



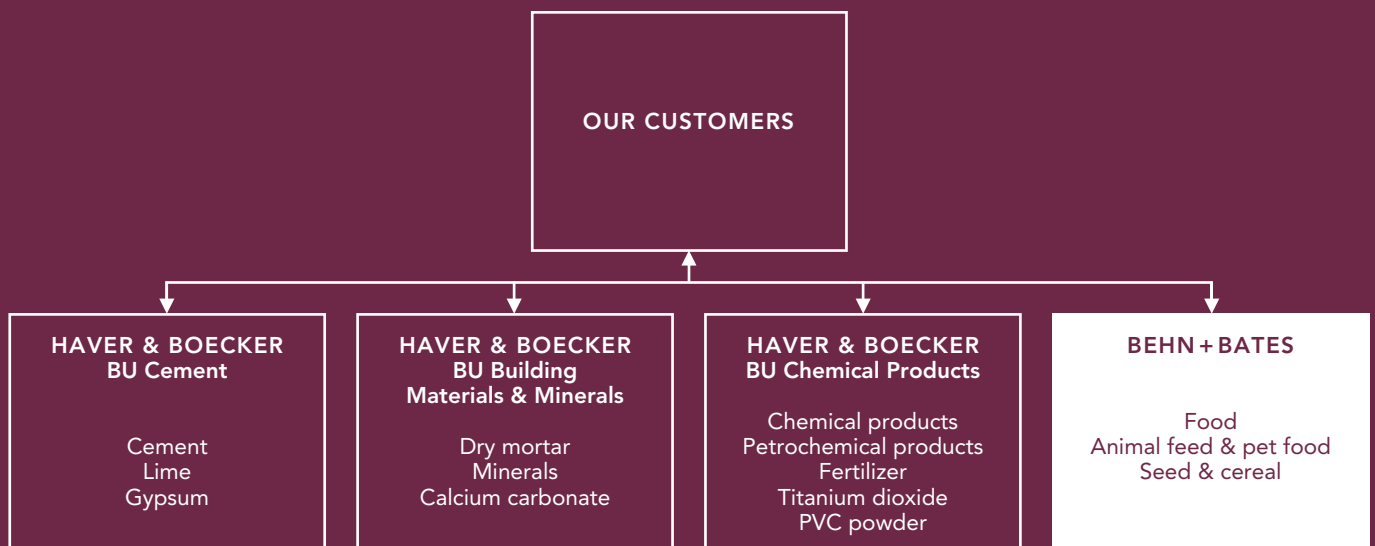
## THE BEHN + BATES TECHNOLOGIES FOR FOOD

# OUR PASSION: OPTIMUM FOOD PROCESSING AND PACKAGING

Founded in Krefeld, Germany in 1933 BEHN + BATES rapidly became known for robust and high quality bag filling machines. In the early stages the focus was on all industries filling their products into bags. After being taken over in 1994 by HAVER & BOECKER, Oelde, Germany, one of the leading packing machine manufacturers, we have specialized in the food and pet food industries from the end of the 90s.

Today BEHN + BATES is an independently working company within the HAVER & BOECKER group of companies that employs more than 2,800 people world wide. Thus, we can offer you the advantages of high flexibility as well as the inventiveness and the experience of an international company.

With customers in more than 65 countries around the globe we have developed a variety of food optimized packaging solutions. We have designed, built and supplied the required packaging technology and successfully put it into operation in close cooperation with the end users. Leading providers of food, animal feed and pet food trust in our technology, as do small factories. We have the packaging solution for every type of bulk product or liquid, for each type of bag or container, and for manual or fully automatic operations.





### Presence around the globe

Our sales and service network, located in more than 65 countries, are readily available to support your installation. They consist of HAVER & BOECKER subsidiaries as well as independent agencies, all of which are highly trained. They know the specialties of food, pet food and animal feed packaging and are able to advise and fully support you from your initial project concept up to the ready-to-use installation and subsequent regular maintenance.





# OUR FOCUS: FOOD, ANIMAL FEED AND PET FOOD

Whatever we do, we always look for the best solution, taking into account your individual requests. Whatever you need for your specific food, animal feed or pet food packaging project – we bring your visions to reality.

All our machines are manufactured according to modern standards such as GMP and HACCP.

Together with our customers, we regularly develop price optimized packaging solutions, taking into account the most recent regulations of the food, animal feed and pet food filling industry as well as modern packaging trends and the experience our experts have gained.

Innovative ideas can be realized by our creative team within very short times. In just a few years we have become one of the leading manufacturers, concentrating our entire know-how and range of filling machines for bulk and liquid products exclusively in the food, animal feed and pet food industries.

It does not matter whether you fill

- cocoa powder & butter
- starch & derivatives
- sugar, dextrose, maltodextrin & sorbitol
- flour, baking ingredients & premixes
- soybean products, rice & grain
- beverages & fruit concentrates
- flavors & fragrances
- food additives & food colors
- animal feed, pet food & seed

we have the solution.

Tread new paths – with us – because you profit from our experience.

