



SAFE DEALER CERTIFICATION PROGRAMME MANUAL

FOREWORD

Foreword

We believe that a safe and healthy workplace is the cornerstone of a successful and productive organization. Every individual who steps through our doors—whether a long-standing team member, a contractor, or a new employee—deserves to feel protected, valued, and supported in an environment that prioritizes well-being above all else.

This Workplace Health & Safety Manual reflects our commitment to creating and maintaining a culture of safety. It serves as a guide for understanding workplace hazards, implementing safety measures, and fostering a proactive approach to health and safety. By working together to follow the guidelines outlined in this manual, report potential risks, and adhere to best practices, we can ensure that safety becomes a shared responsibility and a central part of everything we do.

As part of this shared responsibility, it is essential to recognize and uphold the four fundamental rights of employees in the workplace:

The Right to Know—Every employee has the right to be informed about any hazards that may exist in their workplace. This includes knowing about potentially dangerous materials, processes, equipment, or situations and understanding how to protect themselves and others. Training, access to safety data sheets, and clear instructions are part of fulfilling this right.

The Right to Participate—Employees have the right to actively participate in decisions that affect their workplace safety. This may include joining workplace safety committees, contributing to hazard assessments, or voicing concerns and suggestions. Your input is critical in identifying risks and shaping effective safety programs.

The Right to Refuse Unsafe Work—If you believe that a task or work environment presents an immediate danger to your health or safety—or that of others—you have the right to refuse the work. This is a legal right designed to ensure that safety always takes precedence. If you exercise this right, it is important to immediately report the issue to your supervisor so it can be resolved appropriately.

The Right to No Retaliation—Exercising your health and safety rights should never result in punishment, discrimination, or retaliation. You are legally protected from reprisal when reporting hazards, refusing unsafe work, or participating in safety programs. This ensures that every employee feels empowered to speak up without fear of negative consequences.

These four rights are the foundation of our commitment to workplace safety. They not only safeguard your physical well-being but also promote an environment where everyone is respected, valued, and empowered.

By embracing these rights and responsibilities, we can build a workplace where safety is not just a policy but a deeply ingrained value.

Thank you for your dedication to upholding these principles and contributing to a culture of safety.

This PDF includes a **hyperlinked Table of Contents** for easy navigation throughout the document. Each section listed in the Table of Contents is clickable, allowing you to jump directly to the corresponding page.

Additionally, a "Back to Top" button is conveniently located at the bottom of each page, enabling you to return to the Table of Contents quickly and efficiently. These features are designed to enhance usability and provide a seamless reading experience.

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HEALTH & SAFETY POLICY

As an NSADSA member, our company is unwavering in its commitment to ensuring the health and safety of all individuals within its sphere and fostering a robust safety culture throughout the workplace.

Shared Responsibility: As an NSADSA member, we acknowledge a shared responsibility with our employees for maintaining a workplace that prioritizes health and safety. This commitment is underscored by the implementation of requisite equipment and practices, grounded in sound health and safety considerations. Employees are provided with comprehensive training to execute their duties in a manner that upholds health and safety standards. The company is dedicated to collaborating with safety committees and other safety representatives to further enhance its safety initiatives.

Hazards and Workplace Practices: Recognizing that workplaces may encompass areas with potential hazards, all staff members are dedicated to implementing practices that ensure the well-being of individuals across the work environment. Regular workplace inspections are conducted to identify and address potential safety concerns.

Violence Prevention: As an NSADSA member, we acknowledge workplace violence as an Occupational Health & Safety hazard, capable of causing physical and emotional harm. Any acts or threats of violence within the workplace are deemed unacceptable. The company is resolute in its commitment to preventing workplace violence and responding effectively should such incidents occur. Every member of NSADSA member is entrusted with the responsibility of actively contributing to the creation and maintenance of a safe environment.

Management Leadership: Management assumes responsibility for ensuring compliance with all applicable legal requirements pertaining to occupational health and safety. Leadership is integral to the effectiveness and continual improvement of the Health and Safety Programme. Safeguards necessary for maintaining safe conditions are provided under management's purview. Support is also extended to the Health and Safety Representative in accordance with Occupational Health & Safety legislation.

Supervisory Responsibility: Supervisors play a crucial role in fostering positive attitudes toward health and safety within themselves and among those under their supervision. They are tasked with ensuring that all operations prioritize the health and safety of the entire staff.

Subcontractors/Service Providers: Subcontractors and service providers engaged by NSADSA members bear the responsibility of ensuring that their workers have received comprehensive training, wear mandated safety clothing and devices, and adhere to safe work practices while performing their duties.

Employee Commitment: Employees are entrusted with the responsibility of wholeheartedly cooperating with all aspects of the Health and Safety Programme. This includes strict compliance with rules and regulations, along with a continual commitment to practicing safety in the execution of their duties.

Note: *The safety information provided in this policy is complementary to, and does not supersede, the Occupational Health and Safety Act. All employees are required to be familiar with the Act, ensuring strict adherence to its regulations.*

President _____ Date _____
Name

This policy must be signed and posted in a prominent place annually, once the Policy & Programme manual has been reviewed.

ASSIGNMENT OF RESPONSIBILITY & ACCOUNTABILITY FOR SAFETY

Managers

An employer employs one or more employees. An employer's responsibilities include:

- Ensure employees including supervisors comply with the OHS Act and regulations
- Take every reasonable precaution to ensure the health and safety of employees
- Assign competent supervisors with sufficient knowledge to ensure the health and safety of employees
- Ensure supervisors provide adequate supervision to ensure employees under their direction are carrying out the work safely
- Ensure supervisors are knowledgeable about all the work of the employees under their direction and supervision
- Provide information, instruction and training to employees to ensure their health and safety
- Report workplace incidents immediately
- Develop safety policies, procedures, codes of practice and health and safety programs
- Develop an inspection programme and conduct monthly inspections
- Maintain tools, machines and equipment
- Establish, support and ensure effectiveness of a JOHSC
- Provide new employee orientation and training
- Provide PPE

Supervisors

A supervisor is a person authorized by an employer to supervise or direct the work of employees. This includes people from first-level supervision in the workplace to the manager, to the CEO. A supervisor's responsibilities include:

- Primary responsibility: safely direct work assigned by the employer
- Ensure employees comply with the Occupational Health and Safety (OHS) Act and regulations
- Take every reasonable precaution to ensure the health and safety of employees
- Inform employees of the hazards associated with their work
- Inform and instruct employees to ensure their safety
- Enforce company safety rules, programs, codes of practice and procedures
- Follow all safety rules
- Participate in training
- Report hazards and injuries to employer
- If a current member, participate on joint health and safety committee (JHSC)
- Use personal protective equipment (PPE)

Employee

An employee is a person employed at a workplace. An employee's responsibilities include:

- Report workplace injuries and illness to employer
- Ensure own health and safety
- Ensure health and safety of others
- Participate in training
- Report hazards and injuries to supervisor or employer
- Wear and maintain PPE as instructed

Joint Occupational Health and Safety Committee or Safety Representative

- The Company Joint Occupational Safety Committee is a collaborative employer - employee body established to jointly address the issues in the workplace and is responsible to:
- Attend all JOHSC meetings
- Develop a Terms of Reference and review annually
- Help raise awareness of JOHSC committee and its functions in the workplace
- Regularly review all internal policies and procedures; review and make written recommendations to management for changes or improvement when appropriate
- Analyze injury reports provided by the employer
- Review legislation and communicate to workplace any changes, interpretations and clarifications
- Invite external experts to present seminars and safety talks
- Contribute to committee discussions, offering experience and ideas
- Address work refusals (right to refuse)
- Complete tasks assigned by the JOHSC
- Annually distribute JOHSC health and safety inspection audit to the workplace
- Listen to concerns and suggestions by employees and employers outside the JOHSC; relays to supervisor or committee, as appropriate
- Learn about workplace health and safety
- Complete workplace evaluation each year and shares results with the workplace

In addition, the JOHSC members/Safety Rep. may:

- Conduct/review monthly workplace inspection reports
- Oversee special tasks (such as providing information on legislation or safety weeks)
- Plan wellness initiatives
- Accompany health and safety officers on inspections
- Meet with experts during air quality, noise level or other workplace health and safety test
- to ensure concerns are addressed
- Review accident/incident statistics for injury analysis
- Develop, with the employer, a procedure for monthly inspections
- Prepare with the employer a list of toxic substances in the workplace
- Check for any changes on legislation, processes and procedures
- Produce a monthly or quarterly health and safety newsletter for the workplace
- Invite external experts to share health and safety information at meetings
- Invite co-workers to attend meetings

EMPLOYEE RIGHTS

Your right to know – You have the right to know about any health and safety hazards you may encounter in your work activity. This includes hazards that may result from the use of biological, chemical or physical agent. The Workplace Hazardous Material Information System (WHMIS) plays a key role in our right to know about controlled products in the workplace. Additionally; you have a right to know of any Provincial Department of Labour/WCB Orders, the minutes of committee meetings and the names of committee members and first aiders. Management, supervisors, and employees will have access to the appropriate legislation at all job sites. This legislation will be maintained by the employees within the vehicles.

Your right to Participate – Health & Safety in the workplace is a responsibility that must be shared by the employer and his or her employees. The best way to prevent accidents and reduce the health hazards is to involve people from all levels within the organization. To ensure participation in the workplace, Provincial Occupational Health & Safety Act requires the establishment of safety committee or representatives. If requested, an employee has the right to observe health & safety monitoring, measurement and testing at the workplace.

Your Right to Refuse Unsafe Work - The Provincial Occupational Health & Safety Act gives employees the right to refuse work they believe to be unsafe Section 43 NS. When you use this right, make sure you have done everything possible to fix the problem either by what you do, or by co-operating with your employer, fellow workers and your Health & Safety Committee or Safety Representative. There is a right way and a wrong way to refuse work for health & safety reasons. Make sure you know how to exercise your rights.

Your Right to No Reprisal- If you have been treated unfairly as a result of exercising your rights, the provincial Occupational Health & Safety Act has built in processes designed to provide protection against retaliatory actions.



YOUR FOUR RIGHTS POSTER

ONE

THE RIGHT TO KNOW

Workers have the right to know what health and safety hazards are related to their work. It is an employer's legal obligation to tell workers of any hazards they may encounter, the likelihood of being exposed, and the severity of harm if they are exposed. Additionally, employers must ensure that workers know how to keep themselves safe when they deal with hazards that cannot be avoided.

TWO

THE RIGHT TO PARTICIPATE

Workers have the right to participate in the decision making that impacts their health and safety. This is done by workers selecting a health and safety representative to discuss health and safety issues with the employer, or by having a Health and Safety Committee. The right to participate also means that workers must report hazards they become aware of to their supervisor, health and safety representative or committee member.

THREE

THE RIGHT TO REFUSE

Workers have the right to refuse to perform work that they believe is unsafe either for themselves or for their co-workers.

FOUR

THE RIGHT TO NO REPRISAL

It is illegal for employers to punish workers when they are following the occupational health and safety laws in good faith. This includes reporting hazards, participating on a committee, exercising the right to refuse dangerous work or making a report to the Department of Labour Safety Division.

GENERAL HEALTH & SAFETY RULES

Health and safety is the joint responsibility of both management and other employees. All employees are expected to adhere to the health and safety policy, safe work procedures and participate in the health and safety programme. In addition, the following rules have been implemented for the mutual benefit of employee health and safety. Employees are expected to become familiar with these rules and adhere to these expectations during the course of their daily work activity. The following rules form part of a disciplinary action policy is in place for supervisors to enforce these rules.

- Consuming or being in possession of alcohol, illegal drugs or firearms on company premises, or while on any company business, is strictly prohibited.
- Work area hazards are to be controlled prior to commencing work. This includes defective tools and equipment and basic housekeeping requirements.
- All tools and equipment must be visually inspected before use. Defective tools and equipment are to be reported to the supervisor, tagged or removed from service until repaired or replaced.
- Fighting, horseplay, practical jokes or otherwise interfering with other employees is prohibited.
- All forms of harassment, violence, or actions that negatively impact another individual's psychological well-being are strictly prohibited.
- Running in the workplace is strictly prohibited and must be avoided at all times.
- Theft, vandalism, or any other abuse or misuse of company property is prohibited.
- Only those tools that are in good repair, with all guards and safety devices in place are to be used.
- Smoking is permitted only in designated locations and in compliance with municipal regulations.
- All employees are expected to keep their work areas neat, clean and organized to avoid accidents due to clutter.
- Spills, having the potential to cause slips and falls, are to be signed and cleaned up immediately.
- Hazardous materials are to be stored, handled and disposed as per SDSs to ensure appropriate controls are implemented. Labeling requirements are to be followed at all times.
- Employees performing maintenance on equipment are to follow appropriate lock-out procedures to ensure hazardous energy is eliminated.
- Personal protective equipment is to be worn as a precautionary measure, based upon workplace hazards, and employees are to comply with government regulations, CSA Standards and the company policy on the use of PPE.
- Employees are to be trained on safe work procedures prior to using equipment and follow safe procedures during equipment use and performing of tasks.
- An accident report is to be completed when an accident occurs. First aid treatments as well as accidents and serious near misses, are to be reported to the supervisor immediately. All accidents, unsafe acts, unsafe conditions and serious near miss incidents must be reported to your supervisor.

- Employees are expected to be familiar with and adhere to Regulations that apply to their specific work as set out under the Occupational Health and Safety Act.
- Only those employees who have been trained, and who are competent and designated, are to operate equipment or perform critical tasks. Employees are expected to participate in training so they can be informed of methods to protect their own health and safety and that of others in the workplace.

Failure to comply with the Occupational Health and Safety Policy or any of the above rules will result in disciplinary action, ranging from verbal warning, up to and including termination of employment, depending on the seriousness of the incident. Serious offences, such as those involving firearms, other weapons or violence will result in immediate dismissal.

HAZARD INSPECTION & REPORTING POLICY

Policy Statement:

As an NASDSA member, we are dedicated to maintaining a safe and healthy work environment for all employees, contractors, visitors, and anyone affected by our operations. As part of this commitment, we have established a comprehensive Hazard Inspection Policy to identify and address potential hazards systematically.

Objectives:

- 4.1 To proactively identify and assess workplace hazards through regular worksite inspections, hazard assessments, and comprehensive equipment inspections.
- 5.1 To ensure prompt correction or mitigation of identified hazards.
- 6.1 To promote a culture of continuous improvement in safety practices.
- 7.1 To comply with all applicable local, provincial, and federal health and safety regulations.

Scope:

This Hazard Inspection Policy applies to all employees, contractors, and visitors involved in company operations. The policy encompasses all facilities, work sites, and activities conducted by the organization.

Responsibilities:

Management:

- **Provide Resources:** Senior management will allocate resources to support effective hazard inspections, job hazard assessments, and comprehensive hazard assessments.
- **Set Expectations:** Clearly communicate expectations for hazard identification and corrective actions to all employees.

Safety Personnel:

- **Coordinate Assessments:** Safety personnel will coordinate and conduct regular hazard inspections, job hazard assessments, and comprehensive hazard assessments across all departments and projects.
- **Analyze Findings:** Analyze assessment findings to identify trends and areas for improvement.

Employees:

- **Participate Actively:** All employees are responsible for actively participating in hazard reporting, hazard inspections, job hazard assessments, and comprehensive hazard assessments.
- **Report Hazards:** Report potential hazards promptly and accurately through established reporting channels.

Hazard Inspection Process:

Frequency:

- **Regular Inspections:** Conduct regular inspections of workplaces, equipment, and processes.
- **Scheduled and Unscheduled:** Perform both scheduled and unscheduled inspections to ensure comprehensive coverage.

Inspection Teams:

- **Multidisciplinary Teams:** Form inspection teams that include representatives from different departments or disciplines.
- **Diverse Perspectives:** Utilize diverse perspectives to identify a wide range of potential hazards.

Documentation:

- **Inspection Checklists:** Utilize standardized checklists to guide inspections and ensure consistency.
- **Photographic Evidence:** Document findings with photographs to provide visual evidence.

Corrective Actions:

- **Timely Corrective Actions:** Implement timely corrective actions for identified hazards.
- **Priority Ranking:** Prioritize corrective actions based on the severity and immediacy of the hazard.

Communication:

- **Transparent Reporting:** Encourage transparent reporting and communication of hazards at all levels of the organization.
- **Feedback Mechanism:** Establish a feedback mechanism to inform employees about the status of reported hazards and corrective actions.

Review and Improvement:

- **Regular Review:** Regularly review and analyze inspection and assessment findings to identify recurring issues.
- **Continuous Improvement:** Implement changes and improvements based on lessons learned from inspections and assessments.

Training:

- **Training Programs:** Provide training to employees on hazard identification, and inspection procedures,
- **Competency Development:** Develop the competency of inspection and assessment teams to enhance the effectiveness of hazard identification.

Evaluation Criteria for Risk Assessment

THINGS TO CONSIDER		
Serious	Possibility of serious injury and/or death.	
Major	Weather, Overhead Power Lines, Site Conditions	
Moderate	Consumables you use (chemical, supplies, etc.)	
Minimum	Assets (Tools, Vehicles, etc.)	
Acceptable		
RANKING HAZARDS		
It's important to remember that you are ranking the hazard with NO controls in place!		
Assign each hazard a letter and number (1A, 1B, etc.)		
SEVERITY		
A	Catastrophic	Death or multiple casualties, property destruction,
B	Critical	May cause severe injury or illness or major property damage
C	Marginal	May cause minor injury, first aid, or illness, lost time, or minor property damage.
D	Negligible	Probably would not affect personnel safety
PROBABILITY		
1	Likely	To occur immediately or within a short period of time when exposed to the hazard
2	Probable	Will occur in time
3	Possible	To occur in time
4	Unlikely	To occur

HAZARD CLASSIFICATION	
Chemical	Controls Products
Biological	Bodily Fluids, viruses, bacteria
Psychosocial	Violence, harassment, threats
Physical	Contact with energy sources- impact, pinch, crush, puncture, repetitive stress, injuries, and overexertion.
CONTROLS	
Typically, more than one control will be implemented for each hazard. Control should be implemented in the following order....	
Elimination	Removal, Housekeeping
Substitution	Manual vs. Automatic, Toxic vs Less Toxic
Administrative	Training, Policies, Safe Work Instructions (SWI), Job Safety Analysis (JSA's), Maintenance, Inspection, Investigations, Rules, Scheduling, Purchasing
Engineering	Guards, Railings, Ventilation, isolation, Roll Cages
Personal Protective Equipment	Basic Specialized

PROBABILITY 		SEVERITY			
		CATASTROPHIC	Critical	Marginal	Negligible
		A	B	C	D
1	Likely	Serious	Serious	Major	Moderate
2	Probability	Serious	Major	Moderate	Minimum
3	Possible	Major	Moderate	Minimum	Acceptable
4	Unlikely	Moderate	Minimum	Acceptable	Acceptable

Comprehensive Hazard Assessment and Control Form

Tasks	Hazards within Task	Regulatory Compliance Issue	Priority Ranking	Hazard Controls
AC Fill Machine	High Pressure Gas, eye and skin hazard	WHSR	2C	SWPP, Training, PPE
Advisor Workstations	Walking traffic, repetitive movements, potential for Violence		2C	Training, Violence Policy
Battery Chargers	Tripping Hazards with cords, electrical hazard hooking up charger, Explosion hazard if hooked up incorrectly		1C	SWPP
Bench Grinder	Eye Hazard, Dust or breathing hazard, flying parts and debris, Abrasive wheel		2A	Grinder guards in place, dust and face mask available, SWPP, PPE
Bench Vise	Pinch Hazard		4D	SWPP, PPE
Bushing Press	Pinch Points, Flying Parts		3D	SWPP, PPE

Comprehensive Hazard Assessment and Control Form**Hazard Rankings:** (1A, 1B, 2A, 2B = Critical Tasks)**Risk – 1** Catastrophic **2** Critical **3** Marginal **4** Negligible**Probability – A** Likely **B** Probable **C** Possible **D** Unlikely**Possible Legislations & Regulations:**

- NS Occupation Health & Safety Act (**ACT**)
- Occupational Safety General Regulations (**OCGR**)
- Workplace Health & Safety Regulations (**WHSR**)
- Fall Protection & Scaffolding Regulations (**FPR**)
- Motor Vehicle Act
- Harassment in the Workplace Regulations

Comprehensive Hazard Assessment and Control Form

Tasks	Hazards within Task	Regulatory Compliance Issue	Priority Ranking	Hazard Controls
Drive-on Frame Rack	Various Pinch Points, Slippery Surfaces, Trip Hazard, Possibility of tipping, neck strains, flying part chain/parts	OSGR	1C	SWPP, Inspections, PPE
File Cabinets	Pinch Points, Tripping Hazard		3D	
Floor Jack	Pinch Points, Back Hazard when pushing or pulling, vehicle may slip, Possible foot damage	OSGR	2C	SWPP, Training, PPE
Gas Syphon	Spill hazard, fire hazard, inhalation of fumes	WHSR	2C	SWPP, Fire Extinguisher Training
Gun Cleaners	Spill Hazard, Fumes, Hazardous Liquid	WHSR	3C	SWPP, Training
Heat Lights	Fire Hazard, Burn Hazard		2C	SWPP
High Voltage Vehicles	Electric Shock, Arc Flash, Thermal Burns, Toxic gas release, fire/explosion	ACT	1B	SWPP, Training, Inspections, PPE

Comprehensive Hazard Assessment and Control Form

Hazard Rankings: (1A, 1B, 2A, 2B = Critical Tasks)

Risk – 1 Catastrophic **2** Critical **3** Marginal **4** Negligible

Probability – A Likely **B** Probable **C** Possible **D** Unlikely

Possible Legislations & Regulations:

- NS Occupation Health & Safety Act (**ACT**)
- Occupational Safety General Regulations (**OCGR**)
- Workplace Health & Safety Regulations (**WHSR**)
- Fall Protection & Scaffolding Regulations (**FPR**)
- Motor Vehicle Act
- Harassment in the Workplace Regulations

Comprehensive Hazard Assessment and Control Form

Tasks	Hazards within Task	Regulatory Compliance Issue	Priority Ranking	Hazard Controls
Ladders	Fall Hazard	OSGR	3D	SWPP
Leak Detector	Pressurized air, liquid spill	WHSR	4D	SWPP, PPE
Man Doors	Pinch Points, mats causing tripping hazard		3D	
Mig Welder	Fire Hazard, eye hazard (UV Light), Compressed gas, metal vapors	OSGR	2C	SWPP, Training, PPE
Overhead Doors	Pinch Points, Back strain (power out), Walking and driving traffic, blocked view from incoming & outgoing cars, possible malfunction		2C	Auto stop sensor in place, SWPP, Inspections
Oxy/Acet Welding Equipment	Burn Hazard, eye hazard, full body hazard from sparks, tripping on hoses, possible explosion	OSGR	1A	SWPP, Training, PPE

Comprehensive Hazard Assessment and Control Form

Hazard Rankings: (1A, 1B, 2A, 2B = Critical Tasks)

Risk – 1 Catastrophic **2** Critical **3** Marginal **4** Negligible

Probability – A Likely **B** Probable **C** Possible **D** Unlikely

Possible Legislations & Regulations:

- NS Occupation Health & Safety Act (**ACT**)
- Occupational Safety General Regulations (**OCGR**)
- Workplace Health & Safety Regulations (**WHSR**)
- Fall Protection & Scaffolding Regulations (**FPR**)
- Motor Vehicle Act
- Harassment in the Workplace Regulations

Comprehensive Hazard Assessment and Control Form

Tasks	Hazards within Task	Regulatory Compliance Issue	Priority Ranking	Hazard Controls
P4 Frame repair machine	Pinch Points, back strain, flying chain		2C	SWPP, Training, PPE
Paint Mixing Room	Spill hazard, fumes, hazardous liquids	WHSR	3C	Training
Paint Shaker	Moving parts, spill hazard		4C	SWPP
Parts Stand	Rolling hazard, tripping hazard, falling parts		3C	SWPP
Plasma Cutter	Fire hazard, eye hazard	OSGR	2C	SWPP, Training, PPE
Pressure Washer	Wet floor, tripping hazard, eye hazard		4D	SWPP
Resistance Welders	Fire/explosion, burn hazard, sparks, moving parts	OSGR	2C	SWPP, Training, PPE
Sand Blaster	Airborne dust, metal dust, high noise levels, eye skin and breathing hazard		2C	SWPP, PPE
Spring Compressor	Pinch hazard, Flying parts		3D	SWPP, PPE
Toolboxes	Pinch Points, tip over possibility, possible roll away		3D	SWPP

Comprehensive Hazard Assessment and Control Form

Hazard Rankings: (1A, 1B, 2A, 2B = Critical Tasks)

Risk – 1 Catastrophic **2** Critical **3** Marginal **4** Negligible

Probability – A Likely **B** Probable **C** Possible **D** Unlikely

Possible Legislations & Regulations:

- NS Occupation Health & Safety Act (**ACT**)
- Occupational Safety General Regulations (**OCGR**)
- Workplace Health & Safety Regulations (**WHSR**)
- Fall Protection & Scaffolding Regulations (**FPR**)
- Motor Vehicle Act
- Harassment in the Workplace Regulations

Comprehensive Hazard Assessment and Control Form

Tasks	Hazards within Task	Regulatory Compliance Issue	Priority Ranking	Hazard Controls
Transmission floor jack	Tripping hazard, possible tip over hazard, securing attachments on top may fall, foot hazard	OSGR	3D	SWPP, PPE
UV Light	Eye & skin damage		3C	SWPP, Training, PPE
Vehicle Hoist	Pinch Points, falling vehicle, head impact hazard, tripping when hoist is down, wet floor, power cords catching on hoists, neck strains	OSGR	2C	Hazard stickers in place, lift locks in place, SWPP, Training and inspections, PPE
Vehicles	Traffic, Pedestrians	MVA	1A	SWPP, Licensing, training
Wash Bay	Wet floors, tripping on water & vacuum hoses, slipping, wet feet, eye hazard due to chemicals, storage of buckets, both hot and cold-water connections	WHSR, OSGR	2C	SWPP, Training, PPE

Comprehensive Hazard Assessment and Control Form

Hazard Rankings: (1A, 1B, 2A, 2B = Critical Tasks)

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- Motor Vehicle Act
- Harassment in the Workplace Regulations

Comprehensive Hazard Assessment and Control Form

Tasks	Hazards within Task	Regulatory Compliance Issue	Priority Ranking	Hazard Controls
Waste Oil	Spills on floor, danger of oil on skin	WHSR	3D	SWPP, PPE
Water Hoses	Wet floor, Tripping on hose, eye hazard		4D	SWPP

Comprehensive Hazard Assessment and Control Form

Hazard Rankings: (1A, 1B, 2A, 2B = Critical Tasks)

Risk – 1 Catastrophic **2** Critical **3** Marginal **4** Negligible

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- Fall Protection & Scaffolding Regulations (**FPR**)
- Motor Vehicle Act
- Harassment in the Workplace Regulations

Workplace Inspection

Location: _____ Date: _____

Completed By: _____

AREAS / ITEMS TO INSPECT		√ =OK X =Take Action	AREAS / ITEMS TO INSPECT		√ =OK X =Take Action
1. Safety Requirements			6. On Site Conditions		
OK NOT			OK NOT		
a)	Safety Manual		a)	Adequate Space	
b)	Safety Board		b)	Particles in the Air	
c)	First Aid Personnel		c)	Lighting Adequate	
d)	First Aid Kits		d)	House-keeping	
e)	Fire Extinguishers		e)	Stacking of Material	
f)	Emergency Exits		f)	Trip Hazard	
g)	Eyewash Stations		g)	Sprinkler Room Accessible	
h)	Warning Signs		h)	Electrical Lockout Required	
i)	Emergency Numbers Posted		i)	Stairs Clear	
j)	Other		j)	Other	
2. Maintenance / Inspections/Tool Box Records			7. Critical Task		
a)	Equipment Inspections		a)	Welders	
b)	Emergency Equipment Inspections		b)	Hoist	
c)	Toolbox Talks		c)	Compressed Air	
d)	Monthly Safety Summary		d)	Tire Machines	
e)	New Hire Certificates/Checklists		e)	Other	
f)	PPE Inspections		8. WHMIS		
g)	Tech Tool Inspection		a)	Proper Labeling	
h)	Monthly Hoist Inspection		b)	Bonding & Grounding	
3. Site Rules			c)	Flammable / Explosive Products	
a)	Access Restricted to Shop		d)	Storage	
b)	PPE Use		e)	SDS Binder	
c)	Following Safe Work Procedures		f)	Other	
d)	Other		9. Environmental		
4. Site Equipment			a)	Waste Management	
a)	Ladders / Lifts		b)	Spill Kits	
b)	Hoses / Cords		c)	Other	
c)	Bench Grinder		10. Energized Systems		
d)	Other		a)	Electrical Room (Cleared of Stored Items)	
5. Hand Tools			b)	Panels secured & Unobstructed	
a)	Double Insulated or Grounded		c)	Equipment has lockout provisions	
b)	Safety Guards		d)	Electrical Room Identified	
c)	General Condition		e)	Other	
d)	Lockout/Tagout				
e)	Other				
Notes and Details:					

AREAS / ITEMS TO INSPECT						Date
Safety Requirements						(a,b,c) (√)
e)						
j)						
2. Maintenance / Inspections/Tool Box Records						
Site Rules						
Site Equipment						
Hand Tools						

Additional Notes: (Department Manager is to initial and date the report in appropriate column as corrective actions are taken, then file)

Class A - Likely to cause Death or permanent disability Class B - Could cause serious injury or illness
Class C – Minor Injury / Illness or Property Damage

HAZARD REPORT FORM

A = IMMINENT DANGER WHICH REQUIRES IMMEDIATE CORRECTIVE ACTION

B = HAZARDOUS CONDITION OR ACTIVITY WHICH IS NOT IMMINENTLY DANGEROUS BUT SHOULD BE ATTENDED TO AS SOON AS POSSIBLE

C = LOW HAZARD. GENERALLY DOES NOT INCLUDE MACHINERY WITH MOVING PARTS

PRODUCTION/COMPANY: _____ DATE: _____

HAZARD CLASSIFICATION: A ☐ B ☐ C ☐

DESCRIPTION OF HAZARD:

LOCATION (be specific as possible):

ACTION NEEDED (please note if intermediate steps were taken to alleviate the hazard):

OTHER COMMENTS (continue on back if necessary):

CORRECTIVE ACTION (describe who will correct the situation, what will be done & when):

COMMENTS:

Signature, Safety Representative

Sign Here:

Date: _____

**BE SURE TO SUBMIT THIS FORM TO
YOUR IMMEDIATE SUPERVISOR &
THE PRODUCTION OFFICE**

HAZARD CORRECTED Y____ N____

SIGNED: _____

DATE: _____

WORKPLACE ACCIDENT/INCIDENT INVESTIGATION POLICY

1. Reporting Procedures:

- Employees must immediately report all near-misses*, injuries**, accidents, or hazardous incidents to their immediate supervisor or manager.
- Supervisors or managers receiving the report should document the details, including the date, time, location, individuals involved, and a brief description of the incident, using the designated Accident/ Incident Report Form.

**near-miss—A minor or no injury with more serious potential. No lost time. No medical attention required.*

***injury—Medical attention or lost time required.*

2. Investigation Process:

- The Joint Occupational Health & Safety Committee (JOHSC) will conduct thorough investigations.
- If necessary, the JOHSC will conduct interviews with all involved parties, gather evidence, review CCTV footage if applicable, and analyze the root causes of the accident or incident.
- The JOHSC will document its findings in a detailed report, including recommendations for corrective actions and preventive measures.

3. Reporting to Authorities:

- NSADSA members will comply with Provincial regulations by reporting serious accidents or incidents to the Occupational Health and Safety Division of the Department of Labour.
- Copies of the reports submitted to the authorities will be maintained, as required by regulations.

4. Medical Attention:

- In the event of an accident or incident requiring medical attention, the immediate focus will be on providing prompt and appropriate care.
- A company representative will accompany the injured employee to the hospital or healthcare facility and ensure that all necessary medical information is accurately documented.
- Information related to employee injuries will be treated with utmost confidentiality and shared only with those who have a legitimate need for the information, such as the company's HR department and healthcare professionals.

5. Return to Work Programme:

- As an NSADSA member, we have a comprehensive Early & Safe Return to Work Programme designed to facilitate the safe and timely return of employees to the workplace after an accident or incident.
- This programme will involve collaboration between the injured employee, their healthcare provider, the supervisor, and the HR department to create a customized plan considering the employee's medical condition and job requirements.

6. Training and Prevention:

- Regular safety training programs will be conducted to educate employees on accident and incident prevention, emergency response procedures, and the proper use of personal protective equipment (PPE).
- The company will maintain an open line of communication with employees, encouraging them to identify and report potential hazards, and providing them with the necessary channels to do so.

7. Employee Responsibilities:

- Employees are obligated to follow safety guidelines, adhere to established protocols, and report any hazards or unsafe conditions promptly.
- Cooperation during accident and incident investigations is mandatory for all employees. Failure to cooperate may result in disciplinary action.

8. Disciplinary Actions:

- Disciplinary actions will be taken against employees who fail to adhere to safety policies, with consequences ranging from verbal warnings to written warnings, suspension, and, in extreme cases, termination of employment.
- The severity of disciplinary actions will be determined based on the nature and repetition of the safety violation.

9. Review and Revision:

- This policy will undergo an annual review to ensure its relevance, effectiveness, and compliance with the Nova Scotia occupational health and safety regulations.
- Any necessary updates or revisions will be promptly made, and employees will be informed of the changes through company-wide communications.

Workplace Accident and Incident Investigation Guide

1. Introduction

Purpose of the Guide:

- This guide is to be used by NSADSA member employees involved in the investigation of workplace accidents and incidents. Its purpose is to establish a systematic approach to incident investigations, fostering a culture of safety, continuous improvement, and compliance with relevant regulations.

Importance of Accurate Investigations:

- Accurate investigations are essential for identifying the root causes of accidents and incidents. By understanding these causes, we can implement effective corrective and preventive measures, promoting a safer working environment for all employees.

Legal and Regulatory Context:

- Understanding and complying with local and national regulations is crucial for ensuring that our investigation processes align with legal requirements. NSADSA member is committed to upholding the highest standards of workplace safety and will adhere to all relevant laws and regulations.

2. Initial Response and Notification

Immediate Actions:

- In the event of an accident or incident:
 - ⇒ Ensure the immediate safety of those involved.
 - ⇒ Secure the scene to prevent further harm.
 - ⇒ Identify and isolate witnesses to gather initial information.

Reporting Procedures:

- All employees must promptly report accidents and incidents to their immediate supervisor or manager. Supervisors will use the designated Accident/Incident Report Form to document details such as the date, time, location, and individuals involved.

Identifying and Securing the Scene:

- Designated personnel will be trained to secure accident scenes, preserving evidence for the investigation. The goal is to prevent any alteration or contamination of the scene before the investigation team arrives.

3. Investigation Team and Responsibilities

Formation of the Investigation Team:

- Upon receiving a report, the investigation team will be assembled, comprising individuals with diverse expertise, including JOHSC Members, department heads, and relevant specialists, if required.

Confidentiality Considerations:

- To encourage open communication, all members of the investigation team must adhere to strict confidentiality. Information obtained during the investigation should only be shared with those directly involved in the process.

4. Root Cause Analysis

Identifying Immediate and Underlying Causes:

- The investigation team will employ a systematic approach to identify both immediate and underlying causes of the incident. Immediate causes represent the events directly leading to the incident, while underlying causes delve deeper into systemic issues contributing to the occurrence.

Determining Contributing Factors:

- In addition to immediate and underlying causes, the investigation team will identify contributing factors that may have played a role in the incident. This includes factors such as communication breakdowns, inadequate training, or equipment malfunctions. Understanding these factors is crucial for implementing effective corrective and preventive measures.

