




your competent partner  
for solids handling!

- ▶ Bulk materials technology
- ▶ Control systems
- ▶ Mechanical and plant engineering



## 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 500 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 at five locations in Germany. We supply secure plant technology and solutions for all gas and dust  - areas.

- Bulk materials technology
- Control systems
- Mechanical and plant engineering
- Drilling technology
- Wind energy components
- Contract manufacture
- Foundry
- LSR mould construction





## Customer proximity and service

The company has been consistently training young people since it was founded in 1980. This lays the groundwork for a qualified workforce.

Continuing education is actively promoted by means of training sessions.

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.

- Thorough practical training of specialist staff
- Ongoing initial and advanced staff training
- Factory approval with function test
- Worldwide installation and commissioning by our own professional staff
- Training and instruction of maintenance staff and operators





*Loading agitator vessels*

## 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



*Feeding SiC batches*



*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



*Final assembly of dual screw conveyors*



*Building materials being conveyed with trough screw conveyors*



*Double-paddle mixing screws with electric heating in the trough lid*

## Process screws

Tubular and trough screw conveyors can be ideally combined with further process tasks. Other large plant components such as dryers and mixers can be dispensed with in the process line if these tasks can be realised simultaneously along the transport path.

- Processes for heating, cooling, mixing, grading, washing out, etc.
- Processes at pressure or in a vacuum
- Temperatures up to more than 1,000°C
- Process calculation and design
- Heating/cooling media can be water, thermal oil, low-pressure steam or electrical



*Cooling screw conveyor for ash discharge*



*Cooling screw conveyor for soda*



*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*



*Differential dosing feeder with scale*



*Trough chain conveyor for dry lignite*

## Trough chain conveyors

High-performance conveyors for continuous operation.

Further technological processes such as cooling, heating and sieving can be integrated into trough chain conveyors parallel to the actual conveying. Inclined and vertically aligned conveyors and also combinations of the two are possible in addition to the usual horizontal conveying.

- Free positioning of in- and outflows
- Robust conveying which is gentle on the product
- Can be used for abrasive and corrosive bulk materials and pulp
- Extremely low-maintenance system
- Conveying capacity up to 1,500 m<sup>3</sup>/h
- Conveying distances of up to 100 m horizontally
- Gastight version up to +/- 200 mbar overpressure /negative pressure



*Trough chain conveyor and bucket elevators for transporting potassium salt*



*Oil seed conveying for silo filling*



*Bucket elevator for transporting grain*

## Bucket elevators for vertical transportation

Bucket elevators are the classical mechanic conveying system for high-performance vertical transport. The conveying line is dimensioned specifically for the product; a large number of configuration options permit a solution which is adapted to respective requirements.

