

Tenova TAKRAF Surface Miners

TENOVA is a world-wide supplier of advanced technologies, products and services for the metal and mining industries

Providing selective mining in one step

The Tenova TAKRAF Surface Miner is the appropriate equipment for continuous mining of mineral deposits, substantially reducing or even completely eliminating drilling and blasting. The Surface Miner extracts, crushes and loads the material in one single continuous operation.

The Surface Miner mines soft and medium hard minerals with a compressive strength up to 80 MPa. Bauxite, iron ore, lignite, coal, phosphorite, salt, limestone, clay and other materials are directly extracted from the ground.

The Tenova TAKRAF Surface Miner is the right choice for safe and environmentally friendly mining operations, close to areas where strict permitting regulations apply.

The Tenova TAKRAF Surface Miner was developed for the particular needs of the mining industry. It provides robust design, heavy-duty components and comprehensive features.

Our deep experience in designing and building the full range of continuous mining equipment assures the best performance and reliability of our surface miners for the long term and even operating in the most extreme environmental conditions.

Tenova TAKRAF's customer care does not stop with the system's commissioning. For the benefit of our customers' operations we offer a full range of services, from spare parts supply, refurbishments, upgrades and optimization.



Providing convincing features

Comprehensive Safety Package and Emission Certified Engine

Auto levelling for accurate cutting and cutting height control

Conveyor System with adjustable belt speed

Electrical System according to Heavy Industry Standards

Complete lighting system with 230V HDI working lights and 24V stand-by lights

Spaceous Operator Cabin with FOPS/ ROPS, sound insulated and mounted onto damper system

Ergonomic Operator Seat with damper system and joy stick control

Machine Monitoring and Diagnostic System with Visualisation and Remote Access

Dust Supression System with large tank, high pressure pump and easy exchangeable nozzles

Capacity Measurement System for production monitoring right at the extraction point

Automatic Slope Control - ASC for routine operation in automatic mode

Automatic Grease Lubrication System for controlled and reliable lubrication

Fire Extinguishing System for the engine compartment

Double Air Conditioning for operation in extreme hot climate

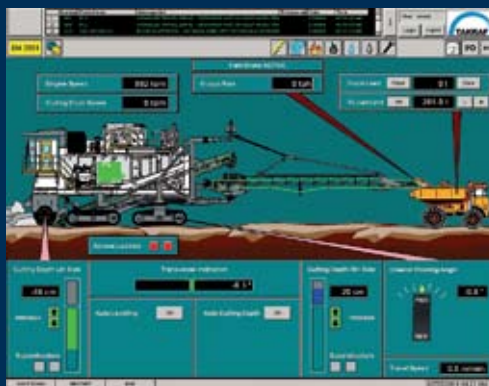
Actuated ladders on both sides integrated in machine interlocks

Maintenance Hoist for lifting parts and tool up to the machine top

Water pump with hose reel for cleaning

Arctic Package for operation in extreme cold climate down to -45°C

More features tailored to your needs as you may specify.



Providing the maximum cutting depth in a single pass

The Tenova TAKRAF Surface Miner is equipped with a large front cutting drum. High performance of the machine only requires low forward operating speed resulting in reduced wear on the crawler. Tenova TAKRAF achieves the surface miner's high performance with the employment of a state of the art and proven cutting drum twin drive system. The two drives on either side are directly flanged to the cutting drum axle. Thus, no additional gear reducers are required.



Providing easy control

The operator cabin is positioned at the front of the main structure above the cutting drum providing the machine's operator with a full view of the cutting path and the product loading. The machine is equipped with a state of the art HMI consisting of a clear graphical and text display. While the machine is maneuvered via a joystick, the operator can monitor and change operational parameters on the control panel with the touch of a finger.

Providing flexible operation and effective loading

Due to the tool's arrangement the extracted material is transported from the cutting drum's outer side to the center, entering an opening of the discharge chute. From there it is transferred to the discharge conveyor, which is mounted underneath the surface miner's main structure. There the material is elevated and discharged onto the transfer conveyor. The transfer conveyor is of luffable design and is slewable by 180° facilitating an effective loading either on to piles or directly on to trucks. The discharge conveyor as well as the transfer conveyor are equipped with highly efficient variable speed electrical drives.

