



APPLICATION

Turnkey automated work cell to apply liquid silicone rubber (LSR) onto automotive radiator end tanks.

Objectives

- Replace an EPDM gasket with a cured in place gasket (CIPG)
- Highly flexible system for on-demand changing of part styles
- Space-saving system design
- Automatic adjustment of the dispensing path program to compensate for part shape variance.

Customer Benefits

This system provides several benefits:

- Flexibility: Part styles can be run in any sequence on-demand by the operator without production stoppage
- High-volume system utilizes space-saving equipment to substantially minimize floor space
- Repeatable precision dispensing on non-repeatable parts in high volume production
- Bead height measurement to confirm bead is within specification
- Automatic rejection of parts out of specified tolerance



Conveyorized loop system. VertiCure™ vertical curing system at right; robots and robot touch-screens at left.

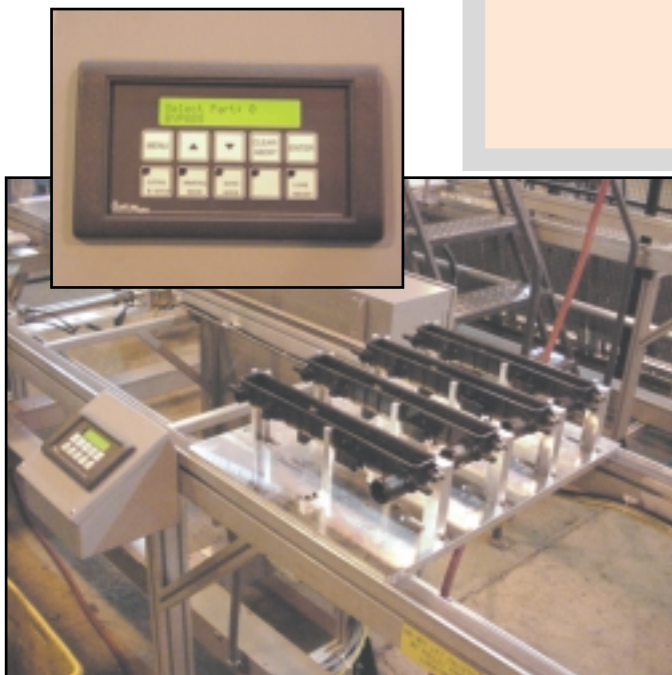
Part

Glass-reinforced nylon radiator end tanks

- Nineteen part styles
- Non-repeatable part dimensions

Key System Features

- Palletized work cell with conveyors and pneumatic shuttles to move pallets
- Two Robotics Inc. Cartesian-coordinate 3-axis dispensing robots with Windows NT® based operator interface
- PC-based work cell controller with QC and SPC data collection
- Dimensional part profiling and mapping
- Bead height measurement
- Part reject pick-and-place
- VertiCure™ space-saving vertical curing and cooling system
- Two-part LSR material delivery system (for each robot). Includes patented Program-A-Flow™ for continuous output metering and mixing; Hi/Lo pressure monitoring
- Pallet ID and tracking
- Two pallet sizes with common fixturing to accommodate all 19 part styles



Part-style switching station and selector keypad.



Part-style switching station at lower left. At upper right is the VertiCure™ door open to show series of pallets in cooling zone.



Two Cartesian-coordinate robots with operator touch-screens.

Systems & Support

Robotics, Inc. has decades of experience designing and building automated dispensing systems. We provide complete system solutions, including start-up and installation assistance, training, field service support, and complete documentation. Dependent on your specific project considerations, Robotics Inc. staff will design and build a system that is right for you.

Information

Robotics, Inc. has designed and built hundreds of dispensing systems for a variety of industries. For more information on this application or other products and services, contact a Robotics Inc. Sales Representative:



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Major System Components

Flexibility and redundancy are key features of this turnkey work cell. Major components:

- High Precision Cartesian-Coordinate Robots
- On-Demand Part Style Switching Station
- Part Mapping and Bead Measurement Equipment
- Work Cell Controller
- Automated Reject Station
- VertiCure™ vertical curing/cooling system
- LSR Delivery System
- Conveyors and Pallets

Process Specifications*

Parts	Injection molded glass-reinforced nylon radiator end tanks
Part Styles	19
Production Rate	Up to 514 parts per hour (includes mapping, dispensing, bead measurement, load, unload, and all related tasks)
Dispense Rate	400 ipm (Approx.)
Total Bead Length	34" to 59"
Bead Dimensions & Tolerance	2.50mm ±0.30mm (height) 3.35mm +0.85mm , -0.42mm (width)
Material	Two-part liquid silicone rubber, heat cured
Mix Ratio	1:1
Cure Time & Temp.	7 minutes @ 150°C

* Values are based on customer's specific requirements and do not necessarily indicate optimum values. Call for further information regarding system capabilities and product specifications.

Since 1971, Robotics Inc. has designed, built, and supported automated dispensing around the world!

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