

# Mobile Off-Highway



# Solving Your Motion Control Challenges With Ingenuity

Evolution Motion Solutions is a leading engineering partner, systems integrator, and value-add distributor of advanced hydraulic, electromechanical, pneumatic, and automation technologies.

For over 80 years, our innovative solutions have been built on a foundation of technical excellence and industry-leading components designed for factory automation, heavy industrial, and mobile/off-highway applications.

We may not manufacture our customers' systems and machines, but we do help them run more efficiently and reliably by optimizing production time and enhancing performance.



## Mobile/Off-Highway

Evolution Motion Solutions provides technical expertise and resources to supply integrated solutions for actuation, optimization, propulsion, and electrification technologies for mobile/off-highway applications. With unparalleled experience in mobile product application and value-added distribution, Evolution is your trusted engineering partner for system and subsystem integration, conceptualization, production, installation, and support.



## Heavy Industrial

Evolution Motion Solutions Heavy Industrial encompasses everything required to design, build, maintain, and optimize hydraulic systems. We provide a wide array of value-added services that include locally-performed certified repairs and industry-leading hands-on training. With over 80 years of industry experience and technical expertise in hydraulics, electronics, drives, and controls, we inspire customers to do more than they ever thought possible.



## Factory Automation

Evolution Motion Solutions provides integrated engineering solutions, expertise, and resources for automation, controls, pneumatic, electrical, hydraulic, sensing, joining, dispensing, and lubrication applications. With over 80 years of unparalleled experience in industrial product application, Evolution is your expert engineering partner for system and subsystem integration and value-added distribution, from initial concept and product to development and support.



**LEARN**



**THINK**



**PLAN**



**INTEGRATE**



**DESIGN**



**SUPPORT**



**SOURCE**



**TEST**



**BUILD**

# **Complete Life-Cycle Support**

# One Team. Infinite Solutions.

Driven by a passion for innovative technology and conquering challenges, we develop solutions that keep our customers moving toward the future. From concept to completion, we provide exceptional customer service deeply rooted in our Commitment to Excellence.

- Solutions Based Engineering
- Design Engineering for Hydraulics, Pneumatics, Lubrication, & Mechanical Solutions
- Machine Control Design Experience
- Hardware & Software Design
- Concept & Process Engineering
- System Integration Solutions
- Subsystem Efficiency Solutions
- Modification of Machines to U.S. Standards & Specifications
- Quality Assurance According to ISO 9001:2015 & AS 9100D
- Designs & Capabilities According to U.S. & European Standards NFPA, UL, CE

## Elements of Success

From our beginnings as a trusted resource for premier components, we have evolved into Evolution Motion Solutions, an engineering partner, systems integrator, and value-add distributor (ESV).

As the world's first ESV, we provide our customers with highly engineered solutions for motion control tasks. By leveraging our group members' diverse industry experience and product knowledge, we engineer technically superior solutions with sustainable value.



We function as an extension of your engineering team. By delivering tailored solutions that address your specific needs, whether concept engineering, system expertise, or R&D, we ensure success and innovation at every step.

- Application Engineering
- Custom Products & Solutions Designs
- 3D Modeling & FEA Analysis
- Application & Technical Support
- Product & Machine Expertise
- Research & Development
- Product Launch Support



