

# DB Santasalo

## MAV Shrink Disc Helps Large Size Gearbox in Mining Industry



Worldwide demand for copper is constantly growing due to continuous urbanisation, electrification and transport needs. As we move towards a lower carbon future, copper is essential to creating the infrastructure needed for renewable energy sources, such as wind and solar.

Copper is used in a broad range of everyday household products and is found all over the world. Copper is mined with large special machines: **400-ton bucket wheel excavators**, with lengths of up to 40 metres and wheel diameters of 12 m, transporting material flows of over 5000 t/h.

Bucket wheel excavators are moved by a planetary gear unit transmitting torque between the motor and the operating machine at the correct operating speed.



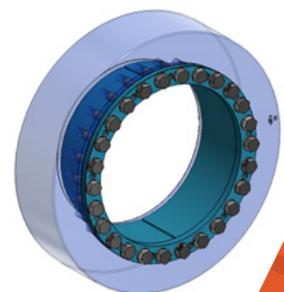
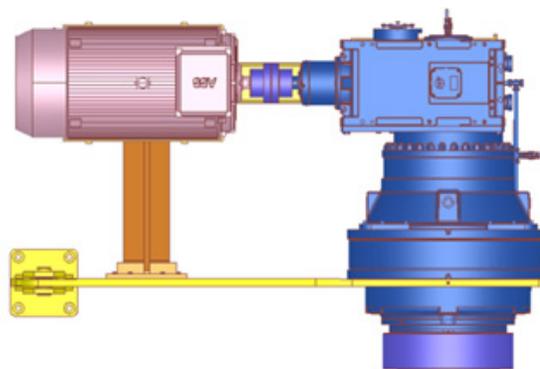
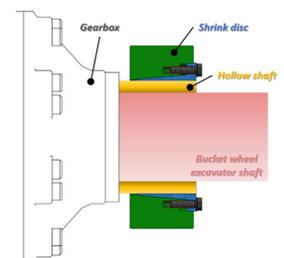
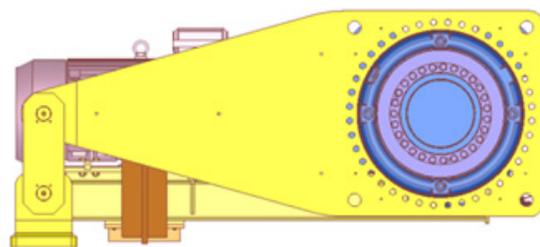
MAV's customer, David Brown Santasalo delivers a wide range of gearing solutions and services for the intense requirements of mining and minerals processing. In this case they performed the refurbishment and maintenance of the gearbox.

The **SHRINK DISC MAV 3009 590 x 960 SPECIAL** large size, is the core of the bucket wheel and gearbox connection, specially designed to meet the 590 kNm torque performance of this extreme application.

Shrink Discs are external devices suited for rigid, backlash-free, frictional keyless connection between the gearbox hollow shaft (hub) and the bucket wheel solid shaft. Installed onto the outer diameter of the hub, which is mounted onto the shaft. In this case the Shrink Disc torque capacity is 2800 kNm.

The gearbox's pendulum connection to the excavator structure is made using a reaction arm, which holds the gearbox in position, preventing it from rotating and transmitting the gearbox's reaction torque to the main structure of the machine.

In the pendulum configuration the weight of the gearbox-motor assembly and the torque to be transmitted to the bucket wheel are entirely supported by the Shrink Disc and Torque Arm, performing a key function for the operation of the entire machine.



US and Canada 1-800-243-3374  
Latin America 1-717-665-2421  
Europe, Asia, Australia and Africa +44 0 870 757 7007

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