5. Report Writing

Clarity and Conciseness:

- The report will be written in clear and concise language, avoiding jargon or technical terms that may be unclear to non-specialists.

Including Findings, Analysis, and Recommendations:

- The report will present factual findings, a thorough analysis of the incident, and actionable recommendations. Each recommendation will be linked to specific findings and root causes, providing a roadmap for implementing corrective and preventive actions.

6. Recommendations and Corrective Actions

Developing Actionable Recommendations:

- Based on the findings and root cause analysis, the investigation team will develop clear and actionable recommendations. Each recommendation should address specific issues identified during the investigation and be feasible for implementation.

Implementing Short-Term Corrective Actions:

- Immediate corrective actions will be implemented to address issues requiring urgent attention. These actions aim to prevent the recurrence of similar incidents in the short term. The lead investigator will oversee the timely execution of these actions.

Establishing Long-Term Preventive Measures:

- The investigation team will formulate long-term preventive measures designed to address systemic issues and eliminate root causes. These measures may involve changes to procedures, additional training programs, or modifications to equipment or facilities. Responsibility for overseeing the implementation of these measures will be assigned to relevant personnel.

Assigning Responsibility for Implementation:

- Clear responsibilities will be assigned for the implementation of both short-term corrective actions and long-term preventive measures. Designated individuals will be accountable for ensuring that the proposed actions are carried out effectively.

7. Communication

Internal Communication Protocols:

- Internal communication will be carefully managed throughout the investigation process. Regular updates will be provided to relevant employees, supervisors, and management. Clear communication channels will be established to disseminate information in a timely and accurate manner.

External Communication:

- If required by regulatory obligations or other external factors, communication with external parties, such as regulatory agencies or insurance providers, will be coordinated by a designated manager.

Keeping Employees Informed:

- Throughout the investigation and implementation of corrective actions, employees will be kept informed of progress and changes.

8. Legal Considerations

Preserving Evidence for Potential Legal Proceedings:

- The investigation team will adhere to protocols for preserving evidence to support the organization's interests in the event of legal proceedings. This includes maintaining the integrity of physical evidence and ensuring accurate documentation of statements.

Adhering to Privacy Regulations:

- All aspects of the investigation, including the collection and handling of personal information, will comply with relevant privacy regulations. Information obtained during the investigation will be treated with confidentiality and respect for individuals' privacy rights.

Consultation with Legal Counsel:

- Legal counsel may be consulted to provide guidance on legal considerations throughout the investigation process. This collaboration ensures that the organization's actions align with legal requirements and minimizes potential legal risks.

9. Continuous Improvement

Learning from Investigations:

- The organization is committed to a culture of continuous improvement. Insights gained from each investigation will be thoroughly analyzed, and lessons learned will be integrated into future safety measures. Regular reviews of incident investigation processes will identify opportunities for enhancement.

Updating Policies and Procedures:

- The organization will promptly update existing policies and procedures based on insights gained from investigations. This iterative process ensures that safety protocols remain effective and aligned with industry best practices and evolving regulations.

Training and Awareness Programs:

- Ongoing training and awareness programs will be conducted to educate employees on the lessons learned from investigations. These programs aim to enhance overall safety awareness, empower employees to identify potential hazards, and reinforce the importance of adherence to safety protocols.

10. Documentation and Recordkeeping

Maintaining Investigation Records:

- Accurate and complete records of investigations, including reports, statements, and supporting documentation, will be maintained secure and accessible. These records serve as a historical reference and support compliance with regulatory requirements.

Accessibility and Security of Records:

- Access to investigation records will be restricted to authorized personnel involved in the investigation process. Measures will be implemented to protect the confidentiality and integrity of these records.

11. Training and Education

Training for Investigation Team Members:

- Members of the investigation team will undergo training to enhance their skills in conducting thorough and effective investigations. Training programs will cover interview techniques, evidence collection, and the application of root cause analysis tools.

General Employee Awareness Programs:

- Regular awareness programs will be conducted for all employees, emphasizing the importance of incident reporting, cooperation during investigations, and adherence to safety protocols. Employees will be encouraged to actively contribute to a safe working environment.

12. Review and Audit

Regular Review of Investigation Procedures:

- The company will conduct regular reviews of investigation procedures to assess their effectiveness and identify opportunities for improvement. These reviews will be conducted by the JOHSC or external experts.

External Audits for Compliance:

- External audits may be scheduled periodically to assess the organization's compliance with regulatory requirements and industry best practices. Findings from external audits will inform continuous improvement efforts.

Adjusting Procedures Based on Lessons Learned:

- Procedures will be adjusted based on the lessons learned from reviews and audits. As an NSADSA member, our company is committed to adapting its investigation processes to align with emerging best practices and regulatory changes.

Conclusion: This Workplace Accident and Incident Investigation Guide outlines the company's commitment to a robust, transparent, and continuous improvement-oriented approach to incident investigations. Regular updates and adherence to the principles outlined in this manual will contribute our company's overarching goal of maintaining a safe and secure work environment.

INCIDENT/ACCIDENT REPORT

SECTION A - DESCRIPTION OF INCIDENT

1. INTRODUCTION

Date Time Location

Name of Personnel Involved in Incident:

Reported to Others: ☐ YES ☐ NO If yes: to whom:

2. INJURED PERSON'S DETAILS ETC. (Not All Information Required At All Times)

Name* Date of Birth
Home Address Tel No
Department/Trade* Supervisor*
Job Title*
Work Experience Yrs Hours worked prior to incident Hrs Day Shift ☐ Evening Shift ☐

Other personnel involved YES ☐ NO ☐ Name Witness(es)

3. CATEGORY (Select from four main categories and applicable sub categories):

☐ NEAR MISS INCIDENT	☐ DAMAGE	☐ PERSONAL INJURY	☐ ILLNESS
☐ Materials	☐ Materials Damage	☐ Fatality	☐ Occupational
☐ Environment	☐ Environmental Pollution	☐ Injury or illness	☐ Non occupational
☐ Fire	☐ Fire/Explosion	☐ Medical treatment	
☐ Person(s)		☐ First aid treatment	

4. DESCRIPTION OF EVENT

Continued on Separate Sheet ☐

Hours Lost:

Description of the event (use separate sheets if needed. and attach sketches, statements, photos etc).

INCIDENT/ACCIDENT REPORT

5. EQUIPMENT INVOLVED

Continued on Separate Sheet ☐

Equipment Involved (if any):

6. IMMEDIATE ACTION TAKEN

Continued on Separate Sheet ☐

Immediate Action Taken YES ☐ NO ☐

Taken By

Date

Details:

Name (Employee)

(Manager)

Sign

Date

Date

SECTION B – DESCRIPTION OF INJURY / ILLNESS

7. PERSONAL INJURY / ILLNESS

PERSONAL INJURY / ILLNESS CATEGORY:

- ☐ Fatality*
- ☐ Unable to work due to injury or illness
- ☐ Major medical treatment
- ☐ Near Miss or First Aid treatment
- ☐ Occupational Illness
- ☐ Non Occupational Illness

REPORTING

Reported to Authorities
Doctor/Medic/Hospital Notified
Sent for treatment
Where:

- ☐ Yes ☐ No
- ☐ Yes ☐ No
- ☐ Yes ☐ No

8. DETAILS OF INJURY

TYPE OF INJURY

- ☐ Crush
- ☐ Cut / Laceration
- ☐ Fracture
- ☐ Burn
- ☐ Particle in eye
- ☐ Bruising / abrasion
- ☐ Electric shock
- ☐ Internal injury
- ☐ Chemical exposure
- ☐ Stretch/strain/twisting
- ☐ Poisoning
- ☐ Infection
- ☐ Welding flash
- ☐ Multiple injuries
- Other

INCIDENT/ACCIDENT REPORT

TYPE OF EVENT

☐ Slip / trip / fall	☐ Caught between Objects	☐ Struck by flying debris	☐ Other
☐ Fall over 3 metres	☐ Struck against object	☐ Repetitive motion	
☐ Over exertion in lifting	☐ Struck by object	☐ Driving	

IF INJURED, SPECIFY BODY PART

L	F	L	R	☐ Abdomen	☐ Internal	☐ Other
☐	☐ Ankle	☐	☐ Hand	☐ Back	☐ Mouth	
☐	☐ Arm (Upper / Lower)	☐	☐ Knee	☐ Chest	☐ Neck	
☐	☐ Ear	☐	☐ Leg	☐ Face	☐ Pelvic Area	
☐	☐ Eye	☐	☐ Shoulder	☐ Head	☐ Respiration	
☐	☐ Foot	☐	☐ Toe	☐ Skin	☐ Fingers	

SECTION C - INVESTIGATION (Management & Employee)

10. WORK OPERATION – MAIN ACTIVITY (select all appropriate items)

☐ Mechanical/Technical	☐ Training
☐ Electrical	☐ Manual Handling
☐ Maintenance	☐ Office Work
☐ Welding/Burning	☐ Not Job Related
☐ Cutting/Grinding	☐ Vehicle/Driving
☐ Lifting	☐ Other

11. CAUSES

CONTRIBUTING ACT

- ☐ Operating equipment without authority
- ☐ Failing to warn
- ☐ Failing to secure / lacking safety precautions
- ☐ Operating machinery at improper speed
- ☐ Making safety device inoperable
- ☐ Removing/ ignoring safety barrier
- ☐ Using defective equipment
- ☐ Using machinery and equipment incorrectly
- ☐ Failing to use personal protection equipment properly
- ☐ Improper loading
- ☐ Improper lifting
- ☐ Improper positioning for task (person)
- ☐ Servicing equipment in operation
- ☐ Horseplay
- ☐ Under influence of alcohol or drugs
- ☐ Working without proper training
- ☐ Working at height without restraint
- ☐ Other:

CONTRIBUTING CONDITIONS

- ☐ Inadequate guards or barrier
- ☐ Inadequate or improper protective equipment
- ☐ Defective tools / equipment or materials
- ☐ Congestion or restricted area
- ☐ Inadequate warning system
- ☐ Fire and explosion hazards
- ☐ Poor housekeeping /disorder
- ☐ Hazardous working environment
- ☐ Noise
- ☐ Instability
- ☐ High/Low temperature
- ☐ Inadequate or excess illumination
- ☐ Inadequate ventilation
- ☐ Misplaced / unsecured objects
- ☐ Object liable to topple/fall
- ☐ Weather (snow, ice, wind, rain, fog etc)
- ☐ Poor visibility
- ☐ Other:

INCIDENT/ACCIDENT REPORT

12. UNDERLYING CAUSES

PERSONAL FACTOR

- ☐ Physical ability
- ☐ Lack of attention
- ☐ Lack of knowledge /skill
- ☐ Abuse or misuse
- ☐ Lack of experience
- ☐ Ignoring procedures
- ☐ Fatigue
- ☐ Other:

JOB FACTOR

- ☐ Leadership or supervision
- ☐ Engineering
- ☐ Purchasing
- ☐ Maintenance
- ☐ Tools / equipment / materials
- ☐ Wear and tear
- ☐ Procedures / instructions
- ☐ Other:

13. RECOMMENDATIONS

14. CLOSE-OUT OF INCIDENT AND INVESTIGATION

(Committee Member)	(Manager)
Name	
Sign Date	Date

YOU MUST REPORT THE FOLLOWING (Email: ohsdivision@novascotia.ca or Phone: 1-800-952-2687):

Fatalities—immediately	Serious injury—as soon as possible, within 24 hours ☐ Unconsciousness ☐ Fracture of the skull, spine, pelvis, arm, leg, ankle, wrist or a major part of the hand or foot ☐ Loss or amputation of a leg, arm, hand, foot, finger, or toe ☐ Third-degree burn ☐ Loss of sight in one or both eyes ☐ Asphyxiation or poisoning ☐ Any injury that requires admission to hospital ☐ Any injury that endangers life	Serious incident—as soon as possible, within 24 hours ☐ An accidental explosion ☐ A major structural failure or collapse of a building or other structure ☐ A major release of a hazardous substance ☐ A fall from a work area where fall protection is required by the regulations

SAFETY TRAINING POLICY

Purpose

The purpose of this policy is to ensure that all NSADSA member employees share responsibility for maintaining a healthy and safe workplace. We are committed to providing general, specialized safety and related training throughout all levels of the organization to promote health and safety throughout the work environment.

Policy

We will provide, and employees will participate, in all safety and related training that is necessary to minimize losses of human and physical resources.

All employees will be trained in:

- ⇒ New Hire Safety Orientations,
- ⇒ Job Procedures and Safe Work Practices (On the job training),
- ⇒ WHMIS, and,
- ⇒ First Aid & CPR Training.

Others will be trained in specific tasks as per job requirements, i.e.:

- ⇒ Safety training for Supervisors, Safety Committee/Rep and Management,
- ⇒ Lockout/Tagout (Company Procedure),
- ⇒ Mobile Elevated Work Platforms,
- ⇒ Fall Protection,
- ⇒ Forklift,
- ⇒ Automotive Hoist Inspection & Maintenance,
- ⇒ Etc.

New Employee Orientation

Dealership:

Department:

Name:

Manager:

Hire Date:

		Yes	No	N/A
1	Health & Safety Policy			
2	Assignment of Responsibilities & Accountability			
3	Health & Safety Company Rules			
4	Hazard Inspection & Reporting Policy			
5	Workplace Accident/Incident Policy			
6	Safety Training Policy			
7	Toolbox Talk Policy			
9	Impairment Policy			
10	Disciplinary Action Policy			
11	Early & Safe Return to Work Programme			
12	Workplace Harassment & Discrimination Prevention Policy			
13	Psychological Health and Safety in the Workplace Policy			
14	Workplace Violence Prevention Policy			
15	Contractor Safety Policy			
16	Environmental Policy			
17	Return to Work Policy			
18	Personal Protective Equipment (PPE) Policy			
19	Maintenance Programme			
20	Joint Occupational Health & Safety Committee (JOHSC)			
21	Unsafe Work Refusal			
22	Safe Work Practices and Job Procedures Policy			
23	Safe Driving			
24	Fire Safety			
25	Emergency Preparedness			
26	Fire Extinguishers- First Aid Kits-Eye Wash Station			
27	SDS (Safety Data Sheets)			
28	Safety Board - Postings – Emergency Contacts – JOHSC Members			
29	PPE Fitting (if applicable)			

This will certify that I have been given the company orientation briefing on the above noted subjects, and that I understand about the Health and Safety Programme and will fully review and comply with its contents.

Signature of Employee: _____

Date: _____

Signature of Manager: _____

Date: _____

JOB SPECIFIC TRAINING

Training Description	Trainee Name/Title (Please Print)	Trainee Signature	Trainer Name/Title (Please Print)	Trainer Signature	Date (s)

EMPLOYEE ON THE JOB TRAINING LOG

EMPLOYEE NAME: _____

[illegible]

TOOLBOX TALK POLICY

Purpose

As an NSADSA member, our goal is to hold regular toolbox talks to increase safety awareness, reinforce safe work practices, and ensure everyone understands how to maintain a safe work environment.

Policy

Frequency

- Toolbox talks will be held weekly or more often, if needed, with all Fixed Operations staff and monthly for Sales/Administration staff.

Topics Covered

- Topics will cover company safety policies, current work tasks, potential hazards, recent incidents, PPE requirements, and any relevant safety updates.

Presentation

- Talks should be short (5-15 minutes) and interactive.

Engagement

- Employees are encouraged to ask questions, share concerns, and suggest future topics.

Responsibilities

- **Management:** Oversees the toolbox talk programme, monitors effectiveness, and supports supervisors.
- **Department Managers/Supervisors:** Conduct talks with teams, document attendance, and encourage participation.
- **Employees:** Attend, engage, follow safety practices, and raise any concerns.

Compliance

Attendance is mandatory, and failure to comply may lead to disciplinary action per company policy.

This policy is designed to keep safety top of mind and ensure everyone is informed and proactive about workplace safety.

TOOLBOX TALK FORM

Meeting Held On:					
Meeting Conducted By (supervisor)					
Safety Rep in Attendance	Yes		No		

Issues to be covered

Others Issues Addressed

Outcome

Signed Supervisor _____ Signature _____

Date: _____/_____/_____
 Month Day Year

Please sign the attendance list on the reverse side

TOOLBOX TALK FORM

I have received a briefing of the day's work activities that included the associated hazards and control measures are those hazards. I comprehend the details to my level of understanding and have had the opportunity ask questions and have them answered to my satisfaction. I further understand that at a time hereafter if I have questions regarding the matter I may require a supervisor or instructor for further explanation.

PRINT NAME	SIGNATURE	COMPANY (if different)

TOOLBOX TALK

ACCIDENT FACTORS	PAGE: 1 of 1
	DEPARTMENT(s):
Accidents on construction projects cause too many painful injuries and claim far too many lives. Our primary concern when we discuss the factors or cause behind an accident is to find a way to prevent a recurrence. The cause of an accident can be found in two areas -- Unsafe Acts and Unsafe Conditions. As an employee you control the first cause, Unsafe Acts. For example: an employee uses equipment that is defective or damaged, or they may use good equipment in a careless or other unsafe manner. Other examples of unsafe acts include disregarding posted warning signs, smoking near flammables or explosives, handling chemicals or other hazardous materials improperly, putting your body or any part of it onto or into shafts or openings and lifting material incorrectly. (Just a short reminder -- always lift with your legs while keeping your back straight.) The second accident factor or cause is Unsafe Conditions which can be found in many service departments. Insufficient illumination, poor ventilation, grounding requirements not observed, too few fire extinguishers available, containers that are not labeled, careless disposal of waste or excess material -- these are just a few of many unsafe conditions that may be caused by co-workers. You can make a difference by taking the time to perform your work safely and reporting any unsafe condition you discover to your supervisor immediately. When the cause behind the accident is found, you'll find that safety on the job plays a major part in preventing that accident from occurring again. If everyone on the job cooperates, injury and death statistics will be reduced, and it will be much safer for you to do your job. Accidents - Learn the cause - Find the solution. Ultimately the worksite and your job will be safer.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

ADMINISTRATIVE PENALTIES	PAGE: 1 of 1
	DEPARTMENT(s):
The In 2010, the Government of Nova Scotia introduced regulations that will allow administrative penalties (FINES) on violations of occupational health and safety laws. The administrative penalty system is intended to act as an additional deterrent to encourage compliance with existing occupational health and safety laws. The penalties can be given to: ➤ EMPLOYEES ➤ SUPERVISORS ➤ OWNERS The penalties will range in amounts. For example, if there is no injury, ➤ the employee will pay \$100, ➤ the supervisor will pay \$250, ➤ and the employer will pay \$500. If there is an injury or potential for an injury the penalties will increase to ➤ \$200 for the employee, ➤ \$500 for the supervisor, ➤ and \$1,000 for the employer. The administrator may increase or reduce the penalty depending on whether efforts were made to avoid the contravention. The maximum increase for an employee is \$500, supervisor is \$1,000 and employer is \$2,000. If a previous offence has occurred within three years, the fines will double. If You See Something Unsafe You must fix it yourself if you have the authority and the ability to do so. OR Report it to someone who does.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

BACKS	PAGE: 1 of 1
	DEPARTMENT(s):
Have you ever given much thought to your back? It's there when you need it, but only if you don't abuse it. The back is made up of four major parts. The spine, nerves, muscles, and the spinal cord. There are thirty-three bones in the spine and thirty-one pairs of nerves branching out from the spinal cord. All of them must work together. If they don't, you could end up with anything from a strain to a ruptured disk, fractured vertebrae, and/or a debilitating disease like arthritis. To help prevent a back injury you should exercise, practice good posture, eat the right foods, and watch your weight. Check with your doctor for muscle strengthening exercises for the back. Other things you can do to prevent back injuries include using work-saving devices -- hand trucks, forklifts, wheelbarrows, and dollies can assist you. When you have an object to lift that is too heavy or bulky get help! Ask a co-worker for their assistance. Remember, two backs are stronger than one.' Now, what can you do when you must do some lifting? Check out the object to be lifted. Think about how you are going to grasp the load and make sure there is a clear path of travel, so you won't stumble. Before you lift, stand close to the object, bend down at the knees and straddle it, get a good grip, and lift with your legs while keeping your back straight. The secret is to let your legs do the work. It doesn't have to be a heavy load -- even a small, very light object lifted incorrectly can trigger a back injury. Back injuries can be painful, disabling, paralyzing, and sometimes even fatal. Protect your back by following the guidelines above. You're here today -- we want you BACK tomorrow. AVOID THE MISERY OF A SORE BACK THINK BEFORE YOU LIFT - THEN DO IT CORRECTLY.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

BRAKE CLEANER	PAGE: 1 of 1
	DEPARTMENT(s):
Hazards identification Product is a colourless aerosol spray. May cause eye and skin irritation. May cause cancer and or organ damage. First aid measures <u>Eye contact:</u> flush eyes thoroughly with running water for at least 20mins, holding eyelids open to ensure complete flushing. Seek medical attention/advice. <u>Skin contact:</u> remove contaminated clothing. Wash affected areas with soap and water. If irritation persists, call a physician. <u>Ingestion:</u> if swallowed do not induce vomiting. Call a physician or Poison Control Centre immediately. If vomiting occurs keep victims head lowered (forward) to reduce the risk of aspiration. <u>Inhalation:</u> move to fresh air if adverse effects such as breathing difficulty arise; if symptoms persist call a physician. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice. Provide supportive treatment, keeping victim warm and quiet. Target Organ Effects: <u>Central Nervous System Depression:</u> Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, unconsciousness and death. Prolonged or repeated exposure may cause: <u>Liver Effects:</u> Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice. <u>Kidney/Bladder Effects:</u> Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination. Exposure controls, personal protection Eyes: wear safety glasses. If splashing is anticipated a face shield is recommended. Contact lenses are not recommended. Skin: Gloves must be worn. Emergency showers and eyewash facilities should be nearby. Inhalation: use local exhaust ventilation as necessary to control air contaminants	
Managers Signature: _____	Date: _____

TOOLBOX TALK

CHILDREN'S CAR SEATS	PAGE: 1 of 1
	DEPARTMENT(s):

If a child's car seat has to be removed to complete a repair or to detail a customer's car, the following steps must be followed to avoid a customer placing their child in a car seat that is not properly connected, putting the child at risk of injury:

TECHNICIAN OR DETAILER

- 1) **NEVER** reinstall the child's car seat yourself. There are too many different types and styles of car seats for you to know them all well and some of them are difficult to install properly.
 - **ALWAYS** leave the reinstallation to the owner as they know the product best.
- 2) **NEVER** place the child's car seat upright and in the same place from which it was removed. This may cause the owner to think that the seat is connected.
 - **ALWAYS** place the child's car seat upside down or backwards so that the owner knows immediately that the seat is not connected.
- 3) **ALWAYS** inform the service advisor that the child's car seat has been disconnected.

SERVICE ADVISOR

- 1) **ALWAYS** make a note on the customer's invoice informing them that their child's car seat was removed to complete the servicing of their vehicle and that it is still disconnected.
- 2) **ALWAYS** point out to the customer the note on their invoice about the child's car seat and be sure that they understand that they need to reconnect the child's car seat themselves.

Managers Signature: _____	Date: _____

TOOLBOX TALK

DON'T GIVE FIRE A CHANCE	PAGE: 1 of 1
	DEPARTMENT(s):
There's plenty of air, plenty of fuel, and plenty of ignition sources in the automotive industry – so we've all got to be on our toes to prevent fire. Here are some ways to keep the job from going up in smoke: ➤ Help keep the shop clean. Store combustible materials away from ignition sources. ➤ Report any possible fire hazards that you notice: open flames, sparks, and electrical equipment that appears to need repairs. ➤ On hot-work jobs, be sure combustibles are safe from ignition. Have a fire extinguisher handy for welding and cutting operations, or when open flame equipment is used. ➤ Help protect temporary electric wiring from possible damage. In case of a fire in or near live electrical equipment, use a dry chemical extinguisher, and not water. ➤ Don't smoke near flammables, in "No Smoking" areas, or while re-fueling equipment. Make sure cigarettes and matches are out. ➤ Always use approved safety cans or the original manufacturer's container to store flammable liquids. Keep these containers closed when not in use, and never store them near exits or passageways. ➤ Clean up any spills as soon as they occur. Put saturated rags into closed metal containers. ➤ Watch to see that canvas tarps, plastic sheeting or other ignitables don't get close to space heaters. Take care to see that heaters aren't accidentally tipped over. ➤ Know where the closest fire-protection equipment is located, and how to use it. Check to see that fire-fighting equipment is in the clear, in proper condition, and ready for instant use. We do everything we can to try to keep our shops fire-safe—but it takes your help, all of the time.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

DRESS FOR THE JOB	PAGE: 1 of 1
	DEPARTMENT(s):
Our clothes and footwear are our first line of defense when it comes to protecting our bodies. Each day we wear our work clothes for eight, ten and sometimes even more hours, and there is nothing worse than working in uncomfortable clothing and/or poor fitting footwear. Although your work clothes are very important to your safety and health, your comfort is also a consideration. You need to have clothes that are right for the job. They must be sturdy and durable, and capable of standing up to heavy wear and tear. You need clothes that will keep you warm in winter and cool in the summer, and that will keep you dry in wet and inclement weather. We all know that it's easier to take off a layer of clothing than not have enough on in cold weather. Wool works best in the cold while cotton is superior during the warm months. In other words, wear clothes that you can work in comfortably and that are designed for the kind of work you do and the weather in which you must do it. Proper footwear is another important part of service attire. Wear the right shoe or boot for the job. A good sturdy leather boot will last a long time and also provide your feet with good support throughout the shift. Since you are on your feet most of the time, make sure the shoe or boot fits correctly. Tennis shoes have no place in a service department -- one reason is that sharp objects and tennis shoe soles just don't mix. If you wear jewelry, watches or rings remember that they can be very dangerous around machinery and electricity. Take them off and put them in your pocket, or better yet, just leave them at home! Many a worker has lost a finger or two from wearing rings on the job. Use common sense and dress for the job you do -- leave jewelry at home, wear appropriate clothing and sturdy footwear, and your workday will be a safer and more comfortable one. SET A GOOD EXAMPLE FOR OTHERS AND TREAT SAFETY AS ONE OF YOUR MOST IMPORTANT JOB RESPONSIBILITIES.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

EIGHT THINGS YOU SHOULD KNOW ABOUT YOUR TORQUE WRENCH	PAGE: 1 of 2
	DEPARTMENT(s):

Torque wrenches are commonplace in the automotive industry. Considering their widespread use however, there remains several things that people get wrong or simply don't know.

1. Storing your torque wrench

When a torque wrench is in regular use throughout the day, it does not need to be wound back. However, when storing a torque wrench, users should always wind it to zero.
A fully loaded torque wrench, left in storage for a long period, can cause a 'set' in the spring, causing it to weaken over time.

2. For accurate results, one click is enough

Users often allow torque wrenches to click multiple times, without being aware of the additional torque being applying to the bolts. Operate your torque wrench in a smooth and steady manner and remember that one click is enough.

3. Using your wrench on a counterclockwise thread

Many torque wrenches will only indicate in the clockwise direction. Therefore, it is necessary for users to always check the wrench's specification before using it on a counterclockwise thread to ensure the tool is suitable and, prevent a loss of torque control.

4. Adjusting your torque wrench

Equipment manufacturers will always provide the required torque for any given piece of equipment and so when adjusting your torque wrench, it is important to ensure that these levels are met. Remember to always adjust the wrench up the scale to the required torque figure to ensure accurate setting.

5. Using marked loading points for accurate results

Most torque wrenches are length dependent and feature a marked loading point on the handle but, many people don't use it. For accurate results, most torque wrenches must be operated with your hand centred over the marked load point. It is also essential that this load point is observed when it comes to calibrating the torque wrench.

EIGHT THINGS YOU SHOULD KNOW ABOUT YOUR TORQUE WRENCH	PAGE: 2 of 2
	DEPARTMENT(s):
6. Using torque wrenches for undoing So long as users operate with caution and do not exceed the maximum torque, most torque wrenches can be used for undoing unless instructed otherwise by the manufacturer. However, if the bolt will not free within the maximum torque of the wrench, another tool should be used instead. By exceeding the maximum torque limit during a bolt loosening you can affect the wrench accuracy, causing problems for future use. If in any doubt, use another tool for loosening bolts. 7. Adding extensions to the torque wrench handle Users should never put a pipe or any other kind of extension onto a torque wrench handle as doing so can seriously damage the tool and make it inaccurate. 8. Locking it in It can be all too easy to accidentally adjust the settings of a wrench during use so, if your torque wrench is fitted with an adjustment lock, you should always apply it before operating the wrench in order to avoid any unintended changes.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

ELECTRICAL SAFETY	PAGE: 1 of 1
	DEPARTMENT(s):
Electric shock and electrocution happen when a person becomes part of an electrical circuit and the current flows through their body. Accidents and deaths can also happen when equipment becomes 'live' due to electrical faults, lack of maintenance, or short circuits. Examples of hazards Burns from hot components and Electrical shocks Safety tips ▪ Use electrical equipment according to manufacturers' instructions. Keep electrical equipment in safe working order through inspection and preventative maintenance programs. ▪ Disconnect and report faulty equipment - for example: frayed cords or broken power points. Always switch off electrical equipment at the power point before pulling out the plug. ▪ Keep electrical cords off the floor to reduce the risk of damage from dragging, contact with sharp objects, or contact with water. A damaged electrical cord can cause electrocution. ▪ Know the location of the main electricity supply. If a breaker trips, disconnect the power source, then identify and fix the problem before resetting the breaker. ▪ To prevent getting a shock, follow lockout procedures before working on them (see SWP on "Energized Systems Lockout"). ▪ Wear shoes with insulating soles and/or stand on a non-conducting mat. ▪ If someone gets an electric shock, shut off the power before trying to help them. ▪ Only use hand tools that are insulated against electric shock (e.g., plastic or rubber handles or an approved "Shock Stick") (See also, "Emergency Response for Electrical Shock and Hybrid Emergency Response"). ▪ Water is a great conductor of electricity, so do not work in wet conditions; when this is unavoidable use a ground fault circuit interrupter (GFCI).	
Managers Signature: _____	Date: _____

TOOLBOX TALK

ENGINE OIL	PAGE: 1 of 1
	DEPARTMENT(s):

HAZARDS IDENTIFICATION Inhalation: Inhalation of vapours (generated at high temperatures only) or oil mist may cause mild irritation of the nose, throat, and respiratory tract. Eye Irritation: Lubricating oils are generally considered no more than minimally irritating to the eyes. Skin Contact: Lubricating oils are generally considered no more than minimally irritating to the skin. Prolonged and repeated contact may result in defatting and drying of the skin that may cause various skin disorders such as dermatitis, folliculitis or oil acne. Ingestion: Lubricating oils are generally no more than slightly toxic if swallowed. Other Health Effects: The International Agency for Research on Cancer has determined there is sufficient evidence for the carcinogenicity in experimental animals of used gasoline motor oils. Handling procedures and safety precautions in the MSDS should be followed to minimize exposure to the used product. FIRST AID MEASURES Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Get medical attention. Skin Contact: Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water and then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned. Eye Contact: Flush with water. If irritation occurs, get medical attention. Ingestion: Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get medical attention. EXPOSURE CONTROLS, PERSONAL PROTECTION Eyes- safety glasses are recommended. Skin- gloves should be worn as a precaution to avoid skin contact. FIRE In case of fire, use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO2) to extinguish flames. Do not use a direct stream of water. Material will float and can be re-ignited on surface of water.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

ENGINE SAFETY	PAGE: 1 of 1
	DEPARTMENT(s):
Vehicle engines are powerful machines with many moving parts. They have the potential to cause serious injury, so care and attention is always required. Examples of hazards • Contact with moving parts such as drive belts, pulley or fans electric shock • Burns • Carbon monoxide poisoning Safety tips • Remove rings, metal watches and bracelets, and loose clothing such as a scarf before working on any engine. • Tie back long hair. • Keep your hands away from moving parts. • Use extreme caution around engine fans which may strike you, fling things at you, start unexpectedly, or catch dangling leads or strings. • Avoid touching hot engine parts; never open the radiator on a hot engine. • Do not run engines in enclosed, indoor spaces and always guard against carbon monoxide poisoning. • Avoid electric shock from battery or ignition systems. Never open the radiator cap on a hot engine allow the engine to cool for at least an hour before attempting to open the cap. Even then, use extreme caution. Place a rag over the cap, then loosen it slowly to the first detent or stop. At this point any residual pressure and steam should be released. Wait until all pressure has escaped before removing the cap the rest of the way.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

EXPOSURE TO AIRBORNE CONTAMINANTS	PAGE: 1 of 1
	DEPARTMENT(s):
Some tasks in body shops and service areas may produce very fine dust or gases that get into the air and that can make you sick or damage your lungs if you breathe them in. Examples of hazards • Vapours from painting • Parts cleaning • Vehicle refinishing • Fumes from welding • Dust particles from sanding operations • Mist from spraying, mixing chemicals, and cleaning job sites If there is a hazard of airborne material in your workplace, your employer is required by regulation to do a formal risk assessment and, if necessary, have a respirator programme including written work procedures. Safety tips • Use a respirator when doing work that requires it. Make sure you have training in using a respirator, and follow the written work procedure when you use it. • Make sure you're using the right respirator for the job. • Make sure the respirator fits you. If the respirator has a facepiece (mask) that seals to your face, you must be clean-shaven. • If your respirator has a cartridge, check that it is the correct cartridge, and that you're using it correctly. Safety alert Let your supervisor or manager know if you have breathing problems or claustrophobia that would prevent you from using a respirator.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

EYE INJURIES	PAGE: 1 of 1
	DEPARTMENT(s):
Loss of an eye can change your life forever, even preventing you from getting some types of jobs. Less severe eye injuries can be very painful and take months to heal. Most eye injuries can be prevented with the use of protective equipment. Your employer is responsible for determining what type of eye protection, such as safety glasses with or without side shields, or goggles with or without ventilation, you require for any task that involves exposure to materials likely to injure or irritate the eyes. Examples of hazards • Flying particles and debris • Molten materials • Chemical splashes • Dust • Ultraviolet, infrared, and visible light Safety tips Be sure your eye and face protection have Canadian Standards Association (CSA) certification.  If it doesn't have this logo, it hasn't been tested and approved by CSA. If you wear glasses with glass lenses and are doing a task that has a danger of impact, wear your glasses behind impact-rated goggles or other eye protection. • Know where the emergency eye wash station is located and know how to use it. • Clean your safety glasses regularly and store them in a clean dry place when not in use.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

EYE SAFETY	PAGE: 1 of 1
	DEPARTMENT(s):

Safety glasses saved this guy's eye from an exploding angle grinder disc...



Some 150,000 disabling eye injuries occur each year. Eye injuries can occur in any operation and in any work area, including offices. All too often we take our eyesight for granted and figure that we'll always have it. We treat our eyes as though we can get replacements. How many home runs could Hank Aaron have hit if he had lost the sight in one or both of his eyes? How well would you be able to do your job if you were blind? There are two important issues to consider; first, you need to have the proper eye protection, second, you need to USE IT!

People who wear glasses usually become so accustomed to them that without much thought they clean them, carry them in their pocket or purse so they are handy, and wear them when they are needed. Unfortunately, few of us are this mindful when it comes to eye protection, and too often we forget it. Some safety glasses and goggles grow dusty from lack of use as their owner's trust luck to protect them from an eye injury.

The most common complaint about eye protection is that it's uncomfortable. Protective eye equipment must be carefully fitted and then worn correctly. It may take some time to adjust to wearing goggles or safety glasses, but it will take much longer to adjust to losing your eyesight. If your goggles or glasses give you a headache, adjust the frames or straps or consider a new pair. Straps used to hold goggles or glasses in place should be adjusted to provide just enough tension to hold them securely. During hot weather, a sweatband will keep perspiration off your goggles or glasses and out of your eyes. Take time to clean your goggles or glasses so they do not interfere with your vision. Don't touch the lenses with your fingers and keep them away from anything that could scratch or pit them.

