

**HAYER & BOECKER**



## **MINERAL PROCESSING PLANTS**

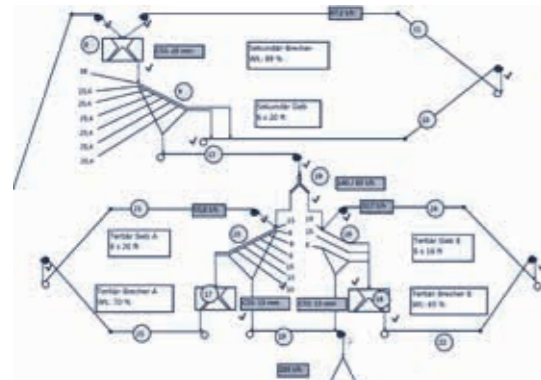
A HAYER & BOECKER Company

Complex plant projects with multiple components and planning phases require comprehensive experience and expertise in plant integration. HAVER & BOECKER links our core screening, washing and pelletizing technologies with supplementary components of our vendors. The North American mineral processing brand W.S. Tyler is also a part of HAVER & BOECKER. Tyler technology can be implemented into your plant.

HAVER & BOECKER offers the "single source" principle where a single contractor takes over full responsibility for project execution. Engineering knowledge, modern systems integration and software solutions provide the basis for successful planning and implementation. Building a plant with our customers is a mutual partnership. The processing specifications and needs of our customers, in combination with our global experience, are the keys to achieving a profitable mineral processing plant.

**Plant engineering: You can count on us.**

- Focus on production flexibility and profitability
- Detailed and efficient layout of processes and components
- Integrated concepts based on customer needs and our in-depth knowledge of the core process
- Tests and analyses at our own in-house R&D Center
- Process simulation, layout and optimization using HAVER & BOECKER NIAflow expert software



NIAflow



Plant under construction

**Project realization: You can build on us**

- Customer-oriented project support, from initial concept to production phase
- Added value through the integrated interaction of various plant components. With us: 1+1=3
- Robust, lifetime design
- Manufacturer-independence for components such as crushers, conveyor technology and peripheral machines such as maintenance cranes, de-dusting systems, compressed air systems, hydraulic hammers and conveying systems.
- Local brand-name components may be integrated
- Planning, delivery and integration of plant control systems and data management
- Extensive consideration of requirements for personnel safety and environment (CE machine directives, dust and noise emissions, energy efficiency)

**Design details: Why it works**

- Optimum flow, robust, low wear & tear, and maintenance-friendly chute systems
- Detailed work platforms, walkways and stairway systems
- Rugged, steel structure production

**HAVER & BOECKER also offers**

- Structural engineering, including verifiable statics calculation
- Transportation management, supervision or complete package: from assembly and electrical installation, to plant start-up and optimization
- Project management, on-site services, provision of operating supplies, components or plant control

- Comprehensive plant documentation on CE requirements and beyond
- Declaration of conformity with EC directives for machines 2006/42/EG (CE)
- Custom services and spare parts packages

