

Case: SCA tissue plant, Mannheim, Germany

Calling for sustainability

Sustainability and high plant availability are the main requirements of the paper and pulp industry. This goes for SCA as well, which operates its largest European integrated tissue manufacturing plant in Mannheim, Germany. V-port segment valves by Metso already operate at the plant 24/7, all year round, ensuring reliable liquor flow from the cellulose digestion process. The newly installed on/off valves from Metso, made of high-alloy stainless steel, polished on the media-affected inside surfaces, represent a key solution enabling SCA to substantially extend valve service life.

"The valves in our continuous digester have to work under extreme conditions," points out **Jan Wattendrup**, Head of Maintenance for electrical, measurement and control technology on pulp line B at the SCA plant in Mannheim. He is referring here to the difficult environment where the on/off valves are installed: "The acidic waste liquor contains process chemicals relevant to the cooking operation that can bake onto the valve and cause localized corrosion. Over time, hard deposits form inside the valve and also clog the sealing ring. Since we know about this problem from years of experience but can't simply switch off the continuous digester mid-operation to make repairs, we replace all valves at regular intervals as a precaution."

SCA operates two pulp production lines in Mannheim: one for spruce and one for beech. Some of the steps in the production process on the spruce line involve brown-stock washing, sorting, and chlorine-free bleaching. However, first the continuous digester has to turn wood chips into the pulp from which the company then manufactures more than 3 million rolls of paper towels, toilet paper and tissues every day. To minimize potential component and system downtime, SCA conducts scheduled system shutdowns twice a year. The heavily stressed valves on the continuous digester are regularly replaced as a safety precaution, because the digester delivers the bulk of the spruce pulp that is urgently needed for paper production.

Replaced at every shutdown

"Regardless of the state of the valves, we routinely replace eight of the segment valves for the continuous digester during each scheduled shutdown," says Wattendrup. He explains: "As a rule, 75 percent of the valves are no longer operational after one year. Only a few valves can be reconditioned and kept on hand as spare parts for the next shutdown. Our ultimate goal is therefore to extend the service life of the valves."

The continuous digester has an operating temperature of 140°C. A total of 16 Metso RE series segment valves are used in the digester's circulation loop.



SCA in brief

SCA is a global leader in hygiene and forest products. It develops, produces, markets, and sells sustainable personal care, tissue and forest products. SCA now also offers medical solutions for wound care, orthopedics and compression therapy. SCA distributes its products in approximately 150 countries around the world under many leading global and regional brands. As Europe's largest private forest owner, SCA attaches great value to sustainable forest management. The group employs around 46,000 people worldwide. SCA is headquartered in Stockholm, Sweden, and is listed on NASDAQ Stockholm.

The SCA plant in Mannheim, with approximately 2,000 employees, of which 1,200 work in production, is the company's largest production site in Europe.



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Every three minutes, eight valves open or close in constant rotation, with approximately 100 cubic meters liquors flowing through the open valves. Every three minutes, eight valves open or close in constant rotation, with approximately 100 cubic meters liquors flowing through the open valves.

Metso valve technology passes test with flying colors

Hoping to extend valve service life despite the adverse conditions, SCA tested high-alloy stainless steel segment valves from Metso; these valves are polished on the media-affected inside surface to cope with the high demands placed on them against valves from a different manufacturer. "The Metso valve impressed us first with its design, which is identical to that of the previously installed valves," said Wattendrup. "In contrast to the second test valve with a longer form, we didn't need to make any modifications to the pipes, which of course saves us labor and costs. The Metso valves are also more compact and lightweight."

While these benefits apply initially only to assembly, the newly installed V-port segment valve went on to demonstrate further special properties during the first six-month test phase. "During the scheduled shutdown we removed and inspected both test valves. The results were so striking that we immediately reinstalled the polished Metso valve for a further round. In the meantime, these valves have been functioning for almost one-and-a-half years without damage or restrictions," confirms the maintenance manager.

The stuff of higher availability

The complete valve technology at the plant comes from Metso. "Based on decades of positive experiences, we have chosen Metso as our standard supplier for valve technology," says Jan Wattendrup, adding: "We always get quick help and support both for technical questions and with regard to the components themselves. That's why we feel we are in very good hands with Metso as a trusted partner, especially because we can rely on a consistent total package, from product to service."

V-port segment valves and strong portfolio of supporting products

The V-port segment valves are economical high-performance valves in a quarter-turn design. The integrally flanged valves feature one-piece body construction with no flange rings, inserts or end caps to create potential leak paths, even under pipe bending forces. Seating capabilities are totally unaffected by pipeline forces, ensuring reliable valve operation.

Metso's flow control solutions also include a complete assortment of typical valves, a wide range of accessories, smart devices, and software solutions, as well as comprehensive services.

Metso experts at your service



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