ABCO AUTOMATION

CASE STUDY

ROBOTIC CELL DESIGN FOR A LEADING AUTOMOTIVE SUPPLIER

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INTRODUCTION

A client contacted ABCO requesting assistance with an automated system for treating and finishing automotive glass, hopeful that we could find a solution for the issue
at hand.

CHALLENGE

The challenge our client faced was in the process applying adhesive to automobile window glass. The entire window's edge required a treating agent applied prior to the edge finishing process. The treating agent needed an extensive drying period before placement into the finishing machine. The manual process for treating the glass and tending the finishing machine proved to be too labor intensive to meet production needs. The answer was an automation solution.

APPROACH

ABCO worked closely with the client to develop a fully-automated work cell to treat and finish the glass and integrate it into the client's manufacturing system. The cell included a KR90 robot and two KR16 robots, supplied by Kuka Robotics, with highly-customized end effectors to handle the glass during various process stages. The cell also included an infeed orienting station, a custom automated drying carousel, and a customized cooling conveyor, all designed and built by ABCO Automation. The ABCO design team collaborated with a few key suppliers to source some of the process systems, which were provided to ABCO without controls. ABCO designed, assembled, and programmed control systems for the machines and integrated all the machines together using Allen-Bradley ControlLogix from Rockwell Automation. A rigorous process was followed to develop the cell safety system to meet the requirements of ANSI/RIA R15.06 Safety Requirements for Industrial Robots.

RESULT

The finished automated cell allowed our client to meet production needs, reduce costs, and produce a higher-quality product. The cell exceeded the required throughput by 20%, which allowed the cell to be converted to a dual-purpose cell capable of running additional models of glass.

6202 TECHNOLOGY DRIVE
BROWN SUMMIT, NC 27214
336.375.6400

GOABCO.COM
ABCOBAGINBOX.COM