

**SPECIAL
REPRODUCTION**

a-p-r



AKTUELLE PAPIER-RUNDSCHAU

CROSSMEDIA-INFORMATION FÜR ENTSCHEIDER DER PAPIERWIRTSCHAFT

2012 | Nr. **11**
www.a-p-r.de

[MASCHINENBAU]

**VIB Systems
will durchstarten**

[JUBILÄUM]

**100 Jahre Hamburger
Rieger**

[TECHNOLOGIE]

**Verbesserte Schlam-
mentwässerung**

[PTS Papier Symposium]

**Herausforderungen
für Papiererzeuger**

[SPECIAL]

**STOFFAUFBEREITUNG,
ABWASSER,
PUMPEN,
REFINER**

[ANTRIEB]

**Synchronantrieb als
Alternative zu Keilriemen**

RICHTER Pulp & Reject

Mechanical engineering + Retrofit

Overhaul, repairs, service

- Pulper & pulp screen
- Screw press & conveyor
- Reject screen
- Feed pump & slider
- Refiner & deflaker
- Shredder
- Bearings

General overhaul – Combisorter CS12



Processing of a new „wear resistant“ top part of the housing Combisorter CS12



Assembly of CS 12



Drum rotor CS12 (see title page), reworked to be highly wear-resistant



Highly wear-resistant regenerated F1TFiberizer housing processed on a CNC mill machine



Pulper storage Escher Wyss ST11 after general overhaul

[REPAIR]

ENERGY EFFICIENCY AND LONG USEFUL LIFE BY MEANS OF HIGHLY WEAR-RESISTANT MATERIALS

For more than 40 years, the company Wolfgang Richter of Düren has been specialized in consumable parts used in the paper industry. The company from the district of Düren is the expert in matters of repair, modernization and upgrading rotors, perforated plates, and screw press in the paper processing sector, as well as other units in the paper machine that are constantly exposed to corrosion and abrasion.

In the factory in Hürtgenwald, machine parts and complete units used in materials processing are regenerated, while the two Richter factories in Düren with the business units for rolls and vacuum pumps have specialized in providing full service.

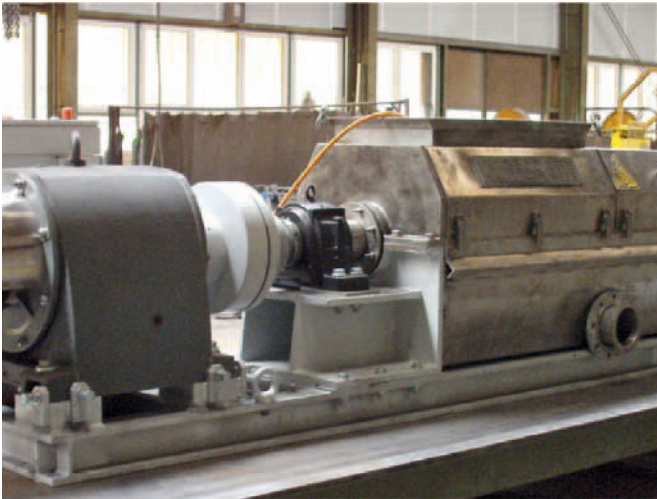
Damaged components and complete units of the paper machine however are not simple repaired at Richter. "We conduct analyses of weaknesses so that damages will not occur again after the repair", says Heinz Heiliger at Richter, who is responsible for technical consulting and sales. At the same time, the Richter experts also investigate the question as to why a machine part is damaged at a specific point and how this can be remedied permanently. Nowadays the energy efficiency of the units was of primary importance as well, says Dirk Richter. "You need a lot more energy for the same work using a dull knife, and the longer a knife stays sharp the greater the energy savings will be," explains the junior manager.

Components and their behavior in terms of wear and tear

With wear-resistant materials, such as steel, stainless steel, hard metals, ceramics, composites and special materials, Richter reinstates the original geometry of deteriorated components and thereby increases their operating life considerably. The two company managers, Wolfgang Richter and his son Dirk, being mechanical and welding technology engineers have a lot of know-how in materials science and developed their own materials for the purposes of upgrading. "Therefore, each repair is a unique piece of work at our company", says Heinz Heiliger.

