

Engelsmann Big Bag Systems:

Dust-proof, precise, safe.



- Big bag emptying
- Big bag filling
- Big bag connecting



J. ENGELSMANN AG
*The Experts for
bulk solids processes*



Welcome to the Experts for Bulk Solids Processes

Founded over 140 years ago, J. Engelsmann AG focused on the specific needs of the bulk solids industry very early on. Whether machines for screening appliances or plants for filling and emptying big bags, Engelsmann designs, manufactures and distributes process solutions for almost all kinds of bulk solids across the world.

The state-of-the-art manufacturing technologies and a quality management system that complies with ISO 9001:2008 ensure that all Engelsmann products are highly safe and of an excellent quality.

„We make short work of your bulk solids“, is our motto. By specializing on our key business screening technology and big bag plants, we combine years of experience with our expertise in planning, manufacturing and assembling process plants for screening, mixing, conveying, dosing and weighing. High quality product solutions in laboratory technology and drum hoop mixing systems complete our product portfolio.



Your safety is our priority

A comprehensive range of services complements our portfolio and provides you with a solution that is tailored to your needs and from a single source. Our fast, local replacement parts service means that we avoid long periods of inactivity and help to reduce breakdown costs.

However, our range of services is not limited purely to „managing emergencies“. An extensive service portfolio accompanies the operating life of our machines and plants, from putting them into service right up until the end of their service life.

Small-scale testing for large-scale applications

We use our pilot station to optimize procedural parameters in downscaled plants so that they can later be used in production processes in larger plants.

Upstream tests are used to certify bulk solids processes and to compile production processes and throughput rates efficiently. We would be happy to run tests together with you upon request.

Think Big with Engelsmann

Big bags are a great help when bulk solids need to be transported and stored cost-efficiently and in an environmentally friendly way. Engelsmann is specialised in the development, manufacturing and distribution of systems for filling and emptying of big bags for bulk processes. Our solutions are based on the individual requirements of our clients and always follow fundamental principles:



Turnkey

Turnkey and ready for operation

We develop custom-made turnkey solutions ranging from project definition over planning and manufacturing up to commissioning. With our system service offers, we provide all-round services.



Small Space Solutions

Great help when space is tight

Confined space is a great challenge for system planning and implementation. Engelsmann engineers offer solutions custom-made to individual space requirements.



Automation

Smooth operation

Our systems perform a variety of complex work processes. All these processes must be controlled with high precision and speed. We offer respective automation and control technology to achieve this.



