



**EMDE**  
Automation

We understand bulk!

- ▶ **Bulk materials technology**
- ▶ **Control systems**



## Decades of experience...

... have gone into product development and the building up and continued growth of the company. A motivated team, which now numbers more than 150 employees, works intensively every day at ensuring your wishes are fulfilled on time and at achieving the highest possible customer satisfaction. In addition to domestic markets, a constantly growing number of new ones are being opened up worldwide. Tailor-made system solutions, which are developed in close collaboration with the customer, are one of the company's particular strengths. A large number of distribution partners ensure the closest possible customer contact.

All products are manufactured in our own quality-certified production plants locations in Germany.

Tests are performed with your product in the technical centre in order to demonstrate the functionality and efficiency of the plant components.

Our own professional installation and commissioning staff set up your plant. As you would expect, we guarantee worldwide service by experienced professionals for installation, commissioning, staff training and repairs.





Batch dosing of additives in the salt industry

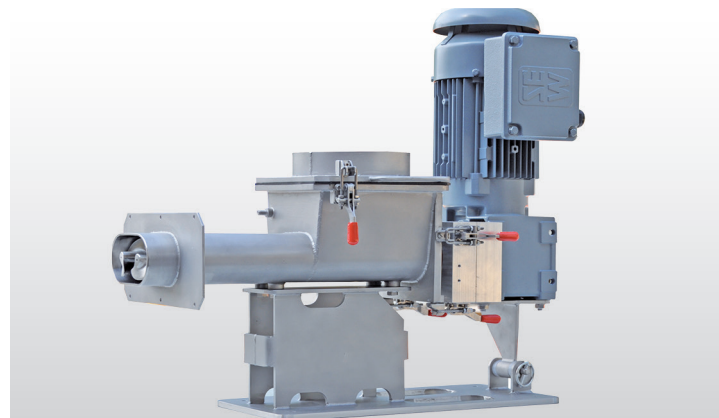
## Dosing with the highest precision

Manual dosing of components is extremely cost-intensive and operator-dependent. Reproducible product quality can be achieved with gravimetrically controlled dosing units. A uniform product feed to continuous processes is ensured by volumetric dosing units.

- Volumetric and gravimetric dosing units
- Single and multiple-component batch dosing units
- Differential dosing units
- Dosing capacity from 1 to 10,000 kg/h
- Product-optimised feed aids to ensure continuous mass flows



Gravimetrically controlled batch dosing



Double screw for milk- and chocolate powder



Silo discharge and metering screws - feed

## EMDE – LIFT flexible screw conveyors

The EMDE – LIFT is a conveyor system for powders and granulates which is extremely easy to set up and quick to dismantle for cleaning. Considerable conveying distances and capacities can be accomplished with low power consumption.

- Flexible screw deployment, including three-dimensional installations
- Low power requirements
- Enclosed, dustproof transport system
- Conveyor lengths of up to 50 m horizontally and 20 m vertically
- Abrasion-proof polyamide conveyor pipe
- Semi-rigid conveyor line with steel or stainless steel pipes and pipe bends



EMDE - Lift for the refilling of a metering screw



Filling interchangeable containers in the foodstuff industry



Tubular screw conveyors charging agitator vessels

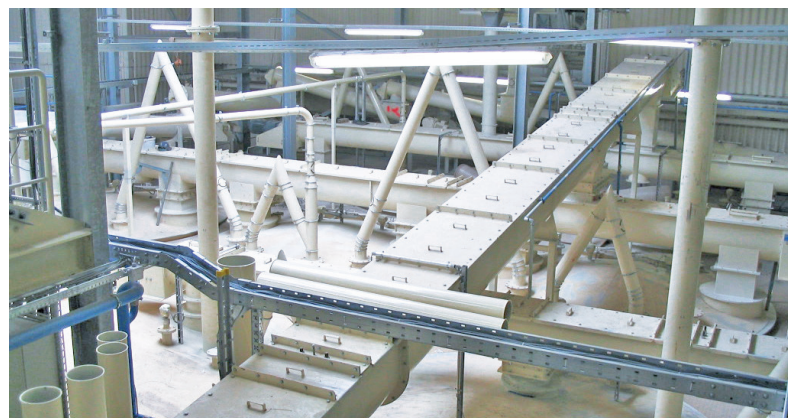
## Trough and tubular screw conveyors

Screw conveyors are an ideal system for transporting a wide variety of bulk materials and pulps. They can be dimensioned to any size and can be used even for relatively long conveying distances. Their robust construction makes them highly valued in all sectors of industry.

