

Handle tonnes
with ease



BIG-BAG FILLING SYSTEMS

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EMDE

EMDE INDUSTRIE-TECHNIK

GESELLSCHAFT FÜR RATIONALISIERUNG UND VERFAHRENSTECHNIK MBH

EMDE manufactures **big-bag filling systems** for the dust-free precise and reliable filling of big-bags of all types and sizes. The equipment is of a modular design and can thus be adapted to suit every task. This modular design also permits retrofitting in many cases to increase performance or adapt the system for different products.

The variations range from the simple, manually controlled filling head to the automatic plant with high-precision weigher and pallet transport system. Great emphasis was placed on simple and sturdy design as well as reliable operation in designing the **EMDE big-bag filling station**.

The **EMDE big-bag filling systems** can be equipped to suit a host of material properties. We offer the appropriate equipment for cohesive, abrasive, combustible, electrostatically charged, potentially explosive, fibrous, moist, fluidising, hot, cold, sticky, lumpy, contaminated, corrosive, hygroscopic, dusty or fragile products.

The following can be used as possible packing materials:

- Disposable big-bags
- Returnable big-bags
- Bags with an inliner
- Intermediate bulk containers (IBC)
- Barrels
- Standard bags
- Boxes

Adjustable combination filling systems are designed so that not only one package shape and size can be filled but a wide variety of packages with suitably adapted interchangeable nozzles. This is of particular interest for flexible job packing into customer-specific containers.

The stability of the filled bags is ensured by various filling methods, depending on the product:

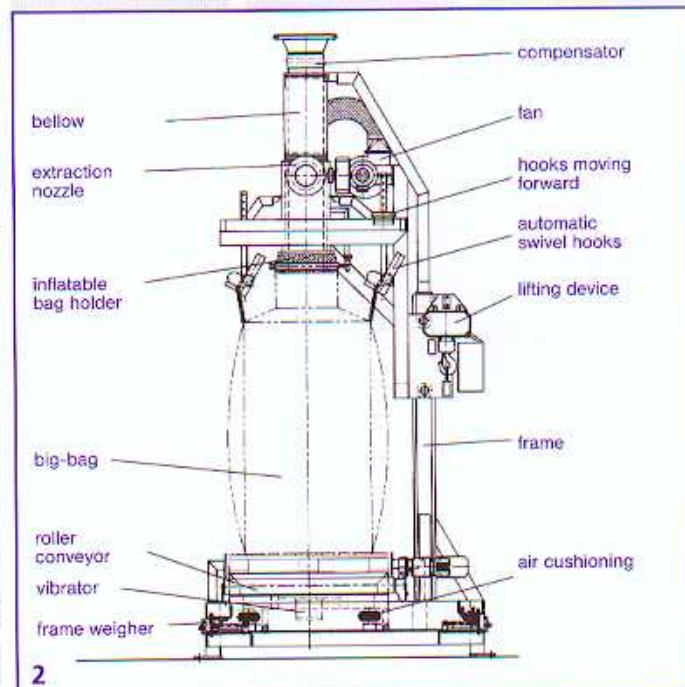
- **standing filling**
- **overhead filling**
- **combination of overhead and standing filling**

Overhead filling is best employed for simple filling tasks which do not require compaction with products which produce a lot of dust.