Protective eye protection extends beyond keeping bits of debris out of your eyes. If you are working around welding or cutting operations special lenses may be required to protect your eyes from the bright, intense light. Chemicals also pose a hazard to your eyes; make sure you use eye protection and splash guards when handling chemicals.

Your employer will provide eye and face protection when machines or operations present the potential for eye or face injury.

Managers Signature: _____	Date: _____

TOOLBOX TALK

FALLING OBJECTS	PAGE: 1 of 1
	DEPARTMENT(s):
➤ Falling objects can be materials, tools, debris or equipment, and if they land on you, you can be seriously injured or even killed. ➤ Let's look first at the problem of materials. Materials are piled in the yard, in the truck, or at various places on the job site. The phrase "Piling up Trouble" surely fits the situation when you pile material improperly. All materials should be piled on a sound base, straight and steady, and at a reasonable height. It may be well to crosstie and cover the material for protection and safety. ➤ When you want to send material, tools or equipment to higher elevations, use containers or buckets and hand lines. Never throw materials or tools. When you pull on a hand line, be sure to stand clear of the loaded materials and tools. Keep an eye on the load as it goes up. When you have to pull up materials that can't be placed in a container, fasten the load securely to the hand line. If materials like pipe, conduit, and rods aren't properly fastened in bundles, a piece can be jarred loose and hit the worker pulling the hand line. ➤ Tools, equipment and materials often fall when workers attempt to carry them up ladders. Use hand lines so your hands will be free to hold onto the ladder when you go up. When you load hoists and platform skips, be sure the materials and packages are stacked safely. A sloppy load is a load of trouble. Never leave a load suspended. ➤ Where scaffolds are not provided and you work at an open elevation, wear a safety belt and tied-off life-line. Then if you're using both hands to pry a panel and it breaks loose suddenly, the safety belt and life-line will keep you from falling. Working from swing staging is also a dangerous operation and requires the utmost care to prevent falls of equipment, materials and tools. ➤ We know what precautions the company takes to protect us. Now, let's all do our share to keep objects from falling. We'll prevent injury to workers below as well as to ourselves.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

FALLS – CAUSES AND CURES	PAGE: 1 of 1
	DEPARTMENT(s):
Has this thought ever crossed your mind? The only way to be safe from falls is to avoid them! Avoidance is the key word. Let's explore just a few of the factors contributing to falls and their serious results. Here are some to think about. Ladders - Select the right ladder for the job. Is it the right size, did you tie it off, did you inspect it prior to use? Always face the ladder when you climb and avoid carrying tools in your hands when climbing -- one slip could send you down -- use a hand line or pouch for the tools. Never stand on the top two steps. Stairways - Slow down -- don't run up or down. Avoid carrying objects that block your view of the steps. To help eliminate falls on stairways take your time, look where you step, and use the handrail. Keep stairways free of clutter to prevent tripping. Housekeeping - A secure footing is a positive step in avoiding falls and good housekeeping is essential to secure footing. Debris, trash, oil and water left to accumulate on stairs, walkway etc. will lead to certain falls. A clean worksite is a safer worksite. Watch your step! Stay alert! Avoidance and prevention! These are your first line of defense. ALSO, BE ON THE LOOKOUT FOR SLIPPERY SURFACES AND WALKWAYS. WINTER'S FROST, SNOW & ICE INCREASE YOUR CHANCES OF SLIPPING.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

FIRE EXTINGUISHERS	PAGE: 1 of 1
	DEPARTMENT(s):
Fire prevention and good housekeeping go hand in hand for obvious reasons, not only on the job- site but in the home and office as well. Fires can start anywhere, at anytime, and this is why it's so important to know how to use a fire extinguisher correctly, and also to know which extinguisher to use for different types of fires. CLASS 'A' FIRES - These fires consist of wood, paper, rags, rubbish and ordinary combustible materials, the kinds of materials typically found in a service department. RECOMMENDED EXTINGUISHERS - Water, through use of a hose, pump-type water cans, pressurized extinguishers, and (ABC) dry chemical extinguishers. FIGHTING THE FIRE - Put lots of water on the fire and soak it completely, even the embers. CLASS 'B' FIRES - These consist of flammable liquids, oil and grease. RECOMMENDED EXTINGUISHERS - (ABC) dry chemical type, foam, and carbon dioxide. Any of these will do a good job extinguishing the fire. FIGHTING THE FIRE - Start at the base of the fire and use a sweeping motion from left to right always keeping the fire in front of you. CLASS 'C' FIRES - are electrical fires, usually dealing with some type of electrical equipment RECOMMENDED EXTINGUISHERS - Carbon dioxide and (ABC) dry chemical type. FIGHTING THE FIRE - Use short bursts on the fire. When the electrical current is shut off on a "Class 'C' Fire, it can become a Class 'A' Fire if materials around the original fire are ignited. CLASS 'D' FIRES - Combustible metals. RECOMMENDED EXTINGUISHERS - Special agents approved by recognized testing laboratories. FIGHTING THE FIRE - Follow the fire extinguisher manufacture's recommendations. Post emergency phone numbers at each telephone, on the job and at home. THE KEY TO ALL FIRE EXTINGUISHERS IS KNOWING HOW TO USE THEM BE SURE THEY'RE ALWAYS AVAILABLE IN YOUR WORK AREA, IT'S TOO LATE TO GO SEARCHING FOR ONE WHEN A FIRE BREAKS OUT	
Managers Signature: _____	Date: _____

TOOLBOX TALK

FROM HEAD TO FOOT	PAGE: 1 of 1
	DEPARTMENT(s):
Business reviews would seem to indicate that today Americans are spending more for clothing than anytime in history. This is in accordance with American standards, and to deny the advantages of being meticulous in dress would be an insult. And yet, we take so much pride in the social aspect of our dress - what about the important angle? What about the way we dress for work with safety in mind? 1. What about our sight, our most important sense? Do we have our eyes examined periodically...if necessary, do we use our glasses when reading... and above all, do we cover them with safety goggles when the occasion demands? 2. The shirt, an important piece of apparel. If we operate, or are engaged around moving machinery and equipment, do we wear short sleeve shirts, or have straight cuffs? The same goes for jackets. Never wear a loose-fitting jacket, keep it buttoned or zippered shut at least chest high. 3. Our hands are a very vulnerable part of our body. If our work calls for it, do we wear gloves? Also remember, worn or tattered gloves are more dangerous than no gloves at all. 4. Wearing overalls or pants with cuffed or rolled up legs is a poor practice. If the legs are too long have them cut off and hemmed. Straight legs reduce the self-tripping hazard. 5. How about shoes? They don't have to shine with a brilliant luster, but they must be practical. A safe working shoe has a thick sole; thin sole shoes can result in serious foot punctures. To protect against toe injuries, steel capped shoes are most practical. Shoelaces should not be too long. 6. Watch out for jewelry. It can catch on things, too. Don't wear loose watch chains, straps, keys on belt, etc., or any item that might hook on something and place you in a hazardous position. Rings, wristlets and other jewelry belong at home and not on the job.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

GOGGLES- GLOVES	PAGE: 1 of 1
	DEPARTMENT(s):
Goggles There is nothing new about wearing goggles for eye protection. Every job is using them to a greater or lesser degree. But the question always arises as to who should not be asked to wear eye protection. In analyzing eye injury cases, it is found that the most common are caused from foreign bodies in the eye, flying objects, dust, and horseplay. The jobs include office workers, laborers, operators, warehousemen, millwrights, drivers, mechanics, carpenters, and so on down the line. Actual reported cases describe accidents in which a laborer was cleaning out one thing or another when some of the contents of a chemical nature splashed in his eyes and resulted in the loss of his sight. Goggles were not worn, since they were not considered necessary for that type of work or worker. But follow this injury and others like it and you will find that most could have been prevented if the right eye protection had been used. <u><i>There's No Such Thing as Being Too Safe!</i></u> ➤ Gloves ➤ Your hands are your wage-earners. ➤ Hands are hurt more often than any other part of the body. ➤ Hand injuries don't have to occur. As talented as your hands are, they can't think, they're your servants, and it is up to you to think and keep them out of trouble. ➤ Be sure you wear the right kind of gloves for the kind of work you are doing. ➤ When you wear gloves, you aren't trusting to luck and you're not taking unnecessary chances. ➤ Wear gloves when you are doing a job that needs them but not around moving machinery. ➤ Time spent in preparing your hands for the job will not only save trouble for you but will probably save time in doing the job.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

HANDLING AND LIFTING	PAGE: 1 of 1
	DEPARTMENT(s):
Improper handling and lifting of heavy or bulky objects are major sources of back injuries. These injuries can affect your quality of life for weeks, months, or even years, preventing you from working or doing many things you enjoy. Most lifting injuries are preventable. Examples of risk factors Risk factors are aspects of the job that put you at risk of injury. The risk of injury depends on how long and how many times you are exposed to a risk factor. The following tasks have the potential to put you at risk of injury: • Lifting heavy equipment or boxes • Carrying loads that are difficult to handle • Pushing or pulling carts or other loads Safety tips Here are some things that employers and workers can do to reduce the risk of injury: • Assess whether you'll need help from another person or a mechanical aid. • Get close to the object • Bend at your hips and knees • Get a good grip • Lift smoothly and slowly, keeping the object close to your body • Pivot with your feet instead of twisting your back • Be sure you can see where you are going when carrying large items • When storing items, organize them by weight, with heavier, more frequently used items between knee and chest levels to minimize bending or reaching • Whenever possible, work with arms at your sides and close to your body • Use a stepladder rather than a chair or crate to reach elevated items	
Managers Signature: _____	Date: _____

TOOLBOX TALK

HAZARD COMMUNICATION	PAGE: 1 of 1
	DEPARTMENT(s):
It is hard to believe that the hazard communication standard has been around for years and yet violations of this standard in our industry are in the 'top ten list' of citations issued by OSHA. As an employee, you need to know what types of chemicals you are using and what hazards are associated with them. The purpose of the standard is to ensure that all chemicals are evaluated, and that all information concerning their hazards is transmitted to your employer and to you. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which include labeling and other forms of warning, employee training, and safety data sheets (SDS). Employers must be sure that labels on incoming containers of hazardous chemicals are not removed or defaced. They are also required to maintain copies of all SDS received with these incoming shipments, and they must obtain SDS for all hazardous materials for which sheets are not provided. These SDS's must be kept readily assessable during each work shift for your review. Furthermore, employers must provide training on the requirements of the standard and the location of the written hazard communication programme. They must record any operation on the jobsite where hazardous chemicals are present, including their physical and health hazards along with protective measures. Your best information concerning hazardous chemicals in the workplace is the Safety Data Sheet. It gives you the trade name, plus the manufacturer's name, address, and emergency telephone number. It also includes the hazardous ingredients and components, the chemical ID, the OSHA PEL (Personal Exposure Limit) and TLV (Threshold Limit Value). You will also find chemical and physical characteristics like boiling point, vapor pressure, flash point, and information on flammability, reactivity, and explosion hazards. Finally, the SDS provides health hazard information, emergency and first aid treatments, and specific precautions for safe handling and use. Remember, you must use this blueprint (the SDS) to ensure your safety and the safety of those that work around you. Read it carefully and follow all the manufacturer's recommendations. If you have <u>any</u> questions, ask your supervisor. CHEMICALS MUST BE TREATED WITH RESPECT! YOU CONTROL THE RISKS -- ALWAYS CHECK THE MSDS.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

HOISTS	PAGE: 1 of 1
	DEPARTMENT(s):
Topic Overview Auto lifts have the potential to cause serious injury and death. Students must be trained in safe work procedures before using a lift or hoist. The Occupational Safety General Regulations (Sections 73(4)(a), 75(b) and 76(a)) requires that auto lifts be inspected visually daily and tested at least monthly by the operator and then annually by an approved competent contractor. As one would expect from such a large and powerful piece of equipment, auto lifts or hoists have the potential to cause serious injury and death. Examples of hazards • lift failure • lift used improperly • vehicle slipping or shifting Safety tips Do not use an auto lift to hoist or support anything other than a vehicle. Never overload the lift Check the manufacturer's rated capacity on the nameplate attached to the lifts. If the nameplate is missing or you can't read it, ask your manager to check with the manufacturer's literature or representative and replace it immediately. Before driving a vehicle into the shop, be sure the lift area is free of the following: • workers • grease and oil • tools • cords and hoses • trash and other debris Do not allow customers or by-standers in the lift area or in the vehicle when the lift is in use.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

HOUSE-KEEPING	PAGE: 1 of 1
	DEPARTMENT(s):
Good housekeeping is the first law of accident prevention and should be a primary concern of all supervisors, foremen and the entire workforce. Poor housekeeping often results in unsafe conditions and implies that the shop is poorly managed and the work being done lacks professionalism. Many accidents and injuries blamed on other causes are caused by unsafe conditions due to poor housekeeping. A safe worker knows he can do his best work easier and more quickly if good housekeeping is maintained. Learning the habit of good housekeeping takes practice. The familiar expression 'a place for everything and everything in its place', will assist you in your efforts. Materials and tools should be stored neatly on your bench or in your toolbox. When cleaning up be sure that all combustible materials are disposed of or stored properly to reduce the possibility of fires. Tripping accidents can be reduced significantly by frequent clean-ups. Make it a habit to roll up hoses out of the way and throw rags and other garbage in the waste cans. Sharp-edged and pointed tools should be stored in such a way as to prevent injuries. Each member of the staff has a responsibility to insure good housekeeping in all phases of their work. It's a lot easier to pick up as you work instead of waiting for the end of the shift. The importance of the relationship between an orderly job and a safe job cannot be overstressed. We can have clean, well appearing, accident-free jobs only if we really want them and insist that everyone cooperates. Good housekeeping requires constant effort and vigilance to make certain the job and equipment are kept in good condition. Are you doing your part? Remember, good housekeeping promotes safety in the workplace, improves performance, protects you and the public, and just makes good sense. A SIMPLE DEFINITION OF SAFETY IS: PROTECTING YOURSELF, OTHER PEOPLE & EQUIPMENT FROM HAZARDS.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

HOW TO USE AN EYEWASH STATION	PAGE: 1 of 2
	DEPARTMENT(s):

*"When a chemical or irritant enters your eyes,
knowing how to properly flush them can save your sight."*

An illustration showing a person using an eyewash station. The person is holding their eyes open with their fingers, and water is flowing from two faucets into their eyes. A clock in the background shows a 15-minute interval, with the text "15 Minutes" below it. Above the person, a hand is shown pushing a yellow lever on the station's control panel.

Go Immediately to the Eyewash Station – Don't Waste a Second!

If a chemical splashes in your eyes, time is of the essence. GO immediately to the eyewash station which should be located within 10 seconds walking distance from you if you work with caustic chemicals.

Push the Lever to Activate the Unit

Push the lever- An ANSI compliant unit will activate with one single motion. The dust covers will pop off and the flushing fluid will begin to flow out from the faucet heads.

Begin to Flush

Get your eyes directly in the stream of the flushing fluid- Immediately!

Hold Your Eyes Open with Your Fingers

An ANSI compliant unit will be hands free so that you do not have to hold the lever open. Once activated, the unit will stay on. Keep your eyes open by holding your eyelids apart with your fingers.

TOOLBOX TALK

HOW TO USE AN EYEWASH STATION	PAGE: 2 of 2
	DEPARTMENT(s):
<u>Roll Your Eyes</u> Gently roll your eyes from left to right and up and down to be sure that the fluid is flushing all of the areas of your eye. <u>Flush for a Full Fifteen Minutes</u> Continue Flushing your eyes for a full 15 minutes. This is important because you want to fully dilute the chemical and wash it out of your eyes. Any time less than 15 minutes is NOT enough time to accomplish this. <u>Take Out Your Contacts</u> If you have contact lenses in your eyes, you can gently take them out while you are flushing. Don't delay the flushing to take out your lenses but make sure that you take them out because they could trap the chemical in your eyes. <i>Depending on the chemical or object you got in your eye, after you have properly flushed, you may want to see a doctor to determine if anything more needs to be done for the preservation of your vision.</i>	
Managers Signature: _____	Date: _____

TOOLBOX TALK

LADDERS	PAGE: 1 of 1
	DEPARTMENT(s):
Ladders are used various times in our work. They provide us with a means of reaching locations too high to reach otherwise. Let's define a ladder as a very useful appliance consisting of two side rails joined at regular intervals by cross-pieces called steps, rungs or cleats, on which a person may step when ascending or descending from a given level. In other words it is two pieces of lumber with rungs attached used to climb up and down. Are you familiar with the various types of ladders? There are Fixed Ladders, Extension Ladders, and Step Ladders. These ladders can be made of aluminum, wood, metal, plastic or fiberglass. Fixed Ladders are attached to a structure and not adjustable in length. An Extension Ladder is a non-self-supporting, portable ladder that is adjustable in length. Then there are Step Ladders which are self-supporting portable ladders that are not adjustable in length. When selecting a ladder, you should consider the capacity of the ladder, its height and footing requirements, and whether it will be used inside or outside. IN THE WORKPLACE A LADDER MUST BE CSA CLASS 1 OR 2. Check the rungs on fixed ladders for damage and be sure they are Securely attached before you climb. When you need an extension ladder, inspect it for defects before using it, and be sure to look for overhead hazards that may interfere with the set-up. Electrical Wires and ladders don't mix! Extend the ladder to the required height and engage the extension hooks. Remember the 1 to 4 rule - the base of the ladder should be 1' away from the wall or support for every 4' of vertical extension (an angle of approximately 75 degrees). When using the ladder to access an upper level, be sure the ladder extends 36" above the landing. Secure the ladder by tying it off to prevent shifting. When using a step ladder inspect the ladder for defects, broken rails, and split steps, and ensure that the spreader lock works property. Place the ladder on solid ground and secure the spreader lock. Fully extend and expand A- frame legs. Never stand on the top two steps; if you need to reach higher, get a larger ladder. Never paint wooden ladders. Paint hides defects and hinders inspection.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

LIFTING	PAGE: 1 of 1		
	DEPARTMENT(s):		
Do you realize you may be risking serious injury many times a day and not even know it? Well, it's true if you don't lift correctly. Improper lifting may cause back injuries that can take months and even years to heal. Sometimes they are permanent and disabling. A little know how, however, can enable you to lift correctly. PREPARING TO LIFT Give the load the once-over. If it looks too heavy, don't be afraid to ask for help. Be sure you're wearing safety shoes. There is always the chance of dropping something on your toes. If the object has rough or sharp edges, wear a good, tough pair of work gloves. They'll give you a good grip and protect your hands. MAKING THE LIFT Crouch down with the load between your legs and get a good grip on the object. As you rise, lift with your legs, keeping your back vertical and the load as close to you body as possible. If you have to place the load to your left or to your right, don't twist your body. Move your feet instead. When you have to lower a load, simply reverse the knees bent, back vertical procedure. LET'S REVIEW Let's quickly review what we said about lifting: 1. Don't lift more than you can handle. Ask for help with heavy loads. 2. Wear safety shoes. 3. If the object is rough or sharp, wear gloves. 4. Lift with your legs and not your back. 5. Keep the load close to your body. 6. Don't twist your body when placing a load to one side or the other. Move your feet instead. When it comes to lifting, don't break your back. Instead, lift right and give your back a break. <table border="1"><tr><td>Managers Signature: _____</td><td>Date: _____</td></tr></table>		Managers Signature: _____	Date: _____
Managers Signature: _____	Date: _____		

TOOLBOX TALK

LOCK OUT/TAG OUT	PAGE: 1 of 1
	DEPARTMENT(s):

Lockout means to physically neutralize all energy in a piece of equipment to ensure that machinery or equipment won't start while a worker is doing maintenance or repair. This can be done by turning off a master switch or by unplugging powered tools or equipment. Working on powered equipment that is not properly locked out can result in severe injuries and death. The most common injuries are severed fingers and crushed limbs, but injuries are sometimes fatal.

Lockout involves the following steps:

Energy Form	Energy Source	General Lockout Guideline
Electricity	Machine power cords, motors, solenoids, capacitors (stored electrical energy).	Turn off power at machine first (ie.-at point of operation switch) and then at the main disconnect switch for the machine, lock and tag main disconnect switch (or remove fuses from box and then lock and tag box). Fully discharge all capacitive systems (e.g.-cycle machine to drain power from capacitors) according to manufacturer's instructions.
Fluid Pressure	Hydraulic Systems (e.g.-hydraulic presses, rams, etc.).	Shut off and tag valves, bleed off and blank lines as necessary.
Air Pressure	Pneumatic Systems (e.g.- lines, pressure reservoirs, air tanks, rams etc.).	Shift off, and tag valves, bleed off excess air, if pressure cannot be relieved block any possible movement of machinery.
Kinetic Energy	Blades, flywheels	Stop and block machine parts (eg.-stop flywheels and ensure that they do not recycle), review entire cycle of mechanical motion; ensure that all motions are stopped.
Potential Energy	Springs, actuators, raised loads, top or movable part of a press or lifting device.	If possible, lower all suspended parts and loads to the lowest (rest) position, block parts that might be moved by gravity, release or block spring energy.
Pressurized Liquids and Gases	Supply lines, storage tanks and vessels.	Shut off, (with chains built-in lockout devices, or lockout attachments) and tag valves. Weed off excess liquids or gases, blank lines as necessary.

Managers Signature: _____	Date: _____

TOOLBOX TALK

NEW EMPLOYEE – NEW JOB	PAGE: 1 of 1
	DEPARTMENT(s):
So, you're the new employee on the job -- or maybe you're an old timer starting a new job. Both of you have a responsibility to learn how to do your new job safely. Your supervisor should take the time necessary to explain the safety requirements for the work you will be doing. Here are several safety topics to think about. First Aid & Emergency: Where is the first aid station located? Where are the first aid supplies? Who is certified to provide first aid? Where are emergency phone numbers posted? Housekeeping & Sanitation: Where is the waste disposal area? Are there any materials which must be disposed of in a special manner? What are the procedures for daily cleanup? Where is drinking water located? Personal Protective Equipment: Are safety glasses required to do this job? Are soft-soled shoes prohibited? Check eye and ear protection requirements! What other kinds of Personal Protective Equipment are needed? Hand & Power Tools: Are you qualified to use the tools you will be using on this job? Are all the required guards in place? Are your tools properly grounded? Ladders: Is the ladder the right one for the job? Is it in good condition? Is it CSA approved? Be sure the ladder is properly set up and secured. Always check a ladder prior to using it. Hazcom: Are you going to have to work with chemicals? Do you understand all of the precautions which must be taken? Find out where Safety Data Sheets are kept, as well as where the main chemical inventory list is located. As the new guy on the block there is a lot of information that you need to comprehend. If you have a question -- ask. As a supervisor you need to be able to answer any questions a new employee may have.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

NOISE EXPOSURE	PAGE: 1 of 2
	DEPARTMENT(s):
Noise in service areas may reach harmful levels that can cause hearing loss. Exposure to sound over 85 decibels over an 8-hour period requires hearing protection, and employers are required to inform workers if sound levels are at 82 decibels or above. Examples of hazards • Grinding • engine revving • sanding • pneumatic wrenches Safety tips • Wear approved hearing protection whenever you are exposed to loud noise. E-A-R Ultrafit Reusable ear plugs are acceptable for most noise levels up to 97 dB, but earmuffs are required when you are using tools or equipment that exceed 97 dB and dual protection (ear plugs and earmuffs together) are recommended for sound levels above 110 dB • Ear buds (headphones) are not hearing protection. High levels of sound from music can cause hearing loss and prevent you from hearing warning signals. • Before purchasing new tools, always look for information regarding noise levels generated by the tools. Noise levels can vary significantly between different brands of the same tool. Always try to buy tools which generate the lowest noise level possible. Exposure to noise levels above 85dB for longer than the permissible time can result in irreversible hearing loss.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

NOISE EXPOSURE	PAGE: 2 of 2 DEPARTMENT(s): _____
Noise level of common automotive repair tools	
Managers Signature: _____	Date: _____

TOOLBOX TALK

PORTABLE ELECTRIC TOOLS	PAGE: 1 of 2
	DEPARTMENT(s):

Each year many workers suffer electric shock using portable electrical tools and equipment. The nature of the injuries, including those caused by ground faults, ranges from minor injuries to serious secondary injuries. There also is the possibility of electrocution. A secondary injury occurs when a worker recoils from an electric shock and, as a result, sustains an injury. Depending largely on the surrounding physical conditions, such an accident can result in a bruise, a broken bone, or a fatal fall.

HOW ELECTROCUTION OCCURS

Electrocution occurs when the shock current exceeds 70 mill amperes, or there about, causing ventricular fibrillation of the heart and death. Typically, electrocution occurs when employees contact electrically energized parts. It is usually the frame of the tool that becomes accidentally energized due to an electrical fault, providing a conductive path to the tool casing. This conductive path can occur instantaneously or can develop gradually over a relatively long period of time. If a worker contacts an energized tool, an unwanted path or circuit of electricity develops from the tool through the worker to ground. The amount of current that flows through the worker depends, primarily, upon the resistance of the fault within the tool the resistance of the worker, and the resistance of the path from the worker back to the electrical supply. Moisture in the atmosphere may contribute to the electrical fault by intensifying both the conductive path within the tool and the external path back to the electrical supply. Moisture also may increase the severity of the shock by decreasing the worker's contact resistance.

Consequently, the extent of the hazard increases with an increase in the amount of moisture at the job site.

METHODS OF PROTECTION

One method of protection against injury caused by an electrical fault is the use of an equipment grounding conductor commonly known as the 3rd, or green, wire. This equipment grounding conductor grounds the exposed, noncurrent carrying metal parts of tools or equipment and carries off the leakage and fault currents, thus limiting the voltage on the tool frame by providing a low resistance path to ground. This provides protection to tool users. Fuses or circuit breakers, on the other hand, will trip; thus, shutting off the flow of current at 15 to 20 amperes.

These provide protection from a fire safety standpoint but won't protect you, the tool user.

TOOLBOX TALK

PORTABLE ELECTRIC TOOLS	PAGE: 2 of 2
	DEPARTMENT(s):
Another method of protection is the utilization of a ground-fault circuit interrupter (GFCI). This device continually monitors the current and detects current leaking to ground via a path outside of the circuit conductors. If the leakage current to ground (either through the equipment grounding conductor or through a person) exceeds the trip level, the circuit is interrupted quickly enough to prevent electrocution. Before you use any portable electrical power tool, inspect the plug, cord, on-off switch and housing. Look for cracked, broken or frayed insulation, exposed wires or connections, and for any evidence of damage in general. If you find any of these things, properly tag the tool and turn it in for repairs. Don't use it! After you've checked out the tool, you still have done only half the job. Now check out the extension cord or outlet you plan to plug into! Look for the same things you looked for when inspecting the tool - evidence of damage and exposed conductors. One last thing before you plug in and start work: Check the outlet, extension cord, tool and work area to determine if they are clean and dry.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

POWER TOOLS	PAGE: 1 of 1
	DEPARTMENT(s):
➤ Know the tool you are using, its application, limitations and potential hazards. ➤ Select the proper tool for the job. ➤ Don't tackle a big job with an undersized tool - make-shift tools can cause accidents. ➤ Ground all tools unless double insulated. A double insulated tool usually has a plastic or non-conductive outside housing and 'double insulated' embossed into the case or stamped on the manufacturer's label. ➤ If the tool is equipped with a three-prong plug, it should be plugged into a three-hole receptacle or extension cord. Never break off the ground prong, it's there for your protection. ➤ Always remove adjusting keys and wrenches before turning on the tool. It's a good practice to adjust only when the tool is unplugged. ➤ Keep your work area free of clutter and debris. These can become tripping hazards. ➤ Tool guards are designed to make tools safer. Never remove or wedge a guard out of the way. ➤ Construction sites change constantly. Be alert to potential hazards in your work area. ➤ Avoid accidental start-up. Make sure the switch is OFF before plugging in the cord or when the power has been interrupted. ➤ Make sure saw blades, drill bits, router cutters, etc., are sharp, clean and regularly maintained. Use only recommended accessories and follow the manufacturer's instructions. ➤ Do not force the tool. Each tool can do a better job at its designed speed. Do not over-reach. Keep proper footing and always balance. ➤ Dress properly. Avoid loose clothing that could catch in moving parts. ➤ Secure your work. Use clamps or a vise to hold your work whenever practical. ➤ Never use a tool with a frayed or damaged cord. ➤ Do not attempt any field repairs. Return broken tools for proper repair. ➤ After use return the tool to its original carrying case and store in a dry, secure location. FOLLOW THESE GUIDELINES AND YOU WILL FIND THAT TOOLS PERFORM BETTER, OPERATE MORE SAFELY, AND LAST LONGER.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

PPE	PAGE: 1 of 1
	DEPARTMENT(s):
PPE stands for personal protective equipment which we use in our daily work activities. The regulations give employers responsibility for ensuring that employees wear appropriate PPE to reduce exposure to hazardous conditions such as falling objects, noise exposure, toxic atmospheres, etc. Personal protection is the main objective and each of us must follow our employer's safety requirements. Many forms of PPE are available to you. Hearing protection in the form of ear plugs or muffs reduces the amount of noise reaching your ear drums, thereby preserving your hearing. Respirators provide protection against toxic substances that might enter our bodies through our respiratory systems. The eyes and face are another area that needs to be protected. There are many types and sizes of spectacles and goggles to protect the eyes, and each has a special application. Be sure you read the manufacturer's instructions before wearing them and choose the right type. Face shields should be worn if potential danger exists from physical, chemical or radiation agents. Personal Protective Equipment can be cumbersome, uncomfortable, hot, etc. and employees occasionally don't wear it even though they know they may be risking injury. Any worker who fails to wear required PPE should be disciplined. Evaluate your work operations and define the hazards. Check with your supervisor for necessary PPE requirements and resolve to wear them. An ounce of protection is worth a pound or cure. KEEP YOUR PPE CLEAN AND IN GOOD WORKING ORDER. REPLACE ANY DEFECTIVE GEAR IMMEDIATELY.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

PROTECTIVE FOOTWEAR	PAGE: 1 of 1
	DEPARTMENT(s):
Today we are going to talk about protective footwear. You may or may not have given this much thought. Dressing right for work is like dressing right for sports -- no professional football player would take the field wearing dress shoes. Wearing the right shoes will help you do a better job; and do it more safely. The first thing to think about is the type of foot protection you are going to need. Automotive repair work requires you to walk, stand, bend, stoop and climb; therefore, it is imperative that you wear sturdy, comfortable footwear. Leather shoes and boots provide the best protection. Tennis shoes, sandals and flip-flops are not acceptable footwear on a construction site. Remember, your feet and toes are made up of many small bones, and just one object dropped on your foot can cause a serious, painful injury. Safety boots come equipped with steel toes, heavy duty leather uppers and steel shanks to help prevent puncture wounds. Your footwear should fit your feet snugly and give your ankles adequate support. Good support will help prevent you from turning or twisting an ankle while moving around the job site. Look at your feet right now. Are you wearing the right footwear for the job you are doing today? If you are working around protruding nails or other sharp objects, you should be wearing leather work boots with good soles. Are you working in concrete? If so, you need to be wearing rubber boots. Wet concrete on your feet will cause concrete turns. Make sure you wash your feet and put on a pair of clean socks if your feet encounter wet concrete. In cold weather it is important to keep your feet warm. Wear a comfortable pair of warm socks and keep a second pair available in case your feet get wet during the day. Get the message? Your feet take a beating every day. Make their job a little easier by wearing the right footwear SAFETY FOOTWEAR HELPS YOU AT WORK, DON'T FORGET TO PROTECT YOUR FEET OFF THE JOB AS WELL.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

RESPIRATORS	PAGE: 1 of 1
	DEPARTMENT(s):
A respirator is an important piece of personal protective equipment that may be worn for many different reasons. It is used when an employee must work in an atmosphere that does not have adequate oxygen. It may be required to protect yourself from other respiratory hazards such as dust, airborne contaminants, noxious fumes, etc. Many of the chemicals that we use require the use of a respirator. Product labels and material safety data sheets (MSDS) tell us how to use chemicals safely and how to protect ourselves from any hazardous properties they have. Prior to use, one must determine which type of respirator should be worn. If you have any doubt, ask your supervisor. All employees must be trained so that they know how to put on a respirator properly, the method of testing the face piece to assure the face seal is correct, the capabilities and limitations of the respirator, and the care of respirator protective equipment. Respirators function by filtering or purifying contaminated air, or by supplying air from an outside source. You will frequently see a cartridge-type respirator in use, especially in many painting operations. This kind of respirator is designed for short term exposure. It is approved for low concentrations of contaminants. You must remember that this type does not generate oxygen. Should you have need for one or have any question about one ask your supervisor. It is important that chemical cartridges and filters be replaced as necessary to provide complete protection. OSHA requires that employees who must use respiratory protective equipment approved for use in atmospheres immediately dangerous to life, shall be thoroughly trained in the use of the equipment. Employees required to use other types of respiratory protective equipment shall be instructed in the use and limitations of such equipment. Respirators and related equipment shall be inspected regularly, maintained in good condition, and cleaned and disinfected before being reissued. If the equipment is damaged in any way, don't use it. Your good health and your life are dependent on the air you breathe. Use a respirator when needed. NEVER WORK IN A HIGH CONCENTRATION OF TOXIC VAPOUR WITH A CARTRIDGE-TYPE RESPIRATOR!	
Managers Signature: _____	Date: _____

TOOLBOX TALK

SAVE YOUR HANDS	PAGE: 1 of 1
	DEPARTMENT(s):
Here's a test to see how fast you can untie your shoes. You can use both hands, but you can't use your thumbs. Not so easy, is it? And, yet do you realize that 25% of all disabling injuries involve hands and fingers? COMMON CAUSES OF HAND INJURIES What are some of the common causes of injuries to hands and fingers, most of which usually are preventable? They include struck by hammers, pinched between objects being moved, cut by sharp objects, pierced by splinters and slivers, burned by hot objects or chemicals, and caught in moving machinery. GLOVES- A PRIME MEANS OF PROTECTION As long as your skin remains unbroken, it can keep germs out. Once it's opened by a scrape or cut, however, germs can get in and infection can result unless you get proper treatment. And no matter how rugged you think your hands may be, they aren't tough enough to stop splinters, slivers, or to resist punctures. That's why gloves are important. They're like an extra layer of skin. The nail that rips your glove would have injured you if your hand had been bare. Wear gloves whenever you are handling rough or sharp material. Use rubber gloves when working with chemicals, solvents, or other material that can irritate your skin. Wear gloves that fit properly. Also, remember that gloves shouldn't be worn when there is a possibility they can get caught in moving machinery. GUARDS ARE HAND SAVERS By removing guards or otherwise making them ineffective, you increase your chances of getting hurt. Tie one hand behind your back for a day and you'll appreciate what the consequences of working without a guard can be. OTHER DANGERS Many hand injuries occur even when you are wearing gloves or using guards. Be alert to these dangers, too. Such injuries can result from the unexpected shifting of material, getting hands caught in pinch points, grabbing moving parts of the machinery, or holding work in the hands that should be held in a vise or securely clamped.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

SCREWDRIVERS	PAGE: 1 of 1
	DEPARTMENT(s):
The screwdriver is very versatile and certainly one of the most common and frequently used -- or misused - tools we have. It comes in many sizes and lengths. The first time you may have used one was when you were a child to adjust the chain guard on your bicycle. Screwdrivers are usually made of well-tempered steel bar or rod, flattened or shaped at one end to fit into the slots in screw heads. The other end of the bar is fitted into a handle of wood, plastic, etc., which is often reinforced to prevent splitting. Screwdrivers are found in various craft worker's toolboxes or pouches. Carpenters, millwrights, electricians, mechanics, painters and plumbers all use them in their daily work. As with all hand tools, it is up to the user to make certain that his or her screwdrivers are in good shape; therefore, you should inspect them before each use. Look for split or cracked handles and check the tips to make sure that they are not damaged. It just takes a few seconds to make a quick check, but those seconds could make the difference between an injury and just another turn of the screw. When using a screwdriver use it as the manufacturer intended. It is designed to be held with a firm grip and used with a turning motion. A screwdriver is not intended to be used as a pry-bar; nor is it intended to be used as a chisel. Using a screwdriver instead of one of these tools could cause the tip or shaft to chip or snap resulting in an injury. Avoid hitting the top of the handle with a hammer or other tool as this may cause the handle to crack or break. When carrying a screwdriver, keep it pointed away from your body with the sharp end pointing down. A lot of workers have the bad habit of putting screwdrivers in their back pockets with the pointed end sticking up; loss of balance, a backward fall, or even a quick turn could result in a serious puncture wound. Treat all sharp pointed tools with respect. Prevent unnecessary accidents by carrying and using them with safety in mind.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

