



HAVER & BOECKER



ELEMENTRA® AND INTEGRA®
WITH FILLING SYSTEMS FOR EVERY APPLICATION

FASCINATING ENGINEERING. **AS ONE.**



CONTENT

ELEMENTRA 4-5



FILLING SYSTEMS
IMPELLER
vertical / horizontal

6-9



FILLING SYSTEM
AIR ENTRAINMENT

10-11



FURTHER FILLING
SYSTEMS

12-13



COMPONENTS-

14-15



SEAL TECHNOLOGY

16-17



BAG PLACING
TECHNOLOGY

18-19



INTEGRA®

20-21



PALLETIZING
SYSTEMS

22-23





STATIONARY PACKING SYSTEM

ELEMENTRA®

ELEMENTRA® are stationary packing machines for filling fine and coarse bulk materials into 25 to 50 kg valve bags made of paper, polyethylene or polypropylene. Also mixed and granulated products can be filled with our ELEMENTRA®.

Your speed requirements determine whether the HAVER ELEMENTRA® packing machine is equipped with one, two, three or four spouts. The ELEMENTRA® is available in manual, semi-automatic or fully automatic versions. That means a manual or automatic bag placing is possible. To boost productivity, it is also possible to add a HAVER & BOECKER automatic bag placer.

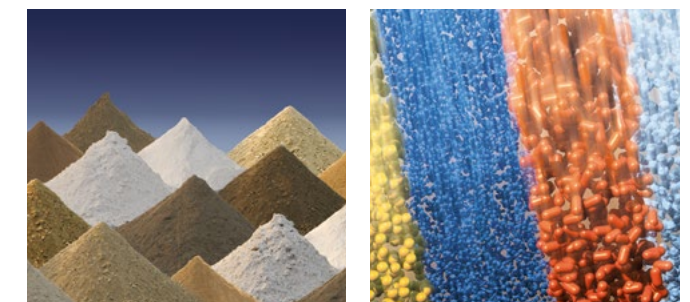


HAVER & BOECKER has optimum solutions for

- Every bulk material property
- Every commercially available valve-bag type and dimension
- All customer requirements, tailored to fulfil local requirements

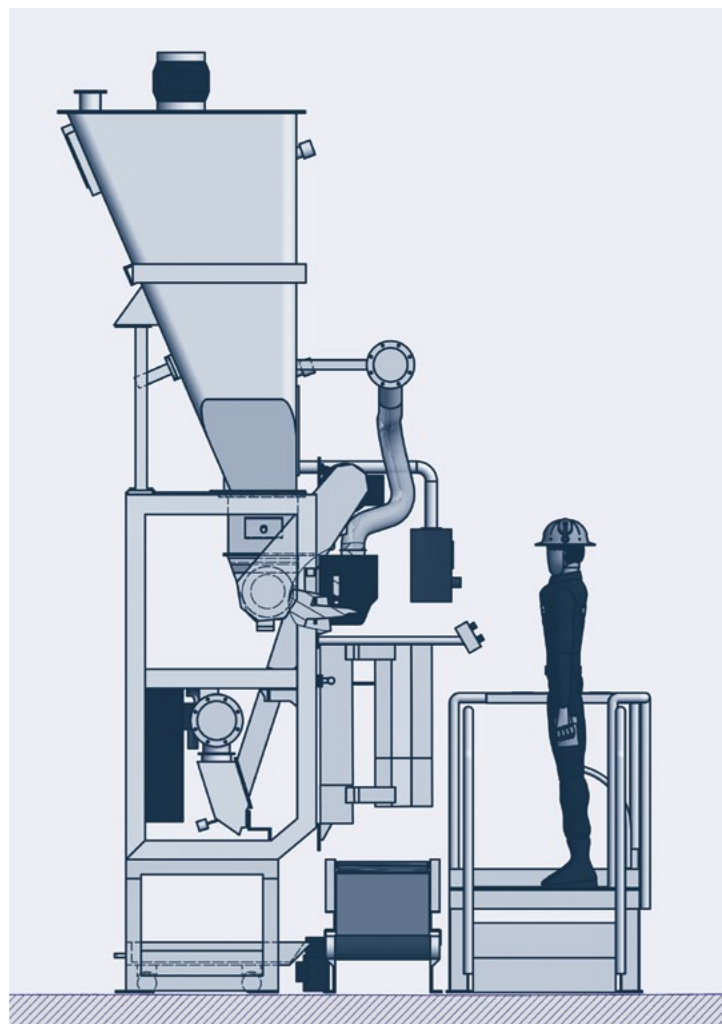
Optimum concepts, analyses, tests Successful and complete system solutions are based on HAVER & BOECKER's analytical approach and its broad-based expertise and experience with:

- Continuous research and development
- Its own in-company laboratories
- Its own, self-developed test methods
- Detailed sampling for determining product flow characteristics
- Exact air permeability tests on empty bags using precision instruments
- Economically sound concepts
- Assessment and design of the paper and plastic packaging means
- Vertical Impeller Filling System



ELEMENTRA® for filling granulated, mixed and powder products

- Horizontal Impeller Filling System
- Air Filling Systems
- Further Filling Systems:
 - Gravity Filling Systems
 - Auger Packer
 - Pump Packer
- System Components
- HAVER & BOECKER Bag Application Technology
- INTEGRA®
- HAVER & BOECKER Palletizing Systems

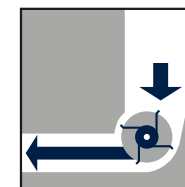


HAVER & BOECKER VERTICAL IMPELLER

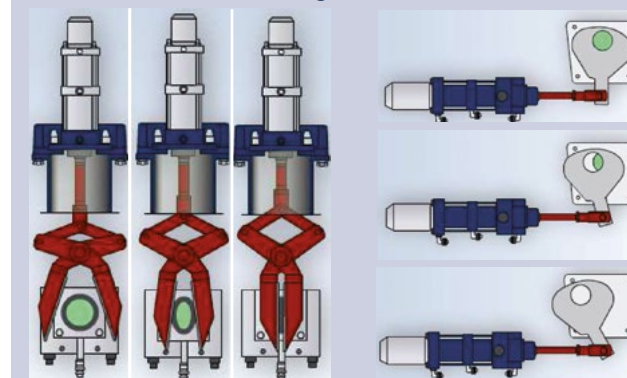
HAVER & BOECKER valve bag filling machines using the vertical impeller filling system are a highly successful technology for filling loose, powder-type bulk material into valve bags according to the gross weight system.

