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REPRODUCTION

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AKTUELLE PAPIER-RUNDSCHAU

CROSSMEDIA-INFORMATION FÜR ENTSCHEIDER DER PAPIERWIRTSCHAFT

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[PORTRÄT]

Dr. Roland Pelzer

[EINWEIHUNG]

Neues Voith Training
Center eröffnet

[FORTBILDUNG]

Konecranes weiht neues
Trainingszentrum ein

[AUSSTELLUNG]

Vorberichte zur Tagung
des Zellcheming

[SPECIAL]
CHEMIKALIEN

[CHEMIE]

Neues Verfahren gegen
Kalziumkonzentrationen

RICHTER Karhula Oy

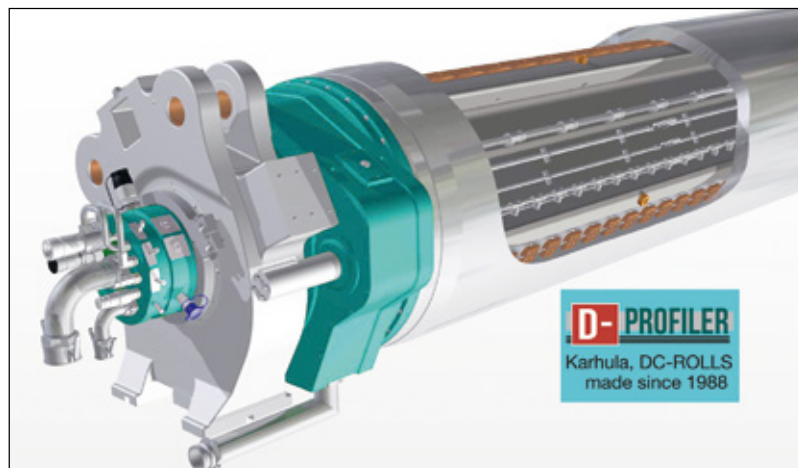
Deflection compensation rolls

New manufacturing & service

- Zone-controlled and swimming rolls
- For press section
- For calenders
- Test runs at operating speed



Overhaul of a deflection
compensation roll in
the Karhula plant



New self-developed, zone-controlled deflection compensation roll (commissioning of the first roll December 2014).



As a service – Nipco roll shell with subsequent honing, surface roughness $R_a = 0.4 \mu$.

[ROLL MANUFACTURING AND SERVICE]

DEFLECTION COMPENSATION ROLLS FROM KARHULA

A year ago, the former Metso plant Karhula was acquired with its roll manufacturing and roll service by the mechanical engineering company Richter GmbH & Co KG from Düren, Germany. The subsidiary, located near the city of Kotka in Southern Finland, is currently manufacturing the first deflection compensation rolls in a new design developed by Richter.

In paper machines, deflection compensation rolls ensure a constant drainage over the entire roll width, thereby decisively contributing to a consistent, high-quality paper production. “We have made good use of Karhula’s 25 years of experience in deflection compensation rolls and improved the roll design concept according to our vision,” comments Wolfgang Richter. Two of these newly-designed deflection compensation rolls are being completed in Finland, one of which is due to become operational at our customer’s premises already at the end of the year.

Special feature

What is special about Karhula is that deflection compensation rolls are completely manufactured up to a length of 10 m. Only a handful of companies have a reputation for being able to handle this. In the late 1980s, after the acquisition of the plant from Ahlstrom Paper Machinery, the previous owner Valmet/Metso had already specialized the manufacturing from complete paper machines to rolls, particular the manufacturing of deflection compensation rolls. In addition to

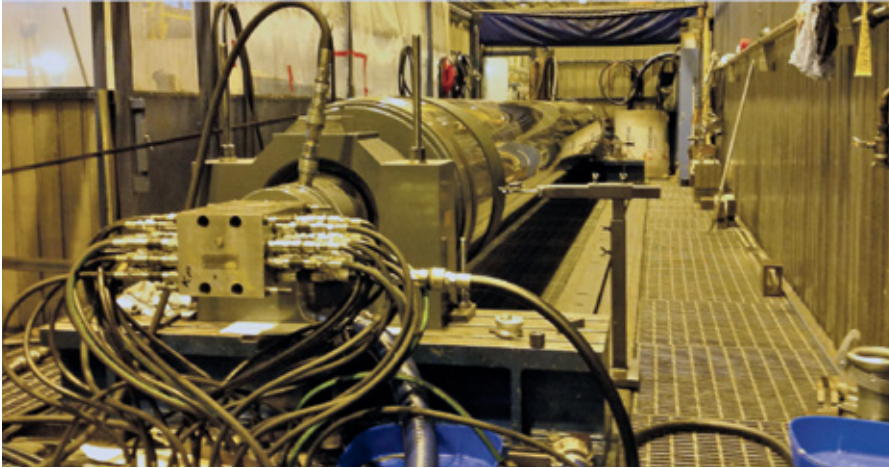
other rolls for the paper industry, swimming deflection compensation rolls were designed at first. This was followed, in 1995, by the manufacture of the first zone-controlled deflection compensation roll. Until today, over 50 zone-controlled and over 400 swimming deflection compensation rolls have been manufactured. Furthermore, all other types of rolls for the paper industry have been overhauled and repaired. “When we acquired the Karhula plant, we found excellent manufacturing conditions; specialised employees with their multi-year experience were still on site, and the modern machine park was in top conditions.

