

# CASE STUDY

**Industry:** Pulp & Paper  
**Customer:** Paper Mill in Malaysia

OFF-HIGHWAY  
**POWERTRAIN SERVICES**

## ▶ Off-Highway Powertrain Services reduces the duration of planned shutdowns for a customer using Hot Spot Analysis

### ▶ Case Description

A Malaysian paper mill requested Off-Highway Powertrain Services (OHP Services) to review and improve the efficiency and effectiveness of their in-house maintenance processes with a special focus on cardan shafts. OHP Services proposed using Hot Spot Analysis to document the existing status of the powertrains. This analysis identified that the cardan shafts were in a high-wear condition. This led to in-depth, detailed discussions with the customer regarding their maintenance and spares stocking processes, it was also identified where the maintenance processes were not optimised, enabling solutions and improvements to be implemented.

Because Hot Spot Analysis can be performed on a running machine, corrective actions can be planned well in advance of a scheduled maintenance shutdown; in this case **saving approximately 26% of the maintenance down time**. Previously, due to the paper mills geographical location, time was lost for shipment of spare parts and subsequent repairs. There are no local cardan shaft service centers, which



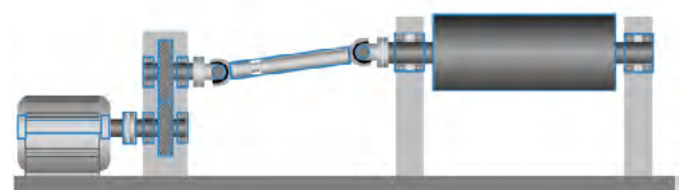
required the customer to stock additional components and spare parts on-site. Now components requiring replacement are identified before the scheduled shutdown, stock planning can be managed in advance, less on-site stock is needed and capital costs are saved.

### ▶ Technology Snapshot

#### Hot Spot Analysis

Hot Spot Analysis carried out by OHP Services is a highly specialised vibration analysis method that enables early detection of wear on cardan shafts. It is used in conjunction with traditional wear determination methods.

As cardan shafts are often difficult to access and are shielded by protective guards, the scheduled down time is often insufficient for a comprehensive manual inspection necessary to identify and determine wear. Hot Spot Analysis can be used to determine the degree of wear on a running



machine, hence it is no longer necessary to manually inspect the cardan shafts during the planned shutdowns.

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▶ **Challenge:**

- ▶ Improved efficiency of the maintenance process
- ▶ Reduced wear and improved lifetime of the cardan shafts

▶ **Solution:**

- ▶ Hot Spot Analysis was carried out to document the current situation of the powertrains
- ▶ OHP Services also carried out corrective services such as alignment and lubrication based on the findings

▶ **Customer Value:**

- ▶ Better shutdown planning and preparation – **time savings ~26%**
- ▶ Increased service life of powertrain parts
- ▶ Reduced spares stock (43%) of cardan shafts resulting in saved capital
- ▶ Improved machine uptime & availability

▶ **What's special?**

- ▶ The customer trusted OHP Services to guide the team to achieve their goals. OHP Services provided a solution tailored to the local conditions

OFF-HIGHWAY   
**POWERTRAIN SERVICES**

**WORLDWIDE**

Off-Highway Powertrain Services collaborates with manufacturers and logistics partners worldwide: benefit from our extensive network. By means of our Service Parts Availability Module, you can define which part are to be available, and how quickly they can be delivered to your location – regardless of manufacturers. We also offer customized spare parts to our clients on stock.

E-Mail: [service.boenen@walterscheid.com](mailto:service.boenen@walterscheid.com)

Phone: +49 (0) 2383 921 15 0

This case study is exemplary only. Any and all information, data, values, products, procedures etc. which are mentioned in this case study vary from case to case and can be different. For calculation pertaining to your business, please refer to a Off-Highway Powertrain Services employee.



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