The normal delivery period for the regeneration of individual components is between four and eight weeks. In emergencies, Richter is always prepared to do everything for its partner-like customers to reduce this delivery period to the absolutely required minimum time. Abrasive materials e.g., waste in recycling paper in the pulper of the paper mill are responsible for the wear and tear on rotors,

screw presses and perforated plates. Yet each component has its own pattern in wear behavior. If a part comes to Hürtgenwald for reworking, it is firstly measured, subjected to a crack test and then undergoes a materials inspection if necessary. Specifically for this purpose, Richter affords a spectral analysis instrument, because given there are about 3,000 different types of steel, knowing the legation composition is decisive in order to choose the suitable material for a high-quality finish. The result of the analysis then decides the choice of materials, and it in turn determines the further processing. In the normal case, the hard surfacing of the parts regenerated by Richter had a better wear resistance quality compared to the hard surfacing of other providers, and likewise clearly thicker layer strengths according to the company. Should regeneration not be possible in a specific case, Richter will also fabricate the component as a completely new part. Of course new fabrications as well are designed to be highly wear resistant right away, i.e. they are made from the company's own wear protection materials.



General overhaul of an A500 Kufferath press with components reworked to be highly wear-resistant (incl. electronics and pneumatics)



General overhaul of a BP601 Beltec press highly wear-resistant press BP601 [sic.: with components reworked to be highly wear-resistant]

One example of the general overhauls are complete screw presses. These are taken apart into individual components and inspected. After a wear and regeneration analysis, definition of customerspecific requirements and an optimization analysis, Richter develops a detailed offer focusing on protection against wear and tear and consequently longer periods in operation. For the overhaul of the screw press the company not only uses one standard material for all screw press types, but also processes special filler materials that are optimized for the component and which are adjusted precisely to the wear behavior of the relevant screw press as well as the grouted materials. In the process, several hard surfacing and consumable materials are used taking the individual layers and zones of the screw press into account (e.g. the filling section and press or pressure zone).

The company's approach is similar in the general overhaul of reject sorters, refiners, strippers and shredders as well.

In addition Richter is also in the position to fabricate all units as completely new parts, and respectively to remodel existing units. Customer requests are taken into consideration at all times by the Richter 3-D design engineers. The aim before a new fabrication was however generally always the repair and optimization of the already existing components according to the company. Likewise, rotors with highly wear-resistant materials are plated on Wolfram carbide basis. This hard surfacing consists of several layers fulfilling purposes, which are fine-tuned to each other. The

geometry of the rotors is final processed on CNC/NC processing centers and precision grinding lathes for plane parallelism and dimensional accuracy.

Own specialized machines that help keep costs down

“Our customers continue to be surprised all over again when they visit us - in terms of the size of the factory and also the vastness of our machinery”, says mechanical engineering technician Gerd Breuer. Most of these machines were brought up to the newest technical state of the art by Richter themselves and in the process specifically adjusted to the company's requirements. Used machines are overhauled by the company's own assemblers, sometimes completely disassembled and reassembled in new form - precise to the functions Richter needs. Richter's philosophy of preserving existing values and optimizing them is implemented just as consistently for the own company as it is for the company's customers. The declared aim at Richter is therefore always the ideal and most cost-efficient solution.

“We are competing with providers who do not deliver such high quality but we have to offer prices that are common in the market. For this reason as well we have developed a few specialized machines to keep the costs as low as possible”, says Gerd Breuer. Whereas competitors use common retail welding wires, the wires used by Richter are not available in retail. They were developed by Dirk Richter and are produced exclusively for the company. The composition is a company secret. The junior

manager has developed a special welding machine in addition, which is tailored to the company's needs and it enables the problem-free welding of the various layers of materials. After welding, all components are beveled to size so that they can be refitted optimally in the paper mill - a complicated process as the special Richter materials used are extremely resistant.

Special training of own employees is part of the standard

„The work at our company is very specialized. Therefore, we train nearly all employees on our own. The training standards in the commercial as well as the technical fields are very high, the trainees are normally also taken over into employment”, says Breuer. Most employees have previously trained at Richter, have consequently worked for decades with customers in the paper industry and are highly familiar with the special needs.

Another particularity is the expansive archive where all components that have ever been repaired and upgraded in the company's history are documented in text form - and since 1992 also including pictures. Richter can thus track the work on every order without gaps. Even the first order placed with the senior manager Wolfgang Richter can still be found in the archive. | DB