

## CAREER PROFILES

### Machinists and Machining and Tooling Inspectors:

**Machinists** set up and operate a variety of machine tools to cut or grind metal, plastic, or other materials to make or modify parts or products with precise dimensions. **Machining and Tooling Inspectors** inspect machined parts and tooling in order to maintain quality control standards.

### Wage/Salary Information:

\$49,186.96 is the median annual salary found locally.

\$23.65/hour is the median wage reported locally.

### Commonly Listed Skills in Job Postings:

- Blueprint reading
- Detail oriented
- Teamwork
- Problem solving
- Oral and written communication
- Work independently
- Manual dexterity
- Troubleshooting
- Critical thinking
- Self-motivated
- Creativity
- Adaptability
- Time management
- Programming
- Computer use
- Organizational skills
- Maintenance
- Machine operation

### Job Duties:

Machinists read and interpret engineering drawings, blueprints, charts, and tables or study sample parts to determine machining operation to be performed, and plan best sequence of operations. Machinists set up, operate, and maintain a variety of machine tools including computer numerically controlled (CNC) tools to perform precision, non-repetitive machining operations such as sawing, turning, milling, boring, planning, drilling, precision grinding, and other operations. They fit and assemble machined metal parts and subassemblies using hand

and power tools and verify dimensions of products for accuracy and conformance to specifications using precision measuring instruments.

Machining and Tooling Inspectors verify dimensions of machined parts or tooling using micrometers, verniers, callipers, height gauges, optical comparators, co-ordinate measuring machines (CMM) or other specialized measuring instruments. They maintain, repair, and calibrate precision measuring instruments such as dial indicators, fixed gauges, height gauges, and other measuring devices. Machining and Tooling Inspectors also report deviations from specifications and tolerances to supervisor and complete and maintain inspection reports.

### Working Conditions:

Machinists and Machining and Tooling Inspectors typically work 40 hours per week. However, some overtime may be required to meet production schedules. Some larger operations require shift work.

Machinists and Machining and Tooling Inspectors typically work indoors in machine shops or manufacturing plants. The work environment can be noisy and dirty, and workers may also be exposed to unpleasant odours.

Hazards include physical injuries due to possible machinery-related accidents, hearing damage from noise, and sickness caused by exposure to toxic lubricants or coolants. The increased use of enclosed, automated equipment has reduced the risk of such injuries and removed much of the noise and dirt created in traditional machine shops and plants.

Machinists and Machining and Tooling Inspectors are required to stand for most of the work day. At times, these workers may also be required to lift moderately heavy objects, which may increase their risk of back injury.

However, modern shops and factories now employ autoloaders and overhead cranes that reduce the need to lift heavy objects.

### Career Pathways:

Many individuals start in entry-level positions, such as Machine Setters. Once in entry-level positions, these workers may then become Machinist Apprentices. Some workers may also begin as apprentices. Workers become certified Machinists once they have completed an apprenticeship program. After several years of experience as a certified Machinist, Tool and Die Maker, or Machining Tool Operator, workers may become Machining and Tooling Inspectors.

Machinists and Machining and Tooling Inspectors are employed by machinery, equipment, motor vehicle, automotive parts, aircraft, and other metal products manufacturing companies and by machine shops. Below are potential career paths for Machinists and Machining and Tooling Inspectors:

- Automotive Machinist

- Aviation Machinist
- General Machinist
- Machine Shop Inspector
- Machined Parts Inspector
- Machining Inspector
- Machinist
- Machinist Apprentice
- Tooling Inspector

Check out more possible career pathways on [WEexplore](#).

### Education and Training Pathways:

If you're interested in becoming a Machinist or Machining and Tooling Inspector, you can begin your apprenticeship or attend a local training/education program.

#### Apprenticeship Details:

##### Machine Tool Builder and Integrator

- Certification: Voluntary (not required to practice this profession in Ontario)
- Red Seal: No
- On-the-job training: 7,280 hours
- In-class training: Three 8-week technical sessions

##### Motive Power Machinists

- Certification: Voluntary (not required to practice this profession in Ontario)
- Red Seal: No
- On-the-job training: 5,340 hours
- In-class training: One 8-week and two 7-week technical sessions

##### Bearings Mechanic

- Certification: Voluntary (not required to practice this profession in Ontario)
- Red Seal: No
- On-the-job training: 5,760 hours
- In-class training: 240 hours

##### General Machinist

- Certification: Voluntary (not required to practice this profession in Ontario)

- Red Seal: Yes
- On-the-job training: 7,280 hours
- In-class training: 720 hours

Individuals interested in pursuing an apprenticeship pathway, should follow these steps:

- 1) Get hired – by an employer/sponsor/union
- 2) Apply online to register as an apprentice at [www.ontario.ca/page/start-apprenticeship](http://www.ontario.ca/page/start-apprenticeship)
- 3) Sign a training agreement with your employer/sponsor and the Employment Ontario apprenticeship office.
- 4) Become a Member of the Ontario College of Trades Apprentices Class at [www.collegeoftrades.ca/membership](http://www.collegeoftrades.ca/membership)
- 5) Keep a record of the hours you work
- 6) Achieve the competencies listed in your training standard if required in your trade
- 7) Complete all of the training requirements in your trade and you will receive a Certificate of Apprenticeship (CoA).
- 8) Write the Exam for the Certificate of Qualification if required in your trade

If you are currently in high school and would like to begin an apprenticeship, visit [oyap.com](http://oyap.com) for more information about the Ontario Youth Apprenticeship Program.

Individuals unsure about whether to pursue an apprenticeship or not, can learn more by visiting [www.ontario.ca/page/prepare-apprenticeship](http://www.ontario.ca/page/prepare-apprenticeship).

#### St. Clair College:

### **Mechanical Engineering Technology – Automotive Product Design**

#### **Admission/Eligibility Requirements:**

- OSSD with the majority of courses at the College (C), University (U), University/College (M), or Open (O) level
- Grade 12 Match (C), or (U)
- Senior level physics: (C) or (U) is recommended

**Academic Credential:** Three Year - Ontario College Advanced Diploma

**Professional Certification:** Unknown

**Attendance:** In-person

**Full-time or Part-time:** Full-time

**Program Length:** 3-year diploma

**Program Cycle:** Unknown

**Program Cost:**

- Year 1: \$3,941.61
- Year 2: \$3,781.05
- Year 3: \$3,804.05
- Total: \$11,526.71 (2017/18)

**OSAP Eligible:** yes**Location:** 2000 Talbot Road West, Windsor, N9A 6S4

For more information on this program, please visit:

[http://www.stclaircollege.ca/programs/postsec/mech\\_auto/](http://www.stclaircollege.ca/programs/postsec/mech_auto/)

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