

## REDUCING DOWNTIME AND IMPROVING PRODUCTION

*TAKRAF X-TREME class sizers are a new generation of crushing equipment designed for hard rock applications.*

When it comes to primary crushing, operators are faced with a choice: use compression type crushers such as a jaw or gyratory machine, or use a roller style crusher such as a sizer, double roll or feeder breaker. Compression type crushers boast a proven reliability in hard rock applications, while roller style crushers, which have typically been employed in coal mining, are lightweight, offer a lower profile and allow for drastically reduced plant size and overall complex footprint. Significant savings in capital expenditure (capex) from reduced civil works and reduced plant weight are driving operators around the world to include sizers in their primary crushing plants, even when the material is much harder and more abrasive than coal.

«However, – notes **Conor Mitchell**, TAKRAF's Product Manager for Comminution, – *you have to ensure that the crusher you choose is designed for the hardest rock that*

*will be fed into the crusher. We have seen all sorts of roller type crushers being put into hard rock applications, but fundamentally, these machines are designed for coal and soft rock. As a result, operators are suffering from major reliability issues with hard rock, causing significant downtime and production losses».*

It was at this point that TAKRAF saw a specific need in the industry for a low profile crusher that would operate reliably in hard rock applications. Employing experience gained in hard rock mining over the company's near 300-year history, TAKRAF developed a new generation of sizer that fills this need: the X-TREME class sizer.

«When we developed the TAKRAF X-TREME class sizer, our main focus was where the coal-class machines were lacking: aggressive engagement with the rock and a robust torque train», – Mitchell said.



**TAKRAF's uniquely designed rhomboid tooth configuration allows even large rock pieces to be engaged and crushed**





**Crushing segments for an X-TREME class machine**

The tooth configuration of the X-TREME class sizer is one of the principal differences in TAKRAF's product. TAKRAF's patented rhomboid tooth configuration allows the feed material to fall deeper in between the rolls, allowing the sizer's teeth to grip large rocks.

Once the rock is fully engaged, the machine then needs to be able to develop and deliver the force required to break the rock. Each component of the crushing train in the TAKRAF X-TREME class sizer is designed to transmit as much force as possible. The crushing segments are locked into the rolls via large shrink fit keys. The keys are far away from the centerline of the shaft, meaning the shaft diameter is as large as possible. The large shafts allow for larger and heavier duty bearings. Gearboxes are selected using high application factors and motors are crusher duty with very high breakdown torque.

The industry is taking note of TAKRAF's X-TREME class range, with sizer references steadily growing around the world and across various applications, including hard rock up to 225 MPa. Several operators are even retrofitting their existing plants to include a TAKRAF machine in order to reduce downtime, increase

production and improve their bottom line. «The sizer works well in retrofits because it is smaller and lower profile than other crushers so it naturally fits into the existing machine pocket of the structure».

TAKRAF's complete range of sizers covers primary, secondary and tertiary sizing applications, from standard to X-TREME class machines, with throughputs of 17000 t/h and beyond.

#### **About TAKRAF Group**

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.

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