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# Project New Skills

Occupations in Manufacturing: A Labour Market Information Guide



**Hamilton Training Advisory Board**  
Commission consultative sur la formation à Hamilton

In partnership with



**MOHAWK**  
COLLEGE



**Adult Basic Education Association**  
Hamilton's Connection to Lifelong Learning

# EMPLOYMENT ONTARIO

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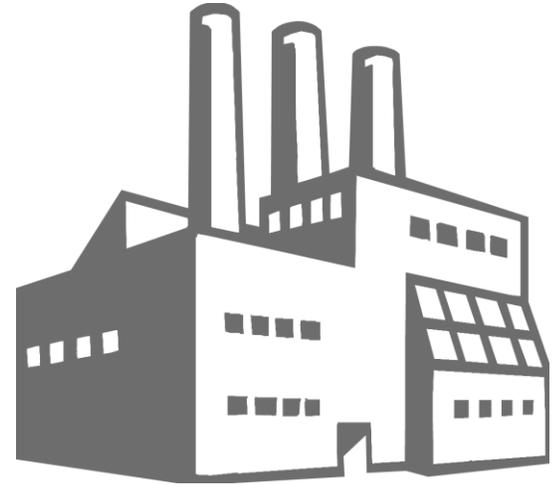
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# Welcome

## to the Occupations in Manufacturing: A Labour Market Information Guide.

Hamilton has a strong history in manufacturing and continues to prosper. This is in part due to Hamilton being well placed to serve major Canadian and U.S. markets.

Today there is still a demand for many jobs in manufacturing. The skills required for these jobs are changing. Most manufacturing jobs need workers with higher skill levels. Most employees will need further training or education.



Project New Skills (PNS) was led by Mohawk College and funded by the Ministry of Training, Colleges and Universities. The Hamilton Training Advisory Board and the Adult Basic Education Association joined Mohawk as project partners. PNS was a response to the changing skills needed to work in manufacturing in Hamilton. The goal was to help people gain skills and information to work or advance in manufacturing.

This guide profiles some of the jobs available in manufacturing. You will find information about

- manufacturing jobs
- essential skills
- local labour market conditions
- salaries
- employment prospects
- local employers

This guide doesn't cover all the manufacturing jobs available in Hamilton. You are encouraged to explore the many other jobs available in manufacturing. You will find labour market information resources listed at the end of this guide.

# Manufacturing in Hamilton

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In 2006 there were 32,905 people working in manufacturing in Hamilton. That equalled 17% of the total workforce.

- a. The majority of workers
  - were between 45 - 54 years of age
  - had high school diploma or equivalent as their highest level of education - matches the rest of Ontario.
- b. 15% of the workforce were 55 years of age and older.
- c. 33% were immigrants, compared to 26% across all industries.



As of December 2010 Hamilton had 1,045 employers in manufacturing. The top 3 types of manufacturing included

1. Fabricated metal product
2. Miscellaneous
3. Machinery

The manufacturing industry continues to play a vital role in our local economy. Many openings in this field will come from the need to replace retiring workers but also from the changing demands of the industry. Find out which jobs employers are looking for as you read through this guide.

# What are Essential Skills?

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## Essential Skills

- are the skills you use in everyday life and at work
- help you do your job
- help you learn other skills
- help you adapt to change
- are measured from 1 to 5 (less difficult to most difficult)

## The Nine Essential Skills

1. Reading Text
2. Document Use
3. Numeracy
4. Writing
5. Oral Communication
6. Thinking Skills
  - a. Problem solving
  - b. Decision making
  - c. Critical thinking
  - d. Job task planning and organizing
  - e. Significant use of memory
  - f. Finding information
7. Working with Others
8. Computer Use
9. Continuous Learning

This guide gives the essential skills needed for each job. The more skills you have the better your chances are to find the job you want.

# Steps to Apprenticeship

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There are many different types of jobs in manufacturing. Education levels needed depend on the job you want. Many jobs need you to complete an apprenticeship program. Apprenticeship offers both theory and hands-on training. Below you will find a few helpful tips on how to be an apprentice.

## 1. Explore your career options with a trained career counsellor

Career counsellors will help you with information, resources and tools that

- assess your
  - transferable skills - using skills in different settings
  - interests
  - personality type
  - strengths
  - weaknesses
  - abilities
- match you with a suitable job

Knowing your skills and abilities can lead to success. You must have the right ability, skills and interests to be a skilled trades person.

Skilled trades are made up four sectors

- a. Construction
- b. Service
- c. Industrial
- d. Motive Power

## 2. Find out what type of trades exist - do your research

Before you decide on the job you want, learn about the job. You may want to learn about

- job openings - today and in the future
- training needed
- skills needed
- education needed
- pre-apprenticeship courses
- time needed to complete the apprenticeship

- salary information
- costs of tools
- work environment
- challenges of the trade
- unionized vs. non-unionized work environments

To kick start your research go to  
 Canadian Apprenticeship Forum  
[www.caf-fca.org/en](http://www.caf-fca.org/en)

Canadian Apprenticeship Forum – Tools for Youth  
<http://resources.caf-fca.org/youth/en>

The following are some tips to help you do your research.

**Information interviews**

Arrange to speak with someone working in a trade, company or job that interests you. The purpose is to gain current information from an “insider” point of view. The goal is to get advice about the trade and their experience.

**Who to contact**

Ask family, friends, neighbours, career counsellors, trades people or someone who has a contact to refer you to.

You can also seek your own contacts by calling individuals and businesses using

- The Yellow Pages
- Hamilton Business Directory
- Unions/ Associations
- Trade Magazines
- Articles in the newspaper

**What to do**

1. Introduce yourself.
2. Briefly tell them of your interest to learn more about their trade.
3. Schedule the date and time you plan to meet.

### How to prepare

Treat an information interview the same as a regular job interview. You should

- be punctual
- come prepared with questions
- dress to impress

### 3. Set out a plan of action

Your action plan will include goals and ways to achieve those goals. You are more likely to have success if you set specific goals that are realistic. When setting your goals consider

- training timelines
- cost of tools and training
- finances
- family
- time to complete apprenticeship

Career counsellors can help you with your training plan.

Update your job search tools. Consider creating or revising your

- cover letter
- resume
- business/networking card
- portfolio - show your strengths, successes and abilities that relate to the trade you are interested in, include your
  - transcripts from courses
  - pictures of work you have done
  - letters of recommendation

#### **4. Search for an employer to sponsor you**

To start an apprenticeship, you must first find an employer. You can do this in different ways.

**a. Web search using [www.apprenticesearch.com](http://www.apprenticesearch.com)**

This free web site helps match those looking for apprenticeship training with employers offering apprenticeship training and jobs. It allows you to

- create a profile
- post your resume
- apply to positions

**b. Networking - making connections**

By talking and connecting with people you may hear about jobs that haven't been advertised. Leave your business card with every contact you make. This will increase your chances of being contacted in the future.

**c. Contacting employers**

Find names of businesses, phone numbers or addresses by using

The Yellow Pages

The Hamilton Business Directory

Unions/associations

Trade Magazines

Articles in the newspaper

#### **5. Practice and carry out "cold calls" to search for work opportunities**

Employers often get an overwhelming response to job ads in the newspaper.

"Cold calling" is a way to help avoid competition and tap into the 70-90% of jobs that aren't advertised. You can do this by phone or in person.

A career counsellor can help you learn and practice how to do "cold calls". Find phone numbers and other important contact information by using a few of the methods given in step 4.

### **What to say**

Develop a short 30-40 second script for yourself to help organize your thoughts.

General guideline for your script include

- introducing yourself
- asking to speak with the person in charge of hiring - be sure to get their name
- asking if they have time to speak with you - if not ask when they do have time so you can call back
- giving the reason for your call
- marketing your skills and abilities
- being prepared to answer questions

You want the employer to accept your resume and think of you for a future opportunity. You may also get other names to contact.

<b>6. Ensure your interview skills and resume are top-notch</b>
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Employers like people who are positive and show a strong work ethic. Your resume gives them their first impression of who you are. An interview should add to that first impression.

In your resume and job interviews you

- need to set yourself apart from others
- market your skills
- highlight your experience
- share your abilities
- present a positive attitude

It's a good idea to get help from a career counsellor when writing your resume or preparing for an interview.

You can prepare for an interview by thinking ahead about the questions you may be asked. Sample questions can be downloaded from the Human Resources Guide for Employers on the [www.apprenticesearch.com](http://www.apprenticesearch.com) website.

To create an effective resume

- underline key words from the job description or want ad
- underline words that match your skills
- group the related skills into categories
- prioritize your skills – decide which sets of skills are most important to the job being advertised
- pick the top 35 words and use them in a summary statement
  - pick the top skills from each category
  - write a summary statement that describes your experience and qualifications for the job - put the statement at the top of your resume
  - put important information first - the person screening a resume spends no more than 30 seconds with each
- use the words you underlined when you describe your own experience in greater detail

A resume and cover letter guide can be downloaded from [www.apprenticesearch.com](http://www.apprenticesearch.com).

## **7. Follow-up**

Following-up means remaining in touch with an employer by phone, email or in person. Following-up shows your

- interest
- initiative
- enthusiasm
- dedication

Many employers welcome your follow-up. Following-up gives you another chance to market your skills and set yourself apart from the competition.

## **8. Remain positive and stay motivated!**

It may take you months to find an employer to take you as an apprentice. It takes hard work and so it's important to stay positive. Keep an open mind and re-evaluate your job search approach from time to time.

## 9. An employer hired you – what’s next?

The employer may want a “trial period” to assess your

- learning potential
- attitude
- work ethic

The Conference Board of Canada’s Employability Skills chart lists what many employers are looking for.

[www.conferenceboard.ca/topics/education/learning-tools/employability-skills.aspx](http://www.conferenceboard.ca/topics/education/learning-tools/employability-skills.aspx)

Once an employer is ready to register you as an apprentice

1. Contact the nearest office of the Ministry of Training, Colleges and Universities (MTCU) – Apprenticeship Branch
2. Complete and sign the apprenticeship training agreement/contract of apprenticeship between you, the employer and the MTCU.

The Hamilton branch can be reached at 905-521-7764.

For all other locations, please visit, [www.edu.gov.on.ca/eng/tcu/search.html](http://www.edu.gov.on.ca/eng/tcu/search.html).

For more information on the Ontario Youth Apprenticeship Program (OYAP), please visit [www.oyap.com](http://www.oyap.com).

For more information on career opportunities in the Hamilton area, visit the Working in Canada website at [www.workinginCanada.gc.ca](http://www.workinginCanada.gc.ca).

