



EM Engineering Solutions LLC
Innovators of Turn-Key Engineering Solutions

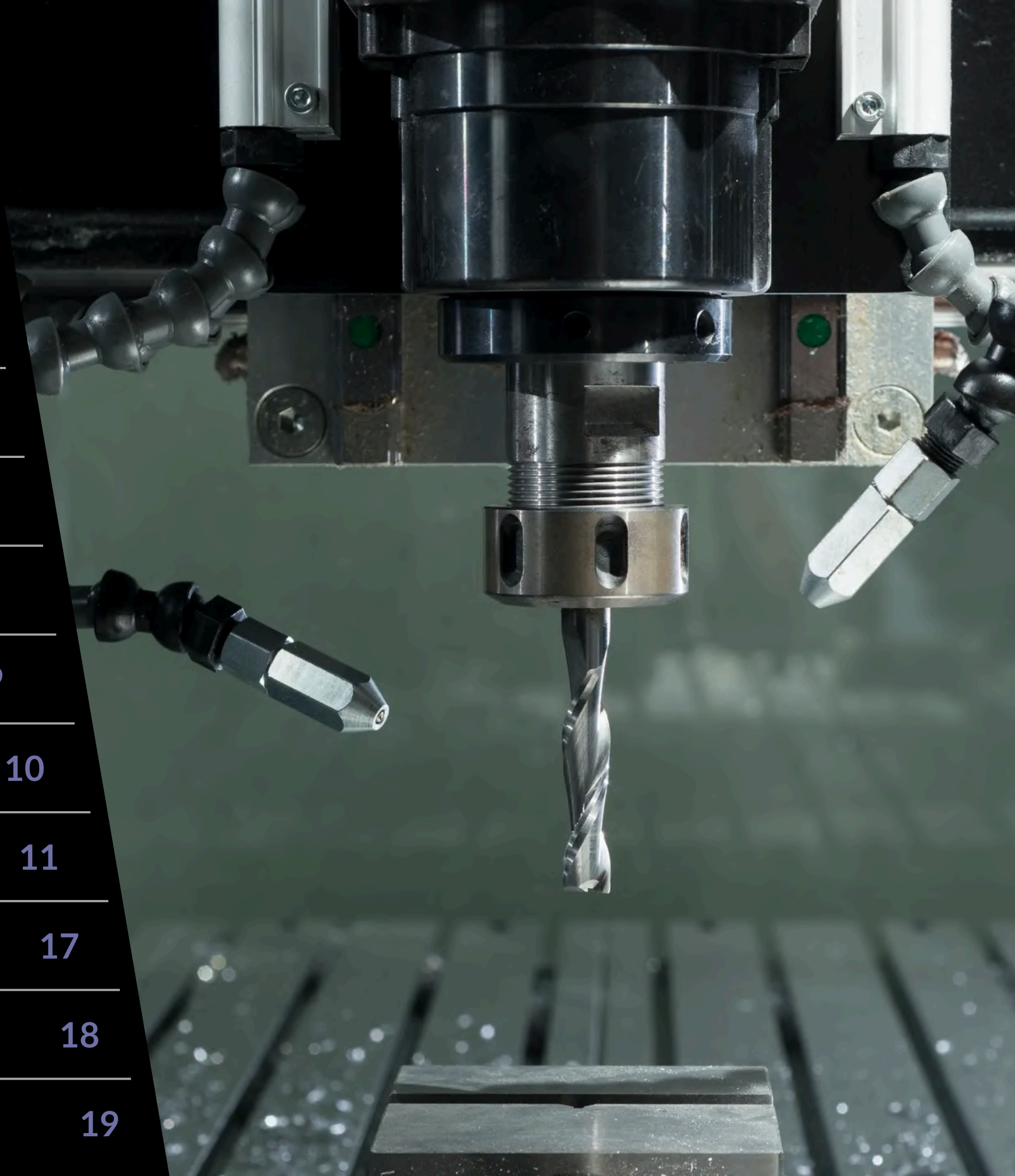
Company Profile

2025 EM Engineering Solutions LLC ©

Revision: V4.5.3 Last Updated: 04/14/2025

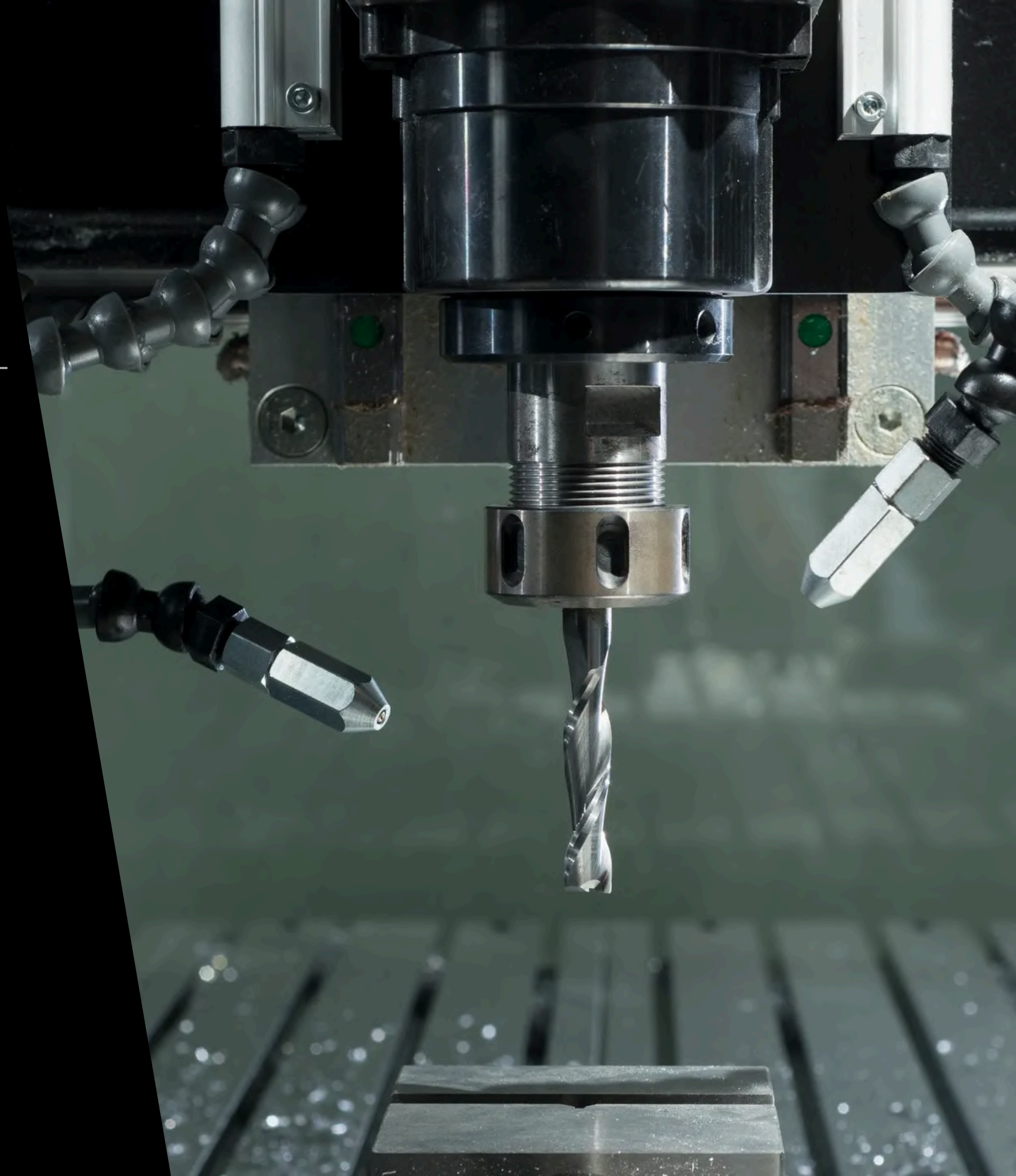
AGENDA

About the Company	4
Our Mission & Vision	5
Our Core Values	6
History	7
EM's Market Share	8
The Future of EM	9
Internal Research	10
Engineering Solutions	11
Internal Products	17
Engineering Tools	18
Concept Vehicles	19



AGENDA (Cont.)

Joint Ventures & Virtual Extension	20
Why Choose Us?	21
Contact Information	22



WHO IS EM?

EM Engineering Solutions LLC, founded in 2018 in South Lyon, MI, is a multidisciplinary engineering design and consulting firm with Value-Added manufacturing capabilities. EM prioritizes providing contract turnkey engineering solutions and services to any industry, servicing small businesses and startups to Fortune 500 firms worldwide.

