



DURABOTICS™
MAKING ROBOTICS MAKE SENSE



Press Tending Robotic Work Cell

Scope

Initial Scope was to provide a fully automated robotic work cell that will load and unload trailer side and front wall sheets into a currently existing punch press at 60 sheets per hour. Finalized scope included the addition of handling the material being punched to assure consistency and accuracy of the holes in the product. Select between automatic and manual modes. New part recipes to be added via an HMI on the fly.

Solution

Durabotics integrated a Staubli RX260 6-axis robot using a vacuum style end effector. A Yamaha single axis robot was used on the front end of the punch press allowing the utilization of an infinitely adjustable side register. This was utilized in manual mode when sheets were manually loaded as well as auto mode. Also, a Yamaha single axis robot was used on the back side of the press that clamped the parts securing them. This axis pulled the part through the press assuring accuracy $<1/32$ " cumulative across all holes punched per the customer requirements. This was utilized in manual mode when sheets were manually loaded as well as auto mode. An HMI was used to communicate with the system to run the appropriate part as well as a recipe style menu was implemented for the addition of new parts on the fly.

System Components

Staubli RX260 6-axis robot, robot base, customized vacuum style end effector, two (2) Yamaha single axis B14 robots, gripper style end effector for manual and automatic part handling through the press, sheet eject bar, staging table, dual sheet detection, safety light curtains, electrical controls including a touchscreen HMI.

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Result

Successful implementation of robotics to drive down labor and manufacturing costs as well as assure consistency and accuracy of the parts being produced.