**Adapted from Steps to Apprenticeship, IEC Hamilton/ Halton publication**

# Occupational Profiles

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# **Assemblers and Inspectors – Electrical Appliance, Apparatus and Equipment Manufacturing**

NOC 9484

## **What responsibilities will I have?**

If you are an assembler you may

- put items together using parts already made - on an assembly line or at work benches using hand and power tools
- put small and large household electrical appliances together
- put together small transformers, small electrical motors and transmissions used in appliances or other electrical products
- put circuit breakers, switches or other electrical control equipment together
- set up assembly line with materials and supplies needed for production
- set up and adjust production tools

If you are an inspector or tester you may

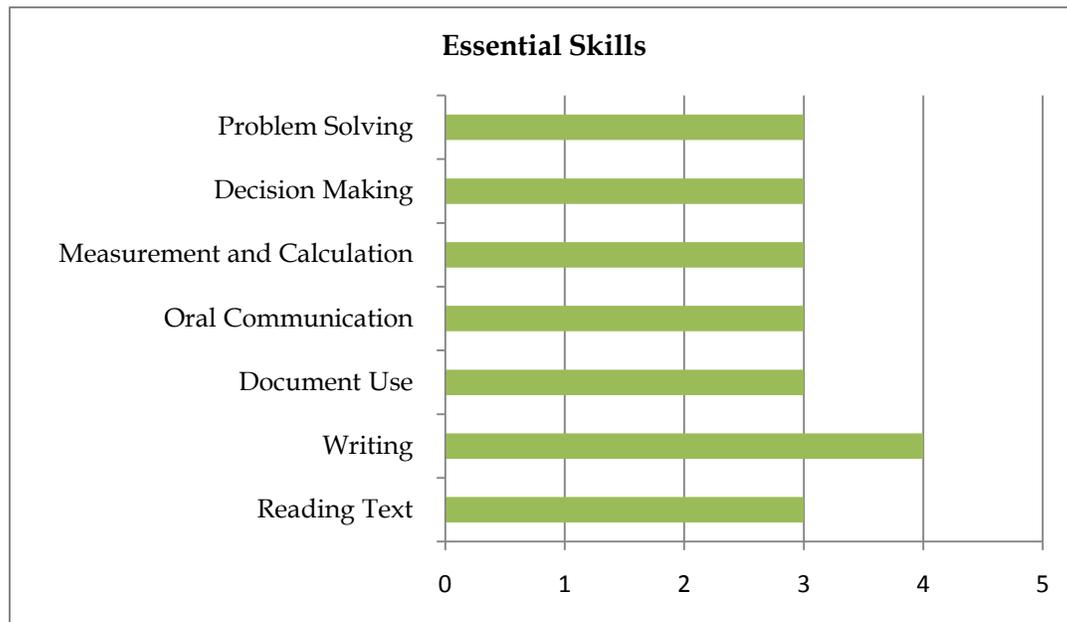
- check products at different stages of production for defects
- check electrical and mechanical connections that aren't correct
- operate automatic or other testing equipment to ensure product quality
- identify and mark products that are acceptable
- identify and mark products that are defective and return them for repair
- collect, record and summarize inspection results

## **What education and training is required?**

You will need some high school education to be an assembler or inspector. You may need to have on the job training. If you are an inspector you may need some experience as an assembler first.

## What skills are required to work in this occupation?

The chart below shows the most important essential skills you will need to be successful as an assembler or inspector of electrical appliance, apparatus and equipment manufacturing.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$41,973
Ontario	\$36,078

### Typical Employers

The top 3 industries that hire assemblers or inspectors of electrical appliance, apparatus and equipment manufacturing include

1. Electrical equipment, appliance and component manufacturing (NAICS 335)
2. Computer and electronic product manufacturing (NAICS 334)
3. Building material and supplies wholesaler-distributors (NAICS 416)

## **Examples of Local Employers**

### **335 Electrical equipment, appliance and component manufacturing**

CESCO Signs and Lighting

[www.yoursolution.ca](http://www.yoursolution.ca)

Innovative Traffic Solutions Inc.

[www.its-traffic.com](http://www.its-traffic.com)

### **334 Computer and electronic product manufacturing**

Honeywell

[www.honeywell.com](http://www.honeywell.com)

Gen Pack Assembly Services Inc.

[www.gen-pack.com](http://www.gen-pack.com)

### **416 Building material and supplies wholesaler-distributors**

Armour Steel Supply Ltd.

[www.armoursteel.ca](http://www.armoursteel.ca)

Ferrell Builder's Supply Ltd.

[www.ferrellbrick.com/hamilton.php](http://www.ferrellbrick.com/hamilton.php)

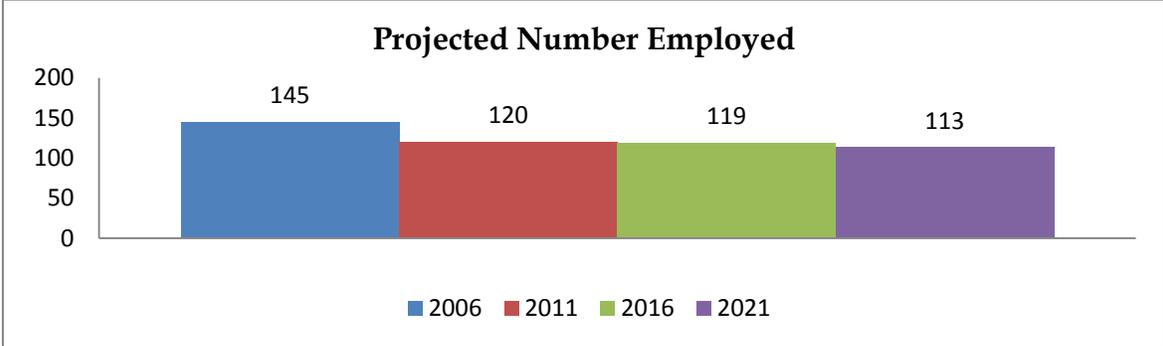
## **Future Job Outlook**

For the next few years you can expect the need for assemblers and inspectors in electrical appliance apparatus and equipment manufacturing to be average levels.

There will be a high demand when workers retire. Over 65% of the current workers are over 45 years of age.

**Employment Projections**

<b>Hamilton</b>	<b>Net New Positions 2006-2016</b>	<b>Potential Retirees 2006-2016</b>	<b>Total New Required</b>
9484 - Assemblers and inspectors, electrical appliance apparatus and equipment manufacturing	-26	20	-6



Source: Centre for Spatial Economics, 2009

# Central Control and Process Operators – Mineral and Metal Processing

NOC 9231

## What responsibilities will I have?

You will

- coordinate and monitor the operation of a particular aspect of mineral ore, metal and cement processing production through
  - control panels, computer terminals or other control systems, usually from a central control room
- operate multi-function central process control machinery to
  - grind
  - separate
  - filter
  - melt
  - roast
  - treat
  - refine or otherwise process mineral ores
- observe computer printouts, video monitors and gauges to confirm specific processing conditions and make changes as needed
- coordinate and supervise production systems in cases of emergency or when scheduled
- provide or organize training for members of production crews
- maintain shift logs of production and other data
- prepare production and other reports

## What education and training is required?

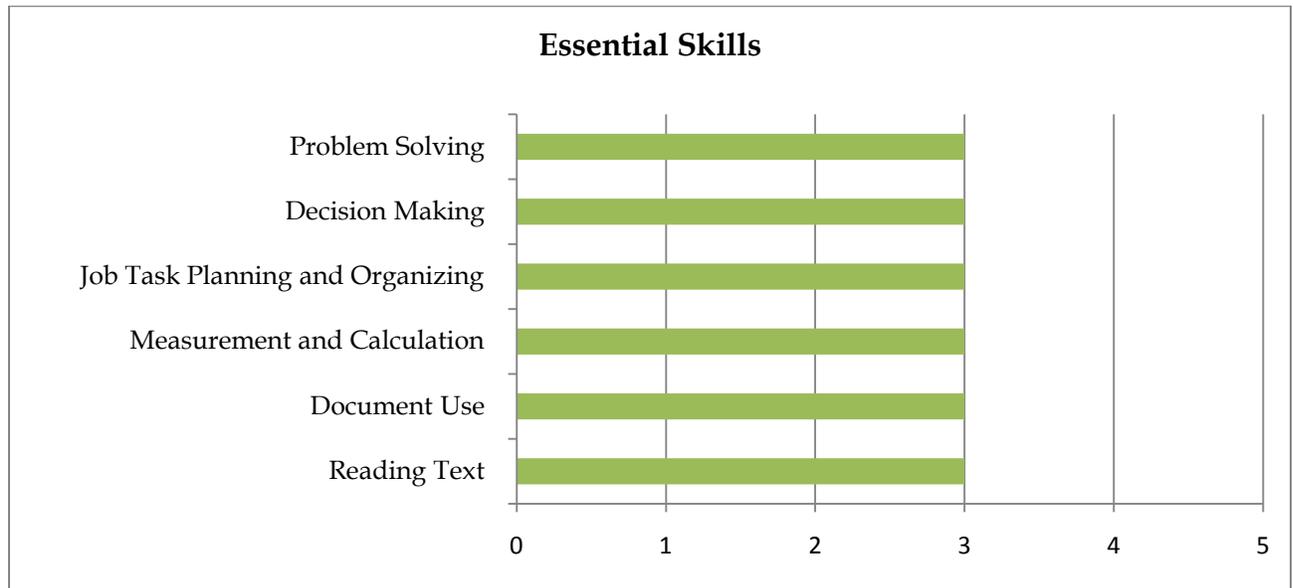
You will

- need a high school diploma to be a central control and process operator in mineral and metal processing
- likely have on the job training
- need to have several years of experience to be a central control and process operator

You may need a college diploma for some positions.

## What skills are required to work in this occupation?

The next chart shows you the most important essential skills you will need to be successful as a central control and process operator in mineral and metal processing.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$64,822
Ontario	\$63,145

### Typical Employers

The top 3 three industries that hire control and process operators, mineral and metal processors include

1. Primary metal manufacturing (NAICS 331)
2. Fabricated metal product manufacturing (NAICS 332)
3. Transportation equipment manufacturing (NAICS 336)

## **Examples of Local Employers**

### **331 Primary metal manufacturing**

Kubes Steel Ltd.

[www.kubesteel.com](http://www.kubesteel.com)

Titan Steel Corporation

[www.titansteel.com](http://www.titansteel.com)

### **336 Transportation equipment manufacturing**

Nuline Products Inc.

[www.nuline.ca](http://www.nuline.ca)

Wabco Freight Car Products

[www.wabtec.com](http://www.wabtec.com)

### **332 Fabricated metal product manufacturing**

Aerloc Industries Ltd.

[www.aerloc.com](http://www.aerloc.com)

Harris Rebar

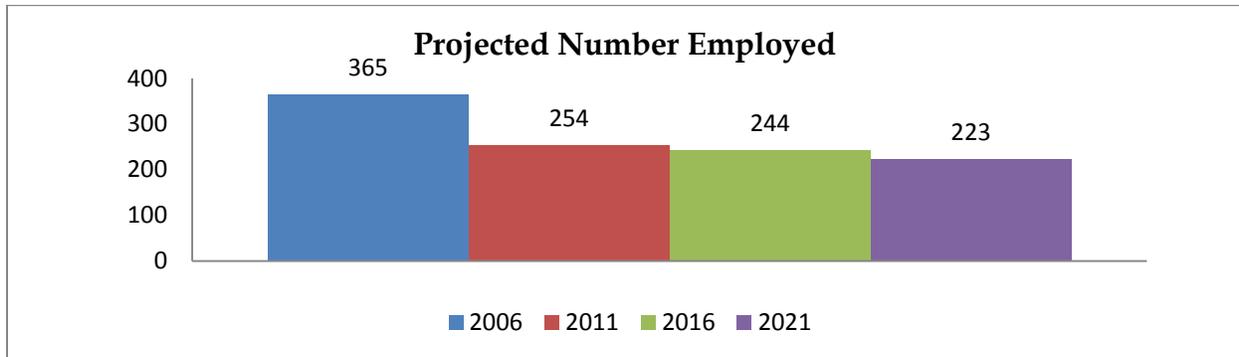
[www.harrisrebar.com](http://www.harrisrebar.com)

## **Future Job Outlook**

In the short term, you can expect that there will be more jobs than workers available to fill those jobs. A large number of workers in this field are older workers which suggests there will be a need to replace workers.

