

SKILLED**TRADES**^{BC}

Personal Record Book

Industrial Mechanic (Millwright)

This is your Record Book!

DO NOT SUBMIT TO SkilledTradesBC

This is not required to achieve certification

- It is a record of your progress towards achieving certification in the trade
- It provides a record of your experience
- It is your responsibility to keep it up-to-date
- Take it with you if you change employers

Note: Employers and supervisors are not responsible for keeping your Record Book up-to-date. They are responsible for sign-off of hours and sign-off of competencies once you have achieved the required level of skills and knowledge.

APPRENTICE IDENTIFICATION

Trade: INDUSTRIAL MECHANIC (MILLWRIGHT)

Legal First Name:		Legal Last Name:	
Suite Number:	Street Number and Name:		
City:		Province:	Postal Code:
Telephone Number: ()		Email Address:	

Work Safely!

A safe work attitude contributes to an accident free environment. Accident prevention and safe working conditions are the responsibility of both employers and employees.

Wear the required personal protective equipment, follow safe work practices and follow all safety regulations applicable to specific job activities.

Employer's responsibilities:

- Provide and maintain safety equipment and protective devices
- Ensure proper safe work clothing is worn
- Enforce safe work procedures
- Provide safeguards for machinery, equipment and tools
- Observe all accident prevention regulations
- Train employees in safe use and operation of equipment

Employee's responsibilities:

- Work in accordance with the safety regulations pertaining to job environment
- Work in such a way as not to endanger themselves or fellow workers.

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EMPLOYER INFORMATION

Originating Employer

Start Date:	End Date:
Employer:	
Contact Person:	
Address:	Phone:
	Email:
	Fax:
Supervisor/Journeyman 1:	*TWID #:
	Phone:
	Email:
Supervisor/Journeyman 2:	TWID #:
	Phone:
	Email:

*TWID # - Trade Worker Identification Number

If you have more than one employer during your apprenticeship, record the information for subsequent employers on the following page(s).

If your job ends or you change employers...

Before leaving your place of employment:

- Please have your sponsor update your Work Based Training hours on their [SkilledTradesBC Portal account](#).
- Update Record of Competencies with your supervisor.
- Confirm with your employer that your workplace hours have been reported to SkilledTradesBC, and if possible get a copy of all Work-Based Training Hours reports submitted.
- Notify the SkilledTradesBC of the change in your employment by submitting an [Apprentice and Sponsor Registration form](#) with your new employer.

When re-employed...

You must be registered with your new employer before submitting any work-based training hours to SkilledTradesBC.

Subsequent Employers

Start Date:	End Date:
Employer:	
Contact Person:	
Address:	Phone:
	Email:
	Fax:
Supervisor/Journeyperson 1:	TWID #:
	Phone:
	Email:
Supervisor/Journeyperson 2:	TWID #:
	Phone:
	Email:

Subsequent Employers

Start Date:	End Date:
Employer:	
Contact Person:	
Address:	Phone:
	Email:
	Fax:
Supervisor/Journeyperson 1:	TWID #:
	Phone:
	Email:
Supervisor/Journeyperson 2:	TWID #:
	Phone:
	Email:

WORKPLACE HOURS

Instructions

Make an entry in this section each time your hours are reported to SkilledTradesBC.

1. Get a copy of the *Workplace Hours Report* from your employer.
2. Fill in the dates of the reporting period and the hours reported.
3. Enter your employer name, address and phone number.
4. Keep your Record Book in a safe place.

Workplace Hours

Workplace hours must be submitted to the SkilledTradesBC by your employer on a regular basis. Your hours should be reported at least every six months; however, every three months is preferred.

At the beginning of your apprenticeship discuss the frequency of reporting with your employer.

Keeping Workplace hours up-to-date in your Record Book gives you the tools to better manage your apprenticeship. It provides you with the opportunity to:

- Follow up with your employer each reporting period to ensure your hours are reported on a regular basis.
- Discuss your progress with your direct supervisor/journeyperson on a regular basis.

