

TAKRAF 



RAPID RAIL LOADING SYSTEMS

Optimal solutions for bulk material handling

Innovation out of tradition – It pays to talk to a specialist!

TAKRAF Group, through its established and well-known brands, TAKRAF and DELKOR, provides innovative technological solutions to the mining and associated industries. We leverage our experience, acquired over more than a century, to provide equipment, systems and services that best satisfy our clients' mining, comminution, material handling, liquid/solid separation and beneficiation requirements. Owners and operators around the world trust our engineered solutions to lower the total cost of ownership and reduce environmental impact by improving efficiency with safe and reliable equipment. For sustainable solutions backed by expert service you can rely on TAKRAF Group. Visit us at www.takraf.com.

We at TAKRAF Group are committed to environmental and social sustainability in all our business interactions and pted a Zero Harm approach under our global safety promise.

Owners and operators around the world are confident that TAKRAF Group provides the most suitable solution to their unique project requirements. We assist our clients in overcoming the most complicated challenges in transforming the resource industry towards a sustainable future. We focus on specific areas that are critical for reliable and sustainable operations, as it is here where we best support our clients with innovative solutions that save energy, lower environmental impact and meet or exceed operational requirements.

We are recognized as the world's leading technology provider when it comes to run-of-mine and bulk material handling. Our TAKRAF brand portfolio ranges from overburden removal, to raw material extraction, comminution, conveying, loading/unloading, processing, homogenizing, blending, storage and final loading for onward shipment.

We leverage our global organization and aggregate our extensive expertise by offering a unique combination of both application experience and product based knowledge. Clients therefore benefit from direct technical discussions with our local specialists, who are able to draw upon this expertise and provide the most suitable local solution and service that enhances safety, improves sustainability, decreases costs and increases efficiency.

Our commitment is summarized by:

Safety | Reliability | Innovation | Sustainability



Load out station, Assmang

TAKRAF RAPID RAIL LOADING SYSTEMS

- Loading precision with a self learning capability, ensuring extremely accurate loading
- High system availability, reliability, and low maintenance requirements
- Discrete Element Modeling (DEM) flow modeling and design to ensure successful material flow
- Customised operating system to meet client's specified requirements
- A long track record with many international references

FEATURES

- Comprehensive on-site training of operators
- Fail-safe operation
- Integrated rapid rail loading system – stockyard to train optimisation
- Upgradeable firmware and control software
- “Point of sale” certifiable loading capability
- “Off the shelf” standard components and readily available spares
- Automatic calibration capability
- Fully automatic operation, with semi automatic and manual operating modes available
- Tag readers to identify different wagon types



Load out station, Assmang

FLASK LOADING SYSTEM

TAKRAF Rapid Rail Loading Systems use the flask loading system to load particulate material into moving trains

- loading at rates of up to 8,000 t/h
- handling a variety of rail wagons of different capacities and types
- loading with accuracies, which meet most countries' statutory requirements
- allowing for a variation in material size and bulk density

A sizable flask system pre-weighs each wagon load prior to depositing the load into the moving wagon. An optional extra is the integrated calibration system, which operates via a SCADA system.

Flow of material from the storage bin and weigh flask is controlled by single-pass radial/clamshell gates. These are actuated hydraulically by a system that ensures that the gates close fully without jamming.

The TAKRAF Profile Chute system, through which material flows into the wagons, is self adjusting and allows for differences in the heights of wagons to ensure the correct profile of material in the wagons. The chute is

designed to minimise potential dust emissions during loading.