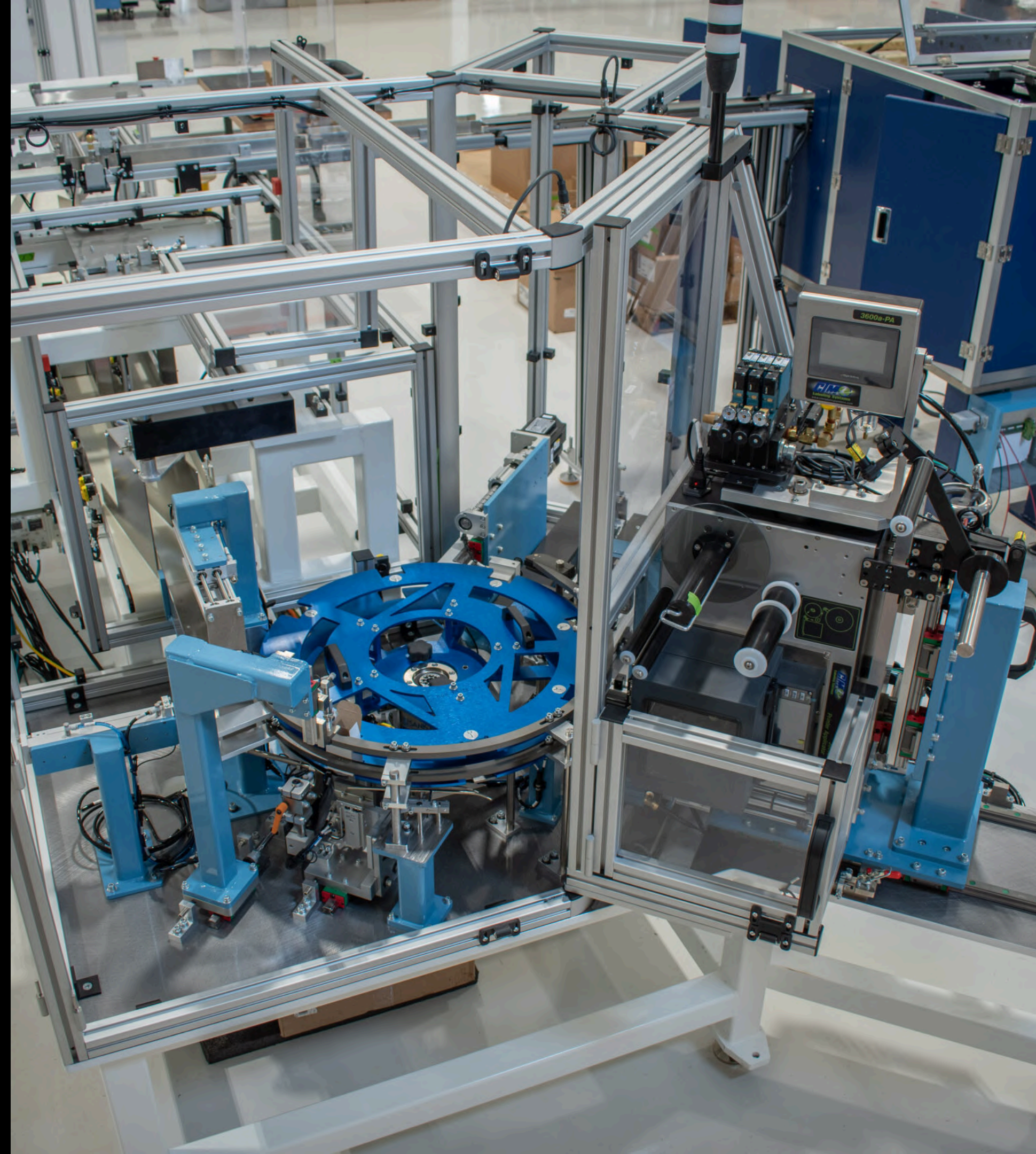


Our Mission

Our goal is to provide turnkey multidisciplinary engineering solutions to firms at a transparent rate, prioritizing the client's needs and ensuring transparency is upheld across the design processes from conceptualization to production, ending with a product that works as simply as turning a key. We dedicate ourselves to creating your visions through our products with the utmost quality and professionalism

Our Vision

Our Vision is to create a world where the use of LEVs and BEVs is sustainably supported by proven, researched technologies available to the public. In addition to providing multidisciplinary engineering design services, EM develops LEV and BEV systems and manufacturing solutions for startups and larger OEMs to utilize in their designs. We prioritize our in-depth industry research to complete our vision and give back to our communities.



OUR CORE VALUES



Commitment to Quality

At EM Engineering Solutions LLC, we are committed to providing the utmost quality in our products and services, ensuring that every product and deliverable is up to industrial standards and properly delivers and achieves the goals set forth at its conception.



Turnkey Ecosystems

We specialize in developing turnkey ecosystems that create rapid value and work seamlessly across their integrations. Our design methodologies are heavily based on DFM/A/A/T principles, allowing our designs to work as simply as turning a key.



Integrity & Transparency

We believe that honesty, integrity, and transparency are the core foundations of business. We pride ourselves in ensuring transparency is maintained across the entire engineering design process, giving clients an increased understanding of provided services.



Innovation & Research

Innovation & research are the core foundations on which EM was founded, we pride ourselves on our continued success in research and innovation, allowing for all audiences to be reached by our studies, promoting and giving back to young minds in STEM in our communities.



Always Improving

As the industry is constantly adapting and changing, EM is committed to always striving for improvement, aiming to create the best solutions available with newly researched and proven technologies. Achieving the insurmountable is the feeling we hope to instill in everyone.



Safety & Ethics

Safety & ethics are our prime concern in the development of multidisciplinary engineering services. We always ensure all specifications are up to industry-accredited standards and fulfill the duties they are assigned and present no public hazards.



Accountability & Professionalism

We hold ourselves accountable for all designs that are within the confines of our facilities, ensuring they leave our development to clients' satisfaction. We uphold the utmost professionalism in the performance of multidisciplinary engineering services.



Client-Centered Approach

Implementing a client-centered approach, focusing directly on the client's needs across multidisciplinary engineering design services, allows us to ensure that all the client's requirements and satisfaction are met when implementing our designs and services.

OUR HISTORY

How EM has changed over time

2018

EM Was Founded

EM was founded in 2018 as a research organization, researching and developing LEV systems, vehicles, & components. EM researched alongside like-minded firms, collaboratively researching LEVs to promote sustainable transportation technologies.

2020

EM Moves Into Consulting

Via its in-depth research experience, EM moved into consulting, providing firms with solutions and the knowledge we gained in the LEV market. The start of concept vehicle design and production for *Project Raptor*.

2022

EM Moves Into Contract Engineering Design

Throughout the process of research, design, and development of Project Raptor and other LEV systems, EM gained vital industry knowledge and experience in industrial design and DFM, allowing EM to move into full contract engineering design for mechanical and electrical applications.

2024

Policy Amendments

Throughout 2024, EM took great care to revitalize all its contract engineering policies to ensure organizational efficiency and prioritize client satisfaction, allowing for a smooth expansion of services and markets into 2025.