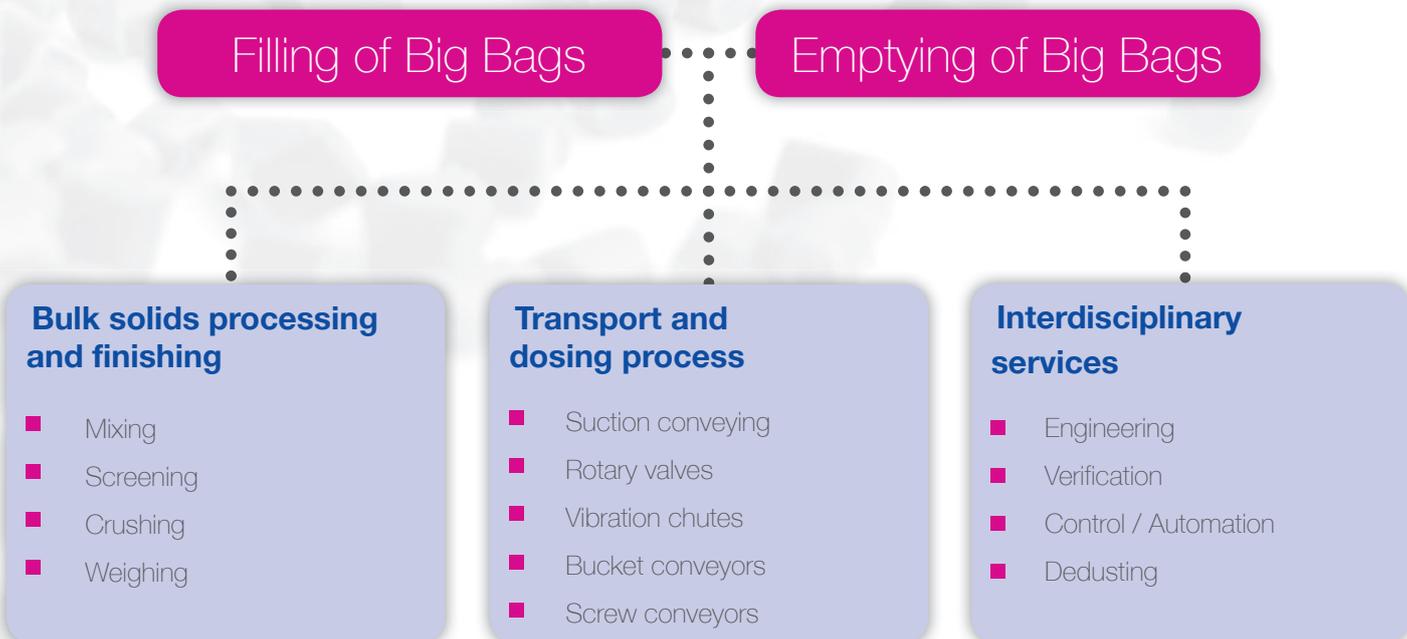
Handling of Sensitive Products

No matter if coarse or fine

Being an expert in the field of bulk processes, we know the special requirements of sensitive products and develop tailor-made solutions for challenges like bad flow properties, sensitivity to shearing forces or bridging materials.

Big all around

Competent in designing systems for the filling and emptying of big bags, we provide you with complete solutions with comprehensive services from one source. Your benefit: No additional costs or coordination effort due to projects involving several suppliers.



Clever Big Bag Filling

When filling big bags, the highest demands in terms of safety and hygiene for products and persons must be fulfilled. Thanks to their experience with different filling applications, Engelsmann engineers offer expert solutions. Be it for powder-based or granular products or filling in explosive environments, Engelsmann offers customer-specific system concepts for standard big bag sizes with and without liners.



Dosing as requested

Dosing in big bags is either achieved using screw conveyors, rotary valves or dosing chutes. If required, dosing can either be realised gravimetrically or volumetrically via filling level sensors without weighing unit.

Neat and clean

To minimise standstill times, system cleaning and maintenance can be easily implemented. A high proportion of smooth surfaces facilitate the cleaning process. The modular and open system design allows for quick and easy disassembly.

Filled to the brim

During filling, the big bag is introduced into the filling station and the inlet is attached to the filling head. Before the actual filling process, the big bag is inflated to completely unfold it. During filling, displaced air is sucked off by the aspiration nozzle. After filling, the big bag is closed, removed and a new process cycle can begin.

Trickle protection system JEL FlowStop: The perfect protective dose

The trickle protection system JEL FlowStop ensures contamination-free filling of big bags. It protects the operating staff and the plant against contamination owing to product trickling out and allows for continuous metering – independent of the plant type.



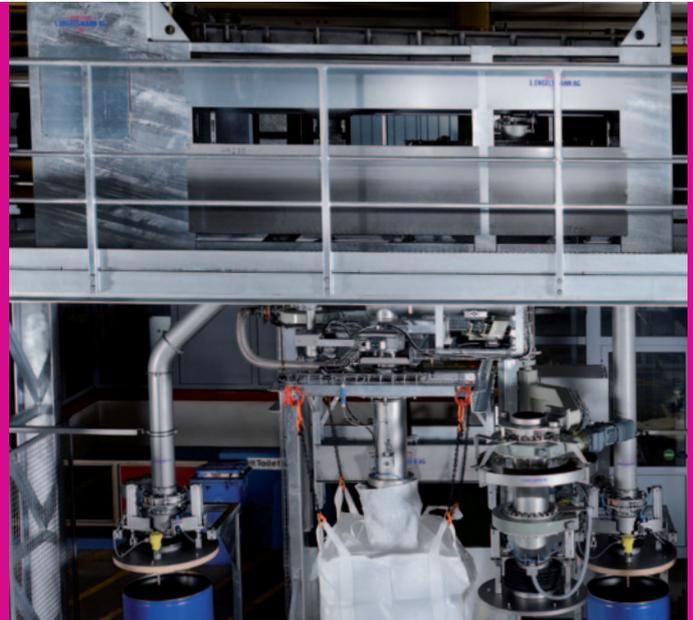
Convincing facts

- Modular design
- Simple operation, cleaning and maintenance
- Various connection systems for big bag inlet (i. e. JEL SafeConnect)
- Manual or electronic height adjustment for different big bag sizes.
- Optional with integrated weighing system
- Accessories and customised models
- ATEX version according to Directive 94/9/EC
- Trickle protection system for protection against contamination



Practically Proven: Big Bag Filling made by Engelsmann

Engelsmann filling systems are used in various industry and application sectors. Integrated in existing production processes, they ensure safe and profitable filling of big bags.



Application Example

Big bag filling system for screening of yield and waste

Incorporated in the coarse and fine screening process of granular products, filtered out fine and oversized granulates are to be separated from yield and filled in big bags or drums.

All-in-one in very confined space

A free-moving screening unit ensures coarse and fine screening of the granular product. Filtered out fine and oversized granulate is filled into drums over downpipes from the screening unit. A filling level sensor detects in time when a drum is full. The yield granulate is introduced into a container under the screening unit and stored there until a big bag is connected to the weighing system for filling. The storage container is equipped with a maximum level sensor to avoid overfilling. After the big bag inlet is drawn over the filling pipe, the inflation collar is activated. The inliner of the big bag is inflated by a blowing system to achieve better filling properties. First, filling is carried out in coarse flow mode.