DATE (TO-FROM)	EMPLOYER	HOURS
TOTAL HOURS		

RECORD OF COMPETENCIES

Instructions

The Record of Competencies is filled out and signed-off by the journeyperson supervising your work.

1. Know what skills are expected at each level of the program.
2. Ask the journeyperson to sign off on the competency when you have acquired the skills and are able to perform the task without supervision.
3. If the journeyperson agrees that you have the required skills, he/she will:
 - Record the date that the competency was achieved
 - Sign off on the competency
 - Enter his/her Trades Worker Identification Number (TWID #)

What is a Record of Competencies?

The Record of Competencies lists all competencies you should be knowledgeable in prior to receiving your certification. Keeping this section up to date will allow you to track your progress towards certification and demonstrate proficiency in the skills within the scope of your trade. Completion of the entire program should result in you becoming a skilled and knowledgeable journeyperson.

- Refer to this section periodically to ensure you are getting the work experience you need.
- Use the competencies as a guide to ensure work tasks are assigned so that you acquire the skills and knowledge required to be successful in the trade.

Review the Record of Competencies on a regular basis with your direct supervisor/journeyperson to ensure they have been completed.

Program Outline

The Program Outline provides detailed information on the scope of knowledge and skills expected at each level of the program, further defining the competencies listed in the Record Book. The Program Outline is a great resource for developing a training plan.

Download from: <https://skilledtradesbc.ca/industrial-mechanic-millwright>

Apprenticeship Toolkit

For general information on apprenticeship and tips for navigating the apprenticeship system in BC visit SkilledTradesBC's website to learn about the [apprenticeship basics](#).

LEVEL 1

IMPORTANT!

Download the Program Outline!

<https://skilledtradesbc.ca/industrial-mechanic-millwright>

Read the competency tables

Some competencies are taught in many levels

For detailed information about that competency, go to the Program Outline

THEORY

LINE A: PERFORM SAFETY RELATED FUNCTIONS

- Determine and apply jurisdictional regulations
- Identify the personal protective equipment (PPE) required for various situations
- Identify various possible hazards that may be encountered on the job site and describe the corrective actions required
- Identify fire hazards and the four types of fires
- Explain the principles of fire fighting and describe the safe use of fire fighting equipment
- Recognize the ergonomic risks in the workplace and identify applicable preventative measures
- Identify energy sources and lock-out requirements
- Identify lock-out and tag-out procedures

LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- Describe lubrication types and systems
- Describe the safe use, storage and handling of lubricants
- Describe the use of layout tools
- Describe appropriate layout procedures for the installation of machinery
- Explain the safe use and handling of grouts
- Describe equipment foundations and associated materials
- Classify and identify mechanical fasteners and locking devices

- Identify and use appropriate tools and describe methods required to set torque values
- Explain and use methods to determine the strength of fastening devices
- Identify and use the proper chemical fastening compound for various situations
- Read and interpret various textbooks, service manuals and bulletins related to the performance of the work
- Identify the types of drawings and diagrams associated with the Millwright trade
- Identify the elements common to all drawings, plans and sketches

LINE D: USE COMMUNICATION AND MENTORING TECHNIQUES

- Identify and use record keeping systems

LINE E: PERFORM MEASURING AND LAYOUT OF WORK PIECE

- Identify precision measuring tools and equipment
- Identify layout tools and instruments

LINE G: PERFORM RIGGING, HOISTING/LIFTING AND MOVING

- Identify and use hand rigging and devices
- Identify and describe cranes

PRACTICAL

LINE A: PERFORM SAFETY RELATED FUNCTIONS

- Use personal protective equipment (PPE) and explain proper maintenance and storage techniques
- Use lock-out and tag-out procedures

LINE B: USE TOOLS AND EQUIPMENT

- Use and maintain hand and portable power tools
- Set up, use and maintain shop machines
- Use access equipment

LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- Use a scientific calculator, graphs, tables and charts to solve problems
- Use mathematical calculations to perform duties
- Locate information from a variety of sources necessary to maintain, troubleshoot and service equipment
- Produce a sketch using common drawing elements

LINE D: USE COMMUNICATION AND MENTORING TECHNIQUES

- Use trade terminology

LINE E: PERFORM MEASURING AND LAYOUT OF WORK PIECE

- Use measuring tools
- Select and use measuring and layout tools
- Layout and fabricate work piece

LINE F: PERFORM CUTTING AND WELDING OPERATIONS

- Use oxy-acetylene equipment
- Use and maintain plasma arc cutting equipment

LINE G: PERFORM RIGGING, HOISTING/LIFTING AND MOVING

- Select and use sling and rigging attachments
- Perform rigging calculations
- Create a rigging plan

Supervisor Signature

NOTES FROM LEVEL 1

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LEVEL 2

IMPORTANT!

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Read the competency tables

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For detailed information about that competency, go to the Program Outline

THEORY

LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- Describe the safe use, storage and handling of lubricants
- Identify types of lubricating systems
- Describe maintenance and service of lubricating systems
- Describe the leveling and alignment of components
- Identify the characteristics associated with metals and list methods of mechanical and chemical testing
- Describe types of metals and their properties
- Describe the metallurgical principles of non-ferrous metals, using appropriate trade terminology
- Describe the metallurgical principles of ferrous metals using appropriate trade terminology
- Describe drawings used to assemble machines

LINE F: PERFORM CUTTING AND WELDING OPERATIONS

- Identify gas metal arc welding (GMAW or MIG) equipment
- Identify gas tungsten arc welding (GTAW / TIG) equipment
- Describe gas tungsten arc welding

LINE H: SERVICE SHAFTS, BEARINGS AND SEALS

- Describe the service of shafts and shaft attachments
- Describe various types of friction and load conditions associated with bearings

- Identify styles and construction of friction and anti-friction bearings
- Describe the installation, removal and maintenance of seals

LINE I: SERVICE COUPLINGS, CLUTCHES AND BRAKES

- Identify different types and couplings
- Recognize coupling failure and diagnose problems

LINE J: SERVICE CHAIN AND BELT DRIVE SYSTEMS

- Describe drive chains
- Define belt drive terminology
- Identify types and arrangements of belt drive systems

LINE K: SERVICE GEAR SYSTEMS

- Describe gear terminology
- Identify types and arrangements of gears and gear drives

LINE L: PERFORM SHAFT ALIGNMENT PROCEDURES

- Describe shaft alignment procedures

PRACTICAL

LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- Use fits and tolerances
- Use trigonometry
- Use simple machines
- Use power transmission theory
- Select the correct lubricant for specific applications

LINE F: PERFORM CUTTING AND WELDING OPERATIONS

- Perform shielded metal arc welding
- Maintain shielded metal arc welding equipment
- Perform vertical shielded metal arc welding
- Perform gas metal arc welding
- Maintain gas metal arc welding (GMAW or MIG) equipment
- Maintain gas tungsten arc welding (GTAW / TIG) equipment

LINE H: SERVICE SHAFTS, BEARINGS AND SEALS

- Install and fit keys, key ways and key seats
- Select the correct type of bearings for specific applications
- Fit, mount and dismount friction and anti-friction bearings
- Inspect and maintain bearings and diagnose causes of bearing failures
- Select the correct seals, packing and gaskets to meet specific applications

LINE I: SERVICE COUPLINGS, CLUTCHES AND BRAKES

- Assemble, install and maintain couplings
- Inspect clutches and brakes

LINE J: SERVICE CHAIN AND BELT DRIVE SYSTEMS

- Install and service belt drive systems

LINE K: SERVICE GEAR SYSTEMS

- Inspect and repair gear drives

LINE L: PERFORM SHAFT ALIGNMENT PROCEDURES

- Use shaft alignment tools
- Demonstrate shaft alignment procedures
- Record shaft alignment results
- Perform rim and face dial alignment

Supervisor Signature

NOTES FROM LEVEL 2

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LEVEL 3

IMPORTANT!

