

Progressive cavity pumps reduce maintenance costs for recycled paperboard mill

Visy Paper Co., Conyers, Ga., a leading producer of recycled containerboard, was incurring high maintenance costs during a processing phase in which polymer is added to dewater incoming batches of a fibrous bulk paper pulp slurry. The gear pumps the mill had been using to transfer the mixture were becoming too costly to operate, requiring the replacement of one pump per month. After extensive research, Visy installed three new progressive cavity (PC) pumps and was able to eliminate the materials flow problem. Payback on the PC units was just six months.

Visy Paper recycles 300,000 tons of old corrugated containers (OCC) and mixed office waste (MOW) from the Atlanta area on a 50/50 basis. In the mill's recycling process, unsorted OCC and MOW arrive at the mill thoroughly cleaned and baled. The bales are taken at about 50 tons per batch up two stories by a loading conveyor, where the bailing wires are cut, with the bales falling into a 30 to 40 ton capacity loose-pile tub. Recycled water is added to the bulk paper at a rate of 10,000 to 30,000 gallons per batch, depending on tonnage. The mill processes 36 batches per day on a continuous basis.

The tub, which has a large rotor, mixes the paperboard and water for 15 to 20 minutes into a final slurry of about 15% solids. Polymer is then pumped into the slurry, allowing the water to drain out and making the solution easier to handle.

According to Rich Blevins, the mill's technical director, the three gear pumps the mill had been using to transfer the polymer into the slurry were causing time-consuming production bottlenecks and excessive labor and maintenance costs. The pumps

needed a proper lubricating agent to operate at maximum efficiency. Polymer, he found, was not a good lubricating solution. The mill experimented with various types of PTFE® and stainless steel gear pumps, but the polymer consistently destroyed the pumps' seals, preventing sufficient lubrication of the units' internal operating parts. The mill continued to replace one gear pump every month.

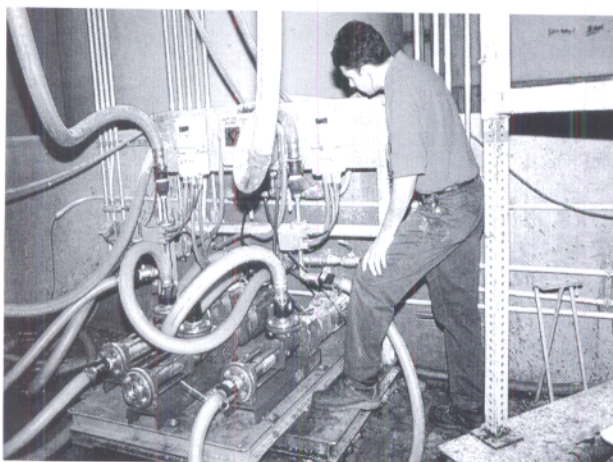
Visy turned to Blake & Pendleton Inc., a regional fluids handling firm, which supplied the firm with three model BN-6L PC pumps manufactured by seepex Inc., Enon, Ohio. Each unit consists of a cast iron housing, a 316 stainless steel rotor, a molded-to-size Hypalon® stator, and has a rated capacity of 1,000 gallons per hour (gph). Blevins says he was influenced by the successful use of seepex PC pumps at Visy's Staten Island, N.Y. paperboard mill.

In operation, the positive displacement pump's single external helix rotor turns within a molded double-internal stator to form cavities that create the pumping action. The pump's flow output is directly proportional to its speed, and its customized stator ensures an identical compression ratio along the entire length of the rotor/stator interface. The new pumps were easily retrofitted to the bases of Visy's gear pumps.

Blevins says that the seepex PC units have experienced no downtime or major repairs since their installation in 1997, operating 24 hours per day, 350 days per year. "The progressive cavity pumps paid for themselves in their first six months of service," he says. The mill now uses seepex pumps for

other functions, such as the discrete metering of chemicals.

For more information, contact seepex Inc., 511 Speedway Dr., Enon, Ohio 45323; by phone at 800/695-3659; or by e-mail at seepex@ix.netcom.com.



Process engineer inspects progressive cavity pumps used to transfer polymer in the recycling unit at Visy Paper's Conyers, Ga. paperboard mill.

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