

Schaeffler Global Technology Solutions

Raw material extraction and processing

BHP Billiton Base Metals, Australia

Replacement of Spherical Roller Bearing by FAG Split Spherical Roller Bearing

BHP Billiton Base Metals is a business unit of BHP Billiton, one of the world's top producers of copper, silver, lead and uranium and a leading producer of zinc. Operating Australia's largest underground mine, most of BHP Billiton employees live in the local township, about 16 km south of the operations. The township has a population of about 4 000.

Challenge for Schaeffler

The main ore conveyor is used to transfer ore from the mine face to the crusher section. Downtime of this equipment would result in significant loss of production. The conveyor is driven through a shaft mounted gearbox. The drive end bearing assembly of the pulley is designed into the structure with limited access. The entire drive system had not been 'touched' for over twelve years, which could have significantly added to the difficulty of the job.

Schaeffler Solution

With the help of condition monitoring Schaeffler indicated a very poor condition of the drive end bearing. A change out was imminent. Schaeffler replaced the 23180K spherical roller bearing by the FAG.231SM380MA split spherical roller bearing on head pulley (drive end) of the main ore conveyor (CV002).



Information about the Plant

Located 560 kilometres north of Adelaide, South Australia, this BHP Billiton operation is a multi-mineral ore body. It is the world's fourth-largest remaining copper deposit and the largest uranium deposit. It also contains significant quantities of gold and silver.



FAG split spherical roller bearing



Head pulley of main ore conveyor



FAG split spherical roller bearing

Customer Benefit

- Significantly reduced installation time. The bearing change was accomplished within the time frame of a scheduled shutdown – no equipment down-time occurred.
- No need to remove shaft mounted gear box. This task would have been a major exercise given the size and condition the shaft mounted connection was in.
- No need for alignment after work is finished – repositioned the assembly onto existing jack bolts.
- No need for special tools such as hydraulic nuts or similar
- Installation was performed and fully supervised by Schaeffler Engineering.
- Performed repair of the lubrication system and initial grease fill as per recommended specification.

What's special

The Schaeffler remedy means for the customer a complete solution from a single source. The use of the Schaeffler split bearing has significantly reduced time and costs involved to perform the repair of this bearing position. The Schaeffler mounting service ensures a professional installation.

Technical Information about the Solution

Split spherical roller bearing

FAG.231SM380MA

Inner diameter:

380 mm

Outer diameter:

650 mm

Width:

200 mm

Fitting width:

270 mm