

Split roller bearings take years of heat

Split roller bearings (SRB) have now been deemed to have successfully replaced the original bronze-bush bearings on the drying cylinders at Lothlorien's paper mill, a South African manufacturer of tissue paper from recycled fibres.

The success is put down to the bearings being fundamentally fit-for-purpose in their ability to cope with demanding applications. Sales & Marketing Director at Revolvo, **Adrian Menzies** explains: "Part of the reason why the split roller bearings are operating successfully after three years in such a harsh operating environment is the fact that they are specifically designed to be extremely tolerant of adverse working conditions, whilst having the capability to support very high loads, rather than a conventional solid bearing design that may have to be adapted to meet demanding applications."

SRB split-roller bearings accommodate shaft thermal growth by the movement of the inner race and rollers relative to the outer race of the bearing. This arrangement permits a high degree of unrestricted axial movement within the bearing envelope, allowing for thermal expansion of the shaft whilst avoiding additional stresses within the bearing. It also allows standard bearing operating temperatures up to 140°C, and operating speeds comparable with solid spherical roller bearings. The principle of the SRB design allows for complete bearing removal and replacement by supporting the shaft. There is no need to lift the shaft, or obtain access to the shaft ends, therefore expensive and awkward to handle lifting equipment is not required. This feature is particularly valuable with large machines, where sheer weight and size can be a barrier to fast and effective servicing. The design allows for much faster bearing replacement, one of the reasons why Lothlorien opted for this bearing model.

Split-roller bearings can also accommodate a high degree of shaft misalignment making them suitable for use in heavy applications such as those within paper mills. A cartridge housing that swivels within the cast-iron support pedestal encloses the bearings; this ensures that the seals always remain concentric to the shaft and extends the potential life of the bearing. Adrian Menzies adds, "About 70% of the bearings supplied are for conversion applications where solid conventional roller bearings are being removed and the application converted to SRB to save bearing fitting time and improve machine up-time and maintenance efficiency".