SHORTCUTS ARE KILLERS	PAGE: 1 of 1
	DEPARTMENT(s):
Most of us have the necessary skills and knowledge to do our jobs well, and most of us don't want to hurt ourselves or anyone else. Why then do we take 'shortcuts,' setting up ourselves and others for injury? The following is a list of things we often do, even though we know we shouldn't! 1. You can't fool safety devices - but we remove or wedge back safety guards, so they won't protect us! 2. We shouldn't take a chance when operating heavy equipment - but we don't use the seat belt that is provided! 3. We know that flames or sparks are not permitted around flammable liquids - but some people smoke around them! 4. A protruding nail in a guard rail can cause an injury - but we don't bother to remove it or bend it over. 5. Horseplay causes a lot of injuries on the job - but many of us continue to play practical jokes. 6. A circular saw can amputate a finger - but we insist on using the saw without a guard! 7. We know the safe way to climb a ladder - but we climb it with one hand full of tools! 8. We should wear our personal protective equipment - but we leave our goggles strapped up on our hard hats! 9. We know better than to use chemicals without reading the SDS - but we use the chemical anyway! 10. We should wear a life jacket when working over water - but we go out over the water without one! 11. It's dangerous to block firefighting equipment - but we stack boxes of material in front of fire extinguishers! This is a short list, you can probably think of a lot more because we all, at one time or another, have been guilty of taking shortcuts. Usually, it's because we are attempting to save some time. Occasionally someone comes up with an idea that works and is a time-saver. That's great, if safety is not sacrificed. Your life and your health are too important to risk by taking stupid chances, and that is exactly what 999 out of 1000 shortcuts are - stupid! Get smart - think safety first - always! Don't take Shortcuts! If you're injured, the minute you saved may cost you days, weeks, or months of pain and suffering.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

SLIPS, TRIPS AND FALLS	PAGE: 1 of 1
	DEPARTMENT(s):
Slips, trips and falls may sound like minor accidents, but they can result in a sprain, fracture or head injury that could keep you off work for a long time. Examples of hazards • Spills (oil, water, and other liquids) • Cluttered walkways and work areas • Ladders and stairways Safety tips • Wear well-fitting non-slip footwear. • Keep walkways and work areas clear of tools, boxes, and other clutter. • Clean up spills right away • Don't carry more than you can safely handle. • Be sure you can see where you are going when carrying large items. • Use a class 1 or 2 stepladder rather than a chair or crate to reach high items.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

SPOTTERS	PAGE: 1 of 1
	DEPARTMENT(s):
I'm sure everyone here is aware of the dangers of blind backing. Not only is there the possibility of injuring someone, but of causing property damage. Today we're going to review safety measures necessary to avoid such accidents. SPOTTERS -AN IMPORTANT REQUIREMENT The first requirement for safe backing is to have a spotter, someone to direct the driver. A spotter is necessary when the driver or operator does not have a full view of the backing path. This is the important rule for drivers and operators: "Don't back up unless you have a spotter directing your movement." It's an easy rule to remember. The important thing is to obey it. THE SPOTTER'S RESPONSIBILITIES Let's talk about the spotter. This person must watch out for others as well as for himself, and make sure the vehicle doesn't damage property. This may appear easy. It seems that all the spotters must do is to direct a vehicle to back up when the path is clear of persons and objects. But there are dangers involved. Sometimes when you're a spotter, you may have to pass behind a vehicle. If so, stop the vehicle first. As you're passing behind it, extend your hand at arm's length and place it against the back of the vehicle. Then if the vehicle starts to move because the driver's foot slips off the brake or clutch pedal, you'll be able to feel the movement and get out of the way. When directing the driver, stand at the rear but well to the driver's side of the vehicle. This gives you an unobstructed view of the entire backing path. And the driver can see you clearly. It's important that the driver understands your signals. So, get together with the driver before any backing and explain the signals you will use. In this way, you can be reasonably sure there will be no misunderstanding. Always be sure to use the same signals for the same moves. Hand signals are much better than vocal signals. Because of noise, a shouted signal may not be heard or may be misunderstood. BE SURE YOU'RE SEEN Always be sure that you can be seen. In addition to standing well to the driver's side of the vehicle, wear a fluorescent vest. At night, don't blind the driver by shining your flashlight in the rear-view mirror. And, day or night, when you walk backwards, be careful not to trip. SPOTTERS AND DRIVERS WORK TOGETHER Togetherness was never so important as when it comes to spotters and drivers of heavy equipment. Working as a team, they not only protect property but the lives of their fellow workers as well.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

STEPLADDERS	PAGE: 1 of 1
	DEPARTMENT(s):
Stepladders are in almost every workplace and home, so most people treat them as a safe convenience rather than the hazard that they are. Every year in Canada, thousands of workers are injured in falls from stepladders that are either placed or used inappropriately. Examples of hazards • Tipping over • Falling from a ladder stepladder collapsing • Fingers caught when folding up a ladder Safety tips • Position the ladder properly. • Fully open the ladder on a level surface and lock the spreaders in place. • Never use a stepladder folded up and leaning against a surface. • Maintain 3 points of contact with the ladder (e.g. 1 hand and 2 feet). • Do not use the shelf or top 2 steps. • Stay between the rails – don't lean to one side. • Never carry heavy, bulky, or awkward objects that may make going up or down the ladder unsafe. <u>ONLY CLASS 1 OR 2 LADDERS ARE ALLOWED IN THE WORKPLACE</u>	
Managers Signature: _____	Date: _____

TOOLBOX TALK

SUBSTANCE ABUSE	PAGE: 1 of 1
	DEPARTMENT(s):
Not all job performance problems involve drug use, but recent studies show that the rising number of employees using drugs inevitably produces increased performance problems. Some of the signals that may indicate abuse affecting safety at the workplace include: • Attendance problems - including chronic absenteeism, tardiness, and excessive use of sick leave • Unsatisfactory performance or productivity shown - for example, poor quality work and increase errors and waste. • Emotional and physical symptoms - such as withdrawal, depression, confusion, loss of concentration, hand tremors, or an unsteady gait. • Evidence of illegal substance use - possession, sale, or delivery, including paraphernalia such as needles, foil wrappers, pipes, etc. • Accidents, near misses, or equipment breakdowns - that may be the result of human error or violations of established operating procedures. • Fighting - involving physical contact, assaults, and erratic or violent behavior. • Drugs and the workplace just don't mix. Any of the above can cause an employee to take a chance and we all know what can happen then. Accidents and injuries take a toll on all of us. A drug free workplace is a safer place. You have enough work-related problems and activities to worry about without adding a concern for someone who does not have it all together. • Alcohol is a drug too, and even though it is not illegal in society, it has no place on the job. Lack of coordination and poor judgment will make you accident prone. Approximately 23,000 people are killed in alcohol related highway accidents each year. Don't drink on your way to or from the job. You'll place yourself and others in harms way. We want to keep you alive and well. Each of us wants to work in a safe environment. Drug and alcohol use on the job is just not a smart thing to do. Make sure you do your part. Say no to both alcohol and drugs. Your life may depend on it!	
Managers Signature: _____	Date: _____

TOOLBOX TALK

TEAMWORK	PAGE: 1 of 1
	DEPARTMENT(s):
As a supervisor or an employee, you have a responsibility to prevent accidents. Safety is a cooperative undertaking requiring a total safety consciousness on the part of every employee. No one likes to see someone injured, but if an accident occurs, in addition to treating the victim, prompt reporting must take place and corrective action taken to prevent additional problems. Proper planning, a good safety programme, the right tools, and communication combine to prevent accidents. Good housekeeping must be always practiced in and around your work areas. Return unused material to the proper storage place. Personal Protective equipment must be worn when the task requires it. Clothing and footwear should be suitable for the job. Set the example -- do what is right and never take chances or short cuts -- they cause accidents and injuries. Alcohol and drugs have no place on a construction worksite. They will impair your motor skills and judgment. Guns and other weapons must be left at home Employees should be alerted to see that guards are kept in place and properly adjusted. Never handle electrical equipment unless you have been trained to do so. Follow lockout/tag out procedures wherever applicable for routine servicing, repair, or relocation of electrical, hydraulic or pneumatic equipment. Any good coach knows all the rules and all the players and has a plan to get the team moving forward. A well-planned job will have the same effect -- a crew that pulls together to safely accomplish whatever has to be done. Teamwork, planning and safety training go a long way in having a safe work environment. Know your limits -- ask for help -- take as much training as the company offers -- and look out for the other person. If you do all the above, you know that your job will be safer for you and your co-workers. One last thing to remember -- never ignore near-miss accidents. Find out what happened so you can make sure it doesn't happen again, to you or any other member of your team!	
Managers Signature: _____	Date: _____

TOOLBOX TALK

TRICKS OF THE TRADE	PAGE: 1 of 1
	DEPARTMENT(s):
➤ Know the purpose of each tool in your toolbox and use each for the task it was designed to do. ➤ Keep cutting edges sharp. ➤ Before you lift anything think about the weight of the load. Too heavy? Get help, not hurt! When you do lift, bend your knees, hold the load close to your body and use your legs to lift. Be alert to eye hazards at your work site. ➤ Wear appropriate eye protection. ➤ On and off the job, protect your hearing by wearing the proper protection. ➤ When working on straight ladders, use the four-to-one rule: position the ladder base one foot away from the wall for every four feet of ladder height. NEVER use the top two ladder rungs. ➤ ALWAYS observe no smoking signs -- they are there for your protection. ➤ Lockout/tagout ensures that power sources have been temporarily turned off. You and ONLY YOU are responsible for removing your tag and lock when the job or repair is completed. ALWAYS wear your seat belt, it will save your life. Good housekeeping is a must. ➤ Clean up daily at the end of your shift. Plug power tools into grounded outlets that have ground fault circuit interrupters. ➤ Be sure that all electrical tools and extension cords are inspected and colour coded quarterly. ➤ Before plugging or unplugging tools make sure the switch is in the off position. ➤ Watch out for pinch points! Do not remove guards or barriers. ➤ ALWAYS wear personal protective equipment. Damaged or worn gear should be replaced at once. ➤ No horseplay on the job -- it's one of the primary causes of accidents. ➤ ALWAYS read a Safety Data Sheet before you begin a job using a chemical. ➤ Post emergency phone numbers near each job phone. Every second counts in the event of an accident or other emergency. DON'T TAKE CHANCES! When in doubt ask your supervisor. SAFETY STARTS WITH YOU! IF YOU FOLLOW THE RULES, YOU SHOULD BE ACCIDENT FREE	
Managers Signature: _____	Date: _____

TOOLBOX TALK

Utility Knife Safety	PAGE: 1 of 2
	DEPARTMENT(s):

EVERY workplace in the country has a utility or box knife. Improper utility knife use can result in minor lacerations or severe lacerations requiring intense surgical repair. Fingers, hands, thumbs and even legs can be injured by utility knives.

Whenever a utility knife is needed, ask these two questions: Is a utility knife the right tool for this job? Is there another cutting tool that would be more appropriate and safer?

TIPS FOR SAFE BOX KNIFE USE

Cut materials appropriate for box knives:

- Thin cardboard and paper
- Shrink wrap or thin plastics

Box knives may not be an appropriate tool for cutting some materials:

- Thick cardboard
- Thick plastics, rubbers, plastic straps

Remember – as MORE FORCE is needed to cut, the greater the injury if one occurs!

- MORE FORCE can lead to a severe laceration.
- MORE FORCE user to lose control.

Forcing the knife can lead to hand and arm fatigue, a weaker grip, which can lead to an injury.

DULL BLADES INCREASE CUTTING FORCE

- Dull blades require more cutting force exerted by the hand, meaning accidents produce very traumatic injuries such as ligament and tendon damage with severe bleeding.

DULL BLADE DISPOSAL

Box knife blades get dull after only a few uses.

- DO NOT use a box knife with a dull blade.
 - Keep spare blades handy
- DON'T dispose of dull blades in trash cans.
 - Consider purchasing safety knives with protected or retractable blades.
 - Consider disposable knives that do not require blade change-out.
 - Dispose of dull blades in a leak-proof container. (Old oil can w/ lid, plastic box with lid.)

TOOLBOX TALK

Utility Knife Safety	PAGE: 2 of 2
	DEPARTMENT(S):
BOX KNIFE TIPS CONTINUED • When emptying trash cans, employees may be injured if blades are not disposed of properly. • Do not use “too much blade.” • Only use enough blade to make the cut. More blade results in increased cutting area, resulting in a more traumatic injury when an accident occurs. • Cut AWAY from the body. • Line of fire: Keep hands, fingers, arms out of the cutting path! • Close knives after use. • Do not store knives in the “open” position. PURCHASING UTILITY KNIVES • Consider other cutting tools versus utility knives. • Only purchase box knives with adjustable blades. • DON'T buy knives without adjustable blades. • Only buy knives with closing mechanisms. • Consider employee requests when purchasing safety knives. • Before purchase, consider common jobs that require utility knife use & match the safety knife to the job.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

VIOLENCE AND HARASSMENT	PAGE: 1 of 1
	DEPARTMENT(s):
Violent incidents can occur without warning. The incidents can be between a customer and a worker, between workers, or between a worker and the employer. Often the incidents take the form of verbal harassment, which may not have physical consequences, but can cause anxiety and depression for the worker. Serious violent incidents are rare, but can be severe - head injuries, gun shot or knife wounds, broken bones, or death. Examples of hazards • Angry customers - particularly regarding money transactions • Co-workers • Criminals Safety tips • Make sure you're aware of people who are likely to come to your workplace (customers, past workers) and who have threatened violence to workers in the past. • Greet customers and make eye contact with them. Remain calm and try to calm the other person. • Avoid escalating the situation. Find ways to help an irate customer save face. • Listen carefully and try to put yourself in the other person's shoes, so you can better understand how to solve the problem. • If you cannot calm the person, ask for help. • Do not resist if there is a threat of violence. • Report all acts of harassment and violence to your supervisor immediately.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

WELDING	PAGE: 1 of 5
	DEPARTMENT(s):

FIRE OR EXPLOSION CAN CAUSE DEATH, INJURY, AND PROPERTY DAMAGE!

To reduce risk of death, injury, or property damage from fire or explosion, read, understand, and follow the following safety instructions. In addition, make certain that anyone else that uses this welding equipment, or is a bystander in the welding area, understands and follows these safety instructions as well. REMEMBER! Arc welding by nature produces sparks, hot spatter, molten metal drops, hot slag, and hot metal parts that can start fires, burn skin, and damage eyes.

- Do not wear gloves or other clothing that contain oil, grease, or other flammable substances.
- Do not weld in an area until it is checked and cleared of combustible and/or flammable materials. BE AWARE that sparks and slag can fly 35 feet and can pass through small cracks and openings. If work and combustibles cannot be separated by a minimum of 35 feet, protect against ignition with suitable, snug-fitting, fire resistant, covers or shields.
- Do not weld, cut, or perform other such work on used barrels, drums, tanks, or other containers that had contained a flammable or toxic substance. The techniques for removing flammable substances and vapours, to make a used container safe for welding or cutting, are quite complex and require special education and training.
- Do not strike an arc on a compressed gas or air cylinder or other pressure vessel. Doing so will create a brittle area that can result in a violent rupture immediately or later as a result of rough handling.
- Do not weld or cut in an area where the air may contain flammable dust, gas, or liquid vapours (such as gasoline).
- Do not handle hot metal, such as the work piece or electrode stubs, with bare hands.
- Have fire extinguishing equipment handy for immediate use! A portable chemical fire extinguisher, type ABC, is recommended.
- Wear ear plugs when welding overhead to prevent spatter or slag from falling into ear.
- Make sure welding area has a good, solid, safe floor, preferably concrete or masonry, not tiled, carpeted, or made of any other flammable material.
- Protect flammable walls, ceilings, and floors with heat resistant covers or shields.
- Check welding area to make sure it is free of sparks, glowing metal or slag, and flames before leaving the welding area.

ARC RAYS CAN INJURE EYES AND BURN SKIN!

To reduce risk of injury from arc rays, read, understand, and follow the following safety instructions. In addition, make certain that anyone else that uses this welding equipment, or is a bystander in the welding area, understands and follows these safety instructions as well.

- Do not look at an electric arc without proper protection. A welding arc is extremely bright and intense and, with inadequate or no eye protection, the retina can be burned, leaving a permanent dark spot in the field of vision. A welding mask with filter lenses must be used.

Do not strike a welding arc until all bystanders and the operator have welding shields and/or welding masks in place. Do not wear a cracked or broken welding mask and replace any cracked or broken filter lenses IMMEDIATELY. Do not allow the uninsulated portion of the wire feed gun to touch the ground clamp or grounded work to prevent an arc flash from being created on contact.

Provide bystanders with UV protection.

Wear protective clothing. The intense light of the welding arc can burn the skin in much the same way as the sun, even through light-weight clothing.

WELDING	PAGE: 2 of 5
	DEPARTMENT(s):
Protect against REFLECTED ARC RAYS. Arc rays can be reflected off shiny surfaces such as a glossy painted surface, aluminum, stainless steel, and glass. It is possible for your eyes to be injured by reflected arc rays even when wearing a welding mask. If welding with a reflective surface behind you, arc rays can bounce off the surface, then off the filter lens on the inside of your welding mask, then into your eyes. If a reflective background exists in your welding area, either remove it or cover it with something non- flammable and non-reflective. Reflected arc rays can also cause skin burn in addition to eye injury. Hot metal slag and sparks may cause fire, burns and explosions, therefore: • Do not operate in explosive atmosphere such as one containing paint, solvents, degreaser or gasoline fumes. • Do not operate near combustible materials. • Have appropriate fire extinguisher available and know how to use it. • Allow workpiece to cool before handling • Welding gases and fumes can be hazardous to your health. The health risks and effects associated with welding gases and fumes are determined by: • the length of time that you are exposed to them • the type of welding you do • the work environment • the protection you use What are gases and fumes? Gases All welding processes produce hazardous gases. Gases are invisible to the eye, and may or may not have an odour. The heat in both the flame and the arc, and the ultraviolet radiation from the arc, produce gases such as carbon monoxide, carbon dioxide, oxides of nitrogen and ozone. Other gases and vapours may be produced as by-products from the breakdown of solvents or coatings on the metal. Gases used for arc shielding, or as a fuel, are also given off during welding. Fumes Welding also produces fumes. Fumes are formed when hot metal vapours cool and condense into very small particles that stay suspended in the vapour or the gas. The particles may be metal or metal compounds and are often smaller than one micrometre (one- fiftieths) the width of a human hair). Fumes may be visible or not. Welding smoke is an example of a visible fume. But even if the fume can't be seen, its particles are still present.	

TOOLBOX TALK

WELDING		PAGE: 3 of 5
		DEPARTMENT(s):
Health Effects of Fumes, Gases and Organic Vapours Produced During Welding		
	Source	Effects and Symptoms
FUMES		
Aluminum	Aluminum component of some alloys, e.g., Inconel, copper, zinc, steel, magnesium, brass and filler materials.	Respiratory irritant.
Cadmium Oxides	Stainless steel containing cadmium or plated materials, zinc alloy.	Irritation of respiratory system, sore and dry throat, chest pain and breathing difficulty. Chronic effects include kidney damage and emphysema. Suspected carcinogen.
Chromium	Most stainless-steel and high- alloy materials, welding rods. Also used as plating material.	Increased risk of lung cancer. Some individuals may develop skin irritation. Some forms are carcinogens (hexavalent chromium).
Fluorides	Common electrode coating and flux material for both low- and high-alloy steels.	Acute effect is irritation of the eyes, nose and throat. Long-term exposures may result in bone and joint problems. Chronic effects also include excess fluid in the lungs.
Iron Oxide	The major contaminant in all iron or steel welding processes.	Siderosis – a benign form of lung disease caused by particles deposited in the lungs. Acute symptoms include irritation of the nose and lungs. Tends to clear up when exposure stops.
Manganese	Most welding processes, especially high-tensile steels.	“Metal Fume Fever.” A carcinogen. Chronic effects may include central nervous system problems.
Molybdenum	Steel alloys, iron, stainless steel, nickel alloys.	Acute effects are eye, nose and throat irritation, and shortness of breath.
Nickel	Stainless steel, Inconel, Monel, Hastelloy and other high-alloy materials, welding rods and plated steel.	Acute effect is irritation of the eyes, nose and throat. Increased cancer risk has been noted in occupations other than welding. Also associated with dermatitis and lung problems.

TOOLBOX TALK

WELDING		PAGE: 4 of 5
		DEPARTMENT(s):
Vanadium	Some steel alloys, iron, stainless steel, nickel alloys.	Acute effect is irritation of the eyes, skin and respiratory tract. Chronic effects include bronchitis, retinitis, fluid in the lungs and pneumonia.
Zinc Oxides	Galvanized and painted metal.	"Metal Fume Fever." A carcinogen.
GASES		
Carbon Monoxide	Formed in the arc.	Absorbed readily into the bloodstream, causing headaches, dizziness or muscular weakness. High concentrations may result in unconsciousness and death.
Nitrogen Oxide	Formed in the arc.	Eye, nose and throat irritation in low concentrations. Abnormal fluid in the lung and other serious effects at higher concentrations. Chronic effects include lung problems such as emphysema.
Ozone	Formed in the welding arc, especially during plasma-arc, MIG and TIG processes.	Acute effects include fluid in the lungs and hemorrhaging. Very low concentrations (e.g., one part per million) cause headaches and dryness of the eyes. Chronic effects include significant changes in lung function.
ORGANIC VAPOURS		
Aldehydes (such as formaldehyde)	Metal coating with binders and pigments. Degreasing solvents.	Irritant to eyes and respiratory tract.
Di-isocyanates	Metal with polyurethane paint.	Eye, nose and throat irritation. High possibility of sensitization, producing asthmatic or other allergic symptoms, even at very low exposures.
Phosgene	Metal with residual degreasing solvents. (Phosgene is formed by reaction of the solvent and welding radiation.)	Severe irritant to eyes, nose and respiratory system. Symptoms may be delayed.

TOOLBOX TALK

WELDING	PAGE: 5 of 5
	DEPARTMENT(s):
Welding gases and fumes do not normally cause immediate health problems. However, if over the years of welding, you breathe in gases, vapours and fumes it is likely that your health will suffer. To protect yourself from fume and gas hazards while welding it is important that you wear P100 (2097) filters on the 3M ½ face Respirator that you were fitted with or 3M's 8214 which is recommended only for welding procedures and NOT to be worn at any other time.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

WHAT CAN YOU DO TO PREVENT ACCIDENTS	PAGE: 1 of 2
	DEPARTMENT(s):
Have you ever wondered what you can do to prevent accidents? Maybe, like many people, you believe accidents are bound to happen and there's not much you can do about them. Or you may think that they only happen to the other person. Well, the truth is that accidents do happen to everyone and often can be prevented. SOMETHING TO THINK ABOUT Here's something to think about. Statistics show that in many cases an accident could have been prevented by the victim and, in other cases, by a co-worker. Think of accidents that happened to people you know. Usually, it was a stupid mistake. Right? In other words, that person or someone else working on the job could have prevented it. SEVEN EXCELLENT SUGGESTIONS Here are seven ways you, personally, can do something about preventing accidents: 1. Make accident prevention a part of your daily routine: Plan safety in advance. Before beginning a job, be sure your tools are in good condition. Also, see that you have the required protective equipment. 2. Report unsafe acts or conditions to your supervisor: If you see something that's dangerous or someone working in an unsafe way, do something about it. If it's an unsafe condition, correct it if you can. Otherwise, report it to someone who has the authority or ability to do so. If you see someone committing an unsafe act, warn that person in a friendly way. 3. Avoid horseplay: Aren't you always telling your kids to knock off fooling around before someone gets hurt? Well, horse- play is dangerous for kids of any age. On a job, you can easily be injured if you're not strictly business all of the time. Often a person is killed or hurt when a "harmless" prank or a practical joke backfire.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

WHAT CAN YOU DO TO PREVENT ACCIDENTS	PAGE: 2 of 2
	DEPARTMENT(s):
4. Follow instructions: You'd follow instructions if you were dismantling a time bomb - and very carefully at that. Well, take the same attitude on the job. When we give you instructions, it's only after we've considered the safest and best way to do it. Sometimes doing something just a little different from what you were told can get you or someone else in a lot of trouble. 5. Make suggestions: If you see a quicker or a better way to do something, let us know. We'll check it out and if it's practical, we'll use it. But first we'll make sure it's safe. And if you see a safer way of doing something, bring it to our attention. 6. Practice good housekeeping: Nobody likes a slob. it's upsetting to see someone with a messy work area. And it goes even further than that. A sloppy work area is not only hard on the eyes, but a breeding ground for accidents. Trash and materials strewn around can result in trips, falls, and fires. 7. Dress for the job: In addition to wearing protective equipment, dress so that you won't get hurt. Don't wear floppy clothing (such as loose sleeves or cuffs) or jewelry that can catch on something or become entangled in machinery.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

WHY ACCIDENTS OCCUR	PAGE: 1 of 2
	DEPARTMENT(s):
Every accident is caused by a breakdown in one of four areas: 1) the worker, 2) the tools used, 3) the materials used, or 4) the methods used. Often there is a breakdown in at least two areas; one being the worker and the other coming from one of the three other areas. The accident's cause usually results from an unsafe act or an unsafe condition. Today we will review some types of unsafe acts, the results from, and unsafe conditions. <i>Types of Unsafe Acts:</i> • Operating a tool or some equipment without authority. • Working at an unsafe speed. • Using unsafe or defective equipment or using equipment in an unsafe manner. • Disconnecting safety devices. • Unsafe unloading, placing or mixing materials. • Assuming an unsafe position or posture. • Working on moving equipment. • Horseplay or distractions; taking shortcuts. • Failure to wear and use appropriate Personal Protective Equipment. <i>Unsafe Acts Result From:</i> • An improper attitude. • Lack of knowledge, training or skills. • Reduced mental or physical capacities.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

WHY ACCIDENTS OCCUR	PAGE: 2 of 2								
	DEPARTMENT(s):								
<i>Unsafe Conditions:</i> • Improper guarding. • Defective equipment or materials. Unsafe working procedures. Improper housekeeping. • Poor lighting or ventilation. • Improper personal attire (Poor dress). • No or improper evaluation of site conditions The most important reason for following the safety programme is not to protect ourselves from Administrative Penalties, but to ensure that you remain unharmed while at work. As employees, you have been trained in the proper use of PPE. We have weekly toolbox talks discussing safe work practices and procedures. But for this knowledge to keep you safe, you must first put it into practice. Our approach to safety has always been education. We believe that the better educated everyone is in regard to workplace hazards, the greater success we will have when it comes to complying with rules concerning PPE and safe work practices/procedures. However, when education of hazards fails to bring the necessary compliance, department managers are expected to enforce the Disciplinary Action Policy, which is as follows: Disciplinary Steps <table><tr><td>Step One:</td><td>verbal warning</td></tr><tr><td>Step Two:</td><td>written warning</td></tr><tr><td>Step Three:</td><td>suspension with or without pay</td></tr><tr><td>Step Four:</td><td>termination</td></tr></table> Depending on the severity of the problem or the number of occurrences, one or more steps in the progression may be bypassed.		Step One:	verbal warning	Step Two:	written warning	Step Three:	suspension with or without pay	Step Four:	termination
Step One:	verbal warning								
Step Two:	written warning								
Step Three:	suspension with or without pay								
Step Four:	termination								
Managers Signature: _____	Date: _____								

TOOLBOX TALK

WORKER RIGHTS AND RESPONSIBILITIES	PAGE: 1 of 1
	DEPARTMENT(s):

As a worker in Nova Scotia, you have the legal right to:

- Training in safe work procedures and how to recognize on-the-job hazards, before you start a new job or do a task for the first time, and additional training if you need or request it.
- Supervision to make sure you work without unnecessary risk.
- Employer-provided safety equipment required for your job (although you are responsible for safety footwear and headgear).
- Refuse work you think is unsafe - without being fired or disciplined for refusing.

If you don't feel safe:

- Explain to your immediate supervisor why you're not comfortable.
- If your immediate supervisor is unavailable or doesn't give you a good answer, go to his or her supervisor.
- If you're still not satisfied, talk to a member of the safety committee.
- If none of these steps work, you can phone the Department of Labour at 1-800-9-LABOUR.

As a worker, your responsibilities are to:

- Know and follow health and safety requirements affecting your job.
- If you don't know how to do something safely, ask for training before you begin work.
- Work safely and encourage your co-workers to do the same.
- Immediately report unsafe working conditions to your supervisor.
- Immediately report any injury to your supervisor.
- Take the initiative. Make suggestions to improve health and safety.

Managers Signature: _____	Date: _____

TOOLBOX TALK

WHMIS	PAGE: 1 of 2
	DEPARTMENT(s):
Many chemicals used by auto mechanics are hazardous and may cause conditions ranging from minor skin irritation to serious injury and disease. Some can be flammable or explosive. Others may be toxic, and may enter the body through the skin, the lungs, or the mucous membranes (eyes, nose, or mouth). Still others can burn the skin. If workers are expected to work with hazardous materials, their employer is required to inform them that the materials are hazardous and train the workers in their safe use. All workplaces that use materials identified as hazardous (controlled products) by the Workplace Hazardous Materials Information System (WHMIS) are required to follow the WHMIS system. The system uses consistent labeling to help workers recognize hazardous materials. The system and labels provide specific information on handling, storing and disposing of such materials. Examples of hazards • Solvents for cleaning engine parts acids for metal preparation • Body fill products that use cream hardeners • Paint mixing, including solvents, isocyanates, lead and chromate • Petroleum products If you have been successfully trained in how to handle hazardous materials, you should be able to answer these 4 questions: 1. What are the hazards of the product you are using? 2. How do you protect yourself? 3. What should you do in case of an emergency or spill? 4. Where can you get more information on the product? Safety tips Read the labels and Material Safety Data Sheets (MSDSs) that accompany chemicals. When using hazardous materials: • Use only as directed and follow safe work procedures. • Use the appropriate personal protective equipment. • Do not do 'hot work' (such as cutting or welding) where flammable chemicals are in use or stored. • Store hazardous material in a properly ventilated, locked area.	
Managers Signature: _____	Date: _____

TOOLBOX TALK

WHMIS	PAGE: 2 of 2 DEPARTMENT(s):																								
Learn about and pay attention to WHMIS symbols:																									
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* The GHS system also defines an Environmental hazards group. This group (and its classes) was not adopted in WHMIS 2015. However, you may see the environmental classes listed on labels and Safety Data Sheets (SDSs). Including information about environmental hazards is allowed by WHMIS 2015.																									
Managers Signature: _____	Date: _____																								

TOOLBOX TALK

WRENCHES	PAGE: 1 of 2
	DEPARTMENT(s):
A WRENCH DOESN'T LOOK LIKE A TROUBLEMAKER	
Wrenches seem simple and safe. Yet why do they cause so many accidents?	
WHY WRENCHES CAUSE ACCIDENTS	
The answer is that either the correct type of wrench isn't used, or improper use of the wrench causes it to slip. The result can range from mashed knuckles to a serious fall. Slipping is caused mostly by using a wrench that is slightly oversized for the nut. If the wrench is properly sized, it applies equal pressure to the faces of the nut. But if the wrench is just a bit oversized, the pressure is applied to the corners of the nut where the jaws touch. And the wrench slips. Eventually the jaws of an improperly used wrench can become weakened or sprung. Then the wrench won't even fit the right size head. Some persons try to use shims to compensate for the wrong size wrench, but this isn't satisfactory either. Another reason why your wrench slips are that it isn't fully seated on the nut or bolt. This usually happens when the nut tightens is hard to reach. This situation calls for an offset or socket wrench. It may seem like a lot of trouble to get one, but it's worth it. Always pull on a wrench and adjust your stance to prevent a fall if something should suddenly slip.	
FIXED JAW WRENCHES ARE PREFERABLE TO ADJUSTABLE WRENCHES	
You should use a fixed jaw wrench that fits rather than an adjustable wrench. Box or socket wrenches are even less likely to slip. Pliers are no substitute for a wrench. Don't misunderstand, however. An adjustable wrench is a good tool when properly used. Always place this wrench so that the pull on the nut comes from the solid jaw and the push from the adjustable jaw.	
CHEATERS	
A common mistake is using a piece of pipe or "cheater" on the handle of a small wrench to increase the leverage. This can place more stress on the wrench than it is designed to take, causing it to break or the pipe itself to slip off. In either case, the person using it can have an accident. Imagine what would happen to you if you were standing on a ladder when the pipe gave way. Don't use a wrench as a hammer or a pry bar. It won't do you or the wrench any good.	
TAKING PROPER CARE OF YOUR WRENCHES WILL HELP MAKE YOUR WORK EASIER	
No, a wrench doesn't look like a troublemaker, and it doesn't have to be one, if you use it right. Keep it clean and in good repair and bear in mind the tips we have just pointed out.	
Managers Signature: _____	Date: _____

IMPAIRMENT POLICY

Purpose

NSADSA members are committed to providing a safe, healthy, and productive work environment. This policy aims to manage and reduce risks associated with impairment, ensuring the safety of employees, clients, and the general public. Impairment can stem from various sources, including but not limited to alcohol, recreational and medical cannabis, prescription medications, and other substances that may affect an individual's ability to perform their duties safely and effectively.

Scope

This policy applies to all employees, contractors, and any other individuals performing duties on behalf of our dealership, whether on company premises, in company vehicles, or while conducting company business off-site.

Definitions

Impairment: Any reduction in an individual's ability to perform work safely and effectively due to the influence of alcohol, cannabis, prescription drugs, fatigue, or other factors.

Fit for Duty: Being in a physical, mental, and emotional state that enables an individual to perform assigned tasks competently and safely.

Policy Statement

All individuals covered under this policy are expected to report to work fit for duty and remain unimpaired during work hours. Impairment from any source is prohibited while conducting business on behalf of our dealership.

Employee Responsibilities

Employees are responsible for:

- Reporting to work fit for duty and unimpaired.
- Informing their manager or supervisor if they are taking medication or undergoing treatment that may impact their ability to perform work safely.
- Reporting any concerns about impaired behavior in the workplace to their supervisor or manager.

Manager/Supervisor Responsibilities

- Managers and supervisors are responsible for:
- Observing employees for signs of impairment.
- Addressing situations where they have reasonable grounds to believe an employee is impaired.
- Ensuring that employees are aware of this policy and its implications.
- Respecting the confidentiality of all information related to impairment concerns, subject to legal obligations.

Impairment Protocols

If an employee appears impaired or if there are reasonable grounds to believe they are not fit for duty, the following steps will be taken:

- **Observation:** The manager or supervisor will discreetly assess the situation and document any observable signs of impairment.
- **Discussion:** The manager or supervisor will meet with the employee to discuss concerns and determine the reason for the impairment.
- **Assessment and Action:** If necessary, the employee may be sent home with safe transportation arrangements.
- **Follow-Up:** The manager or supervisor will follow up with the employee to discuss their fitness for duty and potential accommodations if required.

Accommodation for Medical Impairment

All NSADSA members recognize its duty to accommodate employees who may require medication or treatment that causes impairment. Employees are encouraged to communicate any requirements for accommodation to their supervisor or the HR department. All accommodation requests will be managed in compliance with applicable privacy and human rights laws.