## Employment Projections

Hamilton	Net New Positions 2006-2016	Potential Retirees 2006-2016	Total New Required
9231 - Control and process operator and metal processing	-121	37	-85



Source: Centre for Spatial Economics, 2009

## Fitter Welder

NOC 7263

### What responsibilities will I have?

You will

- lay out, position and secure parts and assemblies according to specifications, using
  - straightedge
  - combination square
  - callipers
  - ruler
- weld parts and assemblies, using equipment that is
  - electric
  - gas
  - arc
  - other
- install and repair equipment, such as
  - lead pipes
  - valve
  - floors
  - tank linings
- inspect grooves, angles, or gap allowances using different measuring tools
- analyze engineering drawings and specifications to plan
  - layout
  - assembly
  - welding operations
- develop templates and other work aids to hold and align parts

### What education and training is required?

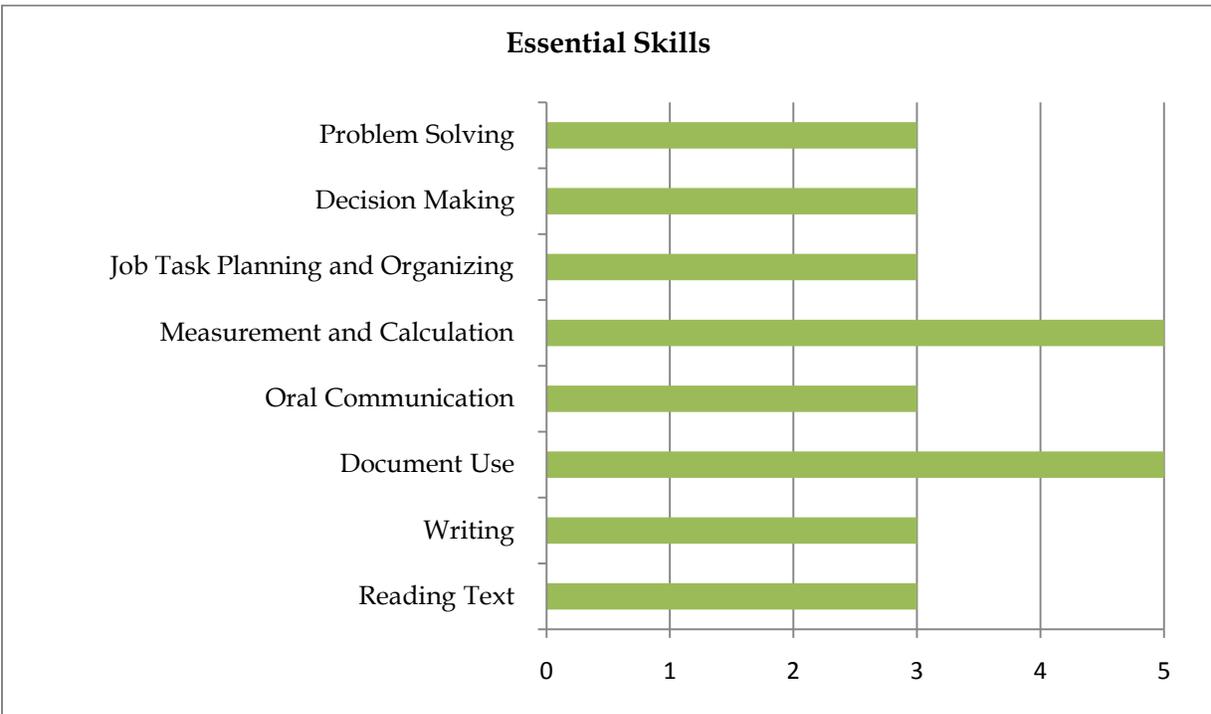
You

- will need a high school diploma
- may need to complete a 3 - 4 year apprenticeship

In Ontario, trade certification is available and often recommended by employers.

## What skills are required to work in this occupation?

The chart below shows you the most important essential skills you will need to be successful as a fitter welder.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$60,282
Ontario	\$54,503

### Typical Employers

The top 3 industries that hire fitter welders include

1. Primary metal manufacturing (NAICS 331)
2. Fabricated metal product manufacturing (NAICS 332)
3. Building material and supplies wholesaler-distributors (NAICS 416)

## Examples of Local Employers

### 331 Primary metal manufacturing

Arcelor Mittal Dofasco

[www.arcelormittal.com](http://www.arcelormittal.com)

Kubes Steel

[www.kubesteel.com](http://www.kubesteel.com)

### 416 Building material and supplies wholesaler-distributors

Industrial Material Center

[www.industrialmaterial.ca](http://www.industrialmaterial.ca)

Rheem Canada Ltd.

[www.rheem.com](http://www.rheem.com)

### 332 Fabricated metal product manufacturing

Fine Cancro Machining Co. Ltd.

[www.cancro.ca](http://www.cancro.ca)

Townsend Tool and Machine Ltd.

## Future Job Outlook

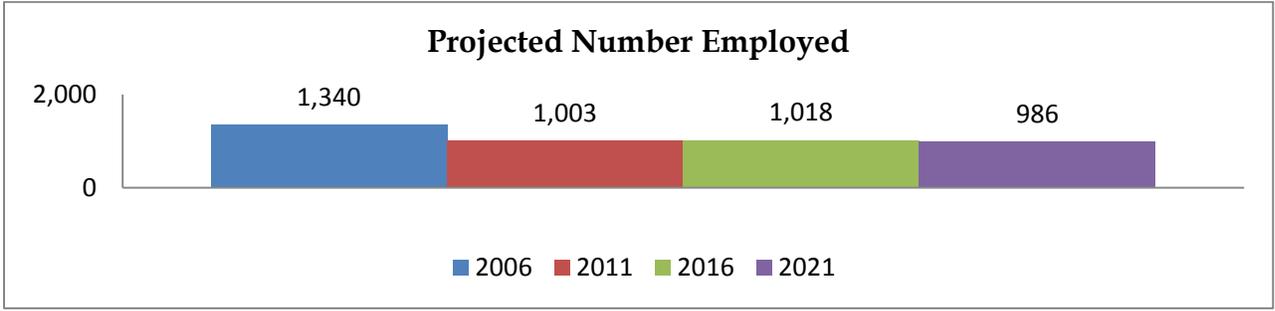
You can expect that the number of jobs for fitter welders will be at average levels over the next few years. You can expect more jobs opening in the future since 60% of the current workforce are 45 years of age or older.

You will have a greater chance of being hired if you

- get the interprovincial certification (Red Seal)
- gain experience with Computer Numerical Control (CNC), Tack, MIG and TIG welding
- are able to read blueprints

**Employment Projections**

<b>Hamilton</b>	<b>Net New Positions 2006-2016</b>	<b>Potential Retirees 2006-2016</b>	<b>Total New Required</b>
7263 – Fitter welder	-322	168	-154



Source: Centre for Spatial Economics, 2009

## **Furniture and Fixture Assemblers and Inspectors**

**NOC 9492**

### **What responsibilities will I have?**

If you are an assembler you will

- prepare, sand and trim wooden furniture and fixture parts using hand and power tools
- put together parts made of wood, metal plastic, cane or other materials to form parts of furniture or complete furniture articles
- make furniture and fixtures stronger using dowels or other supports
- install hardware on furniture such as
  - hinges
  - clasps

If you are an inspector you will

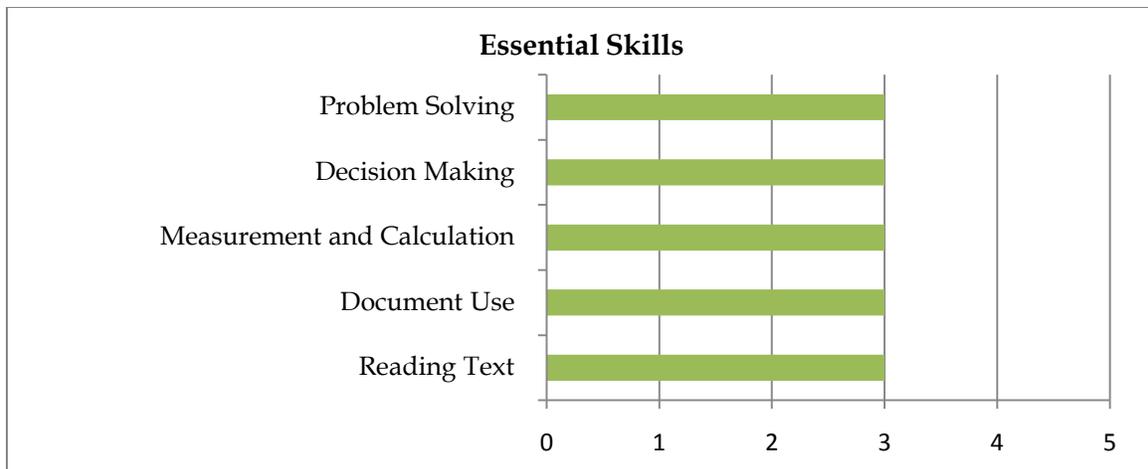
- inspect furniture and fixture subassemblies (parts of fixtures) and finished products to ensure they fit within standards
- mark defective parts or products for repair
- make minor adjustments and repairs
- record information on products inspected

### **What education and training is required?**

You will need some high school education. You will get on the job training.

### **What skills are required to work in this occupation?**

The chart below shows you the most important essential skills you will need to be successful as a furniture and fixture assembler or inspector.



Source: Ontario Skills Passport, 2003

### How much money will I make? Where can I work?

#### Average Employment Income

Hamilton	\$29,611
Ontario	\$32,291

#### Typical Employers

The top 3 industries that hire furniture and fixture assemblers or inspectors include

1. Furniture and related product manufacturing (NACS 337)
2. Wood product manufacturing (NAICS 321)
3. Furniture and home furnishings stores (NAICS 442)

#### Examples of Local Employers

##### 337 Furniture and related product manufacturing

Acryflek Industries Inc.

[www.acryflek.ca](http://www.acryflek.ca)

Erik Cabinets

[www.erikcabinets.com](http://www.erikcabinets.com)

##### 321 Wood product manufacturing

Fima Woodworking Ltd.

ArchMill House Inc.

## 442 Furniture and home furnishings stores

Centura Floor and Wall Tile

[www.centura.ca](http://www.centura.ca)

Stoney Creek Furniture

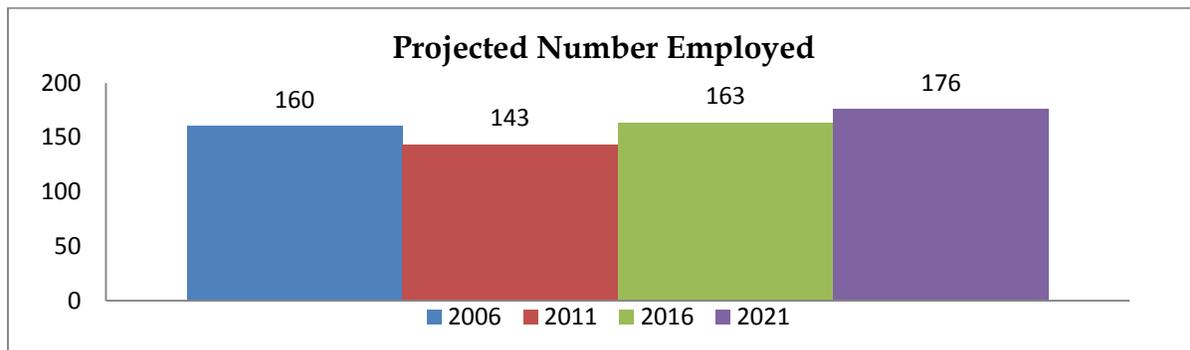
[www.stoneycreekfurniture.com](http://www.stoneycreekfurniture.com)

### Future Job Outlook

You can expect to find more workers than jobs from 2009 to 2018. The average age of workers is 40.

### Employment Projections

Hamilton	Net New Positions 2006-2016	Potential Retirees 2006-2016	Total New Required
9492 - Furniture and fixture assemblers and inspectors	3	13	17



Source: Centre for Spatial Economics, 2009

## General Machinist

NOC 7231

### What responsibilities will I have?

You will

- read and interpret information to determine machining operation and plan the best order of operations - information will come from
  - engineering drawings
  - blueprints
  - charts
  - tables
  - sample parts
- figure out the size of items and what they can handle
- measure and lay out work pieces
- set up, operate and maintain different machine tools including computer numerically controlled (CNC) tools to perform precise, non-repeating machining such as
  - sawing
  - turning
  - milling
  - boring
  - planning
  - drilling
  - precision grinding and other operations
- fit and assemble machined metal parts and subassemblies (parts) using hand and power tools
- ensure products are the right size and meet specifications using precise measuring tools
- set up and program machine tools for use by machining tool operators

### What education and training is required?

You will need a

- high school diploma
- 4 year apprenticeship certification

In Ontario, trade certification is not mandatory, but is recommended by employers.

