Advanced Manufacturing

Industry Profile

Make Macomb Your Home

Macomb County, Michigan
**Macomb County - An Industry Leader in Advanced Manufacturing**

The integration of knowledge-based information technology and traditional manufacturing resources are helping Macomb County companies become the leaders in advanced manufacturing. Sophisticated software systems are integrating design, prototyping, production and supply chain management, leading to shorter product development cycles and increased manufacturing efficiencies.

The technical skills and innovation pioneered by the automotive industry are now finding new applications in a variety of high-tech manufacturing industries. No other county or region is as well equipped to meet the demands of the advanced manufacturing industry.

Macomb’s reinvented economy is no longer totally focused on automotive manufacturing. The county has emerged as a leader in advanced manufacturing technology. Sophisticated new industries in aerospace, life science, information technology, defense and homeland security have grown alongside Macomb’s traditional manufacturing businesses.

Macomb County companies now compete head-to-head and brain-to-brain with national powerhouses such as California’s Silicon Valley, Boston’s Route 128 and North Carolina’s Research Triangle. Macomb’s advanced manufacturing industries produce everything from chemicals and electronics to machine tools and plastics.

Our industrial base is built upon more than 100 years of ingenuity and innovation. More than 30,000 researchers and engineers are hard at work finding the smartest and best solutions to today’s advanced manufacturing needs. A skilled and ready workforce of more than 2.7 million potential employees can be found within the region.

If you are looking for a great place to grow your business in advanced manufacturing, there is no better place than Macomb County, Michigan.

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**Macomb Strategic Advantage**

- Home to a full quarter of the world’s advanced manufacturing workforce
- Our region is ranked first in the nation for industrial R&D spending
- More than 30,000 workers are engaged in engineering, research and development
- More than 3,000 patents are filed annually in the region
- 437,000 residents are in the workforce with another two million throughout the region
- Almost 100,000 college degrees granted every year in the region
- Annually, the region enrolls nearly 12,000 science and engineering graduate students
- The region grants master’s and Ph.D.’s at a rate almost twice that of the national average
- 41 colleges and universities in the region graduate more than 10,000 degreed engineers and technicians annually
- Nearly 79 percent of engineering graduates find jobs locally
- Over 350 labs and research facilities in the state are devoted to industrial and manufacturing technologies

**Local Support Organizations:**

- Michigan Manufacturers Association
- MMTC - Michigan Manufacturing Technology Center
- Society of Manufacturing Engineers
- National Center for Manufacturing Sciences (NCMS)
- National Institute of Industrial Technology (NIIT)
- Robotics Industry Association (RIA) World Headquarters
- Michigan Aerospace Manufacturers Association (MAMA)
- U.S. Army Tank-Automotive Research, Development and Engineering Center (TARDEC)

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**Make Macomb Your Home**

“Whether you operate a small business, direct a Fortune 500 company, or are accountable for the success of an enterprise that lies somewhere in between, we invite you to explore the many reasons why Macomb County is the right place to start, expand or relocate your operation.”

Mark A. Hackel
Macomb County Executive
The state of Michigan is a world-wide technology leader with more than $2 billion spent annually on research and development. Because we graduate more than 12,000 degreed engineers and technicians per year, many of those research projects are performed at colleges and universities in the state.

Central Michigan University
- Center for Supply Chain Management

Eastern Michigan University
- NSF I/UCRC Center in Coatings Research

Kettering University
- The Crash Safety Laboratory

Lawrence Technological University
- Center for Innovative Materials Research

Macomb Community College
- Advanced Manufacturing for Aerospace & Defense Programs

Michigan State University
- Fraunhofer Center for Coatings and Laser Applications

Michigan Technological University
- Keweenaw Research Center
- Sustainable Future Institute

Oakland Community College
- Customized Automotive Design Programs

Oakland University
- Fastening & Joining Research Institute
- Product Development & Manufacturing Center

University of Michigan
- Automotive Research Center
- Transportation Research Institute
- Institute for Advanced Vehicle Systems

Wayne State University
- Center for Automotive Research
- Institute for Manufacturing Research
- HC Emissions in Gasoline Engines Laboratory

Western Michigan University
- Center for Integrated Design
- Automotive Systems Laboratory
A Strong and Diverse Business Base Helps Macomb County Advanced Manufacturing Companies Grow

The following world-class companies call Macomb County home.

