



Customer Success Story

We pioneer motion

Smart lubricator

Integration into existing maintenance software

The maintenance team of the Schaeffler production plant in Herzogenaurach was looking for an innovative lubrication and monitoring solution to prevent unnecessary production stops during maintenance of the multi-stage press. The final solution should optimize maintenance work, be sustainable and, above all, be integrated into the existing predictive maintenance system.

The OPTIME C1 smart lubricator meets all these requirements. With this digital solution, maintenance can keep machines running even in pandemic times thanks to location-independent access to machine data.

And the monetary benefit?

More than 137,000 euros saved for each prevented multi-stage press breakdown

Customer benefits

- More time – regular inspections become unnecessary
- Optimum integration into existing maintenance software thanks to API interface
- Simple and plannable maintenance – status of all lubricators always in view from afar – thanks to plain text messages on mobile devices
- Fewer production stops thanks to smart lubricator technology
- More sustainability – OPTIME C1 saves up to 30 percent of lubricant

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Customer

Schaeffler Technologies
AG & Co. KG, Germany

Sector

Industrial

Application

Multi-stage press

Solution

Lubricant monitoring

SCHAEFFLER

What drives our customer ...



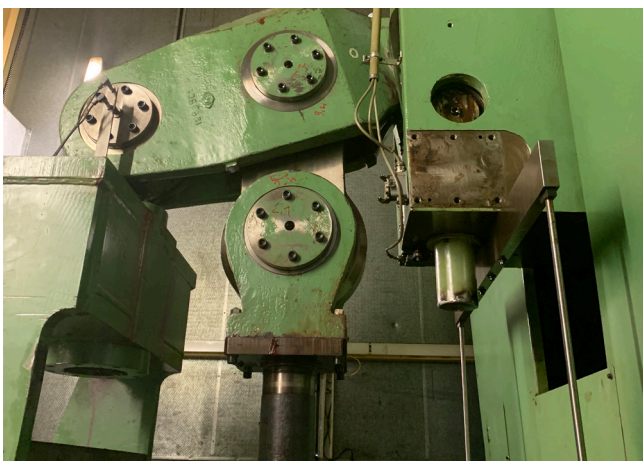
Schaeffler Headquarters and plant, Herzogenaurach

Challenge

In the Schaeffler plant's production area of the automatic cutting presses, round sheets (= round blanks) are cut to size by the multi-stage press using the deep drawing process. With a press force of 4500 kN, the workpieces are manufactured in several steps by the multi-stage press using a toggle mechanism to produce the desired end product. The press is serviced twice a year. In addition, monthly inspections are carried out to check the lubrication of the spherical plain bearings. An unplanned shutdown or failure of the machine results in high costs and production losses.

Jochen Dotterweich, specialist for predictive maintenance at the plant, describes the challenge as follows:

We check the lubrication of the spherical plain bearings every month. Each time we do that we have to turn off the multi-stage press. This requires appropriate advanced planning, costs us valuable working time and leads to machine downtimes and thus production losses. In addition, the hard-to-reach control points are located in a safety area.

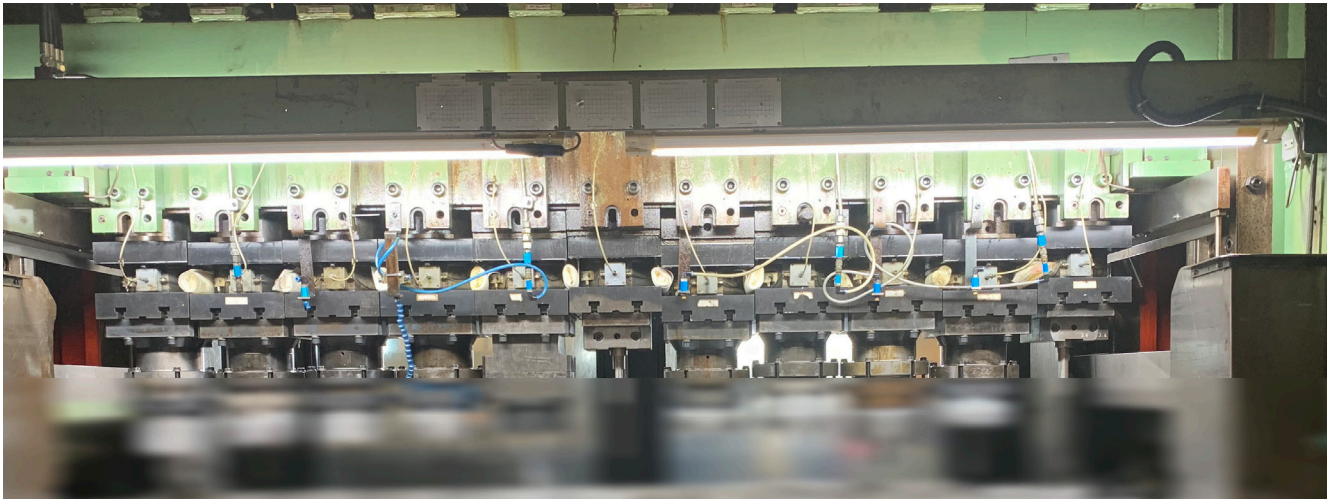


Multi-stage press

Technical data of the multi-stage press

Type	PST – b450/12/260/320
Press capacity	4500 kN
Stroke rate	20 – 60 Hub per min
Tool adjustment	60 mm
Working capacity	80 kJ
Main engine power	160 kW

What Schaeffler offers ...



