

Now and Tomorrow **Excellence in Everything We Do**

Essential Skills and Apprenticeship

Essential Skills for Success as a Machinist

Machinists 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 shift notes and log book entries about work in progress.
- Read memos and bulletins about industry-wide news.
- Read supplier catalogues to find information on new tools.
- Read instructions on work orders.
- Read manuals to learn how to carry out work.

Document Use



- Complete checklists and other forms to document work completed, place requests and identify problems.
- Scan work orders to find assigned tasks, materials required, shipping dates, order numbers and client names.
- Review graphs to identify trends in production cycles.
- Review photographs and sketches of parts to estimate measurements.
- Interpret scale drawings.



Numeracy



- Take length, height and weight measurements of raw materials.
- Compare measurements of machined parts to measurements on scale drawings to ensure parts are produced within specified tolerances.
- Estimate the duration of machining jobs.
- Estimate the amount of material required to carry out machining jobs.
- Calculate the difference between raw and finished dimensions.
- Review quality control data to examine trends in machine performance.
- Calculate all finished product dimensions of a part before starting a job.
- Adjust daily work schedules to accommodate rush jobs or jobs that take longer than expected.
- Use formulae to calculate the placement of holes, sprocket teeth and shaft threads.



- Write brief notes to record procedures for setting up or carrying out jobs.
- Write requests for equipment repairs and tool replacements.
- Write reports describing problems encountered on the job, corrective actions taken and recommendations for improvements.

Oral Communication



- Talk to co-workers about work completed at shift changeovers.
- Share opinions with co-workers, such as how to complete unfamiliar machining tasks.
- Coordinate work plans with other machinists to complete large orders.
- Clarify work instructions with supervisors when scale drawings or work orders are unclear or incomplete.
- Talk to customers on the phone or in person to confirm orders.
- Discuss features and compare specifications of new tooling products with suppliers.
- Discuss machining jobs during team meetings.

Working with Others



- Work with other machinists to carry out new or complex tasks or to solve problems.
- Work in pairs or small groups when carrying out work on larger jobs.
- Work with engineering staff to ensure documentation is complete and accurate.

- Participate in formal discussions about work processes or product improvement.
- Inform and demonstrate how to perform tasks to other workers.
- Orient new employees.

Thinking



- Adjust the machining process to accommodate minor defects in materials.
- Use manuals to look up formulae, tolerances and other key information when interpreting job specifications.
- Decide when parts must be replaced.
- Substitute materials or adjust work schedules when parts or materials needed for a job are not available.
- Decide which equipment, tools and measuring instruments are most appropriate for a specific job.
- Consult co-workers and supervisors to gather information missing from scale drawings.
- Perform routine troubleshooting to determine the cause of equipment failures.
- Determine the suitability of tools and equipment for machining jobs.
- Plan the sequence of tasks for machining particular parts.
- Interpret sketches when information is vague or missing.

Computer Use



- Use databases to access documents.
- Use email to communicate with supervisors, customers and suppliers.
- Use the Internet to search product catalogues and other supplier information.
- Use computer-assisted design, manufacturing and machining software.

Continuous Learning



- Read trade magazines, industry journals, manuals and supplier catalogues to keep up-to-date on changes and new products.
- Learn on the job and through discussions with co-workers and supervisors.
- Participate in workplace training.

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

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Paper

Cat. No.: HS18-10/7-2009E ISBN: 978-1-100-13823-7

PDF

Cat. No.: HS18-10/7-2009E-PDF ISBN: 978-1-100-13840-4