Your benefits

- Production rate of up to 350 bags/hr
- Precise weighing during the filling process
- High compaction levels
- Low aeration amount during filling produces high density packaging
- Minimal spillage
- Rapid emptying of the packing silo and filling machine via a second (optional) impeller outlet
- Easy accessibility for effective maintenance and cleaning
- Modern drive system design and optimally designed wear parts assure maximum operation time for a higher availability and a low-wear filling of abrasive products



HAVER Filling shut-off valves



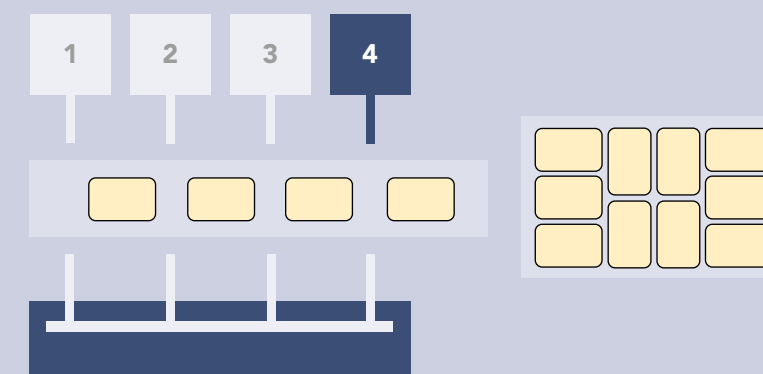
Pinch valve

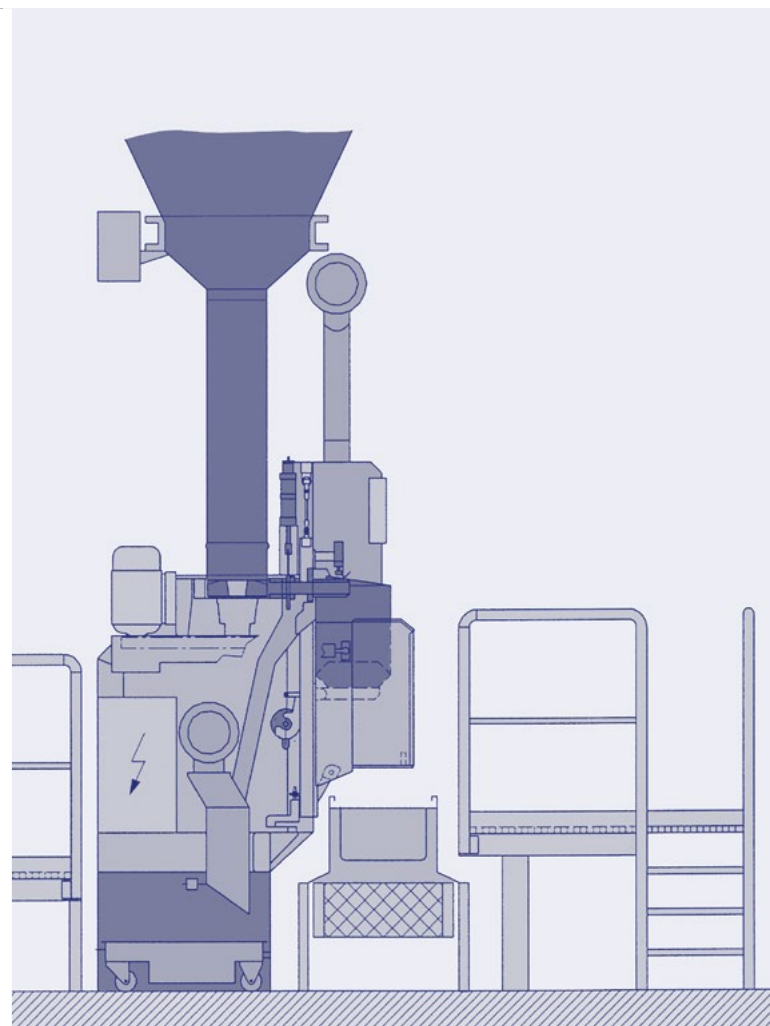
Slide valve

The new dosing unit ROTO-LOCK®



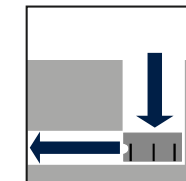
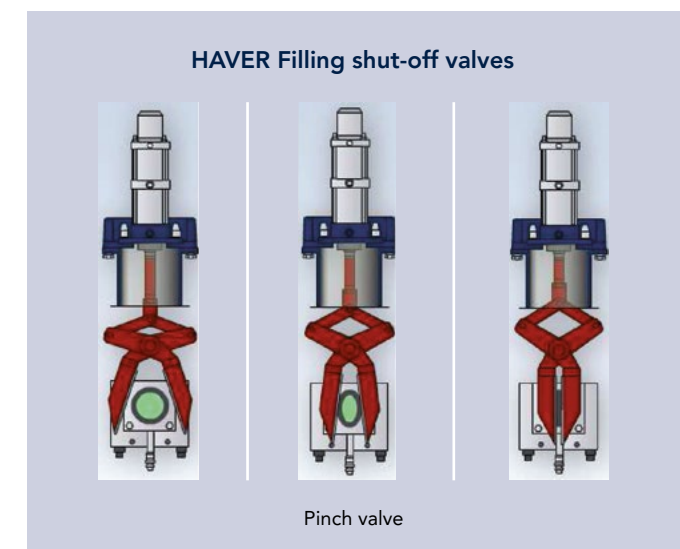
From the 1-spout filling machine with manual operation through to the 4-spout INTEGRA® with empty bag cellular feeder