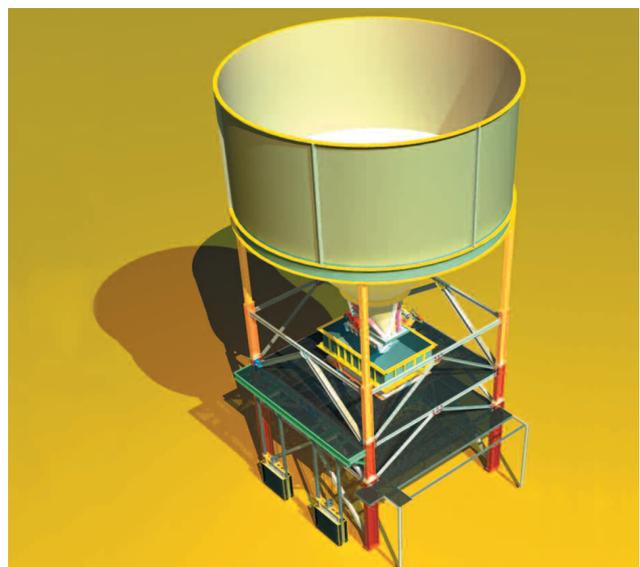
The Profile Chute is fail-safe in the event of any electrical or hydraulic power failure. The Chute will automatically move out of the way when obstacles enter the rapid rail loading system bay.



Load out station, Windfall



Load out station, Portnet



SELF LEARNING CAPABILITY

The TAKRAF Rapid Rail Loading System incorporates a programmable logic controller (PLC) and computer controlled measurement system, which has a learning capability.

As the first few wagons are loaded, the system assesses the effect of the loaded material's density and flow characteristics; the latter is affected by particle size, moisture, temperature, etc. The system automatically accounts for prevailing conditions and loads subsequent wagons to a high level of accuracy.

CONTROL SYSTEMS

TAKRAF Rapid Rail Loading Systems are equipped with user friendly computer control, information and records systems.

The accurate loading capability avoids penalties because

- individual wagons are not overloaded
- axle distribution requirements are met
- wagons are loaded to the correct height

The control system is based on client specified hardware and Windows™ based software allowing

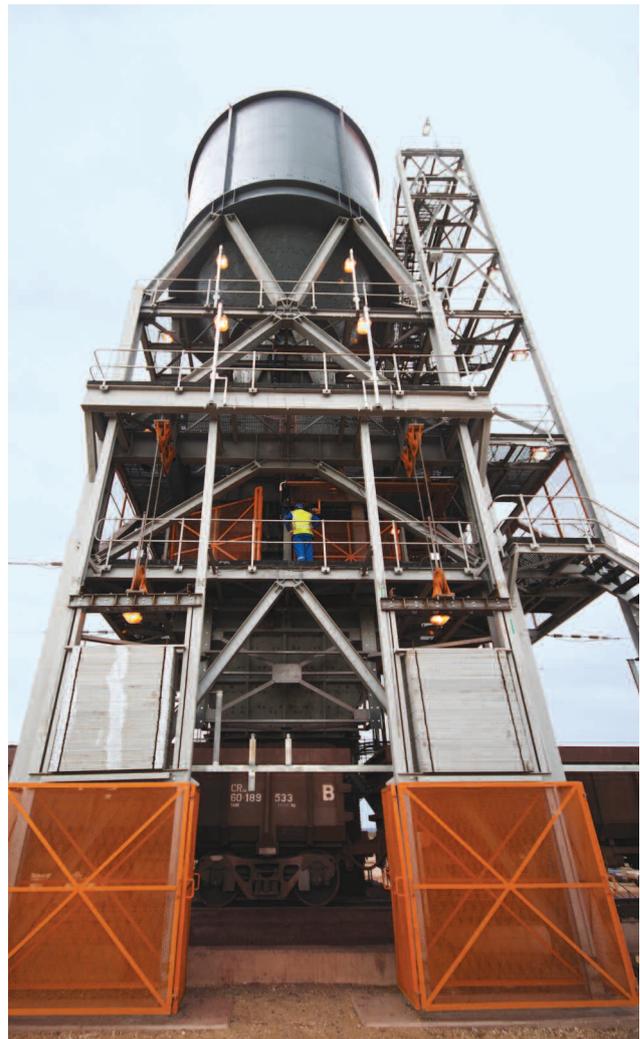
- overall SCADA control of the operation
- automatic validation of truck numbers as they are entered into the SCADA system
- visual monitoring of operations through closed circuit television systems

Several optional facilities can be supplied, including

- uninterrupted power supply for computer systems
- communication networks to the other computers, PCs or mainframes
- communications with other weighing equipment on the plant to control reclaim operations
- built-in mass calibration systems to simplify calibration
- dust suppression system
- polymer spray system



Load out station, Buxton



Load out station, Assmang

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