

ENGINEERING YOU CAN **TRUST**

Custom Test Systems
Product Development
Systems Integration
Reverse Engineering

Automation
Manufacturing
Prototypes
Build to Print



Aerospace & Defense

Mission-critical solutions
for aerospace and
defense applications.



Medical Devices

Precision engineering
and manufacturing for
medical technologies.



Industrial Manufacturing

Automation, test
equipment & custom
manufacturing



Research & Development

Innovative prototypes
and test systems that
accelerate discovery.



Government Agencies

Trusted partner for
government agencies and
defense contractors.

Engineering & Design Concepts (EDC) designs and fabricates custom automated test systems, manufacturing equipment, precision fixtures and electromechanical products for aerospace, defense, medical and industrial customers.

From concept through production, we combine engineering, manufacturing and automation expertise to deliver dependable solutions that reduce risk and improve performance.

Since 1998, customers have relied on EDC to deliver dependable, high-performance systems where reliability, precision and quality are essential.

WHY COMPANIES CHOOSE EDC



COMPLETE TURNKEY SOLUTIONS

From concept development through production and installation support.



MULTI-DISCIPLINARY ENGINEERING

Mechanical • Electrical • Software • Automation



PROTOTYPE TO PRODUCTION

Design, fabrication, assembly, integration and testing. Build to print services.



PROVEN EXPERIENCE

Aerospace • Defense • Nuclear • Medical • Industrial

TRUSTED BY LEADING ORGANIZATIONS

Johnson & Johnson

secantmedical

BAE SYSTEMS

GE Aviation

BD

LOCKHEED
MARTIN

PENTAX
MEDICAL

Kearfott
Corporation



RFL



Learn more about our
capabilities and view project
examples.

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INNOVATIVE SOLUTIONS

FOR COMPLEX PRODUCTS & MANUFACTURING PROCESSES

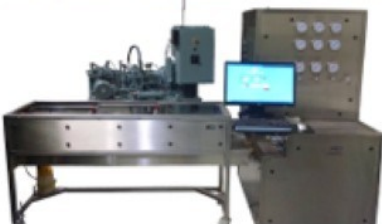
From concept through production, EDC design and builds custom equipment for aerospace, defense, medical, industrial, biopharma and energy applications.

Production Diode Test System

- ✓ Parts Handling
 - ✓ Testing
 - ✓ Temperature & Humidity
- at speed...*



AUTOMATED TEST SYSTEMS



- Hydraulic Component Testing
- Automate legacy manual test processes
- Improve speed, repeatability, accuracy and reduce training time

AUTOMATION & FIXTURES



- Mechanical Design
- Linear Static Analysis
- Frequency/Modal Analysis
- Fabrication Services
- Welding
- Unique Materials

PRODUCT DEVELOPMENT



- Electronics Packaging
- Mechanical Design
- Hydraulics & Pneumatics
- PLC Programming
- Operator Interface
- Fabrication Services

MACHINE VISION HANDLING



- Accurately position parts
- Exceptional repeatability
- Precision motion integration

REVERSE ENGINEERING



- Obsolescence Mitigation
- Redesign & Modernization
- Provide Production
- Sustainment Engineering

UNIQUE THERMAL EQUIPMENT



- Large format LN2, CO2, Glycol based thermal plates and systems
- Equipment for rapid thermal changes
- Custom Environmental Control for temperature and humidity

COMPLETE
IN-HOUSE
CAPABILITIES



MECHANICAL
ENGINEERING

ELECTRICAL
ENGINEERING



SOFTWARE
DEVELOPMENT

MANUFACTURING



SYSTEM
INTEGRATION

ASSEMBLY
& WIRING



TEST &
VALIDATION

DOCUMENTATION
& SUPPORT

FEATURED PROJECTS

Real problems. Real solutions. Real Results. Built for demanding applications.

AUTOMATED TEST SYSTEMS



CHALLENGE

Factory floor test system needed for multiple PCB assemblies. Custom Pogo-Pin bed of nails test fixtures with 0.040 - inch pitch needed.

SOLUTION

Compact Electrical & Mechanical design using solid modeling and PCBA's to meet the high-density requirements.

RESULTS

Tested over 10,000 PCBAs over the last 15 years in support of our armed services.

RENEWABLE ENERGY & CLEAN POWER

CHALLENGE

Customer needed a robust modular platform to test inverters that would fit within the framework of a fast-paced manufacturing floor.

SOLUTION

Created modular solution so that a set of 3 end items could move about independent from one another.

RESULTS

Over 174,000 inverters delivered for solar powered smart grid technology to create a distributed "virtual power plant" without consuming land or space.



AWARD-WINNING TELECOM PLATFORM



CHALLENGE

Customer needed a robust telecom platform with advanced functionality in a modular compact form factor. Must be able to swap daughter boards for multiple configurations.

