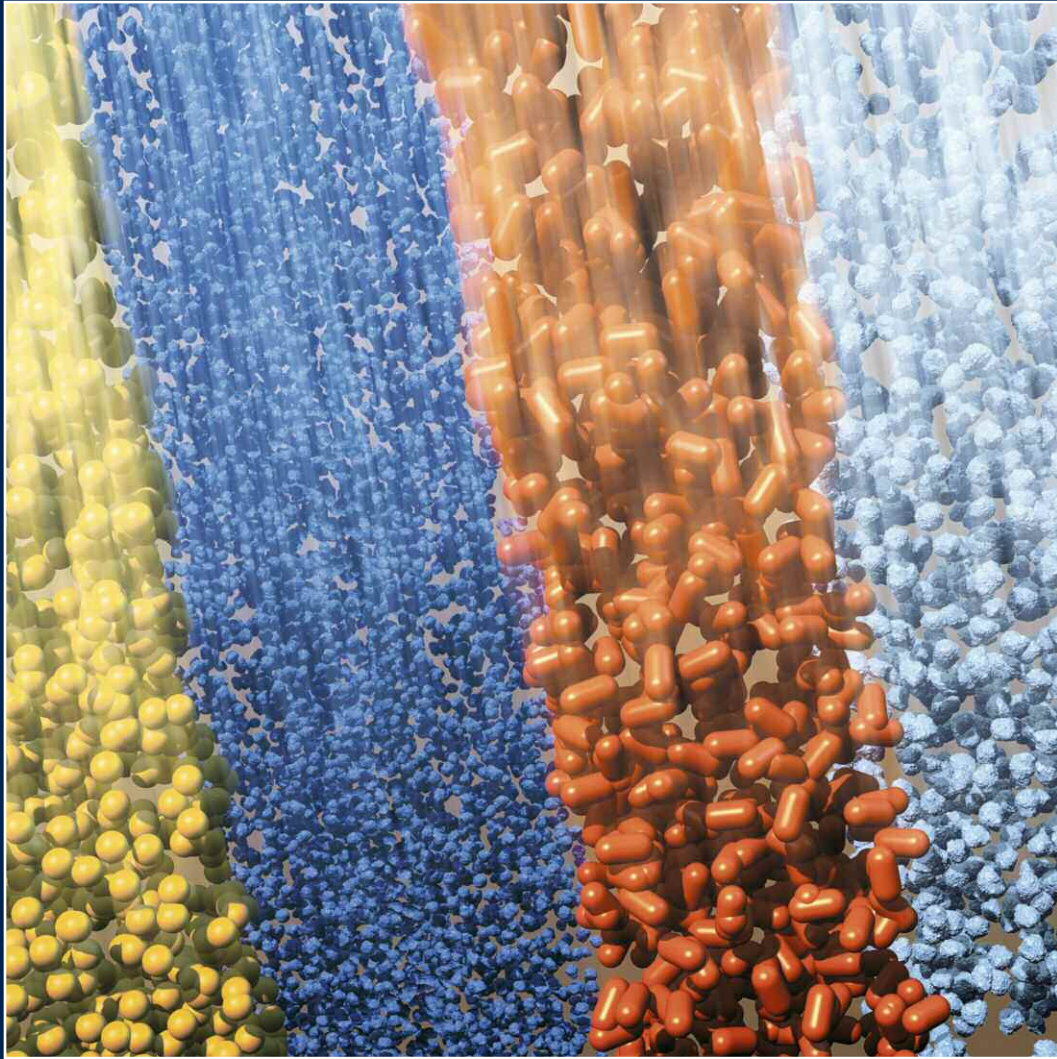


HAYER & BOECKER



**HAYER FFS SYSTEMS FOR FILLING
GRANULATED TO POWDER PRODUCTS**

Economy and high protection of filled product for long storage times remain the fundamental requirements for a packaging material to fulfil top quality demands.

As a packing machine specialist, HAYER & BOECKER offer a broad range of FFS machines (FFS = Form Fill Seal – i. e. bags are formed, filled and sealed in the machine).

