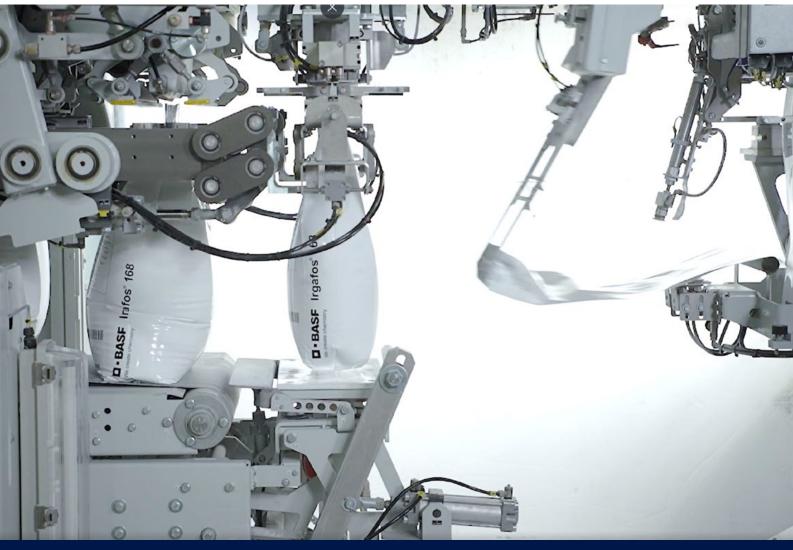
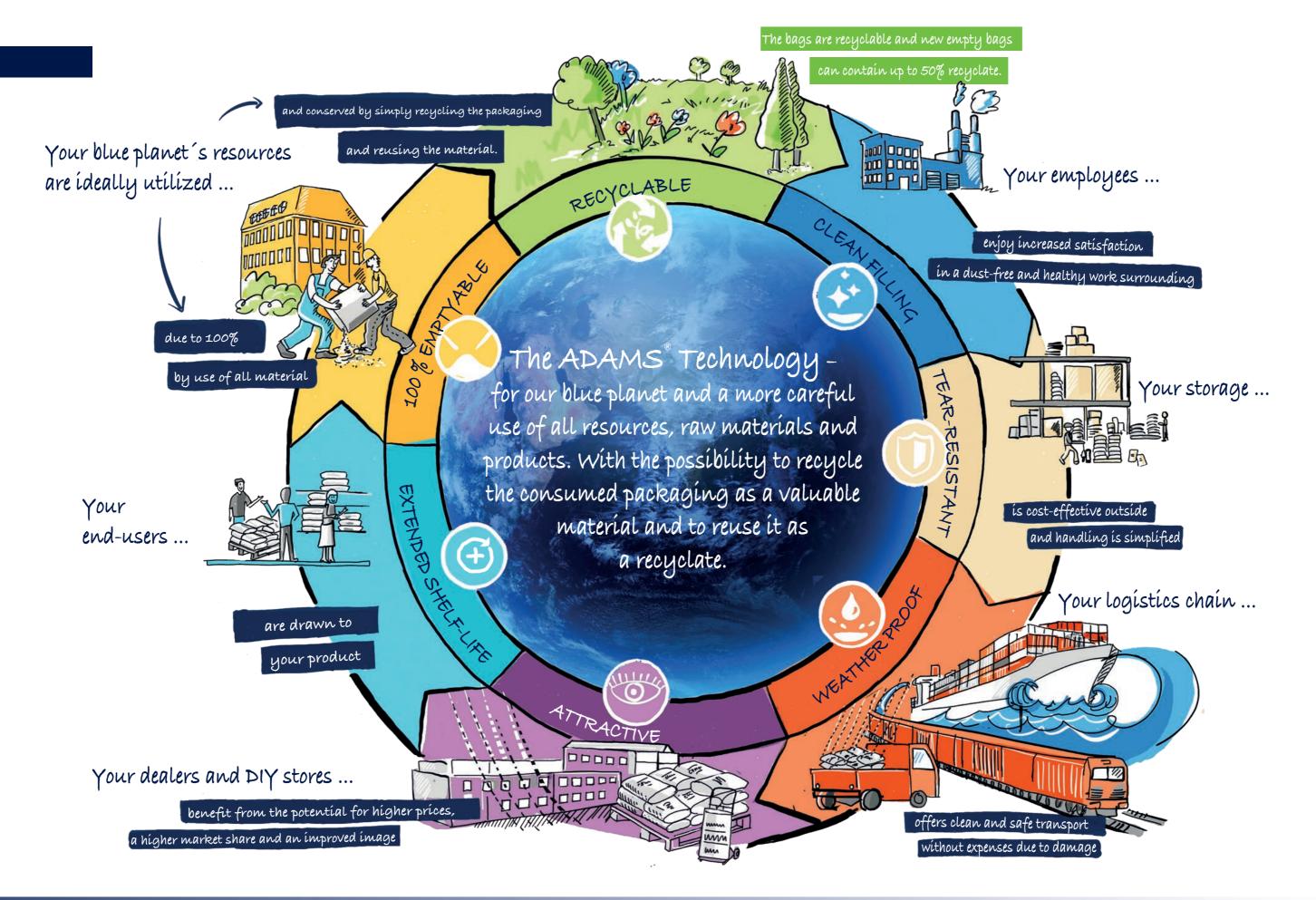