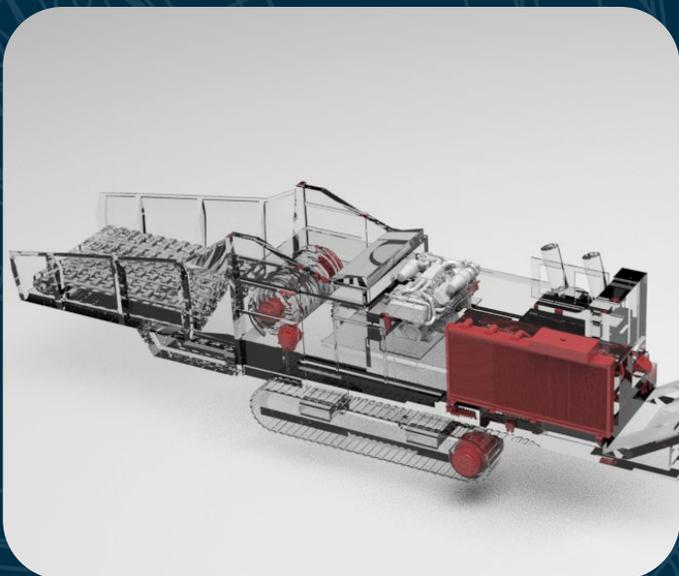
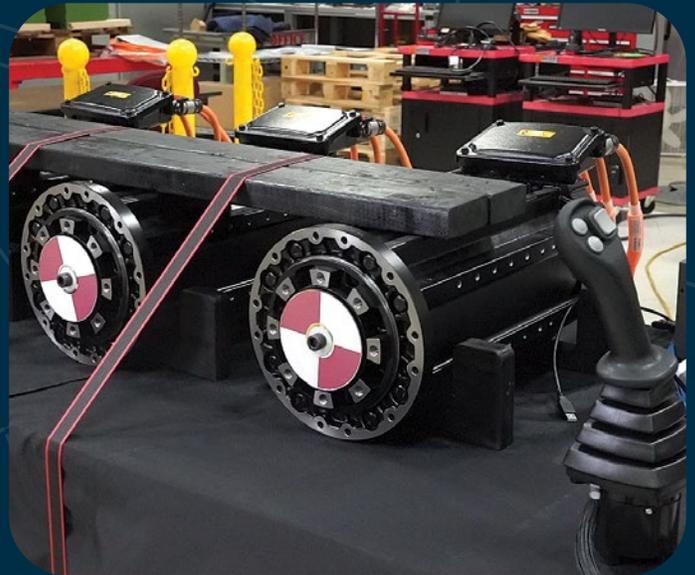
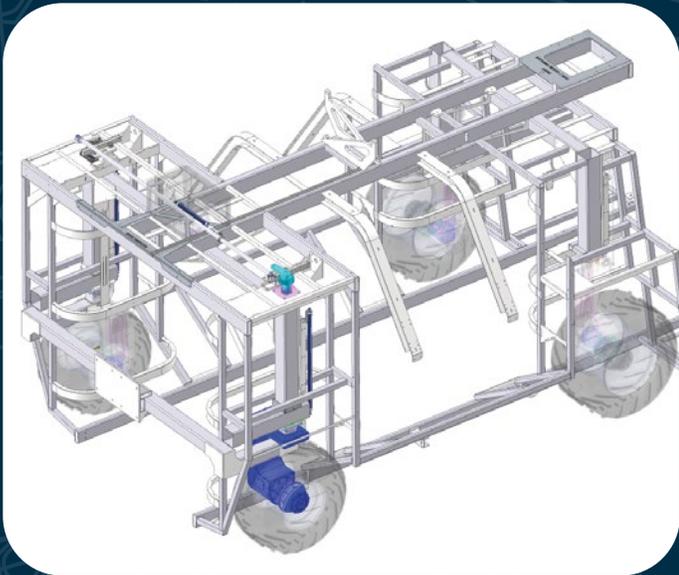
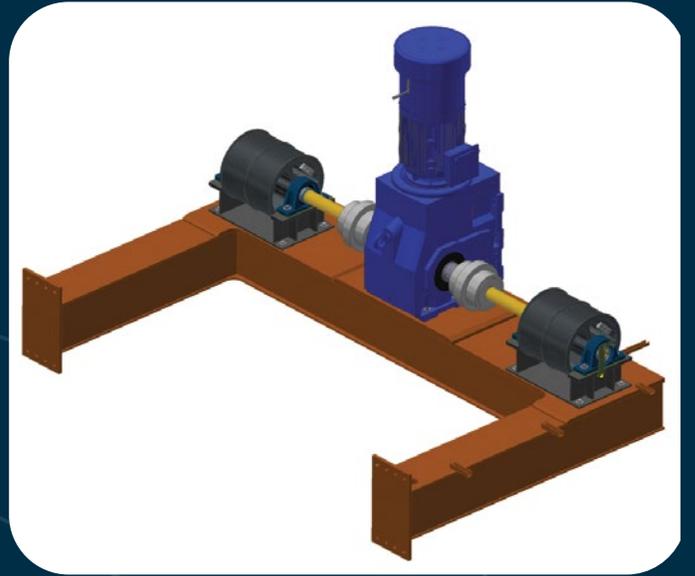
Our engineering expertise extends to integrating new and legacy systems, optimizing them for improved performance, reliability, and longevity by delivering application assistance, subsystem aggregates, and complete system solutions.