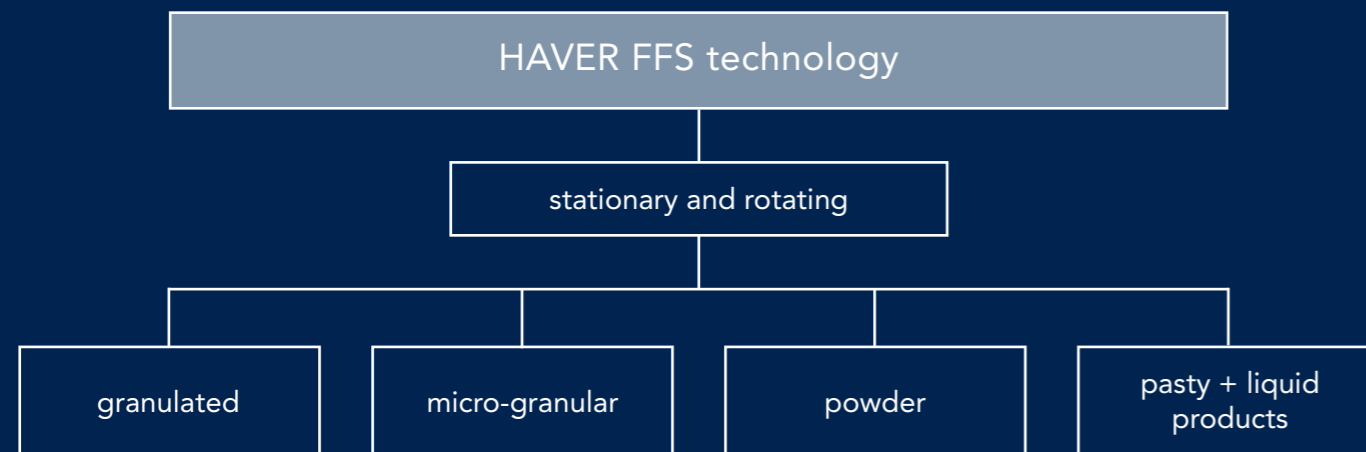
The HAYER FFS machines fulfil the latest standards of technology and are ideal for bagging grainy, granulated and powder-type products into plastic bags for producing a clean, compact and sealed shut package. Depending on the FFS technology system, the bag is formed in the machine from a PE continuous plastic tube. Next the formed bag is filled and then closed shut. This FFS method reaches speeds of more than 2400 bags/hr. The filling machines are connected with upstream high-performance net weighers, which have made HAYER & BOECKER a well-known specialist of weighing systems.

In addition to the proven stationary FFS systems for bagging granulated and grainy products, HAYER ADAMS® is a FFS high speed packing system with 1 to 12 filling spouts for the clean, compact, and tightly sealed filling of products into PE bags made from tubular film.

Using FFS technology from HAYER & BOECKER, the following can be filled:

- Free-flowing products in granulated, grainy or powder form
- Fine grain granulate
- Free-flowing, grainy and gritty bulk products
- Pasty and liquid products
- Micro-granular and powder-type products

A rapid on-site installation and start-up is possible thanks to the integrated design. All components from the bag manufacturing unit to the discharge unit are installed, wired, and controlled as an integrated system.



Film types:

- Plastic film
- PE and PP tubular film
- Aluminium/PE combination film
- Woven band film (woven*FFS)

Bag weights:

from 5 to 50 kg/bag

Bag lengths (variable):

from 350 to 950 mm

Bag widths (variable):

from 350 to 420 mm

At the HAYER Research & Development Center, environmentally friendly, energy-saving and economical solutions are developed under real-life conditions in cooperation with the customers. One result of this close cooperation is the cost-saving **HAYER FFS 2500** packing system.

The HAYER FFS 2500 was designed to fill free-flowing granulated, grainy and gritty bulk products.

HAYER FFS systems are laid out to handle single or multiple-ply, neutral or printed continuous side-gusset, band-woven tubular films made of polyethylene or polypropylene (80 to 250 µm thick).

