

Drive solutions for the sugar industry

Leading global power transmissions provider, Bonfiglioli South Africa, outlines the company's comprehensive field-to-table drives product offering for the sugar industry.



As a leading global Power Transmission provider, Bonfiglioli has vast experience in a wide range of industries. The sweetest industry by far, however, is sugar production, where Bonfiglioli has been present for over 60 years. Historically, the sugar industry has focused on the production of raw ingredients for the food industry but sugar producers have started diversifying their product offering into additional markets. These include the production of bio-fuels, base materials for petroleum-free-plastics, and other side products to ensure that the demand for sugar processing plants remains buoyant into the future.

The importance of sugar as a raw ingredient means that the social impact of a mill is quite large. According to the South African Sugar Association, SASA, more than 1 000 000 people rely on the farming and processing activities of the sugar industry in South Africa, which highlights the importance

of continuing to sustain the industry.

The process of harvesting and processing cane or beet for sugar includes a multitude of steps, and Bonfiglioli is a partner that is trusted to add value by supplying the drives that move the industry. Bonfiglioli has a true field-to-table product offering and a global presence in all the major markets, which ensures that it is positioned to apply industry leading technologies so that customers experience high levels of reliability during the seasonal harvest.

Bonfiglioli is able to select from a proven range of heavy duty equipment to meet these tasks and, by implementing its highly efficient drives when replacing outdated equipment, allows customers to see significant improvements in energy efficiency while still achieving long component life and high availability. This aids producers' abilities to remain competitive in the increasingly more difficult global market.

Within the harvesting period, Bonfiglioli wheel-hub drives are used for a large proportion of the harvesting equipment. This is achieved through hydraulic and, increasingly, electric means highlighting the commitment of Bonfiglioli to aiding OEMs and operators to reduce the carbon footprint of all processes in the value stream.

Within a sugar mill, several primary operations can be identified, including; raw materials handling, raw material preparation, juice extraction, juice refining, crystallisation, drying and finally, packing.

On the front end processing of the plant and in applications from cane unloading through to the feed into the mill, Bonfiglioli's

helical and helical bevel drives are highly suited. These drives allow for compact and highly efficient power transmission for conveying and processing of cane and bagasse.

Further, by customising the drives using standard catalogue options, or through local office specialisations, any operational challenges can be engineered out to allow for improved reliability during the processing season. Paint specifications, breathers, couplings and other ancillaries can be specified to improve the integration of Bonfiglioli products into the plant.

As one of the highest power consumers on a sugar mill, milling is often the most critical step within the process. These drives have traditionally been operated by large single bevel helical gearboxes, which have to be very large to deliver the required ratios and torques. Also, a series of open gears have to be used to transmit the drive power to the various milling shafts. These drives, although robust, are often not able to achieve the high efficiency of modern power-dense drives.

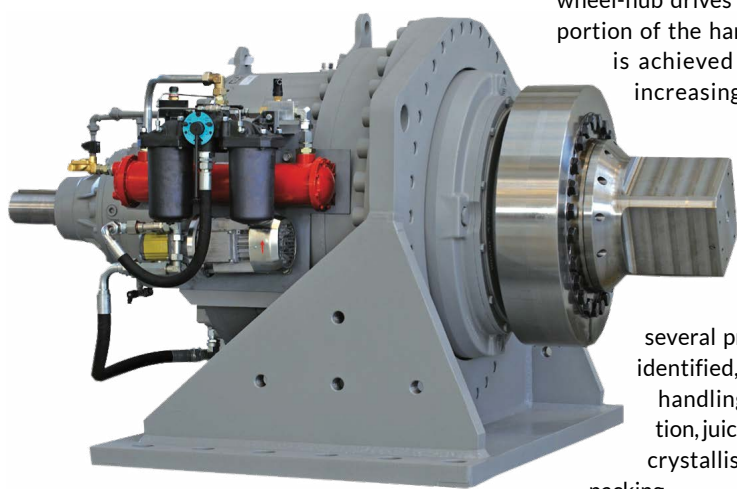
Bonfiglioli has considerable experience with multi-drive mills, which allows for low installed cost, reduced lead time due to smaller components, and improved efficiency derived from the ability to independently control each mill roller. Several such installations have been installed by Bonfiglioli, and have been operating very successfully.

For post milling processes such as clarifying and crystallisation, Bonfiglioli 300 series planetary drive sets are a benchmark standard, often providing customers with years of value adding service. The modularity of these drives allows for close ratio spacing, achieving optimal speeds for clarifying and crystallisation processes at high torque outputs.

Finally, within the packing environment, Bonfiglioli's highly customisable worm and smaller helical bevel units can be configured to meet all packaging and material handling needs, from filling and labelling, to wrapping, to name a few.

Bonfiglioli South Africa is also able to assist customers with strong aftersales support, and the ability to cost-effectively return damaged gearboxes to their as-new condition, particularly during seasonal off-crop periods.

The Bonfiglioli products, engineered solutions and services enable producers to improve productivity while reducing costs. By partnering with Bonfiglioli more competitive products can be delivered at every step of the process. □



The Bonfiglioli 300 series is a benchmark standard for all high torque processes in sugar production, including milling.