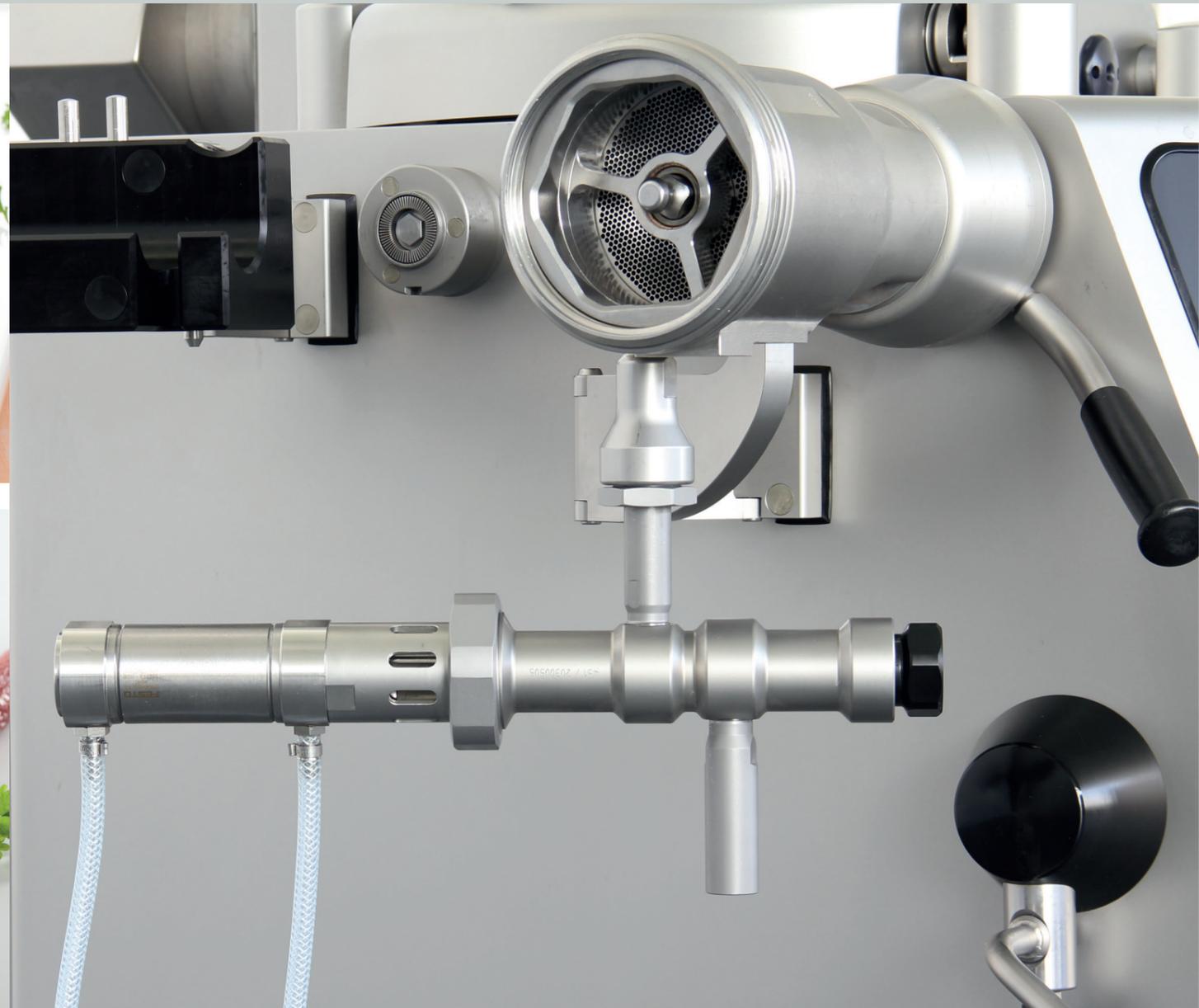


FILLING AND GRINDING IN A SINGLE STEP

Inline grinding system technology for excellent product quality



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PRODUCT AND COST OPTIMISATION

Integrated inline grinding system technology for product and cost optimisation

The quality of end products is dependent on the grinding method. Less stress on the product and very gentle cutting are decisive factors in achieving a perfect product appearance. First-class product quality only comes from first-class technology. The integrated Handtmann inline grinding system technology facilitates these features – product quality due to protection of the product and flexibility of use in a wide range of applications.

With the Handtmann inline grinding system technology, the product is ground to its final grain size and simultaneously portioned in one process step. The main advantage of grinding to the product's final size during the filling process is the reduced number of process steps. Coarser pre-grinding or shorter cutter times protect the product. As the coarsely pre-ground product passes through the vane cell feed system it is evacuated efficiently. The residual air content falls significantly – an indispensable product quality advantage. The shelf life and colour stability improve and the product exhibits a compact structure.

THE PROCESS

The inline grinding system itself is the key element of the process. The Handtmann cutting concept provides the crucial edge – state-of-the-art control technology and independently controlled feeding and separating drives facilitate flexible adaptation of the cut size.

