



Customer Success Stories

We pioneer motion

With predictive maintenance

annual saving of 50,000 euros, manual maintenance effort reduced

As a global manufacturing hub, it is essential that the Schaeffler plant in Bien Hoa City, Vietnam, remain operational at all times. It is therefore, crucial that the machines are kept in optimal working condition in order to prevent any unplanned downtime. With this in mind, a holistic conditioning monitoring solution was implemented to help keep the machines in optimum working order and thereby minimize the risk of breakdowns that may have detrimental business consequences.

The bottom line after eight months: Annual saving of 50,000 euros and a 30% reduction in maintenance effort

Customer benefits

- Reduced maintenance costs
- Lower risk of unplanned downtime
- Intelligible data for diagnosis
- Enhanced planning of resources and inventory
- Support readily available for diagnosis by Schaeffler Experts

www.schaeffler.de/en/success-stories

Customer

Schaeffler Vietnam plant

Sector

Industry

Application

Pumps, motors, fans, compressors, outdoor cooling units

Solution

Condition monitoring and lubricators

SCHAEFFLER

What the customer does and what Schaeffler has to offer ...

Challenge

The Schaeffler Vietnam plant currently has a workforce of around 500 employees, and this number is steadily increasing. With more than 17,000 high-quality industrial products manufactured in this plant annually, a team of 35 maintenance specialists must work tirelessly to guarantee seamless operation.

Our biggest concern is unplanned machine downtime. We have a tight production schedule and cannot afford delayed shipments to customers.

Tran Tuan Tri, Maintenance Manager,
Schaeffler Vietnam.

For this reason, it is critical that the Schaeffler Vietnam plant remains operational at all times in order to meet customer demands world-wide. This calls for a comprehensive and broad monitoring solution, which applies to operation across the entire plant and focuses on critical machines.



Schaeffler plant in Bien Hoa City , Vietnam



Planned plant maintenance

Solution - Summary

Following consultation with Schaeffler experts in both Asia Pacific and Germany, the maintenance team at the Vietnam plant decided to implement a thorough and holistic condition monitoring solution consisting of SmartCheck for critical motors, fans, and pumps, a ProLink CMS system for compressors, and an OPTIME system to complete the monitoring of the remaining auxiliary machines. Lastly, the lubrication of critical motors and pumps was handled by the CONCEPT1 automatic lubricators, to ensure that critical machines remained well lubricated and in optimum condition at all times.

50,000 €

of savings after only eight months

30 %

reduction in maintenance

0 downtimes

since the introduction of predictive maintenance solution

Success Story 0175, 2022/02, contact: industrial-services@schaeffler.com, phone +49 2407914966

What Schaeffler offers ...



SmartChecks installed on critical pumps.

Thanks to SmartCheck, we received a warning message for the fan on a heat treatment furnace. The early alert prevented an unplanned shutdown, resulting in a saving of 13,700 euros.

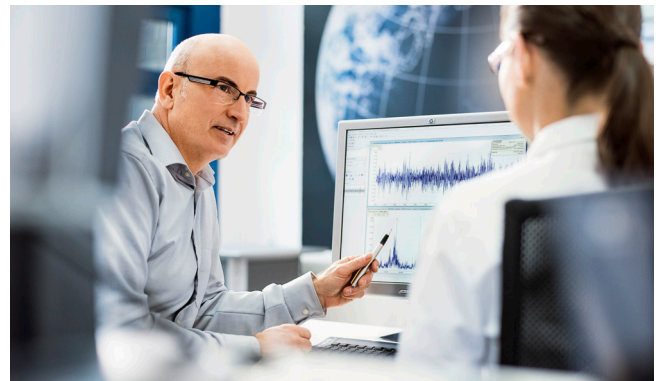
Tran Tuan Tri, Maintenance Manager,
Schaeffler Vietnam

Schaeffler SmartCheck

As an online measuring system for decentralized machine and process parameter monitoring, SmartCheck is suitable for monitoring individual production-critical machines. This maintenance solution provides an early warning system and visualization of incipient damage.

Monitoring of critical machines – SmartCheck

More than 70 Schaeffler SmartChecks were installed on critical motors, pumps and fans in the plant to ensure continuous condition monitoring of the machines. The vibration sensors are connected to a cloud-based server, which permits remote online monitoring of the entire product life cycle by the Schaeffler Operation & Maintenance Team in collaboration with Schaeffler experts. Any machine malfunctions are reported at an early stage, enabling corrective measures to be initiated.



Remote Service Center Schaeffler Germany



Technical information for SmartCheck

Data exchange	via OPC/UA
Monitored units	Motors, pumps
Monitored operating parameters	Vibration, temperature, speed
Method of diagnosis	Speed, acceleration and envelope

What Schaeffler offers ...



Schaeffler ProLink CMS in the control cabinet

We are able to monitor several compressor motors using a single system.

