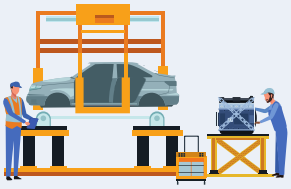
# Occupational Profile

## Machinists and Machining and Tooling Inspectors

Machinists are skilled manufacturing tradesmen/women who operate machines and tools to shape, cut, drill and turn metals and other alloys to manufacture products and components. Their skills and expertise are indispensable in manufacturing, especially in the fabrication and production of parts for motor vehicles, airplanes and ships. As a skilled trade, Machinists are in demand in the automotive manufacturing sector, with more than 1,100 job openings projected over the upcoming decade.

## Where do Machinists and Machining and Tooling Inspectors work?

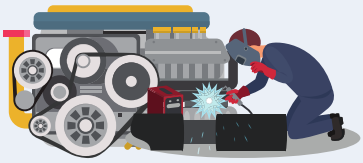


Vehicle Assembly and Body Parts Manufacturing

Aerospace Manufacturing Industry

Machine Shops

Industrial Equipment Wholesalers



Machinery Repair and Manufacturing Industry

## What do Machinists do?

Custom metal fabrication is key in many industries. Machinists shape and cut metals for use in equipment and products. In doing this, Machinists use tools and operate robotic machines such as computer numerically controlled (CNC) machines to create complex components with a high level of accuracy. Below are some of the tasks of Machinists:

- Set up, operate and maintain a variety of tools, equipment and machines to perform precise operations such as cutting, drilling, boring and turning
- Test models under simulated operating conditions for development, standardization, and feasibility of design purposes
- Maintain, repair and calibrate precision measuring instruments
- Collaborate with engineers, supervisors, or manufacturing managers to exchange technical information

## Career pathways & potential earnings of Machinists

Machinists can progress to other roles and positions with the adequate experience and skills:

### Machinists

Machinist wages start at $19/hr, and can exceed $38/hr with experience. Machinists skilled in CNC systems can become programmers.

### CNC Programmers

CNC programmers write instructions for automated systems such as mills and plasma cutters, and can make up to $45/hr.

### Manufacturing Managers

Manufacturing Managers oversee the day to day operations of a production line or a facility. They can earn up to $72/hr.

Machinists and Machine and Tooling Inspectors can also apply their skills and expertise in other occupations such as the following:

- Metal Working and Forging Machine Operators
- Machining Tool Operators

## How do I become a Machinist and Machining and Tooling Inspector?

There are several educational, licensing and training requirements to become a Machinist. Some requirements may vary by province or company. Below are the most commonly required qualifications to work as a Machinist or Machining and Tooling Inspector:

- **Minimum Education:** A high school diploma.
- **Certification and Licensing:** Certification requires four years in an apprenticeship program, or an equivalent time of experience and relevant industry courses. Certification offered in the provinces and territories of Canada are optional.
- **Training and other requirements:** Machinists may need several years of experience in machining, machine operating or tool and die inspecting.


## What are the most important skills to have as a Machinist?

Machinists work just as often with software and robotics as they do with hand and power tools, so today's Machinists must be familiar with advanced manufacturing software and computer numerically controlled (CNC) systems. Machinists can acquire these skills through their job training, apprenticeships, and courses.

**Technical Knowledge and Skills**

- Mechanics and Machinery
- Computer-Aided Design and Computer-Aided Manufacturing (CAD/CAM) Software
- Computer Numerically Controlled (CNC) Systems
- Equipment Repair and Maintenance
- Control Precision

**Soft Skills**

- Critical Thinking
- Pattern Recognition
- Visualization
- Inductive Reasoning
- Coordination

## Future of Machining jobs in Canada

Machinists are a highly in-demand skilled trade in Canada. In 2021, more than 35,200 Machinists were employed across Canada's sectors and industries. FOCAL projects more than 1,100 job openings for Machinists in Canada's automotive manufacturing sector between 2021 and 2030. FOCAL also forecasts that during the same period, more than 930 Machinists are needed to fill recruitment gaps in the sector, especially as the sector transitions to the manufacturing of electric vehicles (EVs) and batteries.


Learn more about the job market for machinists and machine and tooling inspectors, as well as about many other developments and new technologies in Canada's automotive manufacturing by visiting our website futureautolabourforce.ca.
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