



APPLICATION

Automated Quality Inspection of Dispensed Material

- Electronic Housing Gasket
- PCB Thermally Conductive Adhesive Drops
- Cast Aluminum Housing Assembly

Objective

The customer needed an on-line automated station to inspect the integrity and tolerance characteristics of both dispensed Liquid Silicone Rubber (LSR) gaskets and dispensed thermally conductive adhesive drops.

Dispensing Material

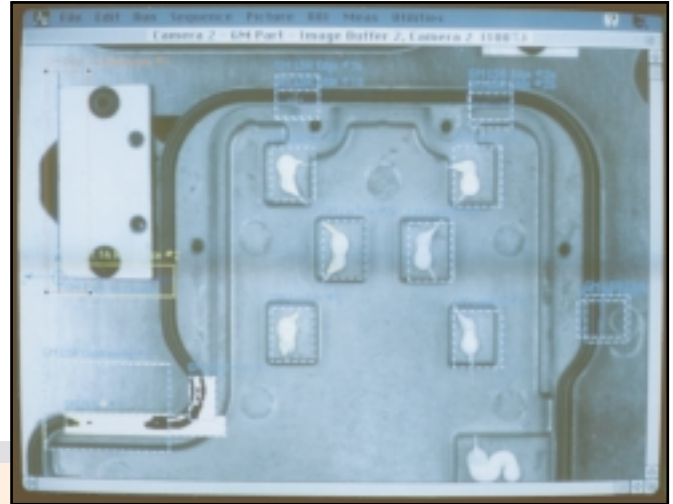
Two dispensed materials were inspected:

Liquid Silicone Rubber (LSR)

- Two-part material
- 1:1 mix ratio
- Heat-cured

Thermally Conductive Silicone Adhesive

- Heat-cured
- Contains difficult-to-dispense aluminum oxide and glass bead components



Monitor showing the inspection of one part. Two separate checks are performed: (1) the amount of adhesive on each housing heat-sink pad; (2) the width of the LSR gasket bead.

Key System Features

- Completely integrated with fully-automated line
- PC menu driven application set-up
- Inspection results stored for off-line evaluation
- Part-failure indicator area for manual part removal
- Four cameras: Each set of two inspects one part at a time
- Calibration compensation for perspective distortion
- Adjustable contrast sensitivity



Robotics, Inc. VisionCheck™ vision inspection system (tower) shown on-line. Cantilever unit on left of tower is an optional part reject identification system for manual part removal.

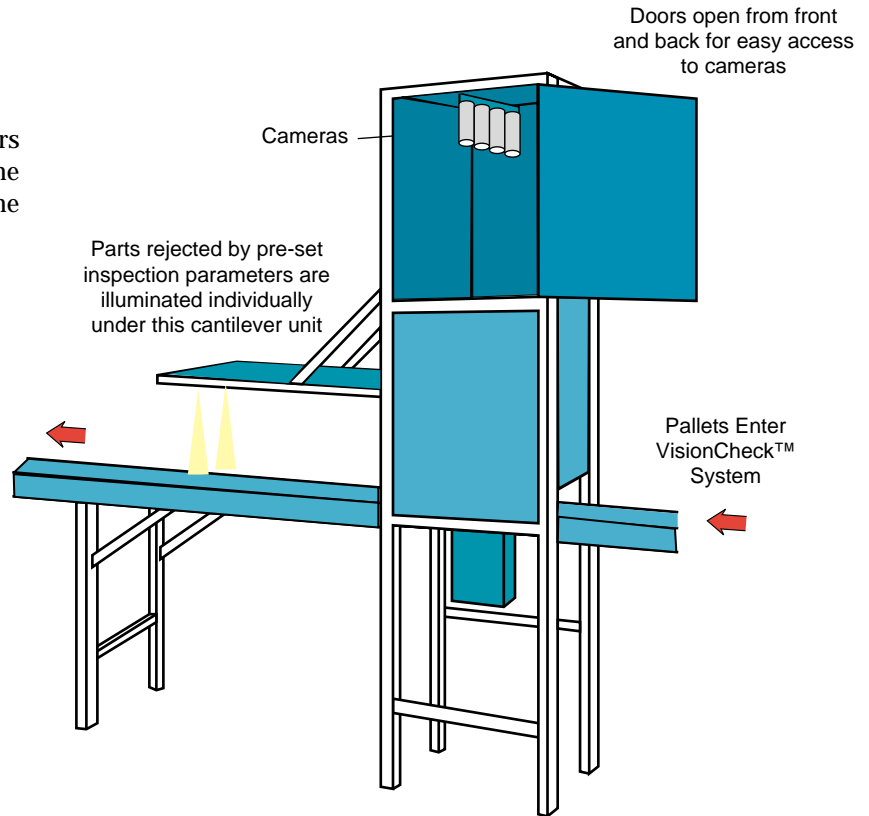
Systems & Support

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. Depending on your specific project considerations, Robotics Inc. staff will design and build a system that is right for you.

Layout

Function Sequence

1. A pallet enters inspection area.
2. A sequence of four camera inspections occurs through the interfacing of the PLC with the vision computer. Results are recorded as the inspections are completed.
3. Failure reports are written for off-line analysis.
4. Pass/fail conditions are recorded for two parts based on inspection results of four cameras. The next set of parts is inspected as the pallet moves to its next position.
5. Rejected parts are indicated by spotlights under the cantilever unit for manual removal.
6. Once all rejected parts are removed, the pallet automatically moves to the next operation.



The tower design was utilized for proper perspective over part-design protrusions.

Information

Robotics, Inc. has designed and built numerous dispensing applications for a variety of industries. For more information on this application or other products and services, contact a Representative from our Technical Sales Department:



Headquarters

2421 Route 9
Ballston Spa, New York 12020
Phone (518) 899-4211 or (800) 876-2684
Fax (518) 899-4230
www.Roboticsinc.com
Email: Info@Roboticsinc.com

Midwest Regional Sales Office

Phone (248) 288-6585
Fax (248) 288-6587

Electrical/Electronics Sales Inquiries

Phone (518) 899-4211 or (800) 876-2684
Fax (518) 899-4230

Process Specifications*

Part	Electronic cast aluminum housings Approx. dimensions: 4.5" x 5" x 0.375"
Cycle Time	12 seconds per pallet of 8 parts (includes ~ 99% pallet movement time)
Bead Width Tolerance	0.125" dia. ± 10-17%, depending on area being checked
Adhesive Area Tolerance	0.0276 in. ² ± 25-33%, depending on area being checked
Production Rate	480+ parts per hour
Part Delivery	On-line asynchronous conveyor, with manual unload of rejected parts

* 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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