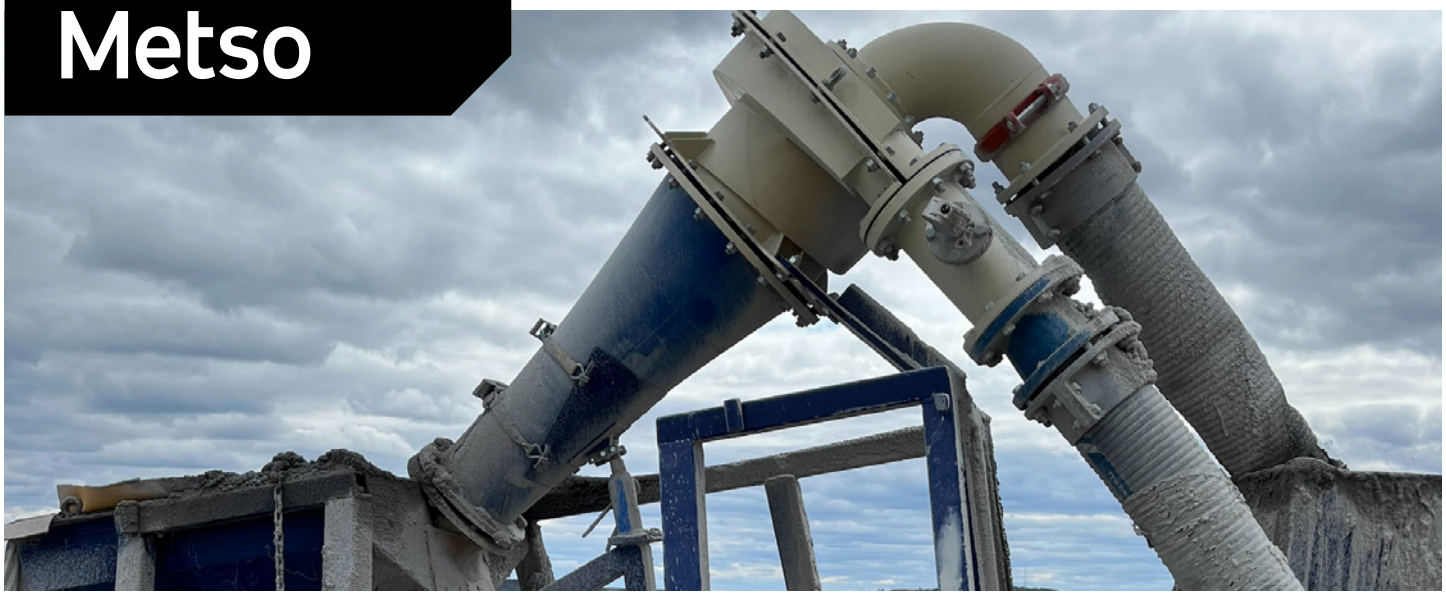
Metso



A Golden Partnership:
Metso's MHC500 Hydrocyclone increases efficiency and cost savings for Björkdalsgruvan

Björkdalsgruvan is one of the only gold mines in Sweden, and has been in operation since 1988. It is one of the largest gold mines in northern Europe, and boasts high production expectations. With a processing capacity of 1.3 million tonnes per year, the mine produced 42,148 oz of gold in 2023. For 2024, they aim to produce 43,000 - 47,000 oz.

Metso has a long and successful history with Björkdalsgruvan, highlighting the mine's commitment to efficiency and quality. Having supplied equipment and services to the site since 1988, there is a variety of Metso equipment present, such as slurry pumps, Lokotracks, flotation equipment, crushers, thickeners, screens, mills and more.

Challenge:
Björkdalsgruvan was not satisfied with the high wear rates and low performance of their competitor tailings hydrocyclone. The operating pressure was high, and they struggled to deliver the right product, which is very important for this kind of tailings application due to rules and restrictions of the outputs to avoid severe dam failure.

These problems resulted in high operating costs, primarily due to frequent wear parts replacements during shutdowns. Pressure played a significant role, as higher pressure led to increased wear. Finding the right balance between pressure, wear, and product quality was crucial for both cost savings and environmental protection.

Solution:
Metso experts responded to the challenges at Björkdalsgruvan with a tailored solution aimed to address their concerns while demonstrating cost-efficiency and product quality improvements. The solution: a single MHC500 hydrocyclone with an inlet adapter to measure the feed pressure in the field.

During the initial quoting phase, Metso successfully conveyed to Björkdalsgruvan that the MHC500 would operate at significantly lower pressure while achieving product specifications. This assurance was supported by Metso's proven simulation tool, which utilizes both theoretical and practical data to ensure a reliable hydrocyclone selection.

The timely delivery of the MHC500 enabled the site to begin commissioning as per their schedule. This was executed successfully in March 2021, has since been in continuous operation since, further demonstrating the effectiveness of the solution in meeting their operational needs.

Benefits:
Due to the superior MHC design, Metso's solution offers a range of substantial benefits. This innovative hydrocyclone enhances unit capacity and efficiency, resulting in significant reductions in operational costs. The MHC's distinctive inlet and head design allows it to operate at lower pressure while still delivering the required product, thus reducing downtime and maintenance costs.

Additionally, the solution contributes to improved safety, as it mitigates the risk of dam failures by consistently meeting product requirements. This, together with less wear, leads to reduced maintenance shutdowns.

Beyond efficiency gains, Björkdalsgruvan has achieved power consumption and electricity cost reductions by implementing the MHC500. Furthermore, wear part consumption for both the MHC500 and the Metso cyclone feed pump has decreased, resulting in ongoing cost savings. Metso's initial simulation was validated during operations, leading to improved product quality and greater operational efficiency, all while lowering costs through reduced pressure. Remarkably, these savings translated into the MHC500's capital costs being reimbursed in just a few months of operation.

93%

apex consumption savings per year

44%

cyclone feed pump motor power savings per year

Continued partnership:
The longstanding partnership between Björkdalsgruvan and Metso stands as a testament to our commitment to customer satisfaction. Björkdalsgruvan has found the Metso approach and understanding to be instrumental in achieving their operational goals.

The simplicity of the order process made the entire experience more efficient, and with the timely delivery, this ensured minimal disruptions to their operations. With ongoing support throughout the journey, from initial discussions to full scale operations, Metso has provided Björkdalsgruvan with peace of mind and confidence in our solutions.

The high level of customer satisfaction has not only reinforced our partnership, but also resulted in the opportunity to replace the second and final competitor tailings hydrocyclone on-site in 2023. This continued collaboration allows Björkdalsgruvan and Metso to continue as reliable partners in their pursuit of operational and environmental excellence.
At Metso, it is our core expertise to help our customers transform the industry.
That is why we are the **partner for positive change**.