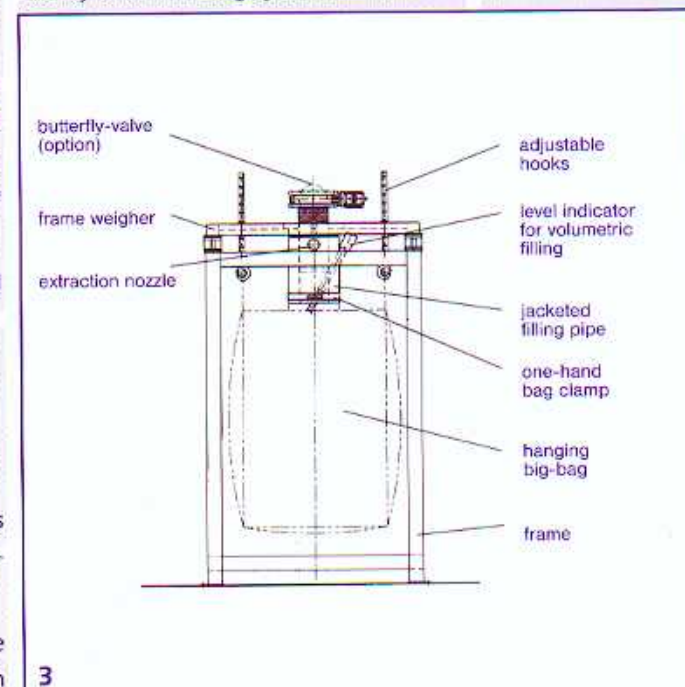
Standing filling is recommended for big-bags which are standing on pallets. With this filling method the product can be compacted during filling and it is also possible to fill other shapes of packages.

The **combination of overhead and standing filling** is used in universal systems for a wide variety of products and for systems with a high filling capacity.

EMDE offers all filling variations both with and without a weighing system. The fully electronic weighing technology used complies with the latest national and European calibration regulations. We will also specialise use customer specified weighing equipment.



Big bag filling station type BFR 4000E for overhead and standing filling equipped with roller conveyor, bag inflation facility and vibrating system.



EMDE big-bag filling station type BFR 1500 for overhead filling equipped with butterfly-valve and level indicator.

The centrepiece of the **EMDE big-bag filling station** is the filling head for dustfree filling. In all systems this filling head consists of an internal product pipe and the connection for the bag filling nozzle. The product pipe is provided with a coaxial suction jacket in which the dust in the displacement air can settle again through the decelerated air movement. Manual bag clamps or the **EMDE inflatable bag holder** can be used to connect the bag spout.

The filling head can be designed either as fixed or height-adjustable.

Filling stations with a fixed filling head are equipped with a rigid base frame with 4 columns. A variation for suspending from the ceiling without columns is also available.

The following are available, depending on the application, as height adjustment facilities:

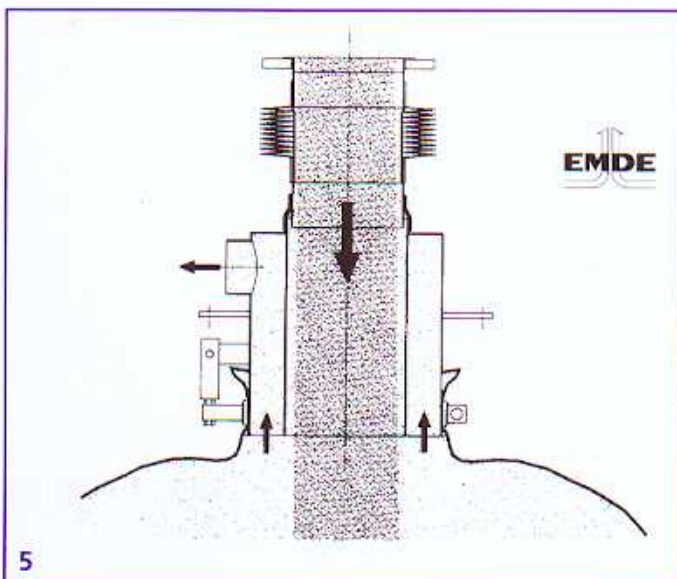
- Hand winch for setting the height in standing filling
- Pneumatic cylinder with control valve for stretching in standing filling
- Electric chain hoist for lifting in standing and overhead filling
- Screw lifting gear for use in potentially explosive areas.

The filling head is guided on the lift mast with maintenance-free idlers mounted on antifriction bearings. The mast is a very robust sectional structure and is connected to the base frame with minimum deflection. The mast arranged at the rear of the station permits unhindered access on three sides for attaching and tying up the bags.