OUR MARKET



1,000,000

Manufacturers, Startups,
Consumer Electronics Industry



50,000

Medical, Aerospace, and
Other Industrial Firms



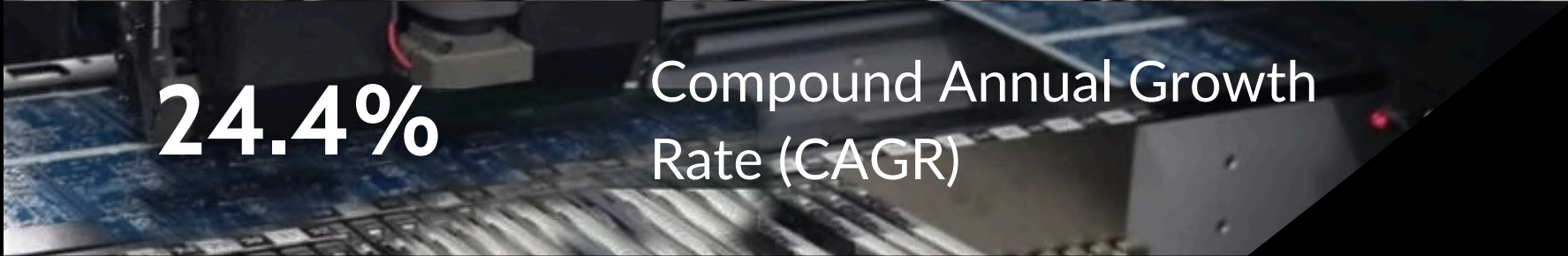
30,000

General LEV/EVSE Market,
OEMs & Tier 1 Suppliers



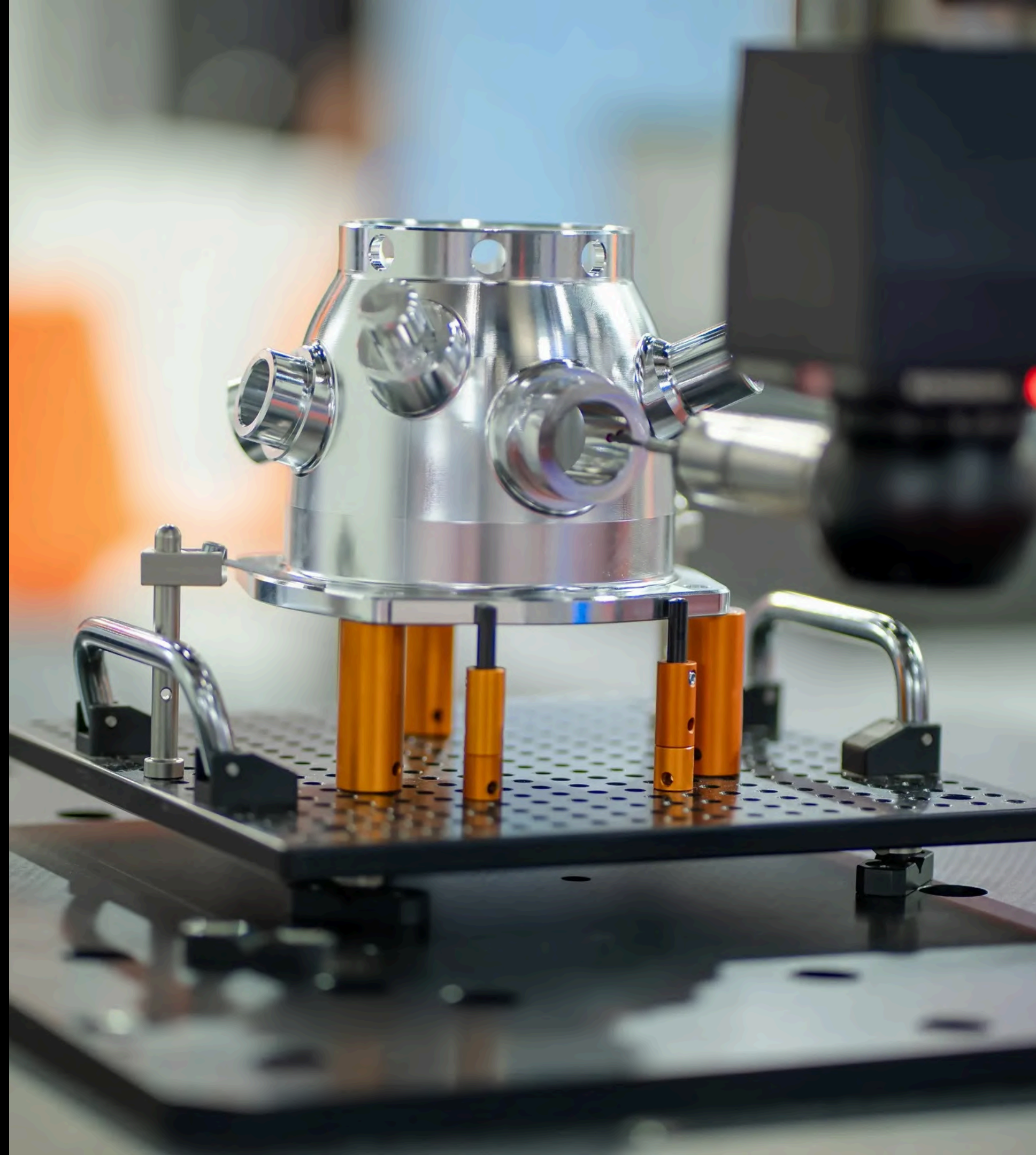
\$1,028.6B

2025 Contract Engineering
Services Market Share



24.4%

Compound Annual Growth
Rate (CAGR)





OUR FUTURE

EM's plans for the future

2025

Service Expansion

EM hopes to expand into new markets and industries, expanding our capabilities, services, and offered solutions, aiming to provide our clients with the best contract design solution with proven engineered technologies.

2026

Physical Expansion

EM hopes to expand our engineering team, moving into new warehouses and offices to allow for the expansion of production and offered services. EM hopes to move more production domestically, creating more jobs in the US and becoming a turning force for the US Economy.

2028

Divisions of Markets

Throughout the process of research, design, and development of Project Raptor and other LEV systems, EM gained vital industry knowledge and experience in industrial design and DFM, allowing EM to move into full contract engineering design for mechanical and electrical applications.

2030

OEM Manufacturing Status

As part of our 10-year plan, by 2030, EM hopes to have entered the market as a fully-fledged OEM manufacturer of electric vehicles and light electric vehicles with the EM-600 concept vehicle finishing production, achieving worldwide recognition of services where EM is a key player in the contract engineering service provider market.