THE ADAMS® TECHNOLOGY WEATHERPROOF. CLEAN. PROFITABLE.





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This might also be of

interest to you



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three Families



We are always there

for you 34-35



THE GAME CHANGER

»This extremely high level of product protection makes our ADAMS® technology valuable and unique.

Almost all of our customers' products are distributed worldwide. The moisture barrier and the very compact filled bags often play the decisive role.«



Robert Brüggemann, Head of Business Unit Chemicals HAVER & BOECKER



6 7

The ADAMS® WEATHERPROOF. CLEAN. PROFITABLE.

With ADAMS® technology, HAVER & BOECKER has revolutionized the packing market worldwide. The polyethylene bags not only look classy, they are also tear-resistant and weatherproof. In this way, they protect the valuable contents and strengthen the end consumer's trust in the manufacturer and its brands. This also benefits profitability. Less breakage during transport. Because the bags are weatherproof, they can be stored for longer and even outdoors - which saves even more costs. The bags are also easy to empty, re-closeable and completely recyclable. Due to specific material composites, the pure tubular film sacks can be added to the processing procedure unopened and dissolve in the process. With our bagging machines we follow a hygiene concept from the film manufacturing over the forming and filling of the bag, considering all necessary handling steps up to the end users, by meeting pre-condition international standards of i.e. chemical and food industry. And another significant advantage: the ADAMS® systems avoid dust during filling, which would otherwise contaminate working areas. The bag is formed in the machines from a prefabricated polyethylene tubular film, after which the product is filled and the bag is fully closed. The size of the packaging is variable; anything goes between 5 and 30 kilos. Speed is of the essence. Originally developed for cement plants, ADAMS® now fills a wide variety of chemicals worldwide.



HAVER & BOECKER

FROM THE TUBULAR FILM TO THE PERFECT PALLET





The tubular film

The polyethylene bags are delivered as film (PE side gusseted tubular film) on rolls, picked up on a carrier and fed manually into the machine.



The printing

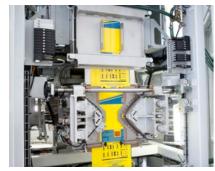
The versatile marking systems ensure reliable and positionally accurate printing with your individual marking. We adapt this process step exactly to the speed requirements of the machine. Empty bag printing with laser ($\mathrm{CO_2}$ + fiber laser), thermal transfer or labeler and full bag printing with inkjet are optionally available.



The bag scanner

The optional bag scanner scans the QR code printed on the film to ensure that the machine operator is using the correct bag roll selected for the product to be filled. QR codes can additionally be used for product and bag tracing.





The bag manufacturing: corner welding and bottom seam welding

Due to the diagonal welding of the side gussets, the bag bottoms are optimally formed. Among the advantages of corner welding are improved bag geometry, higher bag strength and very good stackability. This attractive positioning options on pallets, both in terms of storage positioning options on pallets. The machine automatically adjusts to different bag lengths as soon as the corresponding data have been entered. The system variably compensates for the bag lengths. Separated by a knife the bag is open at the top.





The hexagon filling spout

The bag gripper clamps the bag chest tight to the hexagonal filling spout, resulting in a clean filling process.



