core extrusion competencies for mono-, bi- and co-ex blow moulding heads and extruders in-house. Bekum develops, designs, manufactures and assembles the core components independently. Thus, with the blow moulding machine, we have a direct influence on the rheological design and production quality of these components. Standard and special materials can be consistently processed and when it comes to extrusion blow moulding of PET, Bekum is the leading supplier to well-known packaging manufacturers.

Using resource-saving processes and technologies, Bekum machines can achieve material savings and process recycled plastics to produce sustainable packaging and containers, contributing to the circular economy.



HIPEX 36D  
EXTRUDER

### HiPEX - High Performance Extruder

The name HiPEX 36 conceals a completely redeveloped more powerful extruder generation.

The main focus lay in the efficiency of the system as a whole. The new HiPEX generation of extruders for the future packaging machine series are characterized by their exceptional process stability, their high maximum throughput capacities and their excellent melt homogeneity. When designing extruders, Bekum places particular emphasis on a high degree of energy efficiency, as extruders are the main energy consumer of blow moulding machines. Thanks to the installation of extruder screw lengths of 36D in combination with improved mixing zones, the screw consistently supplies homogeneous material and better colour mix.

### Advantages of the new high-performance extruder HiPEX 36D:

- Energy savings of 20 %
- Direct driven gear boxes and new IE5 extruder high efficiency motors
- Overall lengths of 36D in combination with improved mixing zones
- Increased output with consistently good melt quality and colour mixing
- Reduced temperatures lead to faster cooling times and productivity optimization
- Lowered pressure profile in the feeding zone reduces the wear creating a longer life
- The extruder screw and the feeding zone geometry are designed for many blow moulding plastics with high melt strength, low melt temperature and good homogeneity
- Improved processing of extrusion blow mouldable plastics, such as HDPE, LDPE, HMWPE, and PP as well PCR and regrind.

HiPEX 36D





SPIRAL MANDREL  
EXTRUSION HEAD

### Bekum extrusion heads

The Bekum extrusion heads for continuous and discontinuous extrusion are constantly undergoing further development.

They are a decisive factor for production success. Bekum's Mono, Tri-Ex and Co-Ex spiral mandrel extrusion heads offer short, less shearing gentle flow paths for homogeneous melt and temperature distribution. Its big advantage is the uniform wall thickness distribution over 360° around the article. The reproducible production results lead to improved quality and reduced weight, as no thin spots and weld seams have to be compensated for. The big advantage of this technology is the reduced material and colour change times. There is no temperature-related influence on the die position, which reduces the setting times and the adjustment effort when starting production and reduces material usage.

### Properties and advantages of our spiral head:

- Very good melt and temperature homogeneity
- Uniform wall thickness distribution over the full circumference around the article

### Advantages:

- Repeatable production results lead to an improved quality with potential article weight savings
- Exclusion of thin spots, weld seams and flow lines
- Straight parison drops at production rates
- Reduction of adjustment effort during start-up of production leading to lower material usage
- Reduction of die adjustment times

### 3-layer Tri-Ex-view-stripe-extrusion head



### Short, smooth and uniform flow channels Advantages:

- Reduced color change times and material usage

### Latest rheological design increases the possible material throughputs and range of applications

#### Advantages:

- Larger production window and increased application possibilities
- Reliable processing of extrusion blow-mouldable plastics HDPE, PP, PC, HMWPE and PCR (Post-Consumer Recycled) and Regrind
- Long service life and high operation reliability

### 4BKB 30-2/85(V) extrusion head



# SERVICE - IN-PERSON & DIGITAL

## INCREASES EFFICIENCY AND CREATES MORE OPERATIONAL RELIABILITY.

Whether in-person or digital customer service, maintenance, process optimization or retrofitting, Bekum takes care of your needs throughout the entire machine life cycle.