- Application Assistance
- Configured Assemblies
- Product Sizing & Selection
- Integrated Products
- Custom System Design & Manufacturing
- Subsystem Aggregates
- Complete System Solutions



We go beyond traditional distribution by offering value-added services such as 24/7 support, product kitting, and inventory management. We provide high-quality components and solutions that meet your needs—every time.

- 24/7 Support
- Customer Service
- Factory Trained Repair Technicians
- Inventory Management
- Configured Assemblies
- Product Kitting
- Product Support
- Service Technicians
- Training
- Advanced Product Training





## Expert Conceptual Engineered Solutions

The Motioneers are a team of dedicated engineers who create custom conceptual engineering motion control solutions for mobile applications. Serving as an extension of your engineering team, the Motioneers collaboratively partner with you to learn and understand your application's requirements and specifications so they can create the most efficient system design solution. By partnering with the Motioneers, you gain a team of expert mechanical, electrical, and controls engineers who provide concept engineering solutions for many technologies, applications, and industries - at no additional cost.

### Technologies

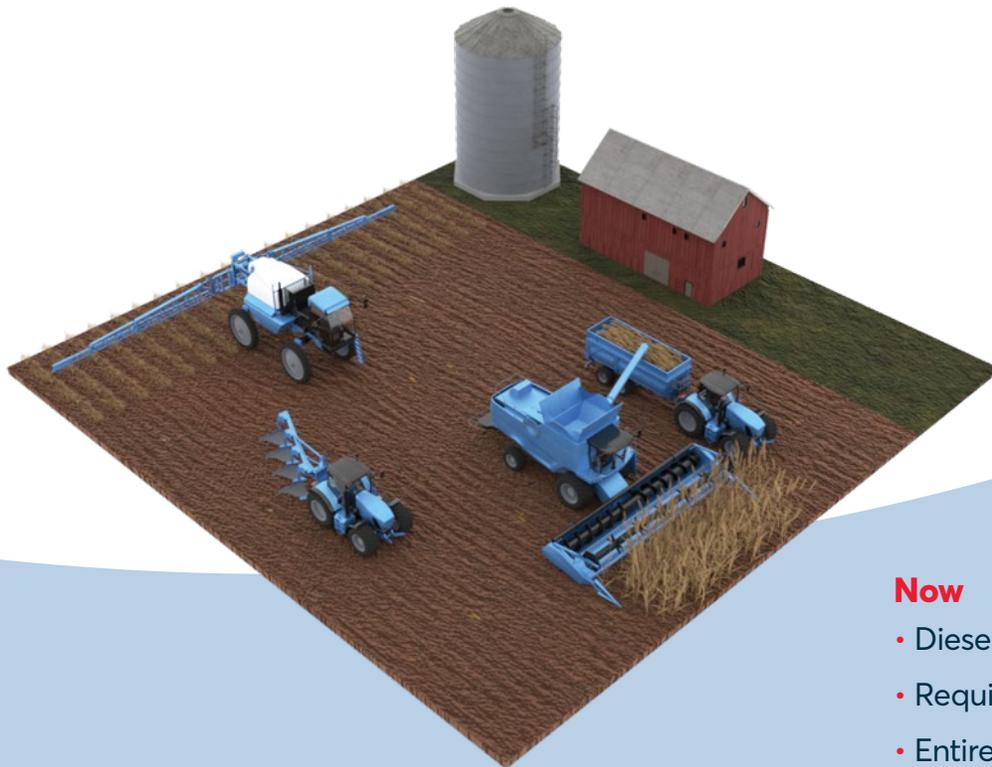
- Propulsion
- Actuation
- Optimization
- Electrification

