**There's lots more than purchase price to consider when replacing pump parts. Can your operations afford the risk of simply buying on the cheap?**

Manitoba Kraft Papers, a division of Tolko Industries Ltd. (Tolko), is one of only a few companies in North America that produces Kraft paper, and one of only a handful that has the ability to produce the extra-strength paper made from northern climate trees with very strong, short fibers.

Paper is just one product Tolko is known for. Based in Vernon, British Columbia, the corporation manages 18 manufacturing divisions across four Canadian provinces, serving customers in more than 20 countries. Some of its other products include lumber, plywood, veneer and OSB (oriented strand board).

Tolko's Manitoba mill produces more than 460 metric tons of Kraft paper daily from one paper machine in a production process involving hundreds of pumps. Today, approximately 90% of the pumps are ITT Goulds Pumps (specified preferred vendor for the mill), supplied by Industrial Fluid Consultants (IFC) of Winnipeg, Manitoba. When spare parts are needed, the mill purchases only precision-manufactured Goulds parts. It was a very different story 10 years ago.

Stuart Parker, mechanical engineering technologist at Manitoba Kraft Papers explained that until the late 1990s the mill had increasingly used replicator parts for pump repair and maintenance. The "bogeys" were generally less expensive than OEM parts, but caused major headaches. "Like plants in many industries over the years, the competitive pressures pushed management to shop for spare parts based on price," Parker notes. "To a purchasing agent, the parts look identical, and the replicators claim that the performance will match the OEM part. But

in the end, all parts aren't created equal and our experience has shown that the replicated pieces often impede pump performance."

**OEM aces the test**

The 10-year process of converting the mill to all-OEM pump parts began with a Goulds 3175 model stock pump on a machine chest that was under-performing. The pump played a key role in production, delivering thin stock (1.5% consistency) with a vertical lift of about 80 feet to the deculator. Its reduced performance was bottlenecking the process and stunting the mill's output by up to 10% on some heavy grades of paper.

Ray Gagnon of IFC made the six-hour drive north of Winnipeg to the Manitoba mill to assist with the under-performing pump. When he got there, he found it impossible to assess the impeller and casing with flow and pressure measurements to confirm if the pump was operating on the performance curve. That's because of the unit's non-OEM parts. Measuring performance against the pump curve supplied by the original manufacturer is useless when replicated parts have been installed. Even a disparity of fifteen-thousandths of an inch—*no thicker than a sheet of notebook paper*—can cause drastic changes in hydraulics and performance. Gagnon suggested that the mill fit the pump with a Goulds impeller and suction sideplate to standardize the pump for an accurate assessment. Within a few hours of these key components being replaced, the pump was again performing exactly as it should—and the machine rebounded to meet production requirements.

**From "bogey" parts to bonus profits**

Parker used the example of the machine-chest 3175 to encourage purchase of OEM parts for other pumps. Convincing a purchasing manager to voluntarily pay more for replacement parts is no easy feat. Parker made the case that OEM parts were more cost-effective than replicators, and offered to be held personally accountable if standardizing on OEM did not yield dramatic cost savings on maintenance and total parts spending and alleviate assembly problems.

Soon after the company began to switch, the graph charting maintenance and repairs turned into a downhill Canadian ski slope. Because the original parts last longer than bogeys, as well as fit and perform properly, the total parts budget went down. Labor costs for pump maintenance decreased while the overall performance and reliability of the pumps improved significantly. Based on the success of the parts program, Goulds was also specified as the preferred pump vendor for all process and chemical pumps.

For the next 10 years, Manitoba Kraft Papers replaced parts and entire services with OEM products as they failed or wore out. In 2001, the mill began a project to enhance quality and productivity of the paper machine. This process modification required a change in the paper stock delivery process, whereupon Tolko replaced the previous Goulds 3175 machine chest pump. Parker recalls that the new 3175 installation has never needed repair or replacement parts in the past seven years of continuous 24/7operation.

As the maintenance workforce at the mill is decreased through attrition, the need to become more effective and efficient with less becomes ever greater. Among other things, by standardizing on Goulds pumps and replacement parts, performance issues related to pumps have become a rare concern. “We used to see four or five pumps and parts piled up each weekend waiting for repairs,” Parker says. “Now, when the rare occasion for a repair occurs, it draws a crowd.”

## Overall benefits

Manitoba Kraft Papers continues to benefit from its change to OEM parts. The mill increased paper production, cut its parts budget in half, lowered operating costs, decreased manpower needed for maintenance and repairs, and out-of-pocket spending has gone down despite OEM parts being more expensive than replicators. In addition, Kraft Papers can troubleshoot with IFC over the phone, thanks to standards afforded to OEM parts. **MT**

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