The filling and bag closure

The combined MEC® control and weighing electronics – a development of HAVER & BOECKER – ensures exact filling quantities. Product compaction inside the bag is a fundamental requirement for achieving a clean and efficient final result. Inner and outer vibration compactors provide the required product compaction. The contents of the bags are efficiently compacted during filling. This reduces costs: compacted bag contents mean less volume and therefore less film.





The full-bag transport

The filled bags are forwarded in an upright position, closed and placed on the conveyor belt.





The quality control

The check-weigher for the "bag-check" with weight and closure control.





The bag forming section

The belt conveyor consists of various adjustable elements, that ensure proper filling and increase process reliability. By using a pressing belt, the filled and sealed bags are formed precisely and can thus be palletized perfectly.



Reinhard Surmann

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E-mail: r.surmann@haverboecker.com



FILM PROPERTIES



A packaging solution with a considerable range of outstanding and sustainable benefits – currently even with a **recycled content of up to 50**% through to the use of CO₂ neutral bags out of biofilm.



Seal Improved sealing seam for highly contaminated weld areas



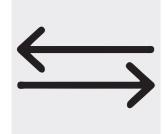
TightAdditional longitudinal seam to protect particularly fine powder



Barrier Enhanced water barrier for particularly hydrophilic goods



Hygienic The material meets international hygiene standards



Anti-Slip Additional coating for a highly-effective non-slip surface



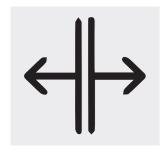
Easy Reclose Allows opened bags to be reclosed



Easy Carry Integrated carrying handle for convenient transportation



Batch capability
Due to the special material properties, the pure tubular film bags can be added to the processing procedure unopened and dissolve in the process.



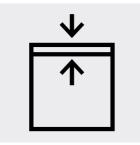
Easy Open
Easy to open without a knife or scissors



Recycled Material Film with recycled content and recyclable



Green PEResin made from sugarcane-based ethanol



Dawngauging Thinner film overlap for lower packaging costs



12 13

THE ADAMS® ADVANTAGES

WEATHERPROOF

Top quality in PE bags

The highest quality right from the beginning – this is what products filled with the ADAMS® technology as well as their packaging offer. Tightly sealed PE bags stand for a long lifetime and a consistently high product quality for powdery products along the entire transport and storage chain. Stored outside or inside.

Thanks to the robust and exceptionally tight PE material, you have the following advantages:

- PE bags offer a high level of UV and aroma protection, and thus the quality of the filled product provides high performance over the long-term.
- Since they are especially durable, PE bags help to prevent customer complaints – and ensure topproduct quality.
- Due to the high level of frost and weather resistance offered by PE bags, the packed products are always reliably protected even under harsh outdoor weather conditions and allow your customers to order in large quantities.

CLEAN

Clean and attractively packed

A clean and appealing presentation at point of sale is crucial for a product's success.

The packaging not only protects the product, but it also conveys a message to your customers. On the market it bears your company's image. At building sites, during transportation or storage, on the sales floor, inside or outside – PE bags ensure dust-free surroundings, as well as a clean and attractive presentation along the entire delivery and storage chain. The ADAMS® technology already achieves clean results during the filling process, amongst others due to product compaction within the package.

This allows the following advantages:

- Clean filling coupled with the packaging's tearresistance assures low dust levels – and thus high protection of your operating personnel.
- During filling, transport or storage, the bags protect the environment from possible pollution from hazardous contents.
- The improved printed, glossy image offers new possibilities for layout and design. The end-buyer always receives an attractive and clean package that contains a long-lasting and premium quality product
- Hygienic demands are considered and concepts are available
- Batch inclusive applications can be executed

PROFITABLE

Highly economic

PE bags that are handled with the ADAMS® technology can be presented in an appealing manner, and offer a decisive competitive advantage. Enjoy cost savings in storage, transportation, material and staff.

Practically this are your advantages:

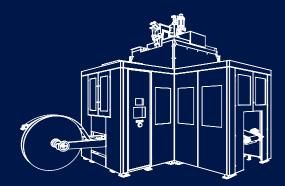
- Ultimately the packaging's appearance is decisive when it comes to competitive advantage. A masterful presentation by PE bags in the environment of complimentary products brings with it a sales-boosting value that gets reflected in market share.
- Because products now may be stored outdoors, they are no longer seasonal. Your plant can produce with a constant capacity utilization over the entire year. This secures sales during periods of peak orders, makes production smoother, saves on unnecessary extra work and simplifies planning.
- Already before filling, the empty bags need less space in transport and storage – thus leading to lower costs. Moreover they can be stored outdoors and so reduce the need for roof cover. The employees save time with ordering and the feeding of the filling machines.
- Because of low dust levels during filling there is less wear and tear to the machines and downstream systems. The needed materials for maintenance and repair decrease and machine downtime is reduced. The results: constant production capacity utilization and lower operating costs.