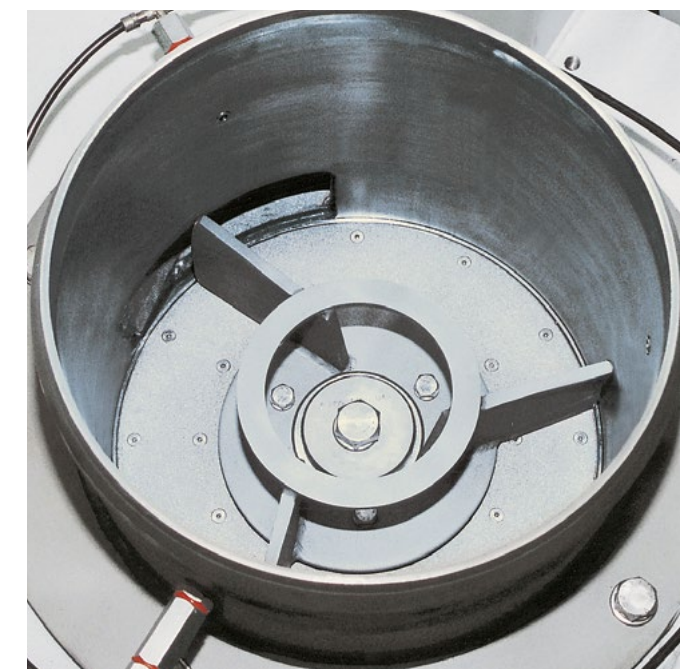
Your benefits

- Special adaptability to different materials and material flow characteristics
- Large material inlet cross section
- High filling speeds
- Continuous material feeding (no clogging, no bridging)
- High filling speeds while maintaining tight weight tolerances

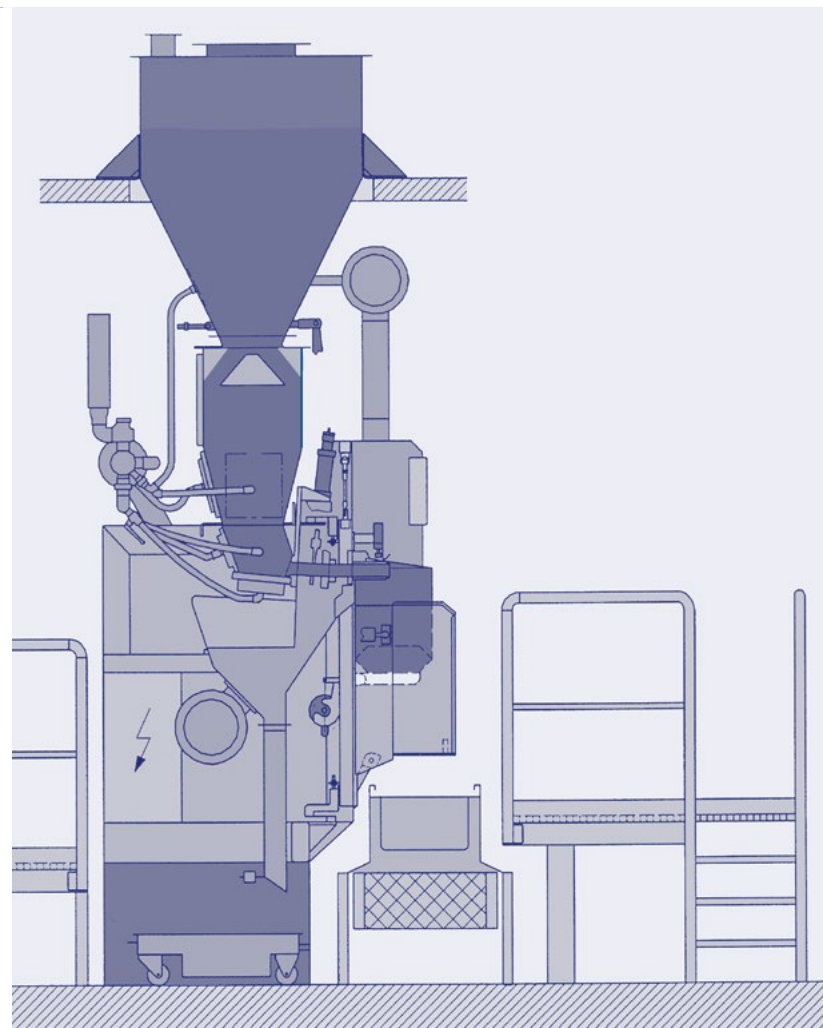


HAVER & BOECKER HORIZONTAL IMPELLER

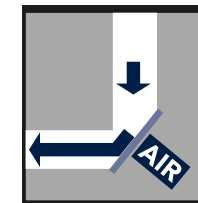
Through continuous development, HAVER & BOECKER's horizontal impeller filling machine is designed to pack highly flow-resistant, powder-type, loose materials that are prone to clogging.



HAVER & BOECKER horizontal impeller with servo-drive



The air filling machine according to the gross weight filling system is used for filling free flowing materials as well as filling technically difficult powder-type and granular products.



The pressure chamber aeration concept provides optimum product flow with minimal air consumption. Aeration rates depend on the product characteristics and are individually adjustable.

The universal air filling system has gained wide acceptance for filling fine to granular products into valve bags.

Inline filling machines are available for manual or fully automatic operation and for integration into existing packing plants with up to four filling spouts. Universal application for filling many products types, which vary in particle size and density, where the air flow rates can be optimally adjusted independent of each other and where the air pressure can be centrally regulated.

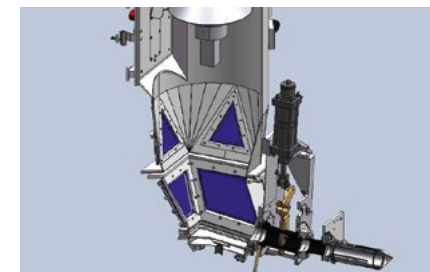
Your benefits

- Gentle product handling
- Material components do not become separated during the packing process
- Production rates of up to 400 bags/hr per filling spout
- High weight precision
- Fully aerated pressure chamber
- Homogeneous product/air mixture
- Dust minimization
- Automatic cleaning program
- Trouble-free filling of paper, PE and PP valve bags
- Operator friendly design
- Entire system requires minimal maintenance
- MEC® weighing electronics with spout control and setting options

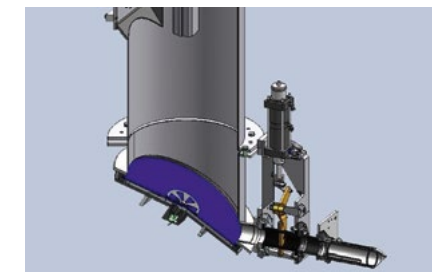
As an option, this adjustment process may be automated via the sort selection of the HAVER & BOECKER weigher electronics.

