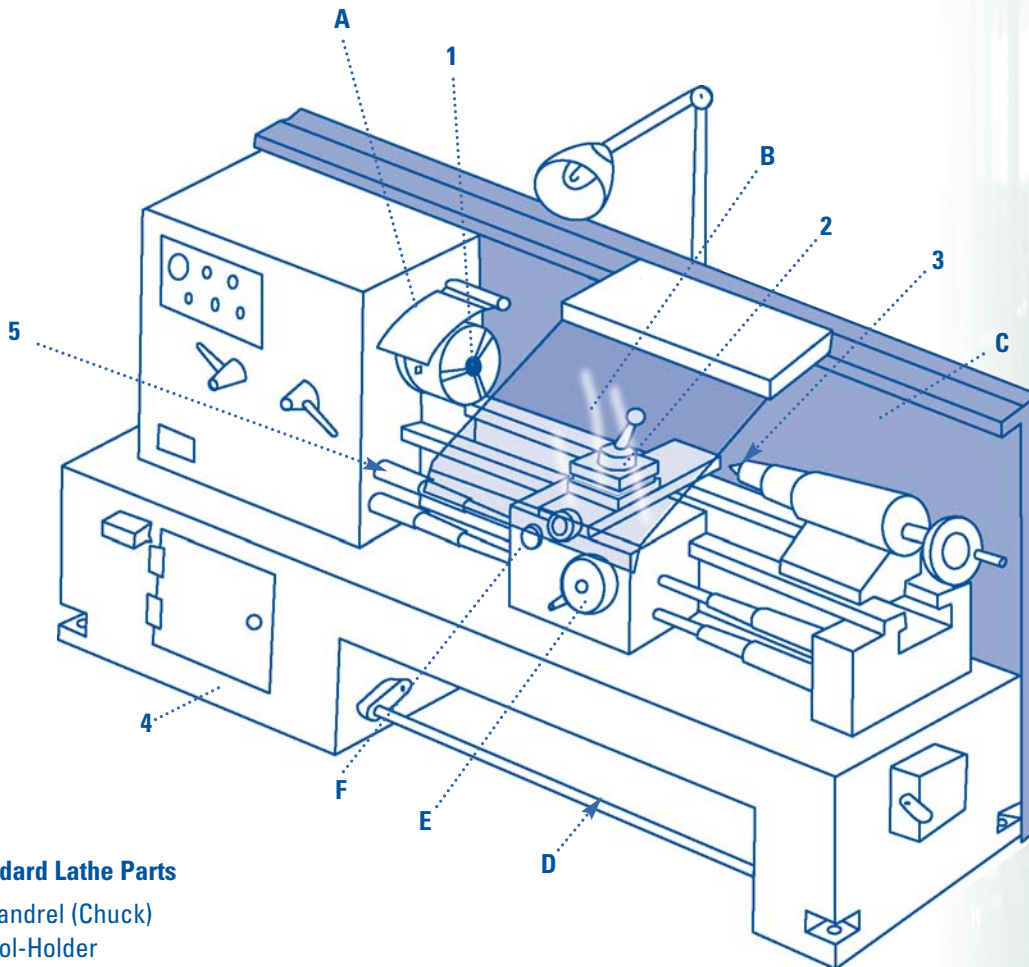


Equipment identification: \_\_\_\_\_

Date : \_\_\_\_\_

# Standard Lathe



## Standard Lathe Parts

- 1 Mandrel (Chuck)
- 2 Tool-Holder
- 3 Tailstock Centre
- 4 Frame
- 5 Lead Screw

## Safety Devices

- A Mandrel (Chuck) Guard
- B Moveable Transparent Guard
- C Screen
- D Emergency Stop Bar
- E Disengaging Wheel
- F Emergency Stop Button



Association paritaire pour la santé  
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Secteur fabrication de produits  
en métal et de produits électriques  
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Institut de recherche Robert-Sauvé  
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# SELF-ASSESSMENT FORM

For Occupational Health And Safety

## LEGEND

### Preventative Measures

- ▶ Procedural Measures
- Orders/instructions

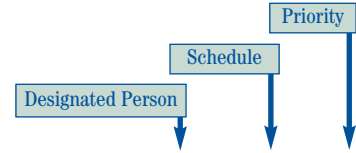
### Priority Codes for applying risk measures:

- A. Immediate stoppage and resolution
- B. Resolution as soon as possible
- C. Resolution according to normal company procedures

The suggested preventative measures are based in part from the Workplace Health And Safety Regulations (RSST, S-2.1, r.19.01), from An Act Respecting Occupational Health and Safety (Québec LSST, S-2.1), as well as Industrial Mechanics, Module 9 — Machining And Machine Tools, edited by CEMEQ, 1996 and INRS Safety Data Sheet; Lathes, 1998.

