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## Drives and motors for reliable mining in Africa



*BMG's energy efficient drive solutions are designed to meet the exact needs of mining and mineral processing in Africa.*

BMG's integrated engineering solutions service to the mining sector in Africa encompasses a complete electromechanical capability, which includes a customised plant design, product selection, installation, commissioning and support service.

"BMG's energy efficient drive solutions are designed to meet the exact needs of mining and mineral processing, at the same time ensuring improved asset availability and the lowest possible cost of ownership. These robust drive systems can withstand heavy loading and operation in extreme conditions and are able to control equipment installed at great distances," says Ian Smith, country manager, BMG, Zambia.

"By optimising ac-drive applications for every plant design, BMG provides dependable solutions that improve productivity, save energy costs, reduce maintenance requirements and extend service life of equipment.

"BMG's premium drives' offering is through the Danfoss brand, which incorporates high power VLT® drives and the VACON® range. BMG is now able to deliver low voltage drive solutions up to 5 MW, in a variety of customisable configurations." Danfoss drives are designed to operate in harsh, dusty environments and in high ambient temperature conditions, without de-rating. They can also be installed in environments containing relatively high levels of contaminants. Standard VLT and VACON drives have a long motor cable capability on mines with a large-scale layout. They are fully compatible with all ac motors and integrate seamlessly into PLC field bus networks.

These drives have built-in RFI filters, which ensure reliable operation of all other electrical equipment on the same installation. No additional RFI filters are required on the input of the drive – this saves space and installation time and costs, compared with conventional ac-drive solutions. Danfoss drives, have a compact design and an intelligent heat management system for reduced project and operating costs. The back channel cooling concept for VLT high power drives reduces contamination of the drive electronics, resulting in increased lifespan of the unit. This cooling concept is also an optimal solution for reducing heat dissipation within the drives installation area. By removing the drives dissipated heat directly, mines are able to reduce cooling system requirements, thereby saving on capital and long-term energy costs.

VLT and VACON drives are used for many applications in mining, including the control of mine ventilation fans, for smooth acceleration and deceleration of long conveyors, for electric driven dewater pumps skids and for the reliable operation of slurry pumps. These drives are also used for all mining and mineral processing equipment applications and bulk material handling facilities. Danfoss variable speed drives are fully compatible with BMG's high power motors, which are available in an IP66 variant and in different power / frame size combinations.

Motor life span is improved by winding all motors with Class H insulation and a Class B temperature rise. Installation and changing out of the BMG high power motor range is made easy due to the oversized terminal box and removable gland plate. These motors, which are tested to stringent SABS and international standards, are SPM-ready to facilitate vibration monitoring and testing. BMG's high power gearbox range incorporates the Sumitomo (Paramax and Hansen), Nord and Zollern brands. Optimised gear tooth profiles reduce wear and noise levels, also extending the service life of the product. BMG is able to customise gearboxes for specialised applications. BMG's two branches in Zambia – in Lusaka and on the Copperbelt in Kitwe – offer a 24/7 support-service for the full product range, through technically competent workshops and field service teams.