U.S. Replacement Parts Ease Repair of Equipment Made Offshore

How do you find mechanical and electrical parts for foreign-made machines here in the U.S.? Maintenance and plant engineers were asking this question at Viking Polymers, a maker of plastic polymers, when they recently needed replacement parts for a specialized, German-built machine at its Jamestown, NC, facility.

The 35-year-old two-roll mill is used for mixing and heating compounds for quality-control purposes. It uses two electrically heated chrome-plated rollers, spaced close together to mix composite materials. The electrical contacts on the mill's shaft rollers were originally made of carbon and bronze rings. Over time, one of the rings had broken into three pieces and was held together by wire. Every time the electrical charge would pass a crack, the machine's roll heaters would momentarily turn off, causing a slow heat-up. Also, brushes were held by makeshift holders and the springs that held brushes against the contact were fatigued and unreliable.

In a search for replacement parts, Richard Setele, Viking Polymers' plant engineer, learned that the mill's original manufacturer had been acquired by a Swiss-based company. With some difficulty, Setele contacted the company, and learned that replacement parts were available, though his particular machine was no longer made. He received a faxed quote for the parts, but no additional information that would have simplified the overseas purchase.

"The whole process was frustrating," he says. "We needed to find the exchange rates to translate the quote. We decided we needed to find an American company."

Setele searched for a U.S.-based electrical-contact manufacturer and found Helwig Carbon Products, a Milwaukee, WI-based manufacturer of carbon brushes, brush holders and mechanical carbons. His request for quote was forwarded to a regional service representative who responded within 24 hours.

"The rep came in the day before Christmas, inspected the machine and took photographs," says Setele. "I couldn't have asked for more."

While he was at the facility, the rep asked the Viking team if they knew what grade of carbon was used on the original machine. Viking's electrician checked the resistance of the rings to determine the proper grade, but could not provide the detail that would enable Helwig Carbon to make a replacement.

To answer that question, Viking overnighted the broken carbon rings, brush holders and springs to Helwig Carbon on a Friday evening where they were tested for hardness, density and resistivity. The parts were back at Viking on Monday morning, and the company never missed a day of production. From its test of the original parts, Helwig Carbon determined that a new fixture was needed: a combination of new rings and brush holders. Helwig Carbon changed the OEM design and used a constant-force spring, in addition to newly designed carbon slip rings and a bank-of-two brush holder. This allowed for constant brush contact. The new fixture created a continuous current flow and helped the application heat up faster, keep constant temperature and greatly improve temperature control.

Helwig Carbon made the rings, brush holders and springs manufactured and shipped them to Viking within four days. According to Setele, the Swiss

manufacturer would have needed 14 weeks lead-time to ship. The entire purchase of new-design and replacement components cost about the same as what it would have cost to order the original carbon slip rings and brushes from the overseas manufacturer, plus spares. Part numbers are now on file at Helwig Carbon for easy reordering.
"Aside from the ease of working with an American company, we feel the real benefits are in the reliability and consistency of our machine with the new parts and the improved control of the application," says Setele. "Helwig delivered in many ways."

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