**„We love to refine technologies for food applications.“**



Our core business has always been bag filling. We can offer you:

- **Valve bag filling:**
  - Manual or automatic valve bag packers - with or without ultrasound sealing station and FRONTLINE® valve bag applicator
  - INTEGRA® FD for automatic valve bag filling within a dust-tight cabinet
  - ROTOSEAL® system for high-output valve bag filling
- **Open-mouth bag filling:**
  - Manual BOH filling machine for powders
  - Manual NWEDO filling station for granule filling
  - Automatic TOPLINE® system in powder or granule-optimized variants
- **FFS bag filling:**
  - ADAMS® system for powder filling
  - FFS system in different versions for granule filling
- **Big bag filling**



In close cooperation with our sister companies we can now also offer you:

- Palletizing systems, automatic truck loading systems and railcar loading
- Filling solutions for filling all kind of food liquids and pastes into jerry cans, pails, drums or IBCs
- Silo technologies, bulk material handling, ship loaders and unloaders
- Plant engineering & design

# HIGHLY PRODUCTIVE: OUR VALVE BAG FILLING TECHNOLOGY

The optimum project planning in our company begins upon receipt of your enquiry. We analyze your product and your bags in our highly modern R&D Center to propose and select the right filling technology for your valve, open-mouth, FFS or big bag. The right filling technology is the perfect combination of product, packing material and machine. Your product is the task – we have the solution.

A lot of food, animal feed and pet food producers choose the valve bag due to its easy handling. High outputs, high weighing accuracies and compact bag shapes with high advertising impact are achieved with the filling system specifically chosen for your project. We supply:

- Pneumatic packers
- Impeller packers
- Auger packers
- Gravity packers

The variety of products processed by your company plays a decisive role in making the right choice – whether they are floury, powdery, gritty or granulated.

The output per filling spout amounts to up to 300 bags per hour depending on the type of machine, the characteristics of the product and the type of bag.

The packing machine is a main part of your value added chain. Being supplied specifically for your product and your conditions, it provides considerable and lasting advantages:

- Maximization of profit due to clean and weight-accurate product processing
- Maximization of benefit due to improved product protection and protection against humidity
- Reduced cost due to a clean packing environment and reduced cleaning work
- High advertising impact due to optimally filled bags that can be efficiently processed by your customers

## Product analysis

The exact analysis of the product and its characteristics as well as the used materials is one of the basic preconditions for all processes in the bulk goods handling industry.

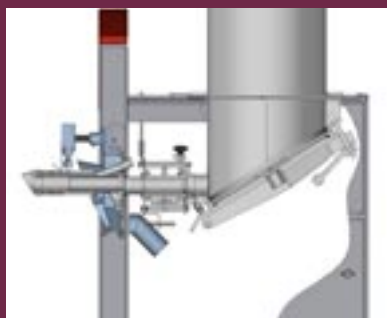
Our practice-orientated tests lead to economic packaging solutions and facilitate the collection of process-relevant product data.



### We analyze your product:

Bulk density, free-flowing properties, humidity, tamped volume, flowability, angle of repose





**Air filling principle**  
Floury, powdery and  
gritty products



**Impeller filling principle**  
Fine powdered and  
fine-grained products



**Auger filling principle**  
Flaky and gritty products

# CUSTOMIZED: OUR AUTOMATIC VALVE BAG FILLING

**Each packing machine manufacturer likes to supply you with a customized solution allowing you to either automatically apply and seal the bag or to attain higher outputs on request.**

Fully automatic packing processes can be realized by the integration of automatic bag applicators and sealing stations. We can offer you different options of bag applicators. The applicator type for your project is chosen depending on whether you operate a 1-spout filling machine or a high-output installation with up to 10 filling spouts. For the dust-tight bag seal, we use ultrasound sealing stations, closing the filled bag directly at the filling spout by means of cold welding tools.

**Valve bag filling to perfection – that means we combine high functionality and efficiency with a clear and space-saving machine design.**

Our „Plug ‘n Pack” designs INTEGRA® FD and MINISEAL® provide an absolutely clean and low-noise operation. They unify the applying, filling and sealing station in a compact dust-tight housing.

For high output applications the ROTOSEAL® system with 3 – 10 filling spouts is the best solution. The filling spouts are mounted on a rotating machine frame. Therefore less space is required to reach higher packing outputs with more filling spouts. The result is high-quality bag packing at increased hourly rates of up to 2,000 bags.

