BULK MATERIAL HANDLING EQUIPMENT

Optimal Solutions & Technologies
### PRODUCTS AND SERVICES

#### Mining Systems and Equipment
- Complete Mining Systems
- Bucket Wheel Excavators
- Bucket Chain Excavators
- Crushing Plants
- Apron Feeders
- Belt Conveyors
- Belt Feeders
- Belt Wagons
- Mobile Conveyor Bridges
- Spreaders
- Transport Crawlers
- Cable Reel Cars
- Shifting Heads

#### Minerals Processing Equipment
- Roll Crushers
- Sizers
- High Pressure Grinding Rolls (HPGR)
- DELKOR Thickeners
- DELKOR Horizontal Vacuum Belt Filters
- DELKOR F.A.S.T. Filter Press
- DELKOR BQR Flotation Cells
- DELKOR Belt Linear Screens
- DELKOR Apic Jigs

#### Bulk Material Handling Systems and Equipment
- Stockyard and Disposal Facilities
- Reclaimers
- Scrapers
- Stackers
- Combined Stacker/Reclaimers
- Wagon unloading
- Wagon/truck loading
- Belt Conveyors
- Tube/Pipe Conveyors
- Ship Loaders
- Ship Unloaders

#### Services and Components
- Project Development Services
- Fabrication and Components
- Construction and Commissioning
- Technical Services and Spare Parts
TAKRAF, a Tenova company, is an integrated solutions provider to the global mining, bulk material handling, minerals processing and beneficiation industries, offering innovative technological solutions as well as process and commodity knowledge along the industry value chains. With the integration of the well-known DELKOR and Tenova Advanced Technologies (formerly Bateman Advanced Technologies) brand of products into TAKRAF as specialized product lines, our portfolio for the minerals processing and beneficiation sectors has been considerably enhanced.

TAKRAF is a key supplier of equipment and systems for open pit mining and bulk handling, having provided hundreds of complete systems, as well as individual machines, to clients all over the world. Based upon more than a century of experience and know-how, the product range stretches from overburden removal, raw material extraction, conveying, processing, comminution, homogenizing, blending and storage to onward transport or shipment.

TAKRAF provides the full range of services, from project studies, planning, engineering and design to fabrication, supply, erection and commissioning, technical assistance, service and after-sales service for plants, systems and equipment. Its equipment has proved robust and reliable in adverse geological conditions, in extreme climates with temperatures down to minus 45°C, in dust, wind or extreme humidity, as well as in seismic zones and altitudes of up to 5,000 m above sea level or in underground applications.

TAKRAF has committed to both environmental and social sustainability in their business interactions and has adopted a Zero harm approach to safety under the SAFETY FIRST promise of Tenova.
As a major competitor on the international market, TAKRAF offers system solutions for handling and transporting bulk materials. The employment of the latest techniques in planning, design and production ensures fast delivery. Alongside individual machines, we also supply complete installations for the handling and storage of raw materials and other bulk goods.

We will advise you on-site to be able to take into account territorial specifics and regulations right from the start. Our installations take care of unloading, storage, blending, sampling and reloading. Up-to-date manufacturing techniques ensure that TAKRAF machines and systems for bulk handling are top quality products - providing you with benefits such as high output, high efficiency and high availability.
Our quality assurance system, coupled with efficient project management, ensures that the customer receives consistently high quality, and not only for products manufactured in our own factories.

We ensure economical operation of our individual machines and systems, working reliably under all climatic conditions and with low impact on the environment.
TAKRAF’s technical planning services focus on:

- Advice during solution development
- Feasibility studies
- Studies into capacity expansion and the refurbishment of existing facilities

We perform services in the planning and realization phases, such as:

- Complete supply, erection and commissioning of bulk material facilities
- Project management and quality control
- Preventive and regular maintenance refurbishment and modernization of existing facilities
TAKRAF supplies

- Complete systems for bulk material handling, transportation and storage, including requirements of sizing, blending and sampling
- Coaling and ash removal systems for power plants
- Handling systems for technological processes
- Port handling systems
- Stackers
- Reclaimers
- Stacker/reclaimers
- Scraper reclaimers
COALING AND ASH REMOVAL FACILITIES

TAKRAF has decades of experience in this field.

Our technical know-how ensures the incorporation of optimum solutions in power plant construction. We supply machines and complete systems for:

- Coaling facilities
- Stockyard management facilities
- Systems based on delivery by rail or road
- Mechanical conveying in ash removal facilities
FACILITIES FOR THE TREATMENT AND TRANSPORT OF BULK MATERIALS

TAKRAF offers tailored solutions for various requirements and numerous applications.

For the treatment and transport of bulk materials, we supply:

- Process-controlled facilities with continuous or discontinuous handling
- Stacking and reclaiming equipment
- Interim transport facilities
- Facilities for the transport of sensitive materials
The TAKRAF pipe conveyor has been specially developed for the environmentally friendly transport of bulk materials. In the field of copper mining we offer complete solutions for Heap-Leach Systems.
Powerful stockyard systems complete TAKRAF’s range of bulk material handling products.

The line-up includes:

- Stackers
- Reclaimers
- Scraper reclaimers
- Stacker/reclaimers
- Facilities for blending and circular stockyards for all capacities
FACILITIES FOR BULK MATERIAL HANDLING AT PORTS

TAKRAF’s unloading, storage and loading systems for sea and river ports are always designed as custom solutions.

TAKRAF’s port facilities are used throughout the world. With their high technical standards and state-of-the-art design, our systems satisfy the tough demands faced by modern ports.

TAKRAF’s product range includes:

- Ship to shore handling facilities using ship unloaders featuring grab operation and continuous handling
- Equipment for the continuous mechanical transport of bulk goods on land, including loading facilities
- Shore to ship handling facilities with mechanical slewing ship loaders featuring shuttle conveyors for sensitive bulk materials