RICHTER:From pulper to winder your partner in the paper industry

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INTRODUCTION:

Company Richter is a family business that was founded in 1971 in Hürtgenwald-Horm near Düren (Germany) as a repair workshop for the paper industry by Wolfgang Richter. Since its foundation, Richter has worked primarily as a service provider in mechanical engineering almost exclusively for the paper industry. In the initial phase, Richter's focus was primarily on stock preparation, but then expanded to include paper machines with a focus on rolls.

Figure 1: Regeneration, Repair and new manufacturing of parts or complete aggregats of pulp & reject (independent of manufacturer).

Figure 2: Highly wear-resistant regenerated housing.

Over the past 50 years, the Richter Group has grown continuously and today produces at 3 sites in Düren (DE), Karhula (FI) and Hürtgenwald-Horm (DE). Despite all this growth, Richter still sees itself primarily as a service partner and extended workbench for their customers, with whom they endeavour to work in partnership to solve any problems economically, from pulpers to rewinders.

Since its foundation, Richter has continued to specialized in carrying out high-quality repairs and overhauls. We refer to optimizations in the repair of components, units and rolls and call it Richter Retrofit.

Retrofit as a company philosophy:

Our primary aim is always to repair defective rolls, units and components from a wide range of manufacturers at low cost and to a high standard. The quality of our repairs, overhauls and new parts is in many cases more durable and therefore of higher quality than those from the original manufacturer due to the use of customized materials.

The Richter retrofit philosophy is exactly what is generally referred to today as sustainability. It is not only practiced by Richter for its customers, but has also been a guiding principle for its own production sites since the company was founded.

Sustainability through retrofitting

A wide range of sustainability effects are realized through our retrofit. The service life and overall service life of units, components and rolls is extended. Energy efficiency losses due to worn geometries are reduced to new levels, which in most cases enables extreme energy savings, especially for vacuum pumps

Additional energy savings are generated by our highly wear-resistant special materials, as efficiency losses caused by wear are avoided in the long term.

We at Richter have always kept an eye on this by always trying to repair and optimize products instead of always manufacturing new ones (which we can of course always offer if necessary). We do this with wear-resistant materials such as steel, stainless steel, hard metals, ceramics, composites and special materials. Many of these are special in-house developments. One example of this is a customer from Spain. We received a rotor from them that was not considered repairable. We discussed all the required parameters with the customer and completely overhauled the old rotor delivered to us.

This not only led to drastically increased running times for the customer thanks to the optimizations we carried out and the materials we used, but also meant that the customer was able to save a lot of money.

As we did not manufacture new parts and used the base body, we were also able to save a lot of CO2, which would have been incurred if the base body had had to be manufactured from scratch.

The total weight of the rotor is 1620 kg. After deducting the material we used to retrofit the rotor (680 kg), the remaining weight of the base body was 940 kg, which was not recast, meaning that 58% of the original component could be reused.

Figure 3: (Left) Picture of Rotor from Spain which has been retrofitted.

We offer our customers a one-stop service for vacuum pumps, which means that all the necessary steps (including spare parts) are carried out in-house.

In addition to reconditioning water ring vacuum pumps from all manufacturers, we also overhaul and optimize rotary lobe systems, Roots blowers, centrifugal pumps and headbox pumps. centrifugal pumps and headbox pumps.

The vacuum pump service is carried out both, in Germany and Finnland.

Figure 4: (Below) On-Site analysis of vacuum pump by Richter service engineers.

This is just one example of many in which we have helped customers to optimize their old units and thus drastically increase running times. This often goes hand in hand with high energy savings.

The non-incurring replacement costs due to reduced installation and removal intervals are added to this.

The picture (Fig.3: above before & after) clearly shows the work and optimizations we have carried out.

Vacuum pump service since 2005

We support our customers also also in the part of vacuum pumps to save energy. Over the years, capacity losses/increased power consumption can occur, which can be caused by a variety of reasons such as deposits, corrosion, erosion or cavitation.

Based on this fact, we recommend that our customers constantly check their vacuum system, and we support them with this. We usually start with an on-site analysis of your vacuum system. At this test, the inlets of the pumps are opend and will be started to opearting speed while several measurments are carried out. Following the measurement, you will receive a detailed report on each vacuum pump, including details of the losses in kW.