**The BEHN + BATES delivery program offers an appropriate solution for all your needs.**

It does not matter which option you select. Our aim is to provide an individual solution for your specific project. Therefore, a large number of packing machine accessories is available, e.g.:

- sampler
- motor-driven bag size adjustment
- automatic bag discharge
- bag vibrator
- metal detector – integrated or external
- check weigher
- bag discharge unit
- printer and/or labeler for empty or full bags

## Our delivery program for valve bags:



Manually operated 1-spout packers with or without valve bag sealing station, output: up to 300 bags/h



Fully automatic 1- to 3-spout installations with bag applicator and sealing stations, output: up to 650 bags/h





Expandable „Plug 'n Pack" designs INTEGRA® FD and MINISEAL® with 1 to 3 filling spouts, output: up to 650 bags/h



Expandable ROTOSEAL® systems with 3 – 10 filling spouts, output: up to 2,000 bags/h

# INNOVATIVE: OUR OPEN-MOUTH BAG FILLING TECHNOLOGY

**Optimum product protection and improved storage, high advertising impact, flexible filling volumes or simple opening and re-closing of the used bags – all these are convincing features of the open-mouth bag.**

The filling of powdery products requires very special sensitivity as powder can be dusty. Only the well balanced combination of low-air filling, a dust-tight filling spout and efficient de-aeration provides optimum filling results – and this is our main strength.

In the early project stages you will decide which packing material best meets your product and your marketing targets: a pre-fabricated open-mouth gusseted or flat bag made of paper, PE or/and PP or an endless gusseted film made of plastic. We will then advise you on the proper filling technology – decisive factors are the required output and the question as to whether the machine is to be operated manually or automatically.

**We recommend our filling stations BOH and NWEDO for manually filling pre-fabricated open-mouth bags.**

Thanks to the product-specifically chosen machine design, powders are filled as reliably as are granules. The BOH is perfectly suited for powder applications where production volumes do not justify the installation of fully automatic packers. The NWEDO fills granules and can reach high outputs even when being operated manually.

**We offer the TOPLINE® system for the fully automatic clean packing of pre-fabricated open-mouth bags.**

It was originally developed for powders and flours for filling according to the gross filling principle. The net filling principle is used for granules and grains bagged at higher outputs. Net filling means the product is weighed before filling.

The complete bag packing from the empty bag feed up to the full bag sealing is carried out in a compact, dust-tight machine cabinet. The bag magazine is chosen according to your individual project needs. The packing outputs vary depending on the product and machine design – between 250 bags/h with gross weighing and 1,200 bags/h with net weighing.