Disciplinary Action

Failure to comply with this policy may result in disciplinary action, up to and including termination, depending on the severity and frequency of the violation. Each case will be reviewed individually, considering all relevant factors.

Reporting Suspected Impairment - (Page 1 of 2)

Reporting Employee			
Date Incident or Concern:			
Description of incident concern and those involved:			
BEHAVIOUR	Nervous? ☐	Insulting? ☐	Sleepy? ☐
	Exaggerated politeness? ☐	Confused? ☐	Combative? ☐
	Excited? ☐	Quarrelsome? ☐	Fatigued? ☐
	Uncooperative? ☐	Poor memory? ☐	Overly talkative? ☐
UNUSUAL ACTIONS	Sweating? ☐	Slow reaction? ☐	Crying? ☐
	Quick moving? ☐	Tremors? ☐	Fighting? ☐
	Other [please describe]? 		
SPEECH	Slurred? ☐	Slow? ☐	Confused? ☐
	Thick? ☐	Rambling? ☐	Pressure? ☐
BALANCE	Falling? ☐	Staggering or unsteady gait? ☐	Unsure? ☐
	Needs support? ☐	Stumbling? ☐	Normal? ☐
	Other [please describe]? 		
Witness/other employees involved:			
Supervisor actions			
Signature:			
Date:			

Responding to Suspected Impairment Form - (Page 2 of 2)

Employee Name: _____ Date _____

Supervisor's Name: _____ Date _____

Observers Name: _____ Date _____

INCIDENT OR CONCERN DETAILS

ACTION NOTE:

Is there is a concern that an employee may be or may become violent or threatening, or maybe in need of medical assistance, call Security, Police or 911

Observations:

Concerns regarding safety, health, or other work-related issues:

Details for discussion with Employee:

Safe arrangements [driven by taxi or other work assigned, etc.]

Next Steps/Return to Work Process

Notifications made to:

SIGNATURES:

Employee: _____ Date _____

Supervisor: _____ Date _____

Observer: _____ Date _____

DISCIPLINARY ACTION POLICY

Purpose

This policy aims to ensure a safe and healthy work environment by addressing violations of workplace safety rules and standards. It establishes clear procedures for corrective action in cases of non-compliance, in accordance with the provincial Occupational Health and Safety Act.

Scope

This policy applies to all employees, and contractors at all NSADSA member dealerships.

Guiding Principles

1. **Safety First:** Maintaining a safe workplace is a shared responsibility.
2. **Fairness:** Disciplinary actions will be based on evidence and applied consistently.
3. **Compliance:** The policy aligns with applicable workplace safety regulations and laws.

Examples of Safety Violations

The following behaviours or actions are examples of safety violations that may result in disciplinary action:

- Failure to follow established safety procedures or protocols.
- Removing or tampering with safety equipment or signage.
- Not wearing required personal protective equipment (PPE).
- Engaging in unsafe practices that endanger oneself or others.
- Willful damage to safety equipment or infrastructure.
- Failing to report workplace hazards, injuries, or unsafe conditions.
- Using alcohol or drugs during work hours or on company premises.

Disciplinary Action Steps

Depending on the severity of the violation and whether it is a repeated offense, the following steps may be taken:

1. Verbal Warning:

- ⇒ For minor, first-time violations.
- ⇒ The supervisor will explain the violation, discuss the correct procedures, and outline potential consequences for further infractions.
- ⇒ Documented in the employee's file.

2. Written Warning:

- ⇒ Issued if a verbal warning fails to correct the behavior or if the violation is more serious.
- ⇒ The warning will detail the violation, previous warnings (if any), corrective actions required, and consequences for non-compliance.

3. Suspension (Optional):

- ⇒ For repeated violations or severe unsafe actions that could endanger others.
- ⇒ Suspension may be with or without pay, depending on the circumstances, and will be documented.

4. Termination of Employment:

- ⇒ For serious safety breaches (e.g., willful disregard for safety procedures leading to significant risk or harm) or if prior corrective actions fail to resolve the issue.

Immediate Action for Serious Violations

Severe safety violations, such as intentionally endangering lives, tampering with safety systems, or acts of violence, may result in immediate suspension or dismissal without prior warnings, subject to a full investigation.

Confidentiality

All disciplinary matters and investigations will be handled confidentially, with information shared only on a need-to-know basis.

PROGRESSIVE DISCIPLINARY ACTION FORM

Employee Name	
Position	
Reporting to	
Date	

Incident information

Date		Time		Location	

Incident type

Job Performance		Professionalism		Insubordination	
Safety Violation		Attendance/Reliability		Other	

Incident details (has the employee been counselled before on this or a similar occurrence?):

Corrective action taken

x	Action taken	Comments
	Verbal warning (documented)	
	Written warning (documented)	
	Suspension	
	Termination	
	Other (include documentation)	

Manager's Signature: _____ Date: _____

Notice to employee: You have been given this notice to impress upon you the seriousness of the incident noted above. We are confident that you will correct this situation. However, if this type of incident re-occurs, you will be subject to further disciplinary action, up to and including termination of employment.

Employee comments

By signing below, I acknowledge that I have received a copy of the above notice of discipline and that the job performance requirements have been explained to me.

Employee's Signature: _____ Date: _____

EARLY & SAFE RETURN TO WORK PROGRAMME (ESRTW)

Purpose

All NSADSA members are committed to supporting the health and well-being of its employees and recognizes the importance of facilitating their stay-at-work or return-to-work after an injury or illness. This policy outlines our commitment to providing appropriate accommodations, support, and resources to help employees remain productive and engaged in the workplace

Objective

The primary objective of the Early & Safe Return to Work Programme (ESRTW) is to promote early intervention, effective communication, and collaboration among employees, supervisors, healthcare providers, and relevant stakeholders. This programme aims to facilitate the timely and safe return of employees to work while ensuring their health and safety.

Roles & Responsibilities

Employees: Employees are responsible for promptly reporting any injuries or illnesses to their supervisor or management, cooperating with medical evaluations, participating in the development of an early & safe return to work plan, and adhering to any prescribed accommodations or restrictions.

Supervisors/Managers: Supervisors and managers are responsible for supporting employees throughout the stay-at-work or return-to-work process, facilitating accommodations, providing necessary resources, maintaining open communication, and ensuring compliance with this policy.

Health & Safety: The Health & Safety personnel are responsible to coordinate early & safe return to work plans in collaboration with employees, supervisors, and healthcare providers, to provide resources and support to ensure successful accommodations and review and update this policy as needed to align with regulatory changes.

Communication

Open and transparent communication between employees, supervisors, and healthcare providers is essential throughout the early & safe return to work process. Regular updates, meetings, and discussions will be encouraged to facilitate effective communication and address any concerns promptly.

Reporting and Notification:

Employees must report any work-related injuries or illnesses to their supervisor or management immediately. Supervisors are responsible for notifying management and initiating the early & safe return to work process promptly upon receiving a report.

Accommodations and Modified Duties:

Reasonable accommodations to facilitate the early & safe return to work of employees, including modified duties, flexible schedules, ergonomic adjustments, or other accommodations will be made as deemed necessary and appropriate.

Medical Documentation:

Employees may be required to provide medical documentation from a healthcare provider outlining any work restrictions, accommodations, or recommendations for the early & safe return to work process. All medical information will be treated confidentially and maintained in accordance with privacy laws.

Interactive Process:

An interactive process will be initiated involving the employee, supervisor, management, and healthcare providers to identify suitable accommodations, develop a early & safe return to work plan, and monitor progress. This process will involve ongoing communication, collaboration, and adjustments as needed.

Training:

NSADSA members will provide training to applicable supervisors, managers, and employees on the Early & Safe Return to Work policy and procedures to ensure understanding of roles, responsibilities, and compliance requirements.

Evaluation and Continuous Improvement:

The effectiveness of the Early & Safe Return to Work Programme will be periodically evaluated, and feedback from employees, supervisors, and stakeholders will be solicited to identify areas for improvement. Necessary adjustments will be made to enhance the program's effectiveness and compliance with regulations.

Review and Revision:

This policy and programme will be reviewed periodically to ensure alignment with legal requirements and best practices. Any revisions or updates will be communicated to employees and stakeholders accordingly.

Conclusion:

We are committed to fostering a safe, healthy, and inclusive work environment where employees feel supported in their early & safe return to work journey. This policy and programme reflect our dedication to promoting employee well-being and productivity while complying with provincial regulations.

Worker Discomfort Survey

Completed By:		Date:	
Job Name:		Shift:	
Department:		Time on Job:	

Please list other jobs you have done in the last year (for more than two weeks).

Note: If more than two jobs, only include those you worked on the most

Plant	Job Name	Department	Time on Job

1. Have you had pain or discomfort during the last year that you feel is job-related?
☐ Yes ☐ No (if 'No', stop here)
2. If 'Yes', please rate the level of discomfort over the last month by checking off the appropriate box using the scale of 0 to 10, with 0 being no discomfort and 10 being the worst discomfort ever.

No Discomfort
↓
0 1 2 3 4 5 6 7 8 9 10
Worst Discomfort Ever

Neck

Upper Back

Left Shoulder

Right Shoulder

Left Elbow/Forearm

Right Elbow/Forearm

Left Wrist/Hand

Right Hand/Wrist

Left Hip/Thigh/Buttock

Right Hip/Thigh/Buttock

Left Knee

Right Knee

Left Ankle/Foot

Right Ankle/Foot

Completed By:

Date:

3. When did you first notice your discomfort?

(month)

(year)

4. What do you think caused the discomfort?

5. Please comment on what you think would help to reduce your level of discomfort.

6. Do you consider your discomfort to be a problem?

☐ Yes

☐ No

7. Have you received medical treatment (from a doctor, chiropractor, physiotherapist, massage therapist or other health care practitioner) for your discomfort?

☐ Yes

☐ No

8. Have you taken time off work because of your discomfort (vacation, sick days, lost time claim, medical aid)?

☐ Yes

☐ No

RETURN-TO-WORK PLAN

Organization:															
Worker's name:															
Worker's regular supervisor:															
Worker's regular job title:															
Worker's regular hours:															
Modified work supervisor (if different):															
Description of illness/injury and current safe functional abilities: 															
Worker's pre-injury/illness work: Can the worker still perform these duties after the injury/illness, either without changes, or with some adjustments?															
	<table style="border: none;"> <thead> <tr> <th style="text-align: left; padding-right: 10px;">YES</th> <th style="text-align: left;">NO</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </tbody> </table>	YES	NO	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
YES	NO														
☐	☐														
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☐	☐														
Job position: ☐ Pre-injury job with modified work/hours ☐ Alternate job, with or without modifications ☐ Re-bundled tasks ☐ Home position															
What activities can the worker do safely as they recover? (Based on the functional abilities assessment provided by the health care provider). 															

TRANSITIONAL WORK:

Type of plan:

☐

modified

☐

alternate

☐

other (describe)

Transitional job title, if applicable:

Transitional job supervisor:

Transitional work (list all), if applicable:

Tools, supports, equipment, training, and accommodations required for this work (list all):

Days and Hours Scheduled Each Week							
Work Week (Date)	Mon	Tues	Wed	Thur	Fri	Sat	Sun

Comments:

STAY CONNECTED

Make sure to talk to your employee often to see how they're doing and to make sure the transitional work continues to be safe based on their recovery.

Agree on when you will meet and check in with each other:
Frequency:
Outline how you'll stay connected:

IDENTIFYING WORKER CAPABILITIES



Walking — How far can they walk?

Tolerance: Getting the mail, taking the dog out, walk in the park
Responses: Short distance, 15 minutes only, 30 minutes as tolerated, not on uneven ground, etc.



Driving — Are they driving? For how long?

Tolerance: Grocery shopping, going to a doctor appointment, travel to another city
Responses: Less than 30 minutes, less than 60 minutes, more than 60 minutes, driving restricted due to medications



Hand use — Do they have any limitations in their ability to use their hands?

Tolerance: Holding objects, gripping objects, typing, writing
Responses: Type for less than 30 minutes



Reaching — What are their above-shoulder abilities?

Tolerance: Putting dishes away, self-care activities such as washing and drying their hair, etc.
Responses: Reach above shoulders



Standing — How long can they stand?

Tolerance: Washing dishes, food preparation, showering
Responses: Less than 15 minutes, less than 30 minutes, as tolerated



Sitting — How long can they sit?

Tolerance: Driving, watching television, reading the newspaper
Responses: Less than 30 minutes, less than 1 hour, etc. before requiring a change in position



Climbing — Can they climb stairs?

Tolerance: Climbing stairs to enter their home or get to their bedroom (ask how many stairs they can climb)
Responses: Short distance, one story, multiple stories



Lifting — How much can they lift? Floor to waist?

Tolerance: Lifting grocery bags, taking milk out of the fridge, lifting an infant or a child
Responses: Less than 5 lb, less than 10 lb, greater than 10 lb, etc.

WORKPLACE HARASSMENT & DISCRIMINATION PREVENTION POLICY

Purpose

The purpose of this policy is to create a work environment that is free from harassment and discrimination, ensuring that all employees, contractors, interns, volunteers, and visitors are treated with dignity and respect.

Scope

This policy applies to all employees, contractors, and visitors at all NSADSA member dealerships and workplaces.

Policy Statement

All NSADSA members are committed to providing a workplace that is free from harassment and discrimination. We do not tolerate any form of harassment or discrimination based on race, colour, religion, sex, national origin, age, disability, sexual orientation, or any other protected characteristic.

Definitions

Harassment: Harassment includes any unwelcome conduct based on a protected characteristic that creates an intimidating, hostile, or offensive work environment. This can include, but is not limited to:

- Verbal conduct such as derogatory comments, slurs, or jokes.
- Visual conduct such as inappropriate gestures, pictures, or emails.
- Physical conduct such as unwanted touching or blocking someone's movement.

Discrimination: Discrimination involves treating someone unfavorably because of a protected characteristic. This can include decisions related to hiring, firing, promotions, pay, job assignments, training, and other terms of employment.

Responsibilities

Employees

- Treat all colleagues, clients, and stakeholders with respect and courtesy.
- Report any incidents of harassment or discrimination to their supervisor, or upper management immediately.
- Participate in training sessions and understand the procedures for preventing and responding to harassment and discrimination.
- Cooperate with investigations and follow the protocols established by the organization.

Managers and Supervisors

- Develop and implement training programs related to harassment and discrimination prevention.
- Investigate all reports of harassment and discrimination in a timely, fair, and confidential manner.
- Provide resources and support to employees affected by harassment or discrimination.
- Maintain records of incidents and follow up on the implementation of corrective actions.
- Promote a respectful and inclusive work environment and lead by example.
- Ensure employees understand this policy and the procedures for reporting and responding to harassment and discrimination.
- Respond promptly and appropriately to all reports of harassment and discrimination.
- Provide support to employees involved in or affected by harassment or discrimination.

Preventive Measures

- Educate employees about harassment and discrimination prevention, recognition, and response.
- Promote awareness through posters, emails, and other communication channels.
- Encourage open communication and a supportive work environment where employees feel comfortable reporting concerns.
- Implement policies and procedures that promote diversity, equity, and inclusion.

Reporting Procedures

- **Immediate Action:** If an employee experiences or witnesses harassment or discrimination, they should report the incident to their immediate supervisor, or upper management as soon as possible.
- **Confidentiality:** All reports will be handled confidentially to the extent possible, and information will be shared only with those who need to know to investigate and resolve the issue.
- **No Retaliation:** Retaliation against any employee who reports harassment or discrimination or participates in an investigation is strictly prohibited. Any form of retaliation will result in disciplinary action.

Investigation

- Management will conduct a thorough investigation of all reports of harassment and discrimination.
- The investigation will include interviews with involved parties and witnesses, as well as a review of any relevant documents or evidence.
- Based on the findings, appropriate actions will be taken to address and resolve the issue.

Response and Resolution

- Appropriate disciplinary actions will be taken against individuals found to have engaged in harassment or discrimination. This may include warnings, suspension, termination, and, if necessary, legal action.
- Support services such as counseling and employee assistance programs will be provided to victims and affected employees.
- Follow-up will be conducted to ensure the effectiveness of the response and to prevent future incidents.

Non-Retaliation

Retaliation against any employee who reports harassment or discrimination or participates in an investigation is strictly prohibited. Retaliation will result in disciplinary action, up to and including termination.

Review and Training

- This policy will be reviewed regularly to ensure it remains effective and up to date with current laws and best practices.
- Regular training sessions will be conducted to educate employees about harassment and discrimination prevention, recognition, and response.

Conclusion

NSADSA members are committed to fostering a work environment that is respectful, inclusive, and free from harassment and discrimination. By adhering to this policy, we can work together to ensure a safe and productive workplace for all.

PSYCHOLOGICAL HEALTH AND SAFETY IN THE WORKPLACE POLICY

Purpose:

This psychological health and safety policy has been developed to ensure that all employees are protected from psychological harm and to promote psychological health in the workplace. Psychological Health and Safety is a shared responsibility. Employees, physicians, clients, volunteers and contractors are responsible for working in a manner which will not put themselves or their co-workers at risk of psychological harm.

Policy Statement:

All NSADSA members are committed to the promotion of psychological well-being and the prevention of psychological harm including in negligent, reckless, or intentional ways. We believe that creating and sustaining a psychologically healthy and safe workplace is essential to the success and sustainability of our organization and consistent with our values, priorities and objectives. We are committed to supporting a mentally healthy workplace through appropriate policies, programs and services. Policies that have an impact on the psychological health of workers will be reviewed regularly. These policies will result in an action plan, including the identification of training needs that will be reviewed by the appropriate stakeholders including the Joint Occupational Health and Safety Committee (JOHSC) and approved by management.

Responsibilities:

Employer:

- Develop the necessary procedures and guidelines to effectively implement this policy to ensure all reasonably practicable measures are taken to eliminate psychological injuries.
- Ensure adequate resources and supports are available to implement the appropriate policies, procedures and guidelines.
- Ensure an effective quality assurance process is in place to monitor its on-going effectiveness.

Senior Management:

Leaders have a duty to develop and maintain a psychologically healthy and safe workplace that promotes psychological well-being and allows no harm to employee mental health in negligent, reckless or intentional ways by:

- Leading in a positive way;
- Making psychological health and safety part of decision making; and
- Engaging workers.
- Leaders will incorporate psychological health and safety into the way work is carried out and the context in which work occurs.

Managers/Supervisors:

Managers/Supervisors are responsible for ensuring the psychological health and safety of their workers.

- Where a manager/supervisor believes an employee is struggling with a mental health problem or illness, the manager/supervisor is expected to engage the employee in a dialogue and, if a mental health problem or illness is identified through that dialogue, help the employee seek appropriate treatment.
- Where a mental illness or injury is identified and confirmed by a qualified practitioner, managers/supervisors and employees are to ensure accommodation options are fully explored.
- Where a critical incident occurs, the manager/supervisor will direct employees to the Employee Assistance Programme.

Workers:

All workers are accountable for protecting the psychological health and safety of themselves and their co-workers through adherence to the company's policies and procedures including:

- Workplace Violence Prevention Policy;
- Harassment and Discrimination Prevention Policy.

Human Resources:

- Take a leadership role to assist the Executive Team, Directors, Managers and Staff in implementing and maintaining an effective psychological health and safety management system.
- Ensure regular monitoring, inspections and audits are performed and assist departments as required to eliminate or control psychological hazards.
- Ensure training is developed and provided to workers.

Definitions:

Psychological Health: A state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.

Psychologically Safe Workplace: A workplace that does not permit harm to employee mental health including in careless, negligent, reckless or intentional ways.

WORKPLACE VIOLENCE PREVENTION POLICY

Purpose

The purpose of this policy is to establish a framework for preventing and addressing workplace violence, ensuring the safety and well-being of all employees, contractors, and visitors.

Scope

This policy applies to all employees, contractors, interns, volunteers, and visitors at all organizational facilities and work sites.

Policy Statement

NSADSA members are committed to maintaining a work environment that is free from violence, threats, and intimidation. We will not tolerate workplace violence and will take all necessary measures to prevent and address any violent incidents.

Definition of Workplace Violence

Workplace violence includes any act or threat of physical violence, harassment, intimidation, or other threatening disruptive behavior that occurs at the work. It ranges from threats and verbal abuse to physical assaults and even homicide.

Responsibilities:

Employees:

- Report any incidents of workplace violence, threats, or suspicious behaviour to their supervisor, or manager immediately.
- Participate in training sessions and understand the procedures for preventing and responding to workplace violence.
- Cooperate with investigations and follow the safety protocols established by the company.

Managers and Supervisors:

- Promote a safe work environment and lead by example.
- Ensure employees understand this policy and the procedures for reporting and responding to workplace violence.
- Respond promptly and appropriately to all reports of workplace violence.
- Provide support to employees involved in or affected by workplace violence.

Human Resources:

- Develop and implement training programs related to workplace violence prevention.
- Investigate all reports of workplace violence in a timely, fair, and confidential manner.
- Provide resources and support to employees affected by workplace violence.
- Maintain records of incidents and follow up on the implementation of corrective actions.
- Provide support to employees involved in or affected by harassment or discrimination.

Preventive Measures

- Conduct regular risk assessments to identify potential hazards related to workplace violence.
- Implement security measures such as controlled access to facilities, surveillance systems, and emergency response procedures.
- Promote awareness by discussing warning signs of potential violence, de-escalation techniques, and emergency response protocols.
- Encourage open communication and a supportive work environment where employees feel comfortable reporting concerns.

Reporting Procedures

- **Immediate Danger:** If there is an immediate threat of violence or if a violent act is occurring, employees should call 911 and notify security if available.
- **Non-Immediate Threat:** For non-immediate threats or concerns, employees should report the incident to their supervisor or manager as soon as possible.
- **Confidentiality:** All reports will be handled confidentially to the extent possible, and information will be shared only with those who need to know to investigate and resolve the issue.

Investigation

- Management will conduct a thorough investigation of all reports of workplace violence.
- The investigation will include interviews with involved parties and witnesses, as well as a review of any relevant documents or evidence.
- Based on the findings, appropriate actions will be taken to address and resolve the issue.

Response and Resolution

- Appropriate disciplinary actions will be taken against individuals found to have engaged in workplace violence. This may include warnings, suspension, termination, and, if necessary, legal action.
- Support services such as counseling and employee assistance programs will be provided to victims and affected employees.
- Follow-up will be conducted to ensure the effectiveness of the response and to prevent future incidents.

Non-Retaliation

Retaliation against any employee who reports workplace violence or participates in an investigation is strictly prohibited. Retaliation will result in disciplinary action, up to and including termination.

Conclusion

Maintaining a safe and secure workplace is a priority for our company. By adhering to this policy, we can work together to prevent workplace violence and ensure a safe, respectful, and productive work environment for all.



STATEMENT ON WORKPLACE VIOLENCE

The management of NSADSA member dealerships recognize the potential for violence in the workplace. Violence is an occupational health and safety hazard in the workplace which can result in emotional and physical harm.

NSADSA members also recognizes that any form of violence in the workplace is unacceptable and is committed to minimizing and, to every extent possible, eliminating these risks.

NSADSA MEMBERS will not tolerate any form of workplace violence.

Any violation will result in disciplinary action, up to and including termination.

Violence Risk Assessment

Name of Workplace: _____ Assessment Date: _____

Assessors: _____

Workplace or Tasks covered by this Assessment:

Questions

When you are open to the public, are there times when only one employee is present?

☐ Yes ☐ No

Do your employees handle cash or other valuables?

☐ Yes ☐ No

Do your employees provide a service where they may feel threatened by another person?

☐ Yes ☐ No

Do your employees offer care services for others (i.e. health care or community workers)?

☐ Yes ☐ No

Are your employees involved in enforcing discipline to others (i.e. teachers)?

☐ Yes ☐ No

Do your employees deliver or collect items of value?

☐ Yes ☐ No

Do your employees exercise authority over others (i.e. enforcement officers)?

☐ Yes ☐ No

Do your employees inspect other people's private property (i.e. planning inspectors, assessment officers)?

☐ Yes ☐ No

Do your employees provide security services (i.e. security guards, sheriffs)?

☐ Yes ☐ No

Do your employees sell or dispense cannabis, medications or alcohol?

☐ Yes ☐ No

Do your employees work in community-based settings (i.e. nurses, social workers and other home care staff)?

☐ Yes ☐ No

Do your employees walk to their vehicle or building during times when there is limited light (i.e., late Fall or early Winter)?

☐ Yes ☐ No

Do your employees work during periods of intense organizational change (i.e. mediator during strikes or lockouts)?

☐ Yes ☐ No

Do your employees deal with or handle firearms or other weapons?

☐ Yes ☐ No

Have employees in the workplace experienced violence in the past?

☐ Yes ☐ No

Violence Risk Assessment

Does a risk of violence exist in the industry sector?

☐ Yes ☐ No

Do incidents of violence occur in other workplaces in the same industry?

☐ Yes ☐ No

Violence Risk Assessment

Beyond the organizational factors listed on page 1, the employer should consider the following situations or events which may increase the potential for violence:

- late hours of the night or early hours of the morning
- tax return season
- overdue utility bill cut-off dates
- during the holiday season
- pay days
- performance appraisals
- located near to buildings or businesses that are at risk of violence (i.e. bars and banks)
- work with customers valuables
- located in areas isolated from other buildings or structures.

If there is the potential for violence at this workplace or while doing a task, describe the violence.

What activity or function of the workplace or task may trigger violence?

Violence Risk Assessment

Describe the predicted type of violence (i.e. assault, robbery, threats, etc.).

Describe the frequency with which the predictors of violence occur (i.e. if the predictor of violence was “Deposit money to the bank”, the frequency may be “Every Monday”; if the predictor of violence was “Doing inspections”, the frequency may be “Number of inspections done per year”).

Make a list of who is at risk from this violence, preferably using job titles as opposed to personal names.

WORKPLACE VIOLENCE PREVENTION PLAN

Date : _____

Identified Significant Risk of Violence:

Prevention Strategies:

- _____
- _____
- _____
- _____
- _____
- _____

Employees Affected:

If someone starts to threaten or become violent

- Play it safe. Don't be a hero.
- Even if you cannot see a weapon, assume that there is one.
- Stay calm and cautiously observe as much as possible about the person. Don't stare as this may aggravate them.
- Don't lock the door to keep the person from leaving. A person who feels trapped is more likely to panic and become violent.
- If you do not understand what the person is telling you to do, ask for clarification.
- Avoid surprises. Keep your hands in sight and don't make any sudden moves.
- Inform them if you have to reach for something, if there is another employee in the dealership (for example, in the back room), or if something will make an unexpected noise.
- Keep it smooth. Try to deescalate situation.
- Stay at least an arm's length away from them
- If you feel frightened or uneasy, don't continue to confront them. Go to the SAFE ZONE and call for help when it's safe to do so. Alert your manager/supervisor or any other employees who can help you.
- Call the police if you sense a threat of immediate violence

Defusing a potentially violence situation

Ask questions to help you understand what the customer's concerns are.

- If you are an employee and you are unable to address the customer's complaint, encourage the customer to speak with your manager or someone else who has authority to make decisions or changes
- Focus on being respectful and courteous.
- Try to remain calm, and try to calm the customer
- Avoid focusing on who is right or wrong.
- Focus instead on what will satisfy the customer and on finding ways to help the customer save face
- Stick to facts, not opinions or judgments. Ignore insults.
- Keep bringing the discussion back to the real issue listen carefully, and try to put yourself in the customer's shoes
- If the customer is disruptive and noisy, and if it is safe to do so, move to a quieter location, possibly with the help of a co-worker
- If you cannot calm the customer, ask for help

Employees/technicians face many difficult situations, especially if the Dealership is open for longer hours/weekends.

The Dealership shall plan for and train their employees on how to handle situations such as:

- People loitering outside the dealership or gathering inside the store
- Non clients using the dealership area or washrooms
- Test driving a vehicle
- Service and repair shop

Management does want to make it clear to employees that they must not attempt to deal with these situations alone. Instead, employees should report their concerns to a supervisor or ask the police to come to the store.

Dealing with Trespassers

Employers and managers must take the following steps to prevent these situations:

- Security cameras and alarms systems must be operational and set to schedule.
- Signs prohibiting loitering must be posted
- Lighting provided in and around the dealership
- Hire security companies to patrol the perimeter of the dealership, body shops, new and used car parking lots

Trust your Instincts

Sometimes when somebody is in the dealership, it just doesn't feel right. You may notice something odd about a person's appearance, body language, behaviour, or mannerisms, almost subconsciously, which may make you feel concerned.

This person could be in the store to shoplift, rob the store, or worse.

When a suspicious person is in the store, assess the situation carefully. Follow these guidelines:

- Listen to your instincts. Remember that your safety is more important than the goods in the dealership
- Notify your manager/supervisor
- Consider contacting the police or your security service. Describe the situation, the suspicious person, and how long they have been in the dealership
- If someone has been in the dealership for a long time and they seem to be looking for something, ask loudly whether they need help.
- Keep your distance - stay at least an arm's length away
- Consider whether you need to move to the dealership secure area, where you can safely monitor the store (for example, to a lockable office with a fish-eye lens installed in the door and a phone)
- When the suspicious person has left, write a description so that other employees can watch out for this person.
- This will also help you recognize the person if he or she returns

We will work towards making our dealerships less of a target by following these guidelines: Ensure that the dealership has good lighting and good visibility.

- Keep valuable goods behind the counter or in locked displays
- Post signs indicating that there is little or no cash in the dealership
- Install clearly visible cameras
- Make eye contact with and greet everyone who enters the dealership

Dealership shall take steps to prevent robbery in our business, robbery incidents may still occur. If this happens, it's important to act quickly to minimize the effects on our staff and customers.

Dealership shall provide support to victims, report and investigate the incident, and revise the Robbery/ Violence Prevention Plan to prevent a similar incident in the future.

- Provide first aid and other medical attention if necessary
- Never dismiss or downplay complaints or reports of violence.
- Employees should never be told or feel that they have to deal with the problem by themselves.
- Employees should never be told or feel that they have to deal with the problem by themselves.

Sales Test Drive Procedures

Although unusual, there is a potential of violence while alone with customers on test drives.

Some minimum guidelines to help control test drives are:

- Salespeople must have a cell phone with them while on test drives and know the phone number to the sales desk and manager on duty.
- Obtain and keep a copy of the driver's license of all prospective customers on file.
 - A customer may be less likely to become violent when they know they can be easily identified later by authorities.
- Salespersons must let the sales desk know when a vehicle is out on a test drive.
 - The sales desk must have a log to record:
 - Vehicle Stock number
 - Time of day
 - Dealer Plate number
- As often as possible, test drives should be on the designated route determined by management.
 - When this is not possible, the sales desk must be informed where and why the test drive will take place.
 - The sales desk should write down the address or alternate location
- Salespersons should always drive the demo vehicle off the lot and drive to the predetermined transfer place to allow the prospective customer to drive.
 - Test drive transfer places should be well-lit and in areas where there is moderate traffic of people. (malls, movie and restaurant parking lots, etc.).
- Never let a prospective customer who is suspected of being under the influence of alcohol or drugs drive a vehicle.
- Salespeople who observe prospective buyers operating the demonstrator vehicle in a reckless or unsafe manner should stop vehicle and remove driver as soon as possible.
 - If the customer refuses to stop and hand over control, the salesperson must call the sales desk or 911 in the case of immediate danger.

Salespeople must notify sales desk immediately of any dangerous, violent or potentially violent situations.

Fixed Operations Test Drive Procedures

Although unusual, there is a potential of violence while alone with customers on test drives.

Some minimum guidelines to help control test drives are:

- Employees must have a cell phone with them while on test drives and know the phone number to the dealership and manager.
- Employees must let the manager know when a vehicle is out on a test drive.
- As often as possible, test drives should be on the designated route determined by management.
 - When this is not possible, the manager must be informed where and why the test drive will take place.

Employees must notify management immediately of any dangerous, violent or potentially violent situations.

WORKPLACE VIOLENCE REPORTING FORM

To be completed in ALL cases of violence or threats of violence

SECTION ONE: WORKER INFORMATION

Name: <i>(Printed)</i>	Department
Supervisor's Name: <i>(Printed)</i>	

SECTION TWO: DETAILS OF INCIDENT

Date Reported to Supervisor:	Category of Violence <i>(check any that apply)</i> ☐ a. Exercise of physical force that causes or could cause physical injury to worker. ☐ b. Attempt to exercise physical force that could cause physical injury to the worker. ☐ c. Statement or behaviour that is reasonable for the worker to interpret as a threat to use physical force that could cause physical injury to the worker.
Date and Time of Incident: ☐ AM ☐ PM	
Location of Incident (e.g.: office, field, etc):	
Alleged Aggressor <i>(check any that apply)</i> ☐ Employee _____ Department _____ ☐ Customer (name if known) _____ ☐ Supervisor _____ ☐ Visitor/Public (name if known) _____ ☐ Other: _____	Nature of Incident <i>(check any that apply)</i> ☐ Intimidation ☐ Threat ☐ Punch ☐ Push/Pull ☐ Kick ☐ Scratch ☐ Hair pull ☐ Slap/Hit ☐ Grab ☐ Bite ☐ Pinch ☐ Spit Other (please specify): _____ Weapons: ☐ No ☐ Yes Type: _____
Repeat Incident: ☐ Yes ☐ No	
Injuries Sustained:	Medical attention or lost time from work due to the incident? ☐ yes ☐ no
Has a Workers Accident/Incident/Occupational Illness Report Form been completed? ☐ Yes ☐ No	
Brief Description of Incident (optional): _____ _____	

SECTION THREE: STEPS TAKEN TO PREVENT A RECURRENCE (SUPERVISOR) Check all that apply

☐ Safety plan developed / reviewed/revised/shared	☐ Training arranged for worker	☐ Means to Summon Immediate Assistance in Place (e.g. walkie talkie)	☐ Other _____
☐ Incident debriefed with affected worker(s)	☐ Information provided to other workers at risk	☐ Worker relocated (in consultation with Human Resources)	☐ Other _____
☐ Support/advice sought from HR	☐ Support for worker (e.g. referral to EAP for permanent workers; personal physician)	☐ Personal Protective Equipment Considered or in place	☐ Other _____
☐ Police involved	☐ Aggressor Removed (temporarily or permanent) (information shared as reqd)	☐ Trespass notice issued.	☐ Other _____

Additional Notes:

Signature of Supervisor:

Date:

SECTION FOUR: WORKER RESPONSE

Signature of Worker:

Is a Safety Plan in place? ☐ Yes ☐ No ☐ Don't Know If not, do you feel one is required? ☐ Yes ☐ No ☐ N/A If there is a Safety Plan in place, do you feel a review is necessary? ☐ Yes ☐ No ☐ N/A	Do you have a means to summon immediate assistance (e.g. walkie talkie, Sonim, classroom phone)? ☐ Yes ☐ No	Other
Bring to the attention of the Joint Health and Safety Committee for review? * ☐ Yes ☐ No (*all reasonable steps have not been taken)		
Date:		

CONTRACTOR SAFETY POLICY

Introduction

NSADSA members shall ensure that contracted services meet requirements contained within the Occupational Health and Safety Act and Regulations (applicable province), Building Code, the Fire Code and any other relevant health or safety legislation, including our company policy and procedures.

