

MANUFACTURING: Fast-Track Career Guide

GREAT CAREERS ■ SOLID PAY ■ HOMETOWN PRIDE



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What is Manufacturing?

People made this booklet. They made the paper. They mixed the ink. They created the wire that was cut into staples to bind the booklet. And, they made every piece of the machinery that printed the booklet. People like you, your parents, and your neighbors, made everything around us. The things we use each day are the results of manufacturing!

Manufacturing has changed a lot over the years. It is cleaner, easier, SAFER, and more technology-driven than ever before. People traded in brawn for brainpower to work smarter instead of just harder. That is why we have access to more technology today than ever before.

This guide will show you what a career in manufacturing looks like here in Jefferson County. Many people worked their way up the ladder, getting promotions and training through this career pathway. If you are thinking about your career options, this guide will give you the basics, plus tell you what skills, ambition, and common sense it takes to work in manufacturing.

Did You Know?

A college education can launch you into a rewarding career in a many fields, including manufacturing. However, students often overlook two big challenges to a four-degree:

- 1. the four-year wait, and**
- 2. the rising cost of education.**

On average, a bachelor's degree student graduating in 2017 had \$29,200s in student debt, according to data from the Institute for College Access & Success. Plus, they potentially had to forgo the earnings that a full-time job could have generated for those four years.



“A skilled position within manufacturing not requiring an associate’s degree paid an average of \$38,000 per year in 2017.”

In Jefferson County, Illinois, we have some of the best and fastest-growing job opportunities that can “fast track” you toward a solid living—all within a 60-minute drive from Mt. Vernon. According to Jobs EQ™ data for 2017, a Basic Assembler position not requiring any specialized skills or training paid an average of \$30,800 per year. A more skilled position within manufacturing not requiring an associate’s degree paid an average of \$38,000 per year. In addition to wages, most manufacturers in the Mt. Vernon area offer benefits including but not limited to: health insurance, paid time off, paid sick time, tuition reimbursement, employer paid specialized training, 401k plans, stock options, and more. Packages vary among employers, but often add thousands of dollars to the wages offered.

(Source: Bureau of Economic Analysis and Bureau of Labor Statistics and Jobs EQ Chmura Economics & Analytics).

What is Manufacturing — Wage Data

When you compare this option to some of your standard degrees, a manufacturing career really has a lot going for it! See how these jobs stack up. We invite you to explore the pros and cons of this local opportunity. You never know where it may lead!

The Most Common Degrees Sought in College

On average, the more education one has, the more one earns. However, people often conclude their analysis there. Trade school offerings can often outpace the earnings of many four-year degrees. Researchers at Georgetown University used the 2009 American Community Survey to look into the differences between earnings and degree selection, among other findings. Here are the top ten most popular undergraduate majors and their earnings:



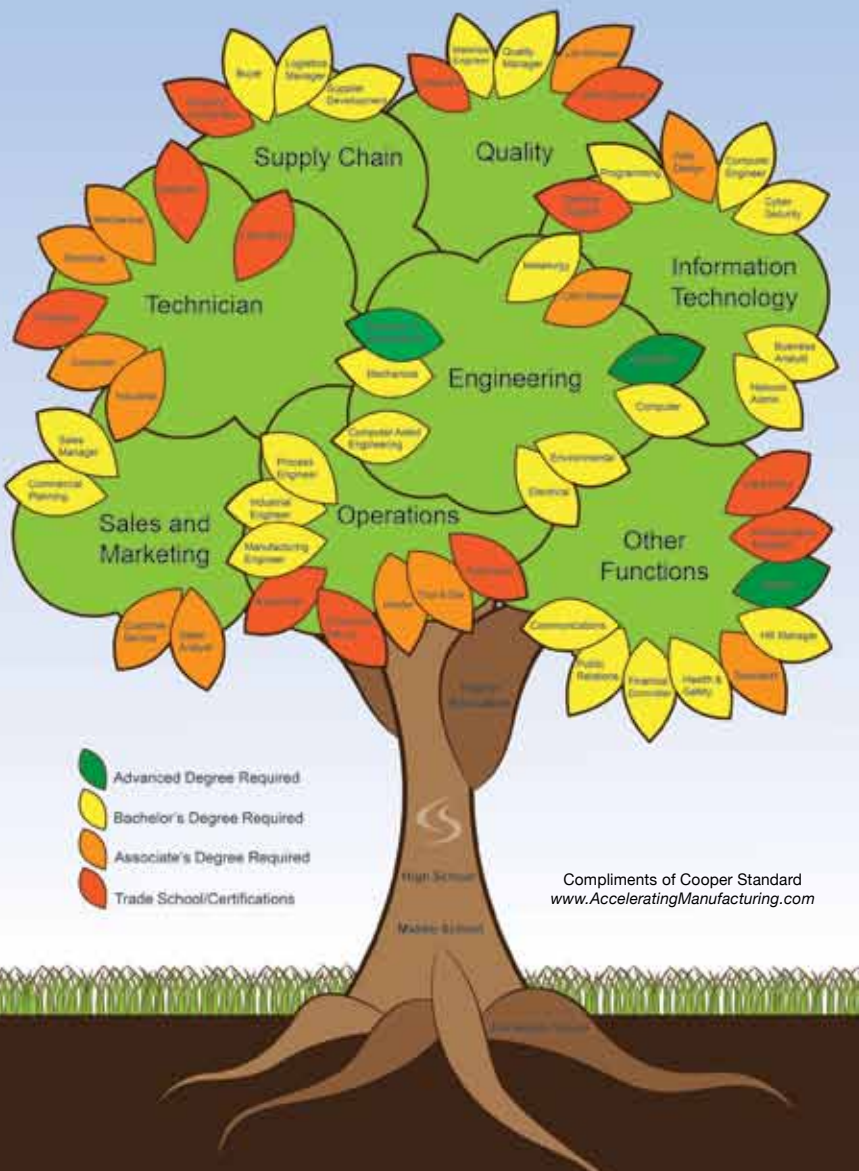
NATIONAL EARNINGS FOR THE TOP 10 MOST POPULAR MAJORS