HAVER & BOECKER AIR ENTRAINMENT

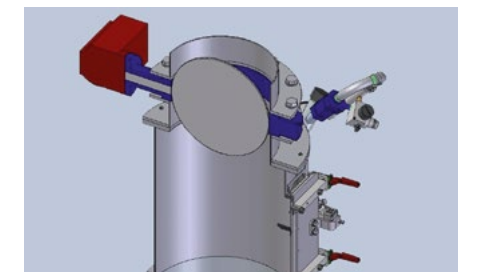
The ideal area of application is the packing of products that consist of a mixture of fine and coarse particles.



Conical valve in our universal air filling system



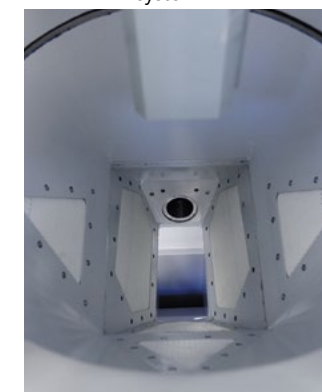
Conical valve in our inclined bottom air filling system



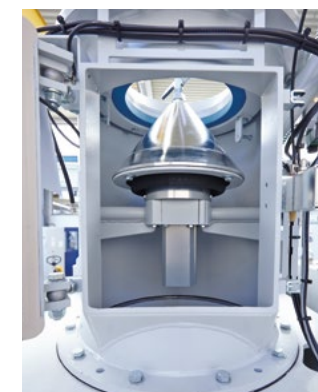
Butterfly valve



Cone from above



Fully aerated



Maintenance flap at the pressure chamber



Maintenance flap at the filling box chamber



Gravity packer / gross



Gravity packer / net



Pump packer

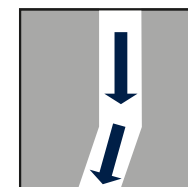
FURTHER FILLING SYSTEMS

GRAVITY, AUGER AND PUMP PACKER

GRAVITY FILLING SYSTEM

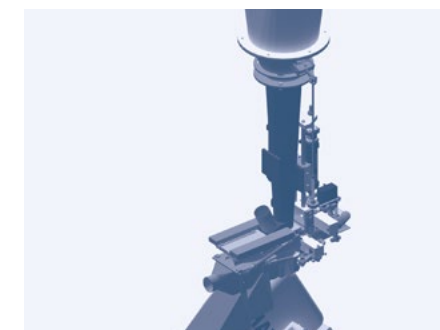
The HAVER & BOECKER Gravity Packer is the all-round solution for grainy, granular and lumpy products.

The product is filled according to the gravity principle – without additional conveying air or mechanical assistance. For optimum product densification the packer can be extended to incorporate a vibrating compactor.



Your benefits

- Cost efficiency through the compact, low-maintenance machine design
- Ease of operation through the clear machine design
- Fully automatic ultrasonic valve sealing possible

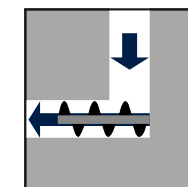


Gravity filling system

AUGER PACKER

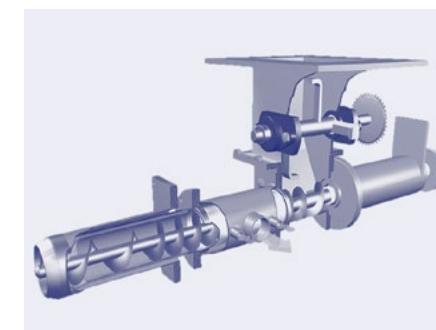
The HAVER & BOECKER Auger Packer is used for the compact filling of badly flowing light products.

The constant product flow into the auger housing is achieved by the continuously operating agitator positioned above the dosing auger. The rotation speed of the dosing auger is adjusted to your product and your requirements for weight-accurate coarse and fine flow product dosing.



Your benefits

- Space savings from the low machine height of only 1,560 mm
- Material savings through the compact filling of very fluidized products
- Improved product storage from the filling of tight bags

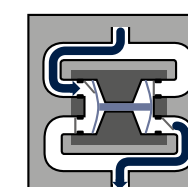


Auger packer

PUMP PACKER

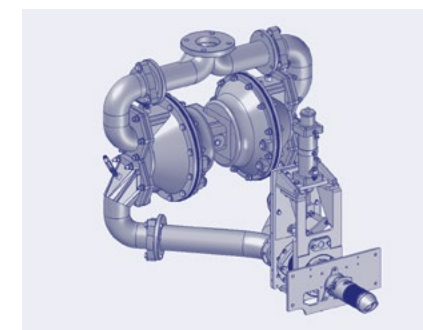
The HAVER & BOECKER Pump Packer is appropriate for filling of products with low density.

The product transport is made by means of a double-acting diaphragm pump. Since the system is self-priming, it is often possible to do without a packing silo. This filling system can be completed by a pressing station.



