

**Custom Solutions**

# Experts in Engineering Customized Solutions



ECT custom solutions are your resource for design, development, and integration of process equipment for production in the aerospace and defense, automotive, consumer and industrial, and medical industries.

We enhance our product offering with expertise in automation controls and specialty application technology to provide OEM manufacturers and machine builders with a range of solutions from existing products to custom workstations tailored for today's specific technical applications.

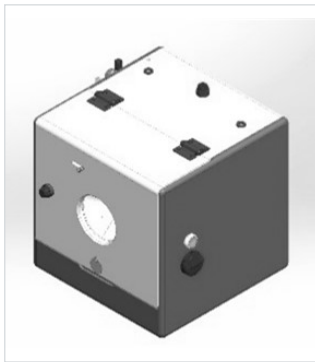
A dedicated ECT Integrator works with the manufacturing team throughout the entire project — to specify process, automation controls, or to deliver entire turnkey workstations. Where others only supply products, we are committed to developing a true collaborative partnership, bringing our unsurpassed expertise and total process knowledge to our customers' specific application challenges. Because we understand the process as a whole, we can offer our customers a solution where chemistry and equipment work seamlessly together with maximum efficiency.

Our integrated part handling and assembly solutions allow manufacturers to focus resources, increase productivity, lower costs, increase safety, and achieve a more efficient manufacturing process. With patented processes and continuing IP development in the handling and treatment of aerospace, automotive, medical and electronics parts and assemblies, ECT delivers long-term value to our customers.

# How to Use This Guide

This guide provides an overview of ECT custom solutions and capabilities across the key markets we serve. As illustrated here, our capabilities focus on customized solutions for customers in the aerospace, automotive, medical, and consumer and industrial electronics markets. Providing our customers with the ability to choose an existing solution or to create a custom designed workstation for a specific application, ECT is a valuable resource for the implementation and launch of your next application.

## Specialty Application Solutions Overview



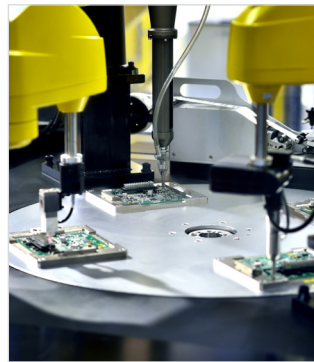
### Bench-Top & Manual Stations

Application specific solutions are available for controlled dispense and cure of manual and delicate applications. From medical to electronics and industrial applications, we can improve your process quality and throughput through these specialty bundle solutions.



### SCARA & Gantry Stations

For smaller geometries and repeat functions, customizable in-line and semi-automated dispense and cure solutions can be designed to meet your specific dosing, gasketing, potting, filling, and inspection of multiple part processing. Single and multiple material solutions and integrated conveyance also available.