INTERNAL RESEARCH

Implementations of 6+ years of dedicated industry research applied to our processes

Starting in 2024, EM started the process of continually implementing its 6+ years of commitment to excellence in internal research into a dedicated article system, offering deep dives into various topics and solutions offered by EM and how current industry adversities are solved by EM. EM's goal for these articles is to promote the advancements of engineering technologies in their respective fields, allowing for the spread of information to reach all audiences of all ages, and assisting in understanding our services. EM firmly believes in promoting young minds in STEM, asserting their value in the industry.



OUR SERVICES & SOLUTIONS

Engineering Consulting & Project Mgmt.

BOM Creation / Management, Mechanical System Design Analyses, PCB / Circuit Design Analyses, Project Management, Product Design Analyses [FMEA], & More.

Mechanical Design Solutions

CAD / Product Design Solutions, DFA / DFM Solutions, FEA / Tolerance Stackup Analyses, Sheet Metal / GD&T Drafting Solutions, Electro-Mechanical System Design, & More.

Electrical Design Services

Schematic Design Solutions, PCB Design / Layout, Battery Systems Development, Power Electronics Engineering, Automotive / LEV Systems Design, & More.

Software/Firmware Engineering Services

C/C++/Assembly Embedded Firmware Debugging, Troubleshooting, Validation, Documentation, & Development, Cross Platform, Enterprise, & QT/QML Application Development, & More

Manufacturing Solutions

FDM, SLS/A/M, MJF Additive Manufacturing, 2/3/5 Axis CNC Machining, Injection Molding, PCB Manufacturing / PCBA, Sheet Metal Forming, & More.



ENGINEERING CONSULTING & PROJECT MANAGEMENT

Getting your deliverables done right



BOM Creation & Management



Mechanical System Design Analyses



PCB & Circuit Design Analyses



Project Management Solutions



Product Design Analyses (DFMEA)



Product Lifecycle Management & Feasibility Analyses



Root Cause Analysis



MECHANICAL DESIGN SOLUTIONS

Designing engineered solutions to fixture, support, & assemble.

3D CAD & Product Design
Services



DFM/Assem./Auto./Test.
Solutions



Thermodynamic Analyses



Finite Element Analyses (FEA)
Validation



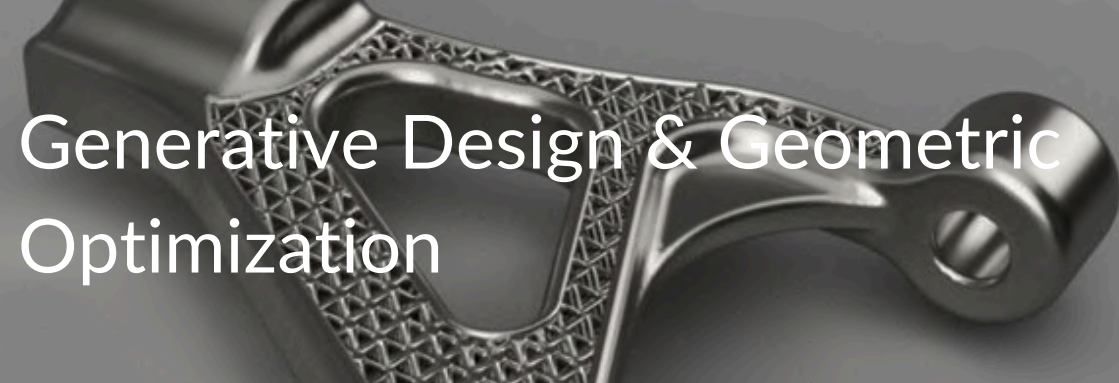
Tolerance Stackup Analysis (TA)



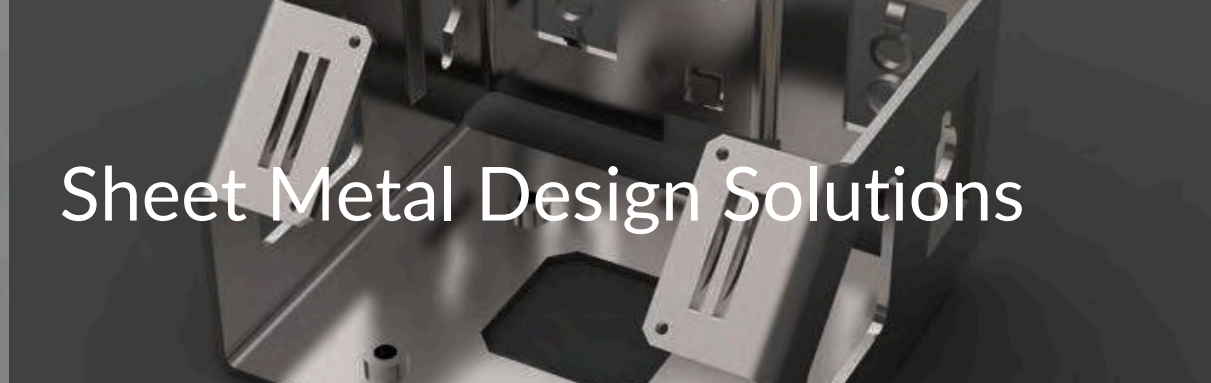
Mold Flow & Manufacturability
Optimization Analyses