	Percent of All Majors	Median Annual Earnings	Earnings at 25th Percentile	Earnings at 75th Percentile
Business Management and Administration	8%	58,000	40,000	85,000
General Business	5%	60,000	40,000	90,000
Accounting	5%	63,000	43,000	95,000
Nursing	4%	60,000	48,000	80,000
Psychology	3%	45,000	31,000	65,000
Marketing and Marketing Research	3%	58,000	40,000	88,000
Communications	3%	50,000	35,000	77,000
Elementary Education	3%	40,000	31,000	50,000
Computer Science	3%	75,000	50,000	100,000
Finance	3%	65,000	43,000	100,000

*All data is for full-time, full-year workers (across the US) with a terminal Bachelor's.
SOURCE: Carevale, Strohl, & Melton (Georgetown Center on Education & the Workforce).*

CAREERS IN MANUFACTURING

Explore the tree below to see where you could grow your career!
Make conscious choices to help you get where you think you might want to go.



Now, look at the chart below to see some typical manufacturing jobs in demand in Jefferson County. In most cases, people can hire in to these positions with an associate's degree or a certification from a local community college. This national data is derived from <http://PayScales.com>, looking specifically at manufacturing jobs.

“A starting position in manufacturing is often the first step toward becoming a Manufacturing Engineer, Senior Engineering Technician, Operations Manager or even Plant Manager.”

We encourage you to have a look at PayScales.com or similar sites to see how your career aspirations stack up to both of these charts. A starting position in manufacturing is often the first step in on a career pathway as a Manufacturing Engineer, Senior Engineering Technician, Operations Manager or even Plant Manager.

NATIONAL EARNINGS FOR POPULAR MANUFACTURING JOBS

	Median Annual Earnings	Minimum Annual Earnings	Maximum Annual Earnings
Computer Numerically Controlled (CNC) Operator & Programmer	51,213	31,667	85,584
Diesel Mechanic/Shop Foreman	58,052	37,873	81,737
Machinist	48,526	30,024	76,115
Maintenance Technician	42,680	27,505	68,536
Welder	44,028	24,983	84,155

Continental Tire the Americas



Continental Tire the Americas, LLC, in Mt. Vernon, Illinois celebrates 45 years this year; making the facility a true multi-generation manufacturing plant! The Mt. Vernon plant produces nearly 16 million Passenger and Light Truck (PLT) and Commercial Vehicle Tires (CVT) per year, making it one of the largest Continental manufacturing facilities globally within the Continental Rubber Division. With over 100 acres under roof and more than 3,400 employees, Continental is the largest employer in Southern Illinois and has available opportunities in hourly production, maintenance, engineering, and more!

With a strong focus on promoting growth and encouraging development from within, hourly employees have worked their way up to supervisory and management roles at the plant. Employees can also earn an Associate degree while working full time for a small \$25 charge. Want to further your education after your Associate degree? Take advantage of Continental's tuition reimbursement program for bachelor's and master's degrees!

Many people think Continental only offers hourly production positions, but hundreds of employees work in salaried, professional positions, such as engineering, IT, controlling, and more. Due to the nature of how tires are made, designated areas of the plant can be dirty and hot. Most employees would agree the plant provides

a clean and safe atmosphere. If you still want to shower before you head home, you can take advantage of the shower room.

Hourly Production

Fifty plus job titles fall under the category of "Hourly Production." Job titles include Tire Builder Operator, Mixer Operator, Trucker, Loader, and Mold Cleaner. Employees must safely operate various pieces of equipment and be prepared to meet production standards and specifications. A high school diploma or equivalency is required for these positions. Benefits include competitive wages, medical/dental/vision insurance, 401K with 6% match, life insurance, paid holidays/vacation time, on-site fitness center, discount tires, and more!