■ By using PE bags you can also significantly save on energy and reduce CO₂ emissions.

14 | 15

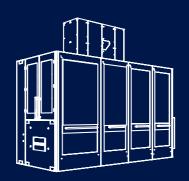
THE THREE RIGHT ONES WHICH SYSTEM FITS YOUR BUSINESS?





Adapted to your individual performance requirements, this system ensures maximum performan- terized by two filling spouts and ce with 4 rotating spouts when filling your powder products into PE bags.

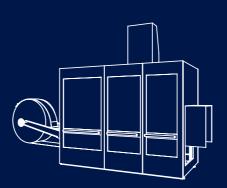
PAGES 18|19



INTEGRA® 2

This extremely space-saving and complete filling system is characrapid, on-site installation and operation start-up when filling your powder products into PE bags.

PAGES 20|21



INTEGRA® 1

This extremely space-saving and complete filling system is characterized by rapid, on-site installation and operation start-up when filling your powder products into PE bags.

PAGES 22|23

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CHOOSE YOUR FILLING MODULE FOR YOUR RS-SERIES:

The properties of your product determine the filling module. If you are packing fine powders, you'll choose the T-module. The "T" stands for "turbine", which means impeller. The product is transported into the bag by means of a turbine. The T-module is available in vertical and horizontal versions.

If you are packing mixed products that differ in grain size, select the L-module. "L" stands for "air". In this process, the product is conveyed from the pressure chamber into the bag by means of air pressure. The L-module is available in two versions, either with an angled or a fully ventilated base plate in the pressure chamber.

We offer the turbine filling technology and the air filling technology as a ST-module and a SL-module for the use of tubular film.

The two RS-modules are equipped with either a vibrating bottle or a vacuum lance to optimize deaeration during the filling process.

SL-Module (air) Tubular Film



ST-Module (turbine) Tubular Film



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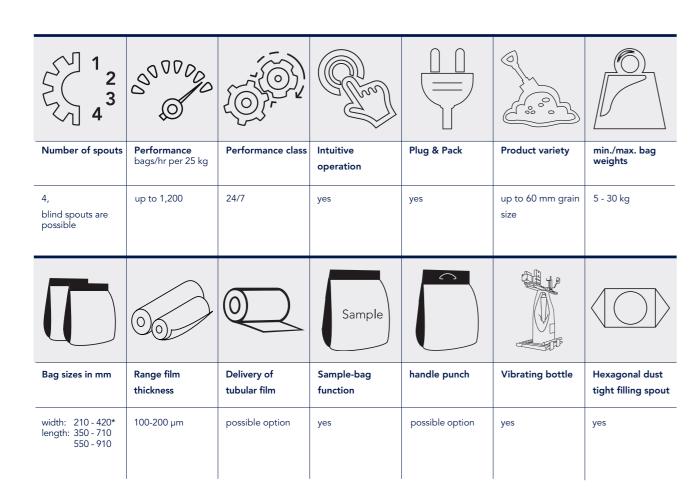
TECHNICAL DATA

ROTO-PACKER® 4 RST/RSL ADAMS® EDITION



With our sustainability campaign "Planet Blue", we're directing our ideas and actions towards a world in balance

Adapted to your individual performance requirements, this system ensures maximum performance with 4 rotating spouts when filling powder-type products into PE bags.



^{*} Actual width range depends on bag material and filling spouts.



