Industrial Solutions

Mining

Innovative equipment and systems for reliable and resource-friendly raw materials mining

thyssenkrupp
Open pit mining equipment and systems
• Bucket wheel excavators
• Mobile, semi-mobile and stationary crushing plants for open pit mines
• In-pit conveyors
• Overland and curved belt conveyors
• Deep angle conveyors
• Belt conveyors, tripper cars and spreaders
• Transport conveyors
• Flow feeders
• Mine planning
• Bucket wheel excavator systems
• In-pit crushing systems

Mineral processing
• Mobile, semi-mobile and stationary crushing plants for quarries
• Crushers, screens, feeders and discharge systems
• Standard machines
• Grinding plants
• Pyroprocessing systems
• Metallurgical injection systems
• Filtration plants
• Flue gas desulfurization plants for power plants
• Laboratory automation systems

Materials handling equipment and systems
• Continuous ship unloaders
• Grab-type ship unloaders
• Shiploaders
• Stackers and reclaimers
• Combined bucket wheel stacker/reclaimers
• Blending beds
• Pipe conveyors and belt conveyors
• Railcar unloading and loading stations
• Cable cranes
• Dress/vigor boxes
• Complete stockyard and port handling systems for bulk materials

Range of products and services

Perfect mining solutions

With our wide-ranging capabilities, we deliver innovative tailored solutions for the mining and minerals industry.

Global demand for raw materials is rising all the time. Set against this is the finite nature of resources and the need to protect the environment. As one of the few full-line suppliers worldwide, we combine efficient mining solutions with sustainable resource management at the highest level. We are reliable partners to demanding customers, offering them tailored, cost-efficient and responsible solutions for machinery and technology.

Contents

04 Three questions for...
06 Mining for success
08 Open pit mining equipment and systems
10 Mineral processing
12 Materials handling equipment and systems
14 Service
In this context, we are driving to increase our pace of innovation. Examples include the modification of parts of iron ore processing systems to use less water, and the variability of fully mobile mining systems.

What is particularly special about the way you work with customers? We have an established customer-driven global network of locations and we want to expand this further in the near future. Our German units, with their decades of design and implementation experience, are an important part of the network. For our customers, collaboration has value when we succeed in turning their specific and varying demands over a life cycle into a high-quality product and/or a high-quality service. I think this global approach is what makes the way we work with customers special. We think and act in many worlds and are always looking for ways to improve in this respect.

Finally, a personal question: Can you recall an event during your time at thyssenkrupp that is characteristic of working in the mining environment? No isolated event, but rather the great variety of international tasks that we tackle in multidisciplinary teams. We help ensure the supply of raw materials that sustain and develop life’s infrastructures. Balancing development with sustainability is a consistently challenging and fascinating task.

Our role is to find the optimum technical and economic solution for every challenge, says Torsten Gerlach, CEO Mining at thyssenkrupp Industrial Solutions.

"We think and act in many worlds and are always looking for ways to improve in this respect.”
Torsten Gerlach, CEO Mining
Mining for success

Open pit mining equipment and systems
- Mining, conveying, spreading and dumping

Mineral processing
- Crushing, feeding, classifying, separating, grinding, drying and filtering

Materials handling equipment and systems
- Loading, unloading, stockpiling, homogenizing and transporting

To find the best solution for every challenge: That’s our aim and our promise.

Our customers profit from a comprehensive range of capabilities – from ultrahigh-strength materials to innovative machinery to turnkey systems for mining, processing, handling raw materials. Our services include designing and building individual machines and complete installations as well as modernizing and upgrading existing systems. From low-cost standard machines to custom systems for extreme conditions – our solutions satisfy all requirements and create lasting value for our customers.
Efficient from the word go

Mining valuable raw materials requires moving huge masses of earth and rock. Our customers profit from innovative systems and tailored solutions.

Large or small volumes, local geological conditions, specific challenges and requirements: We tailor the design of turnkey mining systems to suit individual customer needs. The experts at thyssenkrupp Industrial Solutions have decades of experience and unique expertise in all areas of continuous mining technology. Our bucket wheel excavator systems achieve capacities of up to 240,000 m³/day.

We plan every detail with our customers from the word go. Equipment and systems are coordinated and matched to specific operating requirements with meticulous care. For loose rock mining, we provide bucket wheel excavators, long-distance conveyors and spreaders. For hard rock mining, we offer in-pit crushing systems that reduce the material on site for transportation by belt conveyors. Utilizing every technical possibility available, we design the whole mining process for maximum reliability and cost efficiency.

Even with the biggest machines, it’s essential to get the details right. Every component is made from high-quality material and tested under the toughest conditions so that our customers can count on the quality and reliability of our products.

Our capabilities at a glance:
- Complete bucket wheel excavator and in-pit crushing systems
- Giant bucket wheel excavators
- Compact bucket wheel excavators
- Beltwagons
- Trapper cars
- Spreaders
- Stationary crushing plants
- Semi-mobile crushing plants
- Mobile crushing plants
- Stationary, relocatable and shiftable belt conveyor systems
- Overland and curved belt conveyor systems
- Skip conveying systems
- Chevron-MegaPipe® conveying systems
- Transport crawlers
- Plow feeders
Expert processing is the link between the mined raw material and an optimum product for further use.