Maintenance Apprenticeships/Technicians

Students in Continental's Maintenance Apprenticeship program gain valuable work experience while earning their degree. They offer 100% paid tuition for the program, so students can graduate debt-free. Enrollees work 20-28 hours a week to gain experience. Graduates can apply for permanent employment as a Maintenance Technician, complete with the previously mentioned benefits and rewards. Other technicians hold Associate Degrees in Electronics, Welding, Automotive Technology, or similar programs.

Engineering

Continental's engineers work on a variety of projects, including design, budget, procurement, installation, or start-up of electrical and / or mechanical projects in the plant. Engineers are involved in troubleshooting problem equipment with the Maintenance Department. They ensure all drawings and prints are up to date and all new equipment spare parts are set up. Engineers protect the plant's interest in all projects for which outside or internal engineering in designing, procuring and starting up is required. A Bachelor's Degree in Electrical Engineering, Mechanical Engineering, or Industrial Engineering is required for these positions.

Interested in Applying?

Come roll with us! Go to www.continental-jobs.com for details.

InnoTech Manufacturing

InnoTech Manufacturing, based in Mt. Vernon, Illinois, is a leading provider of aluminum balconies, awnings, canopies and sunshades, distributing products throughout the United States. In 2017, balcony sales more than doubled from years past. Innotech currently employees 32 people. Management encourages employees with an innovative, motivated mindset. Applicants should be eager and interested in growing within the company. Each department has a leader responsible for empowering, training and encouraging their team. This management style has attracted applicants looking for a stable, engaging environment. Innotech is looking for welders, fabricators, powdercoat technicians and general laborers.

In 2017, InnoTech Manufacturing experienced substantial growth, specifically in the aluminum balcony sector. Projected to launch in mid-September 2018, InnoTech Manufacturing plans to unveil an innovative, interactive website where clients can design and purchase their own balcony. InnoTech will be the first balcony supplier to tap into the e-commerce market.



Welders

Welders at Innotech perform TIG, MIG, and Stick Welding. Successful applicants will have a high school diploma or equivalent and at least two years welding experience.

Fabricators

Fabricators make the components that go into the various products manufactured at Innotech. Successful applicants will have a high school diploma or equivalent, and at least three years experience in reading CAD drawings.



Interested in Applying?

Call (618) 244-6261 for details.

Magnum Steel Works, Inc.



Magnum Steel Works, Inc. began in 2005 in a 12,000 sq. ft. building. They are now in their third facility and have called a new 128,000 sq. ft. building home since 2012. Many people think that they buy and sell steel because of their name. However, Magnum Steel Works repairs and rebuilds coal mining and other types of equipment. The company projects to be at maximum capacity for the next two years minimum and currently employs 110 people. Students that like working with their hands and solving problems should consider a job here.

MSW is a cool place to work because they repair a variety of equipment for clients all over the world. Employees are constantly learning new things. They are proud when they completely rebuild a piece of machinery that came in rusted and broken, and it goes out the door looking like it is brand new! There are so many different positions to choose from; Welder/Fabricators, Heavy Equipment Mechanics, CNC Programmers, Purchasing Managers, Accounting Clerks, Electricians, Human Resources, Painters, Shipping Clerks, Tool Crib Attendants, Waterjet Operators, and Inspectors.

Magnum Steel Works is another company with promotion opportunities. One of their welding supervisors began as a general laborer about seven years ago. With an interest

in welding, he practiced on his own time and became a welder doing basic work. He now supervises the “drum-welding” group, which requires high-quality welds.

Welders/Fabricators

Welders and fabricators make and weld parts together following specifications from blueprints. Starting pay is in the mid-teens per hour and benefits include group medical, dental, vision, and life insurance; retirement benefits; uniforms; vacation; and holidays. All applicants must have a certificate in welding technology and have taken blueprint reading. Welders must pass a weld test.

Mechanics

Mechanics at MSW diagnose and make repairs on various types of heavy equipment. Starting pay is in the mid-teens per hour and benefits are the same as above. All applicants must have a heavy equipment technology certificate and one year of experience. Mechanics must be able to identify items on a hydraulic schematic and generally read schematics.

CNC Machinists

CNC Machinists program and operate computer numerically controlled mills and lathes. Starting pay is in the upper teens per hour and benefits are as above. Applicants must hold a valid CNC Machinist Certificate and pass a micrometer and caliper reading test.

Interested in Applying?

Contact Ms. Julie Rohr, HR Manager, at (618) 244-5190
or julie@magnumsteelworks.com

Mt. Vernon Outland Airport



Mt. Vernon Outland Airport serves the businesses and residents of Jefferson and surrounding counties. The airport handles all facets of General Aviation including business development, business retention, cargo, air medical, flight training, and the U.S. Military.