Thus, the plant includes two turning lathes for components of up to max. 80 t, a turning diameter of max. 2.10 m and a turning length of max. 18 m, as well as two grinding machines for diameters up to 2 m and 13.50 m grinding length. In addition, there are also large drilling lathes and a honing machine for high-precision processing of deflection compensation roll shells at its disposal. This machine allows reaching very fine surfaces with a roughness value (R_a) up to 0.4μ , which can be processed up to

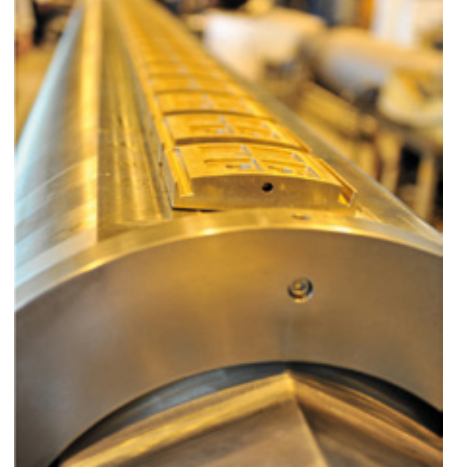
diameter of 1.70 m, as well as a length of up to 10.50 m and a weight of up to 60 t.

Extensive test before delivery

Eventually, the fully assembled rolls are thoroughly tested on an in-house testing bench. “The aim is to test the roll with the same operating speed like the roll will run later in the paper machine,” explains Jari Hämäläinen, Managing Director of the Karhula plant. Only when it is certain that there are i.a. no oil leaks, the pressure inside the roll is correct and no vibrations due to, for example, imbalance or resonance are present, the roll is ready to be delivered. “And if the roll is assembled at the customer’s premises, it must work flawlessly from the very beginning,” continues Hämäläinen. Only few companies are able to test the rolls under pressure and at operating speed. The testing bench has been recently extended to deflection compensation rolls with hydrostatic friction bearing, and is used by Richter Karhula not only for newly designed rolls, but also for roll service. This is offered by the company not only for deflection compensation rolls, also other types of rolls such as press-, calender and suction rolls are processed and end were



Karhula's testing bench for all types of deflection compensation rolls and suction rolls



Overhauled yoke of a Sym roll

tested on the testing bench. "We are able to overhaul all roll makes – from the smallest repair to complete overhaul including retrofitting. Our machine park enables us to do all kinds of service works and roll processing," explains Jari Hämäläinen.

Vacuum pump service

In addition to roll manufacturing and roll service, Richter has recently started offering a vacuum pump service in its plant in Finland, thus transferring more know-how from Düren to its subsidiary. Already the fifth vacuum pump is being repaired in Karhula. Also the headbox service is offered by the Finnish specialists to their customers. Customers come mainly from Finland, as well as from the rest of Scandinavia and Russia, while Richter continues to be active in the Central European market from the headquarter in Düren. The main business in Karhula is, however, the production of rolls, in particular of large ones: if their weight does not exceed 80 tonnes, they can be manufactured or overhauled as single parts. In addition, the Richter subsidiary produces the "G-Groove", a spooled stainless steel roll cover for press rolls, which ensure long service life and better running times. "We see ourselves as mere system supplier for OEMs, i.e. we manufacture the rolls, but do not carry out any retrofitting at the customer's premises. That would exceed our possibilities," says the company boss. According to the company, the rolls specialists' customers presently include most Original Equipment Manufacturers.

A year ago, the specialist for repairs, modernisation and finishing of wear parts in the paper industry from Düren, had acquired the entire infrastructure and logistics for roll manufacturing in Karhula. Now, the reorganisation and restructuring of the plant has been successfully completed and the order books are already well-filled. "When the Mesera Oy plant was acquired the short-time working rate stood at 85%, while today, 14 month later, we have reached full employment," says General Manager Dirk Richter. About 50 people

» We are able
to overhaul all roll
makes. «

are employed in roll manufacturing and roll service. For Managing Director Jari Hämäläinen, it was also a time of adaptation. "For years we were part of a concern. This is quite different from being part of a mid-sized company." The Finn, who worked for four years as Service Manager at Valmet Paper Machinery in Pfungstadt and speaks fluently German, has employed in Karhula since 1990, first for Valmet/Ahlström and later for Metso. He has shared an intensive cooperation with Dirk Richter since 2012, when Richter took over the distribution for Mesera Karhula rolls and "G-Groove" roll cover in Central Europe.

Cooperation with Yamauchi

In early 2010, still under the former owner Mesera Karhula, a cooperation started with the Japanese company Yamauchi which, since then, has been manufacturing calender roll covers made of polymeric composite materials in a part of a plant, thus complementing Karhula's portfolio. Today, together with its Finnish subsidiary Karhula and partner Yamauchi, the Richter company can therefore offer any type of new rolls, spare shells for deflection compensation rolls, roll covering and service work for all paper industry rolls.

In technological terms, for the company from Düren, the acquisition of Karhula was the last step towards establishing itself as a complete supplier of modules, components as well as regeneration series for the paper industry. "From plate conveyors to PU-coated reel spools, which we manufacture in our plant in Karhula including our own coatings, we can now cover the entire mechanical engineering spectrum for the paper production." Wolfgang Richter is satisfied with the development. "For us, the acquisition of Karhula was a big step. But all went well and I am very satisfied. Finnish people are very flexible and proactive, and work has reached the levels of our plants in Düren." | DB