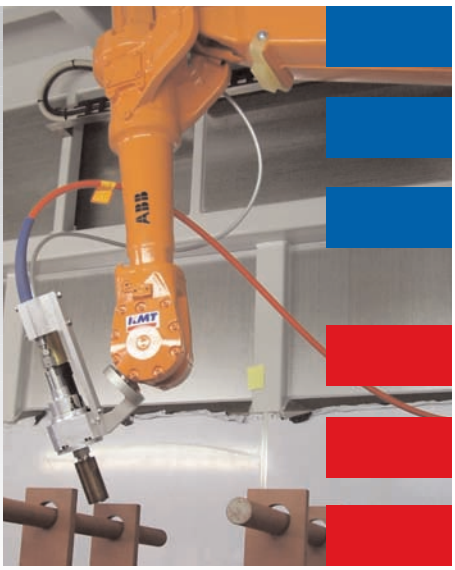
KMT Robotic Solutions Success Story

GENERAL ELECTRIC

KMT's Waterjet Stripping System Helps GE Reduce Costs and Improve Productivity



Challenge

General Electric, the world's leading manufacturer of large jet aircraft engines, is not only responsible for building new, top of the line engines for the aerospace industry, but the Engine Services division is also responsible for keeping them functioning properly. The GE Engine Services team in Strother, Kansas, repairs, overhauls and performs general maintenance on new and used aircraft engine components.

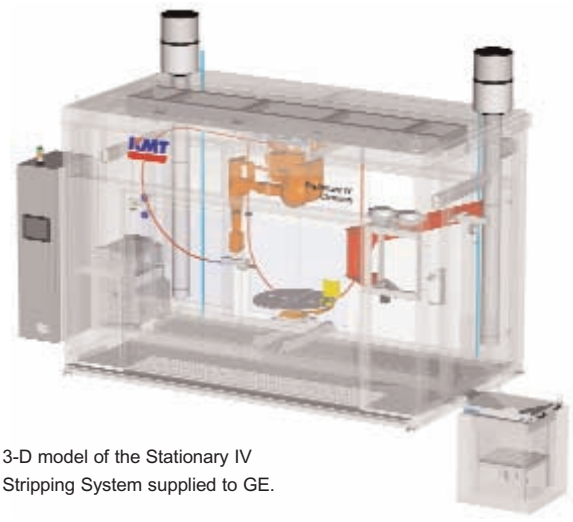
For the past 12 years, GE Strother used a waterjet stripping machine with a closed loop filtering process to remove thermal sprayed coatings from jet engine components. Thermal coatings, made of ultra-fine grained metal alloys or ceramics, are applied to protect the base material of components that are exposed to heavy contact with other rotating parts. When refurbishing a thermal coated part, the team at GE Strother must first strip the original coating and then reapply it to its original thickness.

Although this process was effective, GE wanted to find a suitable replacement system that would eliminate the hassle and associated costs of the closed-loop waste filtering process. During closed-loop filtering, the water used to clean the part is continuously recycled through a series of costly filters.

Solution

"KMT worked hand in hand with GE Engineering to develop an efficient, open-loop filtering solution for stripping the process waste," said GE Engine Services Special Process Engineer John Segovia. "This included great outside the box thinking and simple ideas for a complex problem."

KMT supplied GE with a customized Stationary IV Stripping system. The system features an overhead rail-mounted, six-axis ABB IRB 2400 robot with a KMT Rotojet cleaning head. Mounted next to the Rotojet is a search probe to ensure the part is in the cleaning area, and an air nozzle to remove water from the part after it is stripped. >>



3-D model of the Stationary IV Stripping System supplied to GE.

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- John Segovia, Special Process Engineer, GE Engine Services

Solution (continued)

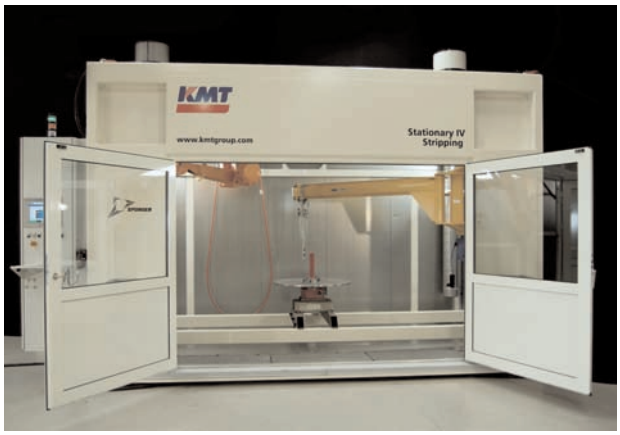
The additional robot axis was very beneficial to our stripping process," Segovia said. "We constantly acquire new and different parts to repair. Now we're only limited by the size of the cell, and not by the type of part that needs to be stripped."

KMT's CleaningWare software makes the system easy to program and operate by improving human-to-machine communication and adjusting water pressure to minimize wear on the high-pressure tubes and hoses.

Operators load parts into the system with the help of a telfer crane, or by hand. Once the part is loaded onto the rotating table, the operator scans a bar code that automatically calls up the correct stripping program. The water used to strip the part is pumped through the cleaning nozzle at very high pressure via a KMT Streamline SL-V 100R Plus intensifier.

Results

According to Segovia, the new open-loop filtering system, which uses fresh water from the plant's water supply, improved the reliability of the intensifier and reduced water filter costs by 75%. Productivity and cycle time have also been improved, enabling GE Strother to process 25% more parts than its previous capacity. The company has also realized additional savings in training costs and uptime.



GE's Stationary IV Stripping System is equiped with an overhead rail-mounted ABB IRB 2400 robot (left side), a telfer crane (right side), and a rotating table (center).

The intensifier (left) is supplied by KMT Waterjet - KMT Robotic Solutions' sister company located in Baxter Springs, Kansas.

KMT Robotic Solutions.
Creating value through automation.

KMT ROBOTIC SOLUTIONS

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