**Our delivery programme for pre-fabricated open-mouth flat and gusseted bags:**

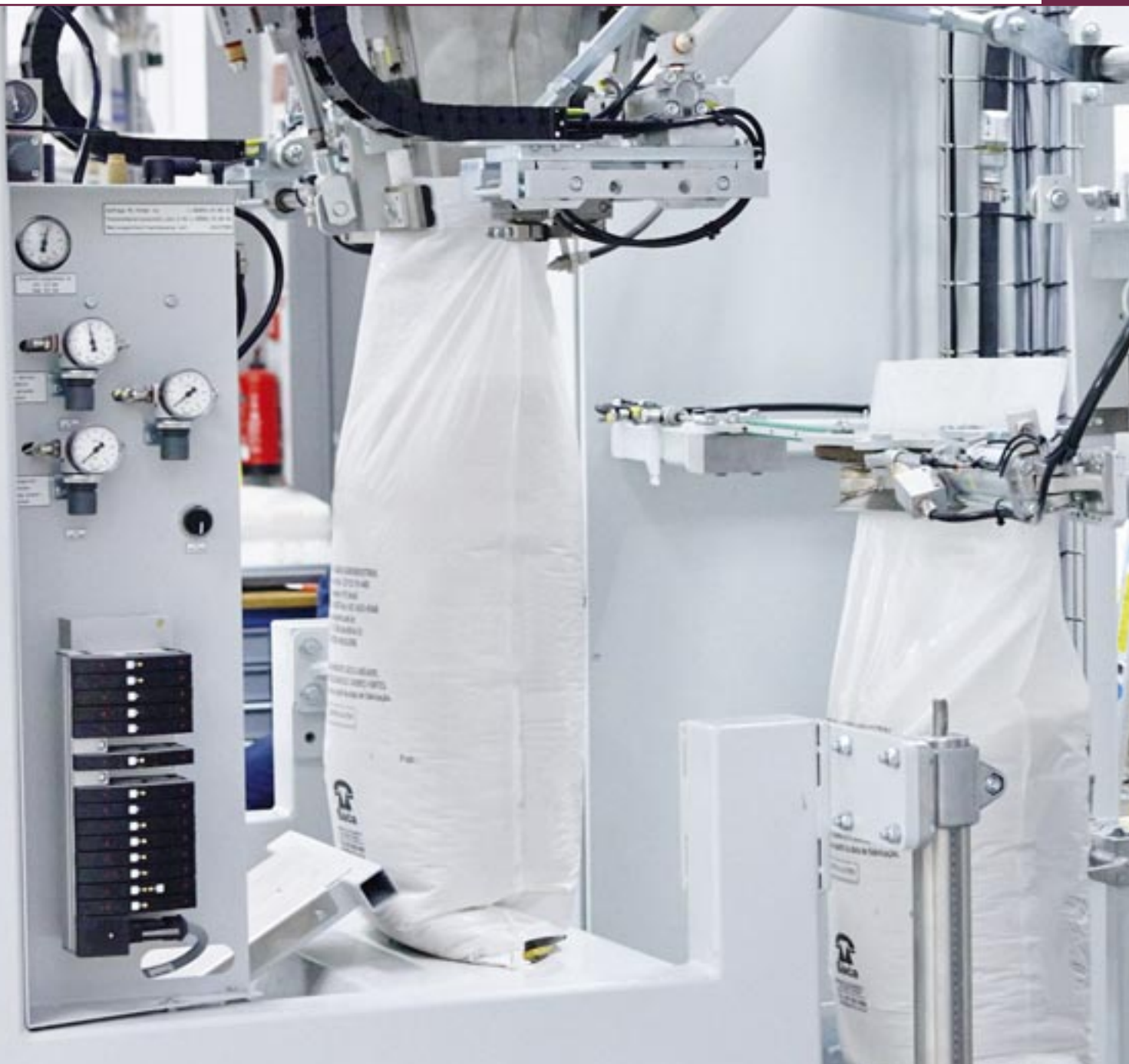


**BOH**  
Manually operated filling machine



**TOPLINE®**  
Fully automatic system with gross weigher for powders and net weigher for granules





The low-air and low-dust product filling is reached by the product-specific design of the dosing element and the right filling spout.



**Hexagonal filling spout**  
With integrated residual air  
de-aeration for flours and powders



**Flap filling spout**  
For granules and grains



# TREND-SETTING: OUR FFS AND ADAMS® TECHNOLOGY

**Ahead of its time:** In the coming years an increasing number of food, animal feed and pet food producers will want to fill their products into plastic bags. In order to meet these demands we can offer various machine designs differing in their output, product de-aeration and densification.

## **FFS system – machine technology, flexibility and productivity made to order**

Each packing company is keen on keeping its packing cost as low as possible. The FFS bag meets this requirement to the largest possible extent. It is formed out of an endless gusseted tubular film, filled and sealed thus allowing the bag size to be adapted to fill goods even with fluctuating bulk densities.

Our proven FFS systems are especially suitable for grains and granules, e. g. crystal sugar, rice, corn or animal feed pellets. Combined with the BEHN + BATES net weigher and flap dosing, they reach outputs of 600 up to 2,000 bags/h depending on the filling product and the machine variant.

In the beginning, only granules were reliably filled into FFS bags. But thanks to new sophisticated technologies, the FFS packaging process now supplies excellent results for powders, e. g. starch and dextrose or flours and premixes, too.

Proven technologies form the basis of the ADAMS®: The proven filling machines ROTO-PACKER® and FFS system have been combined. The result is the ADAMS® – our new trendsetter for filling powders and flours into FFS bags. You tell us what products you want to handle at which speeds. We will design the ADAMS® to meet your requirements: Multiple filling spouts are possible.

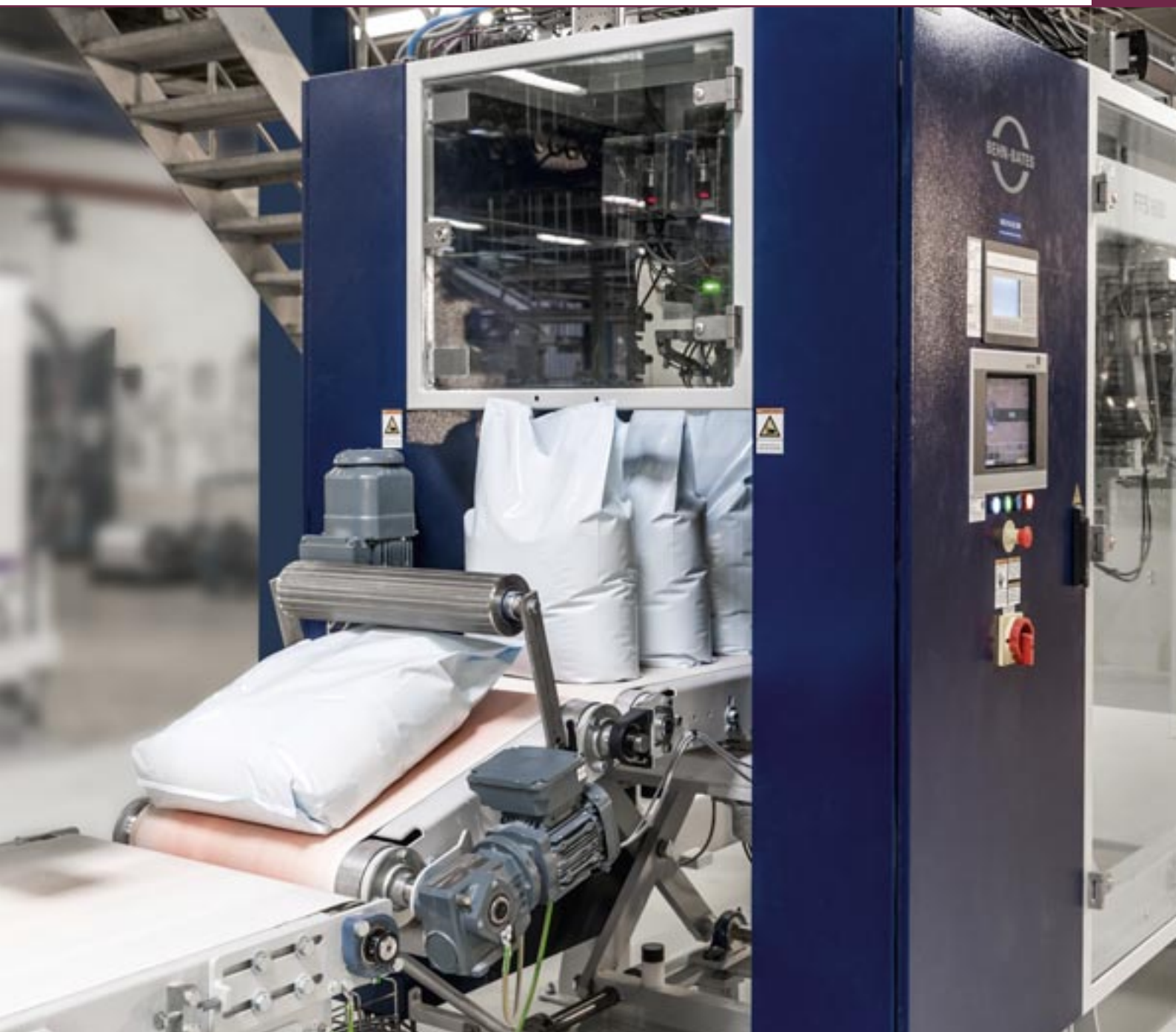
## **Some of our technical features that make the difference**