### Industries

- Agriculture
- Construction
- Energy
- Material Handling
- Mining
- Municipal Machines
- Waste Management

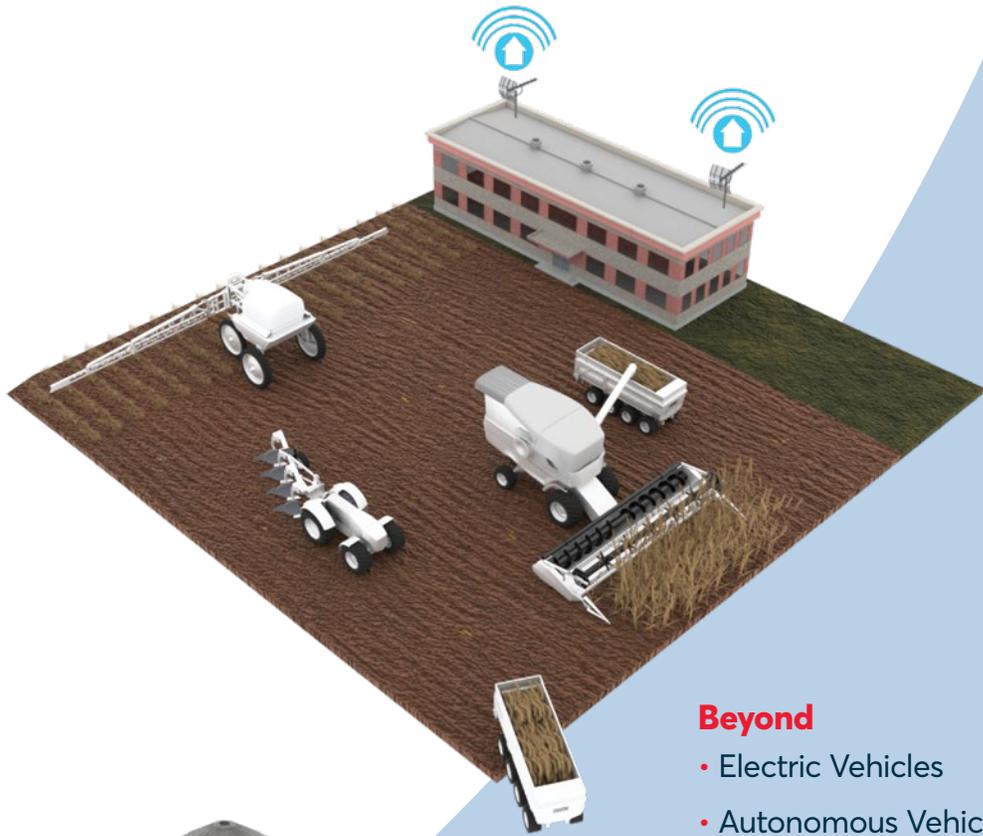
# Innovation That Keeps You Moving

OEMs and machine manufacturers increasingly demand mobile working machines that are more productive, safe, flexible, and energy efficient. Evolution Motion Solutions Mobile business unit is equipped to support those machines throughout and beyond the Industry 4.0 revolution.