**ASl Instruments**

ASI Instruments Direct in Warren, Michigan designs and manufacturers world class instruments for the Life Science/Biomedical Research community. ASI Instruments use the most advanced techniques and facilities to develop and manufacture an expanding innovative, patented, line of products “Design By Scientists for Scientists.” ASI holds 13 patents for their cutting-edge products.

The company has pioneered major developments in the industry over the last four decades. In 1984, ASI Instruments introduced the revolutionary Rodent Brain Matrix that set new standards in durability and performance among tissue dissection aids. In 2011, ASI introduced to the scientific imaging community a new innovative research tool, called the Animal Management System (AHS). It is a multiple component, patented suite of technologies for true high throughput preclinical imaging in a multi-modality laboratory environment.

The company also has introduced Multi-Barrel Pipettes. ASI’s computerized manufacturing process produces the highest quality blanks in 3, 5 or 7-barrel configurations that you can pull with unsurpassed repeatability. All are fitted with a pre-attached 100 micron glass filament in each barrel, which aids in the tip filling process.

ASI is currently working on the launch of new products, including Stereotaxic Instruments, Tissue Matrices, Micromanipulators and a Microdrive System. These new products will help the company grow sales revenue by about $1 million year over the next 5 years.

ASI products are renowned for solving real problems in the research community. Their products have earned the respect of the most demanding user in labs around the world. “Our products set trends in the industry and are backed by the best warranties in the business. I encourage everyone in the research field to experience the ASI difference,” said Chris Chiodo, President of ASI. Chris sites the support the company has received from the Michigan Small Business & Technology Development Center and a $450,000 grant from the National Institutes of Health as important to his success.

**Eagle Manufacturing**

For over 50 years, Eagle Manufacturing Corporation in Shelby Township has made its name by creating innovative, futuristic, technology-driven automated production systems for lean manufacturing. Their half century of experience and innovation has leveraged the latest in technology to create cost effective engineering solutions for their customers. Eagle offers their clients a wide range of solutions ranging from complex multi-cell robotic fabrication and welding machines to high volume production lines and complete turn-key systems.

Eagle Manufacturing has embraced the SS Kaizen Philosophy which is the process of creating and maintaining an organized, clean, safe and high-performance work place, which helps the company serve as a foundation for lean and continuous improvement activities. Their 70,000 sq. ft. headquarters and world-class manufacturing facility services many different industry segments including; Alternative Energy, Defense & Aerospace, Automotive, Medical, Appliance, Packaging, Home Building and Food Processing.

Eagle has been recognized in the press for their corporate culture founded on ethics, integrity, open communication, invention, and sound decision making. Eagle is consistently ranked among the best and fastest-growing companies by Michigan's Top 50 Companies to Watch, Crain's Detroit Business and the television show “Keeping America Strong”.

The Shelby Township facility offers complete electrical/mechanical design and manufacturing capabilities utilizing high end cad/cam softwares. Their clients also take advantage of high speed CNC machining for material up to 98” wide x 160” long, precision wire EDM with cutting capabilities on materials up to 18” thick and laser and water jet cutting for any materials up to 72” wide x 162’ long.

“Our Macomb County location gives us a strategic advantage with regards to local employment. The region has a wealth of experienced engineers, designers and manufacturing talent. We also have a strong supplier base in the area.” said Brent Short, President of Eagle Manufacturing.
Elite Mold & Engineering, Inc.

Established in 1982, Elite Mold & Engineering in Shelby Township is on a mission to provide customers with high quality plastic injection molded parts with the shortest turnaround time. Elite’s business model allows them to focus on low volume production runs while their sister company, Elite Plastic Products focuses on high volume injection molding.

The company’s commitment to excellence has expanded their customer base in a variety of industries including, Medical Devices, Pharmaceutical Equipment, Personal Robotics, Marine Products, Recreational Vehicles and Hybrid and Electric Vehicles. Owner and President, Joseph Mandeville states that “Elite knows that the best way to grow our business is to help customers be successful in getting their products to market faster with the highest quality, best cost options and backed by unparalleled customer service.”