Just before the set weight is reached, the dosing chute is switched to fine flow mode. Dust and displaced air are extracted by the suction system. Once the set weight is reached, the dosing chute is switched off and the dosing valve is closed to prevent residual flow of the product.

Detailed requirements

- Screening and filling with a compact machine unit with low space requirements
- Calibrated weighing and filling
- Filling of big bags or drums with yield
- Short standstill times when modifying the system

Filling system components

- Free-moving screening unit
- Two drum docking stations for fine and oversized granulate
- Storage container (500 l for yield)
- Dosing pipe
- Dosing valve
- Weighing unit for drums and big bags

Convincing facts

- Container change and system modification during running screening operation
- Low space requirements thanks to compact design
- Low standstill times thanks to quick system modification from big bag to drum filling
- Calibrated weighing and filling
- Low-dust operation

Big Bag Emptying: Safety First

Emptying of big bags places many requirements on technology and personnel: dust-proof docking and emptying requires operationally safe and user-friendly solutions and flexibility. Big bag emptying stations made by Engelsmann are based on individual application requirements and can be used up to OEB class 4.



Dust-free emptying and dosing

Big bag emptying stations are used for dust-free emptying and dosing of bulk solids from big bags and can be put on silos or mixers for gravity unloading if required. Dosing from big bags is either achieved using screw conveyors, rotary valves or dosing chutes. After dust-proof connection of the big bag outlet, it is manually opened to initiate the emptying process. Before removal from the station, the empty big bag can also be evacuated. After sucking off residual dust, it can be folded to a small and space-saving package.

Great in flexibility and productivity

To account for all standard bulk solids and container sizes, emptying systems can be quickly adapted thanks to their modular design. Discharge support for slow-flowing products, weighing systems and tensioning units for optimum emptying and tensioning of big bags are only some of the components that are optionally available for emptying stations. During design of accessory systems, focus was placed on user-friendly handling, short modification times and later adaptation.

JEL SafeConnect: Always securely connected

Different heights of inlet and outlet nozzles may require expensive adaptations when connecting big bags. In this respect, the JEL SafeConnect system module offers the perfect solution for easy and secure connection of differently sized big bags. The system is suitable for emptying and filling of big bags with and without inliners. Without system modification, it can be used for different outlet diameters and refitted.

Convincing facts

- Modular design
- Emptying aid for refitting
- Weighing technology and weighing module for negative weighing for refitting
- Tensioning unit for big bag for refitting
- CIP cleaning system for refitting
- Easy height adjustment for change of location
- Various connection systems for big bag outlet (i. e. JEL SafeConnect)
- Subsequent modification of manual operation to pneumatic operation
- Sealing band for sealing partly emptied big bags
- ATEX version according to Directive 94/9/EC
- Safety module for protection against contamination and mechanic dangers



JEL Protect: All-round protection

During emptying of big bags, JEL Protect prevents contamination of the operating staff, the product and downstream bulk solids processes by foreign objects that have collected inside the outlet nozzle while the big bag was being transported.



Practically Proven: Big Bag Emptying made by Engelsmann

Big bag emptying systems made by Engelsmann are customised according to individual customer requirements. These systems are suitable for various applications and offer highly automatic and precise emptying of big bags.



Application Example

Big bag emptying system for cartridge filling

Development and delivery of a cartridge filling system made it possible to realise one of the largest automatic cartridge production facilities in Germany. The system was designed for production of customer-specific company colours guaranteeing general colour consistency.

Automatic precision

Every one of the ten big bag emptying stations of the cartridge filling system is equipped with a chain hoisting system to take up the big bags. A dust-proof connection is established between the big bag outlet and the emptying hopper.

Each hopper features a double dosing screw conveyor for coarse and fine dosing. The system is controlled according to colour recipes directly picking up the individual colours at the big bag emptying station with a movable weighing unit carrying a drum. At each station, the drum is automatically connected in a dust-proof way with the outlet of the dosing screw conveyor and the dosing process is started. It ends as soon as the predefined weight is reached. To prevent residual flow of products, the screw conveyor outlets are pneumatically sealed. After the individual colours have been dosed into the drum, they are carefully mixed by a highly efficient drum hoop mixing unit. After a predefined mixing period, the drum is withdrawn and the cartridge colour is filled into respective containers for distribution.

Detailed requirements

- Recipe-based colour mixing and practical filling in individual containers
- Homogenisation of individual colour components
- Absolute dosing and weighing precision
- Dedusting of the entire filling line

Filling system components

- 10 big bag emptying stations with double dosing screw conveyors
- Aspiration system for dedusting
- Electrical control system with recipe input
- Movable weighing unit with weighing system
- Drum hoop mixing unit

Convincing facts

- Fully automatic cartridge filling system
- Quick and highly precise dosing
- High process safety
- Easy handling and cleaning
- Dust-proof operation

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