Mt. Vernon Outland Airport's niche markets are aircraft maintenance and flight training. Several companies are located at the airport:

Fixed Base Operator SRT Aviation is a regional leader in major airframe and powerplant repairs/overhauls and avionics installation. Excluding the St. Louis Metro East, SRT Aviation is the only FAA Certified Repair Station on the southern end of the State. A staff of six airframe and powerplant technicians work daily at the airport. SRT Aviation also offers domestic flight training up to Commercial Certification led by knowledgeable and dedicated certified flight instructors.

AIRGO Incorporated specializes in flight training of airline pilots with direct placement in Chinese Airlines. The AIRGO program takes the student from zero time to Commercial Multi-Engine in 18 months. Graduates complete the curriculum with 20 hours of high altitude, twin turboprop training. AIRGO employs certified flight instructors, airframe and powerplant technicians, and aircraft schedulers.

Air Evac Lifeteam #11 provides air ambulance services to Jefferson and surrounding counties. Air -Evac's base is staffed 24/7 with pilots, flight nurses, flight paramedics, and aircraft maintenance technicians.



Kash Helicopter Services specializes in aerial agricultural applications and aerial lifts. Pilots, aircraft maintenance technicians, and ground handlers are required to provide the company's services.

WANTED: Pilots, Airframe & Powerplant Technicians!

The nation faces its largest shortfall of pilots and maintenance personnel ever! Industry experts predict if something does not change in the next five years, there will be an extreme shortage or all out end of commuter (feeder) airlines. There simply will be no one to fly or maintain them. If a large increase of new pilots and maintenance personnel does not materialize in ten years, business aviation serving all small airports will be in jeopardy.

Piloting and aviation maintenance jobs require specialized training and certifications from the Federal Aviation Administration. These certifications can be achieved at nearby universities, specialty schools, or at local airports like Mt. Vernon Outland Airport. Interested in an aviation career? The key is to visit and integrate into your airport. There are many people willing to provide mentorship and support.

Interested in Applying?

Aviation careers offer great pay, good benefits, and an exciting future!
Call (618) 242-7016 for more information.

National Railway Equipment

National Railway Equipment Co. (NRE)

in Mt. Vernon manufactures locomotives for domestic and international customers. The locomotive cab, frame, main electrical cabinets along with much more are also manufactured by NRE. Other services that NRE provides to customers around the globe include locomotive rebuilds, field service and inspections, locomotive leasing, engineering services and wreck repair. If you work at NRE, you are a part-owner! NRE is employee-owned and headquartered in Mt. Vernon, with 9 locations in North America, and more overseas. In Mt. Vernon, NRE employs 241 people, most of them working as welders, electricians and mechanics. They have an average of 10 or more openings in each position annually.

Here's a fun fact; one of NRE's locomotives was featured in the 2010 action thriller, *"Unstoppable,"* starring Denzel Washington.

At NRE, employees start work performing a job but stay and build a career. Many at NRE have started on the shop floor and grown their technical skills and abilities to allow them to further their careers in many different ways all over the globe.

Welders

At NRE, welders remove a locomotive's damaged areas or parts. They measure, fabricate, fit and weld replacements to original specifications. The company seeks welders with knowledge of various types of welding such as: ARC welding, carbon arc gouging, and flame torch burning. All applicants must hold a welding certificate, pass a weld test and have advanced MIG welding skills.

Electricians

Electricians install, repair, test, and maintain electrical apparatus on locomotives. They also modify electrical circuits from blueprints, and test control and power



circuits on locomotives. Applicants must hold a high school diploma, have experience working with blueprints, and the ability to work overhead from ladders and platforms.

Mechanics

NRE's mechanics remove, repair, rebuild, and reinstall diesel engines and other parts for locomotives. They work from written instructions, blueprints and maintenance instructions. Applicants must hold a high school diploma, have experience working with blueprints, and be mechanically inclined. A background with heavy equipment is preferred.

At NRE, each of these positions has a starting hourly wage of \$12.66. At the 6 month mark, the average pay rate jumps to \$14.79, and is at about \$21.13 by year five. These are full-time, union jobs with benefits available following a six-month probationary period.

Interested in Applying?

Contact Laura Bedokis at l.bedokis@nre.com

Phoenix Modular Elevator

Phoenix Modular Elevator is growing fast! This unique company custom builds exterior elevators in their own shafts and installs them on-site. PME has installed elevators from New York City to Alaska to far northern Manitoba. With a staff of 36, PME is small enough to know you as a person, not a number. They are also growing fast enough to provide opportunities for career growth and advancement.

People often mischaracterize manufacturing work as mindless drudgery. PME relies on creative people that can solve problems and improve processes. Their team approach includes dedicated weekly time to work on improvement activities that make your job easier.

