

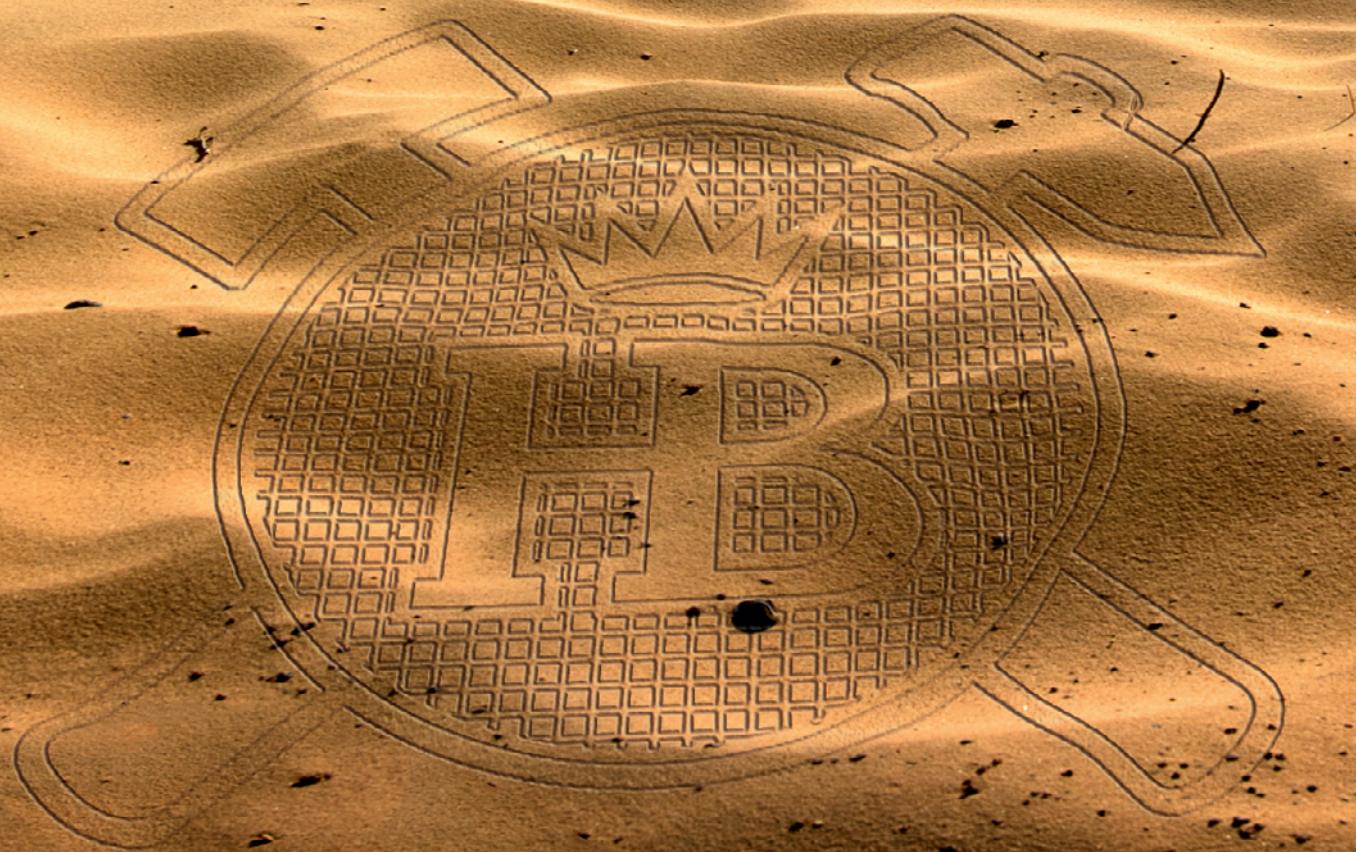
HAVER & BOECKER



DIE MASCHINENFABRIK

THE ELEMENTRA® EVT

REDEFINING A STATIONARY PACKING SYSTEM





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INSPIRATION

*"Our products are not an end in themselves,
but a means by which our customers can
accomplish something useful and profitable."*

Washington Samuel Tyler

While HAVER & BOECKER was founded in 1887, our subsidiary W.S. TYLER is even older and was established in 1872. Washington Samuel Tyler captured in words the philosophy that has been the driving factor to every product we have ever designed. The foundation for the worldwide success of Haver's stationary packing machines is the realization that they are not an end in themselves, but tools for their owner to create something useful and profitable. This is the mantra which inspired us to redesign the EVT version of our ELEMENTRA®, which stands for **E**LEMENT of a stationary packing system for **V**alve bags using **T**urbine (impeller) technology.

