# JOEST

YOUR PARTNER FOR THE FOUNDRY INDUSTRY



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01 | JOEST GROUP

### **JOEST** group



## WE BUILD SOLUTIONS.

Casting parts are not only extremely hot but can also be extremely delicate. With a precisely dosed vibration, these parts can be conveyed very gently.

For the foundry industry, we offer machines and systems for the 'green sand foundry' and 'no-bake sand foundry' processes like coolers, conveyors or charging machines. Companies within the steel and metal industry can be equipped with hopper discharge systems, alloying systems for Electric Arc Furnaces (AEF) and Ladle Furnaces (LF) as well as with conveyors for VD and VOD processes. JOEST is a medium-sized German company and an international leader in vibration technology. Our more than 100 years of experience are an important basis for our flexibility, creativity and innovative skills to meet any customers' need. We are represented worldwide with our subsidiaries and agents, which enable us to analyze and discuss each application directly on site with our customers.

"We don't just build machines. We build solutions. With us, our customers get everything from a single source, from sales contact through production right up to commissioning."

Dr. Marcus Wirtz, Managing Partner JOEST group

## **MELTING PROCESS**

Especially when it comes to demanding charge projects for non-magnetic materials such as non-ferrous metals or stainless steel, JOEST designs and supplies complex solutions in customized dimensions. Here, the most suitable system solutions are employed for storage, vertical and horizontal transport.



### **CHARGING FEEDER**

- Lateral, longitudinal and diagonal movement or combinations possible
- Geometry adapted to the furnace and furnace platform
- Optimized hopper outflow and internal geometry to prevent blockages
- ✓ Standard and tailor made design (mechanical and electrical)



### **ALLOYING PLANTS**

JOEST offers alloying plants with automatic feeding systems of various types, adapted to the requirements of the site. Selected standardized solutions as well as individual adaptations can be offered.

The mechanical solution developed together with the customer is completed with the in-house designed control system and control cabinet.

- High weighing accuracy of the individual aggregates
- / Individual hopper arrangement and design possible
- Cycle-time optimized feeding of aggregates

#### 05 | GREEN SAND MOLDING PROCESS









## **GREEN SAND MOLDING PROCESS**

JOEST provides appropriate solutions when it comes to classic as well as special challenges in the green sand molding process. Perfectly tailored to your molding plant we plan and supply the entire line, from the mold punchout device with shakeout to the casting cooler, sorting conveyor and controls. The vibration technology from JOEST is an essential part of bulk material transport within the sand processing. Just a small part of the product range are e.g. sand conveyors with solutions to avoid sand adhesion or fluidized bed sand-coolers.

- Gentle casting transport and efficient sand processing
- Optimized shakeout process with well-known JOEST Shakeout with electronically adjustable vibrating angle & frequency
- Material flow that fits to customer's logistics





## NO-BAKE SAND MOLDING PROCESS

JOEST designs and supplies complete shakeout units with sand reclamation systems for various no-bake sand molding and core sand processes – organically and inorganically bonded.

JOEST also offers tailored solutions if you e.g. wish to restructure your installation technologically because of the increased requirements of the precisions of castings.

#### 08 | NO-BAKE SAND MOLDING PROCESS





### NON-DISCHARGING SHAKEOUT

- ✓ Low transmission of dynamic forces into the foundation
- ✓ Long lifetime of the machine structure and bearings
- ✓ Optimized power flow in the machine body



## LOST FOAM PROCESS

The lost foam process allows the presentation of complex casting geometries through use of positive styroform models.

The binder-free molding sand needs to fill all spaces in the styroform body completely and perfectly. This also is valid for multiple angled inner structures.



### **COMPACTION TABLE**

✓ Freely selectable frequency and swing amplitude within the possible operating parameters



### **RESONANCE CONVEYOR**

## CORE SAND TRANSPORT

More and more, castings are completely casted in a core pack to avoid a mixture of molding materials and to minimize the molding material flow rate.

JOEST plans and supplies systems which first – with vibration technology – collect used core sand occuring at several places, convey it to a central processing point and then recycle it mechanically and convey it pneumatically. The JOEST lump breaker and JOEST attrition units are a perfect match to handle even big lumps, in no-bake/core sand applications and to process them down to grain-size again.

