Brake and Suspension Systems			
Business Name:		ABN:	
Business Address:			
Contact Person:	Phone:	Email:	

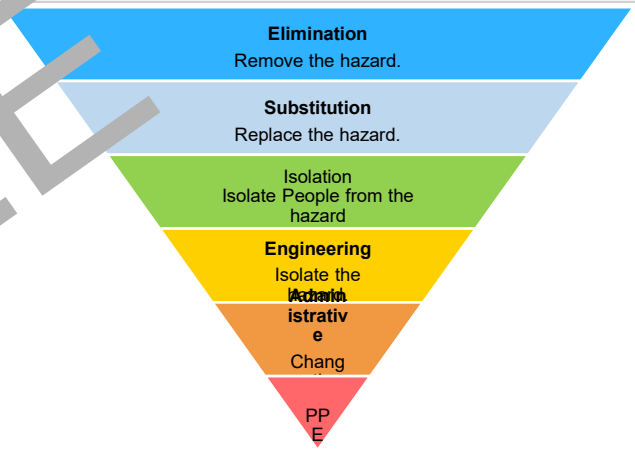
THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT		
Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.		
Full Name:		
Signature:	Title:	Date:

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
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. 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. Vehicle Design, Selection and Brake/Suspension Specification	• Selection of vehicles with brake and suspension systems that are not fit-for-purpose for load, terrain or duty cycle • Inadequate consideration of air brake versus hydraulic brake requirements for heavy vehicles • Vehicle design that limits access for safe brake and suspension inspection and servicing • Insufficient brake performance margin when vehicles are fully loaded or operating on steep grades • Inappropriate or mixed-use of disc, drum and parking brake systems without clear configuration control • Incompatible suspension and steering geometry impacting braking performance and stability • Failure to specify compliant components (e.g. non-approved brake rotors, pads, springs, suspension parts) in procurement documents • Lack of alignment between vehicle manufacturer specifications and workplace operational needs (e.g. frequent towing, high-speed highway use, off-road use)	4A	• Develop and implement a vehicle selection standard that specifies minimum braking and suspension performance and compliance with the WHS Act 2011, Australian Design Rules (ADRs) and relevant Australian Standards • Require all new vehicles to meet or exceed manufacturer recommendations for maximum gross vehicle mass (GVM), braking capacity, suspension ratings and intended operating conditions • Include technical review by a competent automotive engineer for non-standard configurations (e.g. upgraded suspension, aftermarket brake systems, leaf spring changes, air brake conversions) • Specify only ADR-compliant brake and suspension components in procurement contracts, including brake drums, rotors, pads, calipers, leaf springs, struts and steering components • Include design requirements to allow safe access for brake line inspection, manual brake adjustment, bleeding brakes, brake rotor replacement and suspension servicing procedures • Standardise on proven brake and suspension configurations within the fleet to reduce variability and simplify maintenance and training requirements • Mandate ANCAP 5-star safety rating for light vehicles where practicable, with enhanced braking systems (e.g. ABS, ESC, brake assist) and stable suspension setups • Establish a formal change management process for any modification to brake, suspension, steering or wheel alignment geometry, including engineering sign-off and update of maintenance documentation	3H
2. Governance, WHS Responsibilities and Consultation for Brake and Suspension Risks	• Lack of clearly defined WHS responsibilities for managing braking and suspension system risks • Insufficient consultation with workers, health and safety representatives and mechanics about brake and suspension issues • Poor integration of brake and suspension risk management into the organisation's WHS management system • Failure to allocate adequate budget and resources for safe brake and suspension maintenance systems	3H	• Define and document roles and responsibilities for PCBU, officers, supervisors, fleet managers and workshop managers regarding brake, steering and suspension safety management under the WHS Act 2011 • Embed brake and suspension system risks into the organisation's WHS policy, risk register and safety objectives • Establish structured consultation mechanisms (toolbox talks, safety committees, consultation with HSRs) specific to brake system maintenance, suspension servicing and steering adjustments • Allocate dedicated budget and resourcing for brake testing equipment, strut spring compressors, brake lathes, wheel alignment machines and specialised training • Implement a contractor management procedure that includes WHS pre-qualification, verification of competence and periodic audits for external brake and suspension repair providers	2M

