

APPLICATION DATA No. 810 – Robotic Cover Assembly System



Innovative Automation Equipment

## Faucet Cover Assembly System Specifications

- Assembly: Joining a foam gasket to a styrofoam faucet cover.
- Machine Summary: Infeed and discharge conveyors, 6-axis robot, 6-station rotary indexing foam gasket magazine and feeder, and hot melt glue applicator.
- Production Rate: Cycle rate is 6 seconds which equates to 1,200 per hour (two covers produced each cycle).
- Dimensions: 120" W x 129"L x 92"H
- Utilities: Electrical, 208 VAC, 3PH, Control voltage 24VDC, Compressed Air 1/2 NPT, 90 psi.
- **Control:** Allen Bradley, CompactLogix PLC with Ethernet.
- Safety Features: Fully enclosed robot assembly cell, solenoid operated electronic interlock switches on access doors, anti-tie down finger switches on magazine indexer, emergency switches at each cell access point and at conveyor loading station, barrier guarding on all motor drives, magazine loading station and product entry and discharge openings.

## Sequence:

- 1. Operator manually loads Styrofoam cover shells onto continuously running infeed conveyor.
- 2. Cover shells are moved to pick-up station where robot removes (2) shells and moves them to glue applicator station.
- At glue station, applicator dispenses stream/bead of glue to bottom edge of shells. Robot moves shell along its perimeter to coat entire surface.
- 4. Robot then moves the glued shell to a foam gasket magazine and feeder station.
- 5. This station consists of (12) vertical magazines mounted to a (6) station rotary index table and includes two electric actuator lift mechanisms.
- 6. Robot orients the glued shells over the gasket magazines, aligning the bottom edge of each shell to foam gaskets.
- 7. Once aligned, the robot presses the shells onto the foam gaskets, adhering them together.
- 8. Robot moves the completed shell assemblies onto the discharge conveyor.





Robot prepares to grasp two Styrofoam cover shells from infeed conveyor.



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Nordson Hot Melt Glue Applicator dispenses beads of glue to cover shell surfaces.



Robot presses glued cover shells onto gaskets, joining them together.



Robot places completed shell assemblies onto discharge conveyor.