



FILLING FOOD – CONSIDER IT BAGGED!



FOOD AND PET FOOD PROFESSIONALLY BAGGED

**BEHN + BATES FILLING SYSTEMS
FOR OPEN-MOUTH BAGS**

OUR PASSION: OPTIMUM BAG FILLING

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

After considering these options you decide at the early project stage which packing material best meets your product and your marketing targets:

- a pre-fabricated open-mouth gusseted or flat bag made of paper, PE and/or PP
- an endless gusseted film made of plastic
- a big bag or an octabin

We advise you with regard to 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.

Our focus: Food and pet food

It does not matter whether you fill

- cocoa powder
- starch & derivatives
- sugar, dextrose, maltodextrin & sorbitol
- flour, baking ingredients & premixes
- soybean products, rice & grain
- other food products
- pet food & seed

we have the solution:

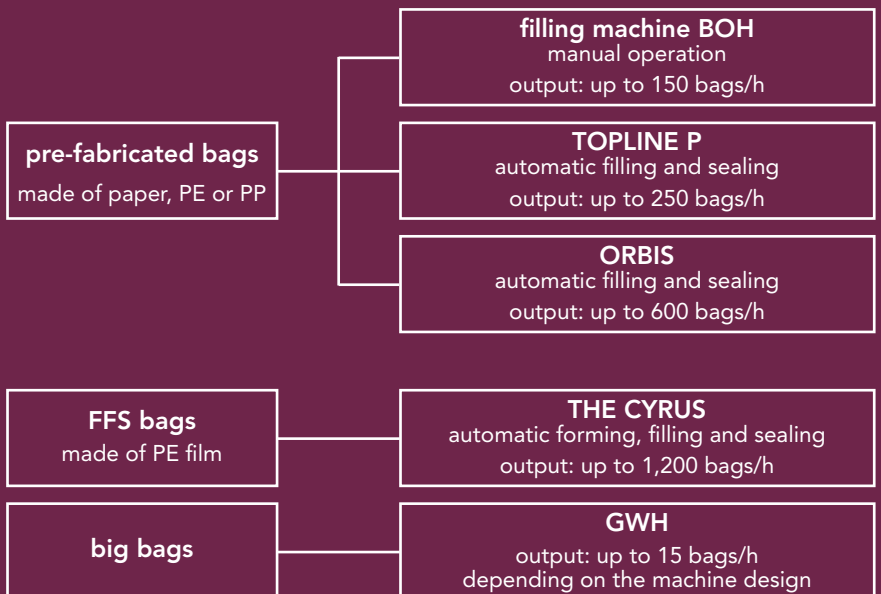
Packaging concepts that take into account your individual requests and modern standards such as GMP and HACCP – as well as the experience our experts have gained in their daily business and evaluated information about trends in the packaging market.

The linchpin: Your product – Our solution: The right filling technology



powders & flours

e.g.: starch, dextrose, maltodextrin, baking ingredients, premixes, second flours, fodders





Granules & grains

e.g.: granulated sugar, rice, cereal, seed

pre-fabricated bags
made of paper, PE or PP

FFS bags
made of PE film

big bags

gravity packer
manual operation
output: up to 160 bags/h

net weigher with bagging spout NWEDO
manual operation
output: up to 1,200 bags/h

TOPLINE G
automatic filling and sealing
output: up to 1,400 bags/h

FFS systems
automatic forming, filling and sealing
output: up to 2,000 bags/h

GWH
output: up to 30 bags/h
depending on the machine design

MANUALLY OPERATED: BOH, GRAVITY PACKER AND NWEDO

Packaging companies with low production outputs or only occasional bagging needs do not normally require filling systems with automatic empty bag application and full bag discharge. Even so they still demand precise filling of their products. We offer the right solution:

■ BOH filling station

powder filling par excellence in the case of manual applications

■ gravity packer

the all-rounder for all granules, grains and pellets

In either case the bag is applied manually to the filling spout. The filling – normally carried out according to the gross filling principle – is started by a push-button. The product can be compacted during the course of filling by bag vibrators arranged underneath the bag chair. The filled bag is manually taken off the spout and transferred to the chosen closing station, e. g. sewing machine. Output: up to 160 bags/h.

Net weigher with bagging spout NWEDO

The quantity to be measured is the output – also in the case of manual operations

If high outputs of up to 1,200 bags/h are required in manual operations, the product is pre-weighed accurately by our net weigher before being filled into the bag in a quick and efficient way.

