Application example:

underside screw driving

tire pressure sensor assembly

Customer Requirements

Universal Instruments' challenge was to provide a solution for two different automotive panels: a 3-up panel with two antennas and one connector per board, and a 4-up panel with two antennas, one connector, and one radial component per board. One of the connectors needed to be screwed in from the bottom with two screws.

Universal Instruments' Solution

Universal Instruments was able to place the five different components using one set of custom pneumatic gripper fingers on the Polaris Multi-Process Assembly Cell. Once this was complete, the board transferred to a custom edge belt conveyor equipped with a tandem underside screw driving assembly. The connectors were held in place from the top while the screwdrivers engaged from the bottom. Various stop locations allowed the panel to advance to the correct location for driving the screws into the connector on each board. By driving two screws simultaneously, cycle time and consistency of driving screws were improved.

Technology Utilized

- Polaris Multi-Process Assembly Cell
- Dual Pneumatic Screw Driver
- Bowl Feeders (for antennas & screws)
- Expanded Multi-Tube Feeder (for connector)
- Radial Tape Feeder

Polaris Multi-Process with edge belt conveyor

Secured connectors ready for screw driving

Dual, underside screw driving on connectors

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