

# ROBOTIC WHEEL PALLETIZING CELL

Wheel Palletizing Cell Handles Two Lines of Wheels at a Rate of 1,000 Wheels Per Hour



## SOLUTION

- Two Lines of Wheels at a Rate of 1000 wheels per hour
- Five Wheel Diameters with 60 Part Numbers
- State-of-the-Art Control System
- Multiple Tray Pick Detection
- Empty Tray Base Insertion
- Partial Pallet Insertion
- Product Changeover Sequence

## RESULTS

- Increased Production by 50%
- Increased Quality Inspection by 100%
- Reduced Human Labor by 50%

## PROJECT SUMMARY

At Pieper Automation, we pride ourselves in our unique ability to provide complete industrial automation/controls solutions & services for our customers, including on-site support, integration of machines/systems, new equipment design and machine upgrades. Along with our custom assembly machine manufacturing and panel building, we deliver you a seamless solution – from one supplier.

Pieper Automation was contracted to design and develop a palletizing cell for top coated automotive wheels. Roller conveyors were used as the main backbone of the system. The palletizing cell handles two lines of wheels at the rate of 1000 wheels per hour. There are five wheel diameters with approximately 60 different part numbers. Five (5) different types of tray and a single style of base are used to palletize the wheels.

The heart of the control system includes a Rockwell Automation ControlLogix PLC System communicating via Ethernet to PowerFlex Drives for the conveyors and three (3) RSView operator interface units.

Pieper Automation designed the automaton such that if the robot picks the tray and two or more trays are picked without successful separation, the photo eye located on the robot end effector will send a signal so the thumper is activated. After the robot picks the last tray on a base, a photo eye will detect that the base is empty and will initiate the transfer mechanism that will allow the empty base to be conveyed over to the main base conveyor.

The sequence allowed that partial pallets of product may be inserted into the line. For a product changeover initiated, a changeover wheel is inserted onto the conveyor to allow the conveying system to know that the next wheel is part of a new product.

Pieper Automation provided all engineering, design, installation and startup. Upon startup the customer immediately recognized delivery times would be significantly reduced.



**WE ALWAYS FIND A WAY**

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