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
	• Inadequate oversight of contractors carrying out brake and suspension repairs, including air brake testing and roller brake testing • No systematic review of incidents, near misses and defect trends relating to braking, steering and suspension		• Include brake, steering and suspension system failures and defects as a mandatory category in incident, hazard and near-miss reporting systems • Schedule regular management reviews of fleet brake and suspension performance data, non-conformances and improvement actions	
3. Competency, Licensing and Training for Brake, Suspension and Steering Work	• Workers undertaking brake, suspension and steering work without formal automotive qualifications or verified competency • Insufficient training on specific systems such as air brakes, hydraulic brakes, disc brake systems and parking brake mechanisms • Lack of competency in using specialised equipment such as brake lathes, brake pedal force measurement tools, roller brake testers and strut spring compressors • Inadequate training in working with high tension springs and springs under tension during fit leaf springs, chassis adjustments and suspension system repairs • Failure to update worker skills when new brake technologies or suspension designs are introduced • Insufficient instruction on safe adjustment of brakes for different load weights and vehicle configurations • Lack of training on identifying early warning signs of brake wear, brake cable damage, steering shake and suspension component fatigue		• Implement a formal competency framework for brake, steering and suspension tasks, linked to nationally recognised automotive qualifications and licensing where applicable • Require verification of competency (VOC) before authorising workers to perform critical tasks such as air brake testing and repairs, bleeding brakes, disc brakes repair and suspension adjustments • Provide task-specific training on the safe use, inspection and maintenance of brake lathes, brake pedal force measurement equipment, roller brake testing machines and wheel alignment systems • Develop and deliver training modules on working with high tension springs and springs under tension, including safe use of strut spring compressors and leaf spring fitting procedures • Ensure periodic refresher training and competency reassessment to account for new vehicles, upgraded systems and regulatory or standards changes • Include formal training on brake performance relative to load weight, vehicle mass distribution, towing conditions and road gradients • Train mechanics and drivers to recognise and report early symptoms of brake fade, uneven wear, steering vibration, chassis instability and suspension sagging • Maintain detailed training records and authorisation matrices indicating which workers are permitted to undertake specific brake and suspension servicing procedures	2M
4. Brake and Suspension Maintenance Strategy and Scheduling	• Absence of a formal preventative maintenance program for brake and suspension systems • Reactive approach to brake repairs leading to operation of vehicles with degraded braking or suspension • Inadequate scheduling for high-risk components such as brake pads, rotors,	4A	[redacted]	2M

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
	drums, wheel bearings, springs and shock absorbers • Failure to account for harsh operating environments or high mileage in maintenance intervals • Poor coordination of wheel alignment, vehicle alignment and steering system checks with brake servicing intervals • Lack of dedicated downtime for comprehensive inspection and testing of brake and suspension systems		[redacted]	
5. Inspection, Testing and Condition Monitoring Systems	• Inconsistent or informal inspection of brake wear, brake lines, brake cables and suspension components • Failure to detect early-stage cracks, corrosion, leaks or fatigue in brake lines leaf springs, struts and steering linkag • Underuse or misuse of diagnostic too such as brake pedal force measuremer devices, roller brake te d alignment equipmen • Inadequate verifi tion of the effectiveness of ma adjustment, parking brake service ar disc brake system maintenance • No clear criteria for whe drums must be machined or replaced versus continued in service • Lack of documented test results to prove braking performance is adequate after repairs or system changes	4A	[redacted]	2M
6. Technical Work Procedures for Brake and Suspension Systems	• Absence of clear, standardised work instructions for complex brake and suspension tasks • Reliance on informal knowledge for critical activities such as adjusting	4A	[redacted]	2M

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
	brakes for different load weights or undertaking brake repairs • Inconsistent methods used for disc brakes repair, brake rotor replacement and brake drum machining operations • Improper procedures for working with springs under tension, including strut spring compressor and fit leaf springs tasks • Incorrect installation of brake systems or replacing brake systems leading to reduced performance or system failure • Uncontrolled variations in suspension servicing procedures and steering system adjustments affecting vehicle stability		[redacted]	
7. Workshop Layout, Plant, Tools and Engineering Controls	• Inadequate or unsafe workshop layo for brake and suspension work, leadin to congestion and collision risks • Use of unsafe or po y maintained equipment such as ake lathes, strut spring compresso jacks and ds • Lack of appropriate g and supp equipment for vehicles undergoing b ke and suspension servicing • Insufficient guarding or containment around rotating machinery such as brake lathes and wheel alignment equipment • Unsuitable or non-calibrated tools used for torque settings on brake and suspension fasteners • Poor lighting and ventilation in areas where brake and suspension work is performed	3H	[redacted]	2M