WASHINGTON SAMUEL TYLER
* 1835 in Ohio City, † unknown
At 37 years of age, Washington S. Tyler started a wire weaving mill in Cleveland in 1872 and began operations with eleven workers.

MOTIVATION

"The stationary packing machine is the starting point, which introduced the valve bag to the world. A new generation of packing system must pay tribute to its heritage while breaking barriers when it comes to cleanliness , intelligence and profitability."

Erik Schöneberger, EVT Project Manager



In order to live up to its heritage, the ELEMENTRA® EVT needs to push the envelope. It needs to set new standards and break current technological barriers. Developed by a designated mechatronic team, the EVT generation is focused on reaching new heights when it comes to cleanliness, intelligence and profitability.

MODULAR

"Whatever we do, we must design a machine that can be adapted to any performance requirement our customers may have. The machine must be configurable in every way that is important to the client. He should not pay for anything that he does not need, but at the same time have the option to upgrade the machine to everything he wants."

Bernhard Pagenkemper, Chief Sales Officer

The EVT version of the ELEMENTRA® is designed to fulfill any and every performance requirement you may have. Similarly to an automobile you can configure your EVT in any way you want. Even if you are not sure about your performance requirements for the future, you can choose to configure your EVT in a manner that it can be upgraded at a later point in time. The key to optimum performance is proper weight. The heart of the ELEMENTRA® EVT is its MEC® 4.0 weighing system, which not only serves as a scale but a configurable control system for your complete packing system. It provides ideal weights and ensures that you never waste your product. In summary, there are no limits to the configuration of your machine. You tell us what you need, and we will help you to configure the EVT in way that is perfect for you.



INTELLIGENT

"Build me a machine that makes it easy for us to operate. It has to be simple. It has to talk to us. It has to let us know what we should do." – YOU

Prior to developing the ELEMENTRA® EVT we spoke to many of you. Your message to us was clear. You wanted a packing system which made it easy for you and your team to operate. You told us that the experience of your team is becoming a more and more important issue. With less time for training and a much increased rate of job rotation and added process complexity, you require a packaging system that can be operated intuitively. It should be easy to understand, quick to learn and, most importantly, it must communicate with you. The EVT accomplishes the goals you gave us. Using LED mood lighting, the ELEMENTRA® EVT talks to you. A blue light indicates it is running fine. The red light tells you it has a fault and a white light helps you to see clearly when maintaining the machine. The large touch-screen panel offers you all features at a click of a button. It can be set to different user interfaces such as operator, maintenance or service technician. The optional HAVER QUATTRO technology allows you to document and adapt the EVT operational settings according to your team's desires. It also enables you to remotely monitor the machine's conditions.



For the basic machine there are 2 different filling boxes, which allows to use the 3 different dosing units ROTO-LOCK® rotary valve, pinch and slider.

BLUE =
Operation
Mode

WHITE =
Maintenance
Mode

RED =
Fault
Mode

PROFITABLE

"The key to making money in this business is time. It cannot be wasted. The process to make my product is too expensive to be sitting idle. The product must flow continuously and the process should not be interrupted." – YOU

We understood. In response to your determination to generate constant flow, we designed the ELEMENTRA® EVT modularly. Each filling spout is a complete filling system in itself. It encompasses everything required to fill, weigh, optionally seal and deliver your bag to the subsequent process step. As a result you can maintain or, if necessary, repair each filling module individually without stopping the machine for an extended period of time. You can both remove the filling module and continue to operate your machine at slightly reduced capacity, or use an interchangeable spare filling module and run your ELEMENTRA® at full capacity all the time. Either way your maintenance crew can roll the filling module requiring work into your maintenance shop, thus allowing your team to properly work on your machine under ideal conditions without the associated time crunch.

