

Replacement of CD profiling actuators made easy, even in single units

Tasowheel Systems, a major manufacturer of different types of CD control actuators, can now deliver replacement dilution actuators and valves for paper machines even in single units, regardless of the actuator's original manufacturer.

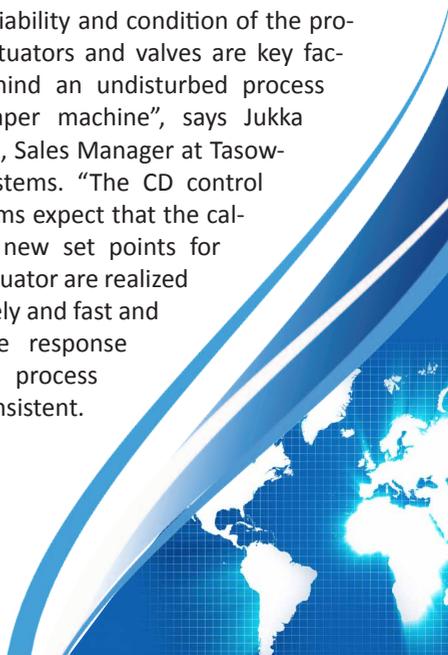
Until now paper mills have had to either renovate a worn out dilution actuator at a high cost, or to replace all actuators simultaneously and invest in a costly CD weight system replacement, if original spare parts are no longer available.

The dilution actuators are a key quality factor in the paper production process, since they adjust how uniformly the headbox distributes the stock onto the wire in the beginning of the process. The stock consistency in machine cross direction (CD) is an important quality property, since it defines the most of the paper basis weight profile on which all other sheet variations depend.

To reach an even weight profile, each actuator regulates a valve that adds dilution water into the stock flow according to the set points given by the CD profiling control software. For this reason the

speed, accuracy and build quality of the CD control actuators are essential for the dilution profiling since the actuators are operating 24/7.

“The reliability and condition of the profiling actuators and valves are key factors behind an undisturbed process in a paper machine”, says Jukka Ahlstedt, Sales Manager at Tasowheel Systems. “The CD control algorithms expect that the calculated new set points for each actuator are realized accurately and fast and that the response on the process is consistent.





The heap of separate cables around the old set of actuators was eliminated in a paper machine that recently was fitted with a new set of Tasowheel Systems' CD actuators, which connect directly to the CD profiling system's I/O control cards.
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As the running speed of a paper machine can be up to 2,000 m/min, any delay in the control action that causes process upsets or broke, will cost a lot of money."

Precision electro mechanics

Tasowheel has delivered more than 200,000 dilution actuators and valves during the past 30 years. But since the products have been branded Metso, Voith or ABB, surprisingly few customers know who the real manufacturer is.

"Our products are made solely of AISI 316 stainless steel", Ahlstedt says. "The flow surfaces of the valves are hard coated to reach long life time and to give an outstanding resistance against wear, which can change the flow curves and cause quality and runnability problems."

Tasowheel is a preferred partner to the leading paper machine manufacturers. But now, as old mills are shutting down rather than new ones opening up, optimizing existing processes has become more and more important for the company's customer service.

"And we are not only talking about paper machines that need service", Ahlstedt says. "A lot of paper machines are converted to produce different paper grades and even whole plants are relocated. In all these cases new actuators and valves are needed. With our products it is possible to replace practically any type of dilution actuator and valve on the paper machines today, regardless of the original manufacturer."

Zone by Zone

One new customer for Tasowheel is Papel Aralar, a leading manufacturer of specialty paper in Spain. The mill in the northern part of the country has three paper machines and the company exports to a good 30 countries on five continents. Aralar is known for its flexibility to adapt the production according to the customers' varying needs.

Last year the company decided to renew the old CD actuators and valves in one of the machines. The problem was, however, that the original spare parts were not available anymore.

"Another possibility was to renovate the actuators and valves, but that was not really what we wanted to do", the Technical Manager at Aralar says. "When we became aware that Tasowheel Systems could replace the actuators and valves with brand new parts even in single pieces, we decided to check out this option regarding two of the most critical units."

The two new actuators and valves were installed and tested in one working day during a pre-planned shutdown in August 2013. According to Jukka Ahlstedt, the unit price was lower than what a renovation of the old actuators and valves would have cost.

"As our actuator cables fit directly to the I/O control cards of existing CD actuator system, neither the quality control system

(QCS) nor to the CD control system had to be altered", Ahlstedt says. "Only some minor modifications had to be done to the existing actuator support plates to fit the new actuators with the original fastening points."



After having tested the new actuators under real circumstances for a couple of months, the customer ordered a change of the next 25 actuators to be made at the turn of the year.

"Since we knew the exact specifications, we could this time do all the modifications in advance, which made the replacements a real plug-and-play operation", Jukka Ahlstedt says. "As a result, also this far more extensive project was completed in one working day. Now we are discussing similar projects with several paper mills all over Europe."

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Tasowheel Systems produces the core parts for the actuators and valves in the company's factory in Tampere, Finland. "We invested heavily last year in a modern multi task CNC lathe, that carves the components directly from the extremely hard stainless steel bars", says Jukka Ahlstedt, Sales Manager at Tasowheel Systems. © Tasowheel

Tasowheel Systems Oy

The core expertise of Tasowheel Systems is to design and manufacture compact electromechanical motion components with exceptional precision. The company is a leading manufacturer of tailored actuators for controls and provides a strong expertise in problem-solving situations and product development projects. The company is a part of Tasowheel Group that is specialized in high-quality precision mechanics and power transmissions.

Papel Aralar

Aralar is a family owned business founded in 1936. It has three paper machines, of which two are recently fully renovated, in the mill situated in Amezketa in northern Spain. As a middle sized company Aralar responds quickly to specific needs on the market and is active in more than 30 countries.

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