

Standard Cartex seal in all pumps of a pulp and paper mill reduces costs

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## Standardization simplifies assembly, maintenance and warehousing

**730 pumps in different designs, shafts with diameters from 33 to 100 mm, a hundred seal types with different material combinations, several suppliers – this was the situation a few years ago in a pulp and paper mill of a Swedish packaging manufacturer. Packaging cartons for the beverage and food industry and liner paper with a production capacity of 740,000 tons per year are produced in its factory.**

The pumps are found throughout the entire process chain – from wood preparation to cooking, washing, bleaching and paper finishing. Mainly single-stage centrifugal pumps are used. Depending on the process stage, the seals on the pump shafts are exposed to abrasive wood fibers, wood particles, cellulose, aggressive chemical substances or water.

The many different seal types and the various material combinations caused a high expenditure for maintenance and warehousing. There was a permanent risk of incorrect material selection

and of assembly errors. EagleBurgmann saw great potential for reducing costs for the paper manufacturer by switching to standardized seals. The seal specialist recommended that after an inventory and subsequent analysis of the data, the packaging manufacturer should standardize the seals which would greatly simplify procurement, warehousing, maintenance and assembly.

### Inventory and analysis

EagleBurgmann offered the packaging manufacturer a standardization package consisting of several elements. In addition to inventory and analysis of the resulting data, the package included services such as spare parts management, a multi-stage repair program, on-site services with installation and services such as the "Bad Actor program". Training courses for fitters and users completed the package.

The packaging manufacturer was open to the standardization approach and so EagleBurgmann went to work and determined which pump types were installed at which point in the process as

a prerequisite for the later offer. Afterwards, the details of the individual pumps were discussed in order to later select suitable standard seals: What is the diameter of the shafts, what are the dimensions of the stuffing box chambers, how large are the bearings and which seals are fitted to the shafts? It was also necessary to check the operating conditions, media and supply systems in cooperation with the customer.

### Two types of seal are sufficient

After all the data had been analyzed, the recommendation was to use seals from EagleBurgmann's Cartex-DN and Cartex-SN series. 23 instead of the previous hundred seal types would be sufficient for all pumps. The double seal Cartex-DN should be used for processes with chemical media, and the single seal Cartex-SN should be used for media with pulp and hot water. Since seal faces in one material combination per series are sufficient, this considerably reduces the risk for the customer of selecting the wrong material combination. The cost of repairs is reduced in the same way.



Packaging for beverages and food as well as liner paper are products of the world's leading Swedish manufacturer.

The standardization concept for repairs generally stipulates that the seals “rotate” from the paper mill to the EagleBurgmann service center and back. The repair program has three stages and regardless of which stage the customer chooses, the costs are defined from the outset and there is no need to prepare a quotation for each individual repair.

Standardized seals also simplify the work of the planning department. Because only Cartex seals are in operation, the technicians know exactly which spare parts will be required for the next revision of the plant. Likewise, matching the seals in operation with the seals registered in the IT system is also easier.

### One seal can cover different pumps

The seals at the packaging manufacturer’s paper mill are now being gradually replaced with Cartex seals. EagleBurgmann uses an adapter to mount the seals. This allows the sealing specialist to use the same seal to cover pumps with different stuffing boxes and housings. The adapter is mounted only once and does not need to be replaced during maintenance or repairs.

The advantage of the standardization concept is that the allocation of each seal to a specific pump is known in the plant. If errors accumulate, the cause can be determined precisely and quickly as part of the “Bad Actor program” and the error rectified. For another customer in the pulp and paper industry, EagleBurgmann increased the average service life of the seals to ten years with the help of the Bad Actor program.

In plants with many different seal types in operation, usually only one or two spare seals are on stock. The plant operator therefore depends on express delivery to receive new ones. Standardization facilitates increased availability by keeping more seals on stock.

The Swedish customer has initially opted for the complete standardization package. If he realizes over time that he would like to use fewer services, costs will only be incurred for the package contents used. EagleBurgmann’s standardization concept meets the individual needs of the customer.



Ideal for standardization and easily installed thanks to cartridge design – the single seal Cartex-SN.



The costs for repairs are clearly defined right from the start.



Standardization allows a precise overview of necessary spare parts.

#### Advantages of standardization:

A cost reduction in the medium term will be noticeable through:

- Reduced time expenditure due to fewer procurement processes
- Reduced expenditure for warehousing
- Greater availability of spare seals
- Minimized error potential during assembly
- Simplified maintenance and repair
- Less training effort