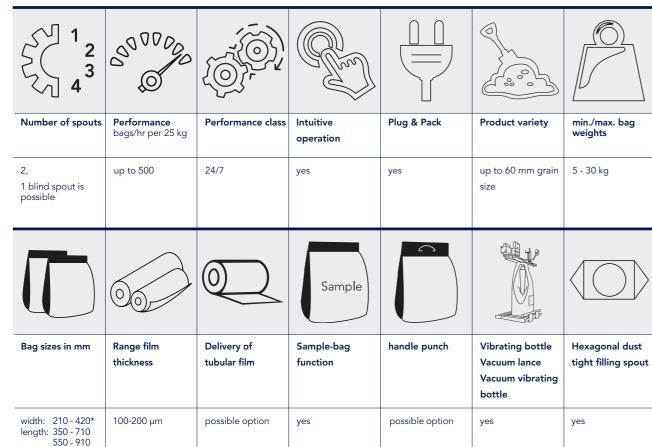
20 21 HAVER & BOECKER

TECHNICAL DATA

INTEGRA® 2 RST/RSL ADAMS® EDITION

With our sustainability campaign "Planet Blue", we're directing our ideas and actions towards a world in

This extremely space-saving and completely filling system is characterized by two filling spouts and rapid, on-site installation and operation start-up for filling powdery products into PE bags.



length: 350 - 710 550 - 910 * Actual width range depends on bag material and filling spouts. 22 | 23 HAVER & BOECKER



TECHNICAL DATA

INTEGRA® 1 RST/RSL ADAMS® EDITION



With our sustainability campaign "Planet Blue", we're directing our ideas and actions towards a world in balance.

This extremely space-saving and completely filling system is characterized by rapid, on-site installation and operation start-up for filling powdery products into PE bags.

| 1 2 3 Number of spouts | Performance | Performance class | Intuitive | Plug & Pack | Product variety | min./max. bag |
|------------------------|----------------------|--------------------------|---------------------|--------------|--|------------------------------------|
| rumber or spouts | bags/hr per 25 kg | r criormanec class | operation | riug a ruck | r roduct variety | weights |
| 1 | up to 250 | 24/7 | yes | yes | up to 60 mm grain size | 5 - 30 kg |
| | | | | | | |
| | 000 | | Sample | | | |
| Bag sizes in mm | Range film thickness | Delivery of tubular film | Sample-bag function | handle punch | Vibrating bottle Vacuum lance Vacuum vibrating bottle | Hexagonal dust tight filling spout |

^{*} Actual width range depends on bag material and filling spouts.



24 25

ACCESSORIES

26 27 HAVER & BOECKER

ACCESSORIES

QUAT²RO® Monitoring



Intelligent system monitoring

- Monitor the production of your machines in real time
- Recognize wear and tear at an early stage
- Increase your efficiency by comparing the machine data
- Proactively plan your maintenance based on the machine data
- Check machine settings and optimize your planning

QUAT²RO® Remote Service



Remote support by experienced OEM-experts

- Enjoy the OEM security that your systems work optimally
- Get concrete advice on technical and filling questions
- Enjoy knowing there is always someone who can help
 Motivate your team and give
- them safety

 Offer your team a perfect support with learning effects
- Reduce your downtimes

QUAT²RO® Analytics



Make the long-term interpretations of your system data usable

- Convert these insights into profit and optimized operating conditions
- Take advantage for predictive maintenance and optimum spare parts stocking
- Profit from ideal maintenance work time management
- Motivate your team, give them confidence and the perfect support with learning effects
- Reduce machine downtime

QUAT²RO® DPS Data processing system



Software for storage and evaluation of weighing data

- Informs continuously about product quality
- Display can be individually configured
- Saves data as proof of your quality controls
- Offers export and import of data integration

Metal detector Che



potential.

Control instrument for non-metallic bulk materials

- Finds impurities in the productReduces personnel costs in quality
- inspection

 Minimizes disturbances in the
- Compact design facilitates integration

filling process

Check weigher



If you want optimum results, you can equip your ADAMS® system with the appropriate additional technology. In interaction, the machine shows its full

Weighing technology from the company Wipotec

- Offers automatic weight control/ check weighing
- Shows adjustable tolerance rangeIs the feedback control to
- the filling spout

 Ensures proper filling
- Regulates the perfect filling

Automatic bag discharge



Control and rejection of defective bags

- Transports rejects to material return
- Provides real-time information on product quality
- Can be individually configuredOffers export and import of data

Module for safe full bag transport

Pallet press

• For the safe transport, the bag stacks are carefully pressed before stretching

Bag scanner



The bag scanner as a reliable control unit

- Checking whether it is the correct tubular film for the selected product
- Control whether the printing is correct, if a printer or labeler is connected upstream

Fully automatic reel changer



Film reel changer for highest production output

- Increased economic efficiency through reduced downtimes
- High degree of automation
- Product variety
- Short set-up times

r Printing systems/Labelers



Position accurate bag printing



- Empty bag printing by laser (CO₂ and fiber laser), inkjet or labeler
- Full bag printing by inkjet