The sturdy base frame made of sealed hollow sections guarantees good stability even on unstable ground and in mobile filling stations.



Filling head with telescopic inner pipe. Manual bag spout clamping by one-hand bag clamp



Sectional drawing of the filling head with coaxial venting pipe. Bellow tube with telescopic inner pipe for protection against product sedimentation and wear.

On request, filling spouts are supplied for a wide variety of packages, such as containers, barrels and standard bags as well as interchangeable spouts. Simple filling spouts without suction pipe are available for non-dusty bulk products.

Please ask for more details!



EMDE combination filling station for filling big-bags and boxes. Interchangeable filling pipe and additional precision weigher for small packages. Metering by EMDE-vibrating feeder, roller conveyor for pallet transport.

EMDE-big-bag-filling stations for volumetric or gravimetric filling:

The frame is designed as a torsionally rigid hollow section structure. The EMDE big-bag filling station can be supplied both for fixed installation and also as a mobile unit for transport using a fork-lift or elevating truck. The station can also be accurately aligned on uneven ground using levelling mounts and built-in spirit level.

The electric control supplied on request with the EMDE big-bag filling station contains the weigher processor for programming the filling weights and the control unit for the installed accessories. Dosing takes place in coarse and fine feed modes. The weights can be recorded on a printer or transmitted via an interface to a process control system.

Two filling methods are available:

- **Volumetric filling** with cut-out of the dosing when the maximum filling level has been reached. A signal is emitted from a filling level sensor integrated in the filling head. For difficult bulk products which do not permit any protrusions in the filling pipe, we also offer infrared measurement through the big-bag nozzle. The filling level measurement can also be used as an overfilling safety device in systems with a weighing system.



Volumetric Filling with vibration system. EMDE big-bag filling station type BFV 1500

- **Gravimetric filling with weigher:** High-precision filling with electronic weighing systems, either above the bag installed in the filling head for overhead filling or integrated in the frame for standing filling. Standing filling permits compaction during the filling process.



EMDE filling station type BFR 4000E. Weigher can be calibrated, printer for reporting.

Data:

- Products: Powders and granulates, free-flowing or with poor flow properties, also with high dust content
- Filling capacity: max. 40 bags/hour
- Bag weight: max. 2500 kg
- Bag size: max. 1200 x 1200 x 2500 mm
Special sizes on request!

Equipment:

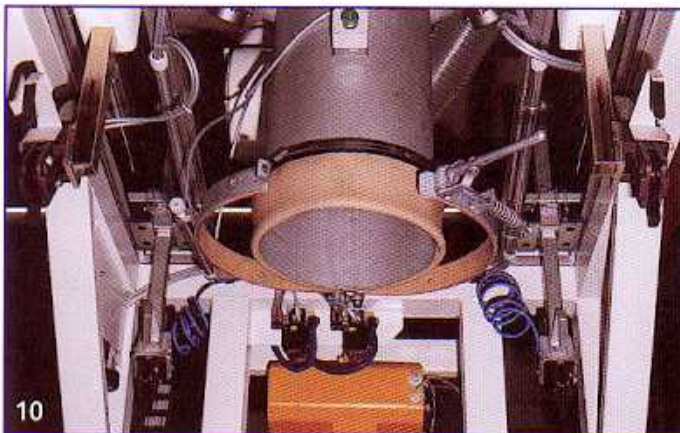
- Materials:
 - Steel St 37-2, painted or plastic-coated
 - Stainless steel 304 or 316
- Optional:
 - Finish suitable for foods or pharmaceuticals
- Loop holders:
 - Height-adjustable safety load hooks
 - Pneumatic swivel hooks
 - Tubular hooks
 - Transfer hooks for removal with fork-lift truck without pallets
- Nozzle clamping:
 - Manually or pneumatically activated bag clamp
 - Inflatable tubular bag holder
- Lifting:
 - Hand winch or pneumatic cylinder, lifting capacity 250 kg, for bag stretching
 - Electric motor, lifting capacity 1500 or 2500 kg
- Weigher:
 - EMDE frame weigher either above the bag for overhead filling or arranged in the frame for overhead and standing filling
 - Weigher calibrated or can be calibrated
 - Control with weigher processor and complete installation