Contractor Compliance and Orientation

- For the purpose of this document the term Contractor will include Contractors/Constructors, Subcontractor, Service Providers and Vendors.
- If the contractor does not sign the declaration, they will not be permitted to begin work until such time as the declaration has been signed and all criteria have been met.
- If contractor's do not comply with the agreements set out in the contractor's declaration
- they will be subject to written disciplinary action, and it would be the subcontractors responsibility that they fulfill this agreement.
- Contractors/Constructors, Service Providers and Vendors are required to adhere to all Provincial, Municipal and applicable Federal laws and regulations. They are to also follow our company rules, guidelines, methods, practices, and procedures while conducting business on behalf our company or while on company property.
- Contractor, subcontractor or vendor workers are not permitted to use any NSADSA member facilities, tools or equipment unless permission is granted by our company Supervisory Representative.
- Contractor employees are not permitted to use any lunchroom, locker room or sanitary facilities provided by NSADSA members for its employees unless required by contract or with permission granted, by our company Supervisory Representative.
- All contractors shall ensure that workers are at least 16 years of age.
- Contractors are responsible for training of their personnel. Training may be through various health and safety delivery organizations as long as they meet provincial requirements.
- Proof of training is required whenever a task is required to be performed which necessitates a competent person and/or competent worker as prescribed by the Occupational Health & Safety Act and any regulations enacted thereunder.
- The company retains the right to assess the validity and accuracy of training provided by contractors.
- The contractor, subcontractor or vendor shall immediately furnish to the site superintendent any information related to claimed training, including but not limited to:
 - ⇒ Method of training
 - ⇒ Course curriculum
 - ⇒ Representative training materials
 - ⇒ Name and details of the instructors
 - ⇒ Documents confirming worker attendance and evaluation

- Contractors shall develop, implement and maintain at the site a written WHMIS programme for the nature of the work to be performed. Subcontractors must inform their employees of the availability of the programme, including the required lists [s] of hazardous chemicals, and material safety data sheets/safety data sheets.
- Contractors shall ensure that all controlled products have current SDS and labelling. Also ensure everyone is aware of the locations off SDS.

Classifications

- ⇒ A contractor is a person, company, consultant, or organization that undertakes a contract to provide material or labour to perform a service or do a job, either on behalf of or for the NSADSA member.
- ⇒ NSADSA members welcome contractors to a positive working relationship. This objective will be introduced to our expectations with respect to health and safety in regard to any contractor that has an agreement to perform certain contract work within company facilities or on behalf of the NSADSA member in any capacity.
- ⇒ In all cases and at all times, the contractor will follow the appropriate Provincial Act and requirements legislated in the Regulations of the Provinces where we operate. Under these requirements, the duties and responsibilities of the contractor, employees, supervisors, workers, owners, and suppliers are well defined. Contractors will be expected to know, understand, and carry out these responsibilities while performing work for NSADSA members. Contractors will be rated for level of risks associated with the work performed.

Subcontractor's Declaration

I, _____, principal of and on behalf of _____ (Subcontractor) shall comply with your Health and Safety Programme and company rules as explained to me and shall ensure my employees and my subcontractors also comply with said Health and Safety Programme while on any job site or in any shop or premises, etc. that is controlled by you.

My employees and subcontractors have received all required training for their duties, and I will provide proof if requested. We will use all necessary personal protective equipment to ensure the safety of ourselves and others at the workplace. Our employees and subcontractors will comply with all applicable OHS legislation while working on your site. If we hire additional subcontractors, we will notify your company's management and ensure they comply with this declaration.

Also, make the following declarations: (Send copies of the following)

- ⇒ I maintain active public liability and property damage insurance for my duties under this declaration.
- ⇒ I am in good standing with the Worker's Compensation Board of Nova Scotia.
- ⇒ Subcontractors shall be Safety Certified or have a Certificate of Recognition or be in receipt of a Letter of Good Standing from a recognized NS WCB audit provider.
- ⇒ Provide a digital copy Health & Safety Manual for review prior to the acceptance of the contract.

All subcontractors working for COMPANY NAME shall, prior to starting work, complete the following;

- Pre-Job Hazard Assessment/Site Specific Plans, which identifies all hazards and potential hazards and action taken to control them.
- Maintain a Health and Safety Programme as required by the Occupational Health & Safety Act for employers with 20+ employees. Companies with fewer than 20 employees and without Safety Certification/COR from an approved NS WCB provider must participate in the NSADSA Health & Safety Programme.
- Report accidents, incidents, lost time injuries and any hazards immediately to management.
- While working on NSADSA member's projects, the Subcontractor shall participate in all Work Site Safety Programs and play an active role as a member of the Safety Committee.
- Subcontractors will conduct Worksite Fall Protection Plan < > 25ft where their work requires it.
- Monitor site conditions and ensure formal Worksite Safety Inspections, Safety Meetings and Toolbox Talks are conducted per NSADSA Safety Policies.
- MEWP Equipment Inspections shall be performed when required.
- Lockout/Tagout & Hot Work /Permits shall be used when required.
- Subcontractors shall provide documentation to the NSADSA member weekly to verify compliance with this policy, or upon request

All information provided by/to NSADSA members shall be kept CONFIDENTIAL and not used any other purpose.

Subcontractor Signature : _____ Date: _____

A new declaration will be issued annually to inform subcontractors of any changes to the company's Health & Safety Programme.

Contractor Safety Checklist

Project : _____

Contractor Name: _____ Checklist Completion Date: _____

Contractor Representative: _____ Contractor Project _____

Supervisor: _____

	Topic	Contractor Requirements
☐ Yes ☐ No	Site Management	Contractor's site Supervisor(s) identified and contact information provided. A Site Supervisor to be on site at all times while work is being performed to ensure compliance with OHS requirements and coordinate sub-trades.
☐ Yes ☐ No	Communications with Project Manager	All communication between company, consultants and contractors must be made through the Project Manager unless other specific arrangements are made. Instructions to and communications from sub-trades must be made only through the contractor.
☐ Yes ☐ No	Safety Legislation and Policies	- Comply with all applicable federal, provincial or municipal safety related legislation and applicable policies and procedures.
☐ Yes ☐ No	Posted Information	The contractor's company name, site supervisor's name and contact.
☐ Yes ☐ No	Housekeeping	Maintain acceptable housekeeping and material organization around the site.
☐ Yes ☐ No	Worker Competence and Supervision	Ensure project workers are adequately trained in safe work procedures prior to commencing work and are sufficiently and competently supervised. Proof of documentation to be provided upon request.
☐ Yes ☐ No	Personal Protective Equipment	Appropriate personal protective equipment must be used when any person is on a construction site. At all times all persons must wear protective headwear, footwear and eye protection, and such other personal protective equipment as circumstances require (e.g., noise, respiratory protection).
☐ Yes ☐ No	Contractor Equipment	All equipment on site must be maintained in a safe operating condition. Our company reserves the right to require the removal from the work site of any faulty, unsafe or substandard equipment. - Only competent, and where required by law, certified workers may operate tools and equipment.
☐ Yes ☐ No ☐ N/A	Barricades/Hoarding	Adequate barricades and hoarding must be provided around all excavations and other construction activities.
☐ Yes ☐ No	Smoking	Smoking is not permitted except in designated areas.

Permits (where applicable, company policies to be provided to Contractor)

☐ Yes ☐ No ☐ N/A	Hot Work	Comply with company Hot Work Permit Policy
☐ Yes ☐ No	Lock Out	Comply with company Lock Out Policy

Safe Work Procedures

☐ Yes ☐ No ☐ N/A	Asbestos/	Asbestos, etc. within work area to be identified. Comply with company Policy
☐ Yes ☐ No	Chemicals	Comply with TDG/ WHMIS requirements. Chemicals-Copies of SDS must be available on site.

Hazards (Note: Mark yes if hazard is present)

☐ Yes ☐ No	Ladders	May only be used for ascent or descent, or light work where the worker can maintain a three point stance.
☐ Yes ☐ No ☐ N/A	Scaffolds	Erected in accordance with legislated requirements.
☐ Yes ☐ No	Fall Protection	Required when a worker may fall more than 3 metres or when over an unsafe surface

Emergency Procedures (in all cases)

☐ Yes ☐ No	Emergency Procedures	Emergency procedures are in place and sufficient

ENVIRONMENTAL POLICY

Policy Statement

NSADSA members are committed to protecting the environment by implementing sustainable practices in all aspects of our operations. We prioritize compliance with federal, provincial & municipal environmental legislation and strive to reduce our environmental impact through pollution prevention, resource efficiency, and waste reduction.

Scope

This policy applies to all employees, contractors, subcontractors, and suppliers engaged in our automotive operations, including shops, and sales or administrative offices.

Objectives

- Continually make improvements to our systems where and when ever possible.
- To comply with all relevant legislation and regulations and strive to exceed whenever possible.
- To develop employee knowledge and understanding of environmental issues related to job functions.
- To maintain an operation that promotes proper uses of resources and reduction of waste from existing and future operations.
- To keep employees, and subcontractors informed of our Environmental Policy and amendments.
- To use protective measure to control accidental spills
- To report any spills to Management that has an impact on the environment.

Responsibilities

Management:

- Develop and maintain the Environmental Policy.
- Provide resources and training to ensure compliance and implementation.
- Monitor and evaluate environmental performance.

Employees:

- Follow all environmental procedures and report any environmental concerns or incidents.
- Participate in training programs and contribute to sustainable initiatives.

Contractors and Suppliers:

- Align with our environmental standards during service delivery or material supply.

POLLUTION PREVENTION PROGRAMME

NSADSA members and their employees will work to prevent contributing to pollution in the following ways:

- Having an established system for keeping the entire facility clean and orderly.
- Using environmentally friendly products when practicable for the task.
- Routinely inspect and address all potential sources of leaks, spills, and emissions.
- Having no open floor drains in the shop floor.
- Regularly inspect and clean out separators (at least every six months).
- Cleaning larger oil spills with a hydrophobic mop, absorbent pads or squeegee/dustpan for spills containing oil, solvents and or other hazardous material.
- Regular cleaning of floor drains.
- Maintain limited amount of hazardous material.
- Using methods of storage that are capable of spill prevention and/or containment.

Employees will ensure that activities will be conducted in such ways as to prevent or reduce pollution in the work place:

1. Changing Automotive Fluids

- Designate an area away from storm or sanitary drains to change automotive fluids.
- Collect, separate, and recycle motor oil, antifreeze, transmission fluid, and gear oil.
- Drain brake fluid and other non-recyclables into a proper container and handle as a hazardous waste.
- Use a radiator flushing fluid that can be recycled and add it to the waste antifreeze.

2. Working on Transmissions, Engines, and Miscellaneous Repairs

- Keep a drip pan or a wide low-rimmed container under vehicles to catch fluids whenever you unclip hoses, unscrew filters, or change parts, to contain unexpected leaks.

3. Preventing Leaks and Spills

- Avoid spills by emptying and wiping drip pans when you move them to another vehicle or when they are half-full.
- Routinely check equipment to wipe up spills and repair leaks.
- Place large pans or an inflatable portable berm under wrecked cars.

4. Cleaning up Spills

- Clean up small spills immediately using shop rags.
- Keep dry absorbent materials and/or a wet/dry vacuum cleaner on hand for mid-sized spills.
- Contain large spills immediately; block or shut off floor and parking lot drains and notify the authorities.
- Train employees to be familiar with hazardous spill response plans and emergency procedures.

5. Identify and Control Wastewater Discharges

- Ensure that shop sinks and floor drains are connected to the sanitary sewer.
- Post signs to prevent disposal of liquid wastes into sanitary drains.

6. Fueling Vehicles

- Clean-up minor spills, with absorbent pads, rather than allowing them to evaporate. Dispose of the absorbent pads as a dry hazardous waste.
- Use a damp cloth and a damp mop to keep the area clean rather than a hose or a wet mop.

7. Removing and Storing Batteries

- Store batteries indoors, on an open rack.
- Return used batteries to a battery vendor.
- Contain cracked batteries to prevent hazardous spills.

8. Cleaning Parts

- Clean parts in a self-contained unit, solvent sink, or parts washer to prevent solvents and grease from entering a sewer or storm drain connection.

9. Metal Grinding and Finishing (i.e., Brake Lathe)

- Catch metal filings in an enclosed unit.
- Sweep filing area to prevent washing metals into floor drains.

10. Storing and Disposing of Waste

- Store recyclable and non-recyclable waste separately.
- Place liquid waste (hazardous or otherwise) within a containment area.
- Collect used parts for delivery to a scrap metal dealer.

11. Selecting and Controlling Inventory

- Purchase recyclable or non-toxic materials when possible.
- Select "closed-loop" suppliers and/or purchase supplies in bulk when possible.

12. Washing Vehicles, Cleaning Engines, and Other Steam Cleaning

- For occasional car exterior cleaning, minimize the water used and divert runoff to landscaped areas, keeping it out of the storm drain.
- Wash vehicles with biodegradable, phosphate-free detergent.
- Make sure no wastewater from engine or parts cleaning or steam cleaning is discharged where it may flow to a street, gutter, or storm drain.

13. Cleaning Work Areas

- Sweep or vacuum the shop floor frequently.
- Damp mop work areas - do not hose down work areas into the street or gutter.
- Do not pour mop water into the parking lot, street, gutter or storm drain.
- Use non-toxic cleaning products whenever possible.

PERSONAL PROTECTIVE EQUIPMENT (PPE) POLICY

Purpose

The purpose of this Personal Protective Equipment (PPE) policy is to ensure the safety and health of all employees by identifying workplace hazards and providing appropriate PPE to mitigate risks, in compliance with Provincial safety regulations. All PPE requirements are task specific. Refer to SWPP's for details/

Scope

This policy applies to all employees, contractors, and visitors who enter or work in areas where PPE is required.

Policy Statement

It is the responsibility of all NSADSA members to provide a safe working environment. PPE will be supplied, maintained, and enforced for use as a control measure where hazards cannot be eliminated or mitigated through other means. PPE requirements are task specific and employees are required to wear PPE as directed in accordance with this policy and safe work practices and procedures.

Responsibilities

1. Management:

- Conduct hazard assessments to identify areas requiring PPE.
- Provide suitable PPE at to employees.
- Train employees on the proper use, care, and limitations of PPE.
- Ensure PPE is maintained and replaced when necessary.
- Regularly review and update the PPE programme to align with regulatory changes or workplace needs.

2. Employees:

- Properly wear and maintain PPE as instructed.
- Attend all PPE training sessions provided.
- Immediately report any PPE defects, damages, or malfunctions to supervisors.
- Use PPE only for its intended purpose.

3. Supervisors:

- Enforce PPE use within their teams.
- Ensure employees understand the risks associated with non-compliance.
- Support employees in accessing replacement PPE when needed.

4. Visitors and Contractors:

- Abide by this policy when entering areas requiring PPE.

PPE Selection and Use

Hazard Assessment:

- A formal hazard assessment will be conducted for each work area to determine required PPE.

PPE Types Provided:

- **Head Protection:** Hard hats for construction sites or areas with falling object risks.
- **Eye and Face Protection:** Safety glasses, goggles, or face shields in areas with flying debris, splashes, or chemical exposure.
- **Hearing Protection:** Earplugs or earmuffs in high-decibel environments (e.g., >85 dBA).
- **Hand Protection:** Gloves appropriate for chemical, thermal, or mechanical risks.
- **Foot Protection:** CSA-certified safety boots when exposed to puncture, crush, or slip hazards.
- **Respiratory Protection:** Masks or respirators in areas with airborne contaminants.
- **Body Protection:** Protective clothing (e.g., aprons, coveralls) for specific chemical/biological exposures or for visibility (High-Visibility Safety Apparel (HVSA)).

PPE Maintenance:

- PPE must be inspected before each use. Damaged or defective PPE must not be used and should be replaced immediately.

Training

All employees required to use PPE will receive training that covers:

- The specific PPE required for their tasks.
- How to properly don, doff, adjust, and wear PPE.
- The limitations of the PPE.
- Procedures for maintenance, storage, and disposal of PPE.

Non-Compliance

- Failure to wear or use PPE when required will result in disciplinary actions up to and including termination of employment, in accordance with company disciplinary policy.

“Info Sheet” for Limb and Body Protection

General Information

Due to the nature of the construction workplace and the number of different hazards, it is not possible to cover specialized limb and body protection in detail. These types of hazards are known as “job exposures” (exposure to fire, temperature extremes, body impacts, corrosives, molten metals, cuts from sharp or abrasive materials). PPE in this category would be items such as:

- ⇒ leg, arm, chin and belly guards,
- ⇒ specialty hand pads and grips,
- ⇒ leather aprons and leggings,
- ⇒ full body suits,
- ⇒ flame and chemical resistant clothing, and
- ⇒ various types of plastic boot covers, and overshoes.

With all PPE, following the manufacturer’s instructions on its use, care and cleaning is critical and will help you get the full service life from your specialty PPE.

Hand PPE (Gloves and Mitts)

PPE for the hands include: finger guards, thimbles and cots, handpads, mitts, gloves, and barrier creams. Choose hand PPE that will protect against chemicals, scrape, abrasions, heat and cold, punctures and electrical shocks.

Types

PPE for the hands come in many forms, each designed to protect against certain hazards. Gloves most commonly used in the construction industry are made from leather, cotton, rubber, synthetic rubbers and other man-made materials, or combinations of materials.

Vinyl coated or leather gloves are good for providing protection while handling wood or metal objects. When you select hand PPE, keep the following in mind: look for anything at the job-site that may be a hazard to the hands. If gloves are to be used, select the proper type for the job to be done. Inspect and maintain hand PPE regularly. If in doubt about the selection or need for glove or hand PPE, consult your safety supplier or Material Safety Data Sheet (SDS).

Do's:

- ⇒ inspect hand PPE for defects before use
- ⇒ wash all chemicals and fluids off gloves before removing them
- ⇒ ensure that gloves fit properly
- ⇒ use the proper hand PPE for the job
- ⇒ follow manufacturer’s instructions on the care and use of the hand PPE you are using
- ⇒ ensure exposed skin is covered (no gap between the sleeve and the hand PPE).

Do not's:

- * wear gloves when working with moving machinery (gloves can get tangled or caught) wear hand PPE with metal parts near electrical equipment
- * use gloves or hand protection that is worn out or defective

"Info Sheet" for Foot Protection

If you are at risk of foot injury at your workplace, you should wear the appropriate protective footwear.

- ⇒ If foot protection is required, set up a complete foot safety protection programme including selection, fit testing, training, maintenance and inspection.
- ⇒ Safety footwear is designed to protect feet against a wide variety of injuries. Impact, compression, and puncture are the most common types of foot injury.
- ⇒ Choose footwear according to the hazard. Refer to CSA Standard Z195 "Protective Footwear".
- ⇒ Select CSA-certified footwear. Ensure that it has the proper rating for the hazard and the proper sole for the working conditions.
- ⇒ Use metatarsal protection (top of the foot between the toes and ankle) where there is a potential for injury.

Footwear must be chosen based on the hazards that are present. Assess the workplace and work activities for:

- ⇒ Materials handled or used by the worker.
- ⇒ Risk of objects falling onto or striking the feet.
- ⇒ Any material or equipment that might roll over the feet.
- ⇒ Any sharp or pointed objects that might cut the top of the feet.
- ⇒ Objects that may penetrate the bottom or side of the foot.
- ⇒ Possible exposure to corrosive or irritating substances.
- ⇒ Possible explosive atmospheres including the risk of static electrical discharges.
- ⇒ Risk of damage to sensitive electronic components or equipment due to the discharge of static electricity.
- ⇒ Risk of coming into contact with energized conductors of low to moderate voltage (e.g., 220 volts or less).

Also, evaluate the risk:

- ⇒ To ankles from uneven walking surfaces or rough terrain; of foot injury due to exposure to extreme hot or cold; of slips and falls on slippery walking surfaces or of exposure to water or other liquids that may penetrate the footwear causing damage to the foot and the footwear and of exposure to rotating or abrasive machinery (e.g., chainsaws or grinders)

What to look for in fit...

- ⇒ Walk in new footwear to ensure it is comfortable.
- ⇒ Boots should have ample toe room (toes should be about 12.5 mm from the front)
- ⇒ Make allowances for extra socks or special arch supports when buying boots.
- ⇒ Boots should fit snugly around the heel and ankle when laced.
- ⇒ Lace up boots fully. High-cut boots provide support against ankle injury.

What symbols will be on the footwear?

The following symbols, or markings, will help you determine which footwear is appropriate for the job.

Selection of Safety Footwear



Green triangle footwear has sole puncture protection with a Grade 1 protective toe (withstand impact up to 125 joules). Any industrial or heavy work environment, including construction, where sharp objects are present (such as nails).



Yellow triangle footwear has sole puncture protection and Grade 2 protective toe (withstand impact up to 90 joules) Light industrial work environments that need both puncture and toe protection.



White rectangle with orange Greek letter "omega" footwear has soles that provide electric shock resistance. Any industrial environment where accidental contact with live electrical conductors can occur.

REMEMBER: Electric shock resistance is greatly reduced by wet conditions and with wear. Also know that conductive footwear as listed in CSA Z195-09 relates to an electrical discharge that might ignite volatile, flammable materials that are close to the wearer. Live electrical work should follow recommendations for an electrically conductive clothing ensemble (as specified under CAN/ULC-60895).



Yellow Rectangle with green letters "SD" and grounding symbol footwear has soles that are static dissipative. Any industrial environment where a static discharge can be a hazard for workers or equipment.



Red rectangle with black letter "C" and grounding symbol footwear has soles that are electrically conductive. For any industrial environment where low-power electrical charges can be a hazard for workers or equipment.



White label with green fir tree symbol footwear provides protection when using chainsaws. For forestry workers and others who work with or around hand-held chainsaws and other cutting tools.



Blue rectangle footwear provides Grade 1 protective toe with no protective sole For industrial work that does not require puncture protection.



Grey rectangle footwear provides Grade 2 protective toe with no protective sole For institutional and non-industrial work that does not require puncture protection.

"Info Sheet" for Eye and Face Protection

Lenses: The Canadian Standards Association (CSA)-certified safety glasses have plastic polycarbonate lenses. They are stronger than regular lenses, are impact-resistant, and come in prescription and non-prescription (plano or zero-power lens) forms.

Markings on safety glasses: The manufacturer or supplier logo is marked (or etched) on all approved safety lenses, frames (front and temple), removable side shields, and other parts of the glasses, goggles, or helmets.

Frames: Safety frames are stronger than street-wear frames and are often heat resistant. They are also designed to prevent lenses from being pushed into the eyes.

What are the pros and cons of the different lenses?

Comparison of Lens Materials	
Material	Characteristics
Polycarbonate	Strongest material for impact resistance Lightweight Can be coated for scratch resistance Most have built-in UV radiation protection
Plastic (CR39)	About one-half the weight of glass Resistant to solvents and pitting More choices for coatings and tinting
Trivex	More impact resistant than CR39 Plastic Less impact resistant than polycarbonate UV radiation absorption properties
Glass	High-density material (heavy lenses) Loses impact resistance if scratched Does not meet impact criteria as set by CSA

If eye protection is required, establish a complete eye safety protection programme including selection, fit testing, training, maintenance and inspection.

Fit

- ⇒ Ensure your safety glasses fit properly. Eye size, bridge size and temple length all vary. Safety glasses should be individually assigned and fitted.
- ⇒ Wear safety glasses so that the temples fit comfortably over the ears. The frame should be as close to the face as possible and adequately supported by the bridge of the nose.

Care

- ⇒ Safety glasses need maintenance.
- ⇒ Clean your safety glasses daily. Follow the manufacturer's instructions. Avoid rough handling that can scratch lenses.
- ⇒ Scratches impair vision and can weaken lenses.
- ⇒ Store your safety glasses in a clean, dry place where they cannot fall or be stepped on. Keep them in a case when they are not being worn.
- ⇒ Replace scratched, pitted, broken, bent or ill-fitting glasses. Damaged glasses interfere with vision and do not provide protection.
- ⇒ Replace damaged parts only with identical parts from the original manufacturer to ensure the same safety rating.

Selecting the proper safety glasses and face protection.

If you are at risk for eye or face injury at work, you should wear appropriate protection.

Selection of Eye and Face Protection														
Note: This table cannot cover all possible hazards and combinations that may occur. Examine each situation carefully and select the appropriate protector or combination of protectors. *Indicates recommended protection	Spectacles (Class 1)		Goggles (Class 2)			Welding Helmet (Class 3)	Welding Hand Shield (Class 4)	Non-Rigid Hoods (Class 5)				Face Shields (Class 6)		
	A	B	A	B	C			A	B	C	D	A	B	C
Flying Objects														
Chipping, drilling, scaling, grinding, polishing, buffing, riveting, punching, shearing, hammer mills, crushing, heavy sawing, planing, wire and strip handling, hammering, unpacking, nailing, punch press, lathework, etc.	*		*	*				*	*			*		

Flying particles, dust, wind, etc.												
Woodworking, sanding, light metal working and machining, exposure to dust and wind, resistance welding (no radiation exposure), sand, cement, aggregate handling, painting, concrete work, plastering, material batching and mixing	*		*	*				*	*		*	
Heat, sparks and splash from molten materials												
Babbling, casting, pouring molten metal, brazing, soldering, spot welding, stud welding, hot dipping operations		*			*				*	*		*
Acid splash, chemical burns												
Acid and alkali handling, degreasing, pickling and plating operations, glass breakage, chemical spray, liquid bitumen handling				*				*			*	
Abrasive blasting materials												
Sand blasting, shot blasting, shotcreting				*				*			*	
Glare, stray light (for reduction of visible radiation)												
Reflecting, bright sun and lights, reflected welding flash, photographic copying	*		*	*				*	*		*	
Injurious optical radiation (moderate reduction of optical radiation)												
Torch cutting, welding, brazing, furnace work, metal pouring, spot welding, photographic copying		*			*				*			*

Examples

Class 1



Class 2



Class 3



Injurious optical radiation (large reduction of optical radiation)												
Electric arc welding, heavy gas cutting, plasma spraying and cutting, inert gas shielded arc welding, atomic hydrogen welding					*	*						



Class 4




Class 5



Class 6



“Info Sheet” for Hearing Protection

People should wear a hearing protector if the noise or sound level at the workplace exceeds 85 decibels (dB). Hearing protectors reduce the noise exposure level and the risk of hearing loss.

If hearing protection is required, then a complete hearing conservation programme should be instituted. A hearing conservation programme includes noise assessment, hearing protector selection, employee training and education, audiometric testing, maintenance, inspection, record keeping, and programme evaluation.

The effectiveness of hearing protection is reduced greatly if the hearing protectors do not fit properly or if they are worn only part time during periods of noise exposure. To maintain their effectiveness, they should not be modified. Remember, radio headsets are not substitutes for hearing protectors and should not be worn where hearing protectors are required to protect against exposure to noise.

Select hearing protection that is:

- ⇒ Correct for the job.
- ⇒ Provides adequate protection. Check the manufacturer's literature.
- ⇒ Comfortable enough to be accepted and worn.

What types of hearing protectors are available?

- ⇒ **Ear plugs** are inserted to block the ear canal. They may be pre-molded (preformed) or moldable (foam ear plugs). Ear plugs are sold as disposable products or reusable plugs. Custom molded ear plugs are also available.
- ⇒ **Semi-insert ear plugs** which consist of two ear plugs held over the ends of the ear canal by a rigid headband.
- ⇒ **Ear muffs** consist of sound-attenuating material and soft ear cushions that fit around the ear and hard outer cups. They are held together by a head band.

How do I pick my hearing protectors?

The choice of hearing protectors is a very personal one and depends on a number of factors including level of noise, comfort, and the suitability of the hearing protector for both the worker and his environment. Most importantly, the hearing protector should provide the desired noise reduction. It is best, where protectors must be used, to provide a choice of a number of different types to choose from.

If the noise exposure is intermittent, ear muffs are more desirable, since it may be inconvenient to remove and reinsert earplugs.

What are the advantages and limitations of ear plugs and earmuffs?

There are advantages and disadvantages associated with the use of either earmuffs or ear plugs.

Ear plugs can be mass-produced or individually molded to fit the ear, and they can be reusable or disposable. On the positive side, they are simple to use, less expensive than muffs, and more comfortable in hot or damp work areas. On the negative side, they provide less protection than some muffs and should not be used in areas having noise levels over 105 dB(A) (A-weighted decibels). They are not as visible as muffs and a supervisor cannot readily check to see if workers are wearing them. They must be properly inserted to provide adequate protection.

Earmuffs can vary with respect to the material and depth of the dome, and the force of the headband. The deeper and heavier the dome, the greater the low-frequency attenuation provided by the protector. The headband must fit tightly enough to maintain a proper seal, yet not be too tight for comfort. On the positive side, Earmuffs can usually provide greater protection than plugs, although this is not always true. They are easier to fit, generally more durable than plugs, and they have replaceable parts. On the negative side, they are more expensive, and often less comfortable than plugs, especially in hot work areas. In areas where noise levels are very high, muffs and plugs can be worn together to give better protection.

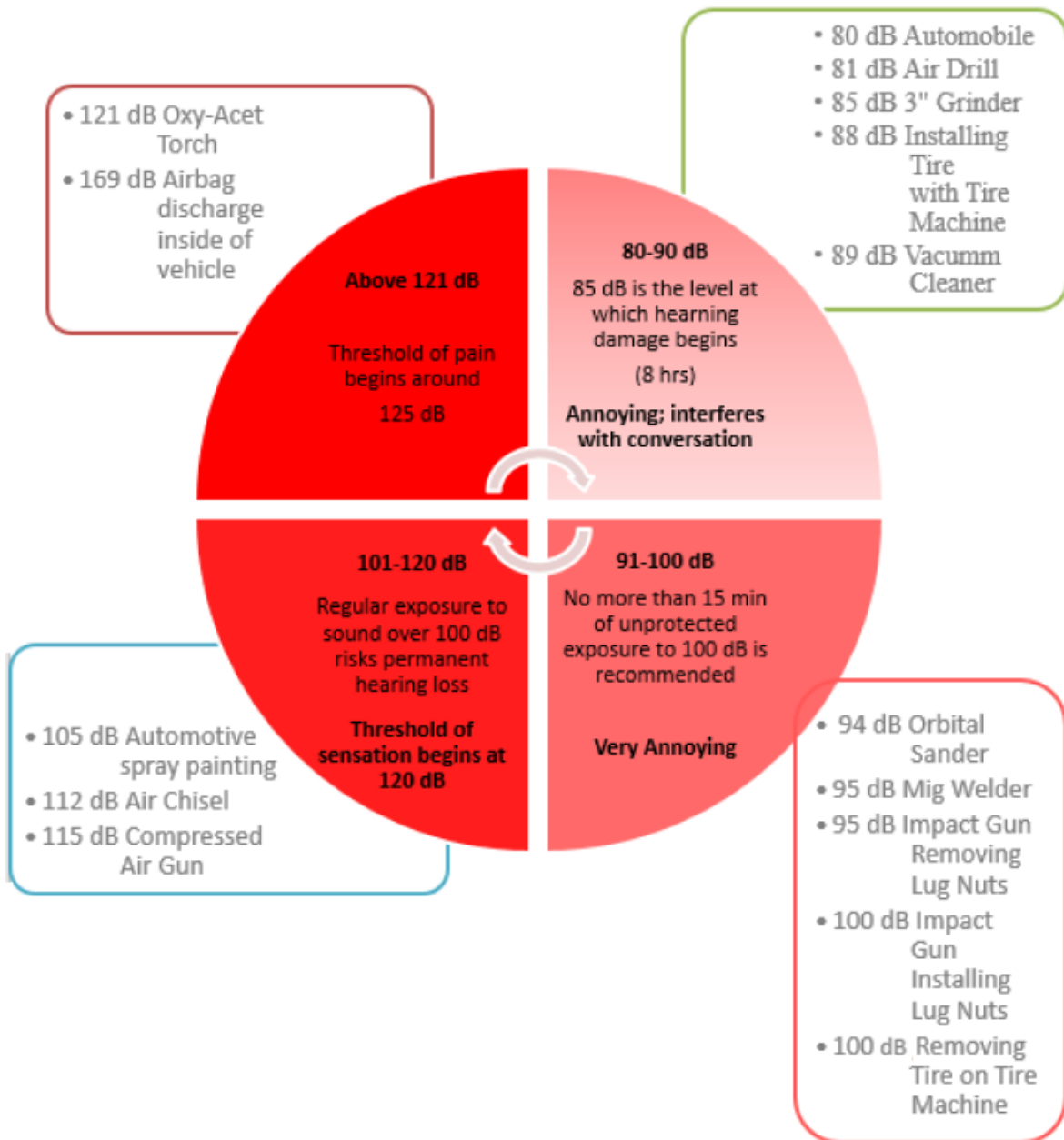
The following table summarizes the differences between ear plugs and Earmuffs.

Comparison of Hearing Protection	
Ear Plugs	Earmuffs
Advantages: ⇒ small and easily carried ⇒ convenient to use with other personal protection equipment (can be worn with Earmuffs) ⇒ more comfortable for long-term wear in hot, humid work areas ⇒ convenient for use in confined work areas	Advantages: ⇒ less attenuation variability among users ⇒ designed so that one size fits most head sizes ⇒ easily seen at a distance to assist in the monitoring of their use ⇒ not easily misplaced or lost ⇒ may be worn with minor ear infections
Disadvantages: * requires more time to fit * more difficult to insert and remove * require good hygiene practices * may irritate the ear canal * easily misplaced * more difficult to see and monitor usage	Disadvantages: * less portable and heavier * more inconvenient for use with other PPE * more uncomfortable in hot, humid work area * more inconvenient for use in confined work areas * may interfere with the wearing of safety or prescription glasses: * wearing glasses results in breaking the seal between the earmuff and the skin and results in de-

Hearing Protection Requirements:

THE THRESHOLD LIMIT VALUES FOR NOISE ARE AS FOLLOWS		
	Duration per day	Sound levels in DBA
Hours	24	80
	16	82
	8	85
	4	88
	2	91
	1	94
Minutes	30	97
	15	100
	7.5	103
	3.75	106
	1.88	109
	0.94	112
Seconds	28.12	115
	14.06	118
	7.03	121
	3.52	124
	1.76	127
	0.88	130
	0.44	133
	0.22	136

Noise Levels of Common Automotive Tools



Why is user preference so important?

The human aspects of hearing protection are particularly important since the only useful kind of protection is the protection that is actually worn. Some people do not accept particular kinds of protectors; every human being is different, and the anatomy of the ear and ear canal can vary significantly from person to person.

It is a good idea for the employer to provide a number of different types of hearing protection from which workers can choose, keeping in mind any safety or hygienic reasons for not providing a particular kind of protector. That is, a particular type of protector should not be used if noise levels are too high or if it proves to be inadequate from a hygienic point of view. For example, ear plugs which are used in a plant setting where people re-use them throughout the day, often reinserting them with dirty fingers, can introduce dirt and bacteria into the ears, causing ear infections.

The bottom line on hearing protection is worker preference. If the workers do not like the type of protection (for example, if it is uncomfortable, does not fit well, or is impractical), they will not wear it.

Follow manufacturers' instructions. With ear plugs, for example, the ear should be pulled outward and upward with the opposite hand to enlarge and straighten the ear canal, and insert the plug with clean hands.

⇒ Ensure the hearing protector tightly seals within the ear canal or against the side of the head. Hair and clothing should not be in the way.

What happens to the protection level when hearing protectors are removed for short periods of time?

In order to get full benefit, hearing protectors must be worn all the time during noisy work. If hearing protectors are removed only for a short duration, the protection is substantially reduced.

The following table gives a maximum protection provided for non-continuous use of an ideally fitted "100%" efficient hearing protector. For example if one takes off his/her hearing protector for 5 min in a 8-hour shift, the maximum protection will be 20 dB.

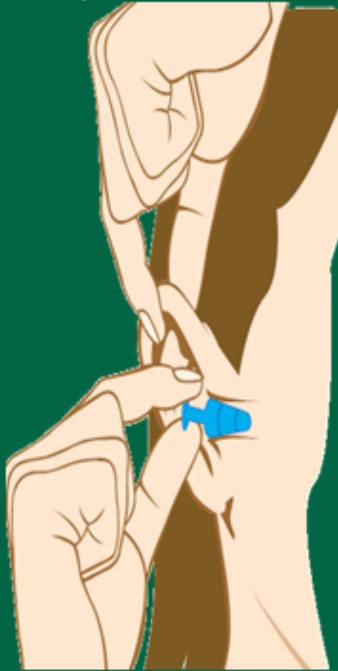
Maximum protection provided by non-continuous use of	
Percent time used	Maximum Protec-
50%	3 dB
60%	4 dB
70%	5 dB
80%	7 dB
90%	10 dB
95%	13 dB
99%	20 dB
99.9%	30 dB

Ear protectors must be used ALL THE TIME to get full benefit.