**Stable:**  
Corner welding of the gusset for optimum bag shapes and easy complete emptying



**Optimally opened:**  
Shaping of the pre-opened bag for easy application to the filling spout



**Your result: Compact, clean FFS bags with minimum welding seams**



**Economic:**  
Minimized material consumption due to minimum welding seams



**Attractive:**  
Palletized, compact, box-shaped bags on their way to the stretch hooding system by a special shuttle system

# WEIGHTY: OUR BIG BAG FILLING

In the logistics chain big bags are a cost-effective alternative to conventional bags. They are available in different designs, e. g. with internal stiffening for better stability. But what all of them have in common is they must allow quick and clean processing – goals that can be easily reached with our big bag filling station.

## Operator convenience

The rear fixing hooks for the big bag loops can be slewed towards the front thus being easily reached by your operator. All 4 hooks open automatically after the filling process.

## Cleanliness

For clean product filling, the big bag is sealed by an inflatable sleeve with counter pressure ring.

## Stable bags

Product dosing and densification are decisive factors for stable big bags. We use vibrating tables to compact your product. Highly fluidized products can be additionally de-aerated by vacuum probes during or after filling.

## Cleanroom filling

Special requirements apply for the filling of big bags under cleanroom conditions. In order to assure that no forbidden materials such as wooden pallets get into the cleanroom we have developed a special shuttle system. After filling it takes over the big bag, transports it out of the cleanroom and puts it onto a pallet for further processing – and all this to comply with the required hygiene standards.

## Accessories

For trouble-free big bag processing right from the beginning up to the end we offer a large selection of additional components, e. g. metal detector, sampler, automatic pallet separator, cover sheet dispenser or full pallet transport systems. You specify the degree of automation – we supply you with the equipment you need.

## Big bag filling: Product-suited, clean and user friendly



Fixing of the big bag loops onto the slewable hooks



Fixing of the filling spout – with inflatable sleeve for dust-tight big bag sealing during filling





Big bag during filling



Filled big bag

# NO DRIP IS LOST: OUR LIQUID FILLING



Regardless whether you process beverage concentrates, glucose, flavorings, cocoa butter or additives – your product can be filled in an accurate, clean and safe way into your desired container type.

All of our liquid filling solutions are realized in close cooperation with our sister company FEIGE FILLING, that has been a leading name in this industry for more than 40 years.

We can provide semi-automatic and fully automatic solutions for filling liquid and pasty products into drums, pails, jerry cans, and IBCs. For turnkey projects, we can supply you a complete system from one source: de-bunging, filling, closing, labeling, carton packaging, palletizing, storing, dispatch and logistics.

Our systems can be used for filling in accordance with existing hygienic standards. Throughout the world, renowned enterprises ranging from medium-sized companies to major corporations rely on our solutions.

## Your product characteristics and the container type determine the filling mode of the filling machine:

- Below-surface  
For products causing foam or explosive gas during filling
- Above-surface  
For uncritical products filled into top open containers
- Below-bunghole  
For uncritical products filled into bunghole containers

## Everything starts with the selection of your container

We are able to fill anything – from 0.5 kg tins or pails, jerry cans, bags, steel and plastic drums to IBCs. The different containers can either be filled by means of cost-effective, yet accurate and ergonomic semi-automatic filling machines or by fully automatic filling plants. Again and again, we turn the wide variety of our customers' project scope into the challenge of finding and – implementing individual and customized solutions.

