FABRICATION AND TECHNICAL SERVICES

Quality Made in Germany
MINING SYSTEMS AND EQUIPMENT

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
- Scrappers
- Stackers
- Combined Stacker/Reclaimers
- Wagon unloading
- Wagon/truck loading
- Belt Conveyors
- Tube/Pipe Conveyors
- Ship Loaders
- Ship Unloaders

SERVICES AND COMPONENTS

Services and Components
- Project Development Services
- Fabrication and Components
- Construction and Commissioning
- Technical Services and Spare Parts

BULK MATERIAL HANDLING SYSTEMS AND EQUIPMENT
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.
TAKRAF operates a workshop in Lauchhammer/Germany for the production of huge-size, high-value mechanical components, offering engineering, manufacturing and after-sales services from one single location. Lauchhammer is situated 120 km south of Berlin and 60 km north of Dresden.

The highly skilled employees are specialized in precise machining and component assembly and testing.

The integrated management system is certified according to ISO 9001, ISO 14001, BS OHSAS 18001, SCCP and EN 1090.

All essential manufacturing steps can be carried out in four interconnected bays with a total covered production area of 17,900 m². Crane capacity allows the handling of units weighing up to 130 tons.

Finished products are dispatched either by truck or train. The roads from the workshop to the nearby Autobahn are fully developed for heavy load and oversize truck transport.

In-house fabrication provides a perfect training ground for engineers, inspection and supervising personnel.
WORKSHOP EQUIPMENT

State-of-the-art tools & machinery
- Turning center: max. diameter 2,000 mm, max. length 10,000 mm
- Vertical lathe: max. diameter 6,300 mm, max. height 4,000 mm
- Boring and milling:
  - up to 7 controllable axes
  - longitudinal travel max. 18,000 mm
  - vertical travel max. 4,000 mm
  - turntable 3,000 x 3,500 mm

Prefabrication
- Huge press with 1,000 tons capacity
- Roll bending of plates with up to 80 mm thickness
- Planing machine 2,000 x 6,000 x 1,800 mm
WORKSHOP EQUIPMENT

Certified welding procedures
- SMW – submerged manual welding
- SAW – submerged arc welding
- FCAW – flux core arc welding
- Tungsten inert gas welding

Furnace for heat treatment of complex structural parts
4,500 x 3,000 x 2,500 mm

Inductive hardening device for increased wear resistance

State-of-the-art shot blasting and painting facilities
WORKSHOP

Product range
- Engineered belt pulleys
- Take-up winches
- Rope drums and rope sheaves
- Bucket wheels
- Crawler assemblies
- Large gearboxes
WORKSHOP

Product range

- Large segmented ball bearings and gear rims
- Large pivot bearings
WORKSHOP

Product range
- Apron feeders
- Sizers
- Jib cranes
- Transport crawlers
- Surface miners
- OEM spare parts

Requests for quotation for these and other similar mechanical equipment are welcome.
WORKSHOP

Assembly and Testing
The Lauchhammer workshop is perfectly suited to either preassemble functional units or complete machines. Individually designed tests before shipment increase quality and facilitate later commissioning at the site of operation.

- Mechanical assembly
- Electrical installation
- Hydraulic and pneumatic installation
- Piping
In-house testing facilities:
- Multi-day gearbox load tests up to 800 KW
- Indoor functional tests of electro-hydraulic and diesel-hydraulic drive trains
- Load test for jib cranes
- Spacious multi-purpose outdoor test field (digging tests, test drives)

Assembly and testing is supported by extensive measuring instruments and analyzers:
- Endoscopy
- Noise and vibration analyzers
- Bearing analyzers
- Laser adjustment devices
- In-line torque meters
QUALITY ASSURANCE

TAKRAF’s quality assurance is carried out in accordance with ISO 9001 along the entire value chain.

- Highly qualified and worldwide experienced inspection personnel
- Certified and proven quality procedures
- State-of-the-art test equipment (non-destructive material testing, 3D-laser tracker, roughness testing, hardness testing)
- Consistent test and inspection planning for in-house and subcontracted manufacturing
- Independent in-process quality monitoring
- Continuous inspection at sub-contractors
TECHNICAL SERVICES

Installation and Commissioning
TAKRAF provides a wide range of services to manage and support installation and commissioning.

- Site management
- Scheduling
- Installation procedures planning
- Supervision and inspection
- Specialized fitters and welders
- Training

Our installation experts gained their experience at sites all over the world, and under all climatic conditions.

The involvement of our experts may be limited to site supervision, but it can also be extended to turn-key handover.
TECHNICAL SERVICES

Inspections and Maintenance
Long-term availability requires appropriate maintenance. TAKRAF’s service team is committed to provide all necessary support.

- Regular inspection of safety devices including readjustment if necessary
- Regular inspections of main steel structures in accordance with international codes and local regulations
- Inspection reports propose necessary actions considering priorities and urgency
- Spare and wear part proposals considering specific operating conditions
- OEM spare part supply
- Training
- Engineering and site assistance for troubleshooting and major repairs
- Gearbox service, comprising condition monitoring by regular inspections, on-site repair, in-house reconditioning
**TECHNICAL SERVICES**

**Refurbishment and Upgrading**

After years of operation under tough conditions progressive wear and decreasing availability may trigger plans to purchase new equipment. However, in certain cases carefully targeted refurbishment can be an attractive alternative.

Thorough inspections allow for a comprehensive proposal considering actual wear and fatigue. According to the priorities set by the client and the available budget, a detailed refurbishment project can be proposed including a reasonable work split-up between the client, local maintenance companies and TAKRAF.

If operating or geological conditions have changed significantly, TAKRAF also offers to increase the performance or to extend operating parameters of existing equipment.

As TAKRAF has contributed to more than 50 major refurbishment and modernization projects worldwide, interested parties are invited to visit reference projects and discuss the potential of modernization in detail.
TAKRAF GmbH
Torgauer Straße 336
04347 Leipzig - Germany
T +49 341 2423 500
F +49 341 2423 510
takraf.sales@tenova.com

TAKRAF GmbH
Bahnhofstraße 26
01979 Lauchhammer - Germany
T +49 3574 854 0
F +49 3574 854 100
takraf.service@tenova.com

www.takraf.com

TECHINT GROUP