Download the Program Outline!

<https://skilledtradesbc.ca/industrial-mechanic-millwright>

Read the competency tables

Some competencies are taught in many levels

For detailed information about that competency, go to the Program Outline

THEORY

LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- Describe fluid power theory
- Describe the leveling and alignment of machine components
- Identify and use schematic and graphical symbols used in hydraulic and pneumatic circuitry as it pertains to JIC and ISO standards
- Identify and interpret the symbols used on vacuum system drawings

LINE M: SERVICE FANS AND BLOWERS

- Describe the maintenance and service of fans
- Describe the maintenance and service of blowers

LINE N: SERVICE PUMPS

- Explain terminology associated with pumps
- Describe the theory of positive displacement pump operation
- Identify and select pumps
- Describe the maintenance and service of positive displacement pumps
- Explain terminology associated with pumps
- Describe the theory of non-positive displacement pump operation
- Identify and select non-positive displacement pumps

LINE O: SERVICE COMPRESSORS

- Identify types of compressors
- Describe positive and non-positive displacement compressor theory
- Describe maintenance and troubleshooting of compressors

LINE P: SERVICE PIPING, TANKS AND CONTAINERS

- Describe the types and functions of process tanks and storage containers
- Describe troubleshooting, repair and maintenance of process tanks and containers
- Describe the standard operating procedures for tanks and process vessels for confined space entry
- Describe the functions and methods of loading and unloading material handling systems
- Describe, maintain and identify the various types and components of material handling systems

LINE Q: SERVICE HYDRAULIC SYSTEMS

- Identify and describe hydraulic system components

LINE R: SERVICE PNEUMATIC AND VACUUM SYSTEMS

- Identify and describe pneumatic and vacuum components
- Describe the maintenance of dryers

PRACTICAL

LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- Use fluid power calculations

LINE L: PERFORM SHAFT ALIGNMENT PROCEDURES

- Perform complex dial alignment
- Perform laser alignment

LINE N: SERVICE PUMPS

- Describe and perform the maintenance and service of non-positive displacement pumps

LINE P: SERVICE PIPING, TANKS AND CONTAINERS

- Assemble and install piping components

LINE Q: SERVICE HYDRAULIC SYSTEMS

- Design hydraulic circuitry
- Assemble basic hydraulic circuitry
- Calibrate, set and adjust hydraulic circuits
- Maintain and service hydraulic systems and circuits
- Troubleshoot faults associated with hydraulic circuits

LINE R: SERVICE PNEUMATIC AND VACUUM SYSTEMS

- Interpret and design pneumatic circuitry
- Assemble basic pneumatic circuitry
- Set and adjust pneumatic circuits
- Maintain and service pneumatic and vacuum systems
- Troubleshoot faults associated with pneumatic and vacuum systems

Supervisor Signature

NOTES FROM LEVEL 3

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LEVEL 4

IMPORTANT!

Download the Program Outline!

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Read the competency tables

Some competencies are taught in many levels

For detailed information about that competency, go to the Program Outline

THEORY

LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- Describe and perform electrical theory calculations
- Describe the leveling and alignment of components
- Identify and use schematic and graphical symbols used in electrical circuitry as it pertains to NEMA and ISO standards

LINE D: USE COMMUNICATION AND MENTORING TECHNIQUES

- Identify and interpret paper-based and electronic record keeping systems
- Read and interpret technical reports

LINE S: SERVICE CONVEYING SYSTEMS

- Describe conveying systems, components and their operation
- Describe the assembly of conveyors
- Describe maintenance of conveying systems