### Rotary & Indexing Stations

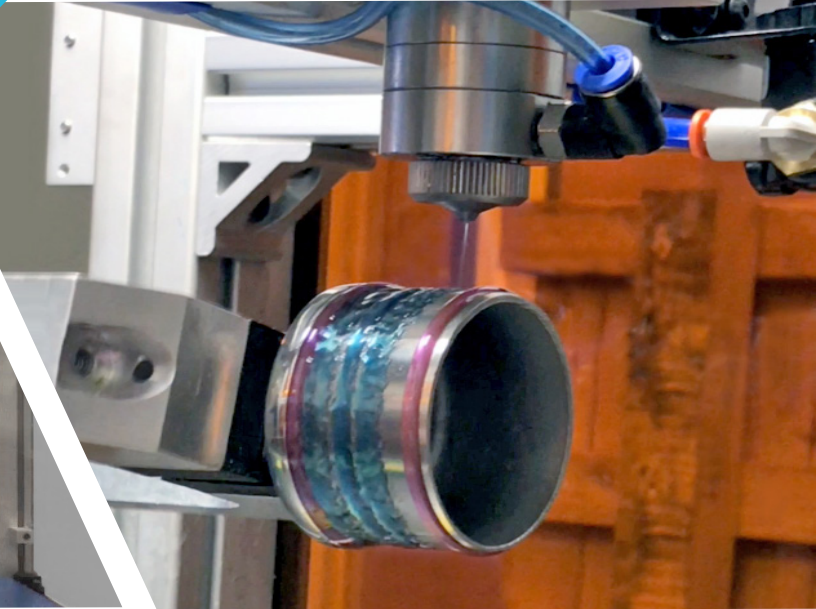
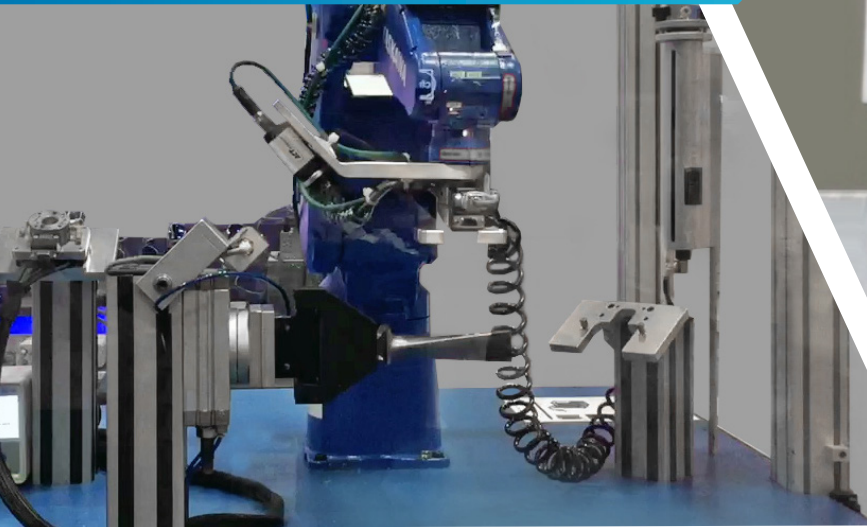
Applications requiring higher throughput and lower operator expenses are designed with rotary or in-line index part handling and work cell solutions. Our solutions range from single part treatment to multi-function, semi-automated work centers to deliver precise, repeatable performance.



### Large Part Robot Solutions

For larger applications and complex geometry requirements, the dispense and cure equipment is moved around the part via a 4-6 axis robotic unit. Large part spray, gasketing, and masking robot cells deliver the most accurate solutions on the market for today's challenging applications.

# Aerospace Applications



## ECT Custom Aerospace Solutions

### Small & Large Turbine Cooling Hole Station

ECT leads the way with new technologies for processing. For small parts, the fin is filled internally, and cured in place upon extrusion to exterior exposure. Large parts utilize find-and-fill vision technology, fin cooling holes are mapped using vision software, and filled via precision robotic application.

### Spray Coatings & Maskant Automation

Supporting masking application on complex geometries, ECT supplies production 6-axis robot control solutions for efficient masking, curing, removal and quality inspection.