Even in small companies, internal promotion is available. Arron Nelson started installing drywall on elevator shafts on the weekends when he was still in high school for \$10/hr. After graduation, he worked full-time and progressed to Production Lead (supervisor). Next, he was trained as an Assembler, then became an Elevator Mechanic apprentice. When he finishes the program and is a licensed mechanic, he will have a maintenance route servicing a wide variety of elevators.

PME hires for a number of positions, including welders, elevator mechanics, assembler (mechanical or electrical), and drywallers.

Welder

Welders at Phoenix Modular Elevator fabricate and weld large structural hoistways. Under certain conditions, PME will consider on-the-job training. However, a certification in welding is generally required and/or two years of experience.



Assembler

If you can assemble mechanical components or wire electrical components, and have at least a year of experience in a factory environment, you may be a good fit for an assembler position at PME. A high school diploma or equivalent is also required.

Elevator Mechanic

This specialized opportunity pays well but requires a 3-4 year apprenticeship. Elevator mechanics install, maintain and repair elevators. PME has worked with internal candidates for apprenticeship opportunities in this role.

Interested in Applying?

Contact Phoenix Modular Elevator at 618-244-2314 or by e-mail at info@phoenixmodularelevator.com

PPG Industries

PPG Industries has been a global leader in the paint and coatings industry for more than 130 years and operates more than 160 plants in roughly 70 countries. Originally known as Vanex Inc., the Mt. Vernon facility opened in 1963. PPG acquired the plant in 2008 and it has since experienced tremendous growth. The plant expects to produce over 1.25 million gallons of product in 2020 alone. PPG currently employs over 50 individuals. Paint produced here is used in the production of steel buildings, metal roofs, high-end louvers and shutters, John Deere and Case New Holland tractors, Continental white-wall tires, and many other incredible products.

What does a career look like at PPG? After graduating in 1978, Jeff McKay served four years in the Marine Corps and rose to Sergeant. In 1982, Jeff was hired at Vanex in Maintenance. One year later, he moved to the Warehouse and worked for 12 years. In 1994, he joined Batch-Making and was promoted to foreman soon after. In 2008, Jeff began as a Lab Technician, and participated in a Coatings Technology program at Missouri University of Science and Technology. Today, Jeff is part of PPG's Lab and Quality Control Department. He ensures all paint meets the strict standards that PPG customers expect.

The majority of PPG's employees work in production, batch making, product filling, product labeling, shipping and receiving, and maintenance. PPG's lab requires technicians, engineers, and chemists who work in quality control, research & development, and technical service. They also employ supervisors and support staff in sales, purchasing, logistics, and EHS (environment, health and safety).

Batch Makers

Batch makers assemble and process batches of paint. Each batch maker locates, weighs, and stages their own raw materials. Utilizing the correct tanks and



equipment, the batch maker creates a finished product, ready to be filled. A high school diploma or equivalent is required. Benefits include Medical, Dental, and Vision Insurance; 401K retirement plan; paid vacation and holidays.

Fill-Crew Members

Fill-Crew Members transfer finished batches of paint from holding tanks into final packaging, working closely with quality control to ensure proper filtering of each batch. The fill-crew also ensures use of correct containers and labels. They are the last workers to touch the product before shipping. A high school diploma or equivalent is required. Benefits are as previously stated.

Lab Technicians

Lab Technicians work in quality control, research & development, and technical service. They ensure every batch meets specifications, aid in producing small batches of experimental formulas, and test new raw materials and potential material replacements. They also test retained samples to ensure product and service quality as part of addressing customer issues. While college-level chemistry skills are preferred, PPG accepts high school graduates (or equivalent) with chemistry classes. In addition to benefits stated previously, lab technicians gain membership in the St. Louis Paint & Coatings Society.

Interested in Applying?

Lab Technician candidates can contact Mr. Walter Rexing, Technical Manager, at wrexing@ppg.com. All other candidates should go to <https://partnerspersonnel.com>

Truck Centers, Inc.

Truck Centers, Inc. was founded in 1970 by M. John Hopkins, III, and two partners as a White Truck dealership in Highland, Illinois. Since 1976, M. John Hopkins, IV, has grown and diversified the company to become one of the most recognized, privately owned Freightliner and Western Star dealership groups in the United States. Together with minority owner Michael Yates and the third generation leaders of the Hopkins family, Truck Centers now consists of 10 dealerships and 2 auxiliary locations in Illinois, Indiana, and Missouri. This includes 55 “Collision Center” work bays, 248 “Service Shop” work bays, and 692,129 total sq. ft. of facilities at 12 locations.

Together, we have...

