

CONTINUOUS PRODUCTION WITH THE CONPRO SYSTEM

For products in alginate casing



Patents (USA/Canada):
6,988,943; 7,762,874; 7,591,717; 7,258,604

Albert Handtmann Maschinenfabrik GmbH & Co. KG
Hubertus-Liebrecht Str. 10-12
88400 Biberach
Germany

Tel.: +49 7351 45-0
Fax: +49 7351 45-1501
sales.machines@handtmann.de
www.handtmann.de



ALGINATE CASING INSTEAD OF NATURAL CASING WITH THE CONPRO SYSTEMS:

The most modern way to produce sausages and sausage-shaped products

UP TO 40% LOWER PRODUCTION COSTS

Advantages of the ConPro technology in comparison to conventional production

The Handtmann ConPro systems (**Continuous Process**) raise the co-extrusion process to a new technical and technological level and in so doing create completely new application options. They combine the advantages of an edible alginate casing with flexible Handtmann vacuum filling technology. With the ConPro systems, sausage and other products can be produced more economically and new market potential can be tapped into.

The most outstanding feature of the ConPro systems is that sausage skins or casings no longer have to be changed. This means that, due to continuous co-extrusion, there are no more casing change times and filling time is therefore maximised. Continuous production with increased potential for automation, almost unmanned production and in-line packaging makes it possible to put conventional production methods to the test in order to generate economic benefits.

THE PROCESS

The basic components of the Handtmann ConPro system are two vacuum fillers. The vacuum fillers can be put together on an individual basis and can therefore be perfectly tailored to the general production parameters and the product requirements. While the master machine continuously conveys the product, the slave machine precisely feeds the alginate paste to the co-extrusion head. The basic principle of a slave machine within the system makes it possible to determine the casing thickness individually and guarantees consistent application. The alginate casing is produced during filling as part of a continuous process, by means of the gelatinisation of the pasty alginate film in a saline fixing solution.

ADVANTAGES OF ALGINATE PASTE

- From a reliable, natural raw material source (brown algae)
- Composition can be adapted on a product and process-specific basis in terms of stability, colour and flavour
- Can be produced across a wide range of temperatures and pH levels and is insoluble in water and heat-stable
- Continuous process – alginate casing is produced during the filling process
- Full process control and traceability
- Perfect product presentation
- New production options for traditionally produced products and product innovations
- Wide variety of applications for fresh, mould-ripened, dried, cooked and smoked sausage products
- Suitable for many different applications, such as meat, cheese, fish, vegetarian and sweet products
- Also for vegan, vegetarian, kosher or halal products

Continuous production with alginate casing provides significant growth potential, allowing forward-thinking processors to acquire new market share, as alginate casing can be customized in terms of its thickness, its colour and its flavour. This creates completely new opportunities for developing, designing and marketing innovative products. Excellent potential for widening the product range coupled with highly-efficient production.

COST REDUCTION

- Up to 40% lower production costs compared with the equivalent products in conventional types of casing
- Significant cost reduction thanks to portioning accurate to the gram
- Reduced staff costs due to high level of automation (a reduction from 3 operators to 1, depending on level of automation)

EFFICIENCY

- Clear increase in efficiency due to continuous production flow
- Fast return on investment due to high productivity and low investment costs
- Efficiency and process reliability due to simple handling
- Low operating, maintenance and running costs

PRODUCT QUALITY

- Guaranteed reproducible product standards
- Constant product appearance due to precisely definable alginate casing application
- Individual portions accurate to the gram due to excellent portioning accuracy

FLEXIBILITY

- Outstanding flexibility due to fast adaptation to product versions
- Large range of applications due to calibre range from 8 mm to 32 mm
- Simple synchronisation and operation via the vacuum filler control system

PROCESS RELIABILITY

- High level of system availability and reliability, including as a module in complex process chains and handling systems
- Perfect hygiene conditions due to a reduction in manual intervention



PROCESS OPTIONS

Variety of products due to diverse process options

The systems can basically be classified into ConPro systems and ConProLink systems (with linking function). The primary difference between them is the shape of the product ends.