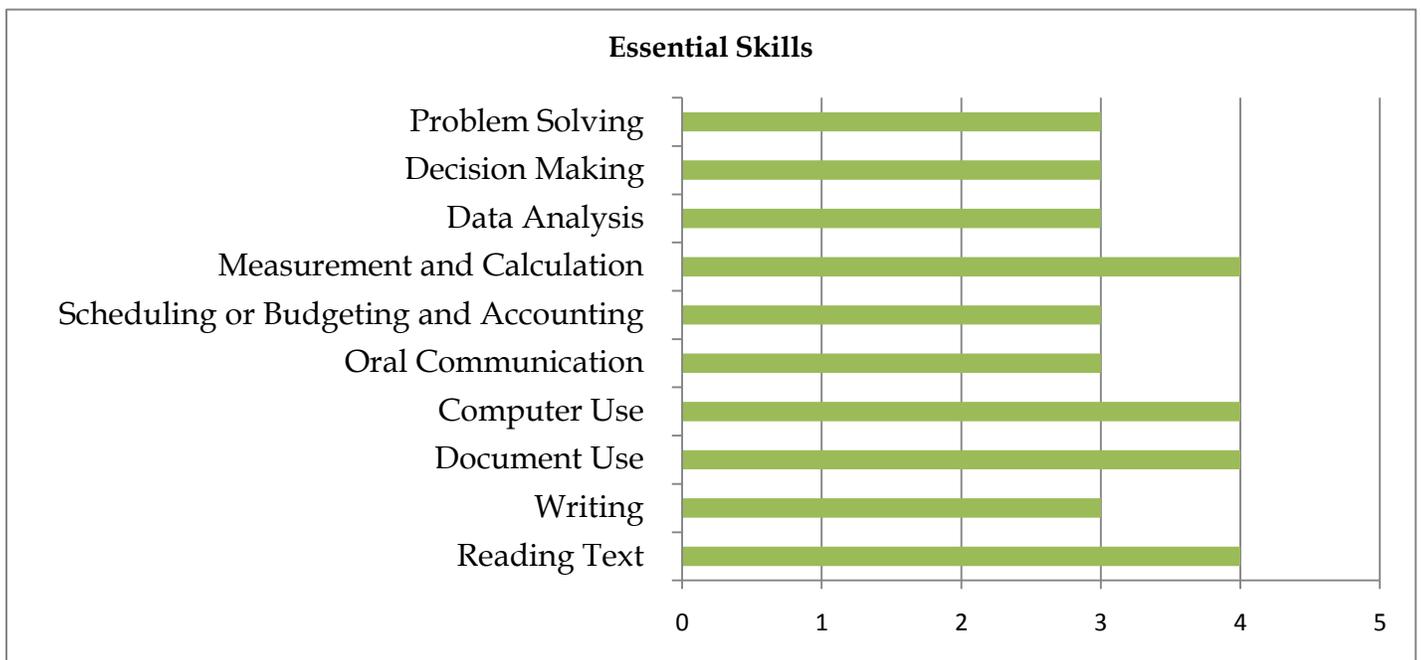
Interprovincial (Red Seal) trade certification, which allows qualified trades persons to work in other provinces and territories, is available for qualified general machinists.

College level programs related to this career include

- General Machinist
- General Metal Machinist
- Mechanical Technician
- CNC Programmer
- CAD/CAM Automated Machinist

### What skills are required to work in this occupation?

The next chart shows you the most important essential skills you will need to be successful as a general machinist.



Source: Ontario Skills Passport, 2003

### How much money will I make? Where can I work?

#### Average Employment Income

Hamilton	\$54,946
Ontario	\$51,086

## Typical Employers

The top 4 industries that hire general machinists include

1. Fabricated metal product manufacturing (NAICS 332)
2. Machinery manufacturing (NAICS 333)
3. Transportation equipment manufacturing (NAICS 336)
4. Primary metal manufacturing (NAICS 331)

## Examples of Local Employers

### 332 Fabricated metal product

Arcelor Mittal Dofasco

[www.arcelormittal.com](http://www.arcelormittal.com)

Sobotec Ltd.

[www.sobotec.com](http://www.sobotec.com)

### 336 Transportation equipment

Taalman Engineered Products Ltd.

[www.taalman.net](http://www.taalman.net)

Nu-Line Product Inc.

[www.nuline.ca](http://www.nuline.ca)

### 333 Machinery manufacturing

North American Tillage Tools Co.

Superior Radiant Products

[www.superiorradiant.com](http://www.superiorradiant.com)

### 331 Primary metal manufacturing

Barton Air Fabrications

[www.bartonairfab.com](http://www.bartonairfab.com)

D & D Custom Steel Products Ltd.

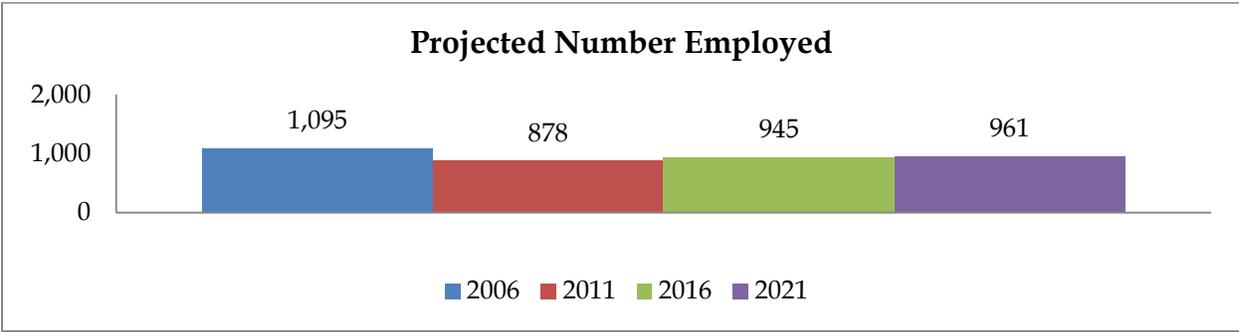
[www.ddcustomsteel.com](http://www.ddcustomsteel.com)

## Future Job Outlook

You can expect there to be jobs at average levels over the next few years. Over 40% of the current workers are over 45 years of age. There will be more jobs as people retire.

**Employment Projections**

<b>Hamilton</b>	<b>Net New Positions 2006-2016</b>	<b>Potential Retirees 2006-2016</b>	<b>Total New Required</b>
7231 - General machinists	-150	131	-19



Source: Centre for Spatial Economics, 2009

# Heavy Duty Equipment Mechanic

NOC 7312

## What responsibilities will I have?

You will

- check bulldozers, cranes, graders and other heavy construction, logging and mining equipment to make sure they are working correctly
- inspect equipment to find faults or errors
- determine the extent of repair required on equipment
- adjust equipment and repair or replace broken parts, components or systems, using hand power tools
- test repaired equipment to ensure that it works correctly
- clean, lubricate and do other routine maintenance work on equipment
- repair work on heavy trucks

## What education and training is required?

You should complete a 4 year apprenticeship program or have 4 years of work experience plus some high school, college or industry courses in heavy equipment repair.

In Ontario, certification is not mandatory but is strongly recommended by employers.

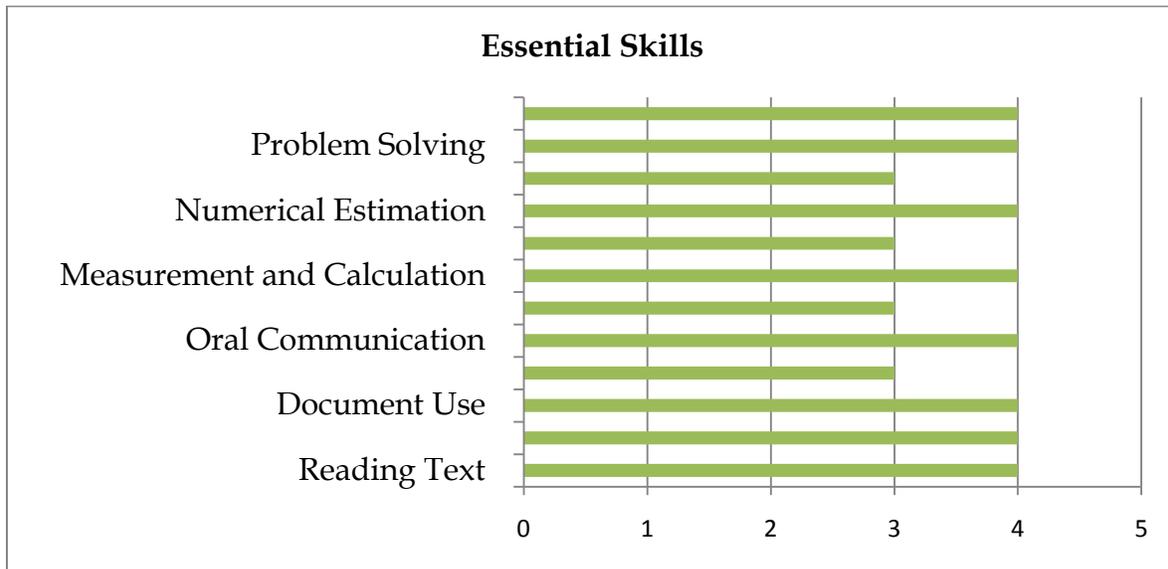
Interprovincial (Red Seal) trade certification, which allows qualified trades persons to work in other provinces and territories, is also available in Ontario.

Post-high school education offered at the college level related to this career include

- Motive Power Fundamentals
- Motive Power Technician
- Heavy Duty Equipment Mechanic
- Truck and Coach Technician

## What skills are required to work in this occupation?

The chart below shows you the most important essential skills you will need to be successful as a heavy duty equipment mechanic.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$57,123
Ontario	\$55,153

### Typical Employers

The top 4 industries that hire heavy duty equipment mechanic include

1. Primary metal manufacturing (NAICS 331)
2. Repair and maintenance (NAICS 811)
3. Machinery, equipment and supplies wholesaler-distributors (NAICS 417)
4. Machinery manufacturing (NAICS 333)

## Examples of Local Employers

### **331 Primary metal manufacturing**

Kubes Steel

[www.kubesteel.com](http://www.kubesteel.com)

Taylor Steel Inc.

[www.taylorsteel.com](http://www.taylorsteel.com)

### **417 Machinery, equipment and supplies wholesaler-distributors**

Altruck International Truck Centres

[www.altruck.com](http://www.altruck.com)

### **811 Repair and maintenance**

DeWitt Car & Truck Service Inc.