LINE T: SERVICE PRIME MOVERS

- Identify the types of AC and DC motors
- Describe the applications of AC and DC motors
- Describe the operating principles of internal combustion engines
- Identify components of spark ignition engines and compression ignition engines
- Describe the maintenance and troubleshooting of internal combustion engines

- Describe the operating principles of turbines
- Identify components of turbines
- Describe the maintenance and troubleshooting of turbines

LINE U: PERFORM PREVENTATIVE AND PREDICTIVE MAINTENANCE

- Describe the processes used to interpret and record equipment history
- Describe problem solving flow charts to plan equipment maintenance procedures
- Describe the types and theory of maintenance scheduling
- Describe troubleshooting equipment
- Describe vibrational analysis theory and procedures
- Analyze vibration test data
- Describe equipment balancing
- Describe the methods of non-destructive evaluation

LINE V: PERFORM COMMISSIONING AND DECOMMISSIONING OF EQUIPMENT

- Explain the reference data required for the commissioning procedure
- Explain the reference data required for the decommissioning procedure
- Describe decommissioning procedures

LINE W: SERVICE MECHANICAL COMPONENTS OF ROBOTICS AND AUTOMATED EQUIPMENT

- Define terminology of robotics and automated equipment
- Describe the installation, maintenance and troubleshooting of robotics and automated equipment

PRACTICAL

LINE C: PERFORM ROUTINE TRADE ACTIVITIES

- Perform calculations relating to prime movers
- Estimate labour and materials and schedule maintenance work

LINE D: USE COMMUNICATION AND MENTORING TECHNIQUES

- Use trade terminology in clear oral and written communication
- Organize and participate in group and multi-trade situations and meetings
- Mentor and guide the training of apprentices to defined industry standards

LINE S: SERVICE CONVEYING SYSTEMS

- Service conveying systems

LINE T: SERVICE PRIME MOVERS

- Maintain and troubleshoot electric motors
- Use tools and equipment for maintenance of internal combustion engines
- Use tools and equipment for maintenance of turbines

LINE V: PERFORM COMMISSIONING AND DECOMMISSIONING OF EQUIPMENT

- Describe and perform commissioning procedures

Supervisor Signature

NOTES FROM LEVEL 4

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MISSING COMPETENCIES?

To develop the best journeyperson possible employers should attempt to provide training in all competencies for the trade. This is not always possible.

If your employer is unable to provide training in any competency required for your trade, note that competency below. Competencies listed here will remain unsigned until your employer can provide training in that area or until you find an alternate way to gain the experience needed.

Competency:	Date:
Reason:	
Alternate plan:	

Competency:	Date:
Reason:	
Alternate plan:	

TECHNICAL TRAINING

Instructions

Keep a record of each level of technical training completed.

Level 1

Date Completed:	Training Provider:
Mark:	Instructor:

Level 2

Date Completed:	Training Provider:
Mark:	Instructor:

Level 3

Date Completed:	Training Provider:
Mark:	Instructor:

Level 4

Date Completed:	Training Provider:
Mark:	Instructor:

COMPLETION REQUIREMENTS

Instructions

Keep a record of each program completion requirement achieved.

INDUSTRIAL MECHANIC (MILLWRIGHT)

- Level 1 - Technical Training
- Level 2 - Technical Training
- Level 3 - Technical Training
- Level 4 - Technical Training

- 6,360 Work-Based Training Hours

- Interprovincial Red Seal examination
- Recommendation for Certification signed by sponsor

Note: After all other completions requirements have been met, SkilledTradesBC sends a Recommendation for Certification form to the sponsor requesting signoff.

CERTIFICATIONS

Instructions

Keep a record of the credentials and endorsements you have earned, including the certification number and date of issue.

CREDENTIAL EARNED	NUMBER	DATE OF ISSUE

*If you have any questions, please contact SkilledTradesBC
Customer Service at customerservice@skilledtradesbc.ca
778-328-8700 or toll free (within BC) at 1-800-660-6011*