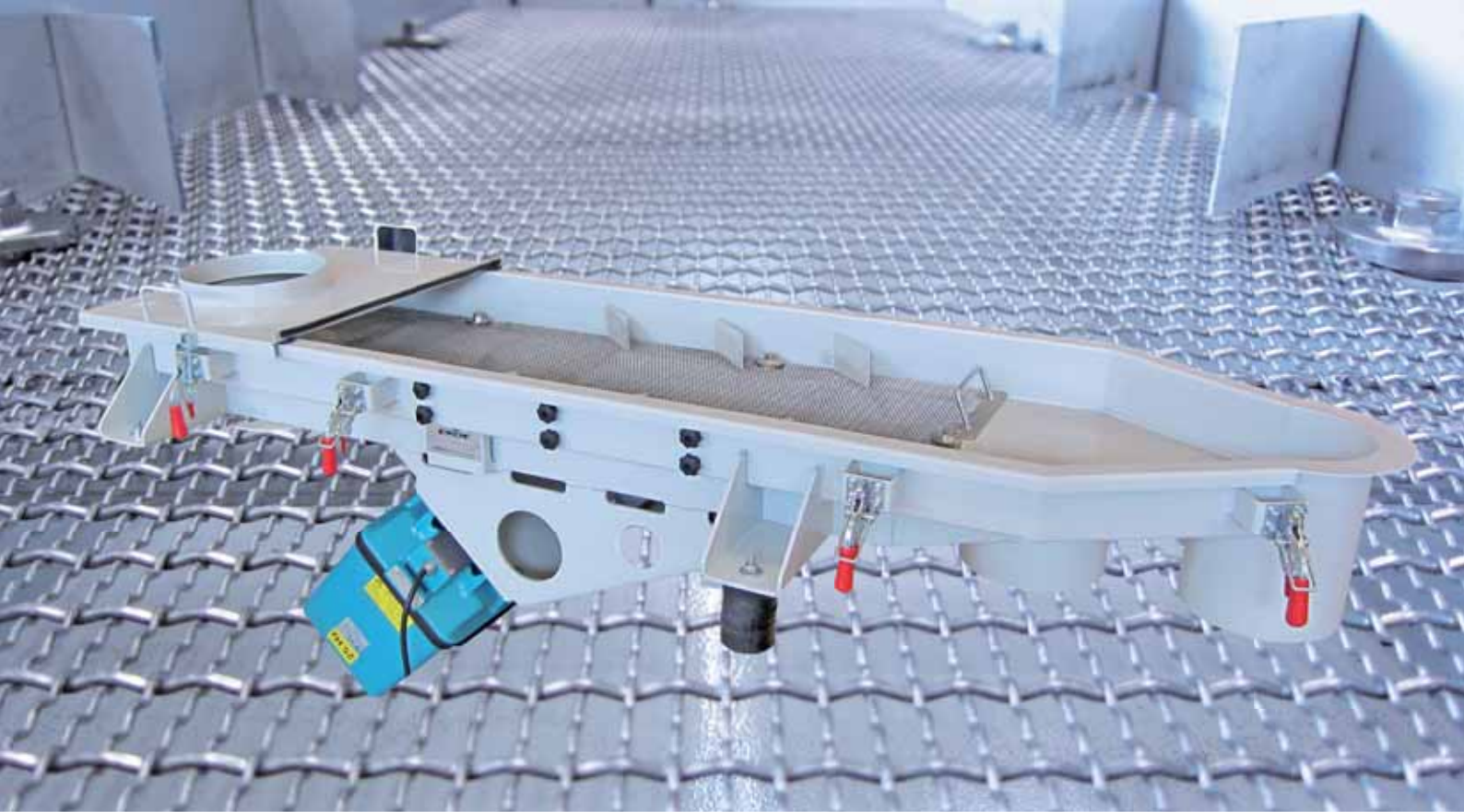
- Belt and chain-driven bucket elevators
- Application-specific bucket configuration
- Transport heights up to 80 m
- Conveyor capacities of up to 800 m<sup>3</sup>/h
- Suitable for large-grained and abrasive products
- Special solutions for adhesive bulk materials



*Potassium salt conveying*



*Loading bucket chain conveyor head and foot sections*



*Screening conveyor with replaceable sieve insert*

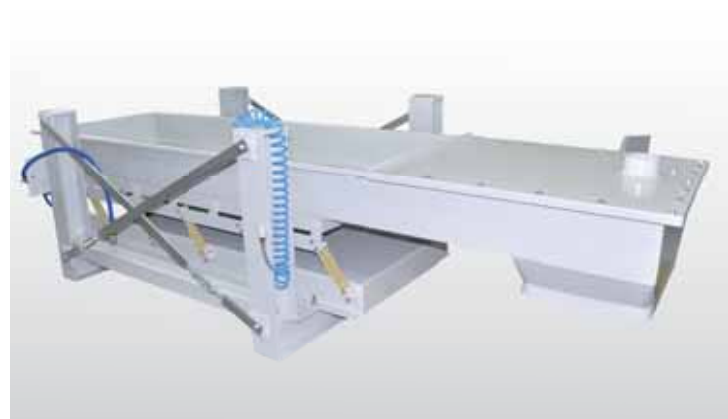
## Conveying troughs – extremely gentle on the product

Bulk materials can be transported and dosed very gently with the lowest possible grain destruction using the microthrow principle. Various drive technologies permit the use of the trough for many applications in all industrial sectors. Process steps such as continuous dosing, sieving, drying and distribution can be realised at the same time as the product is being transported.

