

Customer Success Story

Industrial/Logistic

Schaeffler Technologies AG & Co. KG, Germany

Online condition monitoring using SmartCheck prevents unplanned machine downtime

Customer

Schaeffler's European Distribution Center Central, or EDC Central for short, in Kitzingen is one of Europe's most modern logistics centers with several thousand shipping units rolling off the lines every day. Standard products can be delivered to customers within 24 to 48 hours after receipt of the order.

Challenge for Schaeffler

Seven automated storage and retrieval systems (AS/RS) continuously handle loads in various directions from storage racks with a height of roughly 38.5 meters. The bearings in the drives of these storage and retrieval systems are subjected to severe loads during operation. Any unplanned downtime of the storage and retrieval systems due to bearing damage can affect the entire supply chain. In the worst case, this may result in delayed deliveries of customer orders. The logistics center was therefore looking for a predictive maintenance solution.

Schaeffler Solution

The EDC Central relies on intelligent maintenance solutions developed in-house for monitoring the automated storage and retrieval systems. The 58 most important of the roughly 3,000 drives are monitored using the Schaeffler SmartCheck condition monitoring solution.

Seven SmartChecks are installed on the drives of the storage and retrieval systems. After an operating period of around 18 months, one of the SmartChecks detected an irregular upward trend. The visual inspection carried out by local maintenance personnel confirmed that grease had escaped from the track roller bearing. Thanks to the early detection of this irregularity, the customer was able to schedule and carry out the bearing replacement in good time and therefore prevent an unplanned downtime.



SCHAEFFLER

Information about the EDC Central

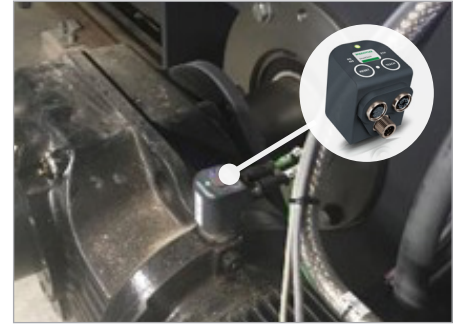
- Groundbreaking: October 2016
- June 4, 2018: opening
- 200 employees in mid-2019
- Investment volume of EUR 110 million
- Total area of 148,000 square meters
- Two storage racks with a height of up to 38.5 meters offer space for 28,000 Euro pallets and 95,000 containers
- Equipped with an in-floor conveyor system and state-of-the-art conveying technology (2 km)
- 20 ramps for 85 trucks per day



One of the seven automated storage and retrieval systems that are monitored using SmartChecks in the EDC Central in Kitzingen (drive)



Grease has escaped from a bearing in the drive of a storage and retrieval system



Schaeffler SmartCheck installed on the drive of a storage and retrieval system

Customer Benefit

The online monitoring solution is an important tool for the customer in eliminating unplanned downtimes and malfunctions during operation. The customer also benefits from the following advantages:

- Prevention of costs resulting from production downtimes
- Prevention of subsequent damage to the drive
- Low purchasing costs for the monitoring system
- Reduced maintenance costs
- Increased machine availability
- Enhanced reliability through a self-reporting system

Oliver Massa, Intralogistics Portfolio Manager at Schaeffler, sums up the advantages of the monitoring solution.

Bearing damage was detected at an early stage thanks to the SmartCheck. The team was able to carry out the four-hour maintenance work outside of regular operating hours. Production was therefore safeguarded, and subsequent damage to the drive was prevented. With predictive maintenance, we can save costs of up to EUR 70,000 every year.

What's Special

This holistic solution can also be applied and extended to other machines and equipment in almost every plant. In order to ensure optimum lubrication of the chain and roller conveyors, the EDC Central additionally uses the centrally controlled CONCEPT8 lubrication system from Schaeffler with specially developed lubricating pinions for continuous and precise relubrication during operation (see Customer Success Story 0133, [link](#)).

Contact

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Technical Information about the Solution

Monitoring system

58 SmartChecks

Monitored equipment

Automated storage and retrieval systems, lifting stations, and spiral conveyors

Monitored operating parameters

Vibration, temperature, and speed

Diagnostic methods

Speed, acceleration, and envelope curve

Status display

Connection to the Schaeffler network and local visualization in the control room