- Screw diameter from 80 to 1,250 mm
- Conveyor capacity up to 500 m<sup>3</sup>/h
- Conveyor lengths of up to 80 m horizontally
- Highest availability in tough continuous operation
- Gastight versions



Trough conveyors



Building materials being conveyed with trough screw conveyors



Vacuum conveyor in final assembly

## Vacuum conveying

The vacuum conveyor fulfils single smaller conveying tasks. The filter element is a sintered stainless steel shaped filter cone. The filter is cleaned with a blast of compressed air. At the same time, the filter of the powder conveyor is anti-conical in shape, which guarantees optimum product discharge of even extremely fine products which have a tendency to adhere due to the fluidisation of the entire surface.

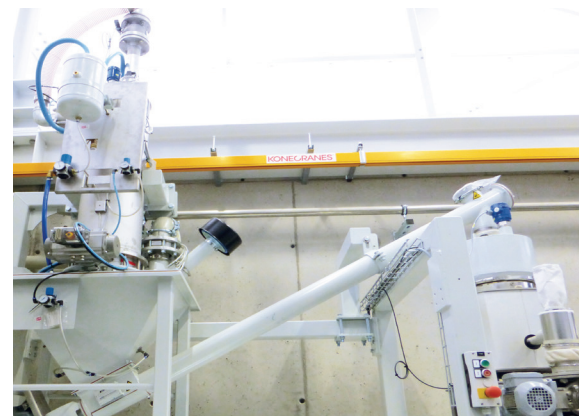
- Conveying lengths up to max. 100 m
- Conveying capacities up to 3 t/h
- Pressure-resistant construction up to 10 bar overpressure / negative pressure
- Vacuum generation with vacuum pump
- Compact electrical control unit fitted at the housing
- Sintered stainless steel filter



Vacuum conveying for sugar



Vacuum conveyor connection with ball valve



Vacuum conveyor for refilling



Technical centre equipment for pressure and vacuum conveying

## Pneumatic suction and pressure conveying

Long conveying distances and lines with many pipe bends can be best realised with pneumatic conveyor systems. Integrating various emitters and receiving points into the system is very simple. Dense flow conveying ensure the product is treated extremely gently. Vacuum transport systems and pressure conveyors can be tested with your product in the technical centre.

- Dustproof conveyor system
- Various wear bend variants
- Pressure conveyors with pressure bins or rotary valves
- High-performance conveyor compressor
- Performance tests in the technical centre
- Support in dimensioning using our practice-oriented calculation programme



Pressure bin conveying system assembled for FAT



Rotary valve conveying



Big Bag emptying station with movable carrying frame

## Dust-free big bag emptying

The big bag is rightly an extremely popular packaging medium for bulk materials. Many manufacturing processes consume products discharged from flexible and easy-to-handle big bags. The technology for dust-free product discharge must be ideally adapted to local conditions and the product to be discharged. This calls for a maximum degree of flexibility and individual solutions. We are happy to fulfil this requirement for you!

- Flexibly configurable component system
- Reliable product discharge with practice-proven discharge aids
- Building height-optimised lifting system for cramped spaces
- Lifting equipment with declaration of conformity and inspection and test book
- Dustproof docking system for discharge hose



Big Bag emptying stations for the charging of differential metering scales



Big Bag emptying station



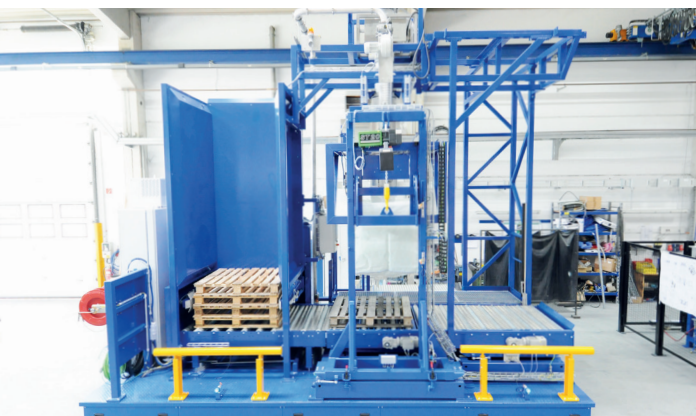


Dual filling system in the food industry

## Self-supporting big bag filling

Fast and absolutely accurate filling of big bags is a challenge for which we offer proven, practice-oriented solutions. A system solution adapted to customer requirements and product properties is available for every filling capacity requirement. Both the product feed and the pallet handling are frequently included with the overall concept.