Different jobs call for different solutions, which we custom design using our unique expertise and extensive product portfolio.

In every project the technology used depends on the job at hand – from planning to machine design to commissioning. Thanks to the extensive range of machinery offered by thyssenkrupp Industrial Solutions, proven solutions are available for every need, allowing raw material processing to proceed with maximum efficiency and at the lowest possible cost.

A wide range of crushing plants is available to reduce overburden, rock, coal and other minerals. Our primary crushers set the standard worldwide and also make a great contribution to reducing CO₂ emissions. In combination with other carefully matched components, they create highly efficient, complete crushing systems – as stationary, semi-mobile or mobile solutions depending on customer needs. With our large selection of standard machines and modules, we offer fast, low-cost solutions for the aggregates and coal industries from a single source.

When it comes to mineral grinding, our mills are valued the world over for their robust construction and outstanding durability, even dealing with extremely abrasive materials. We also offer a wide range of technologies and machinery for the thermal processing of various materials.

More than 20 different crushers provide a suitable type for every conceivable application and performance class.

Our capabilities at a glance:

- Crushers
  - Gyratory crushers, jaw gyratory crushers
  - Jaw crushers
  - Roll crushers
  - RollSizer, Multiple RollSizer
  - Cone crushers Kubria® and HKB
  - Hammer crushers (MAMMUT® and TITAN®)
  - Impact crushers

- Conveying and classifying equipment
  - Apron feeders, chain conveyors, reciprocating plate feeders, vibrating feeders, screens, roller screens, magnetic separators
  - Standard machines and modules

- Grinding and processing equipment
  - Hammer mills
  - SAG mills
  - Ball mills
  - High-pressure grinding rolls POLYCOM®
  - DOUBLE ROTATORS®
  - Roller mills

- Scrubbers
  - Drum dryers, flash dryers
  - Filter equipment
  - Preheaters, rotary kilns, rotary kiln burner systems, multiple hearth furnace, high-temperature shaft kilns, lime shaft kilns, Various coolers

- Lime grinding and gypsum dewatering plants for flue gas desulphurization in power plants
- Machines and plants for the processing of steam coal

Know-how makes the difference
For processed raw material to reach its destination in top condition and without losses, bulk handling systems have to be carefully designed and engineered.

To meet these complex requirements, we offer customers everything they need for the transportation and transshipment of raw materials. thyssenkrupp Industrial Solutions provides a comprehensive range of systems for port terminals, stockyards, bulk material distribution centers and process plants. As one of the few full-line suppliers of such systems, we deliver cost-efficient, environmentally friendly solutions from individual machines to complete turnkey installations for the mining, cement, chemical and fertilizer industries as well as for coal-fired power plants, metallurgical facilities and steel mills. We have particular experience of projects involving throughput rates of more than 10,000 tons per hour.

For raw materials handling at ports, we offer highly efficient systems for loading and unloading seagoing and inland waterway vessels. Custom-designed rail car loading and unloading stations provide optimum links to the rail system. In stockyards, our combined bucket wheel stacker/reclaimers can handle huge volumes of bulk materials. In longitudinal or circular stockyards, scraper-type units carry out blending of coal, limestone and fertilizers. For harder materials, particularly ores, bridge-type bucket wheel systems or drum reclaimers are used. Special pipe conveyors are the solution for eco-friendly handling of dusty materials in metallurgical plants, power stations and cement works.

Our capabilities at a glance:
- Complete stockyard and port handling systems for bulk materials
- Combined bucket wheel stacker/reclaimers, bridge-type bucket wheel reclaimers
- Drum reclaimers
- Scrapers (bridge scrapers, portal and side scrapers, circular stockyards)
- Stackers
- Belt conveyors and pipe conveyors
- Shiploaders
- Continuous ship unloaders
- Grab-type ship unloaders (portable crane/luffing slewing crane)
- Wagon tipplers
- Wagon loading stations
- Cable cranes
- Drives, gear units and gearless drive systems for high-throughput belt conveyors

Tailored bulk handling systems get materials to their destination cost-effectively and with minimum environmental impact, with all components performing their function with maximum efficiency.
So that complex plants can accomplish their tasks in an optimal manner and create and maintain value, professional support by competent experts is necessary – right from the start and at any point in time during the many years of a plant’s life.

Hand in hand with the respective client, thyssenkrupp Industrial Solutions implements varied projects and, through expertise and many years of experience, ensures the successful erection of complex plants, even in difficult environments. However, it doesn’t stop there: All customers around the globe can rely upon thorough, rapid and comprehensive support when it comes to looking after their plant. Moreover, these services are also available for plants from other manufacturers.

Our view of service

When doing so, they can rely on a huge trove of technical and economic know-how – and on globally networked, effective structures – when it comes to the necessary servicing and maintenance work. Our spare-parts management ensures the most cost-effective spare parts and the fastest possible delivery. In local service centers, we have the required know-how to offer our customers a helping hand. Our experts define optimum operating and service intervals, increase cost efficiency and equipment life through modernization and maintenance, and even handle relocation and decommissioning. Together with the customer, automation possibilities are adapted to individual requirements. The qualification of local employees is ensured through instruction and training courses. Integrated asset management helps the customer to reduce the overall costs for a plant.

All work is individually designed and adapted for each customer

Our spare parts supply & management

360°

Service from a single source