

# Drive solutions and services for water, wastewater and sewage

Kelly Mac Iver, BMG's Gears Business Unit manager for the ElectroMechanical Division, describes BMG's drive solutions for the water, wastewater and sewage sectors, which encompass the supply of quality branded drive systems, enhanced by the BMG team's technical expertise and installation, condition monitoring, maintenance and engineering support capabilities.

**"B**MG specialists with technical knowledge and extensive experience in water engineering play an important role in upgrading ageing water and wastewater facilities, and designing new drive systems, to ensure a dependable infrastructure," explains Kelly Mac Iver, BMG's Gears Business Unit manager for the ElectroMechanical Division. "The selection of robust equipment, which can endure continuous operation under severe conditions, is critical. Every drive package selected must match the application perfectly to ensure energy-efficiency, low running costs, minimum downtime and extended service life of the system. Care for the environment is also a priority at BMG and, for this reason, we select environmentally friendly drive solutions that help minimise CO<sub>2</sub> emissions. "It is also important to prevent unneces-

sary breakdowns, which is why reliability is our main focus when designing the drive systems for new and upgraded facilities. All BMG components are precisely matched to each other and to application requirements to ensure high productivity, smooth operation and long service-life. Apart from the supply of new drive systems, the company's broad branch network offers original spares and advanced workshop resources that ensure all repairs to drive components meet pristine OEM standards."

BMG supplies an extensive range of drive packages from NORD DRIVESYSTEMS and Sumitomo Drive Technologies (Hansen, Paramax, Cyclo, HSM helical shaft mounts), which have been designed especially for optimum efficiency in harsh applications, including water, wastewater and sewage treatment plants.



## Sumitomo Hansen and Paramax products

Sumitomo's Hansen product range includes gear units that drive aerators, water screws and brush aerators. Notable features of BMG's locally-assembled Hansen agitator/aerator gearboxes include the flexibility for application-specific product design to meet exact requirements, carburised and ground bevel and helical gearing for added strength, as well as high torque capacity, surface durability and low noise performance. In addition, robust weatherproof housings raise the gearbox and drive motor above the service platform, to prevent contact with water.

Hansen gearboxes are available from BMG with standard or heavy-duty output bearings and have the additional option of extended output bearing distance housings, which allow for greater output shaft support. There is a large overhung load capacity of the gear units and the housing design ensures smooth transition of forces from the centre bore to the mounting feet.

A rigid lantern housing seamlessly connects the gear unit with the motor. Continuous oil circulation through to the bearings is facilitated via a mechanical oil pump and internal oil channels, which ensure extended service life of the gear unit.

The internal construction of the gear unit housing allows for simple and complete oil drainage, while Hansen's Oil-Lock and Oil-Guard systems offer maintenance-free sealing on high-speed shaft extensions. The drywell – available on Hansen P4 gear units – prevents oil leakage on vertical down shafts. Larger units, with inspection covers above the oil level, allow for convenient inspection of internal components on site.

Hansen aerator/agitator units also allow for fitment of additional options, such as oil-sight glasses, flow switches, temperature sensors, oil level switches and dipsticks. Standard

designs are available with torque capabilities from 13 kNm to 328 kNm.

BMG's Sumitomo Paramax gear reducers, which are proven in the conveyor and materials handling industry, also offer the water treatment sector a range of gearboxes that is well-positioned with regards to product capabilities and advanced features: with competitive pricing.

This range is available as right angle or parallel vertical units and a tooth form with a 25° pressure angle to deliver stronger gearing. The mechanical oil pump requires no electricity and the gears are carburised, heat-treated and finished to the highest standards of accuracy. Paramax units are painted with anti-corrosion paint for extended service life in harsh working conditions.

## NORD drives

NORD drives, which include a Unicas helical shaft-mount geared motor in the range, have special features to meet the requirements imposed during water treatment. "NORD drives consist of gears, motors and brakes that are protected against corrosion. Special covers for the hollow shaft and motor also ensure the drive is entirely resistant to spray from tanks and the humid and aggressive conditions to which it is exposed in sewage treatment plants," says Deon Crous, National product manager for NORD Drive Systems at BMG.

"Explosion-proof motors with electrical and mechanical speed controls 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



Sumitomo Hansen 3-stage vertical parallel aerator units complete with motor lantern adapter.



Notable features of BMG's agitator/aerator gearboxes include the flexibility for application-specific product design to meet exact requirements.

system is equipped with a four-wheel drive system 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 with 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 Unicas gearbox that accommodates all the 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 operation at maximum load capacity.



A Sumitomo horizontal, foot-mounted and integral CYCLO Drive Gearmotor.

Also in BMG's NORD range is the compact combination of MAXXDRIVE industrial gear units and the Sealless Adapter For Mixers (SAFOMI), which offer operating reliability and reduced maintenance requirements. Important features of these gear units for mixers include fewer wearing parts – no shaft sealing is required between the gear unit and the IEC adapter. There are also fewer attached components and no additional oil tank is necessary. This reduces installation space.

This NORD range has earned recognition globally for reliability, efficiency, low noise levels, extended life and reduced maintenance.

BMG has made substantial investments to ensure assembly, stockholdings and technical back-up for its comprehensive range of industrial geared motors. All gearboxes and electric motors are in keeping with international standards. This facility enables the quick delivery of world-class geared motor solutions in selected African countries while full repair and maintenance services are also offered.

[www.bmgworld.net](http://www.bmgworld.net)



Sumitomo Hansen P4 size D and E aerators, with BMG motors, ready to depart the BMG workshop to a water treatment site.