HAYER FFS Technology – Higher quality through technical expertise

Increased productivity

- High speeds > 2400 bags/hr
- Most up-to-date servo-drive technology
- Using a HAYER high-performance net weigher

Easy to maintain

- Better overview due to greater distances between stations
- Free access to filling spouts

Lower noise levels despite the higher speeds

- Minimal wear and tear thanks to smoother operation

Minimised cleaning work

- Housed cables
- Open access beneath the discharge conveyor

Higher flexibility

- Expanded range of application with a bag length of 600 to 950 mm
- Rapid batch and format changeovers

Higher process reliability from product feed-in to finished bag

- Innovative control and drive technology

Lower cost / less material consumption

- Minimal weld seam overlap

This system is state-of-the-art technology and so fulfils the demands of future markets.



Woven band bags (woven*FFS)



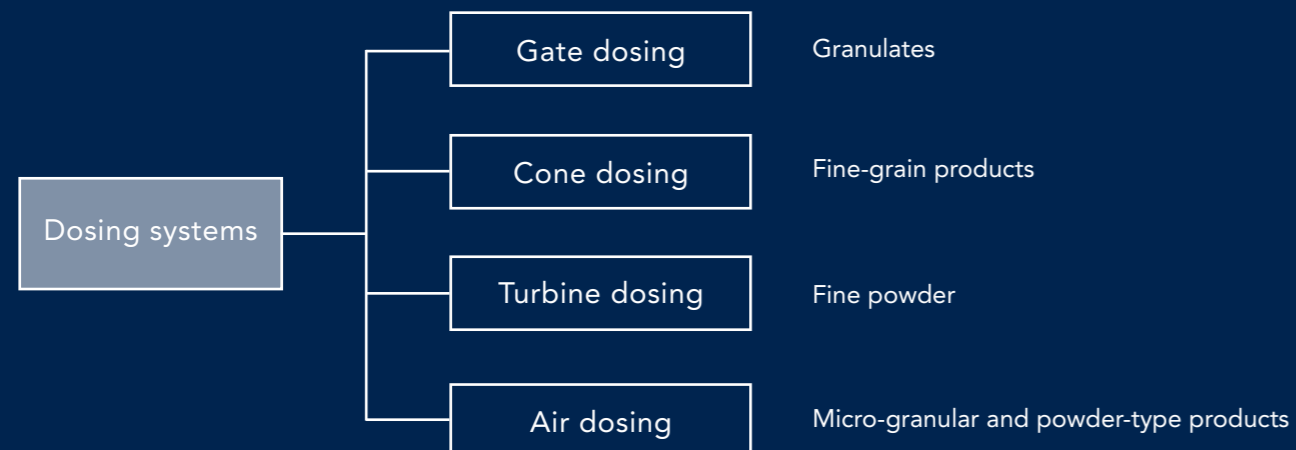
The following components can be used in the FFS technology from HAVER & BOECKER:

- Corner-welding for box-formed bags – easy stacking
- Gross or net weighing
- Vacuum-type air removal via vacuum lance, vibrating lance or table
- Cleaning station
- HAVER high performance net weigher for reaching the optimum filling time combined with discharge dosing
- MEC® III electronic weighing system with touch-panel – high weight accuracy
- Bags with carry-handles
- Mobile
- Double or triple HAVER Reel Changer – product variety and reduced set-up times

- Surge hopper for high speeds
2400 bags/hr each 25 kg/bag and
1650 bags/hr each 50 kg/bag

Weighing and dosing systems

- Dosing using the turbine or air-entrainment system, as well as screw conveyor dosing
- Coarse-grain products – metering unit/belt dosing
- Fine-grain products – cone dosing
- Granulate – gate dosing
- Micro-granular and powder-type products – turbine dosing/air dosing



The **HAYER FFS liquid** is a fully automatic system for filling pasty and liquid products into PE bags made from a continuous tubular film.

The proven components of the successful HAYER FFS technology and the bucket filling station from our Feige Filling subsidiary were merged together.

The result: The fastest filling speeds and optimum weight accuracy.

HAYER FFS liquid revolutionizes the fully automatic filling of pasty and liquid products. This packing technology offers you and your customers significant advantages:

- Flexible packing
- Cost advantages with the packaging material
- Reduced load volumes
- Rapid and complete emptying of the bags using press rollers
- Significantly less difficulty with empty-bags disposal
- Performance > 600 units/hr

HAYER FFS liquid – Ecological and economical. The perfect solution – from production to consumption

HAYER ADAMS® is for bagging micro-granulates into plastic bags - best with bag weights of 5 to 50 kg. Here HAYER ADAMS® can achieve product-specific high speeds.