- User-friendly handling
- Highest degree of automation
- Robust equipment designed for continuous operation
- Robot-controlled big bag feed
- Automatic filler pipe closing system
- Roller or chain conveyor for pallet transport
- Pallet magazine for different pallet sizes
- Paper support



Compact rail moving filling system with pallet magazine for product filling underneath of silos



Filling equipment with pallet magazine



Sack chute with discharge docking

## Sack emptying made easy

The EMDE sack emptier and a sack chute with a supporting table make the job much easier and significantly reduce the amount of dust involved. Sacks can also be emptied dust-free inside a dust-proof system using the enclosed sack emptying cabin with its glove box. EMDE has a combined sack/big bag emptying station for products which are supplied in both sacks and big bags.

- Ergonomic, low-dust sack handling
- Emptying station with integrated filter system
- Enclosed emptying cabin with glove box
- Combined sack/big bag emptying station
- Empty sack disposal within the aspirated area



Sack handling with gauntlet glove and safety knife



Sack discharge with holding spikes to fix sacks



Emptying sacks with force feeder/steep screw conveyor

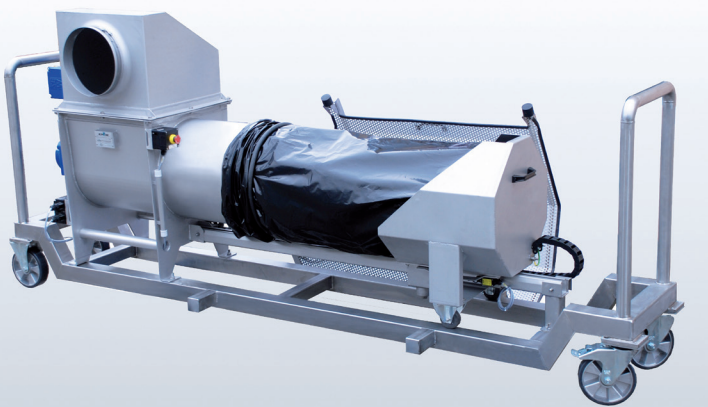


Big bag compressor with extended insertion chute

## Big bag and empty sack compactor

Empty sacks and big bags which are not directly disposed of at the workstation are always a potential dust source when subsequently transported through the plant. Small compactors set up directly on-site ensure a high degree of cleanliness.

- Compact solutions
- Big bag and sack disposal directly at the emptying location
- Compaction via degressive and conical screw
- Ample dimensioned drive
- Compression in an endless hose and disposable big bags
- Endless hose fed through brake skids



Empty sack compactor on moveable frame



Big Bag compactor



Electrically operated barrel tipping device

## Filling | Emptying | Lifting | Pivoting

Bulk materials are not only stored and transported in big bags; a large number of other containers such as barrels, cardboard drums, octabins and other containers have to be emptied dust-free and safely.

- Pneumatically and hydraulically operated lifting/tipping equipment
- Dustproof filling of barrels and other containers
- Container emptying station for returnable containers
- Lifting/tipping equipment for octabins and open containers
- Special solutions for lifting and pivoting movements



Barrel filling



Container emptying with loss in weight feeder



Manually operated one-hand sack clamp

## Sack clamping | Inflation grip | Compensators

Leakproofness is vital when handling bulk materials. The smallest leak can have fatal effects. The sack clamp and especially the inflation grip guarantee the best possible seal and securely hold the container to be filled.