Belt conveyor



Modules for complete full bag transport

- Various adjustable elements
- Guarantees proper filling
- Increases process reliability
- Optionally completely encapsulated

Palletizer



Module for automatic full bag transport

- Fully automatic palletizing of full bags
- Adaptable to any packaging capacity
- Careful bag handling ensures a stable pallet pattern and safe transport

Hood and wrap stretchers



Module for safe full bag transport

- Fully automatic systems for safe transport protection
- Stabilization of critical cargo areas

Pallet loading system



Fully automatic loading

Safe and effective: your loading process is not a bottleneck

HAVER Service Pad



Mobile control device in tablet format

- Increases ease of use in daily operation
- Enables remote control and troubleshooting
- Connects quickly with HAVER & BOECKER Remote Service
- Integrated camera for photo and video recording

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THIS MIGHT ALSO BE OF INTEREST TO YOU



Decisive Basic

Our HAVER & BOECKER Institute is the place where we bring our packing triangle to life. Here we take such a close look at your product so that we can define the ideal machine technology on the basis of the results, and then design the packaging or screening media to fit it precisely.



Bag consulting service

We know your equipment very well and we'll support you in optimizing your bags. We'll advise you on functionality, filling speed, order quantity, valve closure, cleanliness, efficiency, costs and quality.



Bag design

The overall composition of a package, consisting of the brand message, the design and the performance, influences the purchase decision. We show you what really matters.



Starter kits

Are you planning a new packing line? Keep the focus on starting the process with the new technology and on your operational business. We take care of your perfect packaging, from the design of the bag to production.



Daniel Denisow

Area Sales Manager

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E-mail: d.denisow@haverboecker.com



Consume intelligently

Did you know that some processes spend more money on the annual requirement of consumables, than they spent on the original one-time investment of equipment, which requires them? Consumables are the fuel for your process. You need the right material for peak performance and success. We consult, design and even provide your consumables for every step and phase of your project. Regardless of whether you are commissioning, ramping up or you simply want to optimize your process on an ongoing basis.



Empty-bag collection

The film bags can be emptied of residue and thus are easily recyclable. In theory, this is clear to us and our customers. A look in practise shows that film packaging is definitely collected and disposed of in a targeted manner. The residual waste container is the most expensive disposal. The realization that films are recyclable materials is steadily increasing. It is a pleasure for us, trying to develop a collection-system for you! Let us talk about it!



Identify the root causes

Every good doctor knows: The key to good health is not treating symptoms, but identifying the cause. Your process is no different. Don't spend an endless amount of time and energy fighting the symptoms. Remedy the cause with our help and with smart services, software and analytical devices. Because only healthy processes are really economical.



Uncompromising solutions for your processes

Nothing is more important to your success than your own product and workflow. Therefore, don't compromise when it comes to your packing process: Make sure your systems and equipment are designed to meet the specifications of your products, not the other way around. Rely on a family of specialists to get the job done as profitably as possible.

30 31 HAVER & BOECKER

ONE HOUSE, THREE FAMILIES

May we introduce: High-performance packaging technology from HAVER & BOECKER in Oelde, Westphalia. With our V-Series for valve bags and our S-Series for tubular film performing the whole world of bulk packing.

ROTO-PACKER® ROTO-PACKER® 10 ADAMS® EDITION ROTO-PACKER® 10+ ROTO-PACKER® RST / RSL ROTO-PACKER® RVT / RVL ADVANCED ROTO-PACKER® RVT / RVL SEAL EDITION **RADIMAT®**