Your benefits

- Bag filling with low amount of air
- Compact bags due to an integrable pressing station for improvement of performance and shaping of the bags
- Optimal weight accuracy
- Ultrasonic valve sealing possible



Pump packer



HAVER & BOECKER Filling tube variants

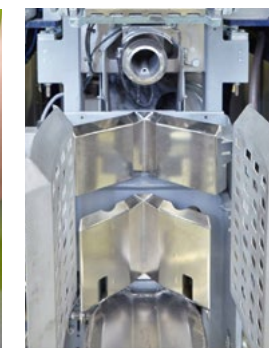
HAVER & BOECKER COMPONENTS

For our different filling systems, we offer a variety of system components:

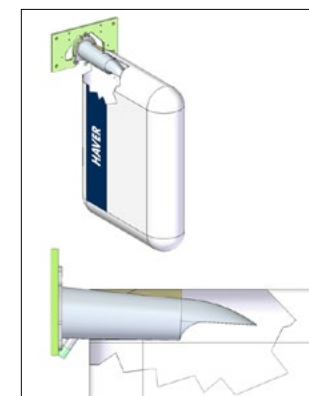
- spillage rejector
- various types of filling tube
- pressure jaws
- various types of bag chairs



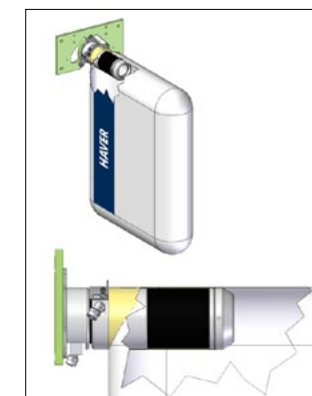
Minimal bag valve extension



Pressure jaws



Filling tube: conical design



Filling tube: with inflatable sleeve

The spillage rejecting flap

offers a big improvement in bag cleanliness. During discharge, the rejecting flap prevents the bag from becoming contaminated with product that could drip out of the filling tube. The rubber flaps are activated automatically.



Spillage rejecting flap during filling process



Spillage rejecting flap during bag discharge

HAVER & BOECKER BAG CHAIR VARIANTS



1 - Bag chairs for manual removal, manually height adjustable
For machines with the manual removal of filled bag, the bag chair may be adjusted to suit the length of the bag using just a few motions of the hand.

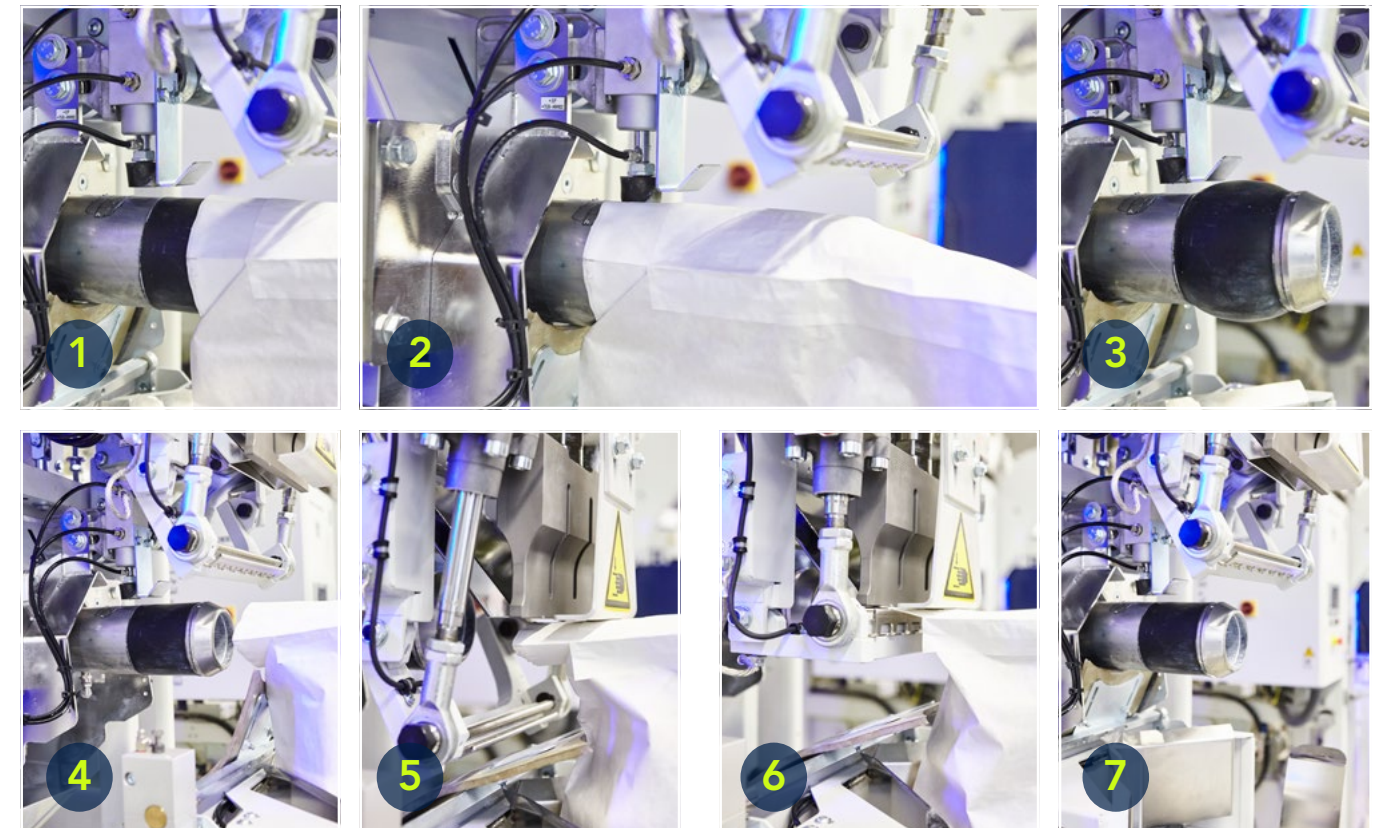
2 - Bag chairs for automatic, vertical bag discharge - manually adjustable (optionally motor-driven, continuous)
When only one bag size is used or when bag changeovers are seldom, then the tip-chair for automatic discharge may be height-adjusted using standard tools.

3 - Bag chair for automatic vertical bag discharge, motorized, continuous height adjustment via bag type pre-selection
For different bag lengths and frequent sort changes, the automatic bag chair height adjustment (through a gear reduction motor and spindle) is recommended. Adjustment is done simply by a sort selection key during product or bag changeovers.