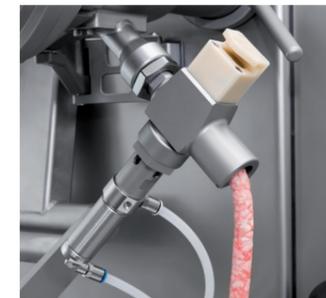
The vane cell feed system conveys the product at constant pressure and with no reverse flow into the grinder head and up to the hole plate. Consistently applied pressure on the entire surface of the hole plate allows the ring knife to cut cleanly without swirling. This therefore prevents abrasion and smearing. Two independent drives for the feed system and the blade shaft, which are perfectly synchronised via the vacuum filler control system, allow for individual adaptation in line with the demanding requirements that producers have in terms of particle definition. The cut size can be adapted down to the finest degree. Handtmann works with the standard feed system for all products, irrespective of the cut size of the final hole plate. It is therefore not necessary to switch feed system parts when the product is changed.

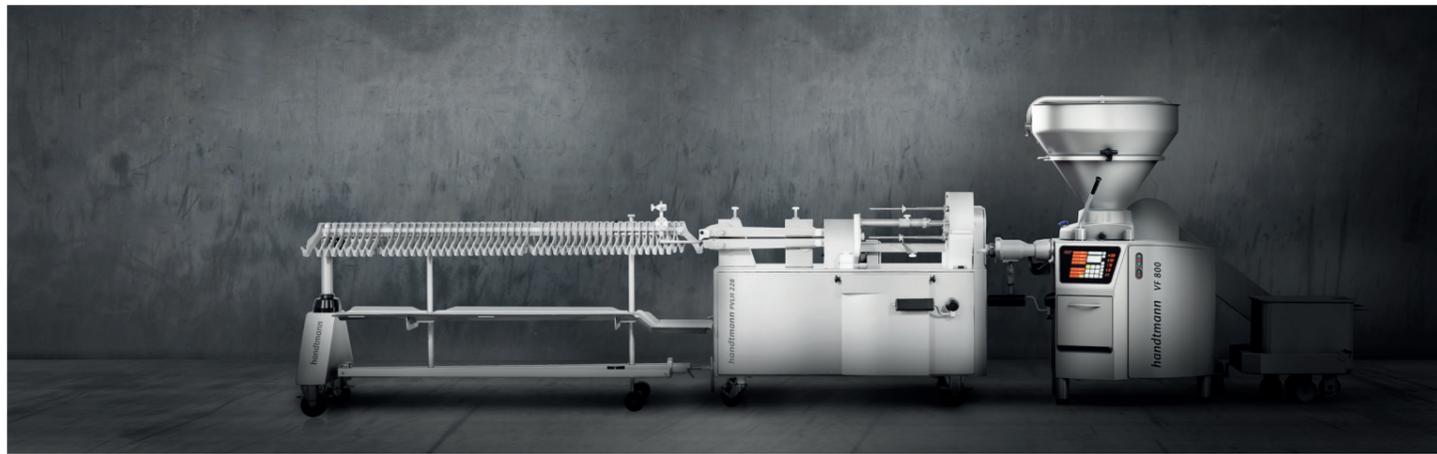
Removing gristle

A separating system which facilitates individual separating intervals removes gristle efficiently. Excellent weight accuracy is maintained, irrespective of production speed. Hard components, such as gristle, sinew and bones, accumulate in front of the final hole plate. Due to the shape of the separating knife, these components are concentrated, conveyed outwards and can be discharged. The gristle separator therefore ensures indispensable product reliability.

Cutting sets

The system uses commercially available cutting sets. The versatile equipment options for cutting set parts guarantee optimum adaptation to the individual product.





ADVANTAGES

Today's consumers expect product quality

PRODUCT QUALITY

- Top product quality due to extremely gentle processing and a reduction in the number of process steps
- Independently controlled feed and cutting speeds facilitate flexible adjustment of the product's particle size
- Guaranteed reproducible, top quality product standards
- Integration of the gristle separator guarantees product reliability

PRODUCT RELIABILITY

- Long shelf-life and colour stability due to outstanding evacuation
- Gristle, sinew and other hard components are reliably ejected by the gristle separator
- Clear particle distribution without abrasion and smearing due to constant pressure and a clean cut

ECONOMIC EFFICIENCY

- High level of productivity and efficiency due to filling and grinding in a single step
- Cost reduction due to excellent portioning accuracy
- Cost reduction due to standard feed system for all products, without switching feed system parts when the product is changed
- Low cutting component wear and maintenance costs

PROCESS RELIABILITY

- Reliable module in many applications and line solutions
- Excellent hygiene conditions due to a reduction in manual intervention

INLINE GRINDING SYSTEM TECHNOLOGY APPLICATIONS

Effective in a wide variety of applications

DRY SAUSAGE/SEMI-DRY SAUSAGE

With dry sausage production, inline grinding technology has a significant impact on the sensory attractiveness of the products. More coarsely pre-processed filling material can be better evacuated than compactly chopped and dry sausage meat. This has a positive effect on colour stability, flavour development and the reduction in product-appearance porosity, as well as on the maturing characteristics.