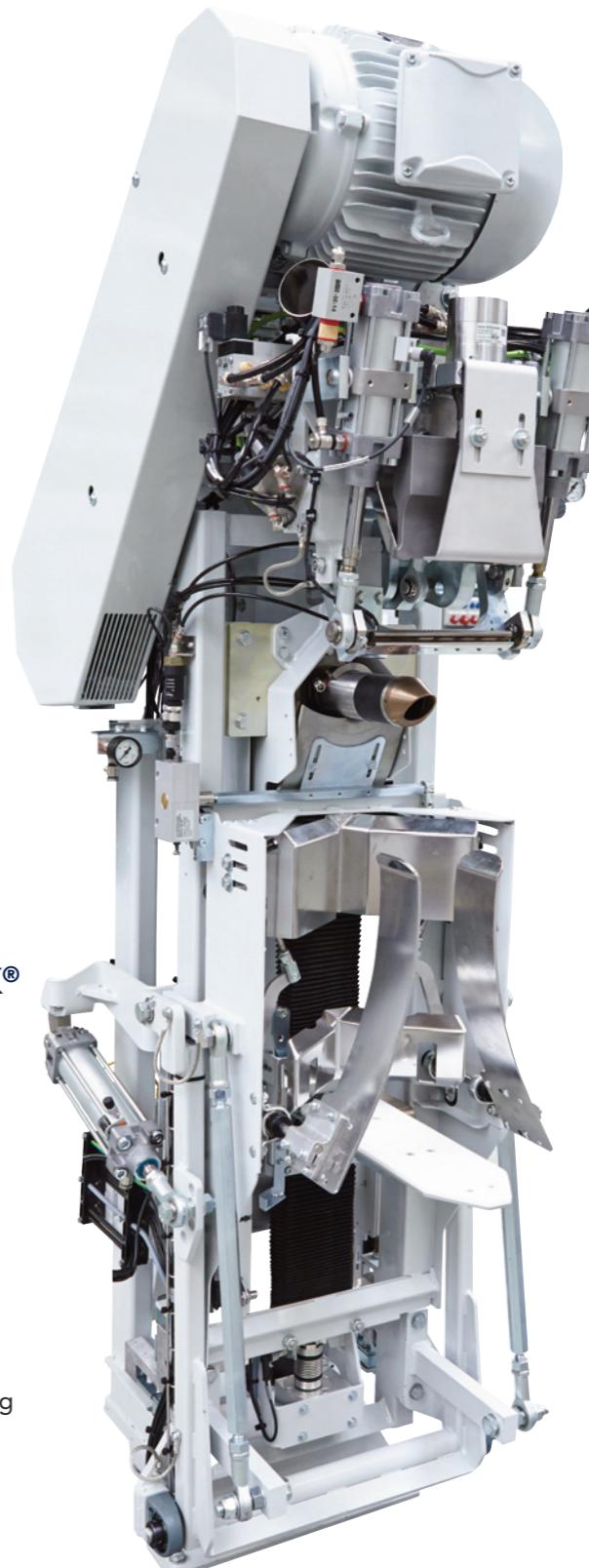
THE PERFECT FILLING MODULE

The ideal modularity

- Can be expanded to the SEAL technology
- Exchangeable dosing units (pinch, slider or rotary valve)
- Exchangeable impeller box of the R130 and R180 size

Your benefits

- Reduction in stocking costs
- Higher flexibility when operating filling systems
- Reduction in maintenance and training costs



The high-performance dosing unit ROTO-LOCK®

- Maintenance-free dosing unit
- No adjustments or readjustments necessary
- Clean filling
- Long operating lifetime due to improved material selection and optimized design

Your benefits

- Profit increase due to cleaner filling and reduced product loss
- Higher production yield due to less downtime
- Cost reduction from less cleaning and lower spare parts costs

The maintenance-friendly design

- Good accessibility to all components
- Easy replacement of complete filling modules

Your benefits

- Reduction in maintenance works
- Longer machine operating times
- Work can be conducted in the maintenance shop

The intelligent aeration

- Automatic regulation of the various aeration positions
- Optimum air amount adjustment according to the product
- No manual pressure adjustment necessary

Your benefits

- Reduction of operating costs, especially for compressed air, less air inside the product = less air in the bag = cleaner filling = less wear and tear
- Less setting errors
- Reduction of spare parts costs