## Specialty Aerospace Solutions

### Printed Circuit Board Assembly

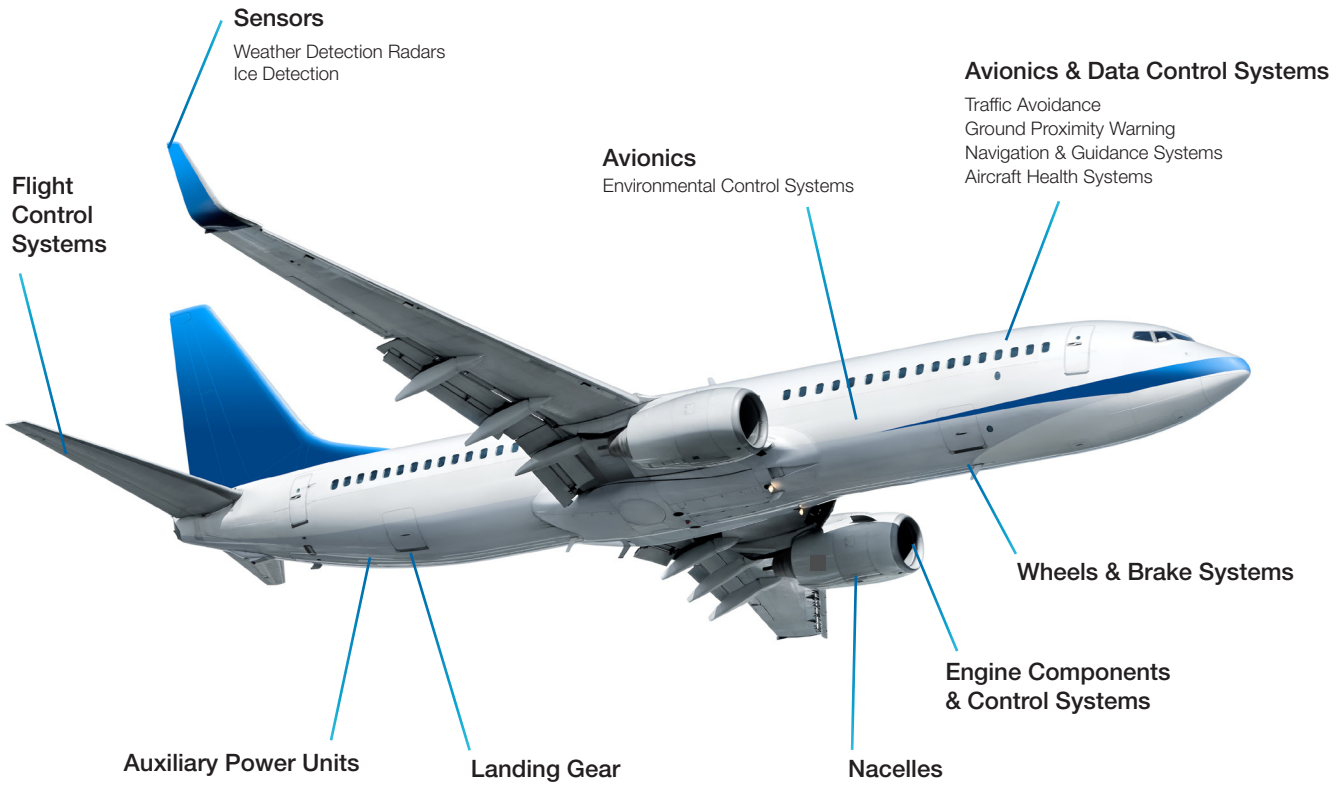
- XYZ coating stations
- Board flipping and 2-sided treatment
- Pilot run and prototype coating services

### Camera Module Assembly

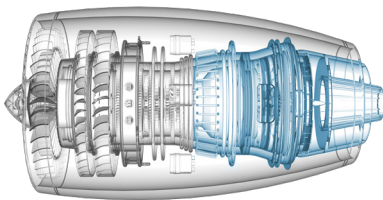
- XYZ potting stations
- Multiple process station
- Pick and place dispense station

### Surface Protection for Engine Components

- 4-Axis: Rotary IBU workstation
- 6-Axis: Rotary IBU spray station
- Fin cooling hole mask solutions



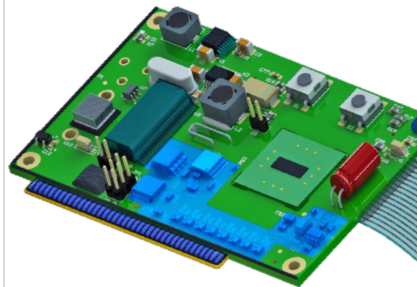
### Surface Protection for Engine Components



- Compressor Blades & Vanes
- Compressor Lines & Cases
- Integrated Blade Rotors/Blisks
- Fluid Line Fitting
- Turbine Disks
- Fan Blades
- Air Seals Hot Section Blades & Vanes
- Combustion Cases
- Combustion Liners
- Nozzle Guide Vanes
- Stacked Vanes
- Many, Many More Components

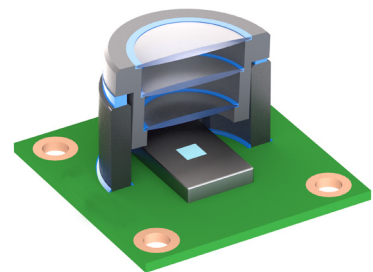
**Processes:** Anodizing ▲ Acid Stripping ▲ Chemical Etching ▲ Plating ▲ Air Plasma ▲ HVOF ▲ Painting ▲ Grit Blast ▲ Shot Peen ▲ Machining ▲ Air Flow Testing ▲ Laser Drilling