Evely International

Wentworth Truck Repair

### **333 Machinery manufacturing**

Complete Plant Maintenance

[www.completeplantmaintenance.com](http://www.completeplantmaintenance.com)

Industrial Brake

## Future Job Outlook

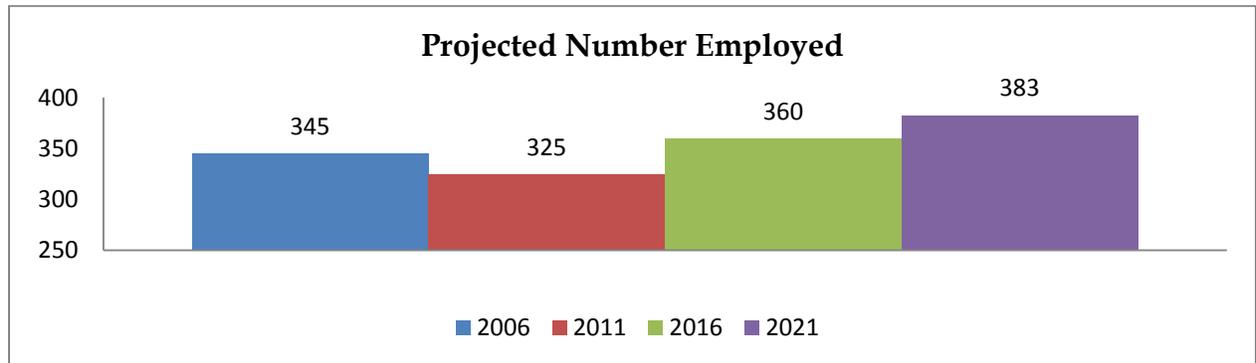
You can expect more jobs than workers for all but the primary metal manufacturing sector. There is a strong outlook for

- machinery manufacturing
- machinery, equipment and supplies wholesaler-distributors
- repair and maintenance

By 2016 Hamilton will need 60 heavy duty mechanics.

## Employment projections

Hamilton	Net New Positions 2006-2016	Potential Retirees 2006-2016	Total New Required
7312 – Heavy duty mechanics	15	44	59



Source: Centre for Spatial Economics, 2009

# Hydraulics Mechanic

NOC 7312

## What responsibilities will I have?

You will

- read and interpret job specifications, blueprints, engineering or design drawings and schematics
- prepare bills of materials to estimate costs to complete a job based on
  - drawings
  - sketches
  - codes
  - company procedures
- maintain and use hand and power tools
- perform bench work including
  - putting together and taking apart
  - modifying
  - measuring
  - inspecting and testing of hydraulic and pneumatic equipment
- inspect and examine components and parts including cylinders and pistons for rust, first, and wear
- install, test, repair and rebuild hydraulic equipment and pneumatic equipment to job specifications
- mount, install, and replace tires
- identify and apply lubricants
- write technical reports and maintain repair records

## What education and training is required?

You will need to

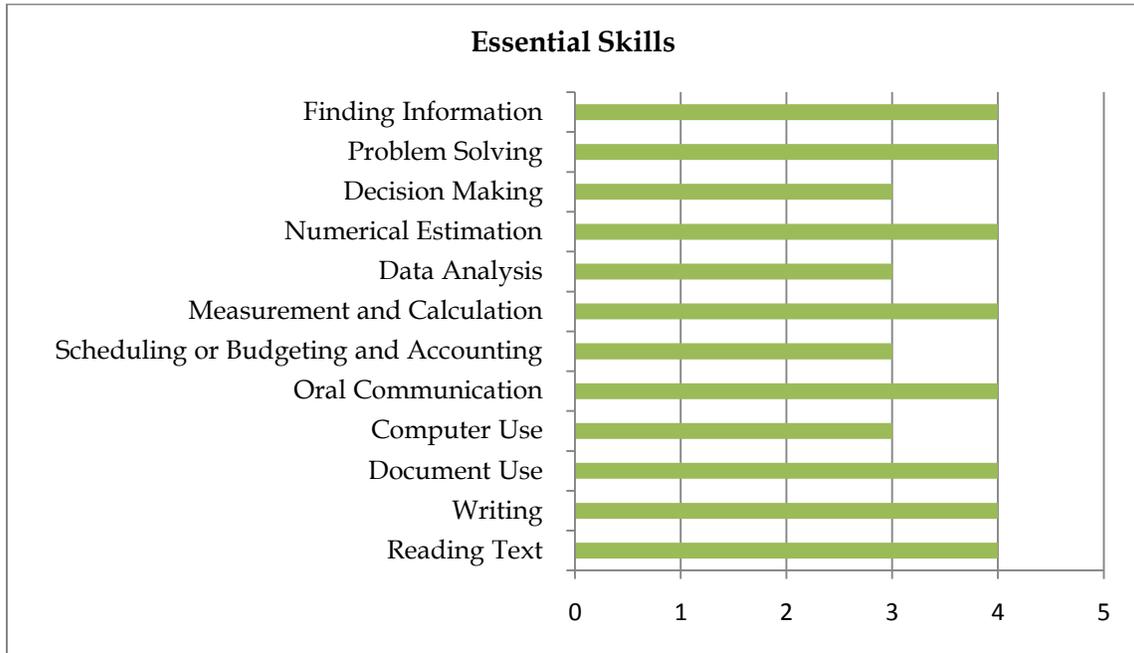
- have a high school diploma
- complete an apprenticeship program of 7,000 – 8,000 hours

College level programs include

Industrial Hydraulics  
Mechanical Engineering Technician  
Electrical Engineering Technician  
Heavy Equipment Techniques

## What skills are required to work in this occupation?

The chart below shows the most important essential skills you will need to be successful as a hydraulics mechanic.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$57,123
Ontario	\$55,153

### Typical Employers

The top 4 industries that hire hydraulics mechanics include

1. Primary metal manufacturing (NAICS 331)
2. Repair and maintenance (NAICS 811)
3. Machinery, equipment and supplies wholesaler-distributors (NAICS 417)
4. Machinery manufacturing (NAICS 333)

## **Example of Local Employers in Hamilton**

### **331 Primary metal manufacturing**

Barzel Industries

[www.novamerican.com](http://www.novamerican.com)

Multiserv

[www.multiserv.com](http://www.multiserv.com)

### **417 Machinery, equipment and supplies wholesaler-distributors**

Crown Pump

[www.crownpump.ca](http://www.crownpump.ca)

Stoney Creek Hydraulics

### **333 Machinery manufacturing**

Hess Machinery (Canada) Ltd.

[www.hessmachinery.com](http://www.hessmachinery.com)

Wentworth Mould & Die Cast Co. Ltd.

[www.wentworthmould.com](http://www.wentworthmould.com)

### **811 Repair and maintenance**

Head and Block Specialty

[www.headandblockspecialty.com](http://www.headandblockspecialty.com)

M.C. Automotive Ltd.

## **Future Job Outlook**

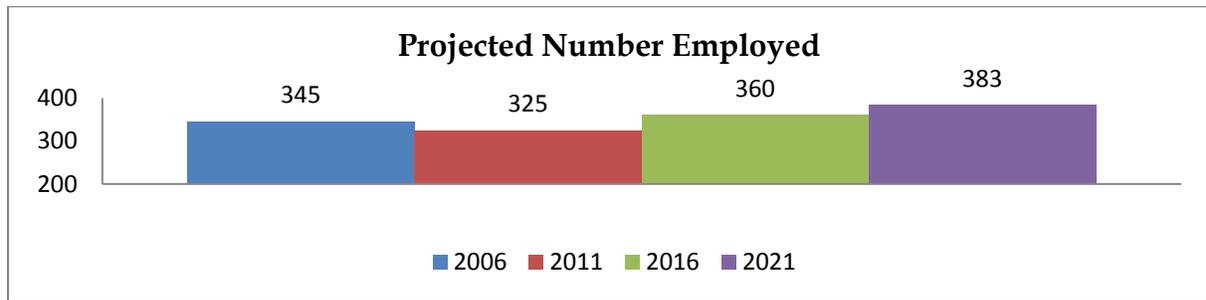
You can expect more jobs than workers for all but the primary metal manufacturing sector. There is a strong outlook for

- machinery manufacturing
- machinery, equipment and supplies wholesaler-distributors
- repair and maintenance

By 2016 Hamilton will need 60 heavy duty mechanics.

## Employment Projections

Hamilton	Net New Positions 2006-2016	Potential Retirees 2006-2016	Total New Required
7312 - Heavy duty mechanics	15	44	59



Source: Centre for Spatial Economics, 2009

# Industrial Electrician

NOC 7242

## What responsibilities will I have?

You will

- read and interpret information to determine wiring layouts for new or existing installations - information includes
  - drawings
  - circuit diagrams
  - electrical code specifications
- install, examine, replace and repair
  - electrical wiring
  - receptacles
  - switch boxes
  - conduits
  - feeders
  - fibre-optic and coaxial cable assemblies
  - lighting fixture
  - other electrical parts
- test electrical and electronic equipment and parts for
  - continuity
  - current
  - voltage
  - resistance
- maintain, repair, install and test
  - switchgear
  - transformer
  - switchboard meters
  - regulators and reactors
- maintain, repair, test, and install
  - electrical motors
  - generators
  - alternators
  - industrial storage batteries
  - hydraulic and pneumatic electrical control systems
- troubleshoot, maintain and repair industrial, electrical and electronic control systems and other related devices

- do preventive maintenance and keep maintenance records
- install, maintain and calibrate industrial instruments and related devices

### What education and training is required?

You will need to

- have a high school diploma
- get trade certification

Industrial electricians must earn 9,000 hours of combined on the job training and in class technical training.

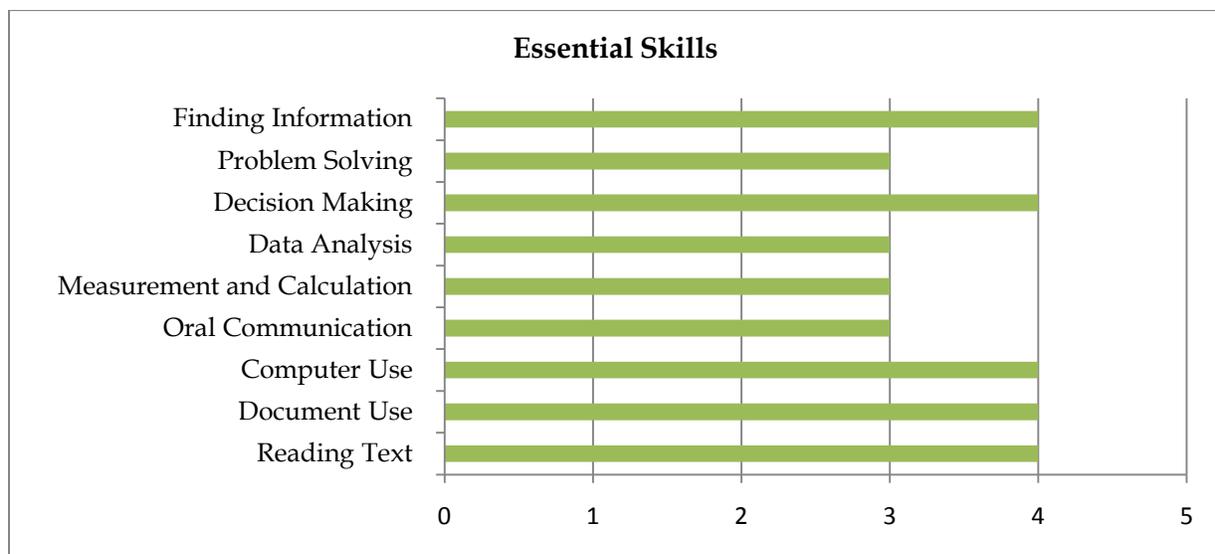
Interprovincial (Red Seal) trade certification, which allows qualified trades persons to work in other provinces and territories, is also available in Ontario.

College level programs include

- Electrical Engineering – Industrial Technician
- Wind Turbine Technician or Industrial Electrician

### What skills are required to work in this occupation?

The chart below shows the most important essential skills you will need to be successful as an industrial electrician.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$72,624
Ontario	\$76,017

### Typical Employers

The top 3 industries that hire industrial electricians include

1. Primary metal manufacturing (NAICS 331)
2. Transportation equipment manufacturing (NAICS 336)
3. Fabricated metal product manufacturing (NAICS 332)

### Example of Local Employers

#### 331 Primary metal manufacturing:

ArcelorMittal Dofasco

[www.arcelormittal.com](http://www.arcelormittal.com)

Kubes Steel Ltd.

[www.kubesteel.com](http://www.kubesteel.com)

#### 332 Fabricated metal product manufacturing:

Bartonair Fabrications Inc.

