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**Multotec Meets Market Demand With A Broad Range Of Centrifuges
Suitable For Any Application**

As the licenced distributor of Siebtechnik centrifuges in southern Africa for over ten years, Multotec has access to a wide range of product available internationally. Gerrit du Plessis, product specialist for Multotec's Solid Liquid and Magnetic Separation Division says that the range includes both filtration (pusher, vibrating and Conturbex®) and sedimentation (conventional decanter) types of centrifuges, available for a multitude of applications.

Apart from offering these two conventional types of centrifuges, Multotec can also offer the option of a collection of hybrid machines, which will include both sedimentation and filtration process steps.

Siebtechnik centrifuges are manufactured under licence, or imported from Germany, depending on the type of machine required. Du Plessis points out that the primary differentiator with Siebtechnik centrifuges is that each is custom engineered for the application at hand.

"Understanding customer needs and providing solution customisation to meet the specific operational parameters is a driving force for Multotec. In many instances, suppliers have a limited range, and they unfortunately force the available centrifuges to fit the application, instead of providing a fit for application purpose-made solution. Having access to such a wide range of product data and designs makes the engineering of a centrifuge for a given application a viable proposition," says Willem Slabbert a process and application manager at Multotec.

Continuously operating centrifuges have long established their place in the solid/liquid separation process. They can dewater large quantities of solids to low final moistures, whilst needing little space, energy and time. By installing the correct centrifuge, organisations will reduce the cost of thermal drying considerably and may even make it superfluous. Siebtechnik specialises in the development and manufacture of continuously operating centrifuges, and supplies centrifuges across a broad range of industries, including mining, chemical, pharmaceutical and food and beverage processing.

The range includes the Conturbex, Pusher, Vibrating and Turbo Cascade screening centrifuges for material separation and washing. The Decanter centrifuge provides separation by means of differences in specific gravity. Each design uses different techniques for separating the material and provides specific advantages, depending on the process requirements. Siebtechnik's unique short bowl decanters, with single bearing overhang design, allows easy access for maintenance and cleaning purposes compared to conventional dual bearing decanters. This feature also allows the machines to be used in high temperature applications where excessive thermal expansion can be better accommodated than dual bearing designs. The unique design of the twin cone decanter can achieve the best of both worlds, with one machine producing a dry solid matter from its secondary drying cone and a clear centrate from the clarification bowl, whilst recirculating the centrate from the drying cone back to the feed.

Conturbex was the first horizontal worm/screen centrifuge supplied by Siebtechnik in 1948. It quickly became a global term for separation technology and centrifuge construction principle, and has developed into a very versatile screening centrifuge for a wide variety of separation requirements. Several thousand Siebtechnik Conturbex centrifuges are operating worldwide in the chemical, bulk goods processing, food products and environmental industries.

Of all the machines operating on the centrifugal principle, the Decanter is the most versatile and has the largest overall market share worldwide. "In light of increasingly demanding requirements of government authorities, in respect of reducing the waste content in effluent and the requirement of industry for maximum possible efficiency of production plants, the decanter is fast gaining popularity," Slabbert says.

As with all Siebtechnik centrifuges, the rugged planetary gear unit, as well as all the anti-friction bearings, are connected to a circulating oil lubrication system. All the components are generously dimensioned and will stand up to the most severe operating conditions. This ensures maximum service life with minimum maintenance.

The design of the Conthick centrifuge is based on the technology of Conturbex worm/screen centrifuge, with an additional pre-thickening unit for high efficiency separation of low solid concentration slurry, as well as a high recovery of fines. This centrifuge separates the solids from liquids in slurry. The slurry is fed via an inlet pipe to the pre-thickening part of the centrifuge via openings at the centre of the worm body. Both liquid streams can be discharged separately or jointly

in one liquid stream through a double or single filtrate discharge cyclone, depending on the process requirements.

A further development of the hybrid centrifuge range is the Turbo Screen Decanter, which exposes solid matter to higher G-forces, and its increased surface area and larger diameter screen facilitate longer washing.

Siebtechnik's new, patented SHS/ZK Pusher design provides operating, performance and cost benefits. The patented filling system consists of an accelerator cone and ring pocket, which ensures extremely gentle acceleration and uniform distribution of solids resulting in reduced abrasion in the feed zone. The ring pocket can be equipped with a screening element to provide pre-dewatering before the slurry reaches the screen basket. This allows lower-than-normal feed concentrations to be introduced into the centrifuge. The wet end of the Pusher features a longer conical screen, which ensures increased throughput capacity, greater washing efficiency, and lower final moisture. The design features a combination of cylindrical or conical screening area, which results in improved capacity over common two-stage designs. Side-by-side tests have yielded up to 50% greater capacity and lower final moistures.

"A special rotary transmission on the SHS/ZK Pusher allows the hydraulic mechanism to be isolated from the bearing area. The improved hydraulics results in lower maintenance, easier access, and reduced downtime. Also, this design eliminates high-pressure hydraulic oil at the main shaft seal, which prevents oil leakage into the processing area via the pusher shaft, allowing additional room for positive and dependable process seal designs at the hollow shaft," du Plessis explains.

He adds that the continuously adjustable stroke length of the SHS/ZK is accessible from outside the unit. In addition, stroke reversal is operated electrically, and does not depend upon pressure.

Both single-stage and multi-stage Pusher designs are available. Single-stage machines are more sensitive to fluctuations in quantity and solids concentration of the feed. The two-stage centrifuges are the preferred choice over more complicated three and four-stage designs. "These two-stage pushers offer high throughputs, combined with great reliability and flexibility. They often process larger quantities than four-stage machines, while concurrently being less expensive, less complicated, and producing substantial process advantages," says du Plessis.

Additional special design features include gas-tight configurations to ensure a safe environment in toxic and flammable process applications, an internal re-pulping system to eliminate interstage re-pulping equipment and specially designed food application machines.

“We realise that for optimum performance, the solution needs to be customised to suit the specific application need. Our engineers have amassed years’ of experience in assessing countless numbers of challenges and solutions, and are able to apply this technical and practical knowledge to ensure the product matches the demands of the application,” Slabbert concludes.

BROAD RANGE OF CENTRIFUGES PIC 01 : The Conturbex filtration type centrifuge employs a fixed differential speed between the dewatering basket and the solids transport scroll to accommodate fluctuations in solids loading exceptionally well without vibration by ensuring a uniform solids distribution across the transport surface.

BROAD RANGE OF CENTRIFUGES PIC 02 : Decanter centrifuges are used effectively on more difficultly separated slurries where the solids may have low density or the liquid is viscous; the double bearing design on each side of the rotating parts allow high rotational speeds with high gravitational force required for sedimentation separation.

BROAD RANGE OF CENTRIFUGES PIC 03 : The Short Bowl Decanter uses overhang design with a single bearing support, which is particularly suitable to high temperature applications because it is less limited to thermal expansion. This machine is used also extremely successfully in food and pharmaceutical grade applications where Clean In Place (CIP) is essential.

BROAD RANGE OF CENTRIFUGES PIC 04, 05 and 06 : The Turbo Screen, Twin Cone and Conthick hybrid centrifuges combine the best of sedimentation and filtration to provide clear liquid streams (virtually zero solids losses) with exceptionally dry solids products. Hybrid centrifuges are unique in their applications and offers unparalleled performance through their state of the art designs.

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broad range of centrifuges

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