COMPACT, CLEAN AND COMPLETELY CLOSED PACKAGE SEAL TECHNOLOGY

All we need in the face of change and challenge is the courage to take the next step, even more so, if everybody benefits from it. The SEAL Technology is developed with one target in mind: to create a new standard when it comes to cleanliness, safety and profitability of traditional valve bag filling technology. And this is how it works:



1 The bag is automatically or manually placed on the filling tube.

2 The bag holder fixes the bag, a pneumatic sensor checks whether a bag is correctly placed, and whether it is in the correct position.

3 The activation of the inflatable sleeve seals the bag valve during filling, and ensures that no product escapes between the bag valve and the filling tube during the filling process.

4 After filling, the upright bag is pushed from the filling tube into the sealing position. This process ensures that no product escapes from the still open bag valve.

5 The ultrasonic sealing unit automatically moves to the bag valve.

6 The bag valve is closed via ultrasonic sealing by pressing the anvil against the Sonotrode, heating and closing the valve with a high frequency of 20,000 Herz. The sealing time for most common types of sacks is about 0.5 Seconds.

7 After the sealing process, the ultrasonic sealing unit opens, returns to the initial position and releases the bag for discharge. A new cycle can begin.

A separate valve closing unit on every filling spout

For greater cleanliness over the entire filling and subsequent transport process - until the bag reaches the consumer - we recommend equipping your ELEMENTRA® with an ultrasonic bag closing unit.





ELEMENTRA® with movable automatic bag placer - bundle system

HAVER & BOECKER BAG PLACING TECHNOLOGY

Automatic bag placers by HAVER & BOECKER for valve bags automate and enhance the packaging process.

In contrast to manual bag placing, they ensure the high efficiency of a packing machine. Empty valve bags – from a bundle or a reel – are placed mechanically onto the filling spouts of the packing machine and adapted to its speed. The placing process is consistent and reliable. The types of bags that can be used are glued valve bags made of paper, polyethylene or polypropylene. The placing technology is easily adaptable to different bag sizes.

The automatic bag placer compact by HAVER & BOECKER can be used with stationary packing machines with 1 to 4 filling spouts.

Your benefits

- Capacity of up to 900 bags/hr
- Compact design
- Low-wear drive engineering
- Easy and fast adjustment to different bag sizes and types
- Integrated bundle magazine carriage with a storage capacity of 200 to 250 bags
- If required, usage of different types of empty bag magazines



Magazine carriage



Vertical magazine



Empty bag cellular feeder

The automatic bag placer LV-Z (traversing linearly, cellular feeder) by HAVER & BOECKER is a compact and flexible, linear high-capacity placing system. It is the optimum solution for the automation of your multiple-spout inline packing plant.

Your benefits

- Capacity of up to 1,300 bags/hr
- HAVER & BOECKER valve bag placing technology, modular integrated
- High availability and maximum efficiency in all performance areas
- Universally usable with respect to bag materials and provisioning of empty bags
- Reliable processes and sensitive control systems

Your output requirement determines what kind of empty bag provisioning system will be used.

Depending on the required storage capacity and the available space, different empty bag provisioning systems can be used:

- Vertical bundle magazine (400 to 500 bags)
- Empty bag cellular feeder (450 to 550 bags, depending on its length)
- Reel magazine

The system can be quickly and flexibly adapted to different types of bags. HAVER & BOECKER automatic bag placers are of modular and compact design and require little space.

Flexible installation

Your automatic bag placer will be adapted to your local and specific conditions! This is made possible by the construction of the HAVER LV-Z according to the proven modular system. The empty bag provisioning system can be installed on the right or left side of the ELEMENTRA®. This way the filling plant can be manually operated and maintained from the front without barriers.



STATIONARY PACKING SYSTEM

INTEGRA®

Fully automatic filling system for valve bags made of paper or PE in modular design, completely assembled and available with 1-4 spouts.

The INTEGRA® is a completely assembled filling system for loose materials inside a dust-encapsulating housing that consists of the following components:

- Filling machine
- Valve sealing system
- Bag placer
- Control system
- Operating unit
- Bag discharge belt

It is a turnkey unit that is ready to operate and allows rapid on-site installation and start-up. Only the product and energy supply systems need to be at hand at the customer's as well as a final assembly for a 3-spout and a 4-spout system.

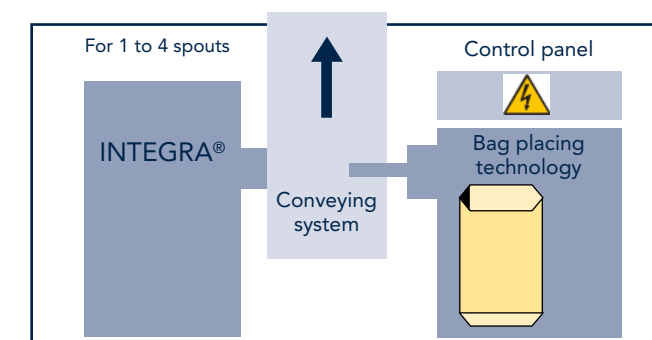
Explosion protection is a part of the technology that has to do with prevention of the occurrence of explosions



and their impacts. This belongs to the field of Safety Engineering and has the purpose of preventing damage by technical products, systems, and other equipment to persons and property.

Explosion protection consists of technical solutions such as ignition protection types and legal requirements such as the ATEX Directives of the European Union.

The INTEGRA® has received the European type approval from DEKRA EXAM. Qualified HAVER personnel check systems that require monitoring in the ATEX range.