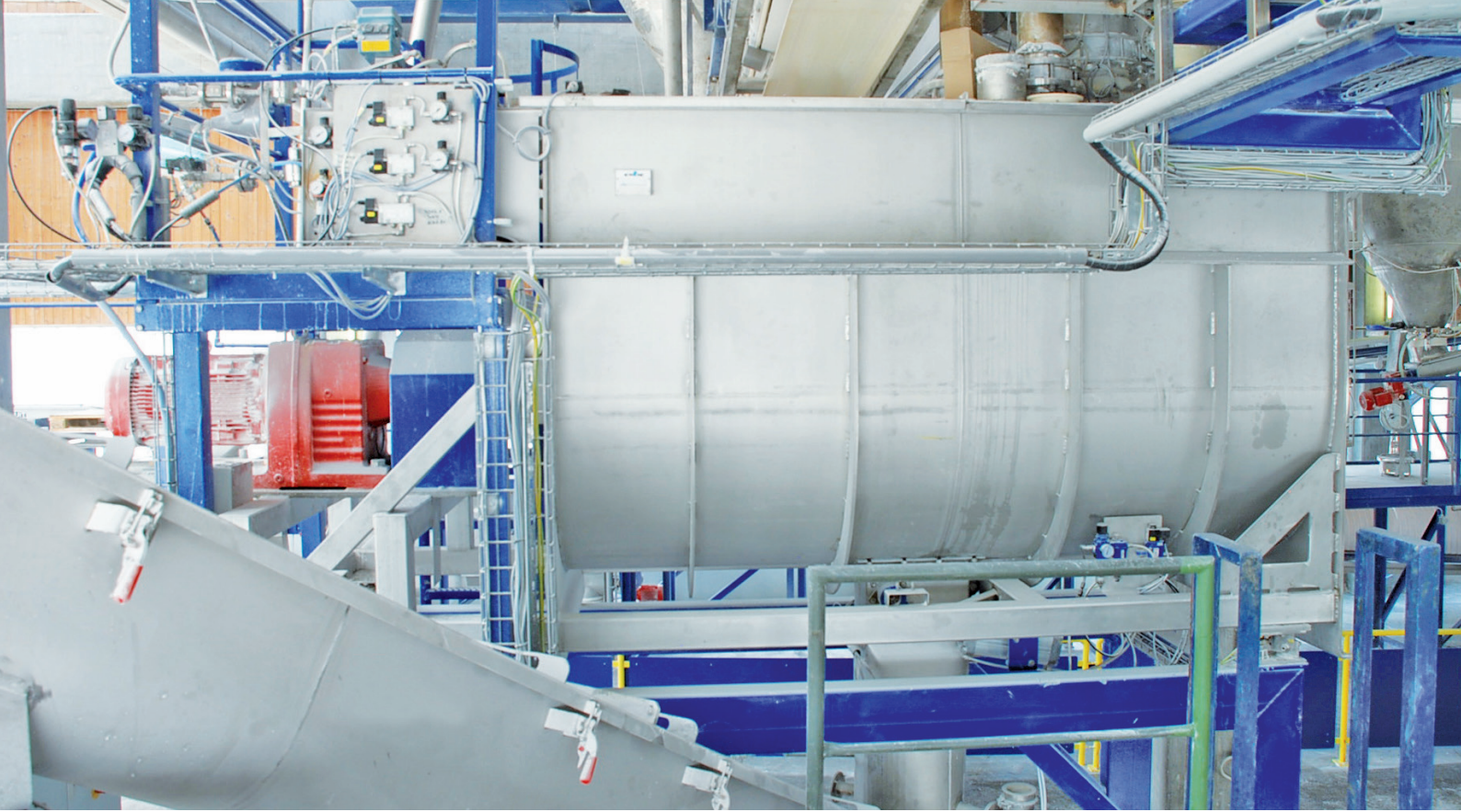
- Internal pressure-monitored inflation grip control
- interior inflation gasket
- Stable swivel hinge
- EMKOM made of FDA-approved silicone
- Seamlessly injection moulded component
- Expansion bellows and stage compensator
- Electrically conductive compensators
- Temperature-resistant from -50 to + 180 °C



Inflation hose



EMKOM compensators



Batch mixer for sodium nitrite

## Well mixed!

We always have the right solution for both continuous and batch mixing processes. Fluid components can also be added to systems conceived as bulk material mixers. It is possible to combine process steps such as heating, cooling, drying, washing out and homogenising.