The condition of your vacuum pump is compared with the condition of a new vacuum pump (capacity & power consumption). In many cases, our customers were downright shocked when they realized how much energy was being lost in their vacuum system thanks to the measurement results. Particularly in view of the extreme rise in energy costs in recent years, an overhaul usually pays for itself in less than six months (ROI < 6 months).

However, we not only overhaul the vacuum pumps, but also optimize them - as in all product areas. Also with a view into the future we use own-developed materials which can even minimize the annual losses and increase the repair intervals.

G-Groove-cover (G-Band)

Another sustainable product from Richter. The proven roll cover technology made out of stainless steel. The grooved press roll cover is extremely durable compared to polyurethane or rubber covers. It is applicable for your deflection compensated rolls (swimming type & zone controlled) or solid press rolls.

Lifetimes up to 20 years are no rarity, we have just received a shell for first recovering which was delivered in 1999 from the Karhula workshop. The wear resistant of the material extends the grinding intervals, leads to less abrasion and reduces shut down times caused by repairs or grindings significantly and thus is optimizing the efficiency of the production.

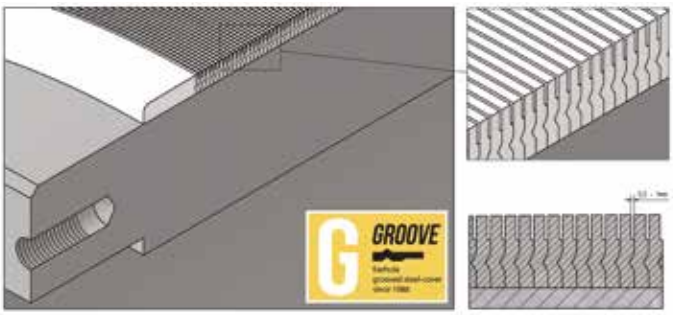

Figure 5: G-Groove from Richter Karhula.

The void volume is constantly high even under big loads, the cover ensures the best dewatering of the paper web in the nip. Due to it's excellent temperature resistance the cooling of the roll is not needed anymore and water and energy are saved. Damages can be repaired also on-site, no need for recovering in many cases. When it comes to bigger damages we offer spot repairs or partial recoverings.

Figure 6: Roll-Grinding (in front) – Perfect results due to 3D-Steering with 4 Point measurment system.

Figure 7: Inside view of Karhula Workshop which is prepared for large rolls up to 80 tons

3D Grinding with 4 point measuring system:

It has got the most accurate roll shape measuring for roundness. The running time of the rolls and the bearings are extended, roll change intervals are longer and the shut-down times in the paper machine and maintenance costs are reduced.

The Richter Karhula Oy site in Kotka/Finland looks back on a long and traditional history.

Founded in 1889 as “Karhula workshop” and in the following centuries active as part of well-known manufacturers such as Ahlström, Valmet and Metso. In 2013, Richter acquired the site and now produces on approx. 20,000 m² for customers from all over the world, particularly in the area of small to large rolls (up to 80 to.) and vacuum pump service.

Thanks to the know-how of our employees and our very well-equipped machinery park, we can support our customers as a reliable partner in word and deed. Our expertise, especially in the field of special rolls such as deflection compensated rolls (all kinds of), suction rolls etc. is well known in the market.Customer service and satisfaction is always our top priority,

The following example illustrates our approach to this.

A potential customer from Hungary had enormous problems with a zone-controlled deflection compensating roll, the only spare roll was at a competitor’s service center. The problem occurred during a late shift on Saturday. The customer tried to reach the other supplier but without success.

They remembered a visit from our sales manager a few weeks earlier and tried to call him, with success. We immediately arranged transport with our forwarders and the roll arrived at our workshop within a few days.

The necessary work was carried out day and night due to the urgency. After a successful test run, the roll was sent back to the customer in the best possible time. Customer service is in our DNA and we are proud to call this customer nowadays a partner who regularly sends us their rolls for service.

Please visit our webpage and we are looking forward to your inquiries. www.richter-industrie.com

Figure 8: Karhula’s testing bench for all types of deflection compensation rolls and suction rolls.

Horm Plant:
Pulp & Reject.

Düren Plant:
Rolls, Covers & Vacuum Pumps.

Karhula Plant:
Rolls, Covers & Vacuum Pumps.