

TRIO® pan feeder boosts OMV'S output

A Trio® EF3606 pan feeder installed by Weir Minerals Africa at OMV's Stilfontein crushing plant has increased production by 40% and helped to create a safer working environment.



The Trio® EF3606 vibrating pan feeder installed at OMV is designed to perform in surge tunnels or under surge bins, controlling the feed rate to the next stage of processing.

A Trio® EF3606 pan feeder at OMV's Stilfontein crushing plant has created a safer working environment and resolved an ongoing production problem. OMV's production target was 1 300 t/day, but the plant could only produce 1 000 t/day. OMV asked Weir Minerals Africa, a longstanding service pro-

vider, to help increase the plant's capacity.

The lack of plant capacity was deemed to be the result of stockpile reclaim chutes becoming regularly blocked, resulting in an inconsistent feed to the cone crushers. As the cone crushers were unable to be choke fed, OMV often experienced inconsistent product, crusher inefficiencies and uneven wear of cone

crusher liners. OMV had to monitor constantly and manually clear the feed from the chutes, which presented a considerable safety risk, as rocks would fall out of the chute once the blockage was removed.

To provide a reliable and consistent feed to the cone crushers, a Trio® EF3606 vibrating pan feeder was selected, which is designed to control the feed rate in surge tunnels or under surge bins. Combining the Trio® pan feeder with a variable speed drive (VSD) and a controller (PLC) allows the feeder to alter its speed based on the levels of feed already within the cone crusher's bins.

Weir Minerals Africa engineers redesigned the chute system using 3D laser scanning equipment to ensure the new structure and chutes would fit within the existing footprint and simulation software was used to optimise the particle flow.

After commissioning, OMV's capacity was immediately increased to 1 400 t/day, a 40% daily production improvement resulting directly from consistent feed to the cone crusher. Furthermore, no blockages have been experienced since the new feeder was installed. The plant has increased its uptime per shift to as much as 99.5% and the safety risk of clearing the chute has been removed.

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Portable dairy dumping-conveying system

Flexicon's new manual dumping system with integral conveyor and separate dust collector is suitable for dairy powders, pharmaceutical products and contamination-sensitive bulk foods.

Designed and finished to 3-A sanitary standards, the system is comprised of a manual dumping station with surge hopper, a flexible screw conveyor and support boom on a castor-mounted frame, plus a separate mobile dust collection system that can be configured alongside or remotely. Ready to plug in and run, the mobile system can serve multiple functions throughout the plant, and then be rolled to a wash-down station and storage area.

A dust hood with hinged lid is mounted to the floor hopper with quick release clamps, and is equipped with an internal baffle and air vent port for efficient dust collection. A support tray allows operators to stage manual additions from hand-held sacks before dumping material through a grate fabricated of

powerful rare earth Neodymium-iron-boron magnet material. The hopper is equipped with a mechanical agitator assembly to promote uninterrupted flow into the charging adapter of a 3.0 m flexible screw conveyor with a stainless steel screw engineered for the conveyed product. Fully enclosed in a polymer tube inclined at 45 degrees, the flexible screw is the only moving part contacting material, and is driven by an electric motor beyond the point of discharge, preventing material contact with the 3-A rated motor shaft seal.

All product contact surfaces are made of 316 stainless steel with continuous welds ground and polished to 180 grit or better, including the specially designed screw, which is welded instead of fastened to the motor drive shaft. A quick-release end cap allows removal of the flexible screw from the lower end of the crevice-free conveyor tube for rapid sanitising and inspection of both components.

The stand-alone dust collector is equipped with an automatic reverse-pulse filter clean-

ing system with stainless steel air reservoir rated at 99.99% collection efficiency for materials with particle sizes of 5 µm or greater. Solenoid valves release short blasts of compressed air inside the cartridge filters on an alternating basis at timed intervals, dislodging dust build-up from outer filter surfaces with no loss in efficiency. The raised height of the unit allows gravity discharging of accumulated dust into mobile bins, drums or other vessels for disposal, or reintroduction in select non-dairy applications.

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Flexicon's portable flexible screw conveyor (FSC) for the dairy industry is finished to 3-A sanitary standards.