Tran Tuan Tri, Maintenance Manager, Schaeffler Vietnam

Monitoring of compressors – ProLink CMS

ProLink CMS was installed to monitor the health of the compressors. The multi-channel system monitors the vibration of several motors simultaneously via OPC/UA. The ProLink CMS integrated into the process environment provides an alarm status for each machine in addition to characteristic values as an indicator of machine health.



Tran Tuan Tri, Maintenance Manager, Schaeffler Vietnam

Schaeffler ProLink CMS

Schaeffler ProLink CMS is used to monitor several production-critical machines. The vibration monitoring solution is particularly suitable for machines with variable operating conditions and harsh ambient conditions such as surface temperatures in excess of 70 °C. Measurement data are exchanged via the fieldbus.



Technical Information for ProLink CMS

Data exchange with customer infrastructure	via OPC/UA
Interface to maintenance planning systems	via OPC/UA
Cyclical transmission of the report or in case of alarm	E-mail
Exchange of measurement data	E-mail

What Schaeffler offers ...



Schaeffler OPTIME sensor on a motor

Shortly after the OPTIME solution was implemented, we succeeded in preventing a machine failure just in time!

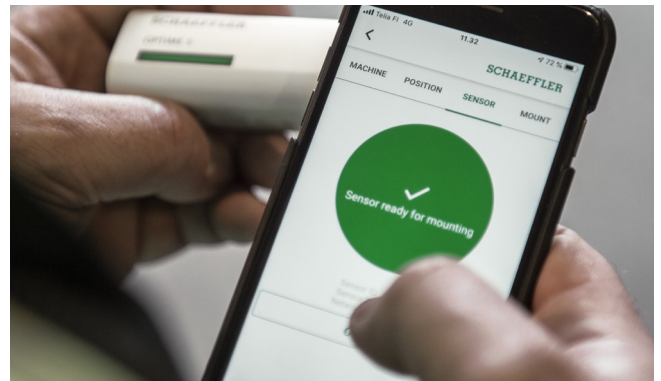
Tran Tuan Tri, Maintenance Manager,
Schaeffler Vietnam

Schaeffler OPTIME

OPTIME is a cost-effective, wireless, and scalable solution that monitors hundreds of rotating machines with constant operating conditions. The solution consists of wireless sensors, a gateway, and a digital service. The gateway receives the data from the sensors and transmits these to the Schaeffler cloud. The data are analyzed via the digital service and a failure diagnosis is generated on the basis of algorithms. The customer receives clear statements about the condition of machinery via a mobile application.

Monitoring of auxiliary machines – OPTIME

135 OPTIME sensors were installed to monitor auxiliary pumps, fans, and motors. This wireless solution continuously monitors all rotating machines in the plant. Four months after installation, OPTIME successfully detected incipient motor damage in one of the cooling units, enabling the maintenance team to implement corrective measures and thereby prevent machine failure.



Plug. Play.Predict.
Scalable solution which enables hundreds of installations per day.



Schaeffler OPTIME wins the Red Dot Award 2021 in two categories

Information on the OPTIME sensor

Vibration bandwidth	OPTIME-3: 2 Hz – 3 kHz OPTIME-5: 2 Hz – 5 kHz
Calculated parameters	7
Sensor commissioning	NFC (Near Field Communication)
Communication	Wirepas Mesh (2.4 GHz ISM Band)
Measurement cycle	Parameters: every 4 h Time waveform: every 24 h

What Schaeffler offers ...



CONCEPT1 are installed on motors and pumps.

With the Concept1, we were able to reduce the maintenance effort per monitored unit by 30%.

Tran Tuan Tri, Maintenance Manager,
Schaeffler Vietnam

Schaeffler CONCEPT1

Screw into place, set the time interval, and you're ready to go! The CONCEPT1 is ready for immediate use and can be installed easily and without the need for special tools. The lubricator can be filled with lubricants a total of three times. This significantly reduces the amount of waste and the ecological footprint. The flexible and cost-effective solution is particularly suitable for machines that are difficult to access and, thanks to ATEX certification, can also be used in potentially explosive atmospheres. By the way – the cartridge can be filled with other lubricants. Contact Schaeffler for more information.

Lubrication of critical machines – CONCEPT1

To maintain consistent and adequate lubrication, 26 CONCEPT1 automatic lubricators were installed on critical pumps and motors. The gas-driven single-point lubrication system is particularly suitable for machines which are difficult to access and can provide lubrication for up to 12 months. In contrast to manual lubrication, this solution is less time-consuming, more accurate, and cost-effective for the maintenance team.



CONCEPT1 – Machines are lubricated with the right quantity of grease at the right time.



Information on lubricator CONCEPT1

Lubricant outlet	1
Lubricants	Oil and grease, NLGI 2
Operating pressure	Max. 5 bar
Operating temperature	-20 °C up to +55 °C
Operating mode	Gas-driven
Protection class and ex-certification	IP68, ATEX and IECEx-certified