

Geared drives for applications from sewage to power

Deon Crous, BMG's national product specialist for NORD Drive Systems talks about ideal solutions for sewage treatment, while Kelly MacIver, BMG's Gears Business Unit manager talks about the Varvel Brand and its new worm drive solution for the PV Solar industry.

BMG's electromechanical drive technicians, with extensive experience in gearing, offer technical advisory and support services, which are tailored to meet the precise specifications of contractors, designers and the end-user. These include brands such as NORD and Varvel, amongst others, which all have niche applications.

"NORD drives, which consist of Unicase helical shaft-mounted geared motors, have special features to meet the requirements of water treatment applications," says Deon Crous, national product specialist for NORD Drive Systems at BMG. "These drives consist of gears, motors and brakes that are protected against corrosion. Special covers for the hollow shaft and motor also ensure that the drive is entirely resistant to spray from tanks and the humid and aggressive conditions to which the units are exposed in sewage treatment plants."

Explosion-proof motors with electrical and mechanical speed control are fitted with anti-condensation heaters for stand-still periods and reinforced bearings for extended life are standard. Special vent plugs, lubricants and a valve-type oil drainage facility also enhance performance in these demanding applications.

Drives with helical flange-mounted geared motors have the flexibility to fit into restricted and awkwardly shaped areas below tank de-sludgers. The traversing platform of this system is equipped with four-wheel drive to prevent wheels from slipping, even under load and in unfavourable wind conditions. Drives for revolving de-sludgers (helical bevel geared motors) and propeller-type agitators and aerator drives (flange-mounted helical geared motors) can comfortably handle continuous operation 24 hours a day. Foot mounted helical geared motors are recommended in paddle mixer drives and, despite heavy loads, design life can exceed 100 000 hours.

A unique feature of these drives is the Unicase gearbox that accommodates all bearing seats within a rigid one-piece casting – no bearing seats are located on bolt-on flanges or covers. Sealing surfaces are not subjected to torque stress or overhung loads and hardened wheel bodies with specially treated teeth ensure smooth and quiet op-

eration at maximum load capacity.

The NORD range is designed by German precision engineers and assembled locally by BMG according to stringent local and international quality specifications. The range has earned recognition throughout the world for reliability, efficiency, low noise levels, extended life and reduced maintenance.

A solar tracking solutions from Varvel

BMG has extended its range of Varvel gearboxes and variators for small and medium power applications to include customised worm gearboxes for installation in photovoltaic (PV) solar tracking systems.

"We work in conjunction with Varvel specialists and South African PV component manufacturers to design sustainable solutions," says Kelly MacIver, BMG's Gears Business Unit manager. "Through close collaboration, BMG, Varvel and South African solar tracking manufacturers, PiA Solar SA, have re-designed mechanical drive components for solar tracking systems to enhance cost-efficiency, increase installation speed and optimise the performance of PV tracking installations.

"Customised Varvel worm gearboxes – designed to minimise efficiency losses – are incorporated into PiA Solar's ContourR+ single-axis trackers. These compact gearboxes, which are maintenance-free and sealed for the life of the unit, maximise efficiency by ensuring solar panels are always in the optimal



BMG's NORD drives, which consist of Unicase helical shaft-mounted geared motors, have special features to meet the requirements imposed during water treatment procedures.

generation position relative to the sun."

Versatile Varvel RT worm gearboxes have numerous advantages for PV installations, including an ingress protection rating of IP66 – certified by specialist laboratories – to guarantee resistance to dust and water. Other significant features include a high ratio of 1 120:1 and the non-back driveability design for locking the solar panels in place, which prevents external forces from moving the panels off their optimal position.

The Varvel range, which is designed for flexibility and interchangeability with other leading gearboxes, as well as easy mounting and quick lead times, enables BMG to offer customised power transmission solutions to users of gearboxes in diverse sectors.

Apart from PV applications, Varvel gearboxes and variators are used for pumps, mixers, conveyors and cranes, scrapers, screw feeders, apron feeders, automotive equipment, lifting control and pipe processing.

"What's important is that each Varvel system can be custom-designed for specific requirements," concludes MacIver. □



BMG's customised Varvel worm gearboxes are incorporated in PiA Solar's ContourR+ single-axis solar trackers.