- Many different applications
- Easy to clean
- The highest possible dosing precision
- Vibration troughs for lumpy and abrasive products
- Vibrating oscillating conveyors for long transport distances
- Dosing conveyors with magnetic drives
- Conveying tubes as an enclosed system
- Conveying lengths up to 25 m
- Conveying speed < 1 – 40 m/min



*Product dosing from big bag discharge with magnetic oscillating conveyor*



*Dosing conveyor with compressed air piston vibrator*



*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 for plastic additives*



*Vacuum conveyor in the technical centre system*

## 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 conveyor for granules or powder*



*Vacuum conveying for quartz powder*



*Mobile vacuum units for flexible deployment on pipeline networks*

## 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



*Stationary vacuum cleaning system in a lignite power station*



*Mobile vacuum cleaning system for ash*



*Big bag emptying and dosing equipment for plastic additives*

## 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 station with docking for discharge hose*



*Big bag emptying with building height-reduced lifting column*



*Big bag filling equipment in the foodstuffs 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



*High-performance filling equipment for limestone*



*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 dustproof 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



*Interior view of the sack emptying cabin with downstream lump breaker*



*Sack emptying cabin for emptying nitrite*



*Big bag compressor with extended insertion chute*

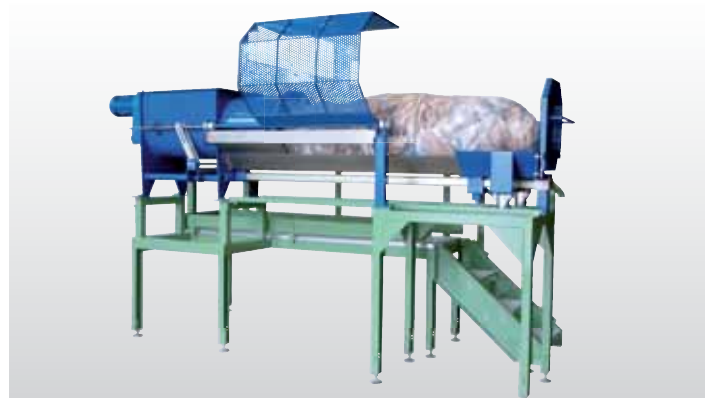
## Big bag and empty sack compactor

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*



*Empty sack compaction with folding protective guard*



*Electrically operated slide valve for sodium nitrite*

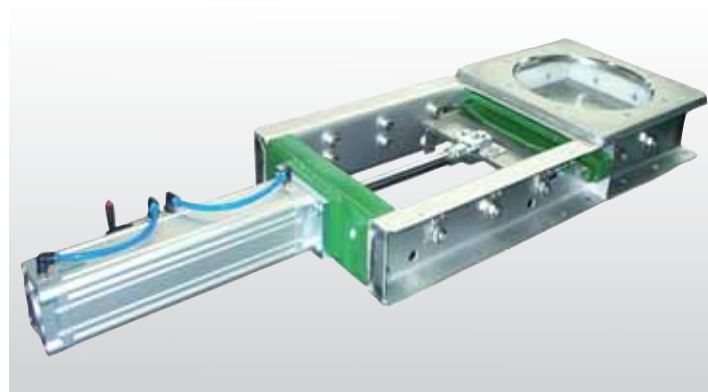
## Slide valve | Flow divider

Extremely robustly welded steel slide valves and flow dividers ensure reliable distribution, dosing and closing off of product flows. A modular drive concept permits operation with media supplied by the customer.