Advantages for you and your customers:

■ **Clean**

Dust-tight filling systems with 6 corner support spouts minimises product loss and keeps the surrounding area clean.

■ **Contaminant-free**

Double spouts make it possible: Cleaning steps can take place during production operation.

■ **Flexible**

With only one packing machine under silos, each operated with its own filling spout.

■ **Sealed tight**

Your product is protected from moisture in securely sealed shut PE bags. As a result the possible storage time is multiplied – also when outside exposed to the elements!

■ **Increased resistance against tearing**

A considerably higher strength against bursting or tearing means bag breakage along the entire logistical supply chain is reduced to a minimum.

■ **Consumer-friendly**

Options facilitate handling: high value products inside appropriate packaging with superior print, glossy effect and possible carry-handle produce customer acceptance and boost sales success.

■ **Economical**

The proven HAYER reel changer guarantees long running times with minimal stoppages.

HAYER ADAMS® – cleanliness and efficiency from production to consumption.



HAYER FFS liquid – for filling pasty and liquid products



HAYER FFS liquid – high speed filling spouts

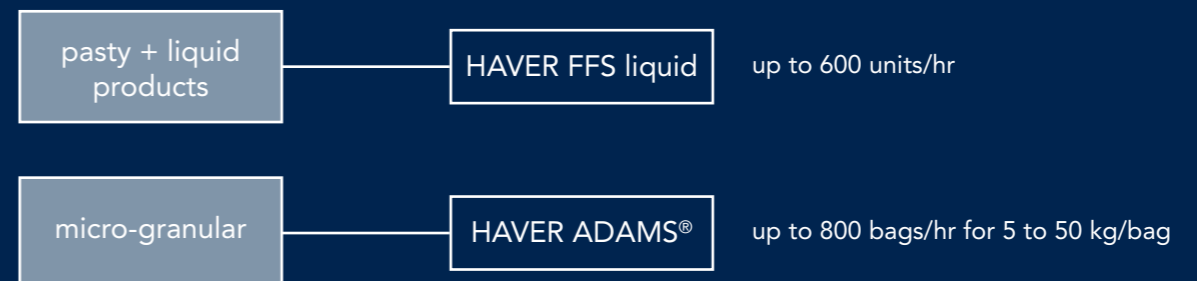


HAYER FFS liquid bag at the filling spout

HAYER ADAMS® - for filling products that do not flow well



PE bag with carry-handle if requested



Your customer expects increasingly more from your products. Also even after long storage times your products are expected to fulfil the highest quality standards. We have decades of experience in designing and producing both filling systems: the HAVER ROTO-PACKER® and the HAVER FFS machines. We have combined the two together. The result: now also the highest bagging speeds for powder-type products in PE bags with HAVER ADAMS®.

The machine type to use depends of the speed requirements and the individual product properties, such as bulk density and compactability. Speeds of up to 2000 bags/hr each 25 kg can be reached.

HAVER ADAMS®

This new packing system offers important advantages for you and your customers:

■ Clean

Dust-free bagging, sealed filling spouts and siphoning off in the packing machine set new standards. Cleanliness in the packing plant is now a reality.

■ Sealed tight

The product is optimally protected from moisture inside the welded PE bag. This leads to a multiplication of the storage time – also when outside exposed to the elements!

■ Compact

The high fill-rate during filling from the integrated compaction system assures optimum stocking and freight space utilisation while ensuring stable stacks on pallets. The integrated bag corner-welding enhances the desired and proven box-form of filled bags.

This provides attractive stacking on pallets and thus delivers the prerequisites for automated stocking systems.

■ Increased resistance against tearing

A considerably higher strength against bursting or tearing means bag breakage along the entire logistical supply chain is reduced to a minimum.

■ Perfect appearance

Premium value products inside the appropriate packaging with superior print quality and glossy appearance increase customer acceptance and thus boost sales success.

HAVER ADAMS PROCESS® – cleanliness and efficiency. From production to consumption.



HAVER ADAMS PROCESS® makes it possible: clean, tightly closed and colourful printed bags



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