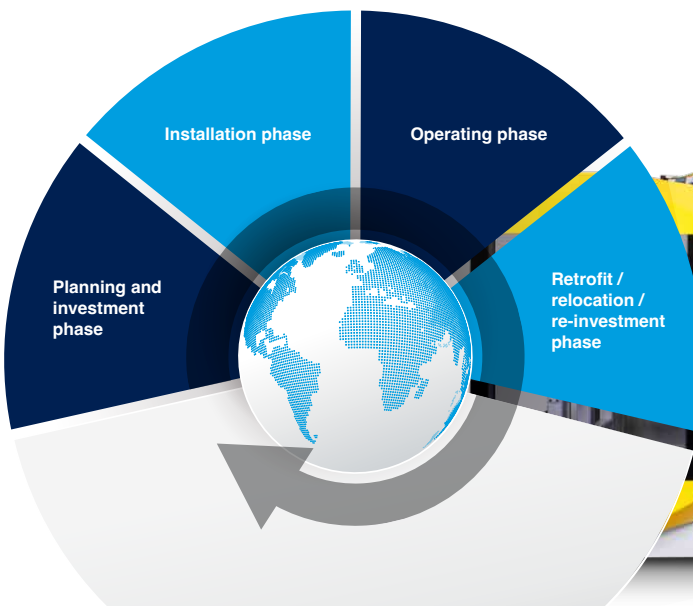
SERVICE

### Customer service

Bekum's blow moulding machines are known worldwide for their reliability, and Bekum's service is equally dependable. The in-person and digital customer support ensures smooth production start-ups and maximum machine availability.

### Bekum's personal service brings advantages:

- Free initial telephone consultation
- Service technician on-site
- Fast and individual spare parts supply
- Application optimization from the expert
- Machine optimization through individualised retrofits



### Online support thanks to digital service from Bekum:

- Preventive and predictive maintenance solutions
- Augmented reality service via remote video support
- Digital spare parts catalogues
- Artificial Intelligence (AI) platform for even more production reliability

# INDUSTRY 4.0 & ARTIFICIAL INTELLIGENCE

## SELF-OPTIMIZING CONDITION MONITORING THROUGH HEALTH AND CONDITION MONITORING

Digital support systems provide effective and sustainable assistance for the productivity of machines and can optimize production processes. With their help, it is possible to increase the efficiency of production while simultaneously reducing costs.



INDUSTRY 4.0

### Discover advantages – Industry 4.0

In the new 8-series, Bekum has added more standardized interfaces to display the data from the process sensors of the machines. This makes it possible to measure the energy consumption, the flow of cooling water and blow air and their temperatures, as well as the facility's temperature and humidity.

- Media measurements are clearly displayed
- Access to historic data for machine evaluation and predictive maintenance (trend analysis)
- Dashboard visualization of the ID 4.0-capable BC 8.0 machine control system
- The operator has an overview of all media consumptions