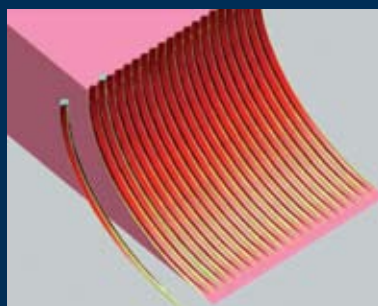
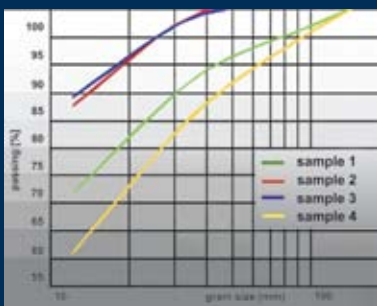


Operating under tough ground conditions

The machine travels on a stable three-crawler travel gear. The three crawlers are located behind the cutting drum. The extraction process of the machine continuously provides levelled ground for the crawler travelling structure. Therefore, wear on the crawlers is reduced and although uneven surfaces occur ahead of the Surface Miner a stable operation is guaranteed. The machine's rear crawler steering facilitates flexibility and smooth maneuverability of the surface miner. Turns in small radii and curve cutting is a standard feature of Tenova TAKRAF's surface miners.

Safe operation and low emissions

Work place safety is a priority to Tenova TAKRAF. Therefore, the surface miner's operator cabin is protected by a robust protective structure for both falling objects and roll-over. The machine can be accessed via two full size stairways from ground level. Air conditioning and heating are standard features. Complying with the standards of environmental safekeeping the surface miner's engine is certified according to EPA Tier II non-road emission. The operator's compartment is comfortably fitted with sound insulation to meet the standards of noise suppression. If less cooling power is needed the cooler drives run at lower speed resulting in less noise. The cutting drum is equipped with an active dust suppression system that reduces dust emission and ultimately provides a healthier working environment. In addition, features such as guards, anti-slip grating and more than ten emergency stop buttons are provided to ensure the safest working area possible.

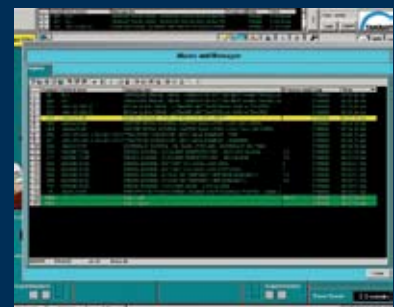


Providing defined product size

Facilitating controlled material extraction and limiting random break out of big lumps the surface miner's cutting drum cuts downwards into the soil surface. This application minimizes oversize content (fraction) in the mined product. The tool arrangement on the cutting drum is tailored to each application which maximizes efficiency in the down stream process chain. Primary and in most cases secondary crushing is no longer required. The product size of material mined with the Tenova TAKRAF Surface Miner shows a steep grain size distribution curve, making the material very suitable for further processing in the raw material processing chain.

Providing for fast and safe maintenance

For usability and convenience of Tenova TAKRAF's surface miner all essential service points are located at ground level, such as oil, fuel and water. An automatic shut-off valve for pressure refuelling is a standard feature. All components of the drive system are accessible via two full size doors and an internal walkway inside the engine compartment. For service position in terms of tool changes the cutting drum is lifted up allowing for an upright working position of the service personnel. There is no engine power required for turning the cutting drum during change-out. The transfer conveyor can be simply slewed away without dismantling it during a belt change on the transfer conveyor.



Facilitating full machine monitoring

For operational settings, machine status, and interlocks a comprehensive monitoring system is installed in all Tenova TAKRAF Surface Miners. This system visualizes the operation on the operators panel, as well as stores data and allows remote access for full support of machine diagnostics.



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TAKRAF



Tenova TAKRAF

TAKRAF GmbH
Torgauer Straße 336
04347 Leipzig
Germany
phone +49 341 2423 500
fax +49 341 2423 510
sales@takraf.com

Bahnhofstraße 26
01979 Lauchhammer
Germany
phone +49 3574 854 0
fax +49 3574 854 100
service@takraf.com

Tenova S.p.A.
Torre Shipping
Via De Marini, 53
16149 Genoa
Italy
phone +39 010 6054067
fax +39 010 6054710
bulkhandling@it.tenovagroup.com

www.takraf.com
www.tenovagroup.com

TECHINT GROUP