

## Schaeffler Global Technology Solutions

### Raw material extraction and processing

#### Pilbara Iron, Australia

### Considerable Cost Savings through FAG Split Spherical Roller Bearings

Pilbara Iron, a member of the Rio Tinto Group, is a world-class asset manager that operates and maintains mining, rail and port facilities in the north-west of Western Australia. Dampier's Port Operations include two ship-loading terminals each equipped with appliances for train unloading, ore stockpiling, ore blending and ship loading.

#### Challenge for Schaeffler

At Pilbara Iron's Dampier Port Operations replacing the bearings on the bucket wheel excavator drive was a maintenance nightmare.

The standard unsplit FAG SGC Pillow Block housing was difficult to access. Normally it would have taken 72 hours to replace the spherical roller bearings. This would have meant costs of idleness of € 1110 (AUD 2 000) per hour.

#### Schaeffler Solution

Schaeffler recommended changing the conventional FAG spherical roller bearings to FAG split spherical roller bearings. The split bearings were fitted into the existing housing without modification or the need to remove the drive shaft. This decreased the installation time by 50 percent and thus resulted in a tremendous reduction in downtime. The price for an FAG standard spherical roller bearing is € 2 780 (AUD 5 000). The cost of an FAG split spherical roller bearing amounts to € 16 670 (AUD 30 000).



#### Technical Information about the Plant

##### Bearing Location

- Drive shaft
- Grease lubricated
- SGC Pillow Block housing
- Speed: 5,5 RPM



Simplified mounting – shortened downtime



FAG split spherical roller bearing



Fitters working on-site

## Customer Benefit

Through the use of FAG split spherical roller bearings, the downtime is shortened by 36 hours, which corresponds to a cost saving of € 40 000 (AUD 72 000). Once the additional bearing costs for a FAG split spherical roller bearing as well as the reduced labour costs simply for one fitter (€ 39/hour) have been taken into consideration, this gives the following minimum savings for each bearing change:

Minimum savings	
Shortened downtime:	€ 40 000 (AUD 72 000)
- Additional bearing costs:	€ 13 890 (AUD 25 000)
+ Lower labour costs (1 fitter) (€ 39 x 36 hours):	€ 1404 (AUD 2 520)
<b>Savings per bearing change:</b>	<b>€ 27 514 (AUD 49 520)</b>

Furthermore, the customer benefits from long term savings in maintenance, since bearing replacement can proceed more easily and more quickly in future through the use of FAG split spherical roller bearings.

## What's special

The range of FAG split spherical roller bearings permits heavy industries such as mining, metals production, pulp and paper and cement companies to reduce production downtime. Moreover these bearings simplify mounting and reduce maintenance costs.

## Technical Information about the Solution

Following FAG bearings and housings were used:

### Locating bearing side:

- BND3160-Z-T-AF-S housing
- 23160-B-MB standard spherical roller bearing

### Floating bearing side:

- Z-144899.02.SGC3084-Z-BF housing
- 23084-B-MB standard spherical roller bearing

### Replacement bearing:

- Z-536955.PRL split spherical roller bearing