- grown from one humble store to **12 “state-of-the-art”** locations.
- built a network respected by our peers and collected the accolades and hardware that go along with industry leadership including the recognition as **“Dealer of the Year”** for all manufacturers in 2014.
- created a culture that places people and purpose ahead of profits. Several multigenerational families and legacy employees create the fabric of continuity at TCI.
- embraced sustainability and “green” initiatives including alternative fuels, materials recycling programs and solar power.
- developed industry-recognized initiatives including our **TCI F.I.R.S.T.** program, to recruit young men and women for in-demand careers as service technicians, service writers, parts specialists, and collision repair techs.
- launched **55 TCI “Future in Repair Service Technology” (F.I.R.S.T.)** careers since 2014
- remained committed to delivering superior customer service and cultivating partnerships for long-term, mutual success.



- **357** team members in the St. Louis Metro area
- **739** team members passionate about our customers
- trained **6,000** techs across the United States at our Training Center
- Worked to be agents of positive change in the communities that we serve including established partnerships with the Gene Silay’s Girls and Boys Club of St. Louis, St. Louis Children’s Hospital, Rankin-Jordan Pediatric Bridge Hospital, Operation United Way, Toys for Tots, and other great regional non-profit organizations.

For nearly 50 years, Truck Centers, Inc. has been guided by a strong sense of working together to do the right thing, to be a champion for our customers, and to be a force for positive change in our communities. Together, we are *“Partners in Excellence.”*

“Our vision is to support the communities where our employees and customers live and work, and to be a positive agent of change.”

— Katie Hopkins, President/COO

Interested in Applying?

Call (800) 669-3454 or visit www.truckcentersinc.com

Walgreens Distribution Center



The **Mt. Vernon Walgreens Distribution Center (MTVDC)** opened its doors in 1990. In the years since, we have seen the facility grow from a 368,000 sq. ft. space, servicing 125 stores to over 1 million sq. ft. across three buildings, servicing 887 parent stores. The MTVDC is unique within the Walgreens Supply Chain because of the distinct responsibility of servicing other Distribution Centers (DCs) and stores outside of our regional footprint. This process, known to us as Central Pick, grants us the ability to service an additional 7,279 stores across the United States and Puerto Rico. That is right—if you have made a purchase in a Walgreens store, anywhere in the U.S. and beyond, there is a high chance that the products in your cart came from the Mt. Vernon DC. MTVDC is currently the largest distribution center within the Walgreens' Supply Chain in physical size, as well as volume shipped. We currently employ approximately 1,500 people from our local communities with nearly 100 of those being leadership. This team is responsible for managing approximately \$100 million of average inventory daily.

Many people may think that Walgreens only offers hourly warehouse positions, but the DC has hundreds of employees working in salaried, professional positions, such as engineering, IT, leadership, and more. At Walgreens, we place a heavy emphasis on the development of our team. This environment is ripe

with opportunities for any interest level, whether it be for hourly employment or professional growth and promotion. Whatever you are looking for, the Walgreens Distribution Center can help you find it.

Due to the nature of our business, Walgreens has committed to driving continuous improvement in all avenues. This mentality allows us to keep a competitive edge in the ever-changing landscape of retail and e-commerce. With this in mind, we are always looking for the newest methods and talent in the market. One of the ways in which we look to recruit and develop outside resources is through a 10-week summer internship, available to college seniors looking at a career in Supply Chain. Our internships are focused on learning the operational flow of the distribution center and utilizing Lean and Six Sigma methodologies to improve or create a process to benefit both internal and external customers.

At Walgreens, we pride ourselves for not only being focused on the bottom line, but treating our team as family. MTVDC provides a clean, safe, and evolving atmosphere. With the DC boasting over 20 hourly job titles and infinite possibilities available, we look forward to you becoming a part of our team and family soon.

A high school diploma or equivalency is required for these positions. Benefits include competitive wages, medical/dental/vision insurance, 401k with company match, life insurance, paid holidays/vacation time, on-site wellness center, discounts, and more!

Interested in Applying?

MTVDC available positions are listed at jobs.walgreens.com under *Distribution > Mt. Vernon, IL*. Check out all available positions (all career areas, anywhere in the country) at jobs.walgreens.com.

Do You Have What It Takes?

Top 10 Skills Needed for a Successful Manufacturing Career

Many entry-level manufacturing positions within Jefferson County require only a High School diploma or equivalent. Some positions require an Occupational Certificate, and others require an Associate's or Bachelor's degree. In addition to technical education courses, other common sense skills can help you enjoy a successful career in manufacturing. Here are several tips from surveyed employers on what they are seeking in potential job candidates:

1. Good Math Skills

Solid basic mathematics skills will help you calculate accurate weights, fractions, measures, convert between unit systems, and use a tape measure.

2. Respect for Safety Regulations

Plant positions in most facilities have standard operating procedures that team members must follow exactly to ensure quality products are made safely and efficiently, preventing most injuries and accidents on the job.

3. Active Work Environment

A manufacturing position is more physically demanding than a desk job. Employees often work standing up and sometimes need to lift light loads. If you like working in an active and fast-paced environment, manufacturing may be a good fit for you!

4. Attendance & Punctuality

A manufacturing position is no different from school when it comes to attendance and punctuality. Excellent attendance and punctuality are often rewarded, while not showing up on time or missing work are common reasons why manufacturers terminate employees.

