



## **Revolve delivers substantial savings in downtime for cooling towers**

For a large petro-chemical company located in Antwerp, Belgium, the cost of replacing failed bearings on its cooling tower fans was becoming a serious issue. With 25 similar applications across just one site there was an urgent requirement to find a better solution which would improve reliability and reduce the maintenance costs. The answer was provided by Revolve, with its SRB split roller bearing design, which greatly reduced the time and cost of the replacement operation.

Bearing replacement is a common issue for companies operating large rotating machines, with the time and equipment required to change a conventional bearing often resulting in significant maintenance costs as well as lost production time in many instances. Due to the scale of these machines, often cranes, hoists, scaffolding and other specialised equipment are required to ensure the task can be performed safely.

In this particular case, bearing failure in axial cooling fans were causing two days of downtime while the replacement was carried out; a situation which was becoming unacceptable, especially during the summer months when the cooling system is required to run at maximum efficiency. The bearings supplied by the OEM were fitted with ineffective seals, which contributed to premature bearing failure. This led to an engineering review of the equipment to try and find a better fan bearing solution.

A site visit carried out by a Revolve application engineer resulted in the suggestion to change the OEM bearing for a SRB split roller bearing, which would not only improve the service life of the bearing but also greatly reduce the time and cost required to change the bearing when replacement was required. The most immediate improvement was a design of a more effective seal arrangement preventing dust and water ingress, which eliminated a major bearing failure mode.

Revolve has developed a high performance labyrinth seal and Kevlar packing seals, which provide effective sealing even in the worst operating environments, which has been evidenced through installations in many demanding applications worldwide. The SRB design ensures that the seals always remain concentric to the shaft, so increasing operational reliability, by eliminating sealing problems with conventional non-concentric designs that rapidly lead to expensive premature bearing failure.

However, the greatest savings have been in the reduction of downtime, which has been reduced from two days to just two hours for the complete bearing replacement. The split-to-the-shaft feature of these SRB bearings enables them to be installed without requiring access to the shaft ends, therefore removal of the drive and fan impeller is unnecessary. Instead, the SRB bearing is assembled around the shaft itself, which removes the need for cranes, & extensive access scaffolding, which in turn also reduces the hazards, risks and costs associated with the operation.

Overall, the service life of the fan bearings has been greatly improved; the time to replace failed bearings has been greatly reduced along with the risks to health and safety. The client has seen an annual saving of over €235,000 as well as improved reliability and greatly reduced periods of downtime.



## 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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