### WITH AND WITHOUT MASS COMPENSATION



#### HINGED BELT CONVEYOR

## CONVEYING AND PROCESSING TECHNOLOGY

JOEST supply various different components in the area of GOESSLING conveying and processing technology. Large freedom of design regarding technology and our experience from more than 50 years in worldwide projects guarantee individually planned, reliable solutions.

- Conveying, cooling, tempering, hardening, diecasting, lifting and tipping
- ✓ From management to production

## **FEEDING BATCH MACHINES**

In accordance with the required, permissible load, the JOEST lifting and tipping devices are basically classified according to load capacities from 300 kg to 3000 kg and characterized by a particularly robust design.

Depending on the version, the devices are driven hydraulically or by an electric motor. The load handling device is versatile and is selected according to the customer's requirements.



### LIFTING & TIPPING DEVICE

- ✓ Proven system in heavy industries
- ✓ Modular or tailormade construction
- Manual or automatic container locking
- Combinable with container feeding systems or AGV

## AUTOMATION TECHNOLOGY

### **CONTROL AND REGULATION**

- ✓ PLC from Siemens and Allen-Bradley
- Intuitive operation through industry-standard
  HMI solutions
- Individual recipe management based on expert knowledge
- Modern drive technologies and control procedures
- ✓ High process reliability and data-tracking
- ✓ Control and monitoring of external machines

### **INDUSTRY 4.0**

- ✓ Holistic monitoring of the machines and plant parameters
- ✓ Remote maintenance and IoT gateways
- ✓ Dashboard analyses and remote access
- Connection to higher-level controls or ERP systems



### AUTOMATION TECHNOLOGY

- ✓ State-of-the-art electrical design with EPLAN P8
- ✓ Switch cabinet for extreme conditions (e.g. Atex) or country-specific standards (e.g. UL)
- ✓ Verified and validated safety engineering according to DIN EN ISO 13849-1 & 2
- Individual software solutions based on proven standards and vast experience

MADE TO MEASURE

## "Worldwide commissioning and training with our own

### staff who are experienced in the JOEST product range."

## SYSTEM SOLUTION

- Holistic view of processes and logistics
- Reduction of interfaces for customers
- Cross-functional cooperation between various equipment

## STANDARDISATION

- Established equipment designs for various applications
- Predefined and established PLC operation
- Raster of widths and heights for multiple used machines

## **DELIVERY PROGRAM**

#### **GREEN SAND MOLDING PROCESS**

- Shakeouts
- Vibration Shakeout Drums
- Casting Coolers
- Helical Casting Coolers
- Sorting Conveyors
- Cast Iron Conveyors
- Sand / Casting Transport
- Bridge / Gate Feeders
- Sand Coolers

#### LOST FOAM PROCESS

- Compaction Tables
- Sand Filling Units
- Sand Coolers
- Roller Track Loops
- Transfer Cars

#### **NO-BAKE SAND MOLDING PROCESS**

- XL-Non-Discharging Shakeouts
- Pre-Reclaiming Sand Crushers
- Sand Lump Attrition Units
- Spiral Crushers
- Fluid Bed Coolers
- Countercurrent Sand Sifters
- Compaction Tables
- Sand Reclamation Plants

#### MELTING PROCESS

- Furnace Charger
- Additive Alloy Handling Systems
- Ladle Treatment Systems
- Non Ferrous Metal Chip Furnace Charging Systems
- Non Ferrous Scrap Furnace
  Charging Systems

#### USED CORE SAND TRANSPORT AND RECLAMATION SYSTEMS

- Vibrating Conveyor Arrangements
- Sand Lump Attrition Units
- Super Inclined Sand Conveyors
- Special Design Sand Storage Silos

#### **CLOSE TO FOUNDRY PROCESSES**

- Feeder/Conveyor for Shot-Blast Systems
  Batch & Continuous
- Feeding Systems for Hardening Furnaces
- Transport Lines for Sand and Chips
- Hopper Discharge Feeder
- Dosing Feeder
- Weighing equipment



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