

Mill Gear Units (MGU) drive the mining industry forward

26 May, 2014: A new range of MGU industrial gear units, designed specifically for use with grinding mill drive trains in the mining industry, have been introduced to the local market by specialist drive engineering company SEW-EURODRIVE.

SEW-EURODRIVE head of engineering and sales **Conrad Pilger** notes that the MGU series of industrial gear units has been developed on the back of the success of the M1 gear series.

"The M1PSF, ME2FS and ML2PSF are a part of the MGU series of industrial gear units. They are an application specific extension of the M1 series of gear units, which were a proven success," he states.

The MGU series meets the highest quality, reliability and performance requirements, and is made from the best quality materials. "This has resulted in increased safety for drive applications that were previously run using conventional gear units. The new series also provides economic advantages for new drive applications," Pilger explains.

The MGU gear series features a horizontally split housing which is equipped with facilities for lifting, oil inlet and outlet, oil heater, a lubrication unit attachment, an oil sight glass, along with various other components. The housing is composed of various materials ranging from fabricated steel to cast iron.

This, along with the sturdy and rugged design, ensures that the gear housing can withstand a tough working environment. All of the gears and pinions used in the MGU range meet ISO 6 standards. In addition, the gear mesh properties have been selected in order to minimise the noise and vibration levels, as well as to reduce the risk of surface wear to the unit.

Pilger highlights that high speed shafts are equipped with a three-bearing arrangement. He adds that the radial load component from the gear mesh is supported by two radial bearings, and an additional thrust bearing load is included to compensate for the axial load component.

If needed, thrust bearings are spring loaded to avoid minimum load condition for non-loaded bearings. Thrust bearings on HS, IM and LS shafts are located on the same side of the housing. This causes a thrust load on HS shaft and a counter thrust load on IM/LS shaft to be compensated close to each other, minimising the housing deflections.

Auxiliary drive packages are also available for use with the MGU gear series. These include disengaging coupling, brake disk and calibre or brake motor. The main drive unit consists of the main gear unit (an M1PSF, ME2FS or ML2PSF), as well as HSS coupling, LSS coupling and a lubrication unit. The auxiliary drive features an auxiliary gear unit, disengaging coupling, HSS coupling, a brake and an electric motor.

During normal operation, only the main drive will be in use. The auxiliary drive will be disconnected from the rotating main drive by disengaging the coupling. This drive is only connected and used when the mill is being serviced, but there is still a need to rotate the grinding mill slowly. In order to accomplish this, the main gear motor is switched off, the auxiliary drive is connected to the main drive train and the system is rotated slowly using the auxiliary drive motor.

Pilger emphasises that the MGU gear series from SEW-EURODRIVE has been developed to ensure user safety during operation. "It is important to make sure that the main drive is not accidentally switched on when the auxiliary drive is connected to the drive train, in order to avoid injury to people or damage to the equipment. To ensure user safety, SEW-EURODRIVE has fitted its mill drive trains with mechanical or electrical interlocking systems, depending on customer needs."

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The mechanical interlock makes use of one key to control two locks which enable the auxiliary drive to be engaged only once the main drive has been switched off. The electrical interlock prevents the main drive from being started if the electric switch detects that the auxiliary drive is still connected to the main drive.

According to Pilger, SEW-EURODRIVE is able to supply drive packages to meet a variety of customer needs. "SEW-EURODRIVE is able to supply ready assembled drive packages consisting of various components that meet customers' specific needs. These packages consist of various components, including; gear units, pressure lubrication units, auxiliary reducers and base plates,"he concludes.

Ends.

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