CNC Machinist

About my job:
As a machinist and a tool and die maker, I set up and operate a variety of computer-controlled and mechanically controlled machine tools. Using these tools, I produce precision metal parts, instruments and tools.

What I do every day:

• Monitor machine operation to identify work piece defects or machine malfunctions, make adjustments to machines as necessary
• Set up and operate a variety of machines, including lathes, cutters, shears, borers, millers, grinders, presses, drills and auxiliary machines
• Identify tooling requirements and determine appropriate speeds and feeds
• Evaluate blueprints and drawings to identify correct part dimensions and tool path configurations
• Develop and oversee new programming procedures; use 3D modeling software
• Position, adjust and secure stock material against stops, or in chucks, fixtures or automatic feeding mechanisms
• Incorporate tooling and gaging necessary to complete projects; evaluate and ensure safety procedures

What makes my job great?

Job growth:
Across the nation, employment of machinists and tool and die makers is projected to grow 7 percent from 2012-2022. In Ohio, the growth rate is 9 percent.

Short-term training:
Machinists learn their trade in technical high schools, technical colleges and apprenticeship programs. A high school diploma along with some technical training is necessary to secure a job.

Good pay:
Salaries for machinists range from a starting wage of approximately $38,000 to $50,000 annually. With additional experience and expertise, a machinist can earn as much as $100,000 per year.

Benefits:
Most machinists work full time with benefits that may include:

• Paid vacation
• Healthcare
• Tuition reimbursement
How can you become a CNC machining specialist?

**Academic/training credentials:**
Many machinist jobs do not require any type of credential. However, having a degree or certificate will enhance job opportunities.

**Other credentials:**
Journey-level certification can be obtained from state apprenticeship boards after completing an apprenticeship. Many employers recognize and look for this certification.

**Work experience/internships:**
Most employers look for two years of experience and some technical training, and some will provide additional training on their specific equipment. Many companies are looking for machinist interns/apprentices. To find out more about local opportunities, contact Lakeland Career Services at 440.525.7222.

**Skills and requirements:**
- Most machinists work full time, and overtime is often required
- Work may require evenings and weekends
- Strong communication skills
- Employee must be drug-free for a minimum of six months

**Where you can find jobs:**
- Online job boards
- Career fairs
- Networking
- Social media
- Department of Career Services at colleges
- Networking

**Potential job titles:**
- CNC machine setter (computer numerically controlled machine setter)
- CNC machinist
- CNC operator
- Cell machine operator (operating multiple machines in a workspace environment)
- Machine operator
- Machine technician
- Machinist
- Operator
- Setup person
- Tool maker

**Potential local employers:**
- Avery Dennison
- Component Repair Technologies
- Fredon Corporation
- Jergens Inc.
- Lubrizol
- Steris
- Swagelok
Local educational opportunities

Two-year institutions:

- Lakeland Community College: Associate of Applied Science-Computer Integrated Manufacturing Technology
  - CNC operator mini certificate
  - CNC setup and programming technology certificate
  - Computer integrated manufacturing technology certificate
  - Industrial computer hardware technician certificate
  - Production shift leader/manufacturing management certificate
  - Tool and die technology certificate
  - Tool room/maintenance machinist apprentice certificate

- Cuyahoga Community College: Associate of Applied Science in Manufacturing Industrial Engineering Technology
  - CNC machining and composite manufacturing certificate
  - Computer integrated manufacturing certificate
  - Machine tools certificate
  - Quality control certificate

- Kent State University (Trumbull Campus): Associate of Applied Science in Manufacturing Engineering Technology

Four-year institutions:

- University of Akron: Bachelor of Science in Automated Manufacturing Engineering Technology

High School Tech Prep:

- A-TECH: Precision Machining Program
- Auburn Career Center: Advanced Manufacturing Program
- Lake Shore Compact: CNC Manufacturing Technology Program
- Excel TECC: CADD Engineering Technology Program
- Contact your high school guidance office

Technical schools:

- Auburn Career Center: Manufacturing Program
- Erie Institute of Technology: CNC Machinist Technician Program

Coursework per educational entity:

Secondary pathway: Manufacturing Operations

Postsecondary program: Manufacturing Technology

An Example of Course with Secondary and Postsecondary Credits
How can I grow my career?

Educational requirements vary for machinists. A CNC operator requires CNC certification. A CNC programmer needs to have certification and may require a 2-year degree.

Where could I focus or specialize in my career?

- Production worker
- Fabricator
- Machinist
- CNC operators
- CNC programmer
- Welder
- Quality technician
- Manufacturing technologist
- Engineer

The career ladder

Pre-manufacturing

- Develop math and science skills
- Problem-solving skills
- Worksite visits
- Job shadowing
- Production worker/entry-level machinist
- Technical high school or trade school diploma
- Manual machining
- Hand power tools
- Shop experience
- $28,000-$80,000 annual salary

Certificate program

- Machinist
- Journeyman certification or apprenticeship
- Machining certificates
- Geometric dimensioning and tolerancing
- $50,000-$80,000 annual salary

Advanced manufacturing and industry training

- CNC Programmer
- Advanced manufacturing and industry training
- Develop machining processes
- Program CNC machines
- $60,000-$90,000 annual salary

Bachelor’s degree in business management and 10+ years experience

- Manufacturing Management
- Bachelor’s degree in business management or engineering
- 10+ years experience in machine trades
- Manage work flow and personnel
- $80,000-$100,000 annual salary

Sources/References:

O*Net Online-Summary Report, Ohio Labor Market Information