

FOR IMMEDIATE RELEASE

Reduced Turbulence And Increased Efficiency With Cavex® Dms Hydrocyclones

Weir Minerals Africa reports an increased demand for its range of Cavex® hydrocyclones in DMS applications.

This statement is underpinned by the most recent installations for major blue chip mining houses, and Sheldon Gabriel, product manager cyclones at Weir Minerals Africa, attributes this to the increased separation efficiencies being achieved using Cavex® DMS hydrocyclones.

“During the Dense Media Separation (DMS) process it is the ability to recover more economically valuable minerals that is considered vital and for this reason reduced turbulence in the cyclone plays a very real part in the process,” Gabriel says.

Gabriel says Weir Minerals Africa has leveraged the successes achieved with its classification cyclones worldwide and applied this technology and applications knowledge to the Cavex® DMS hydrocyclone range. This was done while still retaining the traditional Dutch State Mine guidelines.

Significantly, the inlet design of the Cavex® hydrocyclone has been engineered to reduce turbulence using a unique laminar geometry. The profile of the inlet section has been designed to incorporate an extended or 360 degree scroll and to eliminate any sharp or square edges or corners that are commonly found in conventional cyclones.

“This design allows the slurry to flow into the hydrocyclone with less resistance consequently reducing interparticle collisions, and this reduces turbulence and friction inside the hydrocyclone,” Gabriel says.

This greatly reduced turbulence results in a significant increase in separation efficiency, as the residence time in the separation zone is increased. Another advantage when compared with conventional cyclones is the reduction in misplaced particles in both the overflow and underflow streams.

“It should also be obvious that with such a marked reduction in turbulence and friction, there will be significantly reduced wear,” Gabriel adds.

In coal and similar applications where highly abrasive slurries are transported, ceramic tiles are engineered specifically for use in the inlet section of the Cavex® DMS hydrocyclone.

Tumelo Matsebedi, senior process engineer hydrocyclones at Weir Minerals Africa, says these specially designed radius tiles assist in maintaining the more rounded profile of the Cavex® in applications such as this.

“This further enhances the wear resistance capability of the hydrocyclone, and in extremely high wear applications where very abrasive slurry is being transported the hydrocyclone could be lined with a variety of specialised ceramics and other exotic materials to ensure optimum wear life,” Matsebedi explains.

He adds that hard metal cyclones with a minimum of 27% chrome content are considered ideal for diamond and chrome processing operations. This is because this metal alloy is able to withstand the impact forces while at the same time providing a smooth surface for the easy transfer of the material.

Where hard metal cyclones are used, a combined cone spigot, sometimes referred to in the industry as a monocone, can be supplied to further reduce turbulence in the lower section of the cyclone and this applies especially to diamond applications.

The harsh African mining conditions provide particularly tough operating conditions for installed equipment and Weir Minerals Africa remains focused on providing hydrocyclone solutions that address the operational challenges across all commodity sectors.

INCREASED DEMAND PIC 01 : Sheldon Gabriel, cyclones product manager at Weir Minerals Africa.

INCREASED DEMAND PIC 02 : A Cavex DMS cyclone installed in a coal application.

ENDS ... AUGUST 2016

FROM : CORALYNNE & ASSOCIATES
TEL : +27 011 849 3142
EMAIL : communicate@coralynne.co.za
WEBSITE: www.coralynne.co.za

FOR : RENE CALITZ
WEIR MINERALS AFRICA (PTY) LTD
TEL : +27 011 929 2622
EMAIL : r.calitz@weirminerals.com
WEBSITE: www.minerals.weir