

## Outotec – One of the broadest ranges of competencies in comminution

Outotec has extended its scope in comminution solutions and now offers an even larger portfolio including high pressure grinding rolls (HPGR). HPGR technology can be applied to various minerals processing applications where project feasibility demands lower energy consumption. Outotec® HPGR solutions are supported by Outotec Services providing critical process, maintenance and training support.

Increasing energy prices have highlighted the importance of energy-efficient solutions. The mining industry alone consumes approximately 4% of the world's energy, half of this results from crushing and grinding operations. Outotec HPGR solutions enable the processing of harder ores types with the potential for gains in energy efficiency.

By choosing Outotec's comminution solutions with HPGR technology, customers benefit from a proven product, advanced automation solutions, optimized process design and a rapid ramp up period. In the comminution circuit, Outotec HPGR technology can decrease energy consumption and influence the downstream processes, which can be seen in improved performance in the flotation, leaching, thickening and filtration circuits. These effects are mostly attributed to the inception of micro cracks in HPGR processed ore particles. These micro cracks are generated when the ore particles are exposed to high stresses in the HPGR compression zone between the counter rotating rolls.

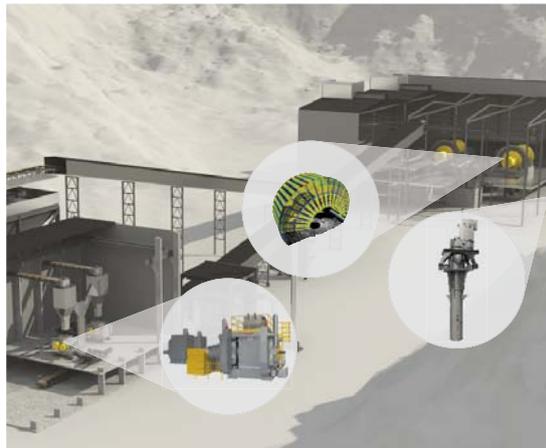
Outotec HPGR services have also designed an efficient HPGR studded tyre for improved performance and reliability, which can be easily retrofitted to any machine regardless of manufacturer or model.

In addition to HPGR solutions, Outotec's existing grinding technologies include AG mills, SAG mills, ball mills, rod mills, scrubbers and HIGmills (high intensity grinding). By adding HPGR technology to its portfolio, Outotec now has one of the broadest ranges of competencies in comminution.

Outotec solutions are supported by an extensive range of lifecycle services. A valuable addition to Outotec's comminution services is the recent acquisition of Scanalyse, which has developed proprietary computer analysis of spatial laser scan data. The data collected is used for determining the condition of process equipment and monitoring operational performance. Scanalyse is already well established in the minerals processing industry with the MillMapper and CrusherMapper products. In addition to these products, Outotec offers relining services, including mill relines, liner design optimization and relining specialized equipment.

Outotec offers a wide range of Operate & Maintain and training services, as well as Outotec OEM spare parts for the entire comminution circuit.

To find out more, visit [www.outotec.com](http://www.outotec.com) or visit us at **MetPlant, Perth 15-17.7.2013**



Outotec provides leading technologies and services for the sustainable use of Earth's natural resources. As the global leader in minerals and metals processing technology, Outotec has developed many breakthrough technologies over the decades. The company also provides innovative solutions for industrial water treatment, the utilization of alternative energy sources and the chemical industry. Outotec shares are listed on NASDAQ OMX Helsinki.