With the ConPro systems, the product strand is either cut directly and straight after co-extrusion and fixation using appropriate separating devices or formed during cutting by means of a forming cut. The product ends are not completely enclosed by the casing. With the ConProLink system, the product strand is linked, thus closing the ends completely. The linked portions can then either be hung or be cut into individual portions or strings.

Filling & co-extrusion (ConPro)



- Filling the endless sausage strand
- Alginate applied by means of co-extrusion
- Gelatinisation of the pasty alginate film in a saline fixing solution

Filling & co-extrusion (ConProLink)



- Filling the endless sausage strand
- Alginate applied by means of co-extrusion
- Gelatinisation of the pasty alginate film in a saline fixing solution
- Portion by portion linking of the product strand

Separated sausages, hanging



- Central hanging of separated sausages
- Hanging a continuous sausage strand
- Formed or straight sausage ends
- Wide variety of product calibres and lengths

Separated sausages, horizontal position



- High portioning capacity
- Formed or straight sausage ends
- Wide variety of product calibres and lengths

Linked & separated sausages, horizontal position



- Formed, closed sausage ends
- Suitable for semi-viscous products
- Wide variety of product calibres and lengths

Linked sausages, hanging



- Formed, closed sausage ends
- Suitable for semi-viscous products
- Wide variety of product calibres and process options

Collating and packing the sausages



- Precise depositing into trays or thermo-forming packaging
- High process reliability
- High level of automation

Continuous processing

- Feeding to continuous smoking, cooking or baking systems



PROCESS OPTIONS

Variety of products due to diverse process options

Each individual process step in the ConPro system is perfected so as to always ensure optimum results of the entire process – a first-class product coupled with profitable production.



1. FILLING AND CO-EXTRUSION

The continuous filling of an initially continuous sausage strand ensures maximum productivity with superior product quality. The alginate paste solidifies in the fixation solution at the same time as the sausage strand is fed to the AL system conveyor belts.



2. CUTTING AND FORMING

The continuous sausage strand is precisely separated into defined portions (equal lengths and equal weights). The forming process step (ends are formed into the typical, round sausage shape) provides an excellent and appetising product appearance.



3. SEPARATING AND HANGING

The interplay of the cutting unit and hanging unit guarantees individually separated sausage loops of equal length.



4. LINKING AND SEPARATING

Continuous sausage production for linked and cut fine sausage meat and dry sausage products with well-formed, closed portion ends.



5. LINKING AND HANGING

Reliable portion linking due to ConProLink linking unit, followed by product hanging on the hanging unit in line with the required number of loops and the distance between them.



6. COLLATING AND DEPOSITING

Using the collating module, portions can be collated in many different ways. Precise depositing into trays is the perfect basis for additional automation steps such as packaging, for example.

7. CONTINUOUS PROCESSING



The individual, cut portions can be transferred to continuous systems, such as smoking, cooking and baking systems, in horizontal position.

INCREASE IN EFFICIENCY DUE TO PRODUCT HANDLING

Automation from filling through to packaging

Completely rethink conventional production processes due to continuous production with increased potential for automation, almost unmanned production and in-line packaging – ConPro technology. Handtmann product handling systems provide the opportunity to further automate the ConPro process.

ConPro systems have a modular design. Supplementary modules for collating and depositing, through to packaging, facilitate a complex line configuration, tailored to individual production requirements.