## Engineering of turnkey systems for complete filling plants

In order to plan a complete overall concept, speak to one of our specialists. As we have a great deal of experience with a wide range of applications and solutions, due to the numerous projects we have executed worldwide.

We will organize your complete filling project and provide you with intralogistics systems integration. The equipment offered by us for storage, conveying, container handling and filling of liquid or pasty products comprises:

- Filling equipment
- Conveyor systems for container transport
- Conveyor systems for pallet transport
- Palletizing systems
- Storage facilities for pallets and containers
- Unloading and loading equipment
- Cleaning systems
- Marking systems
- Load securing
- Data interfacing and exchange



## Pail filling technology

Our pail filling systems can be provided with pail denesters or lid placers to achieve high automation together with precise filling accuracies.





#### **Jerry can filling technology**

We provide your tailor-made concept: From the cost-effect SlimLine machine concept to advanced automation.



#### **Drum filling technology**

Our gravimetric drum filling is designed to meet the needs of your industry.



#### **Pallet filling technology**

Our pallet filling systems provide you with the perfect bulk filling solution.



# THE RIGHT END-OF-LINE SOLUTION FOR YOUR NEEDS: OUR

## NEWTEC BAG PALLETIZING



Your bags are packed. They are tight, clean and offer optimum protection of your products. But: They have not yet arrived at your end-users' sites. Before they have to be stacked accurately and the pallets have to be packed carefully in order to:

- Protect the filled bags against damage.
- Optimally use the available loading space and avoid loss of space due to irregular bag piles.
- Avoid loss of time during handling and transport because of badly stacked pallets.
- Prevent the pallets from tumbling due to irregular bag piles.

**Together we are strong:**

**We maximize the success of value-added chains.**

Optimally stacked and packed pallets help you save time and money. As overall costs can thus be reduced, the profit is increased. In addition, nicely stacked pallets have an excellent advertising impact.

Innovative palletizing technology is offered by our sister company NEWTEC BAG PALLETIZING having more than 40 years of experience in the field of palletizing. They know how to handle the challenge of producing clean and compact filled bag stacks that are in accurate harmony with the upstream packing process. We work hand in hand with them for your perfect end-of-line solution.

Our products out of our food series AGROPAL

### Palletizer G300

Bag palletizing by a robotic gripping arm.  
This palletizer is especially suitable for low-output applications of up to 300 bags/h with bag weights of 5 up to 50 kg.

### Palletizer - Series G600/G1000

Bag palletizing with an automatic gripper.  
This palletizer allows to properly palletize bags that must be overlapped on the layer. Therefore, it is also suitable for difficult-to-handle products.

### Palletizers - Series 500/1000/2000

Bag palletizing row by row.  
These palletizers are equipped with simple, reliable and proven kinematics. The modular machine design ensures optimum palletizing results.

Our technical solutions cover all of the end-of-line systems. We can also propose stretch hooding systems as well as wrapping machines. Please contact us - we will advise you.

## Some details of palletizing and stretch hooding



Row preparation



Layer deposit



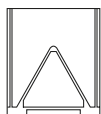
Stretch hooding



Pallet conveying

# AND WHAT ELSE COUNTS: PLANT DESIGN & ENGINEERING

## IBAU HAMBURG



**Your convincing and attractively packaged bags are the result of detailed planning, a carefully selected packaging technology and an overall concept incorporating the prior and subsequent plant components.**

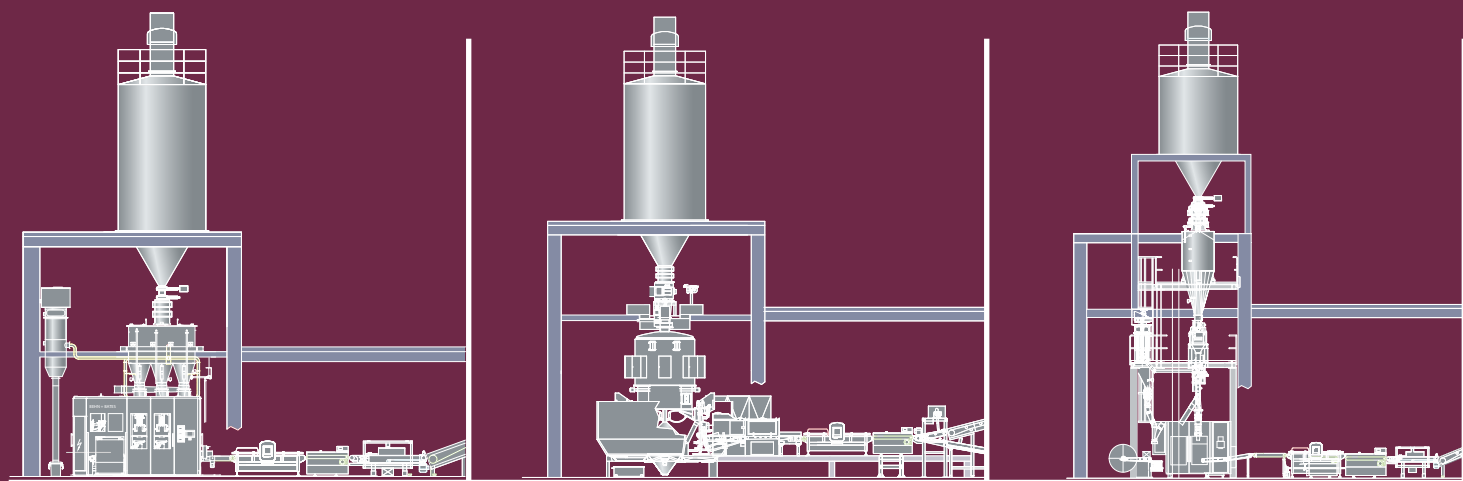
We plan, develop and deliver the single filling machine as well as complete packaging lines with palletizing and transport packaging. In addition, our plant engineering includes the product feed with storage silos, material transport, filter plants, ship loaders and unloaders, etc.

