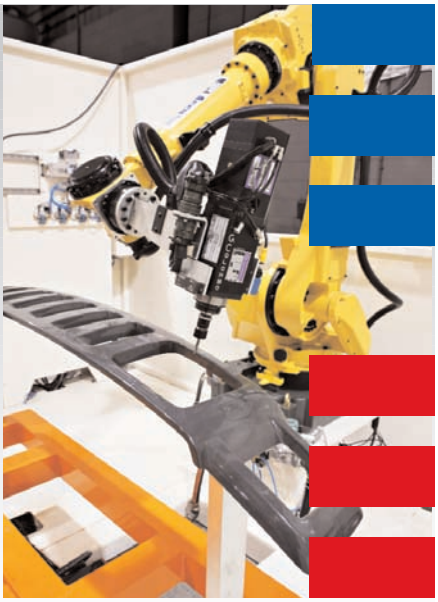
KMT Robotic Solutions Case Study:
RAY PRODUCTS

RoboTrim® RT-500 Router Trimming System Improves Flexibility and Increases Production by 50%



About KMT Robotic Solutions

KMT Robotic Solutions, the robotic systems business area of The KMT Group, is the world's leading designer and manufacturer of robotic waterjet and router trimming systems. KMT also provides robotic laser trimming, edge finishing, arc welding, assembly, dispensing and material handling systems. KMT Robotic Solutions was formed in December of 2006 with the union of KMT Cutting Systems in Ronneby, Sweden, and Robotic Production Technology in Auburn Hills, Mich. We specialize in developing, designing, building, servicing and supporting robotic automation solutions for manufacturing customers. KMT Robotic Solutions has more than 1,500 systems installed around the world. With locations in Europe, the US and China, we're strategically positioned to serve you.

This front view of the RT-500 trimming system shows the riser-mounted AccuTrim™ robot and the servo-controlled rotating table. The RT-500 can trim parts up to 60" x 60" x 36" (1524mm x 1524mm x 94 mm).

Challenge

Ray Products Inc., specialists in the area of thermoforming heavy-gauge thermoplastic materials, faced the challenge of trimming the interior and exterior areas of medical equipment covers, cabinet doors, and large storage unit covers with reduced cycle time.

The five-axis CNC system they had been using for the last 15 years lacked the flexibility to trim both sides of each part and required a second fixture and trim cycle to complete all of the necessary trimming. The maintenance involved with older equipment was time consuming and expensive, and the CNC's inaccuracy led to lengthy cycle times and low repeatability rates.

Solution

Daniel Sweet, Ray Products vice president of operations, felt the company needed to go in a new direction. At a previous employer, Sweet had worked with a KMT Robotic Solutions routing system to trim thermoplastic components. He knew the system to be reliable and accurate, so he suggested Ray Products look into making a purchase.

In May 2006, KMT Robotic Solutions installed the KMT RoboTrim RT-500 router trimming solution. The system included a six axis AccuTrim® robot, system calibration tools, automatic tool changer and a fixture tag identification system to automatically load the correct trimming program for each unique part. The system's rotating table enables the robot to reach all areas of each part.

Results

The RoboTrim RT-500 trimming system greatly improved cycle time, repeatability and consistency. The RT-500 can trim a part in less than half the time it takes the CNC to complete the same part. Repeatability is also much more consistent. Nine times out of ten the first part is a good part because of the fixture change features engineered into the system. In the past, the CNC's inaccuracy caused Ray Products to have to run three to five parts before the cut quality matched their standards.

The RT-500 robotic router trimming solution not only decreased production time by 50%, but it provided tremendous time savings and obviously increased capacity. This increase enabled more jobs to be scheduled on the system, which lead to increased sales volumes.

The RT-500 system's steel enclosure with manual front doors protects the operator while the robot is trimming.

"We can make more parts and turn the machine over more quickly with the robotic system," said Sweet. "The robot comes in, reads the fixture and is ready to run. Before, we had to load the program manually, put the fixture on the machine and try to locate it by measuring and putting the part in the same place. The RT-500 locates the part using the system calibration tools and the tag identification system. It is at least 50% faster just to set up the machine to trim."

Ray Products was also able to improve their part designs because they were no longer restricted by the rigidity of the CNC machines. In addition, the company has been able to reduce the amount of equipment needed, going from six operational CNC machines to four. Being that one robotic system does the work of at least two CNC's, Ray Products' goal is to replace all of their old equipment with KMT router trimming systems within the next two to three years.

For more than five decades, Ray Products has been a world-class leader in thermoforming heavy gauge thermoplastic materials. Combining skilled craftsmen, advanced 3D CAD/CAM technology and specialized vacuum/pressure forming equipment, Ray Products meets and exceeds today's rigid demand for innovative product developmenteco-nomically.

KMT Robotic Solutions.
Creating Value Through Automation.

KMT ROBOTIC SOLUTIONS

www.kmtrobotic.com

KMT Robotic Solutions Inc.
1255 Harmon Rd.
Auburn Hills, MI 48326 USA
Phone: (248) 829-2800
Fax: (248) 829-2750
Email: solutions.na@kmtrobotic.com

KMT Robotic Solutions GmbH
Schanzenfeldstraße 14b
D-35578 Wetzlar, Germany
Phone: +49 6441 44 596 0
Fax: +49 6441 44 596 66
Email: solutions.eu@kmtrobotic.com