Inside the multi-stage press

Solution

With OPTIME C1, maintenance in Herzogenaurach has found the right solution. The innovative wireless lubrication and monitoring solution consists of the smart OPTIME C1 lubricator, a cartridge, a gateway, and a digital service component. An app visualizes the data on a mobile device. It displays the filling level of the lubricant cartridge and errors, such as lubrication line blocks. The relevant status and alarm messages are transmitted from the OPTIME C1 to the Schaeffler cloud as well as into the predictive maintenance system via API interface. The maintenance team can thus conveniently access the data anytime and anywhere.

Inspection rounds are no longer necessary. Thanks to its compact design, the OPTIME C1 can be mounted almost anywhere – even in places that are difficult to access, such as on the multi-stage press. This reduces the risk of accidents tremendously.

What's special

The time savings and the advantage of disburdening and protecting the personnel fully convinced the maintenance management. For this reason, in addition to the multi-stage press other machines and machine components are to be equipped with the OPTIME C1 in order to completely avoid unplanned downtimes in the future.



Lubricators on plain bearings of the multi-stage press



Close up: Lubricator on plain bearings of multi-stage press

What Schaeffler offers ...



Scanning the lubricator



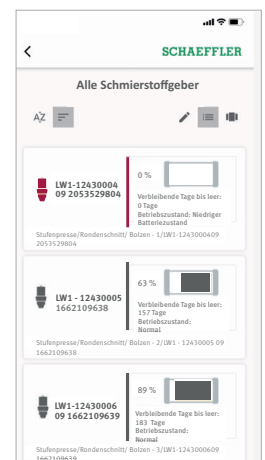
Features

- With the OPTIME ecosystem, the condition of machines and installed lubrication systems can be monitored
- Location-independent access to machine and condition data via cloud and mobile network
- No more unnecessary inspections as all information is available in the app or dashboard
- Remote monitoring of lubrication systems via Wirepas mesh
 - Fill levels always in view with daily display for upcoming cartridge change
 - Information on lubrication problems, for example, impermissible temperature range or blocked lubrication points
 - Integration into maintenance systems via API

Customer view

Via smart phone app, maintenance management can view notifications, fill levels and remaining cartridge life at a glance, regardless of location.

If necessary, relevant measures can be taken immediately. For example, the change or procurement of new cartridges (CONCEPT1).



■ normal
■ almost empty
■ empty

Customer

Schaeffler is a leading global automotive and industrial supplier. With innovative technologies, products, and services in the fields of CO₂-efficient drives, electro-mobility, Industry 4.0, digitalization, and renewable energies, the company is a reliable partner for making motion and mobility more efficient, intelligent, and sustainable. With approximately 83,000 employees, the Schaeffler Group is one of the largest family-owned companies in the world.

What our customer saves ...

Costs for one multi-stage press failure:

Various mechanic labors for
toggle repair € 104,300

Material expenses € 33,054

~ € 137,000

The expenses for monitoring the fill levels of the lubrication solution used before are eliminated. Depending on the plant and the number of multi-stage presses, the savings can quickly become noticeable.

What our customer says ...

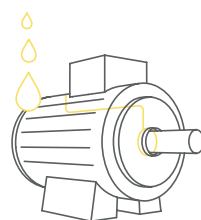


With the OPTIME C1 digital solution, we reliably know that the machine is properly lubricated. This allows us to plan cartridge replacements in advance. Fewer inspection rounds mean more safety and time for other important tasks. And thanks to the API interface, integration into our predictive maintenance system was possible. We are thrilled.

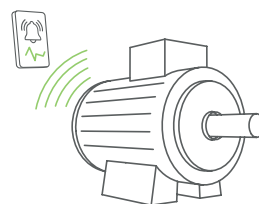
Jochen Dotterweich
Predictive maintenance specialist, Schaeffler

The OPTIME C1 smart lubricator is part of the Schaeffler Lifetime Solutions portfolio, which offers a comprehensive range of products, services and solutions for industrial maintenance. It is designed to support maintenance personnel over the entire service life of a machine.

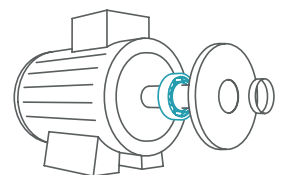
www.schaeffler.de/en/lifetime-solutions



Lubricate



Monitor



Mount