# Mechanical Hazards

**Most likely injuries: Cuts, amputations, fractures, foreign bodies, crushing, etc.**



Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Contact With The Mandrel (Chuck) Or The Rotating Workpiece</b>						
▶ Install a moveable transparent guard in front of the cutting area.	<input type="checkbox"/>	<input type="checkbox"/>				
▶ Install a moveable transparent guard in front of the mandrel (chuck.)	<input type="checkbox"/>	<input type="checkbox"/>				
▶ Install a nozzle to regulate the flow of cutting fluid, and place it so as to allow adjustment without having to approach the mandrel (chuck) or the rotating workpiece.	<input type="checkbox"/>	<input type="checkbox"/>				
● Wait until the mandrel (chuck) has come to a complete stop before carrying out any work in the area of the mandrel (chuck) or workpiece, such as removing or adjusting the workpiece, taking measurements, removing shavings, etc.	<input type="checkbox"/>	<input type="checkbox"/>				
● To remove shavings, use a smooth, long-handled brush with no rings, straps or hooks.	<input type="checkbox"/>	<input type="checkbox"/>				
● Never approach a rotating mandrel (chuck) or workpiece while wearing gloves or holding a rag.	<input type="checkbox"/>	<input type="checkbox"/>				
● Do not wear loose-fitting clothes.	<input type="checkbox"/>	<input type="checkbox"/>				
● Do not wear any jewellery.	<input type="checkbox"/>	<input type="checkbox"/>				
● Tie up long hair and secure under a cap.	<input type="checkbox"/>	<input type="checkbox"/>				
● Never allow the mandrel (chuck) to rotate unattended.	<input type="checkbox"/>	<input type="checkbox"/>				
● Use mill files and emery cloths as little as possible to deburr or finish a piece.	<input type="checkbox"/>	<input type="checkbox"/>				
● Never use any other tool than a mill file to deburr a workpiece.	<input type="checkbox"/>	<input type="checkbox"/>				
● Check the file handle before starting to deburr or finish a piece.	<input type="checkbox"/>	<input type="checkbox"/>				
● Angle the file handle towards your body and hold it with your left hand. Hold the other end with your right hand.	<input type="checkbox"/>	<input type="checkbox"/>				
▶ Install an emergency stop mechanism (pedal, button, bar or cable) coupled to a braking system to halt the mandrel (chuck) and workpiece rotation.	<input type="checkbox"/>	<input type="checkbox"/>				
▶ Install a braking device (mechanical, electrical, etc.) to quickly stop the mandrel (chuck) and workpiece rotation.	<input type="checkbox"/>	<input type="checkbox"/>				

Notes:

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# Mechanical Hazards (continued)

