

Packaging Bottling and Assembly Line Machinery

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

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THIS 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. WHS Governance, Roles and Consultation	<ul style="list-style-type: none"> Lack of clear WHS responsibilities for packaging and bottling machinery across management, supervisors and operators Inadequate consultation mechanisms with workers and health and safety representatives regarding machine risks and changes Poor integration of WHS Act 2011 duties (PCBUs, officers, workers, others) into site procedures for automated packaging lines Insufficient resourcing for WHS (time, budget, competent personnel) to manage complex machinery and robotics Failure to consider WHS in strategic decisions such as selection of new bottle capping, can closing or robotic systems Inadequate WHS leadership and safety culture leading to normalisation of deviance and bypassing of controls 	4A	<ul style="list-style-type: none"> Establish and document a WHS Governance Framework aligned with WHS Act 2011 and WHS Regulations, clearly allocating due diligence obligations to officers and WHS responsibilities to managers, supervisors and workers for all packaging, bottling and assembly line machinery Implement formal consultation arrangements (e.g. WHS committees, HSR structures, toolbox talks) specifically addressing risks from bottle capping machines, can closing machines, carton folding and gluing machines, robotic sprayers and component assembly cells Integrate WHS risk management into change management and procurement approvals so that any new or modified automatic machines, robotic systems, production lines, glue rollers or packaging machines require documented assessments and sign-off by competent persons Develop and communicate a WHS policy that explicitly references safe design, guarding, lock-out/tag-out and safe systems of work for packaging and assembly operations, including in-feed and out-feed tasks Allocate sufficient resources (budget, competent WHS advisors, maintenance staff and trainers) to implement and sustain engineering and administrative controls for the full life cycle of packaging equipment Set measurable WHS performance indicators (e.g. guarding compliance, near miss reporting, safety inspection completion rates) for line managers supervising finishing and assembly tasks and packaging operations Provide WHS due diligence training for officers and senior managers with case studies relevant to high speed packaging lines and robotic machinery Ensure formal mechanisms for workers to raise concerns about unsafe design, guarding deficiencies, interlock bypassing and production pressure, with documented investigation and feedback 	3H
2. Plant Procurement, Design and Integration	<ul style="list-style-type: none"> Selection of machinery (bottle capping, can closing, carton folding and gluing, robot sprayer, pre-gluer, glue roller, packaging machines) that does not comply with Australian Standards or WHS Regulations Inadequate safety-in-design review for integrated assembly lines resulting in hazardous interfaces between machines and conveyors Incompatible control systems across different OEM equipment leading to unexpected start-ups or failure of emergency stops Lack of consideration of human factors in layout (restricted access, poor visibility, complex operator interactions with robotic machinery) 	4A	<ul style="list-style-type: none"> Implement a formal Plant Procurement and Design Procedure requiring compliance with WHS Act 2011, WHS Regulations (Plant) and relevant Australian Standards (e.g. AS 4024 series) for all packaging, bottling and assembly machinery Develop detailed functional and safety specifications for bottle capping machines, can closing machines, carton folding and gluing machines, robotic spray cells, assembly aids and packaging machines including required safety integrity level (SIL) or performance level (PL) for safety control systems Require OEMs and integrators to provide documented safety assessments, verification of interlocks and emergency stop systems, and evidence of compliance with Australian Standards before acceptance Use multidisciplinary design reviews (engineering, WHS, maintenance, operators, HSRs) to evaluate layouts of in-feed and out-feed conveyors, transfer between stations, and integration of robotic machinery with manual packaging operations Specify physical segregation and controlled access (fencing, interlocked gates, presence sensing systems) for tasks involving robotic machinery and automatic machines to prevent worker entry into hazardous zones during operation Ensure all new and modified equipment is subject to a pre-commissioning safety validation, including testing of batch counters, guarding, emergency stops and fail-safe states for loss of power or air 	2M