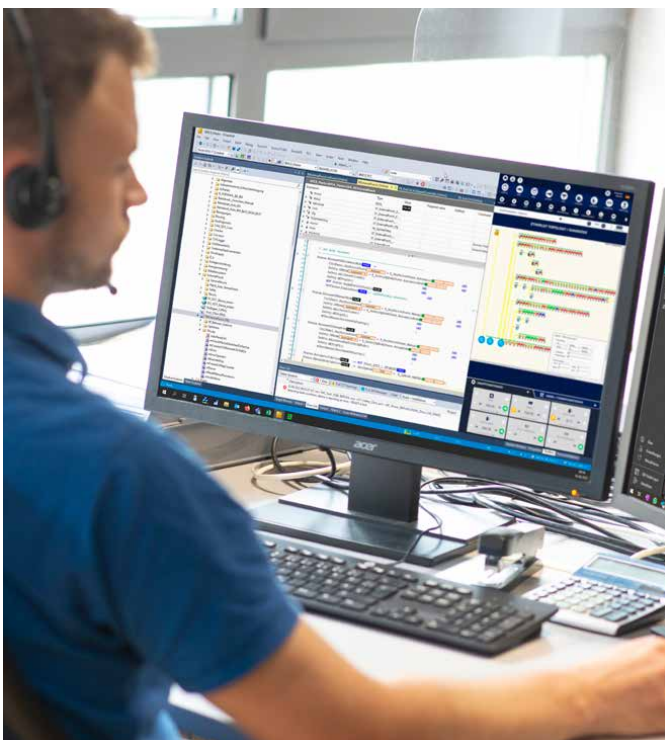


ARTIFICIAL  
INTELLIGENCE

### New AI platform for more production safety

During daily plant operations, unforeseen disturbances and fluctuations occur, for example in raw materials or process parameters. Often these changes are noticed when it is too late. Every second production cycle can lead to waste and expensive follow-up costs. With our new AI platform, this problem can be easily avoided. By automatically compiling all sensor data, evaluating and comparing with past data, changes in drives or heating elements, for example, can be identified in real time. At various levels of the data collection process, the machine's health conditions are summarized and displayed as graphs by Industrial Health Scoring. The operator simply sets the required thresholds for key operating parameters; with an alarm being immediately triggered if the values exceed or fall below the thresholds.

- 1,500 measurement data are evaluated per second and analysed for deviations
- early detection of deviations and production failures
- increases plant availability and production safety
- Monitoring of all production parameters ensures article quality





## Technical specification

EBLOW single and double stations	208S 208D	308S 308D	408S 408D	508S 508D	608S 608D	708S 708D	808D	1008D	1208D
Mould width, max. (mm)	270	370	470 510	500 560	600 660	700 780	800 860	1.060	1.260
Mould length, max. (mm) *with 50 mm higher than platen	350 400	350 400	350 400	550*	470*	550*	470*	550*	470*
Mould thickness, max. (mm)	2 x 100 2 x 130	2 x 100 2 x 130	2 x 100 2 x 130	2 x 130 2 x 150 2 x 180	2 x 130 2 x 150 2 x 180	2 x 130 2 x 150 2 x 180	2 x 130 2 x 150 2 x 180	2 x 150 2 x 180 2 x 200	2 x 150 2 x 180 2 x 200
Carriage stroke (mm)	280	380	480 520	520 580	620 680	720 / 780 750 / 800	820 880	1.080	1.280
Mould opening distance (mm)	180 220	180 220	180 220	320	320	320	320	320	320
Closing force (kN)	60	60	120 150	200 300	200 300	200 300	200 300	300 500	300 500
Production examples per mould (L)	2 x 1	3 x 1	4 x 1	1 x 10	2 x 5	2 x 10	3 x 6	3 x 10	4 x 5

Rights reserved to alterations    S = single station    D = double station    **Bold** is Standard

## Center distance

Cavities	2	3	4	6	8	10	12	16
EBLOW 208S EBLOW 208D	2 x 100	3 x 70	4 x 60					
EBLOW 308S EBLOW 308D	2 x 140	3 x 100	4 x 70					
EBLOW 408S EBLOW 408D	2 x 230	3 x 150	4 x 100	6 x 70				
EBLOW 508S EBLOW 508D	2 x 250	3 x 160	4 x 125					
EBLOW 608S EBLOW 608D	2 x 300	3 x 180	4 x 150	6 x 100	8 x 75	10 x 60		
EBLOW 708S EBLOW 708D	2 x 350	3 x 230	4 x 160	6 x 115	8 x 85	10 x 70	12 x 60	
EBLOW 808D	2 x 400	3 x 260	4 x 180	6 x 125	8 x 100	10 x 75	12 x 65	
EBLOW 1008D	2 x 500	3 x 330	4 x 230	6 x 150	8 x 125	10 x 100	12 x 85	16 x 60
EBLOW 1208D	2 x 600	3 x 400	4 x 300	6 x 180	8 x 150	10 x 110	12 x 100	16 x 75

Rights reserved to alterations  
More center distance and production options on request

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