

Nitric-Acid Plant Expander Refurbishment

Sulzer Hickham USA has supported the nitric-acid industry's requirements for services on critical rotating equipment for years. These services have included overhauls and re-rates on hot-gas expanders, compressors, and steam turbines.



New blades fit-checked in disk.

Over the years, Sulzer Hickham USA has become synonymous with high-quality repairs implemented by technically sound personnel within the nitric-acid industry. In the summer of 2002, Sulzer Hickham USA was able to bring yet another high-tech service to fruition to better serve customer needs.

One long-time nitric-acid customer in the Midwest US had successfully installed and started its Sulzer Hickham USA overhauled (spare) expander. Once the production facility was back on line, the focus was shifted to refurbishing the removed expander to first-class condition. Sulzer Hickham USA was asked to provide the necessary disassembly, inspection, and the formulation of the repair scope. During this phase, it became apparent that the expander would require multiple sets of rotor blades as well as stationary parts.

In the past, some of these component parts may have been outsourced, but with our new airfoil and blade

manufacturing capabilities, the parts can be produced in-house.

New Blade Manufacturing Machining Center

Even though Sulzer Hickham USA's Manufacturing Division had recently

qualified its new blade manufacturing machining centers, it was up to the challenge of embarking upon its first project for a customer. During the order negotiation stages the customer had the opportunity to tour the Manufacturing Division and view this new capability first hand and witness test piece certifications.

Sulzer Hickham USA received the purchase order to proceed with the complete overhaul of the expander incorporating the new blades and



New rotating and stationary parts manufactured at Sulzer Hickham USA.

stationary parts. Typically, from outside vendors or the OEM, delivery times for these types of components are in the 20-to-30-week range. Sulzer Hickham USA quoted 12 weeks to complete the parts. This is a major advantage to end users, who see the duration of exposure without critical spares reduced significantly.

Sulzer Hickham USA's Manufacturing Division recorded this order as its very first for the new blade manufacturing machines. With a great deal of effort from all involved, the blades made their way from simple A-286 (nickel alloy) blocks to finished product. They have since been installed into the discs of the rotor and are ready for service. At the same time it was producing the rotor blades, the Manufacturing Division produced a new inlet nozzle and two stages of stationary blading. All of this was done while other orders were received and placed into production – including some emergency response requirements.

A True One-stop Facility

Sulzer Hickham USA's Core Shop is currently in the final stages of the re-assembly phases for this project. As a result of the new capability, and combining that with the on-going and in-depth expertise, Sulzer Hickham USA is demonstrating to its customers that it is a truly one-stop facility for all of their repair needs.

*Dave Dixon
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