

Mobility Body & Structure Assembly

Body Assembly • GEO tooling • Closures • Glass Decking • Vehicle On Wheels • Flexible automation development • Future product capability process planning • Automated and manual system development for MIG welded assemblies • Structural frames • Light and heavy gauge materials • Reprocess and kit legacy systems • Heavy Deposition Welding

Material Handling

AGV / SDV • Robotic • Servo • Conveyance • Racking / De-racking • Hang Tools • Manual manipulators • Aerospace carts and dollies • Robotic material removal

Custom Machine / Application Development

Difficult To Automate • Process specific solutions • Scalable production volumes • Increase process capability • Defect reduction and improve First Pass Yield

Manufacturing and Automation Consulting / Productivity Improvement

Product development consulting • Simultaneous Engineering services • Manual labor and capital equipment balancing for optimal ROI • Design For Manufacturability (DFM) • Materials and joining technology selection • Product and manufacturing standards development • Cost estimation and reduction • Supply chain development • Design Review • Evaluation of existing product automation opportunities • Risk Assessments • Site Assessments • Ergonomics • Equipment • Quality • Technology upgrades • Workforce Optimization

Robotic Application Development

Collaborative Robotics • Fenceless Systems • Traditional 6-axis robotic systems • Mobile Robotics • Custom End-Of-Arm-Tooling • High accuracy applications



Additive Manufacturing

Product Design for 3D Printing:

Design for Additive Manufacturing (DFAM) • Topology Optimization and Generative Design • Latticing • Field Driven Design • Finite Element Analysis (FEA) • Build Optimization

Commercial Printing Services:

Multi Jet Fusion (MJF) HP 5270:

380mm X 284mm X 380mm Build volume
20µm X & Y • 80-110µm Z Layer resolution
Print Media: PA12 • PA12GB • PA11

Fused Deposition Modeling (FDM) Markforged, Mark Two:

320mm X 132mm X 154 Build Volume
100-200 µm Layer Resolution
Print Media: Onyx • Nylon • Precise PLA • Smooth TPU

Internal Part Geometry – Closed Cell Infill

Continuous Fiber Reinforcement:

Carbon Fiber • Kevlar • HSHT Fiberglass

3D Inspection and Reverse Engineering

Prototype Containerization

Design • Prototype • Low volume builds for specialized containers

Dissimilar Material Joining Technique Development

Self-Piercing Rivets – manual and automated • Flow Screws – automated • Adhesives dispense systems

Vision Systems

Guidance and Best-Fit • Quality Validation
• Safety

Laser Technologies

Welding and cutting • Ablation • Seam Tracking



Services Offered

Simulation:

Process Validation • Digital Twin • Event Based Simulation • Process Simulate • Robot Studio • Robcad • Roboguide

Mechanical Design:

Disciplines: Tool Detailing • Design Checking • Teamcenter Administration • Process Development • Throughput Engineering • Ergonomics / MODAPTS • Robotics Simulations • System / Line Layout • Technical documentation development • Weld gun selection • Controls sequence development.

Software: NX • FIDES • Catia • Teamcenter • Process Simulate • Process Designer • AutoCad 2D/3D • Robcad • Delmia • Factory CAD • eM Planner • Inventor • Solidworks • Ansys Discover • Ansys Mechanical • nTopology • Materialise Magics.

Controls Design:

Architectures: Allen-Bradley • Siemens • Omron • Mitsubishi • PC-based controllers

Disciplines: Electrical hardware design • Software design and development • HMI design and development • SCADA • MES applications • Safety configurations • Motion Control

Fabrication and Machining / Build to Print:

Platforms and balconies • Ground Support • MRO equipment • Stairs and railings • Weldments • Pedestals • Stands • Fixtures • Robot Risers • End-of-Arm-Tooling • Trunnions • A-Frames • Prototyping • Low-volume manufacturing • Trim Fixtures

On-site Installation and Decommissioning:

Project Management • Site Management • Skilled Trades

Staffing Solutions

Project-based labor • Temp-To-Hire • Permanent Placement • Managed Service Provider

Metrology:

Field Checks • Floor Layout • Equipment Leveling • Tooling Certification • Robot-To-Fixture Calibration • Weld Spot and Joining Layout • Repeatability Study • Detailed Part Inspection • Best Fit Laser Scanning • 3D Point Cloud Scanning



Certifications

AS9100D / ISO 9001:2015

ISO 14001:2015

AWS – American Welding Society: Steel and Aluminum • Certified Welding Inspector

CWB – Canadian Welding Bureau: Steel and Aluminum

ITAR – International Traffic in Arms Regulations

GSA – General Services Administration

FEMIA - Mexican Federation of Aerospace Industries

Affiliations

A3 (RIA) – Association for Advancing Automation

NMSDC / MMSDC – National and Michigan Minority Supplier Development Council

MHCC – Michigan Hispanic Chamber of Commerce

NCDMM – National Center for Defense Manufacturing and Machining

SMLC – Smart Manufacturing Leadership Coalition

NDIA – National Defense Industrial Association

MAMA – Michigan Aerospace Manufacturers Association

Supplier Partnership Programs

Fanuc • ABB • Preston Eastin (manipulators – weld/assembly positioners) • Vention • Atlas Copco • HP • Ansys • Lasertronics • On Robot • Kawasaki

CAGE Codes

331221	334418	541330
332312	336112	541430
332439	336211	541611
333514	336413	541612
333923	336419	541614
333992	337215	811111
333999	541330	