Furthermore, inline grinding technology makes it possible to optimise conventional production methods for dry sausage and semi-dry sausage products. Whereas conventional dry sausage technology requires large amounts of frozen recipe components, the inline grinding process only requires a small amount of refrigerating reserves. The use of a greater proportion of fresh, non-frozen recipe components minimises the energy required for raw material temperature control and, in particular, for the temperature adjustment of the filled dry sausages during maturing.

Product examples

Dry polish sausage, pressed meat in aspic, all types of salami, semi-dry sausage



MINCED MEAT PRODUCTS

The integrated inline grinding system technology results in first-class product quality and appearance with the production of minced meat products. Integrating this into the Handtmann minced meat portioning line, comprising vacuum filler, inline grinding system with grinding

attachment and minced meat portioner, facilitates extremely efficient production. The perfect interplay of the grinding and portioning processes in conjunction with the tray feeding option or depositing into thermo-forming machines for extremely automated production standards.

Product examples

Minced meat portions, rib burgers, meatloaf



FORMED PRODUCTS

Using the inline grinding system optimises the production of formed products in terms of process technology and quality. In terms of quality due to protection of the product and flexible adaptation of the particle size. In terms of process technology due to a reduction in the number of process steps, especially in conjunction with forming devices such as round formers and forming systems.

Product examples

Meatballs, cevapcici, burgers, soup add-ins, fish fingers, pet food





VF 800 WITH INLINE GRINDING SYSTEM

GD 451 inline grinding system

State-of-the-art inline grinding system technology in conjunction with state-of-the-art VF 800 vacuum filling technology meets all the demands placed on top production standards. The GD 451 inline grinding system is based on the most modern grinding technology on the market. A powerful servo drive with an extremely high speed guarantees top filling capacities even at low temperatures. Due to the separate drive, the ratio between the portioning speed and the cutting speed can be optimally adjusted in line with the various different products. Both parameters are stored in the product memory and thus ensure a high degree of process reliability and a constantly high product quality.

Benefit from the unique combination of state-of-the-art vacuum filling and grinding technology

- Very powerful due to extremely high speed
- Production of very cold products
- 20 % increase in filling capacity for fine-grained end products
- Capacity reserves ensure process reliability in the event of production peaks
- Low maintenance due to low-wear components
- Cutting sets in defined cutting set combinations
- Automatic gristle separator for product and process reliability

GD 452 MINCED MEAT ATTACHMENT IN CONJUNCTION WITH GD 451 INLINE GRINDING SYSTEM

When combined with the new GMD 99-3 or GMD 99-2 minced meat portioner and VF 800 vacuum filler, the new GD 452 minced meat attachment in conjunction with the GD 451 inline grinding system is suitable for the high-performance, reliable production of all kinds of minced meat products. With a width of up to 220 mm, the grinding attachment facilitates a wide range of products and applications. More information is available in the *Minced meat production brochure*.

GD 451-30 VOLUME SEPARATOR IN CONJUNCTION WITH THE VF 800 S AND GD 451 INLINE GRINDING SYSTEM

With each separating cycle, the volume separator collects a defined quantity of gristle and discharges the separated product. When the defined quantity is ejected, the missing weight is automatically compensated for by the VF 800 control system. Accurate weight portioning is the result. Fluctuating factors, such as sausage meat pressure, product consistency and filling speed, make no impact. Less lean meat but more gristle and sinew is therefore separated out. This results in product reliability coupled with cost savings.



VF 600 WITH INLINE GRINDING SYSTEM

GD 93-3 inline grinding system

VF 600 vacuum fillers have proven to be flexible basic modules for integrated processes. Including in the tried-and-tested combination of VF 600 vacuum filler and GD 93-3 inline grinding system. Together with the integrated inline grinding system technology, the VF 622 and VF 628 vacuum fillers in particular, with their high filling pressure of up to 72 bar, are the solution specifically designed for products which are difficult to process, such as dry sausage meat. Another particular strength of the inline grinding system technology with the VF 600 is automatic sausage production with AL systems.

GD 93-6 MINCED MEAT ATTACHMENT IN CONJUNCTION WITH GD 93-3 INLINE GRINDING SYSTEM

In conjunction with the GD 93-6 minced meat attachment and GMD minced meat portioner, the GD 93-3 inline grinding system is the system solution for efficient, high-quality minced meat production. Integrating the minced meat portioning line flexibly into complete production line solutions through to packaging makes automation and rationalisation options possible.



HIGH VACUUM FILLER WITH INLINE GRINDING SYSTEM

When combined with high vacuum filling technology, using the Handtmann inline grinding system also facilitates further optimisation of product quality and processing. Boiled salami, semi-dry sausage, dry sausage, small-calibre dry sausage snacks or products made from very firm feed material all benefit from the effective use of the inline grinding system technology. The key advantage of high vacuum filling technology and inline grinding system technology is the sensory attractiveness of the products.