**Your industry:**

**Cement**  
Cement



**Building materials**  
Granite



**Minerals**  
Silica sand



**Chemicals**  
Polyolefin



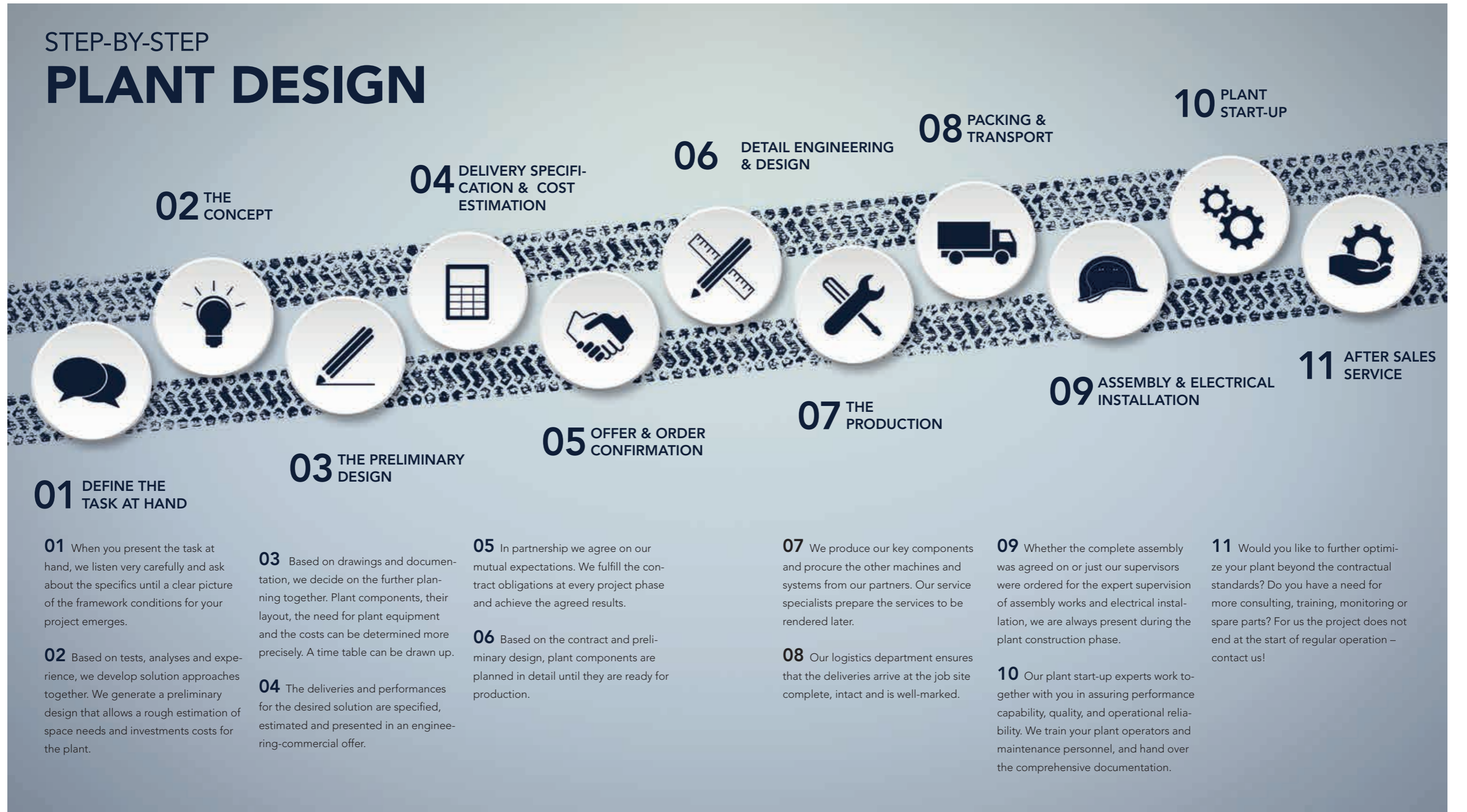
**Food**  
Oat flakes



**Raw materials**  
Potash salt



# STEP-BY-STEP PLANT DESIGN



## 01 DEFINE THE TASK AT HAND

**01** When you present the task at hand, we listen very carefully and ask about the specifics until a clear picture of the framework conditions for your project emerges.

**02** Based on tests, analyses and experience, we develop solution approaches together. We generate a preliminary design that allows a rough estimation of space needs and investments costs for the plant.

## 03 THE PRELIMINARY DESIGN

**03** Based on drawings and documentation, we decide on the further planning together. Plant components, their layout, the need for plant equipment and the costs can be determined more precisely. A time table can be drawn up.

**04** The deliveries and performances for the desired solution are specified, estimated and presented in an engineering-commercial offer.

## 04 DELIVERY SPECIFICATION & COST ESTIMATION

## 05 OFFER & ORDER CONFIRMATION

**05** In partnership we agree on our mutual expectations. We fulfill the contract obligations at every project phase and achieve the agreed results.

**06** Based on the contract and preliminary design, plant components are planned in detail until they are ready for production.

## 06 DETAIL ENGINEERING & DESIGN

## 07 THE PRODUCTION

**07** We produce our key components and procure the other machines and systems from our partners. Our service specialists prepare the services to be rendered later.

