



Design Build
Custom Automation Solutions



Serving Diverse Industries Worldwide



DESIGN BUILD: SYSTEMS THAT OFFER A COMPETITIVE ADVANTAGE

Delivering Productivity, Quality, and Efficiency Gains

For over forty years, ABCO has designed and built custom automation equipment for manufacturing companies in a wide variety of industries, ranging from automotive and wire and cable to appliances and furniture. As with all design build projects, our clients have very unique, very specific needs, but collectively, they share common goals. Every client wants to increase productivity, improve quality, and gain efficiencies—but most of all, achieve a competitive advantage in their marketplace. And, we have proven time after time that with our design and build team's experience and knowledge, we can craft custom solutions that deliver those benefits.

How We Work With a Client

ABCO's design build process is structured and well documented and starts with a rigorous concepting phase. A multi-functional team develops a concept that not only meets the project requirements, but factors in ease of use, capacity, footprint, and cost. We then go to work creating a virtual layout using Visual Components Software.

With Visual Components 3D Event Simulation Software, we design layouts using numerous models and factory components, such as pre-engineered conveyor units and industrial robots. The software helps us plan and optimize factory/production line layouts as well as provide visualization and simulation of factory/production lines. From our experience, we have determined that simulation is one of the most critical steps in the design process. It lets us develop an accurate version of a factory or production line with all the components operating in a real environment. It also allows us to perform feasibility studies and collision detections as well as calculate cycle times.

When we're satisfied that we've created an optimal solution, our estimating team and applications engineers build a proposal that covers operational sequences, detailed equipment lists, project team's responsibilities, schedules, acceptance tests, field services, documentation, and costs.



ABCO Engineers Deliver Solid Solutions

In conjunction with ABCO's project management team, our electrical and mechanical engineers manage the design build project's process, ranging from overall conceptual engineering to detailed design and machine and system programming. With 50 plus engineers on staff, we're poised to design a solution for any manufacturing environment and any system type. ABCO design engineers are well-versed in SolidWorks 3D Software. Through this dynamic software package, we are not only able to create mechanical and electrical designs, we have the ability to:

- Execute thorough concept evaluations
- Create e-drawings for client collaboration
- Perform a finite element analysis for determining potential part issues
- Generate drawings for instruction and maintenance manuals
- Produce manufacturing drawings and electrical schematics

We methodically test our models to ensure that the proposed solution produces the desired end result in the allotted space. In addition, we use SISTEMA software on all projects to verify that our designs meet the required performance level(s) per our risk assessment. This practice helps eliminate potential design flaws and produce a more resilient solution that stands up in a real-world production environment. As part of the design process, we provide interactive design reviews to eliminate surprises and gain design enhancements and improvements. Also, ABCO engineers are accessible for machine assembly, startup support, and field support.

ABCO Project Managers Handle All the Details

Our project managers are degreed mechanical or electrical engineers and PMP-certified project leaders who follow standardized processes based on Project Management Institute (PMI) best practices and the ISO 9000 process. It's the project manager's responsibility to clarify and align the project's key objectives and deliverables with the client's requirements. The project manager handles all phases of the project, including concept, design, construction, factory acceptance testing, and start-up through successful completion.



Industries ABCO Serves

- Agriculture
- Automotive
- Consumer products
- Food / beverage
- Medical devices
- Pharmaceutical
- Tobacco
- Wire and cable

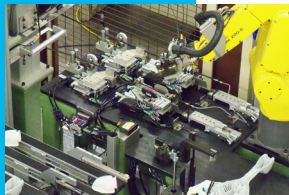


SOLUTIONS TO FIT EVERY APPLICATION



Robotics

With many years of robotics development and implementation experience, ABCO can design and build a robotic automation solution for any manufacturing process. Our systems portfolio includes vision-guided robots, small parts assembly, automated test systems, robotic dispensing, and large material handling systems with flexible robotic work cells.



Assembly Systems

From lean semi-automatic assembly stations to large synchronous precision indexing machines, ABCO can design and build an assembly system that meets specific client needs, adheres to the budget, delivers on-time, but most all improves the manufacturing process.