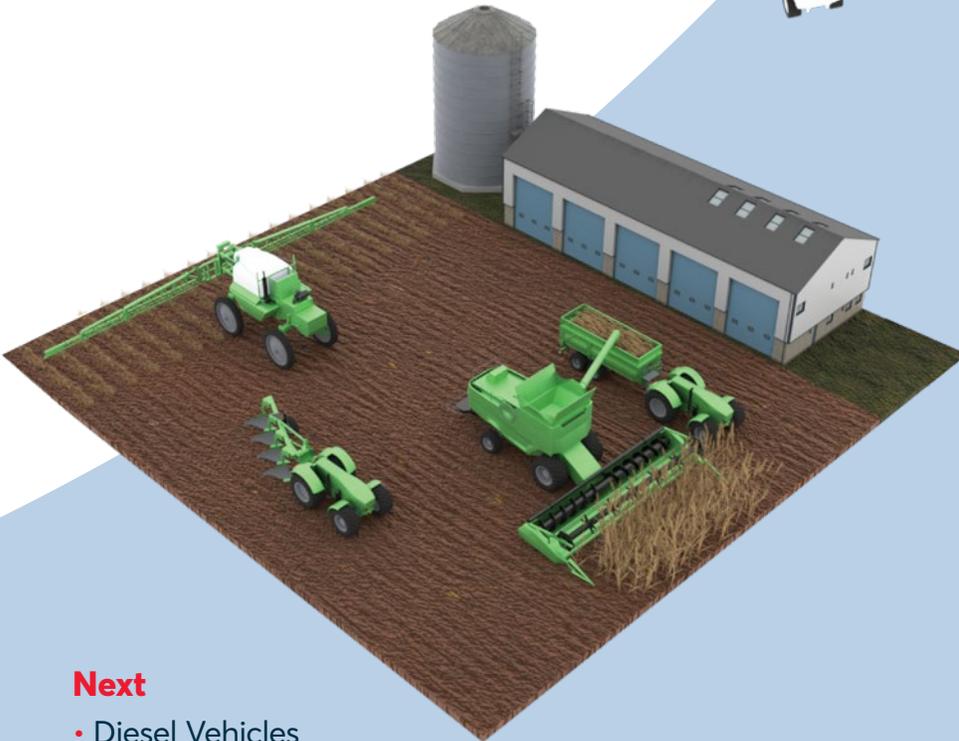
## Now

- Diesel Vehicles
- Require Skilled Drivers
- Entirely Manual Processes



### Beyond

- Electric Vehicles
- Autonomous Vehicles
- Controlled via Cloud Computing
- Hydrogen Powered Vehicles



### Next

- Diesel Vehicles
- Semi-Manual Processes
- Controlled On-Site
- Electric Vehicles
- Telematics
- Advanced Sensor Technology

## Propulsion Solutions

For your propulsion needs, Evolution Motion Solutions calculates gradeability, traction control, speed, and torque performance to design optimized systems – always with full engineering performance design and safety in mind.

**Variable Displacement Pumps**

**Variable Displacement Motors**

**Gear Pumps and Motors**





Propulsion

## Propulsion Solutions

Our propulsion solutions support 2- and 4-wheel drive coordination and anti-slip traction control in any condition, which help us meet end-user demands for reproducible and smooth driving behavior with and without load. We can also accomplish horsepower limiting and support off-road cruise control with our reliable components and turnkey solutions.

**Planetary Gear Drives**

**Steering Orbitals**

**Foot Pedals**

**Electric Drive Packages**

**Gearboxes**

**Joysticks**





Propulsion



## Actuation Solutions

Actuation solutions from Evolution Motion Solutions help you meet the challenges of today's markets as you gain access and control over the power, safety, and efficiency of your mobile machines. Rely on our tools to configure custom, standard, and combination valve packages, ensuring accurate repeatability of automatic and control functions.

### Control Valves

- Sectional Control Valves
- Integrated Cartridge Valves
- Proportional Valves
- On/Off Valves

### Manifold Assemblies

- Custom
- Bankable

### Cylinders

- Hydraulic
- Pneumatic
- Electric





Actuation

## Actuation Solutions

Let Evolution Motion Solutions' advanced technology and cutting-edge engineering solutions improve the efficiency, versatility, and performance of your next-generation machines. By coordinating components to meet optimum standards, our systems improve handling and increase precision in daily operations.

