

Lathe Metal Cutting Risk Assessment

Business Name:	ABN:	
Business Address:		
Contact Person:	Phone:	Email:

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THE PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

Full Name:		
Signature:	Title:	Date:

CLIENT OR PRINCIPAL CONTRACTOR DETAILS

Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION	HIERARCHY OF CONTROLS
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE			Elimination Remove the hazard.
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	Substitution Replace the hazard.
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before work starts.	Isolation Isolate People from the hazard
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Ensure control measures in place.	Engineering Isolate the hazard
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	Administrative Change
								PPE

Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required.
3H	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures. Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:

Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. **Substitute**
3. **Isolate**
4. **Engineering**
5. **Administrative**
6. **PPE**

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work (2023) and ISO 45001:2018 clauses 6–8.

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Preparation	Manual handling injuries, Slip and trip hazards	3H	<ul style="list-style-type: none"> - Ensure work area is clean and free from trip hazards - Provide adequate lighting - Train workers in correct manual handling techniques - Use mechanical aids for lifting heavy objects - Ensure operators wear non-slip footwear - Conduct a pre-operation check - Display safety signs and warnings clearly - Install non-slip flooring - Organise and store tools properly - Regularly inspect walkways and paths 	2M
2. Machine Setup	Entanglement with spindle, Electrical shock	4H	<ul style="list-style-type: none"> - Ensure machine is properly grounded - Use insulated tools and equipment - Display entanglement hazard signage - Provide training on machine-specific setup procedures - Use lockout/tagout (LOTO) procedures during setup - Ensure all guards are in place before operation - Check cables and wires for damage before use - Use remote power isolators - Regularly test safety interlocks - Implement a buddy system for setup tasks 	2M
3. Mounting the Workpiece	Workpiece ejection, Pinch points	4A	<ul style="list-style-type: none"> - Use appropriate personal protective equipment (PPE) - Securely fasten workpiece using chucks or fixtures - Use gloves suitable for handling - Verify alignment before starting the machine - Train operators on safe workpiece handling - Erect barriers to protect from ejected materials - Consider using automated or mechanical holding devices - Use pinch point warning signs 	2M

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			- Regularly inspect holding devices for wear - Implement automatic stop systems for anomalies	
4. Tool Selection	Cut injuries, Tool ejection	3H	1. Select tools with safety features like chip breakers. 2. Use tool holders with built-in safety stops. 3. Implement a tool change safety protocol. 4. Regularly inspect tools for wear and damage. 5. Use appropriate tool grades for the material. 6. Limit tool length to reduce deflection. 7. Use tool presetting for accuracy. 8. Implement a tool inventory system. 9. Train operators on correct tool selection. 10. Use tool condition monitoring systems.	2M
5. Cutting Speed and Feed Rate Setting	Machine jamming, overheating	3H	1. Consult the machine's manual for recommended speeds and feeds. 2. Start with conservative settings and gradually increase. 3. Monitor chip formation and temperature. 4. Use a speed and feed calculator. 5. Implement a trial and error process. 6. Use a variable speed drive (VSD) for flexibility. 7. Monitor machine vibrations. 8. Use a coolant system to reduce heat. 9. Implement a safety protocol for emergency stops. 10. Train operators on safe speed and feed settings.	2M
6. Initiate Cutting Operation	Noise, Vibration	3H	1. Use noise-reducing enclosures. 2. Implement vibration dampening techniques. 3. Use personal protective equipment (PPE) like earplugs. 4. Monitor machine vibrations. 5. Use a vibration analyzer. 6. Implement a safety protocol for emergency stops. 7. Train operators on safe operation.	1L

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7. Monitoring Cutting Process	Operator inattention, Unexpected machine behavior	4A		2M
8. Lubrication Application	Chemical exposure, Slippery surfaces	3H		2M
9. Removal of Workpiece	Burns from hot materials, Strain from lifting	3H		2M

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10. Machine Cleaning	Dust inhalation, Cut by sharp waste	3H		2M
11. Machine Shutdown	Entanglement during shutdown, Electric hazards	3H		1L
12. Maintenance	Unexpected start-up, Contact with sharp edges	4A		2M

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13. Inspection of Completed Work	Inspection errors, Sharp edges	3H		2M
14. Documentation	Data entry errors, Document mishandling	2M		1L
15. Feedback and Review	Inadequate feedback, Missed improvement opportunities	3H		1L

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16. Training	Lack of training, Ineffective training	4A		2M
17. Emergency Procedures	Emergency not handled properly, Panic	4A		2M
18. Personal Protective Equipment (PPE)	Incorrect PPE use, PPE failure	4A		2M

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19. Waste Management	Environmental contamination, Injury from materials handling	3H		2M
20. Review and Update Risk Assessment	Missed hazards, Outdated controls	3H		1L

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES IF ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory

Work Health and Safety Act 2011

Work Health and Safety Regulations 2011

Legislation QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws>

Codes of Practice QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice>

Legislation ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations>

Codes of Practice ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice>

Victoria

Occupational Health and Safety Act 2004

Occupational Health and Safety Regulations 2017

Legislation VIC: <https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations>

Codes of Practice VIC: <https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice>

New South Wales

Work Health and Safety Act 2011

Work Health and Safety Regulations 2017

Legislation NSW: <https://www.safework.nsw.gov.au/legal-obligations/legislation>

Codes of Practice NSW: <https://www.safework.nsw.gov.au/resource-library/list-codes-of-practice>

Western Australia

Work Health and Safety Act 2020

Work Health and Safety Regulations 2022

Legislation Western Australia: <https://www.commerce.wa.gov.au/worksafe/legislation>

Codes of Practice WA: <https://www.commerce.wa.gov.au/worksafe/codes-practice>

Northern Territory

Work Health and Safety (National Uniform Legislation) Act 2011

Work Health and Safety (National Uniform Legislation) Regulations 2011

Legislation NT: <https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws>

Codes of Practice NT: <https://worksafe.nt.gov.au/laws-and-compliance/codes-of-practice>

Safe Work Australia Links

Law and Regulation (All States): <https://www.safeworkaustralia.gov.au/law-and-regulation>

Model Codes of Practice: <https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice>

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work

South Australia

Work Health and Safety Act 2012 (SA)

Work Health and Safety Regulations 2012 (SA)

Legislation for SA: <https://www.safework.sa.gov.au/resources/legislation>

Codes of Practice for SA: <https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs>

Tasmania

Work Health and Safety Act 2012

Work Health and Safety (Transitional and Consequential Provisions) Act 2012

Work Health and Safety Regulations 2012

Work Health and Safety (Transitional) Regulations 2012

Legislation for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations>

Codes of Practice for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice>

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.