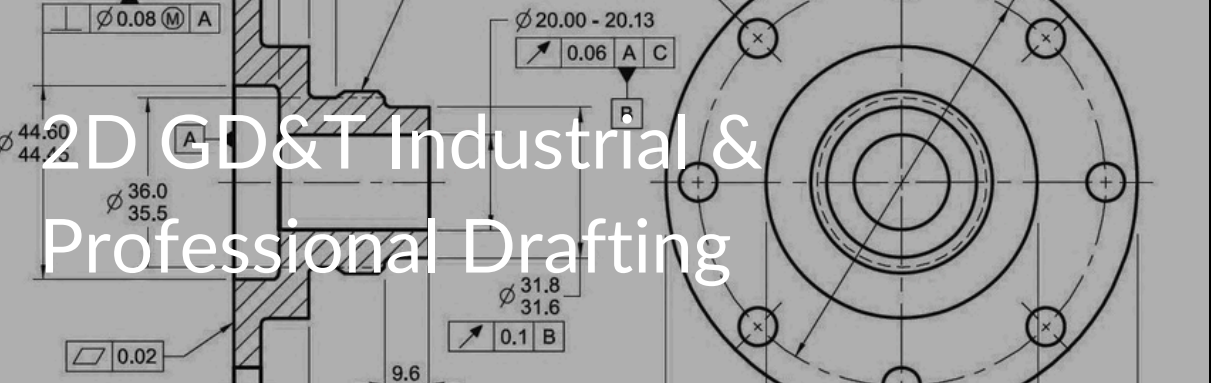
Generative Design & Geometric
Optimization



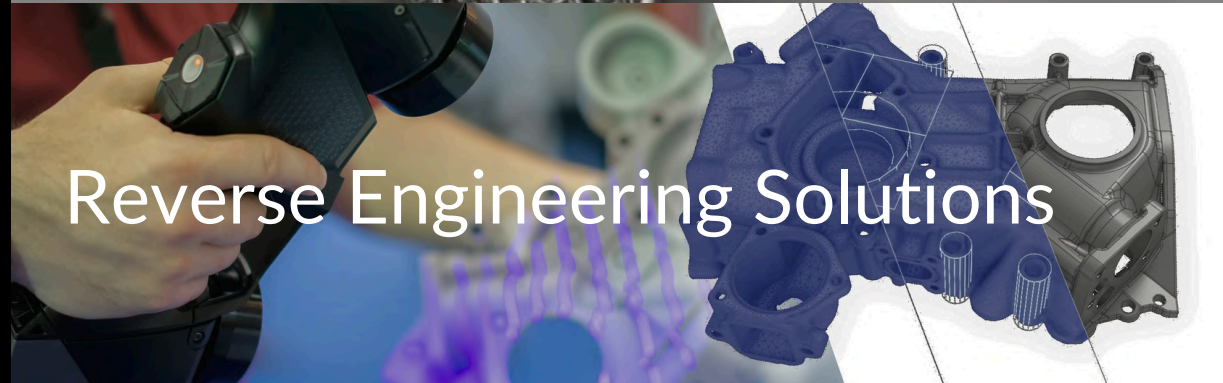
Sheet Metal Design Solutions



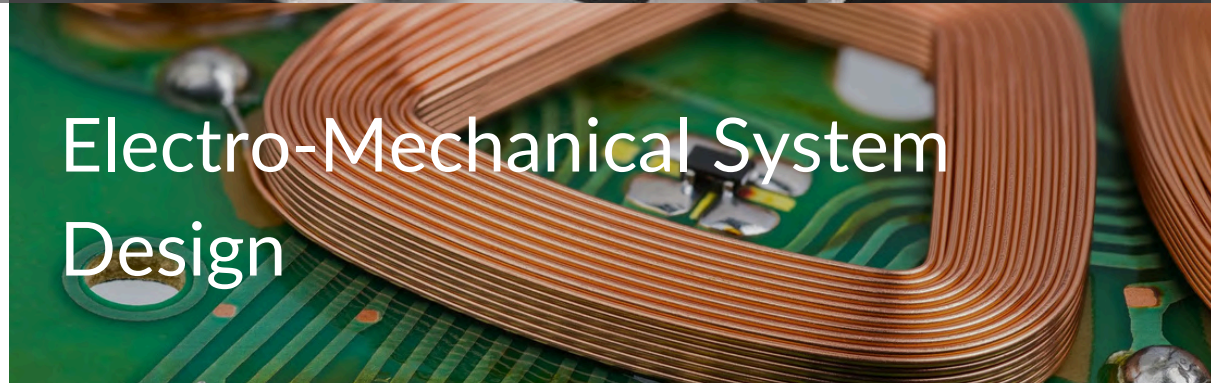
2D GD&T Industrial &
Professional Drafting