[www.bartonairfab.com](http://www.bartonairfab.com)

#### 336 Transportation equipment manufacturing:

Bartlett-Provincial Brake Inc.

[www.barpro.net](http://www.barpro.net)

Nu-Line Products Inc.

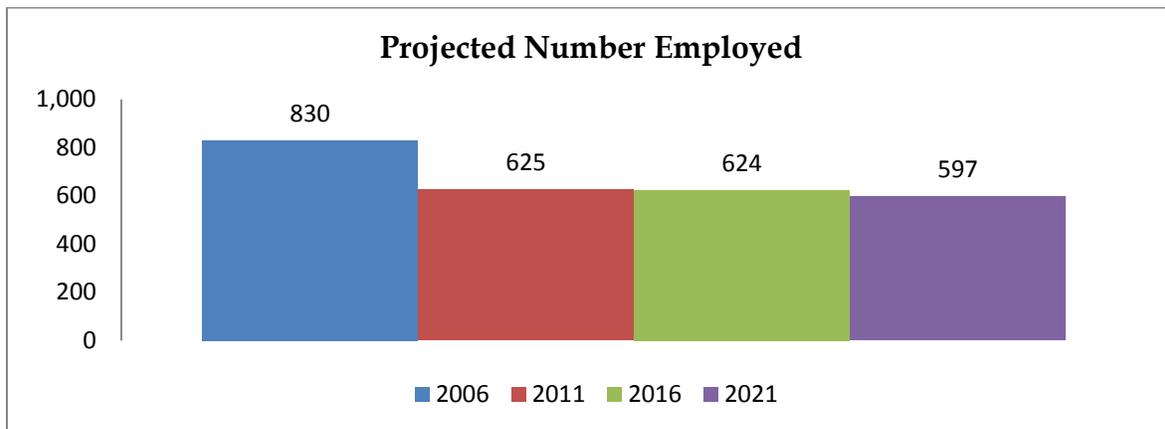
[www.nuline.ca](http://www.nuline.ca)

### Future Job Outlook

You can expect more jobs than workers. By 2016 Hamilton will need 80 fewer industrial electricians.

## Employment projections

Hamilton	Net New Positions 2006-2016	Potential Retirees 2006-2016	Total New Required
7242 - Industrial electricians	-206	127	-79



Source: Centre for Spatial Economics, 2009

## **Industrial Mechanic / Millwright**

**NOC 7311**

### **What responsibilities will I have?**

You will

- read blueprints, diagrams and schematic drawings to determine work procedures
- install, align, take apart and move stationary industrial machinery and mechanical equipment, such as
  - pumps
  - fans
  - tanks
  - conveyors
  - furnaces
  - generators
- operate hoisting and other lifting tools to position machinery and parts during installation, set-up or repair
- inspect and examine machinery and equipment to find and investigate issues and errors
- plan and schedule installations, maintenance and repairs of a wide range of equipment and machinery
- put together machinery and equipment before installing using hand and power tools and welding equipment

### **What education and training is required?**

You will need a high school diploma.

In Ontario, certification is not mandatory; however, getting experience through a 3 - 4 year apprenticeship would be helpful.

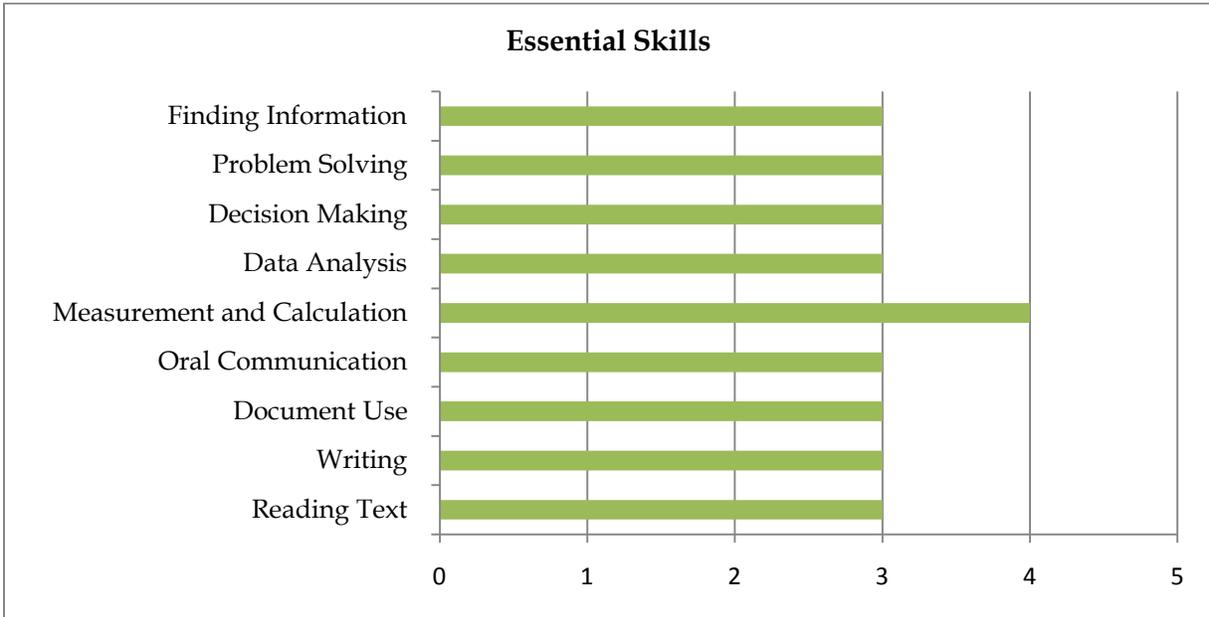
College level programs related to this career include

Industrial Mechanic (Millwright)

Mechanical Techniques – Industrial Maintenance

## What skills are required to work in this occupation?

The chart below shows the most important essential skills you will need to be successful as an industrial mechanic.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$63,998
Ontario	\$65,768

### Typical Employers

The top 4 industries for employment an industrial mechanic or millwright include

1. Primary metal manufacturing (NAICS 331)
2. Transportation equipment manufacturing (NAICS 336)
3. Specialty trade contractors (NAICS 238)
4. Food manufacturing (NAICS 311)

## Examples of Local Employers

### **331 Primary metal manufacturing**

Nova Steel Inc.

[www.novamerican.com](http://www.novamerican.com)

McCoy Foundry

[www.amccoy.com](http://www.amccoy.com)

### **238 Specialty trade contractors**

ThyssenKrupp Elevator

[www.thyssenkruppelevator.com](http://www.thyssenkruppelevator.com)

LJ Barton Mechanical Inc.

[www.ljbarton.com](http://www.ljbarton.com)

### **336 Transportation equipment manufacturing**

Taalman Engineered Products Ltd.

[www.taalman.net](http://www.taalman.net)

National Steel Car Ltd.

[www.steelcar.com](http://www.steelcar.com)

### **311 Food manufacturing**

Olivieri Foods Ltd.

[www.olivieri.ca](http://www.olivieri.ca)

Bunge Canada

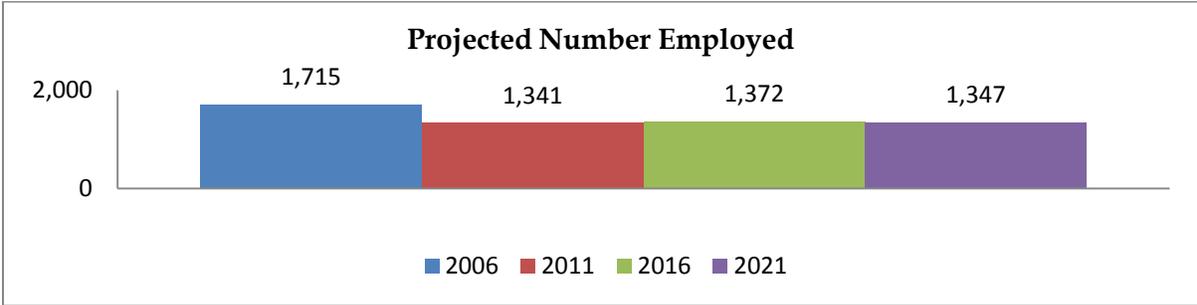
[www.bungecanada.com](http://www.bungecanada.com)

## Future Job Outlook

You can expect more jobs than workers in both primary metal manufacturing and transportation equipment manufacturing. By 2016 Hamilton will need 140 fewer industrial mechanics. Your best opportunities are likely to be in the specialty trade contractors and food manufacturing industries as there are more jobs being created than lost.

**Employment projections**

<b>Hamilton</b>	<b>Net New Positions 2006-2016</b>	<b>Potential Retirees 2006-2016</b>	<b>Total New Required</b>
7311 - Industrial mechanics	-343	201	-142



Source: Centre for Spatial Economics, 2009

## Machine Fitter

NOC 7316

### What responsibilities will I have?

You will

- read and interpret blueprints, sketches, diagrams to determine assembly operations
- fit and put together metal parts to build heavy industrial machinery and equipment such as
  - construction
  - farming
  - processing
  - railway vehicles
  - aircraft engines
- move and line up parts and components using lifting and transporting equipment such as overhead cranes
- install major components such as gears, pumps, motors, and hydraulics assemblies
- inspect parts, subassemblies and finished products to ensure quality

### What education and training is required?

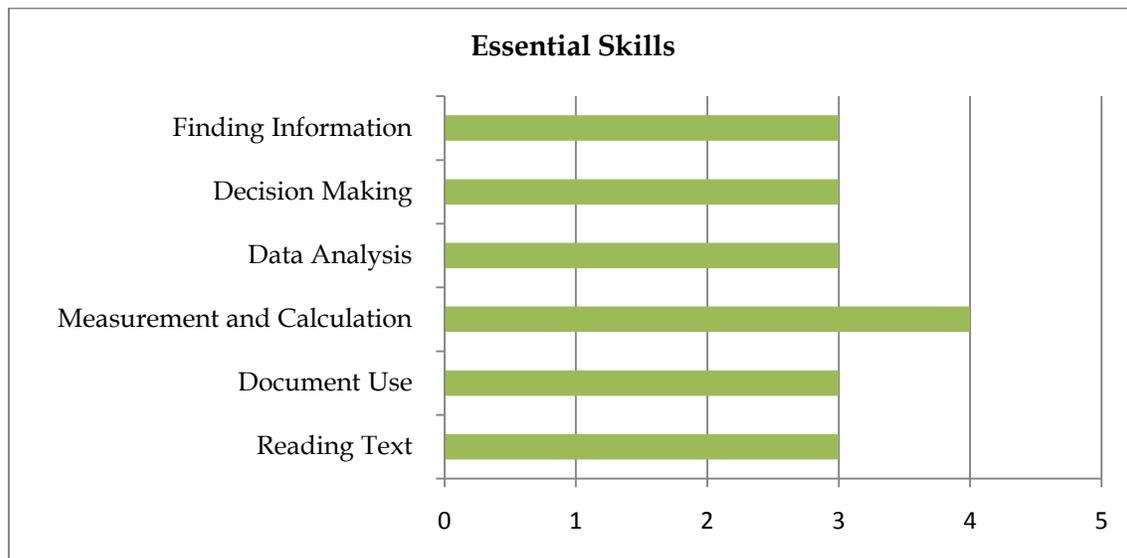
You will need a high school diploma. Many employers also expect you to complete a mechanical apprenticeship program such as

- millwrighting
- machining
- pipefitting
- automotive service
- heavy equipment repair

Once hired, employers usually provide on the job training.

## What skills are required to work in this occupation?

The chart below shows the most important essential skills you will need to be successful as a machine fitter.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$53,672
Ontario	\$56,642

### Typical Employers

The top 3 industries that hire machine fitters include

1. Machinery manufacturing (NAICS 333)
2. Transportation equipment manufacturing (NAICS 336)
3. Repair and maintenance (NAICS 811)

## Examples of Local Employers

### 333 Machinery manufacturing

CCR Technologies

[www.ccr-technologies.com](http://www.ccr-technologies.com)

Wentworth Mould & Die Cast Co. Ltd.