We thus are able to develop comprehensive solutions for hygienic, reliable and economic processes – all this in close co-operation with you and our sister company IBAU HAMBURG, that offers only the relevant: Ingenuity, engineering, turnkey solutions - with references in all kinds of land and marine applications.

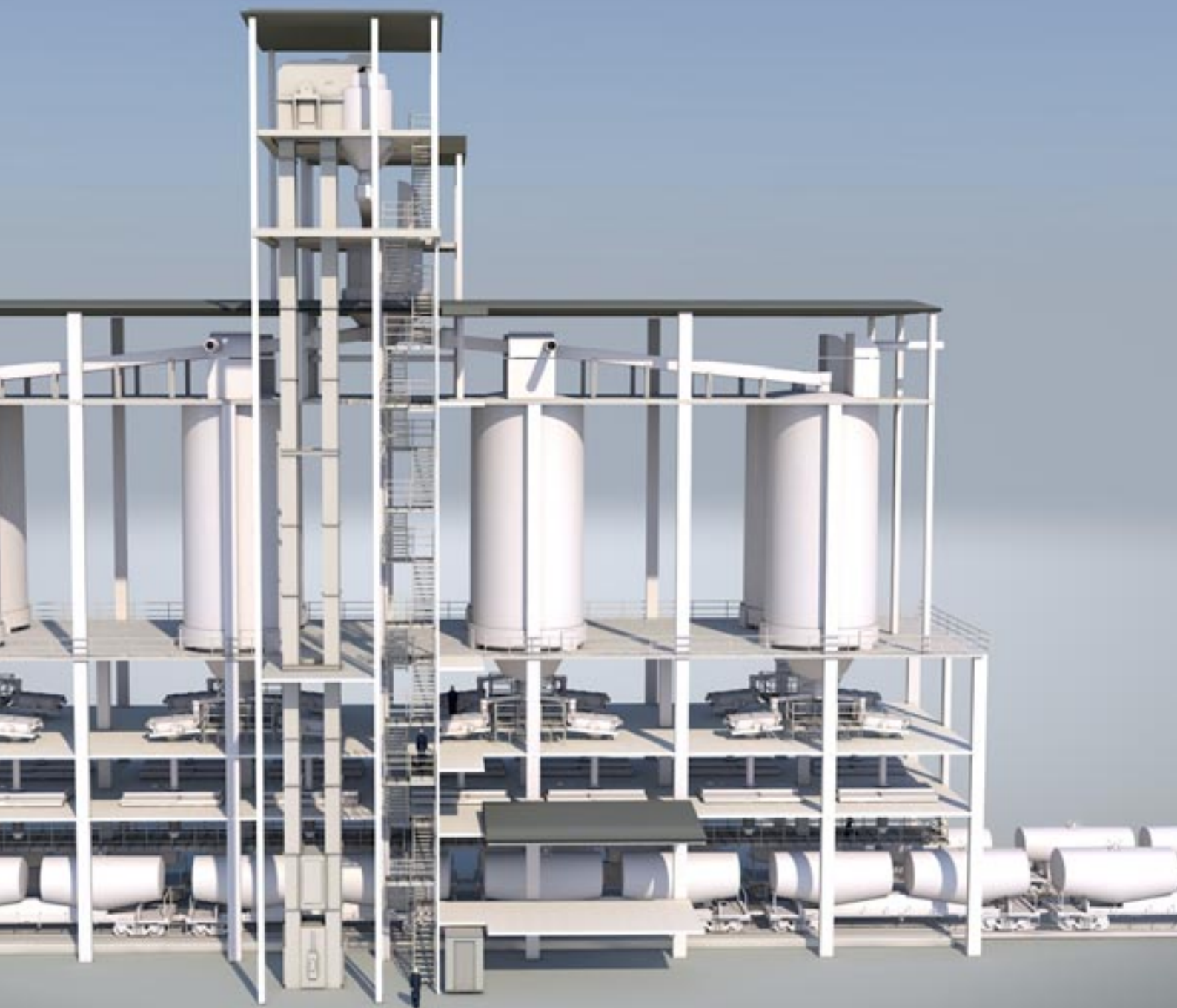
IBAU HAMBURG is an engineering company with one principle: To always find appropriate high quality customer oriented solutions. We continually renew and improve all processes and products. With our excellence program we integrate every new idea and we make it immediately fit for production: Always in close contact with you.