Dispensing Systems

Whether a small footprint cell with a single functioning robot or part of a large complex cell with several multi-tasking robots, ABCO can design and build a robotic dispensing system for any application, including those treatments with complex contours or curves, and in any industry.



Packaging Automation

ABCO packaging automation systems include solutions for the front, middle, or end-of-line packaging sections. We can design and build systems to accommodate product case erection, product pick and place, inspection, case packing, case sealing, labeling, palletizing, and depalletizing.



Material Handling

Whether a stand-alone cell or comprehensive production line, ABCO can design and build an automated material handling system to fit virtually any application. We have extensive experience with all facets of the material handling process including: robotic product selection, product transfer, packing, palletizing, and loading/unloading.



Inspection and Testing

From stand-alone test stations to online 100 percent inspection systems, ABCO can design and build specialized inspection and testing equipment to enhance the inspection process, provide a production line overview, and identify/classify defects. Our strengths in machine vision, control systems, and customized part handling enable us to deliver quality turnkey solutions.



Vision Systems

ABCO can design and build a wide range of custom vision solutions to help detect product defects, monitor production lines, guide assembly robots, and recognize barcodes or optical characters as well as track, sort, and identify parts.



Equipped to Deliver Quality Components and Assemblies

ABCO boasts 30,000 square feet of in-house metal fabrication and machining. This work space allows us to provide custom quality-controlled components and assemblies that support the requirements of our design builds as well as enables us to deliver a fast turn-around time.

We have extensive machining equipment, including CAD/CAM machinery for CNC milling, drilling, turning, and grinding operations on all types of metal and plastic materials. Our specialties lie in CNC horizontal turning, vertical 5-axis milling, horizontal milling, and high-speed machining. With those particular capabilities, we are able to precision machine parts from 1" to 120". In addition, ABCO has a vertical boring mill for machining heavy or large parts with diverse shapes.

As part of our end-to-end welding process, we perform Non-Destructive Examinations (NDE) on welded components to locate and determine any defects. Applying Visual Inspection (VT), our Level II and Level III NDE inspectors practice in accordance with SNT-TC-1A. With tools such as fillet gauges, magnifying glasses, tape measures, and calipers, inspectors can reveal spatter, excessive buildup, incomplete slag removal, cracks, heat distortion, undercutting, and poor penetration.



EMPLOYEES

160

1/3 Engineers

ASSEMBLY SPACE

170

Thousand Square Feet

MACHINE / FAB SPACE

30

Thousand Square Feet

SINCE 1977

40+

Years in Business

THE ABCO DIFFERENCE

VALUE-ADDED SERVICES



Mechanical Engineering Services

Design for Manufacturability
Finite Element Analysis
Simulations: Motion Analysis



Electrical Engineering Services

Test, Debug, and Start-up
HMI Design and Programming
UL Panel Design Build



Field Services

Installation Supervision
Start-up and Training
Failure Mode / Effects Analysis



Machine Rebuilds

Electrical and Mechanical Updates
Update Drawing Packages
Safety Updates



Project Management

PMP / PMI Certified
Degreed Engineers
Safety Assessment / Risk Analysis



Spare Parts

Drop Ship Direct to End Users



Technical Writers

Operator and Maintenance Manuals

MACHINE BUILDING

BUILD STANDARDS

UL
CE
CSA
RIA
Aseptic
3A Dairy
Medical

INDUSTRY EXPERTISE

Agriculture
Automotive
Consumer Products
Food and Beverage
Medical Devices
Pharmaceutical
Tobacco
Wire and Cable

MACHINE EXPERTISE

Assembly
Dispensing
Filling
Inspection
Material Handling
Packaging
Robotics
Winding

MACHINING

Boring Mill
CNC Mills
Turning Centers
Lathes
Grinders

FABRICATION

Certified Welders
Forming
Laser Cutter
Waterjet
NDT Certified

MATERIALS

Aluminum
Carbon Steel
Plastics
Stainless Steel
Sheet Metal

IN-HOUSE CAPABILITIES





6202 Technology Drive | Greensboro, NC 27214 | O: 336.375.6400 | F: 336.375.0090 | goabco.com