KUKA Robotics

KUKA Robotics Corporation along with KUKA Roboter GmbH, Augsburg Germany (part of the KUKA Aktiengesellschaft group), ranks among the world’s leading suppliers of industrial robots and material handling vehicles. KUKA recently moved to a new 80,550 square foot facility in Shelby Township. The new facility will allow the company to grow to over 100 Michigan-based employees in the future and permit KUKA to stay close to target customers and tap into the rich supply of well educated, experienced and automation-oriented workers.

The Macomb County location gives KUKA easy access to key import/export facilities and major regional travel hubs, in addition to a well-rounded supplier network. “KUKA appreciates the support it has received from the State of Michigan, Macomb County and Shelby Township in their business development and retention efforts.” says Stu Shepherd, CEO – KUKA Robotics North America. “The government organizations have revitalized a positive environment for growth in Michigan.”

KUKA’s core competencies include the development, production, and sale of industrial robots, controllers, software, linear units, and omniMove™ omni-directional motion platforms. KUKA robots range from 5kg to 1300kg payloads, and 635mm to 3900mm reach, all controlled from a common PC based controller platform and are utilized in a diverse range of industries including the appliance, automotive, aerospace, consumer goods, entertainment, logistics, food, pharmaceutical, medical, foundry and plastics industries as well as multiple applications including carbon fiber lay-up, material handling, machine loading, assembly, packaging, palletizing, welding, bending, joining, and surface finishing.

KUKA Robotics is the market leader in Germany and Europe, and number three in the world. The KUKA Robot Group employs about 2,100 people worldwide. In 2010, sales of the Robot Group totaled 435.7 million Euro. Twenty-five subsidiaries provide a presence in the major markets of Europe, the Americas and Asia.
Velocity

Velocity is a center for economic collaboration targeting defense, homeland security and advanced manufacturing. It was formed as a partnership between Macomb County, Oakland University and the city of Sterling Heights.

Housed within this 35,000 square foot facility are several Oakland University programs including the Macomb-OU INCubator; Pawley Lean Institute and the School of Engineering and Computer Sciences’ Center for Robotics and Unmanned Intelligent Systems (“CRUIS”). Each offers resources and support to start-up and existing companies.

Macomb County and the city of Sterling Heights offer economic development services at Velocity in connection with many area partners including the Michigan Economic Development Corporation’s Michigan Defense Center and the Michigan Small Business and Technology Development Center.

Macomb-Oakland University Business Incubator

Macomb-OU INC is a regional hub for accelerating economic growth in the targeted industries of advanced manufacturing, aerospace and defense/homeland security. Its purpose is to provide a supportive environment for start-up and emerging companies.

Client companies accepted into the program are offered access to a wide range of business support services; rental space with flexible leases; assistance in the commercialization of new technologies; and assistance in securing traditional and non-traditional forms of financing. Successful graduates of the program emerge as financially viable entities that create jobs while bolstering the local economy.

Founded in 2008 through a partnership by Macomb County, the City of Sterling Heights and Oakland University, Macomb-OU INC is a Michigan SmartZone™ and an active participant of the Business Accelerator Network for Southeast Michigan.

Automation Alley Defense Center

Automation Alley is a regional technology driven organization with over 1,000 members in the areas of business, education and government.

Automation Alley actively supports the advanced manufacturing industry in southeast Michigan. The organization has also conducted numerous global trade missions to Europe, India, China, Mexico and Israel, garnering more than $140 million in contracts for participating companies.

The abundance of engineering talent and the current implementation of innovative advanced manufacturing technology in the state, positions Michigan to reclaim its title as the world’s top manufacturing center.

Macomb Community College

Macomb Community College offers a wide range of educational programs designed to train individuals in skills required for advanced manufacturing. These include a variety of options through traditional educational pathways, as well as customized programs designed to address the needs of specific advanced manufacturing environments.

College programs include vehicle design, automotive engineering technology, electronics, mechatronics, robotics, advanced manufacturing/machining, welding, quality, homeland security, project management, business and information technology.

Macomb’s applied technology advanced processes (ATAP) program features hands-on learning experiences on state-of-the-art technology, such as CAD/CAM, CNC machining, EDM, laser cutting, probing, high-speed machining and reverse engineering.