Reverse Engineering Solutions



Electro-Mechanical System
Design

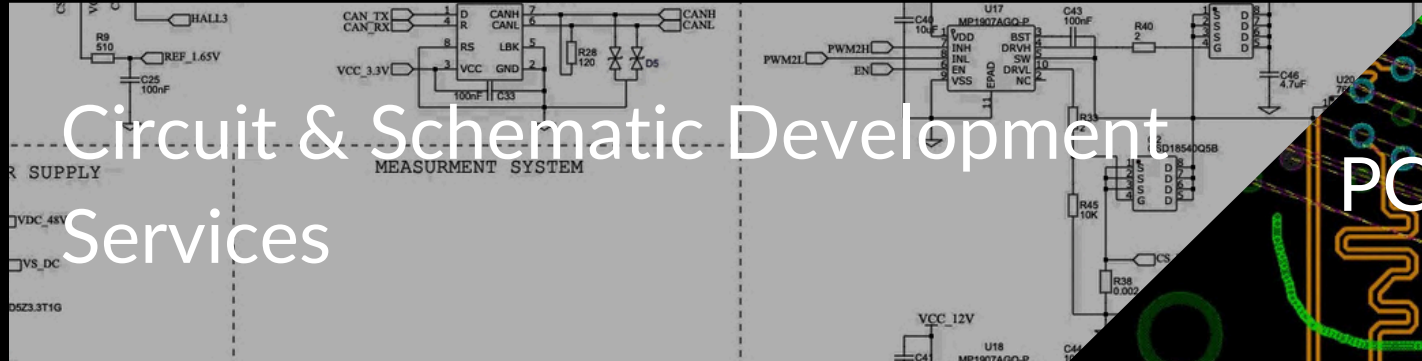


Industrial Systems Engineering

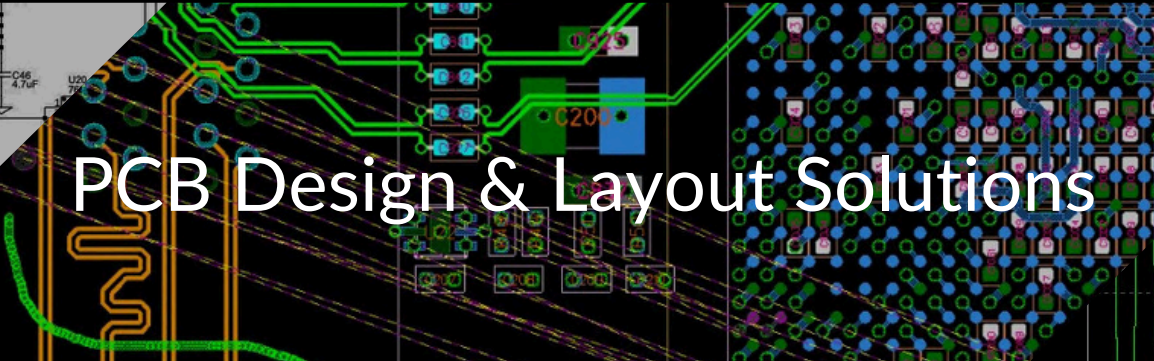


ELECTRICAL DESIGN SOLUTIONS

Communication and power management at ease



Circuit & Schematic Development
Services



PCB Design & Layout Solutions



SPICE & Circuit Simulation Services



IBIS, IBIS-AMI, & SerDes Analyses



SI/PI, Crosstalk, & Impedance
Analyses



EMI Optimization & Analysis
Solutions



Electrothermal & Electronics
Cooling Analyses



Virtual Compliance & Certification
Testing



Electromechanical System
Optimization & Analyses



Turnkey Battery Systems
Development



Power Electronics Engineering



Automotive / LEV Electrical
System Design

SOFTWARE & FIRMWARE ENGINEERING SERVICES

Integrating user-experience and functionality cohesively



C/C+/Assembly Embedded
Firmware Development



Hardware/Software Debugging
& Troubleshooting



Software Product Development
& Documentation



Medical Device Development &
Documentation



Python Application
Development



User Experience & User
Interface Design (UX/UI)



Cross-Platform Application
Development (React Native &
Flutter)