- Manual, pneumatic, hydraulic or electrical operation
- Stainless steel slide with grinded surface
- Gas and pressure-resistant designs
- Dustproof slide valve feed through circular gland sealing
- Monitoring of end and intermediate positions



*Hydraulically operated slide valve; opening cross-section 1,300 x 630 mm*



*Pneumatically operated slide valve*



*Rotary valves in use in soda production*

## Rotary valves

Continuous production processes require a defined product input. Rotary valves combine dosing and shutting-off functions below containers in an extremely space-saving manner.

- Dosed discharge of powders and granulates
- Robust welded construction with exterior flange bearings
- Dustproof discharge system
- Eight-comb rotor
- Discharge capacity 0.5 – 500 m<sup>3</sup>/h
- Rotor diameter 125 – 800 mm
- Rotary valves with blow-through channel for adhesive products



*Stainless steel rotary valves*



*Discharge rotary valve*



*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 grip in big bag filling station*



*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.

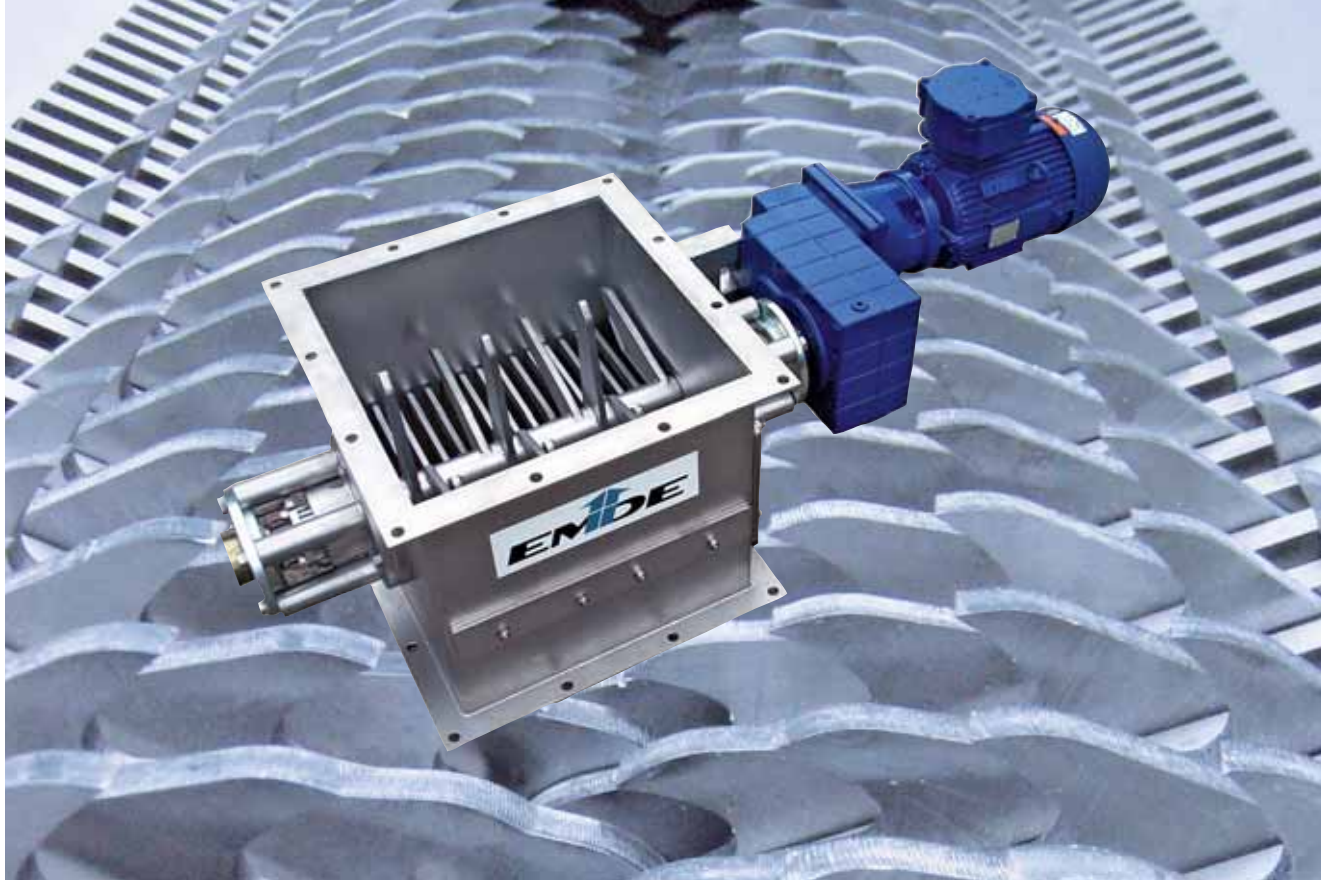
- Single shaft mixers for batch operation
- Shortest mixing times
- Extendable mixing tool
- Mixing tool with screw pitches
- Smallest mixing batches
- Dual shaft mixer
- For continuous operation
- Self-cleaning by means of combing mixing tools
- Throughput of up to 350 m<sup>3</sup>/h
- Flow mixer
- 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 in final assembly*