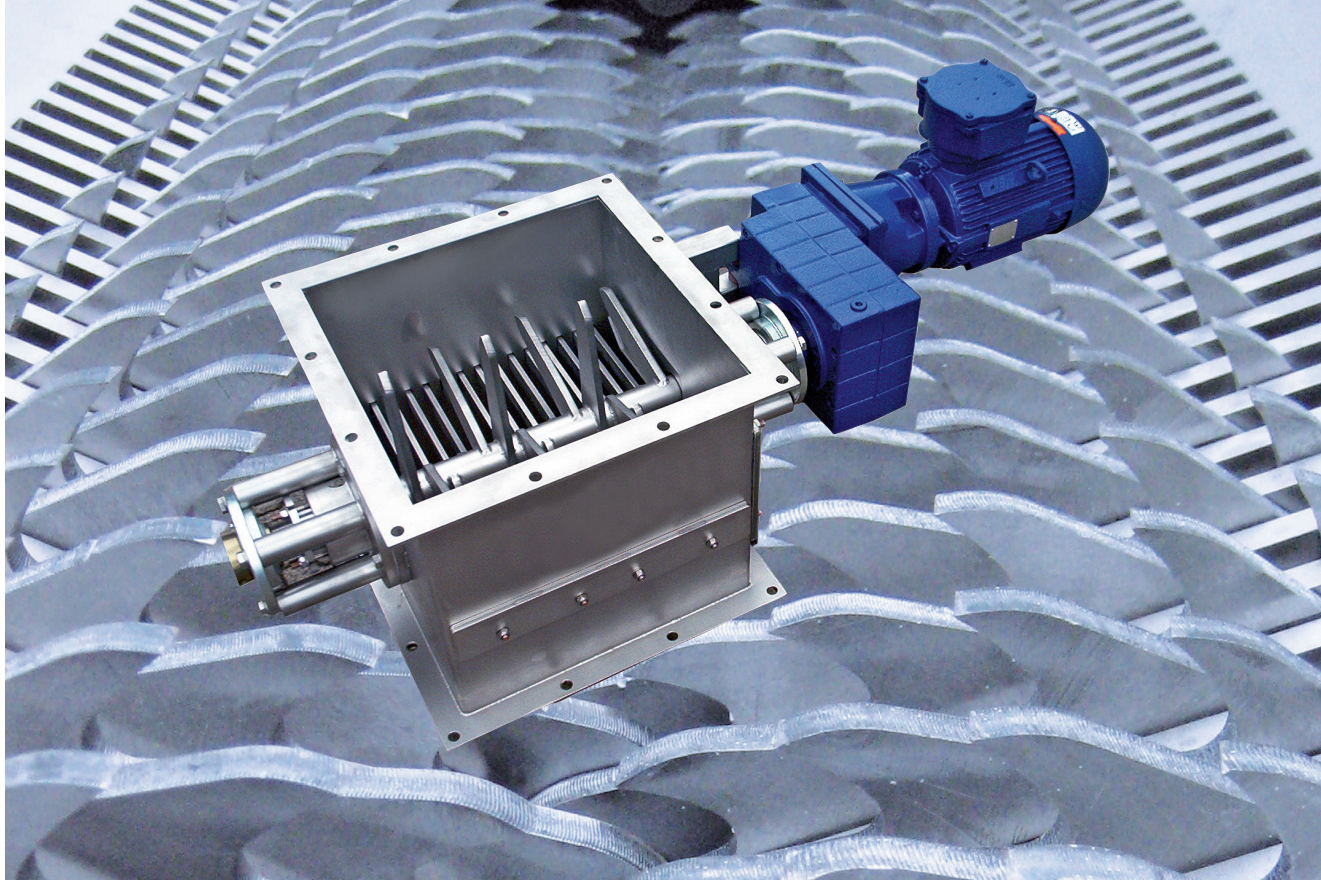
- Single shaft mixers for batch operation
- Shortest mixing times
- Extendable mixing tool
- Mixing tool with screw pitches
- Smallest mixing batches
- Dual shaft mixer
- For continuous operation
- Self-cleaning by means of combing mixing tools
- Throughput of up to 350 m<sup>3</sup>/h
- Flow mixer
- Two concentrically arranged mixing spirals
- Reproducibility of mixing quality
- Spiral rotating speed by means of individual drives
- Throughput of 7 – 270 m<sup>3</sup>/h