Proper Ear Plug Fitting

1. Reach

While holding the stem, reach hand overhead and gently pull top of ear up and back.



2. Insert

Insert earplug so all flanges are well inside the ear canal.



3. Fit

If properly fitted, only the stem of the earplugs should be visible to someone looking at you from the front.

Proper Earmuff Fitting

1. Place earmuffs over each outer ear



2. Adjust the headband by sliding the headband up or down at the attachment buttons



3. The ear cushions should seal firmly against the head



“Info Sheet” for Respiratory Protection

Workers should use respirators for protection from contaminants in the air only if other hazard control methods are not practical or possible under the circumstances. Respirators should not be the first choice for respiratory protection in workplaces. They should only be used:

- ⇒ when following the "hierarchy of control" is not possible (elimination, substitution, engineering or administrative controls)
- ⇒ while engineering controls are being installed or repaired
- ⇒ when emergencies or other temporary situations arise (e.g., maintenance operations)

Other control methods include:

- ⇒ mechanical ventilation
- ⇒ enclosure or isolation of the process or work equipment
- ⇒ proper control and use of process equipment, and
- ⇒ process modifications including substitution of less hazardous materials where possible.

Employers should have a written respirator programme that describes the proper procedures for selecting and operating respiratory protective equipment. The correct use of a respirator is just as important as selecting the proper respirator. Parts of the respirator programme deal with finding out what hazards are present and how much protection the workers will need. Other parts should describe how to wear and look after the respirator.

Without a complete respiratory protection programme, people will probably not receive the best protection from a respirator even if it is the correct choice for a specific job. A respiratory protection programme includes several components such as:

- ⇒ hazard identification and control
- ⇒ exposure assessment
- ⇒ respirator selection
- ⇒ respirator fit testing
- ⇒ training programme
- ⇒ inspection and record keeping
- ⇒ cleaning and sanitizing respirators
- ⇒ repairing and maintaining respirators
- ⇒ proper storage of respirators
- ⇒ health surveillance
- ⇒ standard operating procedures (available in written form)
- ⇒ programme evaluation

Workers with beards, long sideburns, or even a two-day stubble cannot wear respirators because the hair breaks the seal between the skin and the respirator mask. Wearing eyeglasses would also break the respirator seal. This break means that the respirator mask will "leak" and will not provide the needed respiratory protection. Also, if a worker has facial scars or an acne problem, the facial skin may not be able to form a good seal with a respirator mask.

Types of Respirators

The two main types are air-purifying respirators (APRs) and supplied-air respirators (SARs).

Air-purifying respirators can remove contaminants in the air that you breathe by filtering out particulates (e.g., dusts, metal fumes, mists, etc.). Other APRs purify air by adsorbing gases or vapors on a sorbent (adsorbing material) in a cartridge or cannister. They are tight-fitting and are available in several forms:

- ⇒ mouth bit respirator (fits in the mouth and comes with a nose clip to hold nostrils closed - for escape purposes only)
- ⇒ quarter-mask (covering the nose and mouth),
- ⇒ half-face mask (covering the face from the nose to below the chin), or
- ⇒ full facepiece (covering the face from above the eyes to below the chin)

Respirators with a full facepiece also protect the eyes from exposure to irritating chemicals.

Supplied-air respirators (SARs) supply clean air from a compressed air tank or through an airline. This air is not from the work room area. The air supplied in tanks or from compressors must meet certain standards for purity and moisture content (e.g., CSA Standard Z180.1-00 (R2010): Compressed Breathing Air and Systems).

Supplied-air respirators may have either tight-fitting or loose-fitting respiratory inlets. Respirators with tight-fitting respiratory inlets have half or full facepieces. Types with loose-fitting respiratory inlets can be hoods or helmets that cover the head and neck, or loose-fitting facepieces with rubber or fabric side shields. These are supplied with air through airlines.

Examples of these classes of respirators include:

Air-purifying respirators (APRs):

- ⇒ particulate respirators (previously called dust, fume, and mist respirators or masks),
- ⇒ chemical cartridge respirators that can have a combination of chemical cartridges, along with a dust prefilter: this combination provides protection against different kinds of contaminants in the air
- ⇒ gas masks (contain more adsorbent than cartridge-type respirators and can provide a higher level of protection than chemical cartridge respirators)
- ⇒ powered air-purifying respirators

Supplied-air respirators (SARs):

- ⇒ self-contained breathing apparatus (SCBA),
- ⇒ airline supplied-air respirators,
- ⇒ protective suits that totally encapsulate the wearer's body and incorporate a life-support system

There are some combinations of airline respirators and SCBAs that allow workers to work for extended periods in oxygen-deficient areas or where there are airborne toxic contaminants. The auxiliary or backup SCBA source allows the worker to escape with an emergency source of air if the airline source fails.

There are also combination air-purifying and atmosphere supplying respirators. These will offer worker protection if the supplied air system fails, if the appropriate air-purifier units are selected.

These cannot be used in oxygen-deficient areas or where the air concentration of a contaminant exceeds the IDLH level (i.e., immediately dangerous to life or health).

Since filters capture particles, caution must be exercised to always check that these filters are not clogged as it makes it harder for air to pass through and increase the likelihood of contaminated air entering the mask. Cartridges can also become "full" or saturated. It will stop working and "breakthrough" will occur – this term means that the gases or vapors will leak through the cartridge.

Both cartridges and filters must be replaced on a regular basis by using the manufacturer's recommendations (usually determined by using warning properties or end-of-service indicators).

There are 9 classes of particulate filters, depending on the particulate material. They are also classified based on levels of oil resistance and filter efficiency. Oil can break down certain types of filters which means it is important to know the materials you are always working with and always select the right cartridge for your respirator.

The main categories are:

- ⇒ N series (Not resistant to oil) - May be used in any atmosphere where there is no oil particulate.
- ⇒ R series (Resistant to oil) - May be used in any atmosphere where there is no oil particulate, or up to one shift where there is oil particulate present. "One shift" means eight hours of continuous or intermittent use.
- ⇒ P series (Oil-Proof) - May be used in any atmosphere, including those with oil particulates, for more than one shift. If the filter is used in atmospheres with oil particulates, contact the manufacturer to find out the service life of the filter.

Equally important is the selection of the correct type of cartridge or filter.

Filters are made of material that is designed to trap particles as you breathe. Cartridges contain a material that absorbs gases and vapors. It is very important to make sure you are using the right filter or cartridge for the chemicals or substances present in the workplace.

How to care for your respirator; and samples of what you might include on a care checklist.

Checklist for care of respirators

- ⇒ Inspect the respirator before and after each use and during cleaning.
- ⇒ Inspect equipment designated for "emergency use" at least monthly, and after each use.
- ⇒ Replace all parts that are cracked, torn, broken, missing or worn.
- ⇒ Follow the manufacturer's instructions and consult CSA Standard Z94.4-11 Selection, Care and Use of Respirators for information on the care, maintenance, and storage of respirators.

Facepiece

- ⇒ Ensure that no holes or tears are present.
- ⇒ Inspect for cracked, scratched or loose-fitting lenses. For a full facepiece respirator, check for missing mounting clips.
- ⇒ Ensure that the metal nose clip forms easily over the bridge of the nose on disposable respirators.
- ⇒ Make sure the facepiece edges are not rippled or distorted.

Head strap/harness

- ⇒ Check webbing for breaks.
- ⇒ Look for deterioration of elasticity or fraying edges.
- ⇒ Test excessively worn head harness.

Inhalation and exhalation valves

- ⇒ Ensure the valve and valve seat are free of dust particles or dirt that may cause a poor seal or reduce efficiency.
- ⇒ Replace any missing or defective valve covers.

Filter elements

- ⇒ Ensure that the filter and mask are certified for use together.
- ⇒ Check the filter to see that they are approved for the hazard.
- ⇒ Inspect both the filter threads and facepiece threads for wear, make sure they are screwed together properly, and there is no cross threading.
- ⇒ Check the filter housing for cracks or dents.
- ⇒ Check the end of service life indicator for gas masks. Check the expiration date.

Air supply system

- ⇒ Inspect the air-supply hose and end-fitting attachments for breaks, cracks, or kinks.
- ⇒ Test the tightness of connections.
- ⇒ Ensure the proper operation and condition of all regulators, valves or other airflow device
- ⇒ Monitor the operation of air-purifying elements and carbon monoxide or high-temperature alarms.
- ⇒ Check seams in suit or blouse for rips and tears.
- ⇒ Ensure that protective screens are intact and fit correctly over facepiece

Respiratory battery pack

- ⇒ Follow the manufacturer's instructions for charging/discharging.
- ⇒ Before recharging nickel-cadmium (NiCad) batteries, fully discharge them with a discharger designed for those batteries. If this is not done regularly, the NiCad batteries may not provide power for as long as the specifications state.
- ⇒ Ensure that the batteries are fully charged before using them.

Repair, cleaning and storage

- ⇒ Do not clean with solvents.
- ⇒ Follow the manufacturer's instructions.
- ⇒ Wash with a mild dish detergent or a combination of detergent and disinfectant. Use a brush and warm water (49-60°C or 120-140°F).
- ⇒ Rinse with clean water, or rinse once with a disinfectant and once with clean water. The clean water rinse removes excess detergent or disinfectant that can cause skin irritation or dermatitis.
- ⇒ Dry on a rack or clean surface or hang from a clothesline. Position the respirator so that the facepiece rubber will not "set" crookedly as it dries.
- ⇒ Store the respirator at the end of each shift to protect it from dust, sunlight, heat, extreme cold, excessive moisture, and chemicals.
- ⇒ Clean and disinfect respirators after each use, where appropriate.
- ⇒ Permit only trained and qualified personnel to repair respirators.
- ⇒ Do not mix parts from different manufacturers.
- ⇒ Record all repairs and inspections.
- ⇒ Remove dirt.
- ⇒ Check for distortion caused by improper storage

What is an example of a checklist for caring for my self-contained breathing apparatus (SCBA)?

Checklist for self-contained breathing apparatus (SCBA)

- ⇒ Inspect the SCBA unit before each use. Test and clean after each use.
- ⇒ Inspect the equipment designated for "emergency use" at least monthly and after each use.
- ⇒ Follow the manufacturer's instructions and CSA Standard Z94.4-11 for care and maintenance.
- ⇒ Permit only trained, manufacturer-certified personnel to maintain SCBA.
- ⇒ Do not mix parts from different manufacturers.
- ⇒ Maintain a complete record for each SCBA facepiece and cylinder.

Facepiece

- ⇒ Disconnect the facepiece from the breathing apparatus. Wash alone in warm (49-60 °C or 120-140 °F) soapy water using a mild dish detergent.
- ⇒ Rinse the water through the facepiece by placing the palm of the hand over the breathing tube connector on the exhalation-valve body.
- ⇒ Remove excess water with a paper towel or lint-free cloth.
- ⇒ Allow to air dry.
- ⇒ Sanitize according to the manufacturer's instructions.
- ⇒ Check for tears in the rubber.
- ⇒ Check head strap for deterioration.
- ⇒ Examine lenses for cracks, excessive scratching or other deformities.
- ⇒ Check rings and clamps securing the lens for bends or bulges in the metal.
- ⇒ Check the exhalation valve to ensure that it is properly located and that the valve cover is in place.
- ⇒ Test the exhalation valve. Block the air intake opening and exhale gently. If the exhalation valve is not working properly, a heavy blow-by will be felt at the temples. Inhale and a partial vacuum will be formed.
- ⇒ Do not mix demand and pressure-demand facepieces and regulators.

Regulator

- ⇒ Check the regulator, breathing-tube threads, pressure gauge, and bypass and mainline valves for impact damage.
- ⇒ Store with the cylinder valve completely closed.
- ⇒ Bleed off air remaining in the regulator after each use, following manufacturer's instructions.

Breathing tube

- ⇒ Stretch the breathing tube and check for cracks, tears and punctures.
- ⇒ Check gaskets.
- ⇒ Check clamps and rings to ensure that they are tight, properly located, not dented and not excessively corroded.
- ⇒ Wash the breathing tube separately and allow to air dry. If it is permanently attached to the facepiece, allow the breathing tube to dry for several days before using

High-pressure hose

- ⇒ Check the hose for cuts, bubbles and abrasions.
- ⇒ Check the fitting between the high-pressure hose and the regulator for damage.

Audible alarm

- ⇒ Check the audible alarm for damage.
- ⇒ Clean bells or whistles.
- ⇒ Ensure that the alarm is working. If the alarm does not go off when the pressure reaches 20-25% of service time, the unit is defective. Remove the unit from service.

Backpack

- ⇒ Inspect the straps of the backpack for excessive wear, broken stitching, and damaged or missing hardware.

Cylinder

- ⇒ Ensure cylinders are hydrostatically tested as set out in CSA Standard Z94.4-11, Selection, Care and Use of Respirators.
- ⇒ Inspect for cuts or gouges that can cause the unraveling of the composite fibers of the cylinder overwrap.
- ⇒ Check unwrapped cylinders for impact damage.
- ⇒ Check for evidence of exposure to heat. Look for discoloured paint or melted gauge lenses.

Cleaning the rest of the unit

- ⇒ Remove backpack, cylinder and regulator assembly.
- ⇒ Clean with water, or soapy water.
- ⇒ Wipe the regulator, high-pressure hose, audible alarm, air cylinder, backpack and harness with a damp cloth.
- ⇒ Dry with a cloth.

Respirator Selection

Selection of the proper respirator(s) to be used in any work area or operation is made only after a determination has been made as to the real and/or potential exposure of employees to harmful concentrations of contaminants in the workplace atmosphere.

The following items will be considered in the selection of respirators:

- Effectiveness of the device against the substance of concern;
- Estimated maximum concentration of the substance in the work area;
- General environment (open shop or confined space, etc.);
- Known limitations of the respiratory protective device;
- Comfort, fit, and worker acceptance; and
- Other contaminants in the environment or potential for oxygen deficiency.

Examples of work which may require the use of respirators includes, but is not limited to the following:

- Abrasive blasting
- Stripping paints from surfaces
- Welding or heating
- Automotive spray painting
- Using solvents, thinners, or degreasers
- Any work which generates large amounts of dust
- Working in a confined space

A review of the real and/or potential exposures is made at least annually to determine if respiratory protection continues to be required, and if so, do the previously chosen respirators still provide adequate protection.

Respirators

- The respirators selected shall be adequate to protect the health of the employee and ensure compliance with all other Occupational Health & Safety regulatory requirements, under routine and reasonably foreseeable emergency situations. The respirator selected shall be appropriate for the chemical state and physical form of the contaminant.
- All staff who require ½ face reusable respirators for their protection will have an appropriate fit test performed every two years as per CSA standard Z94.4-11 section 9.1.6 and those wearing a full face tight fitting air purifying respirator will be tested annually.
- Respirators must be worn in accordance to CSA standard Z94.4-11 section 9.2.2 (see Annex A)

Filter & Cartridge Change Schedule

Stock of spare filters and cartridges shall be maintained to allow immediate change when required.

Cartridges must be changed based on the most limiting factor below:

- Prior to expiration date (if noted on filter or packaging)
- Manufacturers recommendations for the specific use and environment
- When requested by employee
- When contaminant odour is detected
- When restriction to air flow has occurred as evidenced by increase effort by user to breathe normally
- Even if no other criteria require cartridges to be changed, the cartridge must be changed on a monthly basis

Warning Signs of Respirator Failure

A. Particulate Air-Purifying

When breathing difficulty is encountered with a filter respirator (due to partial clogging with increased resistance), the filter(s) must be replaced. Disposable filter respirators must be discarded.

B. Gas or Vapour Air-Purifying

If, when using a gas or vapour respirator (chemical cartridge or canister), any of the warning properties (e.g., odour, taste, eye irritation, or respiratory irritation) occur, promptly leave the area and check the following:

- Proper face seal
- Damaged or missing respirator parts
- Saturated or inappropriate cartridge or canister

If no discrepancies are observed, replace the cartridge or canister. If any of the warning properties appear again, the concentration of the contaminants may have exceeded the cartridge or canister design specification. When this occurs an airline, respirator may be required.

C. Supplied Air Respirator

When using an airlines respirator, leave the area immediately when an air pressure drop is sensed.

Training

Any worker required to wear PPE must receive training in proper use and care of PPE. Periodic retraining shall be offered to both the employees and the supervisors, as needed. The training includes, but is not necessarily limited to, the following subjects:

- When PPE is necessary to be worn.
- What PPE is necessary?
- How to properly don, doff, adjust, and wear PPE.
- The limitations of the PPE.
- The proper care, maintenance, useful life and disposal of the PPE.

After training, employees must demonstrate that they understand the components of the PPE Programme and how to use PPE properly, or they must be retrained.

Retraining for respirators shall be conducted every two years and when:

- Changes in the workplace or the type of respirator under previous training becomes obsolete
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill
- Other situations arise in which retraining appears necessary to ensure safe respirator use

Record Keeping

Written records must be kept of the names of persons trained, the type of training provided, and the dates when training occurred. The Supervisor shall maintain their employees' training records for at least 3 years.

Hazard Assessment

A hazard assessment is a formal means of determining the appropriate PPE selection based on the hazards of a job. When conducting a hazard assessment, a task is investigated and the hazards and the potential hazards associated with the task are determined. This allows selection of personal protective equipment that will protect the employee from the identified hazards.

A hazard assessment may be conducted of a single employee, of a single task, or a group of employees if all the employees perform an identical task.

During the hazard assessment of each task, inspect the layout of the workplace and look for the following hazardous sources:

- High or low temperature that could result in burns, eye injury, ignition of equipment, heat/cold stress, frostbite, lack of coordination, etc.
- Chemical exposures, including airborne or skin contact that would have the potential for splash on the skin or eyes, or the potential to breathe vapours or mists.
- Harmful dust or particulates.
- Light radiation, e.g., welding, arc lamps, heat-lights, etc.
- Sources of falling objects, potential for dropping objects, or rolling objects that could crush or pinch the feet.
- Sharp objects that may pierce the feet or cut the hands.
- Observe the layout of the workplace and the location of co-workers for the potential for collision with other personnel or objects.
- Electrical hazards.
- Any other identified potential hazard where these hazards could cause injury to employees, personal protective equipment must be selected to substantially eliminate the injury potential.

Certificate of Respiratory Selection and Fit Testing

This will certify that _____ of
_____ has been successfully fit tested and trained with a _____ Respirator.

Model: _____

Size: _____

Type: _____

Fit Test Agent: Sweet _____ Bitter _____

Sensitivity Test Results 1-10 _____ 11-20 _____ 21-30 _____

Facial Hair Yes _____ No _____

Pass Yes _____ No _____

According to C.S.A. Z94.4-11

Date: _____ Fit Tester: _____

This certificate is valid for two years from the above date.

Acceptable

A. Clean-shaven, ideal for a good seal	
B. Amount of facial hair that will typically allow a good seal	
C. Moustache that does not interfere with the sealing surface, valves, or respirator function	
D. Soul patch that does not interfere with the sealing surface, valves, or respirator function	

Unacceptable

E. Soul patch that will interfere with the respirator seal in the chin area on elastomeric facepieces Facial hair and sideburns that will interfere with the sealing surface	
F. This facial "shadow" (not clean-shaven) will interfere with the sealing surface of a half or full facepiece. It will also compromise a secondary seal inside a tight-fitting hood-style respirator. Degradation of fit can occur during cumulative work hours when an individual grows this amount of facial hair.	
G. Moustache is too thick and too long (down around edge of mouth); will contact a sealing surface and interfere with exhalation valve. Sideburns and/or heavy hair under the chin will prevent a good seal.	
H. Moustache is too thick and too long (down around edge of mouth); will contact a sealing surface and could get stuck in an exhalation valve. The hair on the rest of the face will interfere with a sealing surface.	
I. Hair is in sealing region and under the chin. Hair is in chin cup sealing region and on the side of the face.	
J. Moustache is too thick and too long; will contact a sealing surface and interfere with exhalation valve.	

“Info Sheet” for High-Visibility Safety Apparel (HVSA)

High-visibility safety apparel (HVSA) is clothing (e.g., vests, bibs, or coveralls) that workers can wear to improve how well other people "see" them (their visibility). Most often, high-visibility clothing is worn to alert drivers and other vehicle operators of a worker's presence, especially in low light and dark conditions. High-visibility headwear can also be worn to increase the visibility of the wearer in situations where part or all of the wearer's body could be obscured (e.g., leaves/trees, traffic barriers, construction materials, etc.).

High-visibility safety apparel (HVSA) is needed if you work when there is low light and poor visibility, especially if you are working around moving vehicles (cars, trucks or other machinery traveling under their own power, such as , forklifts, backhoes, etc). High-visibility items allow you to be seen by the drivers of those vehicles from farther away so that they can respond accordingly, which increases your safety at work. The human eye responds best to large, contrasting, bright or moving objects. Worker visibility is enhanced by high colour contrast between clothing and the work environment against which it is seen.

The CSA Standard recommends that a hazard assessment be carried out on each job site to evaluate the workplace or work site for known or potential hazards a worker can encounter while performing a job or task. This assessment helps determine the risk to workers of being hit by moving vehicles and the environmental conditions under which work is performed.

When doing a hazard assessment where HVSA might be required, be sure to consider:

- The type and nature of the work:
 - ⇒ Do workers and mobile equipment need to interact?
 - ⇒ Are workers controlling traffic or interacting with the public?
 - ⇒ Do workers need to be visually identifiable from others in the area? Are there industry specifications or good practices?
- Potential exposures to heat or flames.
 - ⇒ Work conditions, such as indoor or outdoor work, temperature, work rates, traffic flow, traffic volume, visibility, etc.
 - ⇒ The workplace environment and the background workers must be seen in (e.g., is the visual area behind the workers simple, complex, urban, rural, highway, filled with equipment, cluttered).
 - ⇒ How long the worker is exposed to various traffic hazards, including traffic speeds.
 - ⇒ Lighting conditions and how the natural light might be affected by changing weather (e.g., sunlight, overcast sky, fog, rain, or snow).
 - ⇒ Factors that affect warning distances and times, such as the volume of traffic, the size of vehicles, their potential speeds, the ability to stop quickly, and surface conditions.
 - ⇒ Current controls (e.g., engineering controls such as barricades or administrative control such as training).
 - ⇒ Any distractions that could draw workers attention away from hazards.
 - ⇒ The sightlines of mobile equipment and vehicle operators, especially when vehicles are operated in reverse.

Once the hazards are identified, the employer can select appropriate controls. It is important to eliminate or reduce the hazards using engineering (e.g., physical barriers) and administrative controls (e.g., work during daylight hours). High-visibility apparel is considered to be personal protective equipment, and can be used in addition to other controls.

What should I look for in High-Visibility Safety Apparel?

Coverage/Visibility:

- ⇒ Bright garments are more visible than dull ones. Coverage all around the body (360° full body coverage) provides better visibility in all viewing directions.
- ⇒ Stripes of colours that contrast (have a distinct colour difference) with the background material can provide increased visibility. Stripes on the arms and legs can also provide visual clues about the motion of the person wearing the garment.
- ⇒ When background material is bright-coloured or fluorescent material, it can increase visibility, but it does not provide retroreflective properties.
- ⇒ Other requirements such as flame resistance, thermal performance, water resistance, durability, comfort, tear-away features, material breathability, and flexibility may be required bases on other hazards present.

Employers should select the colour and stripe combination that provides the preferred contrast, visual indication of movement, and direction of travel.

Brightness:

- ⇒ Daylight - Bright colours are more visible than dull colours under daylight conditions (e.g. fluorescent materials are suitable for daylight).
- ⇒ Low light conditions - Fluorescent colours are more effective than bright colours under low light (e.g. dawn and dusk). Under these conditions, reflective materials are also suggested.
- ⇒ Dark conditions - Retroreflective material provides greater visibility and are preferred over bright colours alone under low light conditions. As fluorescent materials require natural light, they are ineffective at night or when no natural light is present.

Colour:

For all classes, the CSA Z96-15 (R2020), High-Visibility Safety Apparel Standard specifies both the colour of the background and the stripes/bands.

For example, class 1 apparel (e.g., harness style) must have a minimum of 0.14 metres squared of background material, while for class 2 and class 3 apparel, full coverage of background material is required.

Background material can be:

- ⇒ fluorescent yellow-green,
- ⇒ fluorescent orange-red,
- ⇒ fluorescent red bright yellow-green, or
- ⇒ bright orange-red.

MAINTENANCE PROGRAMME FOR VEHICLES, TOOLS & EQUIPMENT

Objective:

Ensure the safe, efficient, and reliable operation of all vehicles, tools, and equipment used in business operations.

Scope

This programme applies to all vehicles, tools, and equipment owned, leased, or operated by NSADSA members. All employees, supervisors, and contractors who operate, inspect, or maintain these assets are responsible for adhering to this programme.

Definitions

- **Company Vehicle:** Any motor vehicle used for the transportation of goods or people for business purposes.
- **Tools:** Hand and power tools used in work tasks.
- **Critical Tools:** Powered tools that, if used incorrectly, could result in serious injury or damage.
- **Equipment:** Includes any machinery or systems necessary for operational tasks outside of hand tools, such as heavy machinery, specialized devices, or plant equipment.

Responsibilities

- **Management:** Responsible for implementing and monitoring this programme, scheduling maintenance, and ensuring compliance with OHS regulations.
- **Supervisors:** Oversee internal inspections and ensure that employees understand and follow maintenance protocols.
- **Employees:** Perform pre-use inspections, report deficiencies immediately, and refrain from operating vehicles, tools, or equipment if deemed unsafe.

Maintenance Requirements

Vehicles

- **Daily Pre-Trip Visual Inspection:** Drivers must complete a visual pre-trip inspection covering brakes, lights, tires, mirrors, fluids, and emergency equipment.
- **Weekly Inspection:** A more detailed written inspection is completed, ensuring all vehicles are safely operational.
- **Scheduled Maintenance:** Follow manufacturer recommended service intervals, including oil changes, tire rotation, and brake servicing. Records of all maintenance must be kept.
- **Safety Inspections:** Conduct an safety inspections by a certified technician to ensure compliance with Nova Scotia regulatory standards.

Tools/Critical Tools

- **Pre-Use Inspection:** All tools (owned by company or technicians/employees) must be inspected for visible damage, wear, or defects before each use.
- **Monthly Inspection:** Conduct a thorough written inspection of critical tools to identify any developing issues and document maintenance needs.
- **Repair and Replacement:** Any defective tools must be repaired by qualified personnel or replaced immediately. Unsafe tools should be tagged and removed from service.

Equipment

- **Pre-Use Check:** Operators must check all critical components, including but not limited to guards, hydraulic systems, and safety interlocks, etc., before each use.
- **Monthly Maintenance:** Conduct scheduled maintenance on equipment following manufacturer guidelines and any specific recommendations for heavy use.
- **Annual Inspection:** Equipment must undergo a full annual inspection by a qualified technician to ensure compliance with safety standards.
- **Repairs:** Promptly address any faults found during inspections or reported by operators. Only qualified personnel may perform equipment repairs.

Documentation and Record-Keeping

All maintenance activities should be documented to create a verifiable history. Records to include:

- Internal inspection checklists for vehicles, tools, and equipment.
- Maintenance logs detailing the date, nature of maintenance, and the name of the technician performing the service.
- Repair logs, indicating any parts replaced, the technician's name, and a brief description of the problem and resolution.
- Annual inspection certificates.

Training

All employees, including supervisors, must be trained to perform pre-use inspections and understand the criteria for identifying unsafe equipment or vehicles.

Emergency Response for Breakdowns and Faults

In the event of a breakdown:

- Report the incident to a supervisor immediately.
- Secure the vehicle, tool, or equipment to prevent further damage or accidents.
- Arrange for repair or towing, if necessary.
- Complete an incident report and submit it to management within 24 hours.

ANNUAL SAFETY INSPECTIONS	PAGE: 1 of 1 YEAR:

The following is a list of items (if applicable) that shall be checked **YEARLY**
(with the exception of the overhead doors which may need more frequent inspections) to ensure that all items are in place and operable.

1. Portable Fire Extinguishers (inspection tag current)
2. Fire Alarm Panel (tested by a certified contractor)
3. Sprinkler System (tested by a certified contractor)
4. Sprinkler Piping Hangers (checked to ensure they are in good repair)
5. Sprinkler Heads (checked to ensure they are in good repair)
6. Sprinkler System (water pressure test with drain valve open)
7. Sprinkler System (water flow alarm tested at most remote location)
8. Private Fire Hydrant (tested by a certified contractor)
9. Hoists (tested by a certified contractor)
10. Elevator (tested by a certified contractor)
11. Fire Department Connection (remove cap to inspect threads for wear, rust and obstructions)
12. Emergency Lighting (test lighting is provided for a duration equal to criteria by simulating power loss)
13. Emergency Lighting (check charge rate after simulated power loss)
14. Carbon Monoxide Sensors
15. Personal Protective Equipment (Fit Test)
16. Overhead Doors (minimum annual inspection by a certified contractor- more often recommended for heavy use)

Numbers(s)	Company	Phone #
1 Fire Extinguisher's	_____	_____
2 Fire Alarm Panel	_____	_____
3,4,5,6,7,8 Sprinkler's, Hydrant	_____	_____
9 Hoists	_____	_____
10 Elevator	_____	_____
11,12,13 Emergency Lights, Fire Department connection	_____	_____
14 Carbon Monoxide Sensors	_____	_____
15 Personal Protective Equipment (Fit Test)	_____	_____
16 Overhead Doors	_____	_____

Yearly Due Date	Test		Comments
_____	_____	☐ Yes ☐ No	_____
_____	_____	☐ Yes ☐ No	_____
_____	_____	☐ Yes ☐ No	_____
_____	_____	☐ Yes ☐ No	_____
_____	_____	☐ Yes ☐ No	_____
_____	_____	☐ Yes ☐ No	_____
_____	_____	☐ Yes ☐ No	_____
_____	_____	☐ Yes ☐ No	_____
_____	_____	☐ Yes ☐ No	_____

BENCH GRINDER	PAGE: 1 of 1 YEAR:

WARNING!

Ensure the grinder is unplugged from the mains power supply before performing any maintenance or service.

DAILY (visual)

- Is the work rest used and kept adjusted to within 1/8-inch (3mm) of the wheel?
- Do the side guards cover the spindle, nut and flange and 75% of the wheel diameter?
- Check that eye shields are in good condition, are secure and that you can see through them clearly.
- Turn the grinding stones by hand and check for any damage. Replace if required.
- Is the maximum RPM rating of each abrasive wheel compatible with the RPM rating of the grinder?

MONTHLY

- Are bench and pedestal grinders permanently mounted?
- Is each electrically operated grinder effectively grounded?
- Does grinder have a working on and off control switch?
- Are grinding & wire wheels in good condition

MONTHLY CHECKS (initial and X or ✓)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓

Every **X** must have a Deficiency Report completed and on file

BEARING PRESS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">PAGE:</td> <td>1 of 1</td> </tr> <tr> <td>YEAR:</td> <td></td> </tr> </table>	PAGE:	1 of 1	YEAR:	
PAGE:	1 of 1				
YEAR:					

Any press which appears to be damaged in any way, is found to be badly worn, or operates abnormally SHOULD BE REMOVED FROM SERVICE until necessary repairs are made.

BEFORE EACH USE

A visual inspection must be made before each use of the press, checking for leaking hydraulic fluid, and damaged, loose or missing parts.

MONTHLY

- Check the press frame to make sure all bolts are tight and inspect for cracked welds, bent, loose or missing parts.
- Check the hydraulic connections for possible leaks. Replace or properly repair damaged or leaking hydraulic components before using.
- Apply a light smear of oil to the moving parts and the bed support pins.

YEARLY

- Have professionally inspected

MONTHLY CHECKS (initial and X or ✓)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
1 ST Week												
2 nd Week												
3 rd Week												
4 th Week												

YEARLY CHECKS (initial and X or ✓)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initial												

Every **X** must have a Deficiency Report completed and on file

CHAIN INSPECTION		PAGE: 1 of 1
		YEAR:
Manufacturer:	Serial#	
Size and Length:	Capacity(SWL):	
Insp. Tag#:	Remarks:	
Manufacturer:	Serial#	
Size and Length:	Capacity(SWL):	
Insp. Tag#:	Remarks:	
Manufacturer:	Serial#	
Size and Length:	Capacity(SWL):	
Insp. Tag#:	Remarks:	
Inspector:	Date:	

DAILY FIRE SAFETY TEST	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">PAGE:</td> <td style="text-align: center;">1 of 1</td> </tr> <tr> <td>YEAR:</td> <td></td> </tr> </table>	PAGE:	1 of 1	YEAR:	
PAGE:	1 of 1				
YEAR:					

1. Fire Alarm Panel shall be unobstructed
2. Fire alarm Panel lock devices intact
3. Check Fire Panel for trouble lights
4. Inspect the Fire Alarm AC power-on light is in normal operation

5. Check Doors in fire separation walls are closed
6. Check that Exit Signs are visible, clean and legible
7. Check that all illuminated Exit Signs are lit
8. Check all Emergency Light Units for power-on light

(initial and X or

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
✓ 1												
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Every **X** must have a Deficiency Report completed and on file

DETAILER BAY WEEKLY INSPECTIONS	PAGE: 1 of 1
	MONTH/WEEK:

Technician _____

Print Name

☞ <i>All tools are to be inspected.</i> ☞ <i>Those that are not OK must be listed.</i>	OK	Not OK	Defective Tool(s)	Repair/Replace Date	Tool(s) Repaired/Replaced	Initial
Bottles: Triggers Work Properly, Proper Labels in Good Condition						
Water Hose: Nozzle Works Properly, Hose in Good Condition, Hose Reel Works Properly						
Air Hose: Hose and Fittings in Good Condition, Blow Gun in Good Working Condition, No Air Leaks						
Vacuum Cleaner: Plug and Cord in Good Condition, Hose and Nozzle in Good Condition, Filter in Good Condition, Unit Functions Properly						
Orbital Buffer: Cord in Good Condition, Unit Functions Properly						
High Speed Buffer: Cord in Good Condition, Unit Functions Properly						
Heat Gun: Cord in Good Condition, Unit Functions Properly						
Housekeeping: Desk/Shelves In Good Condition, Wash Buckets Labeled Properly, Bay Area Free of Obstructions and Tripping Hazards, Extension Cords In Good Condition						

Detailer Signature _____ (to be signed when all tools are ok)

Manager Signature _____ (to be signed when all tools are ok)

DUSTER 3000 AIR CLEANER

PAGE: 1 of 1

YEAR:

MONTHLY	- Clean Dust Filter
	- Check AC Cable, Sock and Plugs for signs of damage or wear
	- Check Main Power Switch for damage or broken parts
	- Clean Middle Pleated Filter
	- Clean and shake Charcoal Filter
SEMI ANNUAL	- Change Outer Dust Filter
	- Change Middle Pleated Filter
	- Change Charcoal Filter
ANNUAL	- Change Main Inner Cabin Filter

MONTHLY CHECKS (initial and X or ✓)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initial												

SEMI -ANNUAL CHECKS (initial and X or ✓)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	X	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initial	✓											

ANNUAL CHECKS (initial and X or ✓)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	X	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initial	✓											

Every X must have a Deficiency Report completed and on file



Pre-use Inspection: Earthmoving Equipment

Inspector: _____ **Date:** _____ **Shift:** _____

Unit Make/Model/No.: _____

POWER OFF CHECKS				OK	NR	NA	POWER OFF CHECKS (CONT'D)				OK	NR	NA
1) Undercarriage:							13) OEM/Approved options/accessories				☐	☐	☐
a) Wheels/Tires/Tracks				☐	☐	☐	14) Personal protective equipment (as required)				☐	☐	☐
b) Axles/Sprockets/Rollers				☐	☐	☐	15) Housekeeping				☐	☐	☐
c) Steering rods/Linkages				☐	☐	☐	16) Other:				☐	☐	☐
2) Lights/Strobes				☐	☐	☐	POWER ON CHECKS				OK	NR	NA
3) Mirrors/Visibility aids				☐	☐	☐	17) Unit starts & runs properly				☐	☐	☐
4) Engine/Battery:							18) Instruments/System warning indicators				☐	☐	☐
a) Cover panel(s)				☐	☐	☐	19) Fuel level				☐	☐	☐
b) Debris				☐	☐	☐	20) Horn/Audible warning devices				☐	☐	☐
c) Belts/Hoses				☐	☐	☐	21) Function controls:						
d) Air filter indicator				☐	☐	☐	a) Control markings				☐	☐	☐
e) Wires/Cables/Terminals				☐	☐	☐	b) Drive				☐	☐	☐
f) Battery-Batteries clean/dry/secure				☐	☐	☐	c) Steering				☐	☐	☐
5) Fluids:							d) Braking				☐	☐	☐
a) Engine oil Level Leaks				☐	☐	☐	e) Turret rotate				☐	☐	☐
b) Engine coolant Level Leaks				☐	☐	☐	f) Lift arms/Boom/Dipper/Attachment				☐	☐	☐
c) Hydraulic oil Level Leaks				☐	☐	☐	g) Accessories/Optional equipment				☐	☐	☐
d) Transmission oil Level Leaks				☐	☐	☐	22) Auxiliary controls				☐	☐	☐
e) Fuel/Battery Level Leaks				☐	☐	☐	23) Seatbelt/Lap bar				☐	☐	☐
6) Hydraulics:							24) Other:				☐	☐	☐
a) Cylinders/Rods/Pin locks				☐	☐	☐					☐	☐	☐
b) Hoses/Lines/Fittings				☐	☐	☐	WORKSITE INSPECTION				OK	NR	NA
7) Chassis/Turret:							25) Drop-offs or holes				☐	☐	☐
a) Windows/Screens/Doors				☐	☐	☐	26) Bumps & floor/Ground obstructions				☐	☐	☐
b) Emergency Exit				☐	☐	☐	27) Debris				☐	☐	☐
c) Entry/Exit steps				☐	☐	☐	28) Overhead obstructions				☐	☐	☐
d) ROPS/FOPS/TOPS				☐	☐	☐	29) Electrical conductors				☐	☐	☐
e) Counterweight/Counterweight bolt(s)				☐	☐	☐	30) Hazardous locations				☐	☐	☐
8) Digging assembly:							31) Slopes				☐	☐	☐
a) Lift arms/Front attachment				☐	☐	☐	32) Ground/Surface & support conditions				☐	☐	☐
b) Boom/Dipper/Rear work attachment				☐	☐	☐	33) Pedestrian/Vehicle traffic				☐	☐	☐
9) Articulating joints				☐	☐	☐	34) Weather conditions				☐	☐	☐
10) Steering/Boom swing lock pin				☐	☐	☐	35) Underground utilities identified				☐	☐	☐
11) Manufacturer's operation manuals				☐	☐	☐	36) Utility authorities called before digging				☐	☐	☐
12) Decals/Plates/Markings				☐	☐	☐	37) Other possible hazards				☐	☐	☐

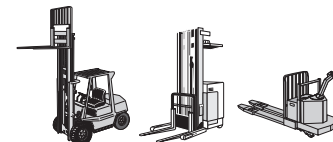
Report any problems found to your supervisor/employer. ALWAYS lock/tag-out unsafe equipment.

