

KumerAction

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**International Paper
Kwidzyn PM4
has Mechanical Drives
from Kumera Drives**

**Full-Range Service from
Kumera Drives Service**

**Intelligent Condition-Monitoring
by Guard Gear 100**



Kumera Mechanical Drives in Modernized PM4 at International Paper, Kwidzyn

The most impressive paper machine PM4 at International Paper Kwidzyn was modernized in July 2005. After upgrading PM4 has a design speed of 600 m/min, a web width of 4,35m and a machine length of 236 m. The machine produces folding box-board in the 200-450 g/m² basis weight range. Mechanical drives for the modernization project were delivered by Kumera Drives.

International Paper Kwidzyn is the biggest Polish producer of white paper for printing, specializing in office paper. All the basic process lines were modernized after privatization when International Paper, the world's largest paper and forest products company, bought the mill in Kwidzyn.

In addition to PM4 modernization, PM1 and PM2 have been thoroughly upgraded in recent years, when PM2 also got new drives from Kumera.

"The main goals of PM4 modernization were to increase speed and capac-

ity. The upgrade scope included rebuilding of the wire, press and drying sections, replacing electrical and mechanical drives and installing a new board sheeter", says Marek Walkiewicz, a manager of engineering and capital projects in the sector of European Papers.

"In order to remain competitive, we need more production capacity produced by latest technology", he explains.

"We chose Kumera Drives as a supplier of mechanical drives because IP-Kwidzyn has been satisfied with Kumera Drives deliveries for modernization of

Complete drive package from Kumera Drives

Kumera Drives delivered 66 mechanical drive packages for the paper machine and coater section. These included complete engineering, mechanical drives, universal shafts, counter flanges, shaft guards and covers.

PM2 in 2003. Our other departments, such as the wood yard and waste water treatment, have also very good experiences about Kumera deliveries in their applications, where the gear drives are working well", Marek Walkiewicz points out.

The drive package delivery was sold to IP-Kwidzyn with eminent assistance of M.S. Spinex, which is a sales representative of Kumera Drives in Poland.

"Our cooperation with both Kumera Drives and M.S. Spinex has been frequent and close. The contact persons from the both companies are professionally skilled and the project was carried out smoothly, resulting in a successful modernization of mechanical drives for PM4", says Marek Walkiewicz.

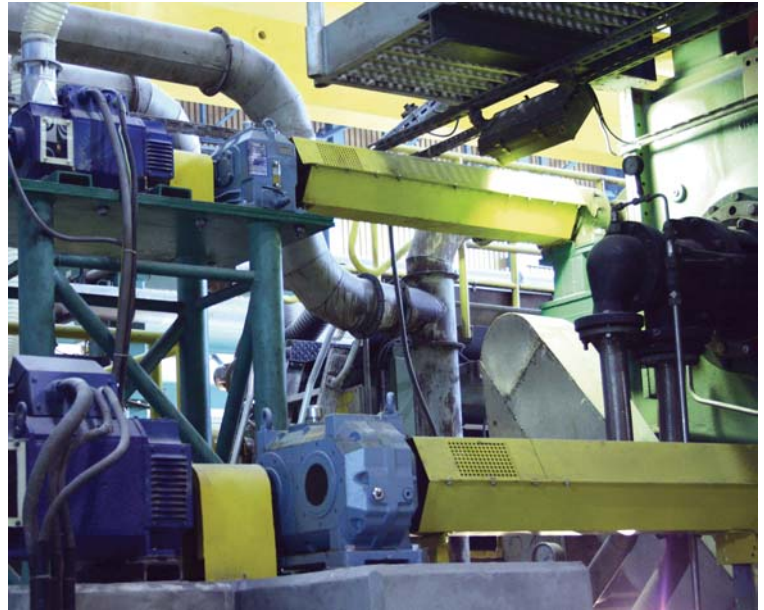
The modernization was carried out in a very short time: 32 days, which required strict actions from the suppliers. "The delivery was very challenging in terms of delivery time and a complex scope of supply but our delivery met the

requirements well, thanks to excellent cooperation between IP-Kwidzyn project organization, M.S. Spinex, and Kumera Drives”, says the Sales Manager from Kumera Drives. “The start-up of the machine took place on schedule”, says Marek Walkiewicz.

