



Customer Success Story

We pioneer motion

Sustainable concept reduces emissions and saves costs

One of the most renowned German car producer is breaking new ground in the ventilation of its production facilities. The continuous monitoring of key system parts was just one element of the planning process, as a sustainable reduction in emissions also played a major role. The holistic concept for the system was provided by Altmann Industrietechnik, a technology partner certified by Schaeffler. The solution was based on Schaeffler components and a patented 3D motor slide.

Benefits

- Reduced friction losses - as a result of converting from a V-belt to a toothed belt drive
- Improved signal analysis and visualization in premium quality
- Less maintenance work and extended system life
- Reduced CO2 emissions
- Reduced total cost of ownership
- More time available for core tasks

Customer

Automobile manufacturer

Sector

Automotive Industry

Application

Fans

Solution

- Condition Monitoring
- Lubrication
- Energy-efficient components

What our customer does ...

Challenge

Several hundred cars have been leaving the automobile manufacturer's plant every day since 1987. It is easy to imagine just how many people and machines are working on this task at the same time. In 2019, the figure was in excess of 255,000 vehicles. In the plant's production halls, the required fresh air is provided by large air intake and exhaust systems. If a fan system fails due to a defect such as imbalance, bearing damage or incorrect lubrication, the results often lead to production and financial losses. To avoid unplanned down-times of this kind, the responsible maintenance planning function at the plant is very cautious in its approach and is always looking for optimized solutions. The idea: Establish a holistic concept for the fan systems, which should not only reduce CO₂ reductions but also provide early indication of damage by means of an intelligent condition monitoring solution. With this goal in mind, the company decided to seek assistance from Schaeffler-certified technology partner Altmann.



Fan with patented 3D motor slide and toothed belt drive at the automobile manufacturer's plant

Technical information on the fan

Airflow rate supply air	> 160,000 m ³ /h
Variable motor speed	800 - 1200 rpm

Customer

The renowned German automobile manufacturer employed more than 126,000 people in 2019, of whom around 9,000 work at the Bavarian subsidiary. 255,805 vehicles left the plant in 2019.

What Schaeffler and Altmann has to offer ...

Solution

The holistic concept for the fan systems essentially consists of the following components: A condition monitoring solution, a lubrication monitoring solution, a 3D motor slide, and a conversion from V-belt to toothed belt.

Monitoring solution with ProLink CMS

The multi-channel condition monitoring system ProLink CMS is used to monitor all bearings, belts, and the motor.

The ProLink CMS was integrated into the process environment using OPC/UA and provides every alarm status in addition to the characteristic values.

Lubrication monitoring with CONCEPT8

The bearings in the fan system are lubricated by two automatic lubricators, which always supply the bearings with the right amount of grease at the right time, thus preventing insufficient lubrication or overgreasing.

New patented 3D motor slide

The patented 3D motor slide is being used for the conversion from a V-belt to a toothed belt drive. This ensures optimal running conditions and is particularly suitable for the maintenance and servicing of drive belts. All that is needed to replace the belt drives is to loosen the tensioning unit. The mutual alignment of the drive pulleys remains constant throughout.



Schaeffler ProLink CMS in switch cabinet.



CONCEPT8 ensures precise lubrication of the bearings.

What's special

Large plummer block housings and other bearing types from Schaeffler were also used in the holistic solution. The automobile manufacturer is 100 percent satisfied with the overall concept and certified technology. As a result, the solution is also envisaged for use in other fan systems.



Technical information on ProLink CMS

Data exchange with customer infrastructure, for example system visualizations and cloud service	via OPC/UA
Interface to maintenance planning systems such as SAP/PM and IBM Maximo	via OPC/UA
Cyclical transmission of the report or in case of alarm	Email
Exchange of measurement data	Via fieldbus. In planning: Profinet and CC-Link IE Field



Technical information on automatic lubricator CONCEPT8

Operating mode	Internal time control
Cartridge capacity	800 cm ³
Lubricant	Arcanol LOAD220

Lubricant quantities

Spherical roller bearings	3,0 cm ³ /24h, 0,125 cm ³ /h
Cylindrical roller bearings	0,4 cm ³ /24h, 0,017 cm ³ /h
Deep groove ball bearings	0,1 cm ³ /24h, 0,004 cm ³ /h

What our customer saves ...

Costs associated with unplanned downtime / repair / production losses according to production area

of **€ 2.500**
up to **€ 145.000**

Energy consumption and annual saving for 6 fan systems with 45 kW motors

	Before the retrofit	After the retrofit
Energy (mWh)	1.373 mWh	1.263 mWh
CO ₂ emissions*	769 t	707 t
Saving/year on electricity		€ 17,741
Saving on maintenance work**		€ 4,850

62 t
reduced CO₂ emissions

€ 22,591
annual saving

* Calculated with a factor for electricity of 560 g/CO₂ equivalent per kWh. Source: Building Energy Act (GEG) of 08 August 2020, from Annex 9, point 3. emission factors, no. 12: Electricity grid-related
** Reduced maintenance outlay following conversion to automatic lubrication and toothed belt drive

What our customer says...



Head of
Maintenance
& Planning

We are particularly pleased with the holistic solution. Local proximity, friendly service, and consistent premium quality are also important to us. Altmann Industrietechnik and Schaeffler have fulfilled all of these requirements. We are completely satisfied.

Strong partners. Optimal solutions

Thanks to the long-term partnership between Altmann and Schaeffler, customers enjoy many advantages: Solutions that increase the service life of bearings, reduce emissions and maintenance outlay, increase plant availability and save costs. The joint objective pursued by Schaeffler and Altmann is to offer customers added value, with original goods of premium quality.

SCHAEFFLER



Certified by
Schaeffler