SOLUTION

Needed solid modeling and mechanical design to meet the high-density requirements

RESULTS

Recipient of the UTC Expo "Best Telecom Equipment Product Award"

AUTOMATED CHARACTERIZATION & CALIBRATION SYSTEM



CHALLENGE

Create a 10,000 Ft-lb torque tools to characterize new designs, break in new gear-train designs and calibrate systems for the factory floor.

SOLUTION

Compact hydraulic braking solution, precise tooling and NIST-traceable measuring instruments all controlled with LabVIEW software.

RESULTS

Thousands of torque tools tested and calibrated. Systems placed worldwide.



SMOOTH INNER BORE SEAMLESS WELDING SYSTEM

Biopharmaceutical, Biotechnology and Life Sciences

EDC developed an automated seamless plastic pipe welding system for high purity fluid transfer systems. The SIB2 system was used throughout the North America to fabricate bead less welds which eliminate entrapment points in high purity systems.

RESULT

More than 25 systems were fabricated and maintained over a 10 year period. These systems created were used to make seamless, entrapment free, smooth inner bore welds in polypropylene and PVDF throughout the continent.

MEDICAL PRODUCT DESIGN



CHALLENGE

Develop a module that will synchronize multiple signals, such as endoscopic video, audio, airflow, pressure or other physiologic signals to the subframe level for swallowing disorder analysis.

RESULTS

Enabled synchronized capture of endoscopic video and swallowing signals to support the clinical evaluation and treatment of swallowing disorders

The overall system used by Otolaryngologists and Speech Language Pathologists.

MEDICAL DEVICE PROCESS EQUIPMENT



CHALLENGE

Provide equipment that is accurate, repeatable, and user friendly. Ensure that systems can be cleaned and sterilized without compromising cycle time, cross contamination and maintainability.

RESULTS

Unique process equipment that can manipulate anything from syringes to human bone. Using 316L SS to Titanium to PEEK are just some of the materials that can be found in our equipment



ORGANIC DEPOT-LEVEL REPAIR CAPABILITY

CHALLENGE

Transform complex OEM repair procedures into a documented, automated, and repeatable capability that can be deployed at military repair depots.

RESULTS

A fully documented, automated repair capability was successfully established at various military depots. The solution enabled consistent, repeatable repairs using organic personnel, reduced reliance on the OEM, and improved equipment readiness and long-term sustainment.



CUSTOM POWER DISTRIBUTION SYSTEM, LARGE FORMAT LED BACKLIGHTING

CHALLENGE

Provide reliable, centralized power for a large LED-backlit architectural display while maintaining consistent illumination across the entire image. Create a system that can be integrated and maintained easily.

RESULTS

EDC developed a custom multi-channel power distribution system that delivered stable, balanced power to the complete LED array, producing bright, uniform backlighting. This format is in one of their flagship location in France.



CUSTOM MEDICAL DEVICE MANUFACTURING EQUIPMENT

Thin-Wall Mandrel System for Covered AAA Stent Grafts

EDC developed a custom manufacturing system and precision bifurcated mandrels for forming the covering used on implantable AAA stent grafts. The mandrel's welded, 1 mm-wall stainless-steel construction reduces thermal mass, enabling faster heating and cooling during the heat-set process while maintaining the required bifurcated geometry.

RESULTS

Lightweight, uniform thin-walled construction reduced heat set cycle time.

YOUR PARTNER FOR INNOVATION. YOUR ADVANTAGE IN GETTING TO MARKET FASTER.

From concept through production, EDC design and builds custom equipment for aerospace, defense, medical, industrial and energy applications



MECHANICAL ASSEMBLY BUILD TO PRINT



EDC provides complete mechanical assembly services, integrating fabricated and purchased components into precise, reliable systems. Our capabilities include hardware installation, alignment, fitting, pneumatic integration, motion components, and final inspection—supporting everything from prototypes to production-ready equipment.

ELECTRICAL ASSEMBLY BUILD TO PRINT



EDC provides build-to-print electrical assembly, including control panels, cable harnesses, PCB assemblies, and system wiring—all inspected and tested for quality and reliability.

PROTOTYPES AND QUICK-TURN PARTS



EDC provides comprehensive in-house manufacturing capabilities—from rapid SLA and FDM prototypes to precision-machined components and custom sheet-metal fabrication. We also can provide you with precision welding, dip brazed and vacuum brazed components to support complex assemblies requiring exceptional strength, accuracy, and reliability. By bringing these processes together, we help customers move efficiently from concept and prototype through fully integrated, production-ready solutions.

LET'S BUILD YOUR NEXT SOLUTION



From engineering and prototyping through fabrication. Integration and deployment, EDC provides a single source for complex technical programs.

LET'S DISCUSS YOUR NEXT PROJECT



LET US ASSIST YOU IN SOLVING
YOUR NEXT CHALLENGE.

From legacy system sustainment to advanced automation, EDC is ready to help you succeed.

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