*Throughput mixer for adding iodine to salt*



*Single shaft lump breaker*

## Lump breakers

Pressure, temperature and dampness cause products to agglutinate 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 in the plastics industry*



*Twin-shaft lump breaker*



*Batchbin loading equipment*

## Batchbin 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 Labin 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 with Robotower up to 12 m
- Precise dosing with the Labin dosing container



*Shuttle transport with chain conveyor and rotary table*



*Dust-free shuttle filling*



*Control unit with operating panel and scale evaluator unit*

## 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*



*Big bag filling plant with pallet magazine and conveying technology for pallets*

## 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*



*Transporting a rotary furnace segment*

## Rotary appliances

Energy can be introduced directly via burners or indirectly with hot air via convection by means of built-in pipe bundles or double jackets. Experienced engineers guarantee correct plant consulting, calculation and design. Specialist fitters perform professional installation and commissioning worldwide.

- Calciners and rotary driers
- Rotary kilns
- Sectional and tubular coolers



*Installing a rotary kiln*



*Fitting a kaolin cooler*



## Nassau works

Koppelheck ♦ D-56377 Nassau  
Phone +49 (0) 26 04 - 97 03 - 0

- ▶ **Conveying**
  - 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
- ▶ **Systems / Components**
  - Plant technology/System solutions
  - Vacuum cleaning systems
  - Batchbin system
  - Empty sack and Big Bag compactor
  - Lump breakers
  - Compensators
  - sack clamps



## Staßfurt works

Atzendorfer Str. 19 ♦ D-39418 Staßfurt  
Phone +49 (0) 39 25 - 98 5 - 0

- ▶ **Foundry: large cast parts for:**
  - Chemical plant construction
  - Wind energy components
  - Machine tool manufacturers
- ▶ **Chemical plant construction**
  - Soda production plants
  - Potassium industry equipment
  - Rotary appliances
  - Thickeners
  - Pressure vessels
  - Large-diameter pipes
- ▶ **Wind energy towers**
- ▶ **Contract manufacturing**



## Wurzen works

Industriestrasse 4-6 ♦ D-04808 Wurzen  
Phone +49 (0) 34 25 - 81 98 - 0

- ▶ Screw conveyors
- ▶ Bucket Elevators
- ▶ Trough chain conveyors
- ▶ Slide valves
- ▶ Rotary valves
- ▶ Continuous mixers/  
paddle mixing screws



## Nentershausen works

Lahnstrasse 32-34 ♦ D-56412 Nentershausen  
Phone +49 (0) 64 85 - 1 87 04 - 0

- ▶ Exploration Drilling
- ▶ Anchor Drilling
- ▶ HDI Drilling
- ▶ Pile Drilling



## Oberbachheim works

Waldstrasse 23 ♦ D-56355 Oberbachheim  
Phone +49 (0) 67 76 - 232

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