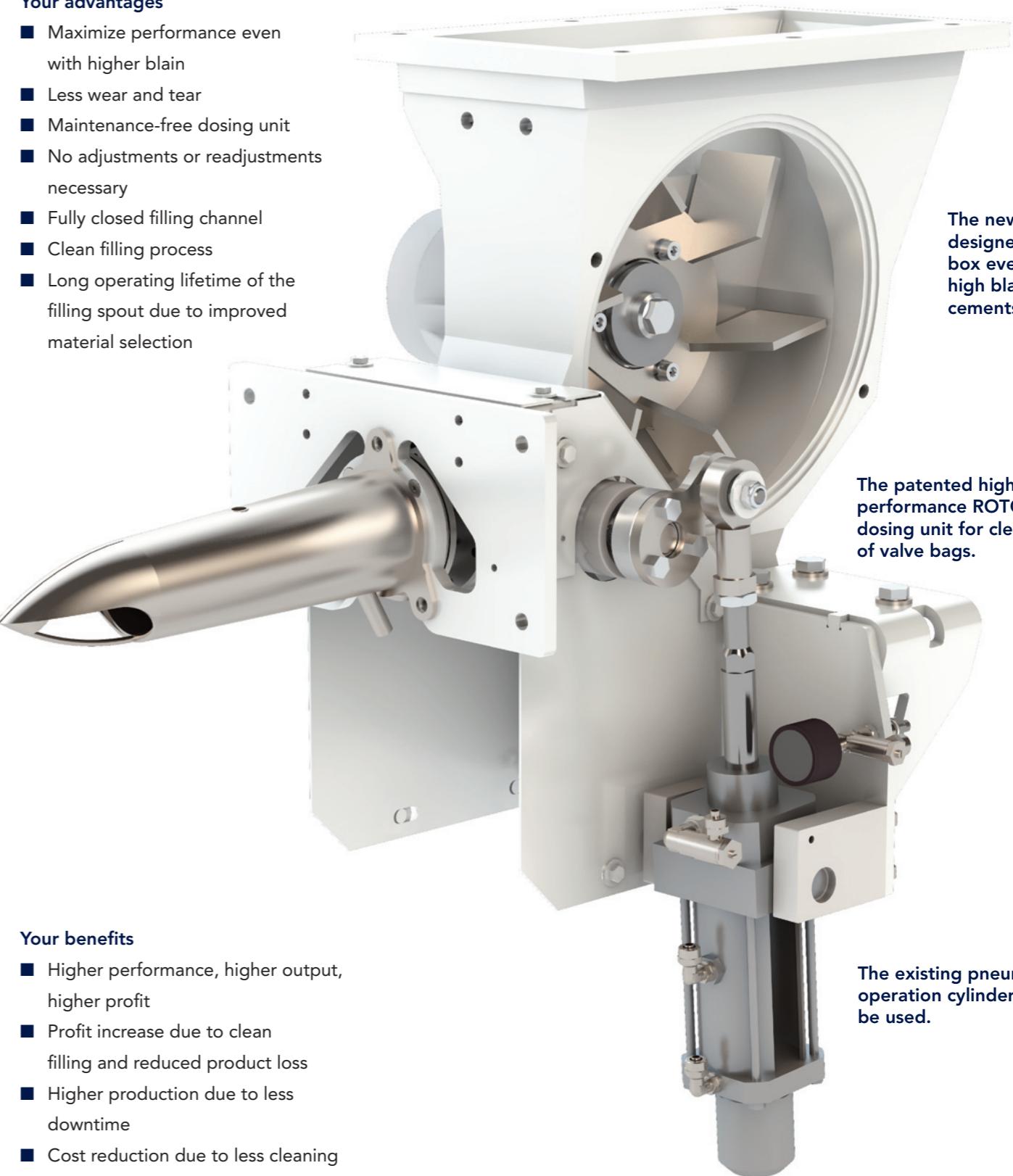
THE NEW DOSING UNIT ROTO-LOCK®

CLEAN

"The health and safety of our staff is our top priority. Therefore, any machine designed for today's requirements must ensure a clean working environment by minimizing product spillage." – YOU

Your advantages

- Maximize performance even with higher blain
- Less wear and tear
- Maintenance-free dosing unit
- No adjustments or readjustments necessary
- Fully closed filling channel
- Clean filling process
- Long operating lifetime of the filling spout due to improved material selection



The new designed filling box even for high blaine cements.

The patented high-performance ROTO-LOCK® dosing unit for clean filling of valve bags.

Your benefits

- Higher performance, higher output, higher profit
- Profit increase due to clean filling and reduced product loss
- Higher production due to less downtime
- Cost reduction due to less cleaning and lower spare part costs

If not maintained properly, one primary source of spillage in high-performance rotating packing systems has always been the sliding plates, which link the impeller box and filling spout. The ELEMENTRA® EVT is the world's only packing system that allows you to replace the sliding plates with ROTO-LOCK® dosing unit as an option. The ROTO-LOCK® is a rotating flow gate. It completely eliminates spillage during the dosing process and requires almost no maintenance. The ROTO-LOCK® is designed in a manner that allows you to retrofit your ELEMENTRA® EVT at any time. It can even be retrofitted on all ELEMENTRA® built since the year 2000.