### Motors

- Fixed Displacement
- Low-Speed, High-Torque
- Variable Displacement

### Planetary Gear Drives

- Slew Drives
- Slew Bearings
- Swing Drives
- Winch Drives

### Compact Power Units

### Joysticks

- CAN Bus
- Electric
- Manual





Actuation

# Optimization Solutions

Save time and money as our optimized solutions help to increase your system's longevity, prevent damage, and reduce downtime. Evolution Motion Solutions adjusts to ever-changing industry standards and provides optimal solutions no matter your need – driving or working, hydraulic, hybrid or fully electric – including Tier IV final and Stage V emissions standards while monitoring the development of Tier V standards.

## Filtration

- Pressure
- Return Line
- Tank Mounted
- Suction
- Breather

## Diesel Fuel Filtration

### Cooling Systems

- Engine Combi Coolers
- Hydraulic
- Heat Exchangers

## Accumulators

- Bladder
- Diaphragm
- Piston

## Reservoir Optimization

- Air Separation
- Reduced Oil Capacity
- Tank Size Reduction

## Engine Flywheel Couplings

### Fan Drive Packages

- Electric
- Engine Driven
- Hydraulic

## Fluid Care

- Particle Counting
- Oil Life Prediction
- Water Content Measurement

## Lubrication

- Automatic
- Manual

## Mounting Accessories

- Clamps
- Band Straps





Optimization

# Electrification Solutions

Our electric, electronic, and digitally networked solutions offer innovative and comprehensive monitoring, service, and control concepts to help satisfy your constant and growing demands for operational availability, reduction in downtime, and detailed load and service management. Evolution Motion Solutions can help you create your next generation of mobile machines with performances that give you access to increased power, safety, efficiency, and intelligence.

## Controllers

### Displays

- HMIs

### Electric Ground Drives

### Low-Voltage Electrification

### High-Voltage Electrification

### Radio Remote Controls

### Sensors

- Angle
- Distance
- Flow
- Position
- Pressure
- Proximity
- Safety
- Speed
- Temperature

## Telematics

- Fleet Management

### Diagnostics

### Electric Cylinders

### Electric Auxiliary Pump Drives

### Foot Pedals

### Joysticks

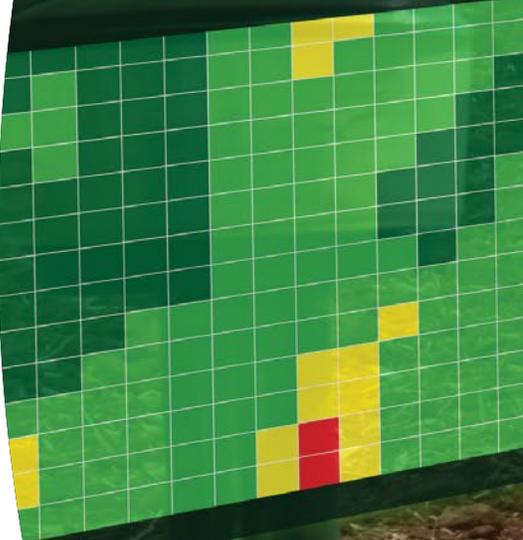
- Electronic
- Hydraulic

### Vision Systems

- 3D
- Collision Avoidance



Nitrogen in Soil





SELF DRIVING



## Mobile Control Solutions

Evolution Motion Solutions is a leader in systems integration with the knowledge and expertise to deliver advanced custom control solutions for mobile and off-highway applications. With over three decades of experience designing and engineering systems, Evolution provides plug-and-play solutions customized to fit any mobile application need, from radio controls and relay logic to complex CAN Bus systems, SAE J1939-based controls, and wireless data communication networks.

