Water Jet turn-up system

significantly reduces paper machine downtime at Stora Enso Hylte

Stora Enso Hylte in Sweden installed a Valmet WaterJet turn-up system, with the result that paper machine PM 4 runs more reliably and with less downtime. The production volumes increased and as a further bonus, occupational health and safety improved. TEXT Sofia Forslund

Stora Enso Hylte is located in Hyltebruk in the south of Sweden. The mill produces paper for morning and evening newspapers in northern Europe. PM 4 produces about 25 tonnes of paper per hour with a basis weight range of 42–48 grams at a speed of 1,480 meters per minute. The machine was originally equipped with a Gooseneck turn-up system from 1989.

In recent years, the turn-up efficiency of the conventional pope reel had been deteriorating, leading to more downtime for PM 4. In 2013, PM 4 recorded no fewer than 861 failures due to poor turn-up efficiency. On average, this meant two failures per day, each of which took three to five minutes to rectify. Armed with this information, Hylte now had an idea for the future of PM 4: what improving the efficiency of the turn-up system would do for PM 4's production volume. They set up a project group including supervisor **Jan-Erik Karlsson**, maintenance engineer **Magnus Hallberg**, machine operators **Joel Haglund** and **Mikael Mildbeck**, and project engineer **Per Malmros**.

"We were looking for a supplier who could meet the three criteria that were important to us," says Per Malmros. It was important that the new equipment would ensure a successful turn-up every time and had high availability and a short delivery time. Early on, the project group discovered that Valmet met all three criteria.

Installation during a planned weekly stop

In July, the contract between Hylte and Valmet was signed. At the end of October, the project group travelled to Finland to carry out a factory acceptance test. The WaterJet turn-up system was installed during a planned weekly stop at the end of November. Before the planned stop, Hylte and Valmet worked intensively together to prepare for the installation. The electrics and water system were in place so that when the stop occurred, the team simply had to assemble the beam and start up the system. The fine-tuning of the system went without hiccups, and six hours after the beam was put in place, PM 4 was up and running as planned. "Valmet's capacity and competence were invaluable, both before and during the installation. Valmet's assembly manager **Timo Martinsén** and the fitters certainly knew what they were doing," says Per Malmros.

Better reliability and faster turn-up

Hylte chose to scrap their old turn-up equipment. The new WaterJet turn-up system offers better reliability and turn-up is carried out faster, more reliably and with more control than before.

"These days, the machine rarely fails due to unsuccessful turn-ups. Occupational health and safety has also improved, as we don't need to clean the machine before tail threading following disruptions. With Valmet's WaterJet turn-up system, we saw immediate improvement in paper machine reliability, which has led to increased production volumes. The effect of the new WaterJet turn-up system has exceeded our expectations," Per Malmros ends. ■

HOW DOES WATERJET WORK?

The WaterJet turn-up system is needed in reel spool changes at the paper machine. With the WaterJet turn-up system, two water jet nozzles traverse to the middle of the machine to initially cut a fine strip in the middle of the sheet. The strip is glued to the empty spool, after which the nozzles quickly traverse to the sides and widen the strip. At Hylte, the 8.4 m wide sheet is transferred onto the new spool in a matter of seconds.

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