The existing pneumatic operation cylinder can be used.

PROSPEROUS

"My bag is my business card. The quality of my package reflects on the quality of my product. My bag must be compact, clean and sharp looking." – YOU

We understand how important your package is to you. Having a clean bag radiates your image to your market, customers, competitors and even your own employees. In response to your demand we want to create a new standard when it comes to traditional valve bag filling technology as well as integrate a completely clean system for those who want to go that extra mile.

For exceptional bag appearance, you can configure your ELEMENTRA® EVT to be equipped with SEAL technology. The SEAL eliminates spillage by inflating a rubber sleeve on a specially designed filling spout during the filling process. After filling, the bag is carefully pulled off the spout and welded shut using an ultrasound sealing device. The result is an absolutely compact and clean bag, which will make your product stand out in any form of presentation. Additionally, the SEAL system avoids spillage during transport and prevents any kind of contamination or product extraction. This allows you to increase your weight accuracy without the need to overfill the bag. The resulting additional product profit to your operation far outweighs the extra expense to installing the SEAL system. Similar to the ROTO-LOCK®, the SEAL system can be retrofitted to your EVT or any ELEMENTRA® built after 2000.



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ELEMENTRA® EVT

Examples of products
that can be packed with
this valve bag system

- Building industry chemical products
- Cement
- Minerals
- Gypsum
- Mortar products
- Special chemicals
- Titanium dioxide
- Aluminium oxide
- Pigments
- Silicia
- Black carbon
- Cocoa
- Starch
- Foodstuffs

Since the inception of business as we know it, the measurement of success for a company has always been the profit it generates. The dictionary defines profit as "the ratio of pecuniary gain compared to the amount of capital invested." At HAVER & BOECKER we believe that the key to maximizing this ratio for any company lies in perfecting the quality of its flow in terms of product and process. We are convinced that a single perfect flow applicable to any and every product or process does not exist. Instead we are driven to identify the ideal flow for each product, customer and operation. In essence, at HAVER & BOECKER we are a family of flow designers and engineers focused on finding your perfect flow. The foundation for our endeavors is our range of premium technologies, which can be combined to form complete systems of flow. From processing and materials handling over mixing, packaging and filling to palletizing, loading and automating, HAVER & BOECKER can partner with you in all aspects of your business. With W.S. TYLER, IBAU HAMBURG, SOMMER, Feige FILLING, BEHN + BATES, NEWTEC BAG PALLETIZING and of course HAVER & BOECKER itself, we have assembled over time nothing but the best and strongest brands in our industry to ensure that we will not make any compromises when designing the perfect flow for you. Maximize your success by allowing our family of flow specialists and professionals to be a part of yours.



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HAVER & BOECKER



DIE MASCHINENFABRIK

ELEMENTRA® EGF

SETTING THE STANDARD FOR BIG BAG FILLING



HAVER & BOECKER

MODULAR

Configure the ELEMENTRA® EGF so that you can optimally fill the Big Bag – the way you want it.

All developments at HAVER & BOECKER are initiated by you, the customer. When we asked you what you wanted when it comes to Big-Bag filling, your answer was clear: "We want a flexible filling system that works cleanly, is weight-precise and offers the large packaging a high stability." We understood. With the ELEMENTRA® (E), great packages (G) can be filled using free fall (F). Not only a machine was created, but an entire modular system as well. This system allows you to select components with the aim of configuring the ideal system.

The ELEMENTRA®-packing system is especially suited for loose products of every type.

Configure your ELEMENTRA® system in only 3 simple steps.