- Custom Engineering**
- Knowledgeable Tech Support**
- In-House Prototyping & Repair**
- Rugged & Durable Designs**
- Serviceable Products**
- Systems Integration**
- Designed & Manufactured in the USA**





### VACUUM CONTROLS

BLOWER OFF



BLOWER ON

VAC. RELIEF OPEN

VAC. RELIEF OPEN

VAC. ENHANCER OPEN

BLOWER OFF

VAC. RELIEF CLOSE

VAC. ENHANCER CLOSE

### SYSTEM CONTROLS



### AUX. LIGHTING CONTROLS

BOOM WORK LIGHTS ON

WORK LIGHTS ON

INTERIOR WORK LIGHTS ON

BOOM WORK LIGHTS OFF

WORK LIGHTS OFF

INTERIOR WORK LIGHTS OFF

BOOM UP

BOOM LEFT

BOOM IN

BOOM DOWN

BOOM RIGHT

BOOM OUT

### TANK CONTROLS

TRASH PUMP ON

VIBRATOR ON

TANK UNLOCK

TANK LOCK

TANK UNLOCK

TANK UNLOCK

TRASH PUMP OFF

TANK UNLOCK

TANK LOCK

TANK UNLOCK

TANK UNLOCK

DOOR OPEN

DOOR CLOSE

TANK UP

TANK DOWN

WORK MODE

THROTTLE ON

THROTTLE UP

ROAD MODE

THROTTLE OFF

THROTTLE DOWN



ALARM ON

HYD. OIL TEMP

EMERGENCY STOP



## Propulsion

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**Variable Displacement Motors**

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CAN Bus

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## Mobile Controls

### Custom Engineering

### Knowledgeable Tech Support

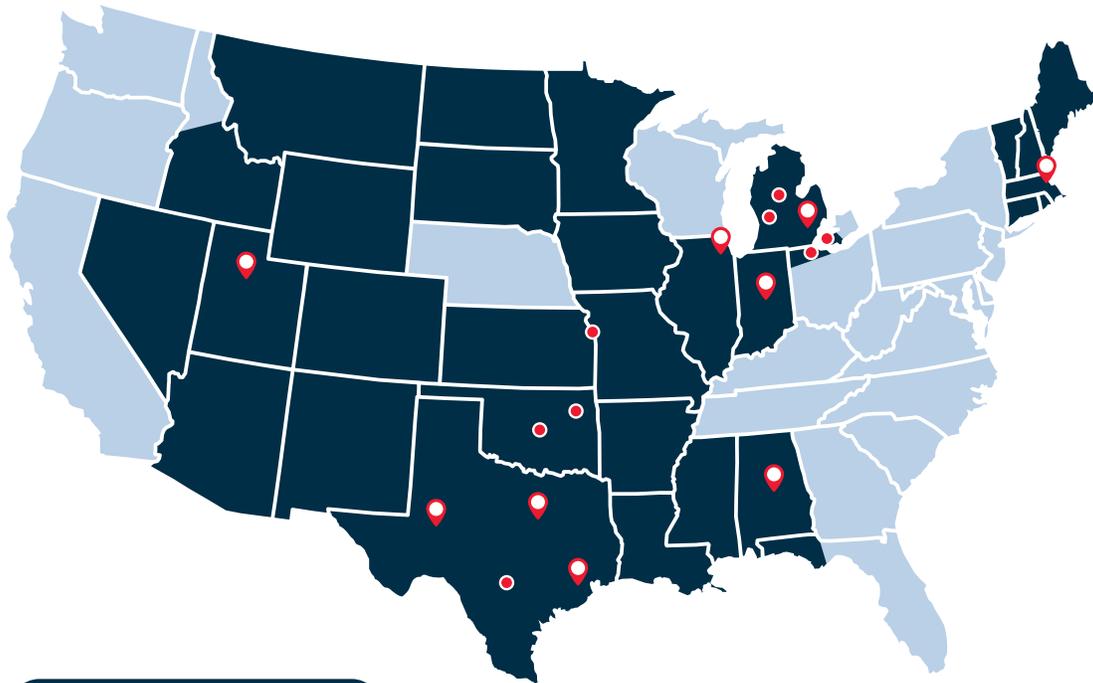
### In-House Prototyping & Repair

### Rugged & Durable Designs

### Serviceable Products

### Systems Integration

### Designed & Manufactured in the USA



 **Warehouse & Sales**  
 **Sales Offices**



### HEADQUARTERS (Dallas)

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