[www.wentworthmould.com](http://www.wentworthmould.com)

### 811 Repair and maintenance

Dynamic Steel Inc.

Carstar Automotive Canada

[www.carstar.ca](http://www.carstar.ca)

### 336 Transportation equipment manufacturing

Nuline Products

[www.nuline.ca](http://www.nuline.ca)

Arzon Limited

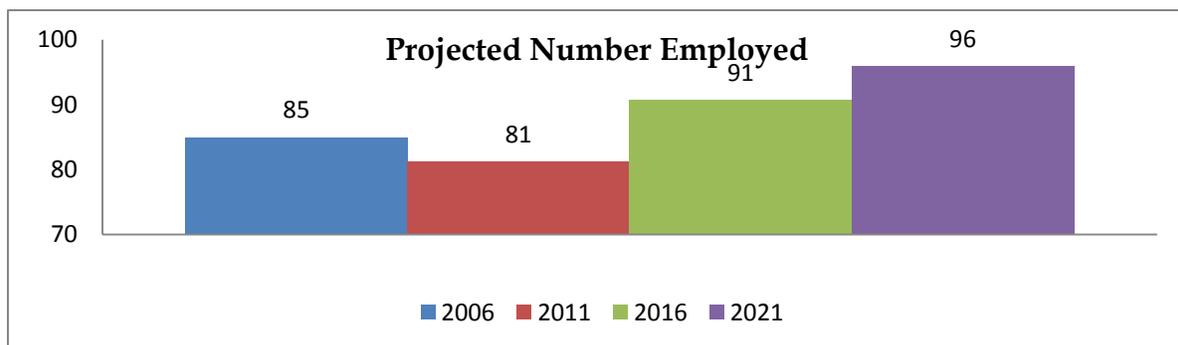
[www.arzonlimited.com](http://www.arzonlimited.com)

## Future Job Outlook

You can expect an increase in job openings as workers retire - 75% of current workers are over 45 years of age. By 2016 Hamilton will need over 90 machine fitters.

## Employment Projections

Hamilton	Net New Positions 2006-2016	Potential Retirees 2006-2016	Total New Required
7316 - Machine fitter	6	20	26



Source: Centre for Spatial Economics, 2009

# Sheet Metal Worker

NOC 7261

## What responsibilities will I have?

You will

- read engineering and architectural drawings, sketches and work details to be done
- lay out, measure and mark sheet metal according to drawings or templates
- develop patterns for sheet metal using computer design and drafting (CAD) software
- operate light metalworking machines such as
  - shears
  - brakes
  - punches and drill presses
- operate computer numerical control (CNC) equipment to cut, bend, punch, drill, shape or straighten sheet metal
- operate computerized laser or plasma cutting equipment to cut sheet metal
- install and use rigging and hoisting equipment
- fit and join sheet metal parts using
  - riveting
  - welding
  - soldering
  - other equipment
- install sheet metal products according to specifications and building codes
- grind and buss seams, joints and rough surfaces
- inspect product quality and installation to ensure specifications are met

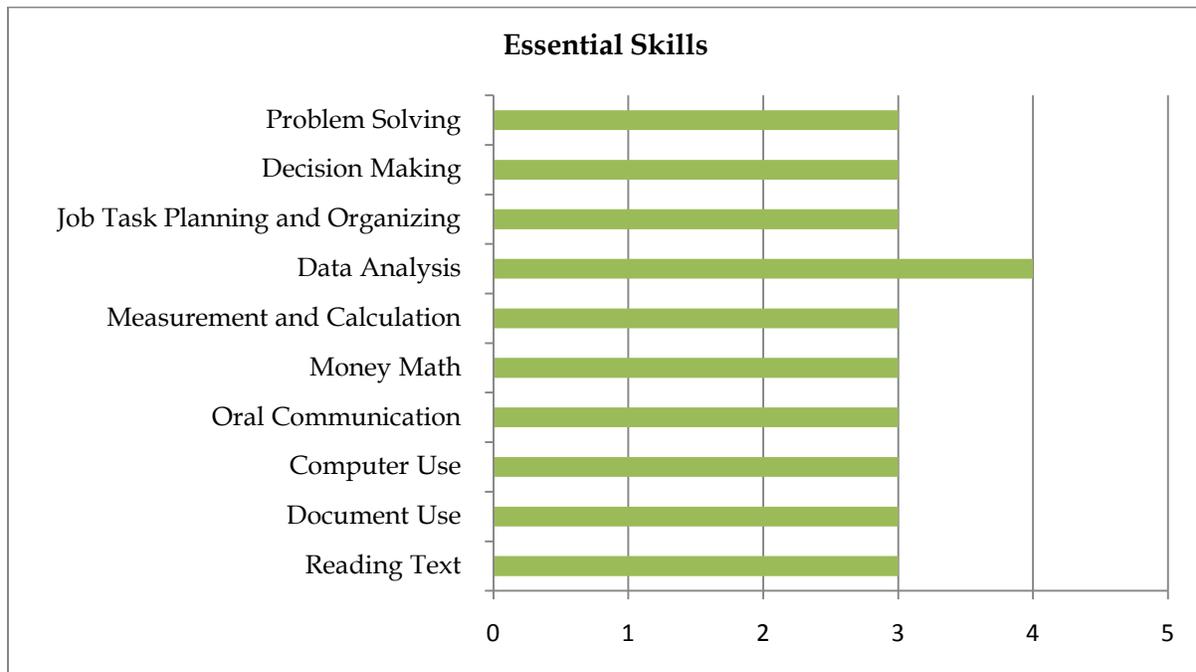
## What education and training is required?

You will need to complete

- high school
- metal workers apprenticeship program (3 - 5 years) with both work experience and courses in sheet metal working

## What skills are required to work in this occupation?

The chart below shows the most important essential skills you will need to be successful as a sheet metal worker.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$53,114
Ontario	\$50,922

### Typical Employers

The 3 three industries that hire sheet metal workers include

1. Specialty trade contractors (NAICS 238)
2. Fabricated metal product manufacturing (NAICS 332)
3. Construction of buildings (NAICS 236)

## Examples of Local Employers

### 238 Specialty trade contractors

Halton Sheet Metal Ltd.

Parson's Precast Inc.

[www.concretesteps.com](http://www.concretesteps.com)

### 236 Construction of buildings

Bestco Construction Corp.

G Mason Construction Ltd.

### 332 Fabricated metal product manufacturing

Burlington Automation

[www.burlingtonautomation.com](http://www.burlingtonautomation.com)

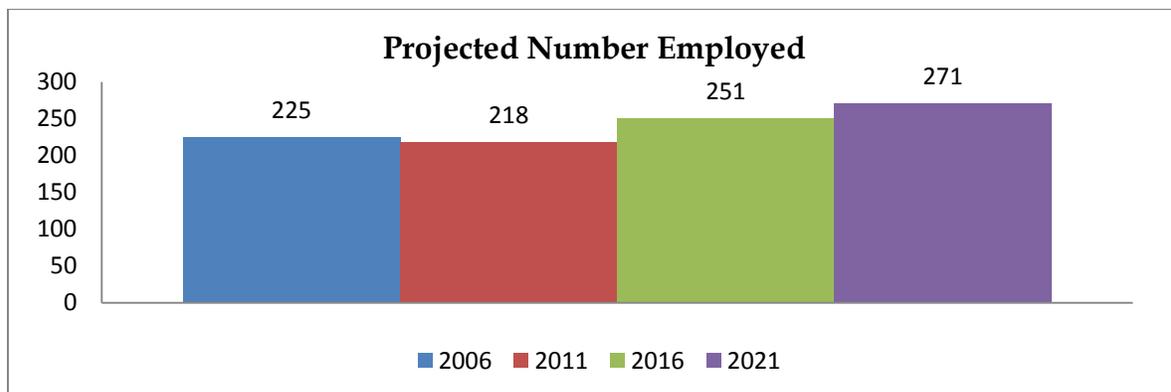
Pro-spec Machining, Welding and Manufacturing Inc.

## Future Job Outlook

You can expect that there will be workers than job openings from 2009 to 2018. Job opportunities will come from the need to replace retiring workers.

## Employment Projections

Hamilton	Net New Positions 2006-2016	Potential Retirees 2006-2016	Total New Required
7261 - Sheet metal worker	26	17	42



Source: Centre for Spatial Economics, 2009

## Truck and Coach Technician

NOC 7321

### What responsibilities will I have?

You will

- find and diagnose operating problems in
  - frames and steering mechanisms
  - engines
  - transmissions
  - brakes
  - ignitions
  - axles
  - fuel systems
  - engine management systems
  - other
- adjust, overhaul, repair and put back together
  - engines
  - transmissions
  - clutches
  - rear ends
  - drive shafts
  - other assemblies
- use different equipment to diagnose and find faults

### What education and training is required?

You will need to

- have a high school diploma
- write and pass an exam for your Certification of Qualification
- complete an apprenticeship program of 9,000 hours with both on the job and school training

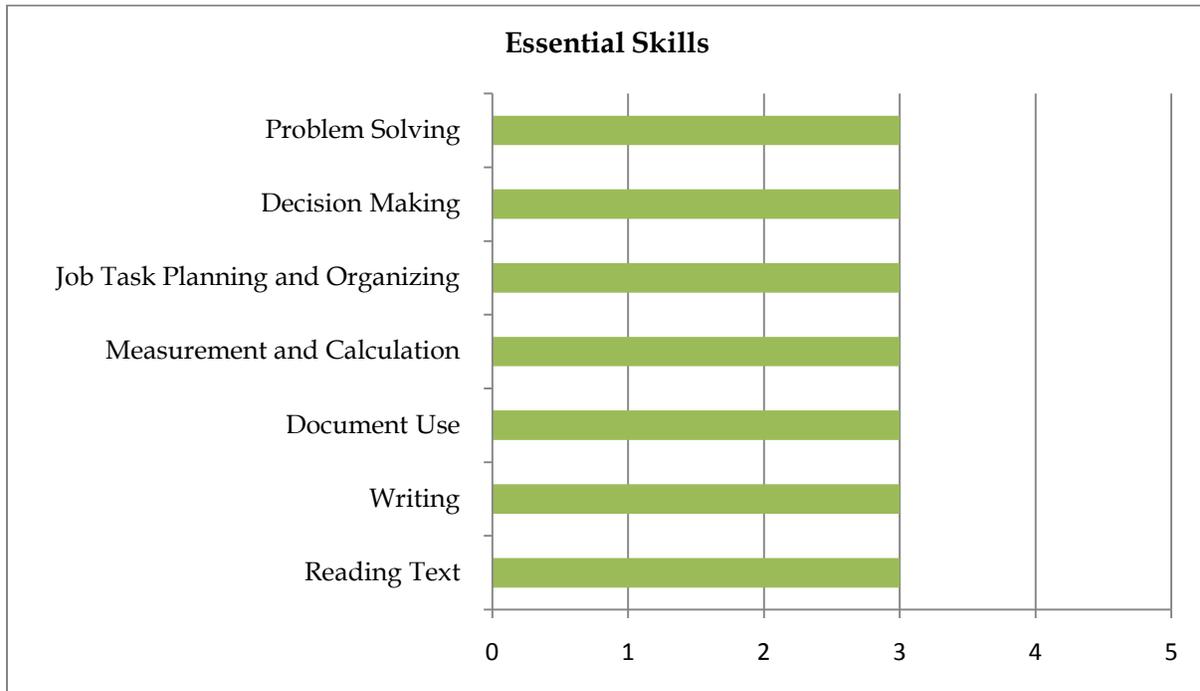
College level programs related to this job include

Truck and Coach Technician

Motive Power Technician

## What skills are required to work in this occupation?

The chart below shows the most important essential skills you will need to be successful as a truck and coach technician.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$45,825
Ontario	\$44,729

### Typical Employers

The top 4 industries that hire truck and coach technicians include

1. Repair and maintenance (NAICS 811)
2. Motor vehicle and parts dealers (NAICS 441)
3. Truck transportation (NAICS 484)
4. Transit and ground passenger transportation (NAICS 485)

## Examples of Local Employers

### **811 Repair and maintenance**

Wentworth Truck Repair

Service 1 Truck & Trailer Repair Inc.