CHOOSE YOUR DOSING SYSTEM

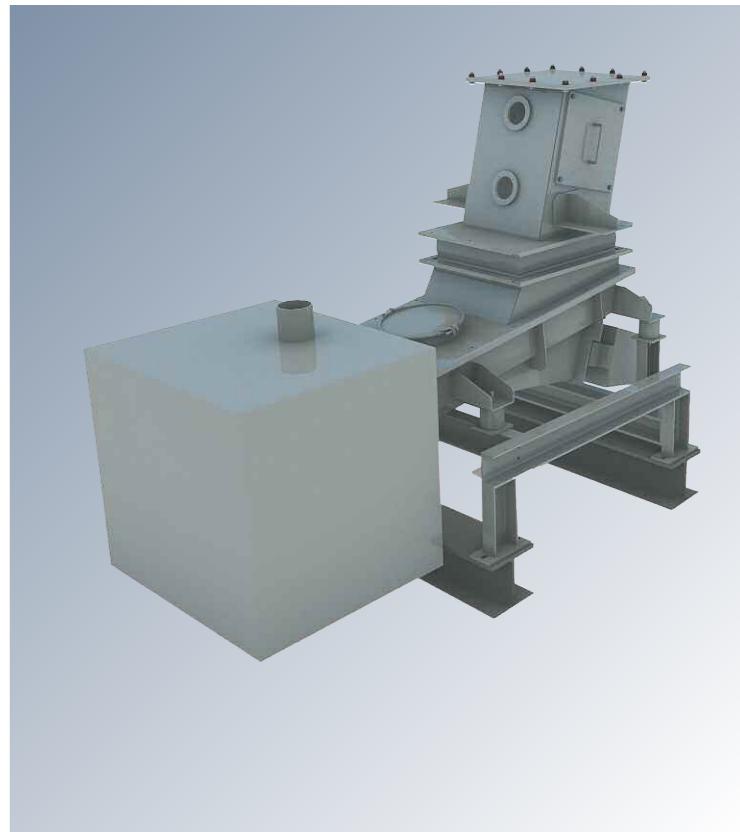
No matter which product you're working with, the ELEMENTRA® EGF offers you the right dosing system. Together we'll define the system that's ideal for you.



Screw dosing for powder



Turbine dosing for powder



Splitters/belt dosing for product blends and mixtures



Rotary flap for grainy products to granulates



Cone dosing for fine grain products (flushable)



Flap dosing for granulates

STEP 2

SELECT YOUR OPTIONS

Configure your ELEMENTRA® EGF using the menu of components.



Complete filling head with automatic bag retrieval



Side view of filling head and weigher cells



Side view of drive unit



Drive unit for stepless handling



Blaine sleeve



Automatic hanging unit



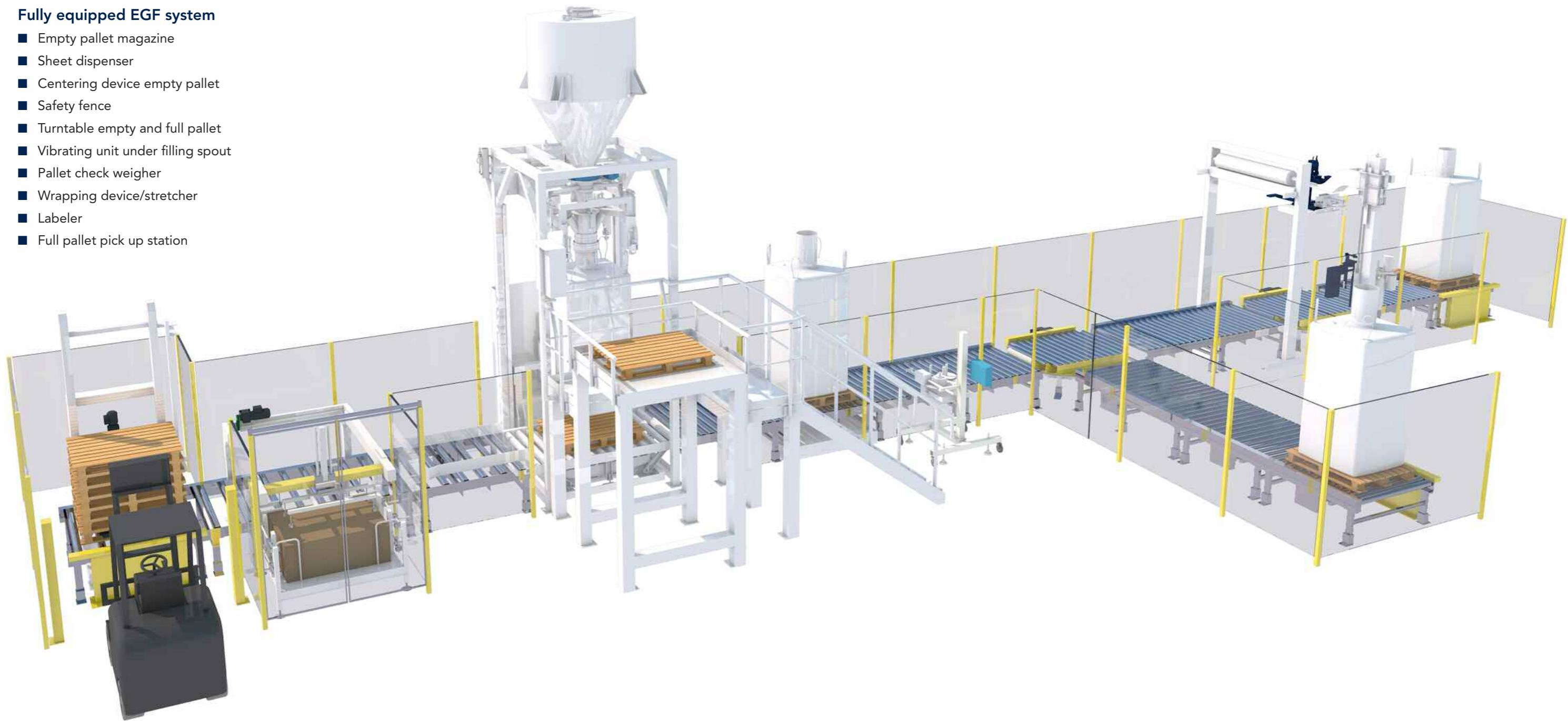
Movable compaction station with belt drive