| | GS 300 collating system | GS 301 collating system | GS 302 collating system |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modules | <ul style="list-style-type: none"> • GM 310 collating module • ZB 311 feed belt • INTRAY tray denester | <ul style="list-style-type: none"> • GM 310 collating module • GB 320 collating belt | <ul style="list-style-type: none"> • GM 310 collating module • GB 322 collating belt • ER 330 loading robot |
| Applications | Collating system for fresh sausage directly into trays for alginate, natural and collagen casing | Collating system for fresh sausage pre-grouped onto the collating belt for alginate, natural and collagen casing (depending on the product). Manual depositing into trays or thermo-forming systems. | Collating system for fresh sausage for depositing into thermo-forming systems for alginate, natural and collagen casing (depending on the product) |
| Performance data | Alginate casing: <ul style="list-style-type: none"> • Portioning speed up to 400 portions/min. • Casing calibre 13 to 32 mm • Portion length 80 to 310 mm | Alginate casing: <ul style="list-style-type: none"> • Portioning speed up to 400 portions/min. • Casing calibre 13 to 32 mm • Portion length 80 to 400 mm | Alginate casing: <ul style="list-style-type: none"> • Portioning speed up to 360 portions/min. • Casing calibre 13 to 32 mm • Portion length 80 to 220 mm |
| Illustration |  |  |  |



CONPRO SYSTEM

Top performance for cut or formed products

The new ConPro system (KLSH 153) is available in two performance level versions. The smaller, entry-level model is suitable for producers who are beginning ConPro production. If more production capacity is required there is no need to buy a new system, production output can be increased via an upgrade. Depending on production requirements, the newly-developed forming and separating units facilitate a significant increase in capacity, coupled with a visually appealing product appearance. Top performance is therefore possible for cut or formed products.

With this ConPro system, the product strand is either cut straight after co-extrusion and fixation using appropriate separating devices or formed during cutting by means of a forming cut. With both versions, the product ends are not completely enclosed by the alginate casing. The processes of collating and depositing or transferral into a continuous system for further processing are the next steps of the complete solution.

ADVANTAGES

- Flexible adaptation to production capacities due to scalability
- Improvement in performance due to new forming and separating units
- Excellent product shelf-life due to ideal hygiene conditions
- Production costs reduced by up to 40 % in comparison to equivalent products made from natural or artificial casings
- Cost savings due to optimum utilisation of the smoking chambers thanks to the possibility of hanging small-calibre products close together

PERFORMANCE PARAMETERS

- ConPro system comprising VF master and VF slave with KLSH 153 AL system
- Calibre range 8 to 32 mm
- Portion length from 40 mm
- ConPro-1:
 - Max. belt speed 1 m/sec.
 - Portioning capacity (depending on product and lengths):
 - Cutting: up to 1,200 portions/min.
 - Forming and cutting: up to 1,200 portions/min.
- ConPro-2:
 - Max. belt speed 2 m/sec.
 - Portioning capacity (depending on product and lengths):
 - Cutting: up to 1,800 portions/min.
 - Forming and cutting: up to 1,200 portions/min.
- Minimum hook spacing: 20 mm
- Further processing of hung products – conventional smoking and cooking systems
- Further processing of cut products – collating and depositing in packaging solutions, transferral to continuous smoking, cooking or baking systems