[www.service1repair.com](http://www.service1repair.com)

### **484 Truck Transportation**

Rims Transport

[www.transportcorp.com](http://www.transportcorp.com)

Tradelink International Ltd.

[www.tradelinkinternational.ca](http://www.tradelinkinternational.ca)

### **441 Motor vehicle and parts dealers**

Hamilton Trailer and Hitch

Trucks Salvage International Inc.

### **485 Transit and ground passenger transportation:**

Coach Canada

[www.coachcanada.com](http://www.coachcanada.com)

Freight Solve

## Future Job Outlook

You can expect more jobs than workers except in transportation equipment manufacturing.

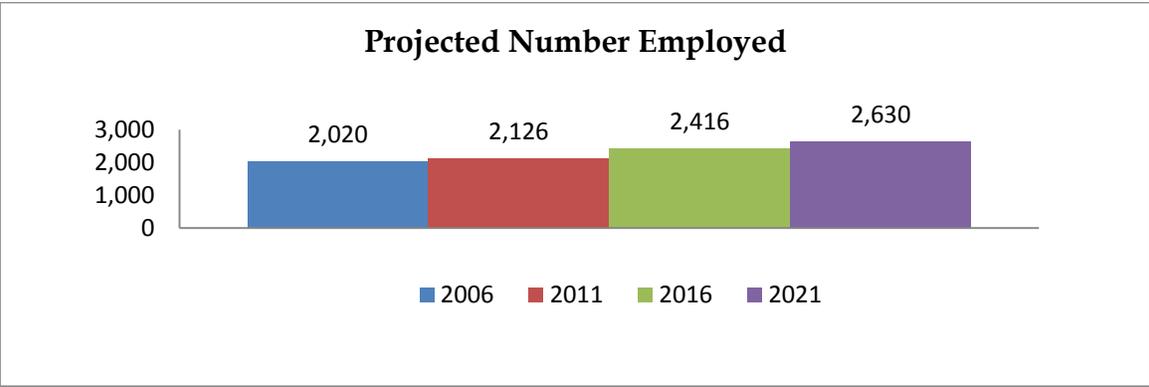
There is a strong employment outlook throughout the sectors of

- motor vehicle and parts dealers
- truck transportation
- transit and ground passenger transportation
- repair and maintenance

By 2016 Hamilton will need over 550 new automotive service technicians.

**Employment projections**

<b>Hamilton</b>	<b>Net New Positions 2006-2016</b>	<b>Potential Retirees 2006-2016</b>	<b>Total New Required</b>
7321 – Automotive service technicians	396	191	587



Source: Centre for Spatial Economics, 2009

## **Welder**

**NOC 7265**

### **What responsibilities will I have?**

You will

- read and interpret blueprints or welding process specifications
- lay out, cut and form metal to specification
- repair worn parts of metal products by welding on extra layers
- fit parts together and prepare for welding
- operate manual or semi-automatic welding equipment
- use flame cutting equipment
- operate metal shaping machines such as
  - brakes
  - shears
  - other metal straightening and bending machines
- help with the maintenance and repair of welding, brazing and soldering equipment
- adjust welding heads and tooling according to work specifications

### **What education and training is required?**

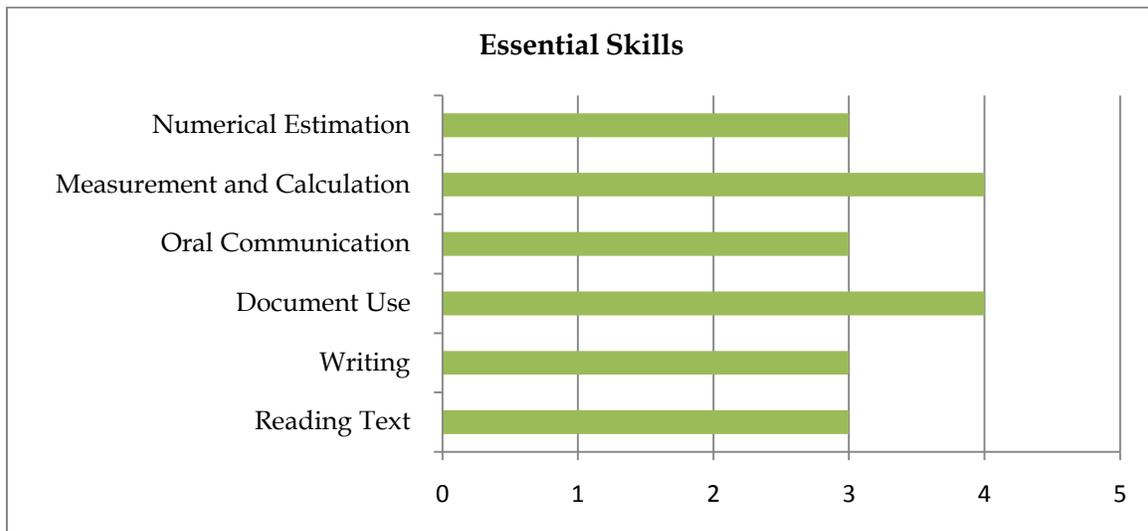
You will need to have a high school diploma. You will also need to complete a 3 year apprenticeship program or have over 3 years experience with college or industry trade courses.

While trade certification is voluntary in Ontario, it is highly recommended by employers.

Interprovincial (Red Seal) trade certification, which allows qualified trades persons to work in other provinces and territories, is also available in Ontario.

## What skills are required to work in this occupation?

The chart below shows the most important essential skills you will need to be successful as a welder.



Source: Ontario Skills Passport, 2003

## How much money will I make? Where can I work?

### Average Employment Income

Hamilton	\$47,799
Ontario	\$47,400

### Typical Employers

The top 4 industries that hire welders include

1. Transportation equipment manufacturing (NAICS 336)
2. Fabricated metal product manufacturing (NAICS 332)
3. Repair and maintenance (NAICS 811)
4. Machinery manufacturing (NAICS 333)

## **Examples of Local Employers**

### **336 Transportation equipment manufacturing**

Streamline Trailers

[www.streamlinetrailers.com](http://www.streamlinetrailers.com)

Taalman Engineering Products Ltd.

[www.taalman.net](http://www.taalman.net)

### **811 Repair and maintenance**

Union Boiler Company of Hamilton

[www.unionboiler.com](http://www.unionboiler.com)

Windmill Power Equipment Ltd.

### **332 Fabricated metal product manufacturing**

Bartonair Fabrications

[www.bartonairfab.com](http://www.bartonairfab.com)

B.S.B. Manufacturing Ltd.

[www.bsbfmfg.com](http://www.bsbfmfg.com)

### **333 Machinery manufacturing**

Butty Manufacturing

[www.buttymfg.com](http://www.buttymfg.com)

Hess Machinery (Canada) Ltd.

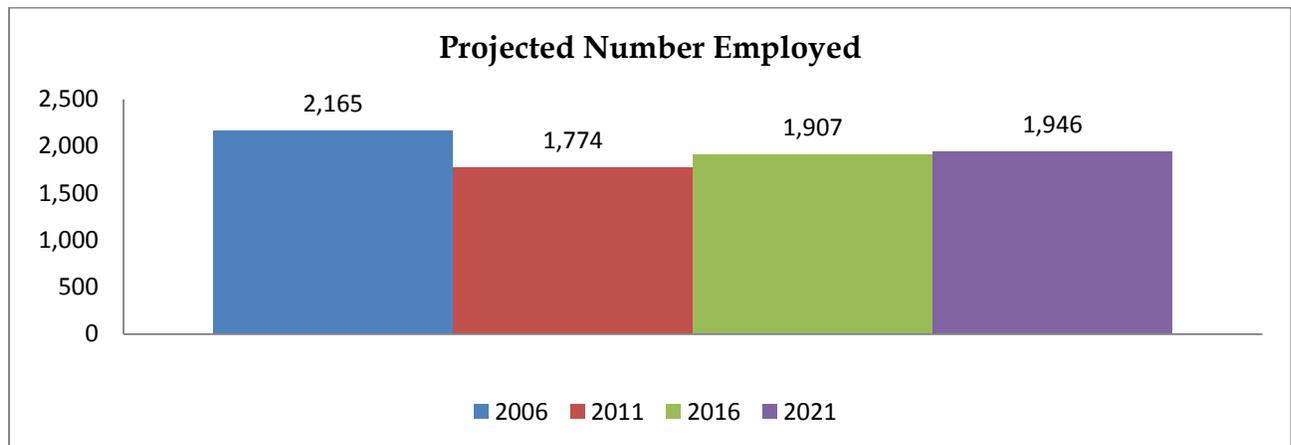
[www.hessmachinery.com](http://www.hessmachinery.com)

## **Future Job Outlook**

There are fewer jobs than workers in both fabricated metal product and transportation equipment manufacturing. By 2016 Hamilton will need 90 less welders. However if you are interested in a career in this field, you are likely to find jobs in the machinery manufacturing and repair and maintenance sectors.

## Employment Projections

Hamilton	Net New Positions 2006-2016	Potential Retirees 2006-2016	Total New Required
7265 - Welders	-258	164	-94



Source: Centre for Spatial Economics, 2009

# Labour Market Information Resources

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**Conference Board of Canada**

[www.conferenceboard.ca](http://www.conferenceboard.ca)

**Explore Careers**

[www.explorecareers.ca](http://www.explorecareers.ca)

**Human Resources and Skills Development Canada**

[www.hrsdc.gc.ca](http://www.hrsdc.gc.ca)

**Job Bank of Canada**

[www.jobbank.gc.ca](http://www.jobbank.gc.ca)

**Labour Market Information**

[www.labourmarketinformation.ca](http://www.labourmarketinformation.ca)

**Ontario Colleges**

[www.ontariocolleges.ca](http://www.ontariocolleges.ca)

**Ontario Job Futures**

[www.ontariojobsfutures.ca](http://www.ontariojobsfutures.ca)

**Ontario Skills Passport**

<http://skills.edu.gov.on.ca/OSPWeb/jsp/en/login.jsp>

**Ontario Universities**

[www.ouac.on.ca/unilinks](http://www.ouac.on.ca/unilinks)

**Workforce Planning of Ontario**

[www.localboards.on.ca](http://www.localboards.on.ca)

**Working in Canada**

[www.workingincanada.gc.ca](http://www.workingincanada.gc.ca)

## Hamilton Training Advisory Board

# Business, Labour & Community: Partners in Workforce Development

Established in 1997, the Hamilton Training Advisory Board is one of 21 Local Boards in Ontario. HTAB is a not-for-profit organization that draws on the expertise of a broad cross-section of our community to enable us to better identify and address existing and anticipated labour force needs.

At HTAB, we envision a health community where everyone achieves his or her potential. To accomplish this goal we

- profile trends, opportunities, and priorities of Hamilton's labour market
- identify skills shortages and future training requirements
- share our research with the community to facilitate labour force planning and training
- undertake projects and partnerships that address labour force issues

**Log on to HTAB's website at [www.htab.ca](http://www.htab.ca) and you will**

**Discover** our community **Projects and Partners** promoting labour force development.

**Learn** about local labour market trends, opportunities, and priorities in our **Publications**.

**Connect** to **Links** on training, employment, and labour market information.



**Hamilton Training Advisory Board**  
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