Kumera Drives offers service for PM4

Kumera Drives offers service for mechanical drives in PM4 through a local authorized service company Wircom Sp. z.o.o. “Service availability is excellent and provided by professionals”, says Marek Walkiewicz.

Mechanical drives with Kumera Compact G-series are reliable solutions for PM4 coater section.



Kumera Drives Service Offers a Full-Range Gear Service Concept



The operations of Kumera Drives Service in Riihimäki, Finland, have been developed to provide versatile service for its customers in the power transmissions field. Operating as a separate unit, the Service department has differentiated, competent and continuously developing resources for engineering and sales as well as for workshop and field work.

in order to maximize their working life”, says Kumera’s Development Manager of the service concept.

Trouble-free functioning of gear drives is secured by ServiceVISITs which, being performed by local gear experts, comprehensively ensure the performance and working condition of gear drives and their accessories. By entering into a ServiceVISIT contract with Kumera Drives, customers ensure faultless per-

formance of the gear drives in their processes, and their own staffs are able to focus on the upkeep of the actual production process.

Nowadays, the operations of Kumera Drives Service are not only limited to replacement gear drives, spare parts or repairs. “We produce services for all phases of the gear life-cycle. We offer competent assembly, supervision and implementation services for both new and renovated gear drives, in

formance of the gear drives in their processes, and their own staffs are able to focus on the upkeep of the actual production process.

”In addition to service visits, a contract can be extended to cover all the procedures related to gear drives. By equipment and spare part inspections as well as critical and problem inspections, we carry out both fast and long-term plans and decisions of our customers”, the Development Manager adds.

At our gear factory, there is a separate workshop with work centers and necessary tools available for repair and service functions, furnished with equipment specifically needed for repairs and maintenance, such as a washer, hydraulic tools, high-pressure oil injection equipment, bearing heaters, etc.

”For repair and modification works, we always use original parts manufactured in our own production chain or purchased parts in accordance with the parts list, taking into account, however, changes in the technical development.”

Preventive Condition-Monitoring for Gear Drives

Guard Gear 100

When striving for high process reliability, the importance of maintenance and condition-monitoring of gear drives becomes critical. Condition-monitoring must be simultaneously both comprehensive and cost-effective. For this particular need, Kumera Drives started up a product development project in order to develop a condition-monitoring device for gear drives. The result of the project - the intelligent, cost-effective condition-monitoring device Guard Gear 100 was exhibited at SPCI 2005 Exhibition in Stockholm, Sweden.

“Our goal was to produce an intelligent real-time condition-monitoring device to assist customers in planning their process maintenance effectively and in predicting actions to be taken. Thus unexpected shut-downs can be avoided and significant cost savings gained”, says Martti Heikkilä, Managing Director of Kumera Drives.

Sales Director Timo Valkonen has brought new views to the condition-monitoring device. “The markets have given support to our perception that there is actual demand for this device in its applications. The device is especially needed to monitor gear drives located in places with difficult access,

such as in high places or, e.g., sunk in liquid in tanks, which makes oil changes and other operations expensive.”

According to the Project Manager, one of the areas of special interest in the project was a method for measuring oil quality. The method enables to detect oil oxidation and increases of water content and contaminant levels, which predict imminent gear drive failure before it breaks down.

“The measurements made during the project proved the new method works well in practice. We tested the device successfully even in stringent industrial conditions.”

The condition-monitoring device Guard Gear 100 makes real-time measurements of oil temperature, oil level and oil quality in the oil sump of a gear drive. Based on the measurements and set values, Guard Gear determines the condition of the gear drive and oil and indicates the remaining life of oil.

Oil level measurements can be used to detect under and overfills, oil leaks and leaks of external fluid into the oil sump. Oil temperature monitoring enables to discover cooling system failures



Condition-monitoring device Guard Gear 100

and high loadings.

Guard Gear is able to operate as a stand-alone unit, in which case the signal lights on the display indicate the status of the gear drive and oil. Guard Gear 100 can also be connected to a process control unit either through a serial interface or relays.

The Project Manager points out that accurate lubrication is crucial for the faultless operation of a gear drive. “In case there are problems in lubrication, Guard Gear 100 indicates it immediately and potential gear drive failures can be prevented.”

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