Accessories:

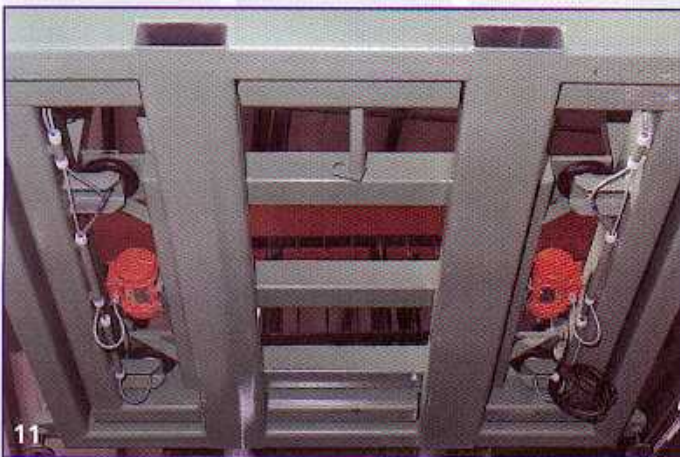
- Explosion-protected designs to EN 50014 and international standards for operation in hazardous zones 1 and 11 (dust explosion).
- Extraction facility with filter
- Inert gas purging device
- Small package filling device with separate weigher
- Automatic filling station with storage carousel
- Automatic inliner closure system
- Vibrating system for compacting the product during dosing
- Pallet conveyor for feeding and removal
- Empty pallet magazine
- Screw feeders and vibratory feeders for the accurate metering of the product



How the bag inflation facility works:
The empty big bag is firmly inflated within a few seconds. The inliner closes tightly without folds to the outer bag. A blown big-bag is stable and ensures the full weight of product.



Filling head of an automatic filling unit with inflating bag holder and additional bag clamp to fasten filling skirts. The rear pneumatic swivel hooks are moved forward.



Bottom view of an EMDE big-bag filling station with vibration system. The pneumatic cushioning allows dosing during vibrating. The weigher will not be affected by the vibrators. This system has a higher filling capacity compared with conventional vibrating units.



This pallet magazine destacks pallets in various sizes. It is adjusted by hand or automatically controlled. The capacity is up to 20 pallets. It is available in explosion-proof design also.

Productive stations in package type design

EMDE-big-bag filling station type BFR 2000 P with pneumatic height adjustment. Mobile compaction plant with vibration system and frame weigher. Designed for low headroom.



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Mobile EMDE big-bag filling station type BFR 4000 E
The station is moved with a fork-lift truck under the silo to be emptied and connected with the docking adapter to the loading valve.



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EMDE-big-bag filling station type BFR 1500 E for overhead filling. Plastic granulate is bagged. The station is suitable for installation outdoors even in low temperatures. For relocation, it is provided with a hand pallet truck.



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EMDE big-bag filling station type BFR 1500 E, electric height adjustment, vibration system. Installation in silo plant, dosing with rotary valve. The entire system was supplied by EMDE.



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EMDE big-bag filling station type BFR 1500 H for the volumetric filling of recycling material. Filling monitoring with "full" indicator integrated in the filling head.

Transportable **EMDE big-bag filling station type BFR 2000 H**. The frame is provided with fork tunnels for fork-lift truck transport. The station is equipped with a pneumatic docking facility and tubular forks for loop holders.



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Automatic filling systems



The bag loops are suspended in special **transfer hooks** so that the fork-lift truck driver can take the bags without getting out and handling them manually. The bags are transported, without a pallet, suspended from the transport loops.



Automatic EMDE big-bag filling carousel with 12 stations for continuous bagging. Filling is controlled by 'full' indicator. They are removed at the guarded changing point.



EMDE big-bag filling system with automatic bag change. The filled bag is moved sideways into the changing position. The new bag when connected is moved into the filling position.