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	<ul style="list-style-type: none"> Failure to segregate robotic cells and automatic machines from manual component assembly and finishing tasks Insufficient specification of guarding, light curtains, safety PLCs and interlocks in procurement documentation 		<ul style="list-style-type: none"> Maintain a plant register with design records, as-built drawings, safety functions description and verification reports for all key machines on the packaging and assembly lines 	
3. Guarding, Interlocks and Physical Barriers	<ul style="list-style-type: none"> Inadequate or missing fixed guards on nip points, pinch points and cutting edges on glue rollers, pre-glueers, conveyors and component transfer systems Interlocks on bottle capping, can closing or carton gluing machines being overridden, damaged or defeated Poorly designed access points into robotic spray cells and automatic packing machines leading to entry while machinery is energised Inconsistent standards for guarding between older and newer equipment the same line Guards that are difficult to remove and refit correctly, resulting in operation without guards after maintenance or clearing jams Lack of documented information on maintenance system for guards, light curtains, pressure mats and other presence-sensing safety devices 	4A	<ul style="list-style-type: none"> Develop and enforce Guarding and Interlock Standard for all machinery, aligned with AS 4024, setting minimum requirements for fixed guards, interlocked guards and distance from hazards for packaging and assembly equipment Conduct a systematic guarding audit across bottle capping machines, can closing machines, carton folding and gluing machines, glue rollers, pre-glueers, assembly stations, in-feed/out-feed conveyors and packing machines with actions tracked to completion Install tamper-resistant interlocks and safety switches on all access doors and hatches into hazardous zones, ensuring machinery cannot operate when access is open and that restart requires deliberate reset Standardise guarding designs where practicable so workers experience consistent access methods and safety behaviour across the line Implement a scheduled inspection program for guards and safety devices (including robotic cells) with documented criteria for pass/fail and immediate rectification of defects Integrate guard status monitoring into machine control systems so that any guard fault generates an alarm, prevents restart and is recorded in maintenance logs Train supervisors and maintenance personnel on legal requirements for guarding, the prohibition on defeating interlocks, and their responsibilities for verifying guarding before returning plant to service 	2M
4. Control Systems, Emergency Stops and Lock-Out/Tag-Out	<ul style="list-style-type: none"> Control system failures causing unexpected start-up or failure to stop packaging and assembly machinery Inadequate emergency stop coverage on long packaging lines, robotic cells and transfer systems Absence of a documented isolation and lock-out/tag-out (LOTO) system for maintenance, jam clearing and cleaning Reliance on software stops rather than hard-wired safety circuits for high-risk plant 	4A	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M