Dual paddle mixing screw



Single shaft plough blade mixer



Single shaft lump breaker

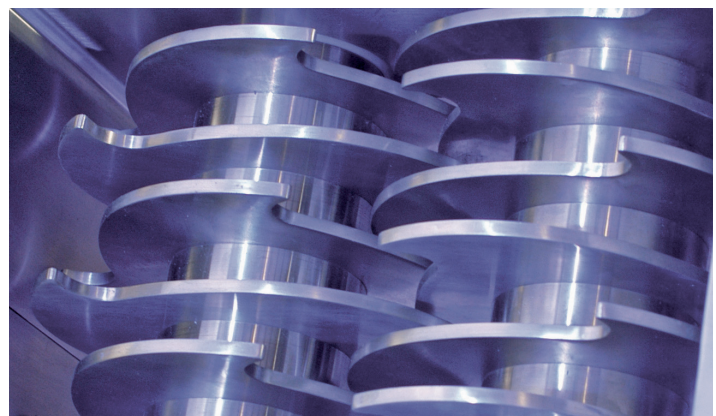
## Lump breakers

Pressure, temperature and dampness cause products to agglomerate and partly stick together to form a monoblock. The lump breaker ensures reliable milling and guarantees the product flow in the process.

- Reliable break-down of agglomerates
- Single-shaft breaker for rough pre-crushing > 30 mm
- Twin-wave breaker with replaceable breaker discs
- Expansion device for fast cleaning
- Product-specific configuration of breaker discs and drives



Twin-shaft lump breaker



Twin-shaft lump breaker

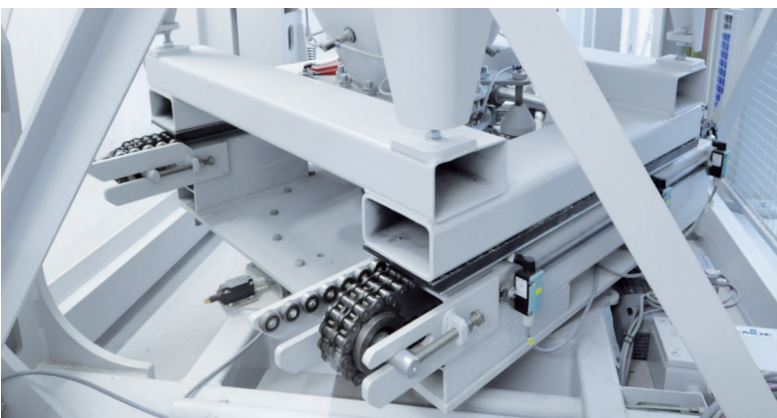


Dosing loading system with alternate dosing container

## Dosing and loading system

This automated loading system leaves no customer wish unfulfilled as regards the number of components to be dosed; even existing dosing and mixing equipment can be extended indefinitely in a modular manner. A shuttle transported by a chain conveyor collects individual components gravimetrically from upstream dosing containers and feeds the overall load dust-free into the downstream mixing process.

- Infinitely extendable modular construction
- Formula-controlled loading system
- High-performance system up to 50,000 t/a
- Dustproof shuttle docking system
- Vertical shuttle transport up to 12 m
- Precise dosing with the alternate dosing container



