

Schaeffler Global Technology Solutions

Railway

Alstom, United Kingdom

Reconditioning of Yoke Type Track Rollers for Pendolino Trains

Alstom designs sustainable and global railway solutions tailored to each operator. For the West Coast Main Line in United Kingdom Alstom has not only delivered the Pendolino coaches but is also responsible for maintaining the entire fleet of 56 high-speed Virgin Pendolino trains.

Challenge for Schaeffler

In March 2015, Alstom began overhauling the entire fleet of 56 Pendolino trains at Longsight. A critical part of this overhaul was the reconditioning of the yoke type track rollers by Schaeffler. The 60-week program involved the overhaul of a trainset worth of bogies per week (22 for an 11 car set and 18 for a nine car set). Each bogie is fitted with four yoke type track rollers, which means that every week Alstom removed 88 or 72 yoke type track rollers and sent these to Schaeffler for reconditioning.

Schaeffler Solution

The European Schaeffler reconditioning center for railway units is located in Schweinfurt, Germany. The process involved dismantling the track rollers and 100% visually inspecting all individual components for any signs of wear or damage, which can include fatigue, cracks, corrosion and indentations caused by overrolled particles. All the parts had been cleaned before to remove grease, adhesive and contamination. Any defective contact rings were replaced with new ones. The inside and outside diameters of the bearings were checked according to dimensional requirements. Subsequently all units were re-assembled, sealed, greased, packaged and returned to Alstom's warehouse in Preston, United Kingdom.



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Technical Information about the Double Row Yoke Type Track Roller

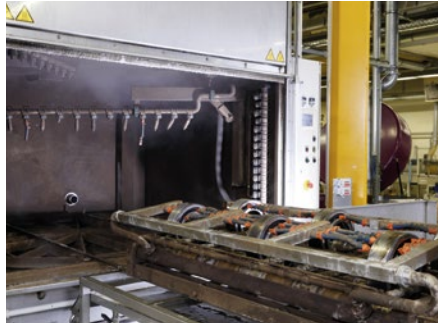
Each unit consists of:

- a crowned outer ring
- a full complement cylindrical roller set
- inner ring
- thrust washer
- Lamellar ring
- Nilos ring
- retaining ring





Yoke type track roller unit



The bearings are cleaned in a customized washing machine



Greasing of the bearings

Customer Benefit

For Alstom, the cost of having the track rollers reconditioned by Schaeffler is lower than purchasing new replacement rollers. Due to the large volume of units involved in this program, the overall cost is significantly lower. Furthermore, in terms of quality, a track roller reconditioned by Schaeffler can be returned to the customer in an as-new condition. Reconditioning also has the additional advantage that it generates significantly lower CO2 emissions compared to the manufacturing of new bearings, which means that the good environmental performance already achieved by the rail industry can be enhanced further.

What's special

The Schaeffler reconditioning process is carried out according to strict quality requirements at several locations worldwide. Nevertheless, with our local centers of competence, known as Schaeffler Technology Centers, we also bring our portfolio of services and products directly in our customers' area. Thanks to the close cooperation between local and worldwide Schaeffler experts within the Schaeffler Global Technology Network, customers always benefit from optimum support anywhere in the world.

Technical Information about the Solution

Reconditioning of yoke type track rollers:

- Disassemble unit
- Clean components
- Inspect and assess components
- Dispose of defective units if necessary
- Measure components and set axial clearance
- Polish components (optional)
- Replace wear parts (optional)
- Assemble, grease, apply preservative and pack unit