**08** Our logistics department ensures that the deliveries arrive at the job site complete, intact and is well-marked.

## 08 PACKING & TRANSPORT

## 09 ASSEMBLY & ELECTRICAL INSTALLATION

**09** Whether the complete assembly was agreed on or just our supervisors were ordered for the expert supervision of assembly works and electrical installation, we are always present during the plant construction phase.

**10** Our plant start-up experts work together with you in assuring performance capability, quality, and operational reliability. We train your plant operators and maintenance personnel, and hand over the comprehensive documentation.

## 10 PLANT START-UP

## 11 AFTER SALES SERVICE

**11** Would you like to further optimize your plant beyond the contractual standards? Do you have a need for more consulting, training, monitoring or spare parts? For us the project does not end at the start of regular operation – contact us!



Primary crushing plant, Greywacke, 750t/h, HAVER F-CLASS, HAVER push feeder, jaw crusher

**Technical details**

- Primary, secondary and tertiary crushing and screening systems
- Dry and wet classification
- From scalpers to ultrafine screening: particle sizes from more than a meter to 100 microns.
- New plants and optimization of existing plants
- Based on the wide variety of screening machine types from HAVER & BOECKER
- Process simulation, layout and optimization with HAVER & BOECKER's NIAflow expert software
- Detailed, efficient layout of plant components
- Includes all peripheral components such as conveying technology, chute systems, steel construction and systems control
- Independent of crusher types and manufacturers
- Global screening experience since 1930



Fine screening plant, silica sand, 300t/h, HAVER FINE-LINE, HAVER L-CLASS



Example of material



Primary crushing plant, fluorspar and feldspar, 80t/h, HAVER F-CLASS, HAVER push feeder, jaw crusher

# PLANT SCREENING



The successful implementation of proven screening machine systems in a well-planned process using the most modern automation technology optimizes your crushing and screening plant for profitability.



Primary crushing plant, calcium carbonate, 120t/h, HAVER vibrating feeder, cone crusher



Washing plant, limestone, 70t/h, HAVER HYDRO-CLEAN, HAVER L-CLASS

**Technical details**

- Wet washing processes based on high pressure water jets and friction
- Stone sizes 0 - 200 mm (HC)
- Based on the HAVER & BOECKER washing system: HYDRO-CLEAN, FRICTIONCLEAN, bucket wheel, washing and dewatering screening machines
- Detailed, efficient layout of plant components
- Process simulation, design and optimization using the HAVER & BOECKER NIAflow expert software
- Includes all peripheral components such as dewatering systems, hydro-cyclone systems, water treatment, conveyor technology, chute systems, steel construction and systems control