The college’s quality programs cover metallurgy; blueprint reading; geometric dimensions and tolerancing; coordinate measuring machines, calibration and measurements; and the ISO/TS 16949 standard for quality systems.

To develop multi-skilled designers, Macomb’s programs have been established to help seasoned designers enhance their skills and provide a baseline understanding and proficiency in software programs, encompassing CATIA, UG and Pro/E.

In computer numerically controlled (CNC) machining, Macomb offers programs to strengthen skills for those with some prior manufacturing experience specific to operators, programmers and CAD/CAM.

The college also provides hands-on training programs leading to certification in welding, which have been developed to meet the needs of the advanced manufacturing, aerospace and defense industries.

Customized programs to meet the needs of specific advanced manufacturing environments are also available.
Quality of Life – Imagine Macomb

With safe neighborhoods, strong schools, top-notch healthcare facilities and diverse leisure-time options, Macomb County is the perfect place to call home. Michigan’s fastest growing county and its third most populated, more than 840,000 residents live here and support 18,000 businesses. An integral part of Greater Detroit, we offer quick access to world-class attractions and sports teams.

The county offers the greatest value for your housing dollar in the region. From starter bungalows in mature neighborhoods to opulent luxury homes on park-like parcels, options for every lifestyle and budget abound. Our communities are among the safest in the United States. Low crime rates, progressive public safety departments and reciprocal emergency response means that your family and property are safe and secure.

Residents in Macomb County expect and demand quality education. Shaping students to be global leaders in the 21st century is a key goal in the curriculums of the county’s public schools and colleges. Macomb Community College was the first in the nation to establish a “University Center” where colleges and universities from throughout the state offer baccalaureate and masters level courses.

We enjoy all of Pure Michigan’s four glorious seasons with very rare interruptions of work due to inclement weather. From neighborhood playgrounds to expansive parkland, there are more than 17,000 acres of recreational land. Boating reigns supreme in Macomb County with 31 miles of Lake St. Clair coastline. The county has more than 57,000 registered boats, 50 marinas and 10,000 slips for quick access to the Midwest’s most popular fishing destination. You can also enjoy our six public beaches and more than 30 spectacular golf courses.

Nearly 1,400 restaurants and coffee shops offer a tantalizing array of epicurean delights that complement our rich ethnic diversity. There are more than 6,000 places to shop in Macomb, including four regional malls, six old-fashioned downtowns, a variety of farmers markets and antique shops.

We encourage you to learn more about Macomb County by visiting our Website at www.MacombBusiness.com.
Access to Capital

The Macomb County Department of Planning and Economic Development can assist your advanced manufacturing company in finding potential sources of capital and financing.

**Michigan Venture Capital Association** – Established by venture capital and private equity investors in the state, the Michigan Venture Capital Association (MVCA) is the state’s premier public policy advocate for the private equity/venture capital industry. MVCA works to promote entrepreneurship and private equity investment.

**Venture Capital** – Through the 21st Century Jobs Fund, Michigan is investing $2 billion to speed up technology transfer in emerging business sectors that promise job growth: alternative energy, the life sciences, homeland security/defense and automotive/advanced manufacturing. The Venture Michigan Fund increases availability of capital for seed and early stage companies, while the 21st Century Investment Fund invests in qualified private equity, venture capital and mezzanine firms.

**Angel Networks** – Aimed at helping companies with early stage seed financing, Michigan is fortunate to have three active Angel Networks: The Great Lakes Angels, The Grand Angels and The Ann Arbor Angels.

**Traditional and Non-Traditional Financing** – Macomb County can help advanced manufacturing companies secure SBA 504 and 7A Loans, as well as funds through conventional and alternative sources. The Automation Alley Technology Center can also assist with accessing non-traditional and unique sources of financing and capital.

**State and Local Incentives** – Michigan offers several programs to make financing available for new companies including the Michigan Business Accelerator Fund, Michigan Pre-Seed Micro-Loan program and Michigan Pre-seed Loan Fund program. Contact us to learn more about which may work best for you.

Macomb County is strategically located within 500 miles of half the population of the U.S. and Canada.