COMPLETE YOUR SYSTEM.

Supplement your ELEMENTRA® EGF by selecting the suitable accessories to complete your system.

Fully equipped EGF system

- Empty pallet magazine
- Sheet dispenser
- Centering device empty pallet
- Safety fence
- Turntable empty and full pallet
- Vibrating unit under filling spout
- Pallet check weigher
- Wrapping device/stretcher
- Labeler
- Full pallet pick up station



INTUITIVE OPERATION

The brain of the ELEMENTRA® is the series-produced MEC® 4.0 electronic weigher system, which not only controls the scale, but also all individual modules in order to achieve a networked weight-precise filling. So that you can optimally and intuitively operate your ELEMENTRA® EGF system, it is equipped with a large touchscreen panel. This allows you to carry out all functions and diagnostics with just the touch of a finger. And so that you can use the full potential of the MEC® 4.0, select the optional HAVER QUATTRO system.



All systems are optionally available with a permanent mobile system monitoring, remote technical maintenance and the personalized RFID LOG-IN via a chip or stick with immediate display of the operator's authorization level.



MEC® 4.0 Touch Panel



CUSTOMIZED SOLUTIONS

Our ELEMENTRA® EGF modular concept still does not offer you every solution that you need? No problem. We would be pleased to build you a customized system that is tailored to meet every detail.



Big-Bag system on air cushion, movable bag doubling



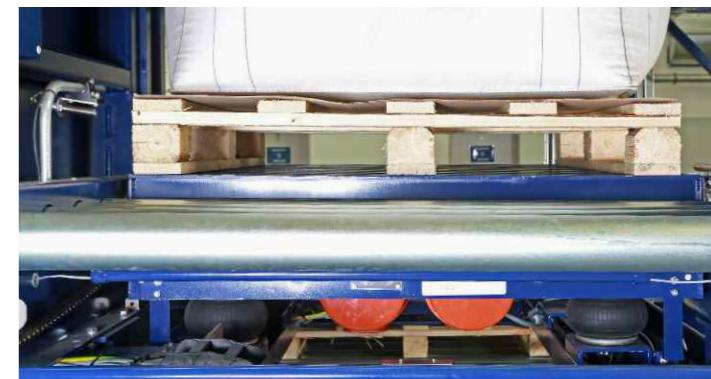
Movable Big Bag System capsuled, in a clean room (Explosion protection)



Net-weigher for high performance



Box-filling (octabin) for PE-granules



Scissor platform with hydraulic



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.

TECHNICAL DATA

With our ELEMENTRA® EGF all large packages can be filled with weight in all sizes, materials and designs

System dimensions

- Total height: 4800 mm
 - Width: 1900 mm
 - Depth: 1850 mm (incl. drive: 2600 mm)

Bag dimensions

- Bag length: 750– 2200 mm
 - Bag cross-section square: 800 – 1000 mm x 800 – 1000 mm
 - Bag cross-section rectangular 700 – 800 mm x 1000 – 1100 mm
 - Bag cross-section changing from rectangular and square

Loop length

- 200 mm – 300 mm (standard for 4 loops)