THE ORIGINAL ROTO-PACKER®

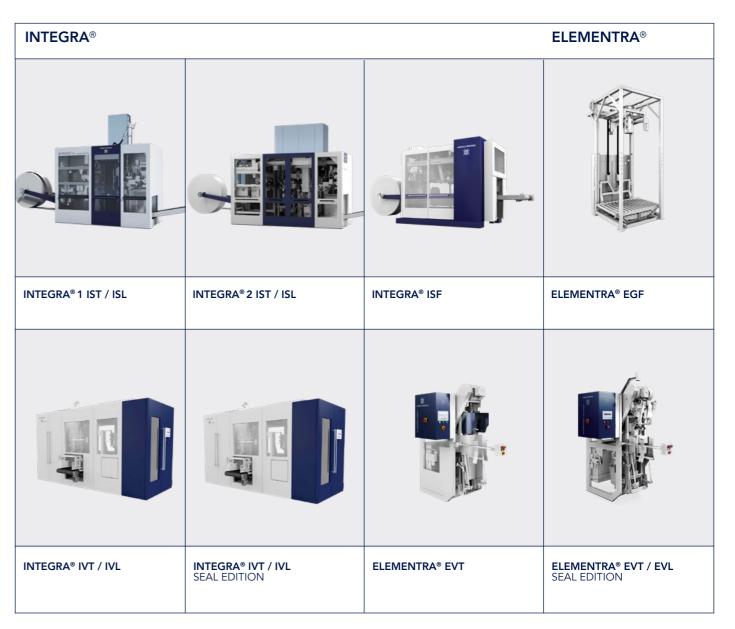
The rotating one. Since 1960, the ROTO-PACKER® has been rotating. Today, it is the best-selling high-performance packaging system in the world. No wonder: After all, we developed it in close cooperation with you, our customers. For a clean, safe and profitable filling process.

THE INTEGRA®

The comfortable one. Here everything is in one machine housing. The latest generation of the packaging system INTEGRA® fills almost any product and runs fully automatically. Plug and Pack! For paper or plastic valve bags, FFS film, pre-made openmouth bags and mini valve bags.

THE ELEMENTRA®

The variable one. You want a system that adapts to every your needs?
The ELEMENTRA® includes a series of components that you can easily replace. A semi-automatic packaging system for big bags and buckets and for paper or plastic valve bags.

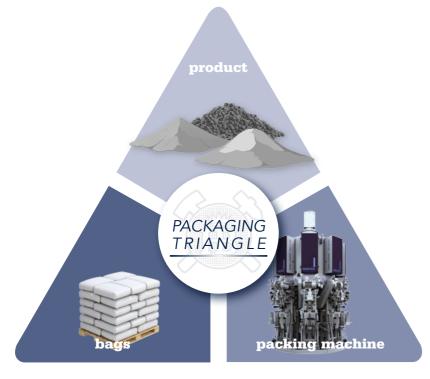


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WE DO WHAT WE KNOW AND WE KNOW WHAT WE DO!

Mastering the interaction within the packaging triangle between product, packaging material and machine technology is the basis of our expertise and the starting point to make your process flow perfectly.





Sustainability for a livable future

Sustainability is a core value for us: We make decisions taking into account long-term consequences for the HAVER & BOECKER family, for the entire universe of our customers and for the well-being of future generations. We follow this fundamental approach and strive with all our technologies to improve living conditions for humanity. That's our mission!



PROCESSING STORAGE MIXING FILLING PACKING PALLETIZING LOADING DIGITALIZATION















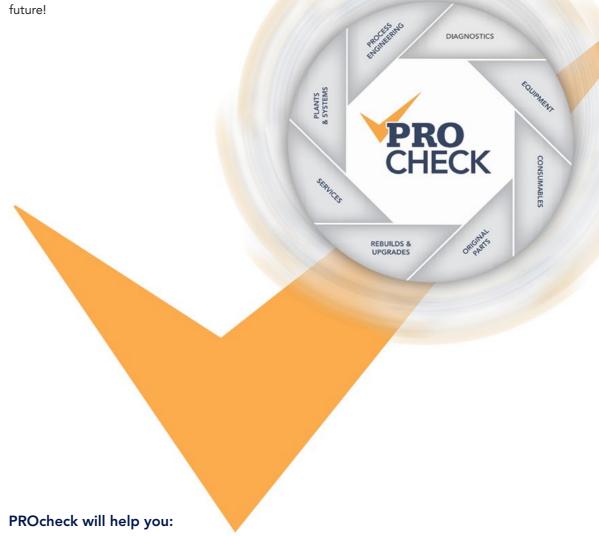
AVENTUS





PROcheck systematizes all instruments and actions with which you can keep an eye on the efficiency and potential of your processes at all times and optimize your success: diagnostics, equipment, consumables, original parts, rebuilds & upgrades, services, plants & systems, process engineering.

With PROcheck, we show you very specifically where and how you can sustainably maximize your productivity and thus your results over the entire life cycle of your plants, systems and machines. So that you'll be also in perfect flow in the



8





product loss



resources











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