



Drafter, Tool Design Apprenticeship

Job Title: Drafter, Tool Design (CAD Product Assembly) Apprentice

Company: World Magnetics

Location: Traverse City, Michigan

Apprenticeship Term: 4 Years, Competency-Based

Join World Magnetics in shaping the future of precision products as a Drafter, Tool Design Apprentice, where you'll bring innovative ideas to life with creativity and a commitment to quality.

About World Magnetics

Located in Traverse City, Michigan, World Magnetics brings over 60 years of innovation in the design and manufacturing of custom switches for industrial, medical, aerospace, and military applications. We are dedicated to excellence in engineering, quality production, and responsive customer service. Our commitment to developing skilled professionals is reflected in our U.S. Department of Labor Registered Apprenticeship Program, which empowers individuals to grow within the advanced manufacturing field.

Position Overview

As a Drafter, Tool Design Apprentice, you will learn to create and revise technical drawings and models essential for product design and production. This role is critical to our design, engineering, and production teams, supporting both existing products and new developments. A typical day might include designing or modifying 2D and 3D CAD models, collaborating with engineers to review design specifications, and providing CNC programming support for milling and lathe operations. You may also engage in lab testing, prototyping, and troubleshooting, ensuring designs are optimized for production. With each task, you'll gain hands-on experience in precision drafting, problem-solving, and teamwork—building a solid foundation in tool design and CAD.

Key Responsibilities

- Design and develop components, assemblies, molds, dies, and fixtures in both 2D and 3D CAD formats to support new and existing switch and head product lines.
- Collaborate closely with engineers, production teams, and the Switch Engineering Manager to ensure designs align with project specifications, production capabilities, and quality standards.
- Update and modify existing designs to integrate changes, improvements, and customer-driven requirements, supporting ongoing product enhancement.
- Participate in new development projects, contributing to the Engineering Change Process as directed by the Switch Engineering Manager.
- Provide CNC programming support, including developing G-code for CNC milling and lathe operations to aid efficient production.
- Conduct lab studies, testing, and prototyping under the guidance of Product Engineers to validate design concepts and functionality.

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- Perform additional responsibilities as assigned to support the overall objectives of the engineering and production teams.

Competencies Developed

- Proficiency in CAD software and 3D modeling techniques.
- Expertise in geometric dimensioning, tolerancing, and technical drawing standards.
- Skill in CNC programming and understanding of machining processes.
- Ability to interpret and execute complex engineering designs with accuracy.
- Strong collaboration skills for interfacing with engineering, production, and sales teams.

Training and Instruction

This apprenticeship includes a minimum of 600 hours of Related Technical Instruction (RTI) through Northwestern Michigan College, covering courses such as:

- Math for Manufacturing (45 hours)
- Machining I & II (150 hours)
- Print Reading & Sketching (60 hours)
- Tolerancing & GD&T [Geometric Dimensioning and Tolerancing] (45 hours)
- CAD/Computer Modeling (75 hours)
- Fluid Power and Electrical Studies (120 hours)

Minimum Qualifications

- High school diploma or GED equivalency.
- Physical ability to stand for extended periods and lift up to 50 lbs.
- A valid driver's license.
- Strong analytical skills and attention to detail.

What We Offer

- **Competitive Starting Pay:** Start your journey with a structured wage progression, beginning at \$19.00/hr and advancing to a maximum of \$24.50/hr upon completing all key competencies.
- **Comprehensive Benefits:** Health, dental, and vision insurance, plus paid holidays and vacation time.
- **Future Financial Security:** 401(K) retirement plan with company contributions.



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- **Professional Growth:** Take advantage of continuous learning through our U.S. Department of Labor Registered Apprenticeship Program, with structured training and guidance.
- **Innovative Culture:** Join a collaborative, supportive team that values continuous improvement.

Growth Opportunities

Upon completing the program, graduates are equipped for advanced roles such as CAD Technician, CNC Programmer, or Tool Design Specialist, with additional pathways for professional growth within World Magnetics.

Application Process

This apprenticeship is open to candidates through an interview process. Selected applicants will serve a 1500-hour probationary period, gaining hands-on experience in a competency-based program designed to prepare them for a fulfilling career in manufacturing.

To express your interest in the apprenticeship program, please email your resume to jobs@worldmagnetics.com.

World Magnetics is proud to be an Equal Opportunity Employer, fostering an inclusive workplace that values diversity and innovation.

Join World Magnetics and take the next step in building a rewarding career in tool design and advanced manufacturing—apply today to start your journey toward innovation and growth.