5. Teamwork

Have you ever wondered why you had group projects in high school? Part of this is about learning teamwork. A positive and agreeable attitude, the ability to stay on task, working well with others—and independently—is critical for all employment positions.

6. Initiative

Be a self-starter and willingly accept extra work or overtime opportunities. Offer constructive suggestions to help streamline processes. Have a spirit of volunteerism and go beyond the minimum job expectations.

7. Attention to Details

Paying attention to details and learning from past mistakes often helps team members avoid creating products with defects or worse—safety issues that can risk lives!

8. Willingness to Learn

Take on new challenges and learn new skills. The most valuable employees contribute safer, more efficient, less wasteful, and more innovative ways of doing things on the job—improving their entire team!

9. Ability to Focus

The ability to focus on work, in spite of whatever may be happening in your personal life, will help you avoid wasting time discussing problems that should be solved during personal time.

10. Good Communication Skills

Conflict resolution should not be difficult. The ability to communicate clearly to resolve conflicts makes working together more fun, prevents misunderstandings, and helps create mutual respect among team members.

Still Interested in a Manufacturing Career?

The following pages have information on available courses at Rend Lake College and career development resources to get you started.

Rend Lake College Training Opportunities



Jefferson County residents have access to eight institutions of higher education within a one-hour drive. The closest is **Rend Lake College** — the #1 community college in Illinois for the third year in a row, according to *WalletHub.com*. Rend Lake College has a number of associate degree programs and certifications based specifically on the needs of area employers.

Rend Lake College now offers apprenticeships through the U.S. Department of Labor Office of Apprenticeship, related to **Industrial Maintenance Technology, Basic Machining Technology, Manufacturing Technology, Truck Driver Training, and Welding Technology**. Look for the ★ (star) next to the appropriate fields below.

Computer-Aided Drafting

Students who have demonstrated proficiency in drafting can complete an occupational certificate (11 credit hour over three semesters).

Diesel Technology ★

Students prepare for occupations involving the maintenance and repair of diesel engines, and develop thorough knowledge of servicing diesel systems and their accessories. Students can earn an *Occupational Certificate* (30 credit hours over two semesters) or an *Associate in Applied Science*, with the option to capstone into a participating four-year institution (66 credit hours over four semesters).

Heavy Equipment Technology ★

Students prepare for occupations involving the maintenance and repair of heavy-duty trucks and equipment, and develop knowledge of engine and brake repair, servicing, sales and alignment. Students can earn an *Associate in Applied Science* and, upon completion, have the option to capstone into a participating four-year institution (72 credit hours over four semesters).

Industrial Electronics & Maintenance ★

Students learn electronics and maintenance fundamentals, the associated circuitry and components, troubleshooting and repair of systems. Courses contain a balance of theory and lab experience that develop a versatile technician, qualifying students for entry-level positions in various industries. Students can earn an *Associate in Applied Science* with the option to capstone into a participating four-year institution (72 credit hours over four semesters). Here are some other options within Industrial Electronics & Maintenance:

PLC Certificate

Students learn the electrical skills necessary to configure, program, connect sensors, motors, or other output devices necessary to work with Programmable Logic Controllers (PLCs) used to automate mechanical processes. Students troubleshoot Allen Bradley SLC 500 control systems and configure PLCs in a stand-alone and a network environment using a teach pendant and the computer-based RSLogic software (20 credit hours over two semesters).

Robots & Automation Certificate

Students learn to install, maintain and troubleshoot automated equipment. This includes principles of DC, AC and digital circuits, wiring, programming and troubleshooting programmable logic controllers, robot set-up, flow charting, programming points, programming sequence instructions and conditional commands (18 credit hours over two semesters).



Certified Production Technician Certificate

Students gain foundational knowledge and skills for entry- to mid-level production technician jobs in manufacturing, including the Manufacturing Skill Standards Council (MSSC) industry-recognized credentialing system covering all four production functions common to manufacturing. Students must receive a “C” or better in all courses (16 credit hours over one semester).

Manufacturing Technology ★

Broad-based curriculum enables graduates to obtain employment in a variety of manufacturing areas, such as the *Manufacturing Skill Standards Council (MSSC)* industry-recognized credentialing system covering all four production functions common to manufacturing. The technician develops knowledge of materials, manufacturing process, quality processes, and computer, electrical, mechanical and machine control systems related to manufacturing disciplines in preparation for supervisory or technical positions. Students can earn an *Occupational Certificate (32 credit hours over two semesters)* or an *Associate in Applied Science (64 credit hours over four semesters)*.

Welding Technology ★

Programs cover welding theory, blueprint reading, metallurgy & inspection, and test procedures. They include extensive laboratory practice in SMAW, GMAW, GTAW and oxy-acetylene welding processes. Students weld with electrodes and wires in positions common to the welding industry. Program completers will have adequate skills for employment as a welder.