↑ Straight cut



↑ Forming cut



↑ Vegetarian sausages



↑ Salami sticks



↑ Salmon sausage



↑ Cabanossi



↑ Breakfast sausage



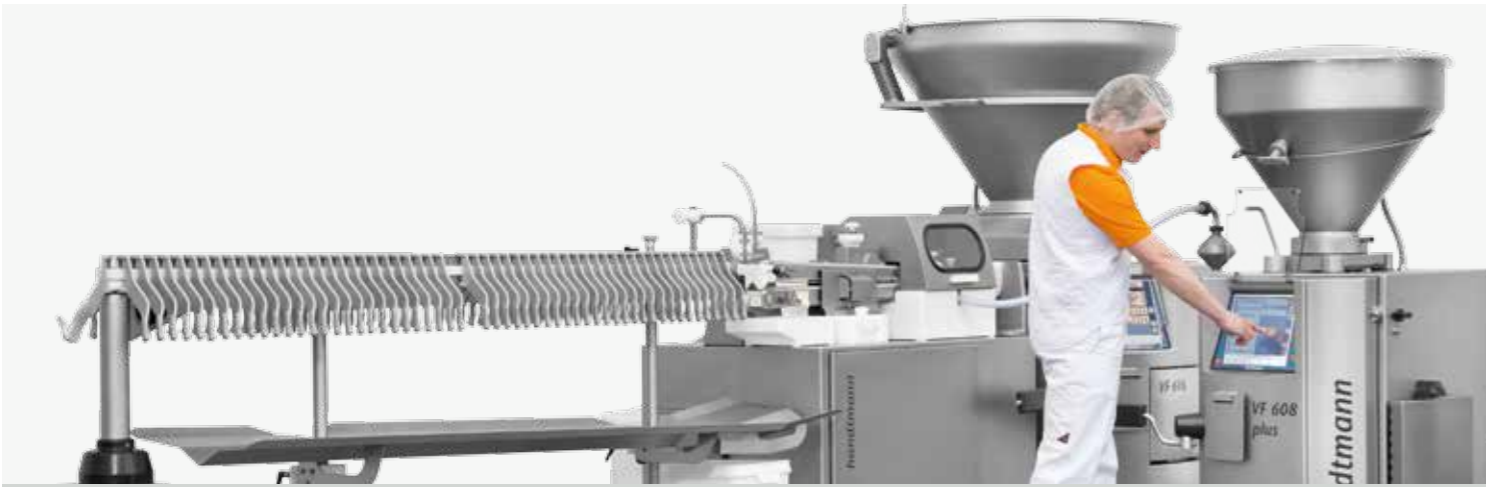
↑ Fried sausage spirals



↑ Hot dog



↑ Merguez



CONPROLINK SYSTEM

Linking with optional cutting or hanging

The ConProLink system enables the continuous production of products with closed ends. The hanging function takes the production of sausages to another level and creates additional potential for innovative product solutions and highly-economical processes. A newly-developed hook makes it possible to hang snack products very close together (cal. 8 and cal. 10). Smoking chambers are therefore utilised to a significantly higher degree, thus resulting in cost savings.

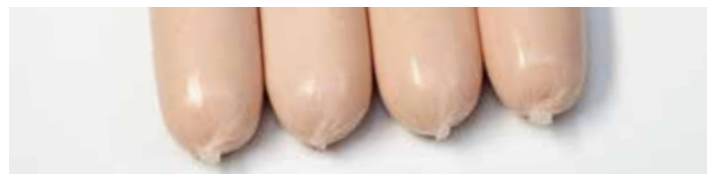
The ConProLink technology produces an alginate casing using the linking/co-extrusion head, portions the filling product accurate to the gram, constricts it in equal lengths with the help of the voider and links the products. The individual, linked portions are then either cut and processed further in horizontal position or a specified number of them are transferred to the hanging unit in loops, with the required distance between them.

ADVANTAGES

- Excellent product appearance due to closed ends
- Production costs reduced by up to 40 % in comparison to equivalent products made from natural or artificial casings
- Processing semi-viscous products is possible due to completely closed product ends
- Excellent product shelf-life due to ideal hygiene conditions
- Existing smoking/cooking systems can be used for hung products (e.g. salami sticks)
- Cost savings due to optimum utilisation of the smoking chambers thanks to the possibility of hanging small-calibre products close together

PERFORMANCE PARAMETERS

- ConProLink system comprising VF master and VF slave with KVLSH 162 AL system
- Calibre range 10 to 28 mm
- Portion length from 80 mm
- Portioning capacity up to 300 portions/min. (depending on product and lengths)
- Minimum hook spacing: 20 mm
- Further processing of hung products – conventional smoking and cooking systems
- Further processing of cut products – collation and depositing in packaging solutions, transferral to continuous smoking, cooking or baking systems



↑ Closed product ends



↑ Mini wieners



↑ Salami sticks



↑ Mould-ripened salami



↑ Cheese sausages



↑ Vegan wieners



↑ Vegan fried sausage



↑ Pet food