



## Revolve slashes downtime at steel mill

In the steel industry keeping the smelter running is crucial to maintaining the production process. So when one of the fans responsible for the control of the temperature and airflow within the smelter suffers a bearing failure, the downtime costs can be considerable. One recent example highlighted the amount of time required to change a single bearing and the cost that this can have to a business. Fortunately Revolve was able to offer a solution which cut downtime by almost 90 percent.

The smelting process lies at the very heart of the steel manufacturing process and accurately controlling the temperatures is crucial to maintaining the quality of the finished product. To keep the temperature and airflow to within the required parameters a reverse fan is used to draw in external air. This is an extremely demanding application due to the high temperatures and presence of corrosive airborne particles meaning that bearing failure is a significant risk. In many installations the replacement of a bearing can take hours, or even days. This can cost the mill hundreds of thousands of pounds in lost production, especially if the bearing repeatedly fails prematurely.

A UK based steel plant was recently experiencing similar problems. The original equipment consisted of a standard Plummer block bearing arrangement; but, in the event of a bearing failure, it would take in excess of 14 hours to change the two fan bearings. The majority of this time was taken up with removing the failed bearings, which required the use of a flame cutter to remove the bearings inner races from the fan's shaft. During this downtime, production within the plant was severely affected.

The maintenance engineers at the steel plant needed to find a more reliable solution and decided to call Revolve to arrange a planned site visit to discuss possible options for improving the bearing arrangement. By assessing the existing installation, the Revolve engineers were able to specify a suitable SRB split roller bearing which would fit within the existing bearings dimensional constraints.

The proposed solution would provide a number of benefits over the original design including superior sealing properties, improved performance, and the ability for bearing inspections to be undertaken in-situ as part of the preventative maintenance programme. However, the most important feature is that the SRB bearing is totally split to the shaft, which in the event of a bearing failure, allows it to be removed & replaced in around 90 percent less time and without the need for ancillary equipment such as cutters to remove seized inner races, or hoists to lift the shaft, which was the situation with the original equipment design of solid mounted bearing.

Unlike solid bearings, the design of the SRB bearing both simplifies and expedites installation while significantly cutting downtime costs in comparison to replacing conventional bearings of a similar size. SRB split bearings allow the shaft to be supported by the lower section of the bearing & housing, whilst the upper section of the housing & bearing outer race can be removed; inspection of the bearing trackway, cage and rollers & lubricant is fast and simple, without the need to remove drives or lift the shaft. This intrinsic feature is especially valuable regarding large rotating machines, where sheer weight and size can be a barrier to fast and effective servicing.



Because of the durability of the SRB split bearing, this fast-removal feature has not yet been utilised, as the new SRB bearings have been operating successfully for over 12 months and continue to perform as expected. The payback period for this investment has been less than six months, resulting in the customer ordering two further bearing sets, one of which will be installed on the second reverse fan and further improve the reliability and performance of the smelting operation and consequently lift the plants productivity.

## **About REVOLVO**

Revolvo, the world's leading manufacturer of specialist bearings, designs and manufactures bespoke high performance bearings for demanding and safety critical applications, combining its expertise for both Revolvo branded ball and roller bearings, and SRB split roller bearings. With our range of STANDARD to CUSTOM designed products, we offer extensive experience, flexibility and the technology to meet the most demanding industry needs.

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