Example of material



Example of material



Washing plant, several aggregates, 300t/h, HAVER HYDRO-CLEAN, HAVER L-CLASS

# PLANT WASHING



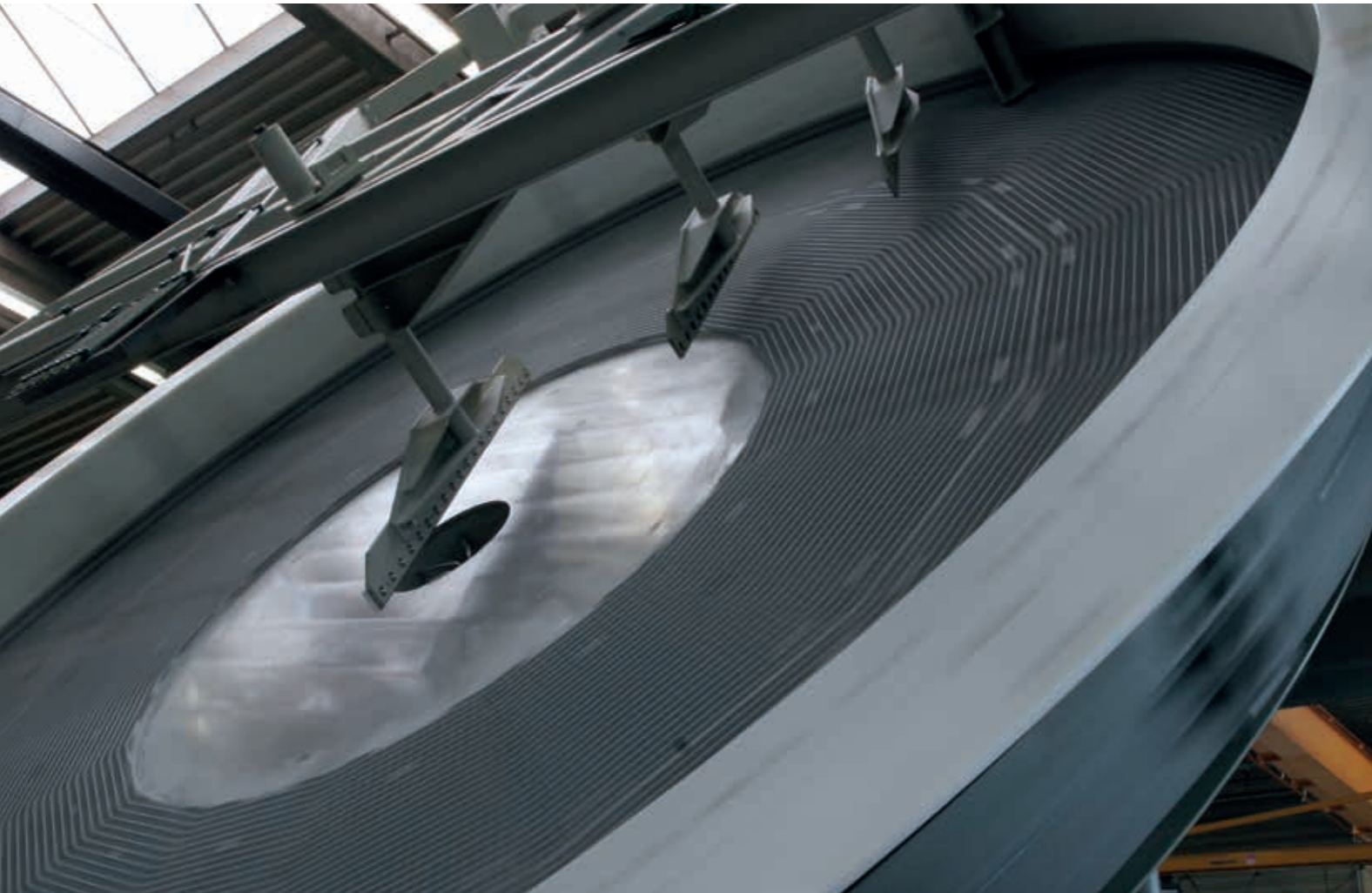
One of the core activities in mineral processing technology is washing material to remove fines and dissolve agglomeration. This technology offers customers an environmentally gentle and cost-effective washing method. Foremost complete solutions with downstream machines, such as screening machines, dewatering screens or water circuits, bring our customers functional and economic success.



Washing and classifying plant, natural sand, 70t/h, HAVER HYDRO-CLEAN, HAVER L-CLASS, HAVER bucket wheel



Washing and classifying plant, limestone, 140t/h, HAVER HYDRO-CLEAN, HAVER L-CLASS



Pelletizing plant, blast furnace remnants, 15t/h, HAVER SCARABAEUS

**Technical details**

- Agglomeration of powder-type materials into granulated pellets
- Based on the HAVER SCARABAEUS pelletizing discs
- Includes all peripheral components such as material feeders and dosing units, conveyor systems, control systems, steel construction, upstream and downstream mixing or thermo-processes and the provision of process supplies
- SCARABAEUS process: CPA particle analysis controls the material feeding and the machine parameters of rotational speed, inclination angle, and circumferential speed for assuring maximum output
- Development based on years of experience and knowledge

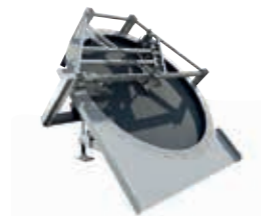


Example of material



Pelletizing plant, iron ore, 140t/h, HAVER SCARABAEUS

PLANT  
**PELLETIZING**



The agglomeration of finely dispersed materials provides for significantly improved transport, processing and application properties. The interaction between the HAVER SCARABAEUS pelletizing plates and the HAVER CPA particle analysis system assures our customers that their products are successfully processed for maximum profit.



Pelletizing plant, iron ore, 140t/h, HAVER SCARABAEUS



Pelletizing plant, mineral fertilizer, 20t/h, HAVER SCARABAEUS

## **HAYER & BOECKER OHG**

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