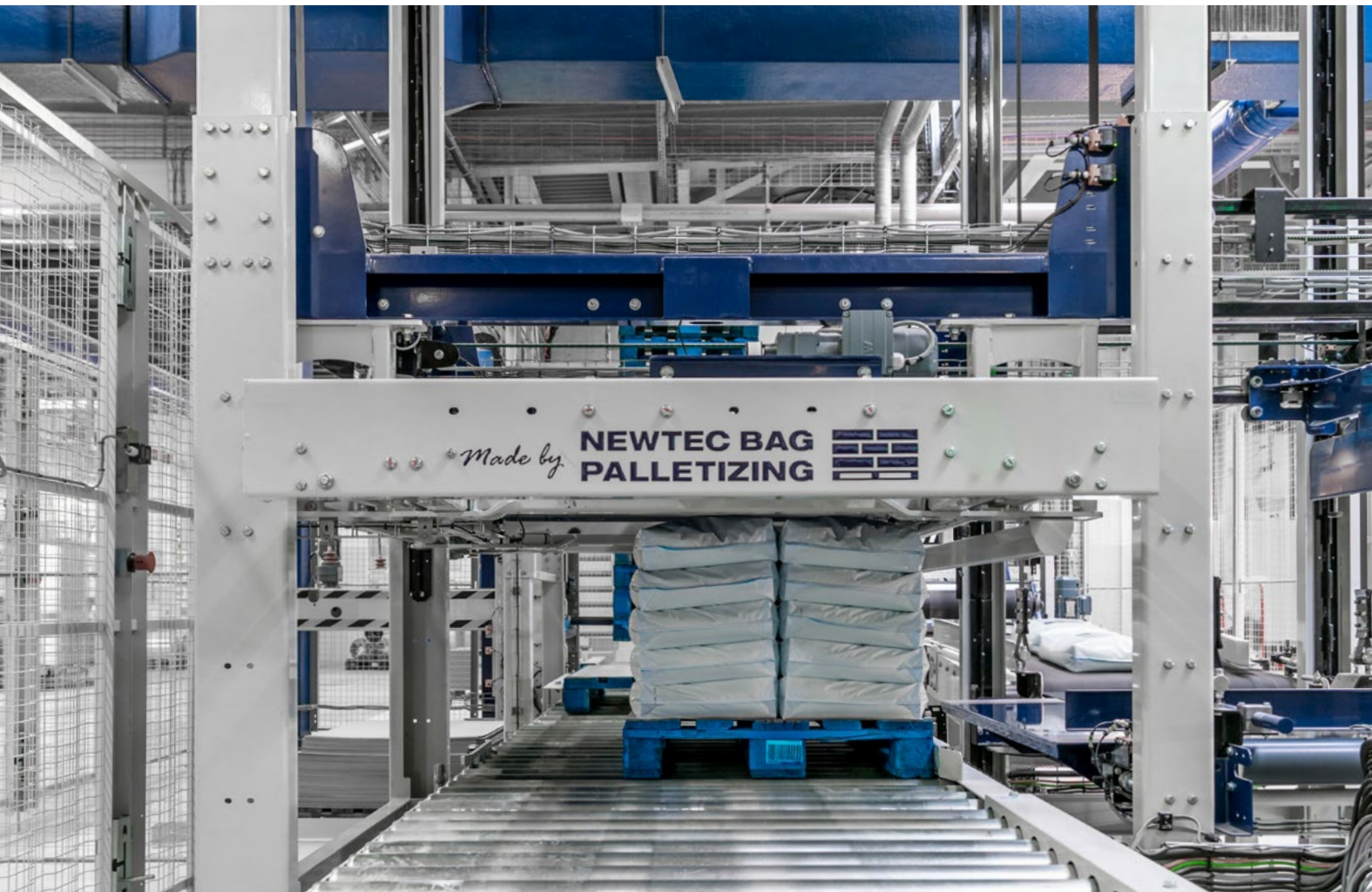


Other INTEGRA® system characteristics:

- Compactness = minimal space requirements
- Encapsulated (less noise and dust emissions)
- High operational reliability
- Easy installation and start-up, easy to reposition or move if needed
- Greatest possible flexibility, rapid changeovers to other bag types or products
- Large maintenance doors, easy access to all components
- Scratch-resistant safety glass for easy viewing
- Operating terminal
- Operator guidance in dialog (text messages) and machine setting

INTEGRA® performance overview		
Spouts	up to bags/hr	to range from
		10 to 50 kg
▼		▼
1		300
2		600
3		900
4		1200
depending on the product		





The palletizer - G 300 series - is designed for low capacities of up to 300 bags/hr of 5 to 50 kg.

HAVER & BOECKER PALLETIZING SYSTEMS

made by NEWTEC BAG PALLETIZING – your products are firmly and cleanly palletized.

The Automatic HAVER & BOECKER Palletizing Systems

Your bags are packed. They are tight, clean and offer optimum protection of your products. But: They have not yet arrived at your end-users' sites. Before they have to be stacked accurately and the pallets have to be packed carefully in order to:

- Protect the filled bags against damage
- Optimally use the available loading space and avoid loss of space due to irregular bag piles
- Avoid loss of time during handling and transport because of badly stacked pallets
- Prevent the pallets from tumbling due to irregular bag piles



The palletizer - 4000 series - is used in the building materials industry and is suited for capacities of 2,500 - 4,000 bags/hr.

In order to successfully implement these goals in your company we offer an extensive programme of packaging systems and palletizers in close cooperation with our subsidiary NEWTEC BAG PALLETIZING:

■ Pallettizer G300

for bag palletizing by a robotic gripping arm
This palletizer is especially suitable for low-output applications of up to 300 bags/hr with bag weights of 5 up to 50 kg.

■ Palettizers - Series 500/1000/2000 to 5000

Bag palletizing row by row
These palletizers are equipped with simple, reliable and proven kinematics. The modular machine design ensures optimum palletizing results. This model is particularly designed for applications of up to 5,500 bags/hr with bag weights of 10 to 50 kg.

Together we are strong

Optimally stacked and packed pallets help you save time and money. As overall costs can thus be reduced, the profit is increased. In addition, nicely stacked pallets have an excellent advertising impact.



QUAT²RO[®] – SMART SOLUTIONS FOR YOUR PRODUCTION PROCESSES



Process Automation
PLC-based process automation and communication (QUAT²RO[®] Basis).



Production Management System
Integration of all machines and components in the production facility with ERP-system for bidirectional data exchange (QUAT²RO[®] Production).