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
8. Parts, Materials, Procurement and Configuration Control	• Use of non-genuine, incompatible or substandard brake and suspension components • Incorrect matching of brake pads, rotors, drums and calipers leading to uneven braking performance • Mixing of old and new components (e.g. wheel bearings, springs, struts) without proper assessment • Lack of traceability for critical components used in air brakes, hydraulic brakes and suspension assemblies • Uncontrolled modifications to chassis, steering or suspension affecting brake dynamics and vehicle stability • Poor storage of brake components leading to contamination or corrosion (e.g. brake lines, rotors, drums)	4A	[redacted]	2M
9. Safe Management of High-Energy and Pressurised Brake and Suspension Systems	• Uncontrolled release of stored energy from springs under tension during suspension repairs and leaf [illegible]ring • Failure of high tension springs or strut assemblies during compression or installation • Sudden release of air pressure during releasing air brake systems or repairs to air brakes • Incorrect bleeding of hydraulic brakes leading to loss of braking effectiveness after service • Lack of isolation procedures for air and hydraulic systems during testing and repairs • Exposure to moving or shaking steering mechanisms during alignment and testing	4A	[redacted]	2M

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
			[redacted]	
10. Driver and Operator Interface with Brake, Steering and Suspension Systems	• Drivers operating vehicles without understanding the limitations of braking and suspension systems under different loads • Failure of drivers to report symptoms such as steering shake, brake fade, pulling during braking or unusual suspension behaviour • Inadequate pre-start checks by drivers to identify obvious brake and suspension defects • No system for communicating recent brake or suspension repairs or restrictions to drivers • Drivers not adjusting driving style for vehicles with air brakes or heavy loads requiring longer stopping distances • Poor feedback loop between drivers and workshops leading to unresolved recurring faults	3H	[redacted]	2M
11. Documentation, Records, Change Management and Compliance Assurance	• Incomplete or inaccurate maintenance and inspection records for brake and suspension systems • Lack of version control for procedures covering disc brake maintenance, air brake repairs and suspension servicing • Failure to document engineering changes, retrofits or upgrades to brake and suspension systems • Inability to demonstrate compliance with regulatory requirements and manufacturer specifications during audits or investigations • Poor linkage between risk assessments, SWMS and technical procedures for brake and suspension work	3H	[redacted]	2M

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
12. Contractor and Third-Party Workshop Management	• Use of external workshops that do not meet the organisation's WHS standards for brake and suspension work • Inadequate oversight of contractor practices for undertaking brake repairs, disc brakes repair or suspension system repairs • Poor communication of workplace-specific requirements and risk controls to third-party brake and suspension service providers • Lack of verification that contracted work such as roller brake testing, brake lathe operations or vehicle alignment meets specified quality standards • Contractors making unapproved changes to brake or suspension configurations during repairs	3H	[redacted]	2M
13. Fatigue, Workload and Human Factors in Brake and Suspension Work	• Mechanics performing complex brak and suspension tasks while fatigued o under time pressure • Rushing critical steps inspecting brake we checking brake cables for wear an ear or replacing wheel bearings • Failure to adhere to procedures due o high workloads or inadequate staffi levels in the workshop • Cognitive overload when managing multiple complex jobs simultaneously, leading to missed defects • Poor communication at handover between shifts or between different technicians working on the same vehicle	3H	[redacted]	2M
14. Emergency Preparedness, Incident Response and Defect Withdrawal	• Delayed response to brake or suspension failures identified on-road or during testing • No clear process to immediately withdraw unsafe vehicles from service after critical defects are found	3H	[redacted]	1L

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
	• Inadequate emergency response planning for severe brake failure or loss of steering control • Lack of structured incident investigation for failures related to braking, steering or suspension systems • Poor learning and follow-up from incidents, leading to repeated system failures		[redacted]	
15. Continuous Improvement, Audit and Review of Brake and Suspension Risk Controls	• Controls for brake and suspension risks becoming outdated due to changes in technology, legislation or operating conditions • Failure to identify emerging risks such as new brake materials, electronic brak control systems or advanced suspens technologies • Infrequent or superficial audits of brak and suspension safet anagement systems • Lack of performa e indic ing to brake and suspe liability a incidents • Complacency arising from peri without major incidents	3H	[redacted]	2M

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

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-of-codes-of-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/forms-and-resources/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

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.

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

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

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