### Printed Circuit Board Assembly



- Thermal Interface Material
- Wire Tacking
- Conformal Coating
- Cure-in-Place Gasket
- Strain Relief
- Masking
- Encapsulation
- Ruggedization/Cornerbond
- Staking
- Reinforcement

### Sensor Camera Module Assembly



1. Bonding the camera lens
2. Fixturing the camera lens barrel to the lens holder
3. Bonding the lens holder to the PCB
4. Reinforcing the FPC

# Automotive Applications

## ECT Custom Automotive Solutions

### Masking & Conformal Coating Cells

ECT coating cells are XYZ or in-line spray, or dam/fill application platforms for PCB and membrane protection. ECT supports fully automated or semi-automated platforms.

### Rotary Mask & Seal Stations

Rotary dispense and cure part handling of industrial motor and compressor assemblies, and automotive housing sealing on difficult geometry profiles.

### Battery Potting & UV Cure Stations

ECT offers rotary and in-line part/tray solutions for small to large potting and ruggedizing applications. We bring value by providing total solutions that combine dispense and cure technologies to ensure material performance throughout the life of the application.

### Large Part Handling Stations

Fast pick and place automation cells support encapsulants that cure in seconds upon exposure to UV and/or visible light to provide tough, flexible protection for bare die, wire bonds, or integrated circuits (IC).

## Specialty Automotive Systems

### Potting & Ruggedizing

- In-line or bench-top automated dispense
- Spray, dam, fill variability
- Vision system for 100% inspection

### Fuel Cell & Battery

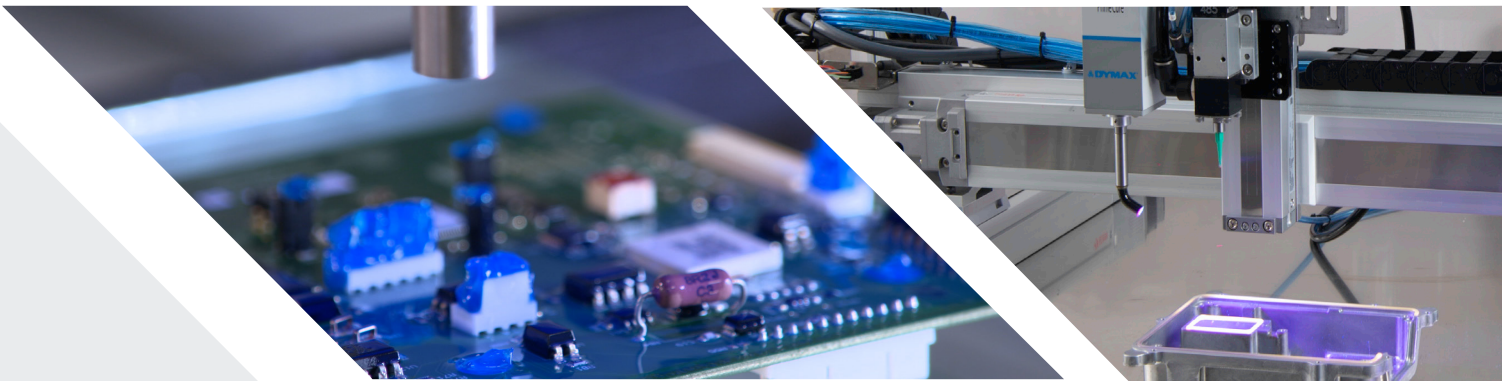
- Bench-top automated dispense
- XYZ pick and place
- Tack vs. pot variability
- Vision system for 100% inspection

### Component & Module Sealing

- Motor and compressor sealing
- Under hood coatings
- Driveline and active suspension

### PCB Coatings & Pilot Run Services

- Thermal potting systems
- Ruggedizing dispense/cure stations
- Gantry and robotic arm platforms
- Scalable, configurable dispense





### **Conformal Coatings**

Electronic Throttle Control  
Control Modules and Sensors  
Battery Management Systems (Hybrid and Electric Vehicles)  
Drive Shaft Coatings  
Door and Window Controls  
EGR Valve  
Tire Pressure Indicators  
Navigation System  
Airbag Sensors  
Power Steering Module  
Instrument Panel Circuitry  
Audio Circuitry  
Heating and Cooling Circuitry