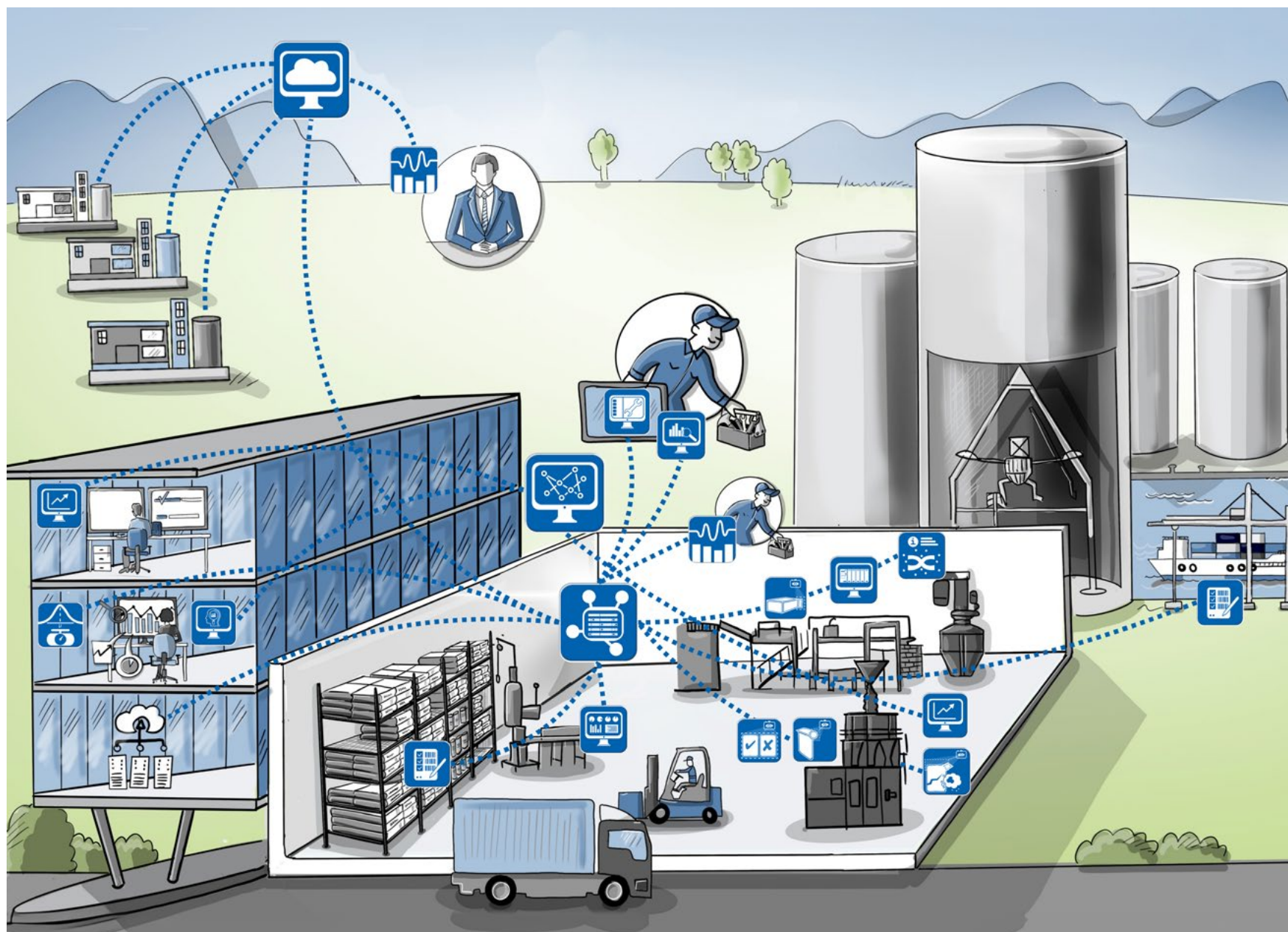
Mixing Process Management
Precise mixing processes, consistent quality, and full traceability (QUAT²RO[®] Batch).



Weighing Data Statistics
Capturing, displaying, and statistically analyzing weighing data (QUAT²RO[®] Data).



Intralogistics
Automation system for digitalized and automated intralogistic processes (QUAT²RO[®] Logistics).



Process Visualization
Supervision and operation of the plant processes (QUAT²RO[®] Process Visualization).



Remote Service
Direct support from our OEM service experts for any situation (QUAT²RO[®] Remote).



On-premise All-in-One Data Hub
The central, locally operated platform for capturing all production events – serving as the base for applications such as QUAT²RO[®] Insights and QUAT²RO[®] Dashboards (QUAT²RO[®] Connect).



Production Insights
Comprehensive analyses of downtime and machine metrics (QUAT²RO[®] Insights).



Production Dashboard
Customizable real-time dashboards for machine events (QUAT²RO[®] Dashboard).



Cloud-based data platform
... for the two applications: QUAT²RO[®] Monitoring and QUAT²RO[®] Analytics (QUAT²RO[®] System Intelligence).



Monitoring System
Real-time system data for machine and maintenance information (QUAT²RO[®] Monitoring).



Analytics System
Long-term system data for optimized operation, targeted service, and precise spare parts needs (QUAT²RO[®] Analytics).



Valve Bag Opening Detection (AI)
The precise monitoring of valve bag openings minimizes the risk of incorrect bag applications (QUAT²RO[®] Valve Check).



Material Exit Detection (AI)
Real-time detection of material leaks and bag bursts (QUAT²RO[®] MatEx Check).



Valve Bag Sealing Detection (AI)
Real-time quality control of bag seals (QUAT²RO[®] Seal Check).



Bag Check (AI)
Ensuring the correct bag type is selected for the specific material to be filled (QUAT²RO[®] Bag Check).

FASCINATING ENGINEERING. AS ONE.

PM 341 E 4156 1119 1 Fe
The machines and equipment shown in this brochure as well as the technical parameters represent only examples of customer-specific technical solutions. We reserve the right to make changes at any time without notice!
The ® symbol indicates a registered trademark of HAVER & BOECKER OHG in Germany. Some of the trademarks are also registered in other countries.

HAVER & BOECKER OHG
Carl-Haver-Platz 3 · 59302 Oelde · Germany
Phone: +49 (0) 2522 30-0
E-mail: haver@haverboecker.com
Internet: www.haverboecker.com