Shuttle transport with chain conveyor and rotary table



Dust-free shuttle filling



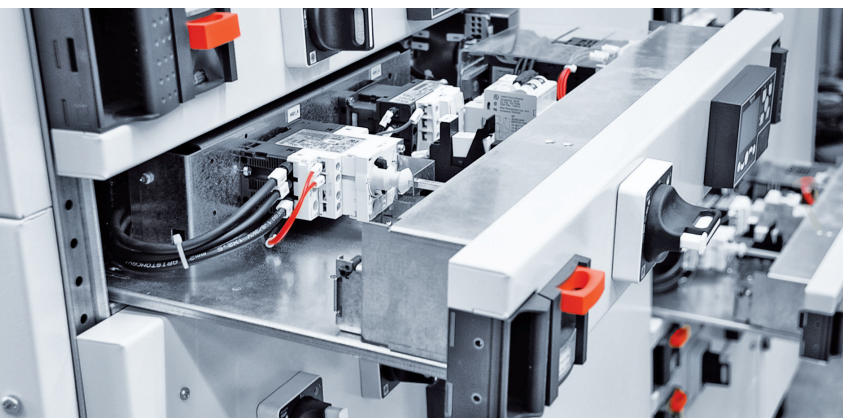


Control system manufacturing

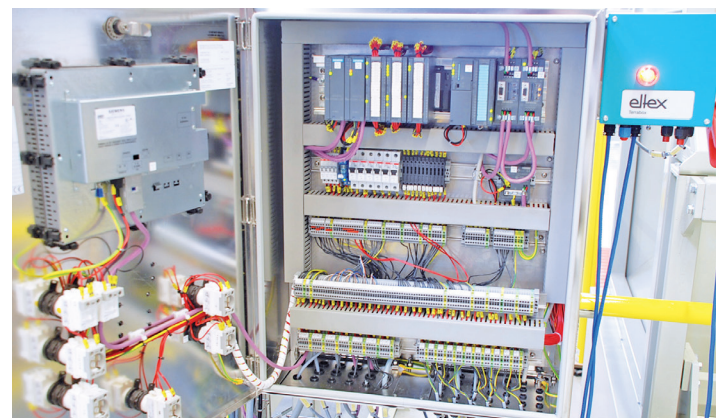
## Measuring | Controlling | Regulating

All devices and equipment are supplied with control units ideally suited to their application. PLC programmes developed in-house guarantee the highest reliability and ideal working conditions for the entire system.

- Control systems and programming
- Siemens S7 and Allan Bradley PLC programming
- Control planning and concept development
- Integration of weighing technology, including formula management
- Process controls with complete measurement and control technology



Control unit with MCC technology



Switching cabinet interior view



Mobile vacuum cleaning system

## Vacuum equipment: suction instead of sweeping

Only a clean operation is a safe operation. Potential sources of ignition should be removed promptly. Dust deposits are repeatedly the cause of fires and dust explosions. Permanently installed pipe networks greatly simplify the regular cleaning of plant and floor surfaces. Mobile vacuum cleaning equipment can be moved about and connected to various pipe networks.

- Stationary and mobile variants
- Up to 1.5 bar excess pressure reduced pressure designs up to 1.5 bar pressure, or shock pressure resistant construction up to 10 bar pressure
- Suction lengths up to 400 m
- Simultaneous working at several suction points
- Large dust collecting capacity
- The highest plant availability
- Pipe networks with automatically closing, fully sealed valves
- Combined blower for suction and pressure operation to empty the filter separator



Vacuum cleaning system in power station



Mobile vacuum cleaning system for ash



Big bag filling plant with pallet magazine and conveying technology for product out of onsite silos

## Complete solutions – everything from one source

Starting with concept development and continuing with detail engineering, design, production, installation, putting into operation and training operating staff, as a plant manufacturer EMDE can offer you a ready-to-run system solution all from one source. Take advantage of our extensive experience in a variety of industries and sectors.

- Experience in all industries/sectors
- System provider with a high vertical range of manufacture
- Short response times in the planning and realisation phase
- Robust plant technology designed for three-shift operation



Setting up plant for works approval



Double big bag filling plant for plastic granulate



We understand bulk!



We understand bulk!

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- ▶ Conveying
  - Screw conveyor
  - Pneumatic conveying systems
  - Vacuum conveying systems
  - Flexible screw conveyors
- ▶ Filling / Emptying
  - Big Bag handling systems
  - Sack emptying systems
  - Lifting and tipping equipment
- ▶ Dosing / Mixing
  - Dosing screw feeders
  - Vibration feeders
  - Batch mixers
  - Screw mixers
- ▶ Systems / Components
  - Plant technology / System solutions
  - Vacuum cleaning systems
  - Dosing and loading system
  - Empty sack and Big Bag compactor
  - Lump breakers
  - Compensators
  - Sack clamps
- ▶ Control systems
  - Control system manufacturing
  - PLC programming and visualisation
  - Electrical installation/commissioning/service

We understand LSR!

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- ▶ LSR mould construction
  - Cold runner valve systems
  - Ready-to-use systems