You profit from our experience:

■ clean bag filling

due to product-specifically chosen filling spout with all-side clamping jaws

■ space saving

due to compact machine design

■ cost saving

due to low operating and maintenance costs

■ easy handling

due to clear operator guidance, easy cleaning and maintenance

■ flexibility

due to possible use of a moving frame to service different storage silos

The linchpin: Your product

Our solution: The right dosing and the adequate filling spout – regardless of the machine variant



The demanding products: powders & flours

Only the well balanced combination of dosing, filling spout and de-aeration provides optimum filling results when filling powders and flours. For low-air dosing we recommend:

- impellers
- augers

Filling is effected by a special powder spout. It seals the bag in a dust-tight way during the filling process - de-aerating it at the same time.



you choose

The less complicated products: granules & grains

The handling of granules and grains is easier. Their flowing action is excellent. They rarely raise dust. Depending on their grain size, we advise to dose them by:

- flaps
- vibrating chutes
- flat slide valves
- belt feeders

They are filled by either a gravity tube or a flap type spout thus pouring into the bag easily.



FULLY AUTOMATIC: THE TOPLINE®

For the fully automatic clean packing of your pre-fabricated open-mouth bags we offer the TOPLINE® system. It was developed especially for powders and flours filled according to the gross filling principle. The net filling principle is used for granules and grains bagged at higher outputs. This means the product is weighed first before filling.

The complete bag processing is carried out in a compact, dust-tight machine cabinet – starting with the bag feed and filling up to the densification and sealing. The bag magazine is chosen according to your individual project requirements. The packing outputs vary depending on the product and machine design – between 250 bags/h with gross weighing and 1,400 bags/h with net weighing.

In brief: The function

The separated empty bag is taken out of the magazine, exactly aligned and opened by sucker bars. Bag grippers take the pre-opened bag to apply it securely to the dust-tight powder or flap type filling spout. In order to compact your products during or after filling we equip the TOPLINE® with vibrators – in specially encapsulated food-grade design – and, if required, with an additional vacuum probe.

You profit in all respects:

- **high cleanliness**
due to product-specific dosing and filling within a dust-tight machine cabinet
- **exact weights**
due to separate coarse and fine flow filling with the gross principle for powders or due to the application of a net weigher for granulated products
- **attractive bag shapes**
due to efficient product densification by special bag vibrators and additional vacuum probes if required
- **good product protection**
due to project-specifically selected bag closure, e. g. folding, welding or hot-melt activation
- **high advertising impact**
due to application of appealing bag materials with high-quality imprints, e. g. in a gloss finish

The linchpin: Your product – Our solution: The fitting components



tailor-made:
empty bag magazine
(maximum capacity: 500 bags)



secure:
bag separation at the bag bottom for trouble-free operation without bag blockages



well-proven:
bag opening by sucker bars



product-specific:
bag filling by dust-tight powder or flap
type spout

ROTATING: THE ORBIS®

The fully automatic filling of powders into open-mouth bags at outputs of up to 600 bags/h firstly confronts each packing machine manufacturer with a special challenge because powders are dusty. For best filling results the products need to be packed by using a minimum of air and compacting them at the same time.

For these specific requirements we refined our TOPLINE®:

The result is the ORBIS® – a rotating filling machine with several separately working filling spouts especially equipped for powder filling with parallel de-aeration.

While the singled, pre-opened bag is applied and packed in coarse flow by one of the spouts, your product is parallelly filled in fine flow and densified by the other spouts. The filled and densified bag is transferred to the closing station. The individual processes are optimally synchronized. Your advantage: The cycle times are reduced considerably – and the output is increased.

In order to reach best weight accuracies we use the gross weighing system. This means that each filling spout is equipped with weighing cells and its own weighing electronics controlling all filling parameters.

Your benefits due to parallel filling steps:

- **high efficiency**
due to short cycle times and synchronized parallel filling steps
- **compact, easy-to-stack bag shapes**
due to low-air filling and excellent product densification by several bag vibrators – and, if required, by an additional vacuum probe
- **increased flexibility**
due to processing of different bag sizes and fully automatic bag length adjustment
- **hygienic working environment**
due to encapsulated, dust-tight machine design, easily accessible machine bottom and cable laying outside the dust area for fast cleaning
- **high operator convenience**
due to clear operator guidance and easy cleaning thanks to a minimum of dust deposit areas

The linchpin: Your requested output – Our solution: Parallel filling steps



sensor-controlled:
exact positioning, taking and applying of the empty bag to the filling spout



increased output:
synchronized separate filling steps
coarse flow filling – fast and precise
fine flow filling – exact and weight-accurate



The bag closure – significant for the quality and the shelf life of your products

The perfect bag must be clean and packed weight-accurately. In addition, it must protect your product from outside influences and deterioration. Therefore, we offer different solutions for the bag closure:

- sewing
- welding
- gluing
- hot-melt activating
- combinations of different closing types

Especially for sensitive food products we recommend using a combination of welding and hot-melt activating. Thus you can be sure that your bag is absolutely tight, foreign bodies do not penetrate your product and storage times can be prolonged considerably.



TREND-SETTING: THE FFS TECHNOLOGY

In future an increasing number of food and pet food producers will want to fill their products into plastic bags. The motive: Each producer is keen on keeping packing costs as low as possible. The FFS bag meets this requirement to the largest possible extent. It is formed out of a gusseted tubular film, filled and sealed thus enabling the bag size to be optimally adjusted to the product. As a result film consumption is reduced.

