

CAVEX® 500 CVX Hydrocyclones increase efficiency at MAL, Hungary

Industry

Bauxite, Alumina and
Aluminium Minerals
Processing

Customer

MAL, Hungary

Application

Bauxite recovery

Equipment

Two CAVEX® 500 CVX Laminar
Spiral Hydrocyclones

Start up date

August 2010

Weir Minerals Hydrocyclones deliver efficient engineering excellence for MAL, Hungary

Established in 1995, MAL is a major European bauxite, alumina and aluminium processing company with its largest operations in Hungary.

Bauxite is extracted from mines in Hungary and Serbia is converted to alumina at the specialist plant in Ajka, Hungary, which produces 300,000 tonnes of alumina per annum. Weir

The Weir Minerals Solution - Enhancing Recovery & Eliminating Waste

A major factor that limited the efficiency of the alumina production was the different compositions of the raw bauxite from Hungary and Serbia. Bauxite from Serbia constitutes 30% of the raw material input at MAL and is substantially more abrasive than the domestic Hungarian material. This was contributing to approximately 31% of material that went through the mill process being unsuitable for the next stage in the alumina production process.

The installation of two Cavex 500 CVX Hydrocyclones provided a solution which would improve the recovery process by allowing the automatic separation and retrieval of larger solids within the slurry that could then be transported back into the mill process.

The cyclones were installed at an inclination of approximately 35° from the horizontal to coarsen the cut point and also to maintain a more stable underflow and maximise benefits.



Minerals became involved with MAL through the installation of Warman 6/4 pumps in the original processing system that transported material directly from the mill. Although performance of the pumps was good, engineers from Weir Minerals recommended the introduction of two Cavex 500CVX Hydrocyclones to provide greater efficiency, which were subsequently installed in August 2010.



Weir Minerals hydrocyclones deliver engineering excellence for MAL



Since installation, the Hydrocyclones have continued to provide a high level of performance, achieving 1200g/l with an 80mm spigot, with a working life of approximately 800 hours. Combined with expertise on hand from the Weir Minerals Services team, Weir Minerals has developed a close working relationship with MAL that is expected to ensure a strong partnership over the long term.

Cavex Hydrocyclones - Reducing Wear & Increasing Capacity

Cavex Hydrocyclones offer a unique solution for slurry applications in the mining and mineral processing industry, designed to deliver maximum efficiency and capacity, whilst providing longer wear life than conventional Hydrocyclone designs.

Cavex Hydrocyclones provide enhanced dewatering and desliming efficiency, reducing product loss, improving product recovery and increasing circuit capacity by minimising the quantity of material escaping to the underflow stream.

The design of the Cavex Hydrocyclone provides a natural flow path for slurry material. The unique shape has no sharp edges, no square corners and allows the feed stream to blend smoothly with the rotating slurry inside the unit, minimising localised wear on the feed chamber and vortex finder. These design improvements result in lower operating costs and fewer hydrocyclones required for a given duty.

The end result is a greatly reduced turbulence, creating more even wear, longer life and a more efficient classification.

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