Welding Technology Certificates

Four certificate programs are available. A *Welding Fundamentals Certificate* requires 12 credit hours of coursework. An *Advanced Welding Techniques Certificate* requires an additional 12 credits. Combined, they are equivalent to the 24-credit *Welding Technology Certificate*. The *Pipe Welding Technology Certificate* requires 12 hours of coursework.

Welding Technology — Associate in Applied Science

Welding professionals expand their knowledge base, core competencies and general education. Each course addresses specific workplace situations. Successful completion demonstrates readiness for American Welding Society certification examinations (65 credit hours over four semesters).

Advanced Metalworking Certificate

Students increase skills in the welding, machining and layout processes commonly used in the metalworking industry, providing entry-level skills required by small- to medium-sized metalworking job shops (19 credit hours over two semesters).

★ *Indicates apprenticeship opportunity.*

Interested in Applying?

If you are interested in learning more about apprenticeship, degree, or certificate programs offered at Rend Lake College, contact the **Applied Science & Technology Division** at 618-437-5321, Ext. 1261 or AppliedScience@rlc.edu.

Training Preferences by Employer

The chart below shows the educational certificates and degrees required and/or preferred by each employer for specific positions. The abbreviation of “**Cert.**” refers to **Occupational Certificate** and “**AAS**” refers to **Applied Associate of Science** degree.

	Cont. Tire	Inno-Tech	Magnum Steel	Mt. V Airport	NRE	PME	PPG	Truck Centers	Wal-greens
High School Diploma or Equivalent	●	●	●	●	●	●	●	●	●
Computer-Aided Drafting Cert.									
Diesel Technology Cert.			■		◆			■	
Diesel Technology AAS	◆		■		◆			■	
Heavy Equipment Technology AAS	◆		◆		◆		■	■	
Industrial Electronics & Maintenance AAS	◆				◆	◆	■		
Industrial Maintenance PLC Cert.					◆		■	■	
Robots & Automation Cert.					◆				
Certified Production Technician Cert.		■	■		◆		■	■	
Manufacturing Technology Cert.		■				■	■		
Manufacturing Technology AAS	◆	■				■	■		
Welding Fundamentals Cert.		■	◆		◆	◆		■	
Advanced Welding Techniques Cert.		■	◆		◆	◆			
Welding Technology Cert.		■	◆		◆	◆			
Welding Technology AAS	◆	■	■		◆	◆			
Pipe Welding Technology Cert.									
Advanced Metalworking Cert.		■							

● = Required

◆ = Required for certain positions

■ = Preferred, but NOT required

Illinois Army National Guard

Illinois Army National Guard and Manufacturing – A Viable Partnership

The **Illinois Army National Guard** provides unique opportunities for employers and employees across many spectrums of industry, through acquired skills and certifications. The Army National Guard will train, pay, and certify enlisted personnel on Active Duty Army bases around the United States to learn various trades and skills. Skills include: *diesel mechanics, welding, technical engineering, plumbing, electrical work, motor transport operation, surveying, construction equipment operation/mechanic work*, and many others. Once trained and certified with the Army, individuals return to the civilian workforce and serve at a local National Guard Armory one weekend a month, and two weeks each summer. They work full-time with their perspective employer as Citizen Soldiers.

Illinois Army National Guard members also receive a four-year tuition waiver for certificates or degrees at any public community college or university in Illinois. Employers of reserves reap the benefits of a disciplined, trained, and loyal employee with work experience in relevant fields.



Interested in Applying?

Contact Sgt. 1st Class Anthony Kraefski, Recruiting & Retention NCO, at (618) 242-1053, or anthony.w.kraefski.mil@mail.mil to explore this opportunity.

Career Development



Need to find a career path, receive funding for training, create a resume, or find local employment opportunities?

The following organizations serving Jefferson County are dedicated to help you with career development, job search assistance, and more — all at NO COST!

Illinois Department of Employment Security (IDES)

One-Stop Business & Employment Center

333 Potomac Boulevard, Suite E ■ Mt. Vernon, Illinois 62864

Phone: (618) 244-1700, option 2

IDES CALL CENTER TTY: 1-866-488-4016

>> Visit our website at <https://www.ides.illinois.gov>

Man-Tra-Con Corporation

One-Stop Business & Employment Center

333 Potomac Boulevard, Suite F ■ Mt. Vernon, Illinois 62864

Phone: (618) 241-6900 or TTY: (888) 340-1009

Ask us about our **Manufacturing Skills Standards Certification** program!

>> Visit our website at <http://www.mantracon.org>

*Sponsored by the Jefferson County Development Corporation,
Man-Tra-Con Corporation, Rend Lake College, and the
Illinois Department of Commerce and Economic Opportunity.*

GREAT CAREERS ■ SOLID PAY ■ HOMETOWN PRIDE