Our delivery programme includes several machine variants differing in output and type of product de-aeration for the proper filling of powders or granules. Your product and your requested output are the decisive factors in selecting the correct machine. Outputs: 150 up to 2,000 bags/h based on filling weights of 25 kg

In brief: The function

The film length needed for your product and your filling weight is automatically cut from the film reel. The bottom seam is welded with a minimum overlap. For an optimum bag shape and also for easy and complete bag emptying it can be fitted with special corner welds.

Grippers take the pre-shaped, opened bag and apply it to the filling spout that fills your product according to its needs – de-aerating and densifying it at the same time. The filled and compacted bag is then welded tight at the top and transported to the palletizing system.

Profit maximisation due to our trend-setter:

- **optimum protection against humidity**
due to tightly welded PE bags
- **emotive commercialisation**
due to product packing in PE film bags that can be easily fitted with a high-quality imprint thus attracting a great deal of attention
- **optimum storage**
due to compact, box-shaped bags that are easy to stack and most suitable for automatic storage systems
- **environment friendly packing**
due to reduced packing material needs and application of energy-saving and low-maintenance components
- **high operating efficiency**
due to extended operating times with reduced cleaning and maintenance intervals
- **comfortable operation**
due to clear operator guidance with the help of modern touch panels and thanks to easy batch or size changes

The BEHN + BATES net weigher: high outputs – accurate weights – low maintenance



Gross weighing systems are most reliable when it comes to dosing products in a very gentle way or the available height is limited. If, however, high outputs are required, we recommend our net weigher equipped with a patent-registered dosing system for optimum filling times.

For decades it has proved its worth for the weighing, dosing and filling of bulk products of all kinds as well as for the recording of production quantity data. More than 2,500 net weighers are used in industrial operations around the globe.

bin sizes: 66 – 120 l

output: up to 2,000 batches/h



The details make the difference



stable:
corner welding of the gusset for optimum bag shapes and easy complete emptying



cost-saving:
reduced film consumption due to minimum weld seam overlaps



time-saving:
automatic reel changer – in variants for 2 or 3 reels – for reduced standstill times in case of film reel changes

WEIGHTY: THE 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 operating staff. 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 fluidised products can be additionally de-aerated by vacuum probes during or after filling.

Tight bag closure

For optimum product protection against outside influences the filled big bag can be closed by turning the filling spout – our so-called tulip forming. On request, this process can also be carried out automatically.

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 you a large selection of additional components, e. g. 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



manual closing of the filled big bag – as an option, by our so-called tulip forming



transport of the filled big bag to the full bag storage

TAILOR-MADE: THE CONTROL – THE SERVICE

BEHN + BATES stands for quality. This also applies to the design and delivery of the required weighing and control technology.

In addition to ease of operation, weighing and control systems used in packing companies must in particular guarantee that the bags are filled in an absolutely weight-accurate way for each product and for each bag type, with low and high-output operations.

All our filling machines are equipped with the MEC® weighing and evaluating electronics developed within the HAVER® group specifically for the requirements of the bagging industries.

Special server and data processing systems are available for the evaluation of the complete filling process from the recording of the weighing data up to the storage of complete product and batch data. The functions of the machine are monitored by the 10.4" large infrared touch panel. Operation of our machines is easy and clear thanks to the graphic-supported menu.

All electric weighing and control units made by BEHN + BATES are Ethernet compatible and can be combined with all conventional software systems for the control and monitoring of production processes.

Service around your filling machines: It is important to us to commission your packaging plant successfully – and moreover to keep it running trouble-free over the years.

A team of well trained service technicians, who have extensive experience in filling technologies, is at your disposal to quickly put your installation into operation and offer regular maintenance for the highest possible reliability in continual operations.

On request, we are able to equip your machine for our teleservice: We can then log into the control of your machine for remote diagnosis to best assist you in case of any problems.

BEHN + BATES solutions are perfect solutions - for both food and pet food!

The MEC® weighing and evaluating electronics

They offer a high operating support - especially for bagging processes:

- The operational sequences are well and clearly structured.
- The programming is easy due to alpha-numeric keys.
- The operating personnel are guided through the menu by a clear text display in German, English or their native language.
- In case of product or bag change the individual filling parameters can be retrieved fast and easily by the 99 product sort storage.

More than 18,000 MEC® weighing electronics are used around the globe. They all stand for high reliability in continual operations and correspond to international weighing standards as they are OIML approved.





The infrared touch panel

Fully automatic machines can be complex. However, their operation is easy through the BEHN + BATES touch panel.

- The menu is clear. The operating surface is made of non-reflecting, scratch-proof security glass.
- All operating data can be retrieved fast.
- The operation and fault analysis are easy thanks to the combined clear text and graphical display.
- Hygiene is our top priority: The touch panel is flush with the door of the control panel. Neither dust nor dirt can deposit in the edges.



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