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	<ul style="list-style-type: none"> Poorly labelled isolators and control panels leading to incorrect isolation of machines or conveyors Multiple energy sources (electrical, pneumatic, hydraulic, stored mechanical energy) not identified or controlled during intervention 		[REDACTED]	
5. Layout, Traffic Management and Segregation	<ul style="list-style-type: none"> Poor layout resulting in congestion between workers, forklifts and pallet jacks around packaging finished products and trailers Inadequate segregation between manual component assembly tasks and automatic/robotic machinery operations Restricted access and escape route around large packaging machines and robotic cells, increasing risk during emergencies Uncontrolled pedestrian crossings over in-feed/out-feed conveyors and transfer points between stations Insufficient space for safe manual handling of components, finished goods and packaging materials within the plant Noise and visual distraction from adjacent equipment reducing situational awareness 		[REDACTED]	2M
6. Safe Work Procedures and Work Instructions	<ul style="list-style-type: none"> Absence of documented procedures for operating packing machinery, automatic machines and robotic systems at a system level Procedures that focus only on production metrics and not on hazard controls for in-feed, out-feed and transfer between stations 	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> Inconsistent practices between shifts or teams when performing finishing and assembly tasks, leading to informal short-cuts Complexity of multiple machines (bottle capping, can closing, carton gluing, assembly aids, packaging machines) resulting in knowledge gaps Procedures not updated following plant modifications, control system changes or incident findings 		[REDACTED]	
7. Competency, Training and Supervision	<ul style="list-style-type: none"> Inadequate training for operators on system-level risks associated with automatic packaging and assembly lines Over-reliance on informal buddy training leading to inconsistent understanding of hazards and controls Insufficient competency of supervisors to enforce WHS requirements and identify unsafe behaviours around machinery Lack of specialised training for maintenance personnel working on robotic machinery, glue rollers, pre-glue rollers and control systems Limited induction content on specific risks associated with bottle capping machines, can closing machines and carton folding/gluing machines 	3	[REDACTED]	2M
8. Maintenance, Inspection and Reliability Management	<ul style="list-style-type: none"> Inadequate preventative maintenance leading to mechanical failures, jams and unsafe conditions on high-speed lines Unplanned breakdowns of critical safety components (guards, interlocks, sensors, glue rollers, conveyors) causing hazardous manual interventions Use of uncontrolled contractors for maintenance on robotic machinery and automatic machines without adequate WHS oversight 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> Failure to identify and manage end-of-life equipment that no longer meets safety standards Insufficient inspection regimes for pressure systems, lifting devices, conveyors and guarding associated with packaging machinery 		[REDACTED]	
9. Change Management, Commissioning and Decommissioning	<ul style="list-style-type: none"> Uncontrolled modifications to packaging machinery, robot programs or glue application systems introducing new hazards Commissioning of new or modified lines without adequate risk assessment testing of safety systems or operator training Removal or repositioning of guarding, interlocks, conveyors or assembly aids during upgrades without proper review Decommissioning or relocation activities (e.g. moving packaging machines or assembly cells) conducted without considering residual energy stability and access risks Software changes to robotic sprayers or automatic machines made in production without documentation or validation 		[REDACTED]	2M
10. Production Pressure, Fatigue and Work Organisation	<ul style="list-style-type: none"> Excessive production pressure leading to bypassing of safety systems or deviation from procedures around packaging machinery Inadequate staffing or poor task allocation causing fatigue and reduced vigilance for hazards on long shifts High repetition and monotonous monitoring of automatic lines 	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> contributing to inattention and increased response time to faults • Extended hours or night shift patterns without appropriate fatigue management for operators and maintenance staff • Inadequate planning of changeovers, cleaning and maintenance leading to rushed tasks during short downtime windows 		[REDACTED]	
11. Contractor, Visitor and Supplier Management	<ul style="list-style-type: none"> • Contractors performing installation, maintenance or upgrades on packaging lines without understanding site-specific risks and procedures • Inadequate control of OEM technicians working on robotic machinery, glue systems and control software changes • Visitors and truck drivers entering packaging finished products and trailer loading areas without proper induction supervision • Suppliers delivering raw materials and packaging components into congested areas around moving machinery and traffic routes 	3H	[REDACTED]	2M
12. Hazardous Substances, Energy and Environmental Conditions	<ul style="list-style-type: none"> • Exposure to hazardous substances such as adhesives, solvents, cleaning chemicals and aerosols from robot sprayers • Inadequate ventilation in areas where glues or sprays are used, leading to accumulation of vapours • Noise, heat and lighting issues around high-speed packaging and bottling lines affecting concentration and communication 	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> Uncontrolled compressed air, steam or hot surfaces associated with packaging and sterilisation equipment Slip, trip and fall hazards from glue spills, packaging debris and product on walkways near machinery 		[REDACTED]	
13. Emergency Preparedness and Incident Management	<ul style="list-style-type: none"> Inadequate emergency response planning for machinery entrapment, fire, chemical exposure or major plant failure in packaging areas Poorly located or insufficient emergency stops, first aid resources and firefighting equipment Lack of drills and training for scenarios involving robotic machinery, automatic packaging lines and large numbers of workers Delayed or incomplete incident reporting and investigation preventing identification of systemic issues Confusion over roles and communication channels during emergencies on busy packaging floor 	3H	[REDACTED]	2M
14. Monitoring, Audit and Continuous Improvement	<ul style="list-style-type: none"> Failure to detect degradation of controls over time (e.g. guards removed, interlocks bypassed, procedures not followed) Lack of systematic WHS performance monitoring for packaging and assembly operations Audit processes that focus only on documentation and not on field verification of controls Non-compliance with legal and standards updates relating to plant and automation 	3H	[REDACTED]	1L

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	<ul style="list-style-type: none"> Under-reporting of hazards and near misses, limiting learning opportunities 		<div style="background-color: black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 20px; margin-bottom: 5px;"></div>	

SAMPLE

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 FOR 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 2025
 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) Regulation 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>

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>

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

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.