### **Encapsulants**

Wire Coating

### **Potting Materials**

Lighting/Active Alignment  
Battery Pack Potting (Hybrid & Electric Vehicles)

### **Materials for Camera Assembly**

Rear View Camera  
Front View Camera  
Camera Modules (ADAS)

# Electrical Applications

## ECT Custom Electrical Solutions

### Conformal Coating Cells

ECT coating cells are XYZ or in-line spray, or dam/ fill application platforms for PCB and membrane protection. ECT supports fully automated or semi-automated platforms

### Keypad Casting & Lamination Cell

3-stage rotary lamination station with capabilities to dispense, laminate and cure keypad and custom keypad and electronic membrane coatings.

## Pilot Run & Testing Services

### Short Run & Trial Support

ECT offers testing, validation, and pilot production run services for our customers. Please inquire with your ECT representative for more information on these services.

## Specialty Electrical Solutions

### Conformal Coating Stations

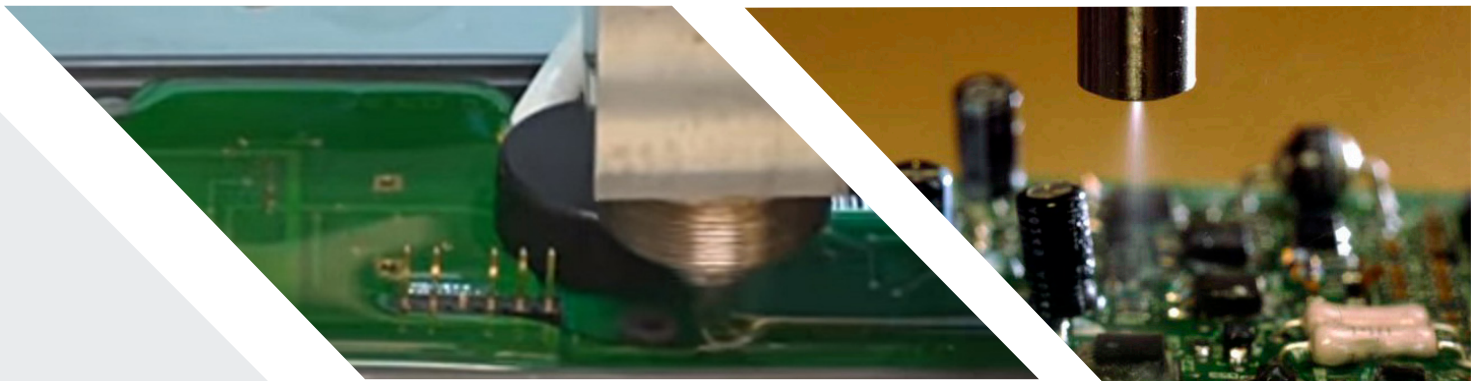
- In-line or bench-top automated dispense
- Spray, dam, fill variability
- Vision system for 100% inspection