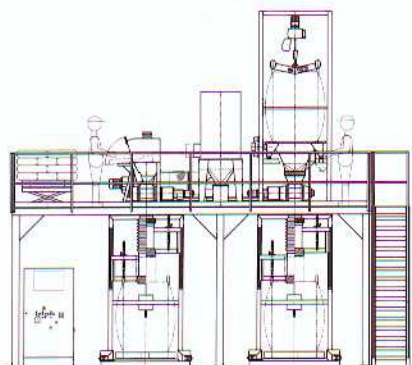


EMDE big-bag filling plant type BFR 4000 E for the automatic filling of the bags with roller track system for feeding and discharging the pallets. Equipped with pallet magazines, vibration systems, moving filling stations with inert gas purging and extraction system.

Filling capacity: 2 x 20 bags/hour

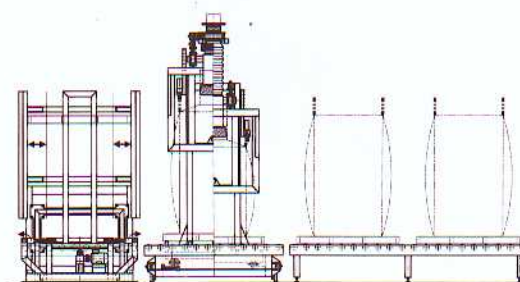
System combinations in practical applications

Two EMDE big-bag filling stations type BFR 2000 H. Filling with sack discharger, empty bag compactor, big bag discharger and dedusting system.



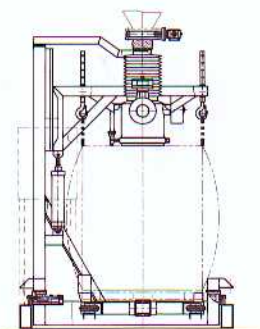
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Automatic filling line type BFR 4000 E with pallet magazine and roller conveyor.



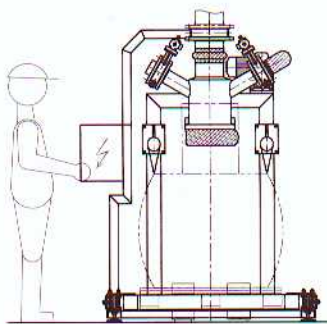
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EMDE big-bag filling station type BFR 2000 P with pneumatic tensioner and vibration system.



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Filling station type BFR 2000 with low overall height. Pallets are taken away by a hand pallet truck.



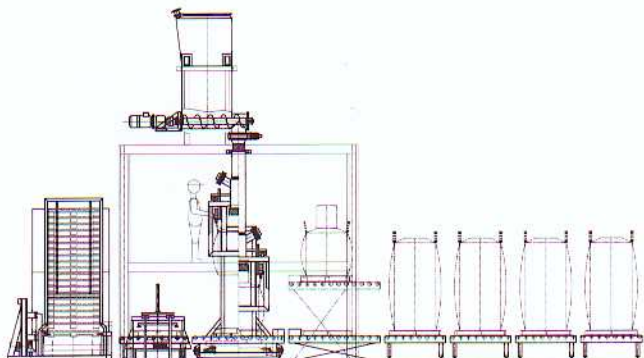
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Volumetric filling with a station type BFV 1500. The filling head has a filter unit inside and a hand winch is used for tensioning the bag.



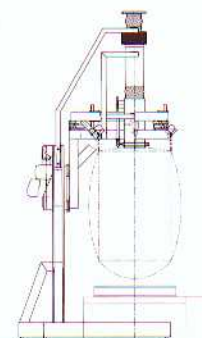
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Filling line for full automatic service. It is equipped with pallet transport system, paper handling unit, filling station type BFR 4000 E with vibration system and roller conveyors. Dosing by an EMDE dosing screw type MDV 250.



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Filling station type BFR 1500 E for overhead filling specially designed for wet and corrosive surroundings.



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