Enterprise Application
Development



QT/QML Application
Development & Deployment



Full Stack Web Development



HMI, AI, & Cloud Development
Services



Robotics & IoT Development
Services

MANUFACTURING & FABRICATION SOLUTIONS

Transforming your ideas into physical objects

Additive Manufacturing Solutions

PCB Manufacturing Solutions

PCB Assembly Services

SMT Stenciling Solutions

Multi-Axis CNC Milling Services

CNC Lathe & Turning Solutions

Laser / WaterJet / Plasma Cutting Services

Sheet Metal & Pipe Bending & Forming Solutions

Injection Molding Services


Blow Molding Solutions

Metal & Multimaterial Casting Solutions

Metal Profile Extrusion Services

INTERAL PRODUCTS

Pre-Built EM Products solving issues in the LEV market



EM W-BMS Modular Battery Systems



EM Power Supply Pro Family of Systems



EM Colorwave © Display Module



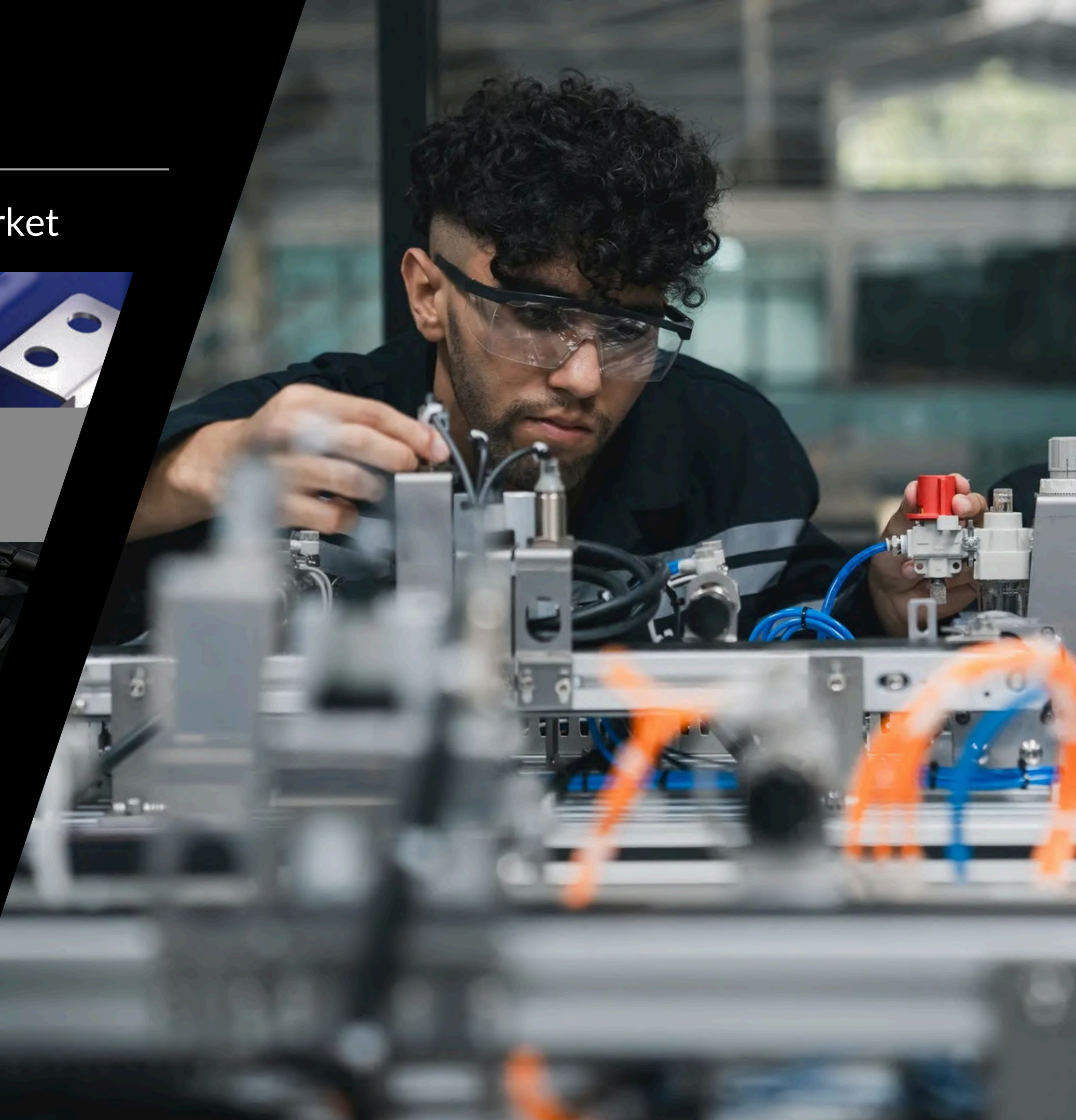
EM VORTEX Peripheral Controller Family of Systems & Breakout Components



EM One © EcoSystem App



EM W-BMS Modular Battery Systems



ENGINEERING TOOLS & SOFTWARE

Engineering Tools & Softwares developed by EM using internal research for all audiences

IPC-2221 Advanced Copper Trace & Pour Calculator

Development set to continue through 2025

More applications are currently in development to suit all of our engineering solutions & processes.



CONCEPT VEHICLES

Concept vehicles showcasing current research and developmental efforts by EM

Project Raptor is the accumulative effort of 4 years of research & development in the Light Electric Vehicle (LEV) field. Its development has foreseen numerous industry changes, implementing and developing new in-house technologies, paving the way for the industry and creating a pathway for continued success in innovation at EM. It is with great pleasure that we have seen this project from conceptualization at the dawn of EM to full-scale production. The goal of Project Raptor is to showcase what is possible with the current LEV technologies, making way for a new era of vehicles to diminish the current adversities we face in operation-related emissions from ICE vehicles. Via our success in industry-leading research, the path that Project Raptor has led will lead to a decrease in total CO₂e Emissions (gCO₂e/mi) by 60%, reducing congestion by a further 40%.

Additionally: EM-600 Concept Vehicle Coming Est. 2026-2030



JOINT VENTURES, PARTNERSHIPS, & VIRTUAL EXTENSION

Start Your Next Tomorrow with EM

EM is always looking to expand our partnership network in manufacturing and multidisciplinary services. Joint ventures are a core of EM's business developmental goals, and we are always looking for more opportunities to assist your firm with contract engineering services and product development.

Context: From our market studies, we have determined that approximately 10% of leads for manufacturing firms are looking to utilize the firm's manufacturing capabilities but need product or DFM design assistance.

Firms that utilize EM as a virtual extension, providing rapid prototyping, DFM revisions, Turnkey Product Development, and multidisciplinary services see a 15% increase in sales from gaining vital market shares and an increased clientele from a turnkey systematic environment, resulting in an average bottom line increase of \$300,000 or more from long term clients, in addition to cost & efficiency savings in manufacturing. These benefits are not only harvested by manufacturing firms but product development firms alike across industries are aided by EM's services.



WHY CHOOSE US?

What makes us qualified for your next project?

Commitment to Quality

At EM, we are committed to proving the utmost quality in our products and services, ensuring that every product and deliverable is up to industrial standards and properly delivers and achieves the goals set forth at its conception.

Deep Industry Experiance

EM has deep roots in the research and development of LEV & BEV systems and technologies, utilizing its 6+ years of commitment to excellence to offer industry expertise in BEV & LEV system development, injecting the quality and design methodologies throughout its processes to deliver the utmost professionalism in its services & solutions

Turnkey Ecosystems

EM focuses on creating solutions that create rapid value and work as simply as turning a key. We prioritize honesty and transparency across the entire engineering design process, implementing a client-centered approach to ensure the utmost quality in every deliverable we produce.



CONTACT US

EM ENGINEERING SOLUTIONS LLC

<https://emengineeringsolutions.com/>

Toll Free: +1 (248) 609-3049

chrishycki@emengineeringsolutions.com

52377 Aspen Dr,
South Lyon, MI 48178
United States