### Potting & Ruggedizing

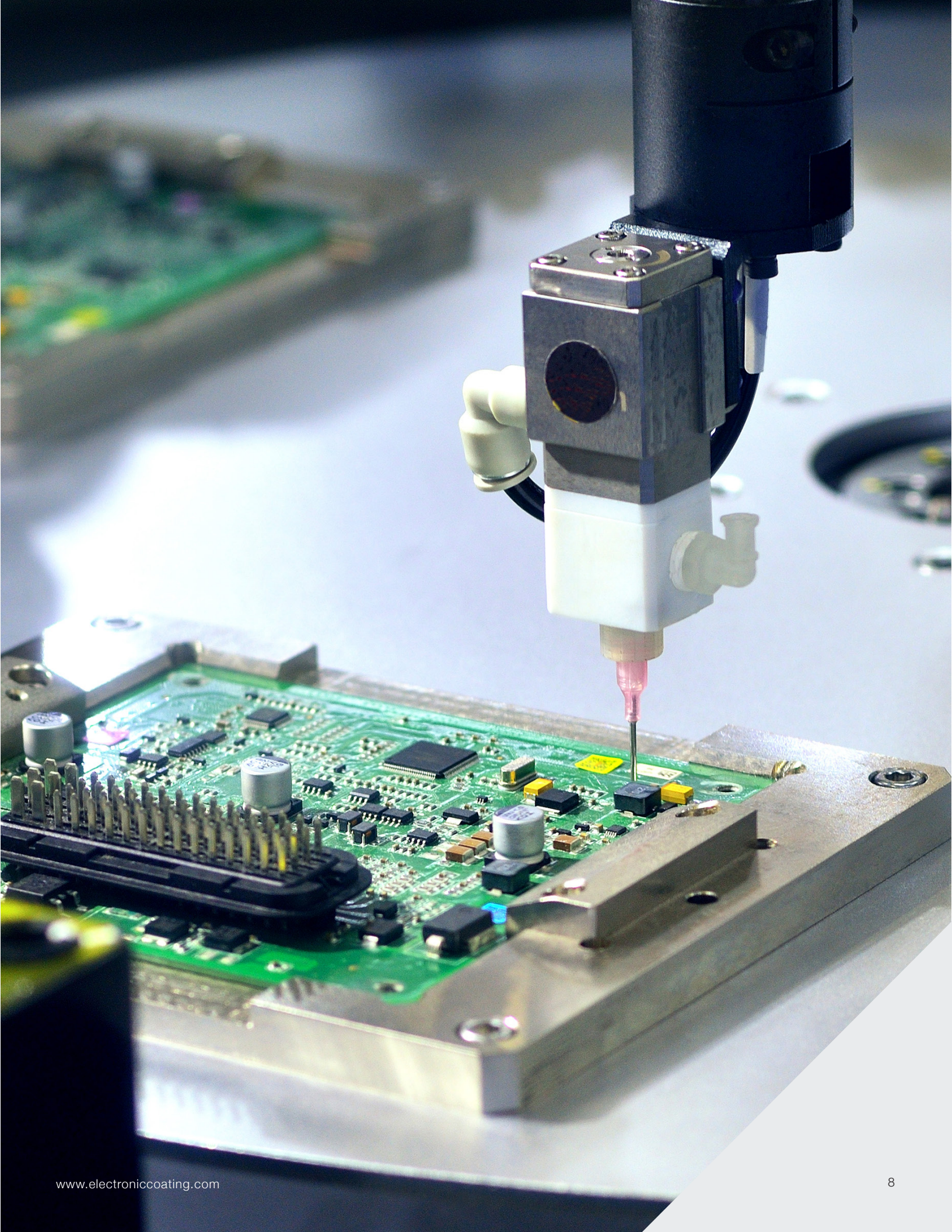
- Bench-top automated dispense
- XYZ pick and place
- Tack vs. pot variability
- Vision system for 100% inspection

### Prototype & Pilot Run Services

- Prototype and pilot runs
- Equipment setup services
- Testing and validation runs







# Medical Applications

## ECT Custom Medical Solutions

### Tube & Catheter Bonding Assembly

ECT leads the way with new technologies and dedicated product platforms for clean room and medical product assembly solutions. Our catheter and tube assembly products increase quality and yield, while decreasing risk and costs related to manual processes.

### Spray Coatings & Maskant Automation

Supporting the need for precision and quality control on critical products with complex geometries, ECT supplies production 6-axis robot control and rotary index solutions for efficient masking, curing, removal and quality inspection of implants, prosthetics, and difficult non-linear surfaces.

### Form-In-Place Gaskets & Seals

Supporting industry initiatives for isolation, sealing, and medical device environmental safety, ECT offers a range of production capabilities targeting single-operator and semi-automatic production. These cells integrate fluorescing vision detection with repeatable precision dispense technologies to deliver high-quality, high-dependability part and assembly production.

## Specialty Medical Solutions

### Catheter & Tube Bonding Solutions

- Bench-top, semi-automated dispenser
- Single point or 360° dosing
- Vision system for 100% inspection

### Lab & Testing Solutions

- Bench-top assembly fixturing and dosing
- Custom assembly design/build
- Turnkey solution management

### Implant Coatings & Treatment

- Standalone 6-axis mask station
- Precision edge definition
- Complex geometry EOAT programing
- Chassis/Tray load/unload

### Form-In-Place Gaskets & Seals

- XYZ dispense and cure stations
- In-line large part 6-axis dispense
- Turnkey solution management





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