Most likely injuries: Cuts, amputations, fractures, foreign bodies, crushing, etc.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Accidental Start-Up Of The Lathe During Maintenance And Repairs</b>						
<ul style="list-style-type: none"> <li>● Apply lock-out procedures: <input type="checkbox"/></li> <li>- disconnect all sources of energy</li> <li>- dissipate (purge) all residual energies (e.g. electrical system condensers or oil pressure in the hydraulic system)</li> <li>- lockout all sources of energy</li> <li>- validate to ensure start-up is no longer possible and that all power has been dissipated (purged).</li> </ul>						
<b>Risk Factor: Contact With Drive Mechanisms</b>						
<ul style="list-style-type: none"> <li>▶ Install fixed guards to limit access to pulleys, belts, gears, etc. <input type="checkbox"/></li> </ul>						
<b>Risk Factor: Contact With The Sharp Edges Of A Stopped Workpiece, With Shavings Or With The Cutter</b>						
<ul style="list-style-type: none"> <li>● Mount the workpiece as far as possible from the cutting tool. <input type="checkbox"/></li> <li>● Coat the cutting edges of a cutting tool to protect from harm during handling <input type="checkbox"/></li> <li>● Handle only with a rag or cut-resistant gloves and, only once the workpiece has come to a complete stop. <input type="checkbox"/></li> <li>● Tighten clamps by pulling towards you, not away. <input type="checkbox"/></li> <li>● Immediately put away any unused tools. <input type="checkbox"/></li> <li>● Remove shavings with a brush. <input type="checkbox"/></li> </ul>						
<b>Risk Factor: Falling Material</b>						
<ul style="list-style-type: none"> <li>▶ Securely anchor the lathe frame to the floor. <input type="checkbox"/></li> <li>● Remove any object likely to fall from the frame. <input type="checkbox"/></li> <li>▶ Supply mechanical handling devices (hoist, dolly with lift table, etc.) suitable to the weight and dimensions of the workpiece, tools and attachments. <input type="checkbox"/></li> <li>● Wear CSA-approved safety footwear with steel-capped toes. <input type="checkbox"/></li> </ul>						
<b>Risk Factor: Fall, Slipping</b>						
<ul style="list-style-type: none"> <li>▶ Install a moveable transparent guard in front of the cutting area to stop shavings from flying and cutting fluid from splattering. <input type="checkbox"/></li> <li>▶ Install a protective screen behind the lathe to stop any flying shavings or splattering cutting fluid from reaching the floor. <input type="checkbox"/></li> <li>● Reduce fluid output and pressure to a minimum. <input type="checkbox"/></li> <li>● Orient the stream of fluid so as to minimize splash. <input type="checkbox"/></li> <li>▶ Repair and clean floor: uneven surfaces, holes, slippery floor, presence of shavings, etc. <input type="checkbox"/></li> <li>▶ Supply floor mats with rising edges. <input type="checkbox"/></li> </ul>						

# Mechanical Hazards (continued)

Most likely injuries: Cuts, amputations, fractures, foreign bodies, crushing, etc.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/> N/A	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Flying Material ( Key, Tool Fragments, Workpiece, Shavings, Cuttings etc.)</b>						
▶ Install a moveable transparent guard in front of the cutting area.	<input type="checkbox"/>					
▶ Install a protective screen behind the lathe.	<input type="checkbox"/>					
▶ Orient the lathe so as to reduce the likelihood of scattered material reaching adjacent workstations.	<input type="checkbox"/>					
● Register the cutter to the workpiece only once the lathe is turning.	<input type="checkbox"/>					
● Stop the lathe if an unusual vibration is felt or noise heard.	<input type="checkbox"/>					
● Wear CSA-approved safety glasses with lateral protection.	<input type="checkbox"/>					
● When needed, wear a CSA-approved face shield on top of safety glasses.	<input type="checkbox"/>					
<b>Risk Factor: Flying Key</b>						
▶ Supply a spring-loaded mandrel (chuck) key to secure the mandrel (chuck).	<input type="checkbox"/>					
● Ensure the key is not still on the mandrel (chuck) before starting the lathe.	<input type="checkbox"/>					
<b>Risk Factor: Flying Fragments In Case of Cutting Tool Breakage</b>						
● Check that the tool's cutting edges are sharp.	<input type="checkbox"/>					
● Properly secure the cutting tool and tool-holder before machining.	<input type="checkbox"/>					
● Stop the rapid advancement of the tool at a sufficient distance from the workpiece.	<input type="checkbox"/>					
<b>Risk Factor: Protection Due To An Unsecured Workpiece</b>						
● Ensure that the workpiece is securely held in the mandrel (chuck).	<input type="checkbox"/>					
<b>Risk Factor: Flying Fragments Following Improper Cutting Parameters</b>						
● Refer to cutter manufacturer specifications or other technical data in order to select a good combination of cutting parameters (feed speed, cut depth, cutting speed, lubrication) according to the material being cut, type assembly being cut and cutter selection.	<input type="checkbox"/>					
<b>Risk Factor: Projection and Movement of Chips/Waste Stock</b>						
● Select proper cutting parameters to avoid creating long curls.	<input type="checkbox"/>					
● Use tools with chip breakers. Alternatively, use a back-and-forth technique during machining.	<input type="checkbox"/>					
● Remove long curls with a pair of pliers and only once the mandrel (chuck) has come to a complete stop.	<input type="checkbox"/>					
● Remove shavings by blowing with compressed air at a pressure less than 200 kPa (30 psi).	<input type="checkbox"/>					
● Never remove shavings by blowing with your mouth.	<input type="checkbox"/>					