**All original constructions.**

**All made to measure under consideration of modern food standards.**

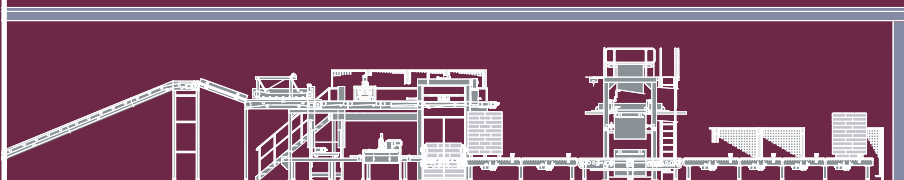






### Integral planning concept

We plan your entire packaging plant – from the product storage up to the fully packaged filled bag pallet with transport protection.



# CUSTOMIZED: OUR SERVICE

**Service around your filling plants: This is another essential component of our company philosophy. We offer you a wide range of different services:**

## **Assembly and commissioning**

Optimum functioning of your new packaging plant is attained if assembly and commissioning are carried out by our food-experienced technicians. They optimally adjust your machine to your products and containers.

## **Operator training**

Well trained and thus motivated operators largely contribute to the perfect operation and maintenance of your packaging plant. We offer training of your operators to best familiarize them with our technologies.

## **Calibration**

Your customers want to get weight-accurately packed containers – you want to avoid costs caused by product loss. Therefore, regular calibration of the weighing electronics integrated in your packaging plant is essential. We offer you our assistance before and during calibration.

## **Spare parts**

You benefit from using original parts: Optimally fitting into the machines, they guarantee highest outputs and a long lifetime. Thanks to our extensive stock of spare parts, we are able to supply original spare parts fast for many years.

## **Maintenance**

Regularly maintained machines reliably reach desired performances over years. Downtimes are avoided. We offer regular maintenance services including all necessary preventive machine adjustments and repairs. Our experts also check the spare parts that you need to have in stock for fast repairs and small downtimes.

## **Retrofit/modernization: "Turn old into new"**

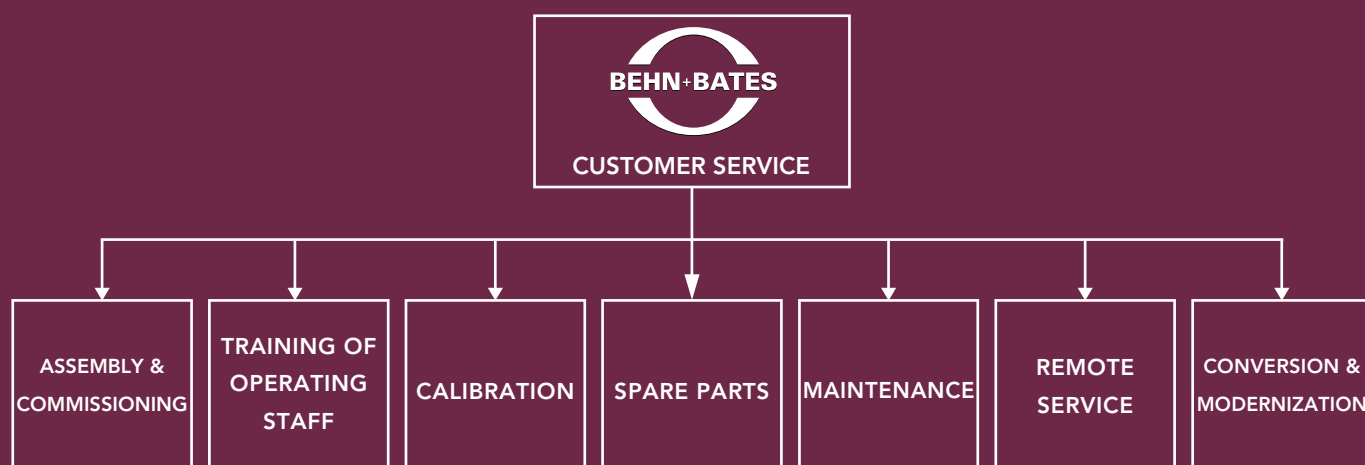
Your old machine functions perfectly. But it does not fulfill today's standards. Small measures frequently help overcome such a discrepancy. Please contact us. We will be pleased to advise you with regard to modernization, conversion, re-commissioning or even extension and automation projects.



## **Our remote service**

In case of breakdowns it is important to get the machine running fast again. If requested, we are able to log into the control of your machine in order to check the program, to trace the source of defect and to carry out resets or desired changes of parameters.

For your own remote control we can offer you our modern service pad.





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## ... AND REPRESENTATIVES WORLD-WIDE



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