

Now and Tomorrow Excellence in Everything We Do

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Essential Skills and Apprenticeship

Essential Skills for Success as an Industrial Mechanic (Millwright)

Industrial Mechanics (Millwrights) use Essential Skills to complete trade-related tasks. Use this fact sheet to:

- learn how Essential Skills are used on the job;
- find out the skills you need to succeed in your trade; and
- help prepare yourself for your career.



Reading



- Read notes from co-workers, such as descriptions of work completed.
- Read directions on product labels for safe handling, usage and first aid procedures.
- Read memos and notices from supervisors, co-workers and suppliers, such as notices about scheduled power shutdowns.
- Read bulletins from regulatory organizations about changes to standards, regulations and code requirements.
- Read manuals for operating, troubleshooting and repairing tools and equipment.

Document Use

• Look for caution and warning signs to identify hazards in work areas.



- Scan labels for information, such as part, model and serial numbers.
- Locate data in lists, tables and schedules, such as to find out what tools and parts are needed to assemble machinery.
- Fill in forms, such as purchase orders.
- Interpret schematic drawings.
- Retrieve data from scale drawings, such as to identify the locations of machinery to be installed and serviced.



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Numeracy	 Measure using rulers, tapes, thermometers and scales.
	 Compare measurements such as width, height, temperature, pressure and rotations per minute on a variety of parts and specifications to make sure the are within an acceptable range.
	 Estimate time required to complete installation and repair tasks.
	 Adjust and align machinery and equipment according to specifications.
	 Use specialized measuring tools such as vernier callipers, micrometers, ang finders, feeler gauges and dial indicators.
	 Calculate loads, capacities and dimensions for mechanical components and systems.



- Write brief text entries in forms and logbooks, such as observations of equipment performance.
- Write incident reports in forms that describe malfunctions, breakdowns and accidents that identify potential causes and effects.
- Write maintenance and repair procedures.

Oral Communication



- Talk to suppliers and contractors about equipment specifications, deliveries, service times and price quotes.
- Discuss work orders, equipment malfunctions and job task coordination with co-workers.
- Communicate with supervisors about work progress and seek their guidance and approvals.
- Discuss issues such as safety, productivity, major repairs and policy changes at meetings with co-workers, supervisors, engineers and clients.
- Teach practices and procedures to co-workers, apprentices and clients.

Working with Others



- Work independently.
- Form teams with co-workers, clients and contractors when installing and overhauling large pieces of equipment or completing industrial systems.
- Participate in discussions about work processes or product improvement.
- Demonstrate how to perform tasks to other workers.
- Orient or train new employees.
- Monitor the work performance of others.

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Thinking	• Determine whether to refurbish, repair or replace worn and defective parts.
	 Assess whether designs meet technical specifications, performance requirements and regulations.
	 Plan job tasks based on work assignments and follow planned work schedules to coordinate work with co-workers and contractors.
	 Take necessary steps when parts needed for maintenance and repairs are unavailable, such as fabricating replacement parts or obtaining approvals to use non-standard parts.
	 Select materials and methods to maintain, repair and improve industrial equipment and systems.
	 Evaluate the safety of work environments.
	 Use a number of sources to find technical information needed to troubleshoot faults with machinery and systems.
Computer Use	 Use databases, such as maintenance and financial systems databases.

- Use computer-assisted design, manufacturing and machining programs.
- Use email to communicate with supervisors, clients and suppliers.
- Use handheld devises such as vibration data collectors and analyzers.



Continuous Learning



- Read manuals and bulletins to stay aware of new developments in the industry.
- Learn informally by exchanging information with co-workers and suppliers.
- Attend training workshops on new equipment and safety procedures.
- Take courses to learn and improve technical skills.

For more information on Essential Skills and related resources, visit

For more information on the Interprovincial Standards Red Seal Program, visit

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