# Ergonomic Hazards

Most likely injuries: Musculo-skeletal disorders, backaches.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Handling Of Heavy Objects</b>						
▶ Supply mechanical handling devices (hoist, dolly with lift table, etc.) suitable to the weight and dimensions of the workpiece, tools and attachments.		<input type="checkbox"/>				
● Ask for help from another worker when help is needed.		<input type="checkbox"/>				
<b>Risk Factor: Straining Working Positions</b>						
▶ Install a transparent guard, which doesn't mask the area being machined.		<input type="checkbox"/>				
▶ Install sufficient lighting to illuminate the machining area so as to eliminate the need to bend neck and back.		<input type="checkbox"/>				
<b>Risk Factor: Static Standing Work</b>						
▶ Supply an anti fatigue mat.		<input type="checkbox"/>				

# Heat-Related Hazards

Most likely injuries: Burns.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Contact With Shavings, Cutting Tools And Hot Workpieces</b>						
▶ Install a moveable transparent guard in front of the cutting area.		<input type="checkbox"/>				
▶ Install a screen behind the lathe to avoid the flying of shavings.		<input type="checkbox"/>				
● Remove shavings with a brush.		<input type="checkbox"/>				
● Wear snug-fitting long-sleeve tops.		<input type="checkbox"/>				
● Handle hot workpieces and cutting tools with gloves or a rag.		<input type="checkbox"/>				
<b>Risk Factor: Fire</b>						
● Dispose oil-soaked rags in a metal container.		<input type="checkbox"/>				

# Physical Hazards

Most likely injury: Hearing loss.

Preventative measures	Appliquée <input checked="" type="checkbox"/>	Non applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Noisy Workplace Environment</b>						
● Identify the sources of noise and implement measures to reduce noise at the source, whenever possible.		<input type="checkbox"/>				
● Wear earplugs or earmuffs.		<input type="checkbox"/>				

# Chemical and Biological Hazards

Most likely injuries: Dermatitis, intoxication, infection, etc.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Inhalation Or Skin Contact Of Contaminants From Cutting Fluids Or The Workpiece</b>						
● Consult the MSDS for the workpiece material to determine if there are any hazardous substances (e.g., beryllium, cobalt, manganese, lead, etc.).	<input type="checkbox"/>					
● Dry-cut whenever possible.	<input type="checkbox"/>					
● Consult the MSDS for the cutting fluid.	<input type="checkbox"/>					
▶ Select cutting fluids that do not contain any amines-class chemical substances and that are the least harmful to your health.	<input type="checkbox"/>					
▶ Confine the machining area and install an airborne particle recovery system (dust and other air-borne particles).	<input type="checkbox"/>					
● Periodically change the cutting fluid and clean all conduits to limit bacterial contamination.	<input type="checkbox"/>					
● During handling, wear gloves that are resistant to the cutting fluid used.	<input type="checkbox"/>					
● Apply the following personal hygiene precautions: - frequently wash hands and forearms with soap and water - promptly report, treat and cover and wounds - regularly change clothing impregnated with cutting fluid.	<input type="checkbox"/>					

# Electrical Hazards

Most likely injuries: Electrocutation

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Contact With Parts Normally Or Accidentally Energized</b>						
▶ Install an isolating switch near the lathe, with clear markings.	<input type="checkbox"/>					
● Apply lock-out procedures: - disconnect all sources of energy - dissipate (purge) all residual energies (e.g. electrical system condensers) - lock-out all sources of energy - validate to ensure start-up is no longer possible and that all power has been dissipated (purged).	<input type="checkbox"/>					
● Check the supply cord insulation and the lathe grounding circuit.	<input type="checkbox"/>					

Completed by:

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This Self-Diagnosis form was developed following a research project in workplace health and safety from IRSST, a workplace health and safety research institute named (Institut de recherche Robert-Sauvé en santé et en sécurité du travail).