Application: Painting

Industry: Automotive
Company Name: Automotive Manufacturer
Products Used: (3) FANUC P-200

The FANUC P-200 has an extremely large work envelope.

Challenges:

An automaker was faced with replacing its worn reciprocator painting system. The automaker compared traditional reciprocators with robotics, evaluating which offered the highest flexibility, quality improvements and lowest paint waste.

Solution:

Following a comparison of traditional reciprocators with robotics, this automaker chose to replace its worn reciprocator painting system with three, new FANUC Robotics' P-200 robots.

The new P-200's heavy payload capabilities and large work envelope make it ideal for many automotive paint applications including interior, exterior and fascia painting, providing a longer lasting paint shop solution. In addition, the P-200 accelerates quickly which allows high-speed cornering and reduces non-painting time between paint segments. The high acceleration enables the robot to do more work or reduce painting speed.

Application Overview

In a single zone, three P-200 robots apply 100% film build of metallic paint to the exterior surfaces of cars and trucks. Two robots are used to spray the sides (vertical surfaces) and one robot is used to spray the top (horizontal surfaces), of the vehicles. The new P-200 system easily handles a combination of trucks and sedans, processing vehicles at a rate of 41 jobs per hour. This application is particularly significant due to the requirement for a one-coat process and the flexibility to paint a variety of body styles.

Solution *(cont.)*

This installation also uses the 800 Series Sames spray guns which are specifically designed for use on FANUC Robotics' reciprocator and robot equipment. The Sames spray gun consists of two manifold-mounted spray heads which are separated to improve film build uniformity. The guns, featuring independent triggers and fluid regulators, provide 75% overlap when the robot tool center point moves with a 50% step-over, square-wave pattern. The robots' motion and painting process is controlled by FANUC Robotics' R-J Series Controllers. The controller receives the style and color data from a PLC. A PaintWorks II operator console and software are included for process monitoring and adjustment. Additionally, FANUC Robotics' AccuFlow II adaptive fluid delivery system eliminates daily calibration and adjustment, resulting in uniform film build and consistent appearance. Each P-200 also features an in-arm integrated, 24-color ModuFlow Color Changer which permits a short paint line, a feature that reduces color change cycle time and paint waste.

This automaker chose a FANUC Robotics system over competing automation systems because of FANUC Robotics' reputation for reliability, fast payback and trouble-free service.