Weights

- Bag weights 200 kg – 1600 kg

Multiple range scale

- 100 mm

Weight accuracy

- As to oIML (International organization of Legal Metrology)

Consumption

- De-dusting air $500 \text{ m}^3/\text{hr}$ and $p = 6 \text{ mbar}$ at adiameter $d = 100 \text{ mm}$
 - Compressed air requirement $6 \text{ Nm}^3/\text{hr}$; With other systems approx. $15 \text{ Nm}^3/\text{hr}$
 - Electrical energy max. 14 kW



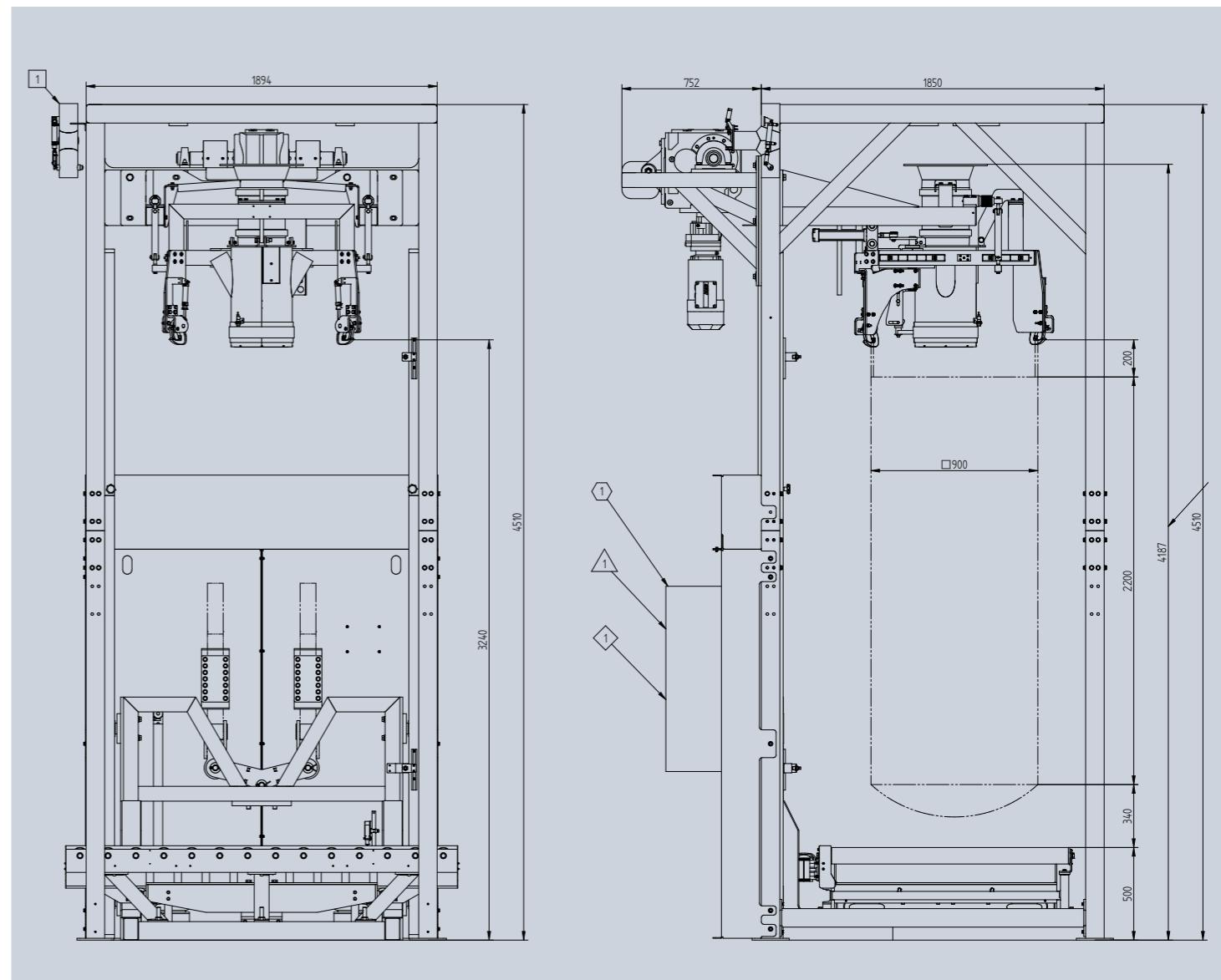
Minimum layout



Movable filling unit



Movable vibrator



2D/3D drawing with installation dimension

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