NOTES

ADDITIONAL INSPECTIONS		
Operator	Confirm	Notes
	Yes / No	
	Yes / No	
	Yes / No	

EMERGENCY EQUIPMENT	PAGE: 1 of 1 YEAR:																																																																														
WEEKLY ➤ Clean and operate 15 min Emergency Eye Wash Station ➤ Fire Extinguishers are unobstructed and identified ➤ Fire Blankets are accessible and identifiable ➤ Insulated Rescue Hook (“Shock Stick”) is accessible and inspection sticker is valid within two-years ➤ Spill Kits are full, readily available, and accessible WEEKLY CHECKS (<i>initial and X or ✓</i>) <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr style="background-color: #cccccc;"> <th style="padding: 5px;">MONTH</th> <th style="padding: 5px;">Jan</th> <th style="padding: 5px;">Feb</th> <th style="padding: 5px;">Mar</th> <th style="padding: 5px;">Apr</th> <th style="padding: 5px;">May</th> <th style="padding: 5px;">Jun</th> <th style="padding: 5px;">Jul</th> <th style="padding: 5px;">Aug</th> <th style="padding: 5px;">Sept</th> <th style="padding: 5px;">Oct</th> <th style="padding: 5px;">Nov</th> <th style="padding: 5px;">Dec</th> </tr> <tr style="background-color: #cccccc;"> <th style="padding: 5px;"></th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> <th style="padding: 5px;">X ✓</th> </tr> <tr> <td style="padding: 5px;">1ST Week</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td style="padding: 5px;">2nd Week</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td style="padding: 5px;">3rd Week</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td style="padding: 5px;">4th Week</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table> ***Every X must have a Deficiency Report completed and on file***		MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec		X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	1 ST Week													2 nd Week													3 rd Week													4 th Week												
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4 th Week																																																																															

MONTHLY FIRE SAFETY CHECKS	PAGE: 1 of 1 YEAR:																																							
The following is a list of the buildings Fire safety Components that shall be checked MONTHLY to ensure that all equipment is in place and operable. A record of this monthly check SHALL be maintained on site for review by any Authority having Jurisdiction as required by the Nova Scotia Fire Safety Act. 1. Portable Fire Extinguishers (inspection tag up to date, not used) 2. Exit and Emergency Lighting (test for operation) 3. Exit Doors and Fire Separation Doors (closed and latched) 4. Fire Alarm System Components: i.e. Fire Alarm Panel, Pull Stations (ensure labels for inspection are on panels) 5. Sprinkler and Stand Pipe System Components: i.e. Sprinkler Heads, Gauges, Fire Department Connections, Protective Covers (in place and secure)																																								
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MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec																												
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓																												
Initial																																								
Every X must have a Deficiency Report completed and on file																																								



Pre-use Inspection: Forklifts												
Inspector:					Date:			Shift:				
Unit Make/Model/No.:												
POWER OFF CHECKS				OK	NR	NA	POWER ON CHECKS			OK	NR	NA
1) Wheels/Tires				☐	☐	☐	19) Unit starts & runs properly			☐	☐	☐
2) Lights/Strobes				☐	☐	☐	20) Instruments/System warning indicators			☐	☐	☐
3) Mirrors/Visibility aids				☐	☐	☐	21) Fuel/Charge level			☐	☐	☐
4) Engine/Battery:							22) Horn/Audible warning devices			☐	☐	☐
a) Cover panel(s)				☐	☐	☐	23) Function controls:					
b) Debris				☐	☐	☐	a) Control markings			☐	☐	☐
c) Belts/Hoses				☐	☐	☐	b) Drive			☐	☐	☐
d) Air filter indicator				☐	☐	☐	c) Steering			☐	☐	☐
e) Wires/Cables/Terminals				☐	☐	☐	d) Braking			☐	☐	☐
f) Battery-Batteries clean/dry/secure				☐	☐	☐	e) Mast/Boom			☐	☐	☐
5) Fluids:							f) Carriage/Work attachment(s)			☐	☐	☐
a) Engine oil Level Leaks				☐	☐	☐	g) Frame level controls			☐	☐	☐
b) Engine coolant Level Leaks				☐	☐	☐	h) Accessories/Optional equipment			☐	☐	☐
c) Hydraulic oil Level Leaks				☐	☐	☐	i) Function-enable (deadman) devices			☐	☐	☐
d) Transmission oil Level Leaks				☐	☐	☐	24) Emergency/Auxiliary controls			☐	☐	☐
e) Fuel/Battery Level Leaks				☐	☐	☐	25) Seatbelt/Operator restraint devices			☐	☐	☐
6) Hydraulics:							26) Other:			☐	☐	☐
a) Cylinders/Rods/Pin locks				☐	☐	☐				☐	☐	☐
b) Hoses/Lines/Fittings				☐	☐	☐	WORKSITE INSPECTION			OK	NR	NA
7) Capacity plate/Load charts				☐	☐	☐	27) Drop-offs or holes			☐	☐	☐
8) Windows/Screens/Doors				☐	☐	☐	28) Bumps & floor/Ground obstructions			☐	☐	☐
9) Overhead guard/Cab				☐	☐	☐	29) Debris/Slippery floors			☐	☐	☐
10) Mast/Boom				☐	☐	☐	30) Overhead obstructions			☐	☐	☐
11) Carriage/Work attachment(s)				☐	☐	☐	31) Electrical conductors			☐	☐	☐
12) Counterweight/Counterweight bolts				☐	☐	☐	32) Hazardous locations			☐	☐	☐
13) Manufacturer's operation manuals				☐	☐	☐	33) Slopes			☐	☐	☐
14) Decals/Plates/Markings				☐	☐	☐	34) Ground/Surface & support conditions			☐	☐	☐
15) OEM/Approved options/accessories				☐	☐	☐	35) Pedestrian/Vehicle traffic			☐	☐	☐
16) Personal protective equipment (as required)				☐	☐	☐	36) Weather conditions			☐	☐	☐
17) Housekeeping				☐	☐	☐	37) Other possible hazards			☐	☐	☐
18) Other:				☐	☐	☐				☐	☐	☐
Report any problems found to your supervisor/employer. ALWAYS lock/tag-out unsafe equipment.												
NOTES												
ADDITIONAL INSPECTIONS												
Operator				Confirm		Notes						
				Yes / No								
				Yes / No								
				Yes / No								
				Yes / No								
				Yes / No								

FRAME MACHINE	PAGE: 1 of 1 YEAR:

ALWAYS

- Clean the teeth of any clamps before use
- Inspect clamps and chains for wear or damage before use
- Remove paint and undercoating on surface to be clamped
- Use safety blankets/chains when pulling

NEVER

- Pull when chain is twisted
- Stand behind pull unit while in use

DAILY

- Inspect Hydraulic lines for signs of wear or damage
- Inspect lines and pump for oil leakage

MONTHLY

- Lubricate all grease nipples
- Lubricate chain roller guides

SEMI-ANNUALLY

- Check fluid level of pump unit and re-fill if required

ANNUALLY

- Check chain lengths for stretching beyond tolerance as per chain inspection report

MONTHLY CHECKS

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initials												

SEMI ANNUAL CHECKS

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initials												

ANNUAL CHECKS (CHECK CLAMPS AND ATT4CHMENTS FOR WEAR AND/OR DAMAGE)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initials												

Every X must have a Deficiency Report completed and on file

HIGH VOLTAGE SPECIALIST CHECKLIST

PAGE: 1 of 1

YEAR:

Gloves

- Inspect gloves for rips, tears, and air pressure test with no leakage
- Ensure at least 2 sets are present and inspection date is valid
- If expiring within 1 month, they must be sent out for inspection **Jacket**
- Inspect jacket for quality – no rips, tears, seems pulling apart
- No fluids spilled
- Zipper operates

Face Shield

- No cracks or damage to body, lens or tightening device
- Holds on head tightly
- Lens visually clear

Multi meter/DVOM

- Turns on with bright screen to indicate batteries in good condition
- Calibration date within 3 months – if expiring must be sent for re calibration
- Change between voltage and resistance – perform quick bench test
- Inspect leads for damage – connections, wire and pin condition Rubber floor Mat
- Hold up to light to make sure there are no punctures
- Inspect overall condition – no contaminates, rips or visual defect **Safety Hook**
- Inspect overall condition – no visual defects, cracks, breaks
- Check inspection date and if within 2 months – send out for re-inspection
- Rating must be 10000 volts

6 MONTH CHECKS (initial and X or ✓)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓

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MONTHLY HOIST INSPECTIONS	PAGE: 1 of 1 YEAR:																																																																																
Date: _____ Lift #: _____ Technician: _____																																																																																	
Instructions: 1. Check (☐) the appropriate box as each item is completed. 2. Record comments, observations and the date items were repaired or replaced. 3. If any item was not inspected, write "NI" in the comments box. Any items not applicable to this auto lift, write "NA". 4. Sign and date at the bottom when all items are completed.																																																																																	
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Managers Signature: _____ Date: _____																																																																																	

MONTHLY IN-GROUND HOIST INSPECTION	PAGE: 1 of 1 YEAR:

ALWAYS (Visual Only)

- Keep locking latch free and oiled
- Keep all bolts tight
- Keep superstructure clean
- Make sure the perimeter of the guide barrel and centre cover are sealed

DAILY (Visual Only)

- Inspect adapters for damage and/or wear
- Check locking latch operation

MONTHLY

- Check containment for liquid accumulation. Remove liquid if present (sight hole)
- Lubricate lift guide barrels (10-20 pumps from grease gun)
- Replace grease fittings as necessary

EVERY 3 MONTHS

- Check plunger guide barrel bolts. Torque to 60 ft/lbs

SEMI-ANNUALLY

- Check fluid level of lift power unit and re-fill if required

MONTHLY CHECKS (initial and X or ✓)

MONTH	Jan X	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initials												

3 MONTH CHECKS (initial and X or ✓)

MONTH	Jan X	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initial												

SEMI ANNUAL CHECKS (initial and X or ✓)

MONTH	Jan X	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initials												

Every X must have a Deficiency Report completed and on file

INSPECTION DEFICIENCY REPORT	PAGE: 1 of 1
	YEAR:

Department: _____

Deficiency: _____

Reported to: _____

Date & Time: _____

Correction Required: _____

Corrected (Date & Initial): _____

Department: _____

Deficiency: _____

Reported to: _____

Date & Time: _____

Correction Required: _____

Corrected (Date & Initial): _____

JACKS & STANDS	PAGE: 1 of 1 YEAR:																																																				
ALWAYS ➤ Check handle springs for breakage and/or wear ➤ Check lifting operation MONTHLY ➤ Check that the labels are in place ➤ Lubricate grease nipple and springs YEARLY ➤ Check the fluid level ➤ Have professionally inspected MONTHLY CHECKS (<i>initial and X or ✓</i>) <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr style="background-color: #cccccc;"> <th style="width: 10%;">MONTH</th> <th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>Jun</th><th>Jul</th><th>Aug</th><th>Sep</th><th>Oct</th><th>Nov</th><th>Dec</th> </tr> <tr> <th style="background-color: #cccccc;">Initial</th> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table> YEARLY CHECKS (<i>initial and X or ✓</i>) <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr style="background-color: #cccccc;"> <th style="width: 10%;">MONTH</th> <th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>Jun</th><th>Jul</th><th>Aug</th><th>Sep</th><th>Oct</th><th>Nov</th><th>Dec</th> </tr> <tr> <th style="background-color: #cccccc;">Initial</th> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table> ***Every X must have a Deficiency Report completed and on file***		MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Initial													MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Initial												
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LADDER INSPECTION	PAGE: 1 of 1		
	DATE:		
Inspect ladders monthly. Remove any ladder that's damaged or in poor condition and report it your supervisor.	Not Applicable	Condition OK	Needs Repair
LABEL			
Ladder is labelled or marked with its load and duty rating (MUST BE CSA GRADE 2, 1, 1A or 1AA)			
LADDER PARTS			
All parts are in place			
Parts are free of defects (cracks, dents, bends, breaks, splits, sharp edges, corrosion, rust, exposed fibreglass, or excessive wear)			
Rungs and steps are free of mud, grease, oil, wet paint, snow or other slippery substances			
Rungs, steps and side rails are connected securely			
Bolts, rivets, nails and screws are secure			
Moving parts move freely without binding or too much play			
Safety shoes or padded feet are in good repair and clean—not missing or loose			
EXTENSION LADDERS			
Locks or latching mechanisms are not missing, broken or loose			
Locking guides or brackets engage properly			
Rope tracks properly in the pulley			
Ropes are not frayed, cut, badly worn, burned or showing mildew or rot			
Ropes are free of tangles			
STEPLADDERS			
Spreader bars are tight and have all rivets			
Spreader bars open fully and lock			
Person completing Inspection Signature			
EVERY FAILED LADDER MUST HAVE A DEFICIENCY REPORT COMPLETED AND ON FILE			

PARTS TRUCK MONTHLY INSPECTION

PAGE: 1 of 1

YEAR: _____

Make _____ Model _____ Year _____ LIC # _____

Month _____ Dates _____ — _____ KM's _____ — _____

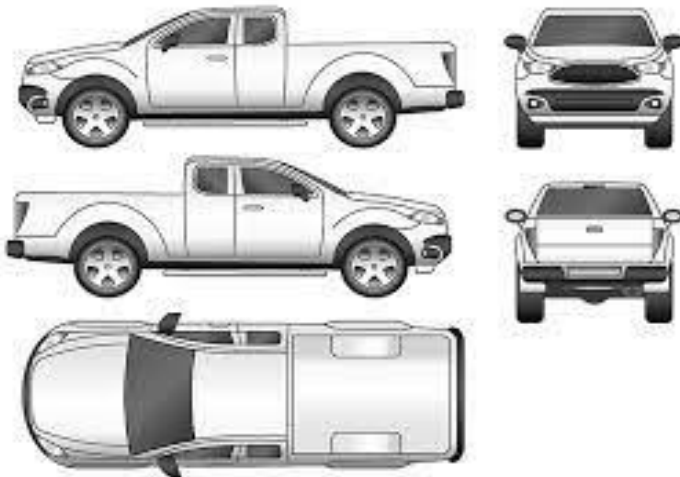
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MAY REQUIRE FUTURE
ATTENTION

REQUIRES IMMEDIATE
ATTENTION

ITEM	WEEK 1			WEEK 2			WEEK 3			WEEK 4			WEEK 5		
Lights															
Wipers															
Win/Fluid															
Firm Brakes															
Tires															
Doors															
Locks															
Fire Ext.															
First Aid															
Damage															
Cargo Net															
Ratchet Straps															
REPORT TO MANAGER BEFORE END OF DAY									REPORT TO MANAGER IMMEDIATELY (DO NOT OPERATE VEHICLE)						

Indicate Vehicle Damage:



Notes:

Signature _____ (Driver) Signature _____ (Manager)

POWER PUSHER	PAGE: 1 of 1 YEAR:

DAILY (Visual Only)

- The machine should be given a brief visual inspection. Any defects noted should be rectified prior to use.
- The handlebar control assembly includes a throttle return spring. Freedom of movement and return to centre (off) position should be established prior to switching the machine on.

WEEKLY

- The “Belly switch” anti-trap function must be tested by moving the machine towards the operator and depressing the switch. The machine must move away from the operator and stop. No movement may then be possible until the machine has been re-set.

Note: this test must be performed with good clearance behind the operator.

MONTHLY

- Check the Power Pusher for bent structural members
- Check for broken or cracked welds.
- Check wheels and tire for wear.
- Check battery terminals for corrosion.
- Check chains for proper tension. Maximum slack should not be more than ½” between sprockets.
- Check tire pressure: maintain pressure at 25psi
- Check and replace fuses if necessary.
- Check bolts inside and out for possible loosening from vibration.

Replace any bent, broken or worn parts.

WEEKLY CHECKS (initial and X or ✓)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
1 ST Week												
2 nd Week												
3 rd Week												
4 th Week												

MONTHLY CHECKS (initial and X or ✓)

MONTH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
Initial												

Every X must have a Deficiency Report completed and on file

SANDBLASTING CABINET	PAGES: 1 OF 2
	DEPARTMENT(s): Service Department

DO NOT perform this procedure until you have been appropriately trained and authorized to do so by your supervisor.

Hazards:

- Exposure to high-pressure abrasive material
- Dust Inhalation (Silica or other Particulates)
- Eye and Skin Irritation
- Noise Exposure
- Pinch Points from Glove Ports or Cabinet door
- Electrical Hazard (Lighting/Fan Faults)

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Protective Gloves



CSA Approved Safety Footwear



Respirator (If Applicable)

Do



- Inspect cabinet DAILY before use. Do NOT operate if damaged or malfunctioning.
- Ensure the ventilation/dust collection system is active and functioning properly.
- Use correct abrasive media for the material and task.
- Confirm gloves, seals, and door latches are intact and secure.
- Always wear required PPE.
- Use proper lifting techniques when placing items in or removing from cabinet.

Do Not



- Do not operate the cabinet with a damaged viewing window, torn gloves, or loose seals.
- Do not bypass or disable safety interlocks or ventilation systems.
- Do not blast toward the viewing window or light fixtures.
- Do not leave the cabinet while operating.
- Do not attempt to clean or maintain while machine is in use

Safe Work Procedure:

1. Preparation

- Inspect the cabinet, hoses, gloves, nozzle, and seals.
- Confirm abrasive level and type are appropriate for the job.
- Turn on ventilation/dust collection system.

SANDBLASTING CABINET	PAGES: 2 OF 2
	DEPARTMENT(s): Service Department
2. Operation • Open cabinet door and place the item securely inside. • Close and latch door fully before activating the system. • Insert hands into built-in gloves. • Use foot pedal or trigger to start blasting. • Blast evenly; avoid prolonged exposure to any one area. • Monitor for visibility and ensure good airflow. 3. Completion • Turn off blasting system and allow dust to settle. • Open cabinet door carefully to avoid dust release. • Remove item and inspect. • Clean interior of cabinet if needed. • Turn off ventilation system. • Report any issues or low media levels. REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	

Housekeeping • Keep area around cabinet clean and dry. • Do not allow buildup of spent media or dust. • Clean work area after use. Emergency Procedure • In case of equipment malfunction or injury, shut down equipment immediately. • Follow the emergency stop or lockout procedure. • Use eyewash station or first aid kit if needed. • Report hazardous situations to supervisor/instructor immediately.

SECTIONAL BAY DOORS MONTHLY INSPECTION CHECKLIST

LOCATION:

DATE:

Grade each element below: Pass—☒ Fail—☒ Not Applicable—N/A

CHECKS—VISUAL AND OPERATING CHECKS ONLY	Door	Door	Door	Door	Door	Door
DOOR, OPERATOR & SAFETY DEVICES OPERATION:						
1. The door operates smoothly and quietly without binding or scraping / grinding noises.						
2. The movement of the door is free of any obstruction, stationary or moveable.						
3. Door stops softly at the floor and at the top of its opening motion (w/ electric operator).						
4. All operator controls function properly (open/close/stop buttons, key controls, etc.).						
5. All safety devices function properly (photo-eyes, safety edges, horns, lights).						
6. All safety and warning labels are intact.						
VISUAL INSPECTIONS:						
1. Inspect door sections for damage						
2. Inspect door for level (door should not be visually “crooked”)						
3. Inspect hinges (center and end hinges) for damage, loose fasteners						
4. Inspect rollers for damage, wear						
5. Inspect cables for signs of damage, wear (eg. fraying)						
6. Inspect bottom brackets for damage, loose fasteners						
7. Inspect vertical track and track brackets for damage, secure fastening to the jambs						
8. Inspect torsion spring assembly for damage (eg. broken spring, worn bearings, bent shaft)						
9. Inspect torsion spring assembly for secure fastening to the wall						
10. Inspect horizontal track and back-hanging for damage, secure fastening						
11. Inspect that electric operator is securely fastened to the wall (or ceiling w/ trolley style)						

NOTES: Report to manager if any of the checks fail or if you are concerned about a door’s safety or operation.

The above monthly visual and safety device checks should be performed between scheduled professional maintenance.
Do not operate the door if there is obvious binding or grinding / scraping noises.

WARNING: The door is constantly under extreme spring tension. DO NOT attempt any adjustments or repairs, especially to the cables, spring assembly or bottom brackets. All maintenance should be performed by a trained door systems technician.

SHUTTLE VAN WEEKLY INSPECTION

PAGE: 1 of 1

YEAR:

(TO BE COMPLETED EVERY MONDAY MORNING)

Make _____ Model _____ Year _____ LIC # _____

Month _____ Dates _____ KM's _____

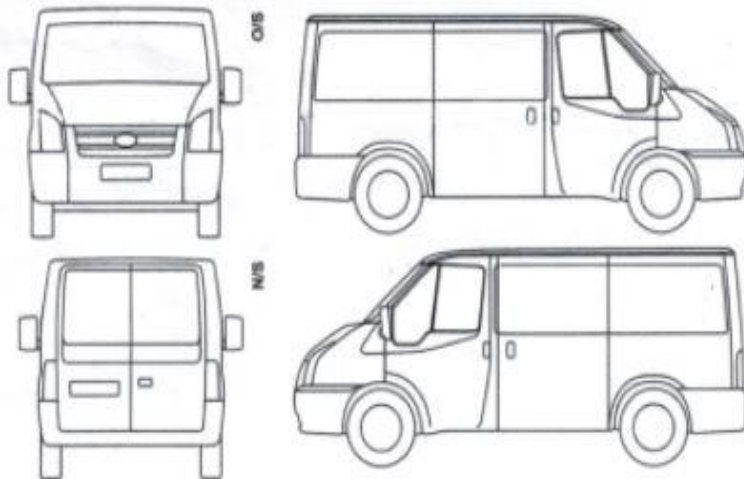
CHECKED OK AT THIS TIME

MAY REQUIRE FUTURE
ATTENTION

REQUIRES IMMEDIATE
ATTENTION

ITEM	WEEK 1			WEEK 2			WEEK 3			WEEK 4			WEEK 5		
Lights															
Wipers															
Win/Fluid															
Firm Brakes															
Tires															
Doors															
Locks															
Fire Ext.															
First Aid															
Damage															
REPORT TO MANAGER BEFORE END OF DAY							REPORT TO MANAGER IMMEDIATELY (DO NOT OPERATE VEHICLE)								

Indicate Damage Location



Notes:

Signature _____ Signature _____
(Driver) (Manager)

SPRING COMPRESSOR	PAGE: 1 of 1 YEAR:																										
BEFORE EACH USE ➤ Ensure that spring compressor is in good operating condition ➤ Ensure that support hooks/feet are clean and dry to prevent spring from slipping MONTHLY ➤ Check handles, arms, support hooks/feet, etc. for breakage and/or wear ➤ Check for smooth operation of moving parts and lubricate as necessary ➤ Check that labels are in place YEARLY ➤ Have professionally inspected																											
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Initials																											
Every X must have a Deficiency Report completed and on file																											

TORQUE WRENCH ACCURACY TEST	PAGE: 1 of 1 MONTH/YEAR:

Technician Name: _____

Serial Number: _____ Model Number: _____

Testing Intervals: _____ Equipment Used: _____

Unit of Measure: _____ Test Results: _____

Tested By: _____

Applied	Tolerances 4% -	Tolerances 4%+	Result
25	24	26	
50	48	52	
75	72	78	
100	96	104	
125	120	130	
150	144	156	
175	168	182	
200	192	208	
225	216	234	
250	240	260	

Test the wrench at three different settings on the chart. Begin with a setting that is equal to or slightly above the highest setting that may be used in your shop.

JOINT OCCUPATIONAL HEALTH & SAFETY COMMITTEE (JOHSC)

TERMS OF REFERENCE

Introduction:

NSADSA members are committed to providing a safe and healthy work environment for all employees. We have established a Joint Occupational Health and Safety Committee (JOHSC) in accordance with provincial regulations. These rules of procedure outline the roles, responsibilities, and procedures of the JOHSC to ensure that our workplace is safe and compliant with applicable regulations.

Definitions:

- ⇒ **JOHSC:** The Joint Occupational Health and Safety Committee established to promote and maintain a safe and healthy work environment.
- ⇒ **Chairperson:** The person appointed of the JOHSC to chair meetings and oversee the committee's activities.
- ⇒ **Secretary:** The person appointed by the JOHSC to keep records of meetings, maintain documentation, and handle administrative tasks.
- ⇒ **Employee Representative:** The representative of the employees selected by the employees to participate in the JOHSC.
- ⇒ **Employer Representative:** The representative of the employer appointed by the employer to participate in the JOHSC.

Rules of Procedure

Establishment of the JOHSC:

- ⇒ Our dealership has established a JOHSC in accordance with provincial regulations. The JOHSC shall consist of at least one employee representing each department in the dealership.
- ⇒ It is mandatory that a senior management employee belonging to that dealership is part of the committee. At least half of the committee members must be non-management employees.
- ⇒ Employees become members of the safety committee on a voluntary basis. However, if a committee does not have a representative from each department, then a member will be appointed.
- ⇒ Alternates will be selected for each department in the case that the current committee member cannot attend a meeting.
- ⇒ The JOHSC members shall be appointed for a term of two years.
- ⇒ A member of Senior Management for the dealership represented will chair the Joint Occupational and Safety Committee.

Roles and Responsibilities:

The JOHSC is responsible for:

- ⇒ Identifying workplace hazards and recommending measures to eliminate or control these hazards.
- ⇒ Participating in the development, implementation, and monitoring of health and safety policies and programs.
- ⇒ Conducting workplace inspections and investigations of accidents and incidents.
- ⇒ Reviewing and providing feedback on workplace safety training programs.
- ⇒ Participating in the resolution of health and safety concerns raised by employees.

Meetings:

- ⇒ The JOHSC shall meet at least monthly or more frequently if necessary.
- ⇒ Meetings shall be chaired by the Chairperson and attended by all members of the JOHSC.
- ⇒ The Secretary shall be responsible for preparing the agenda, recording minutes of the meeting, and distributing copies to all members of the JOHSC.
- ⇒ A quorum consisting of fifty percent of committee members plus one, with more non-management than management members, is required to hold a meeting. In the situation where voting is necessary, it is mandatory that half of the committee members plus one, agree on a decision.
- ⇒ Decisions shall be made by consensus whenever possible. If consensus cannot be reached, a vote shall be taken, with the Chairperson having the casting vote.
- ⇒ Within ten days after the safety meeting, minutes will be distributed to all members and appropriately posted so that all staff has access to reviewing.
- ⇒ All committee meetings and minutes will at minimum include, but not be limited to:
 - Date of the meeting
 - List of Members Present and Absent
 - An attendance sheet to be signed by each member
 - Old business that has not been resolved
 - New business
 - Accidents & Near Misses
 - An agenda listing all items to be discussed
 - Date for the next meeting
- ⇒ Before each meeting, the Committee Chair will distribute an agenda of items to be discussed at the meeting.

Review of Policy and Programme:

Each committee will annually review the:

- ⇒ Occupational Health and Safety Policy
- ⇒ Safe Work Practices & Procedures
- ⇒ Personal Protective Equipment Requirements
- ⇒ Programme Policy
- ⇒ Rules of Procedure
- ⇒ Training Requirements
- ⇒ WHMIS Training

Recommendations for changes or updates will be submitted to management.

Workplace Inspections:

- ⇒ The JOHSC shall conduct regular workplace inspections to identify potential hazards and recommend measures to eliminate or control these hazards.
- ⇒ Inspections shall be conducted by a minimum of two members of the JOHSC, including at least one employee representative and one employer representative.
- ⇒ Inspections shall be documented and communicated to management for appropriate corrective action.

Accident/Incident Investigations:

- ⇒ The JOHSC shall investigate all accidents and incidents that occur in the workplace.
- ⇒ Investigations shall be conducted by a minimum of two members of the JOHSC, including at least one employee representative and one employer representative.
- ⇒ Investigations shall be documented and communicated to management for appropriate corrective action.

Health and Safety Training:

- ⇒ The JOHSC shall participate in the development, implementation, and monitoring of health and safety training programs.
- ⇒ The JOHSC shall review and provide feedback on workplace safety training programs.
- ⇒ The JOHSC shall ensure that all employees are informed about the hazards and risks associated with their work and are trained in safe work practices.

Records:

- ⇒ The JOHSC shall maintain records of its activities, including minutes of meetings, workplace inspections, accident/incident investigations, and health and safety training programs.
- ⇒ Records shall be maintained for a minimum of two years

Complaints:

- ⇒ When an employee has a complaint or concern about health and safety the employee must first bring the matter to their immediate supervisor for review.
- ⇒ If the matter is not resolved to the employee's satisfaction then the employee may report it to the Joint Occupational Health and Safety Committee. The committee's role is to consider the actions taken by the employee and manager and make recommendations as to how the issue may be resolved at the work site. If the committee's recommendations fail to resolve the issue or the manager does not follow through on these recommendations, then the recommendations must be forwarded to the dealer principle.

Work Refusals:

- ⇒ Under **Section 43** of the Occupational Health and Safety Act, employees may refuse work if they find reasonable grounds for believing that the act is likely to endanger their (or another individuals) health or safety.
- ⇒ An employee is to report their refusal to their immediate supervisor. If the supervisor does not remedy the situation to the employee's satisfaction, or refuses to attempt to remedy the situation, the employee can then take the matter to the JOHSC.
- ⇒ The Committee's role in the work refusal is to investigate the circumstances surrounding the refusal, including inspecting the area, equipment or worksite. If the committee feels the task or job to be performed is safe then they must unanimously advise the employee to return to work. Should there be any result other than a unanimous decision then the employee must contact an officer of the Department of Labour in order to have the matter resolved. It is not the role of the committee to advise the employee not to return to work.

Inspection by an outside Health and Safety Official:

- ⇒ Once a year, a Safety Certified Audit of the premises will be conducted by an outside company approved by the NSADSA & the NS WCB, and the Chair of the committee will complete the inspection with them.
- ⇒ The results will be reviewed by the JOHSC committee and recommendations will be resolved.

HEALTH & SAFETY COMMITTEE RECOMMENDATION

DELIVERY DATE: _____

TO: _____

FROM: Joint Occupational Health & Safety Committee

DATE: _____

SUBJECT: _____

BACKGROUND:

RECOMMENDATION:

Signature of Member (JOHSC)

HEALTH & SAFETY COMMITTEE RECOMMENDATION (EMPLOYER RESPONSE)

Employer Response (within 21 days of above delivery date): I accept the above recommendation & agree to its implementation by: _____

I do not agree to the recommendation because:

A 30 day period is not sufficient for response because:

I will respond by: _____

Signature of Employer

Health & Safety Meeting

Date _____

ATTENDEES:

Management

1	_____
2	_____
3	_____
4	_____
5	_____

Employees

1	_____
2	_____
3	_____
4	_____
5	_____

Review of Previous Meeting:

Topic(s) Discussed:

Concerns:

Action Items:

Follow up / Review:

Safety Rep’s Signature: _____

Management Signature: _____

Minutes of Joint Occupational Health and Safety Committee Meeting

Date

Time

In Attendance:

Management

Non-Management

Guests:

Name

Company

Review of Previous Meeting Minutes

Review of Unfinished Business from last Meeting

Item (UNFINISHED) –
Action Item:

Item (UNFINISHED) –
Action Item:

Item (UNFINISHED) –
Action Item:

Completed Business from last Meeting

Item (COMPLETED) –
Action Item:

Item (COMPLETED) –
Action Item:

Item (COMPLETED) –
Action Item:

Item (COMPLETED) –
Action Item:

Item (COMPLETED) –
Action Item:

Item (COMPLETED) –
Action Item:

Item (COMPLETED) –
Action Item:

New Business

Item (ONGOING) –
Action Item:

Item (ONGOING) –
Action Item:

Item (ONGOING) –
Action Item:

Item (ONGOING) –
Action Item:

Item (ONGOING) –
Action Item:

Item (ONGOING) –
Action Item:

Item (ONGOING) –
Action Item:

Accidents and Near Misses

Agenda for Next Meeting

- ☐ Roll Call
- ☐ Approval of the minutes from last meeting
- ☐ Review of Unfinished Business
- ☐ New Business from previous meeting
- ☐ Accidents and Near Misses
- ☐ New Safety Concerns
- ☐ Safety Topic Annual Review
- ☐ Adjournment

Next Meeting:

Time:

FIRST AID PROGRAMME

INTRODUCTION

It is the policy of all NSADSA members is to ensure that at each dealership, there will be enough staff trained in First Aid applicable to the Workplace Health & Safety Regulations of Nova Scotia, and they will be provided with a suitably sized and equipped CSA First Aid Kit applicable to the hazards.

All employees are cautioned that the provision of First Aid to the injured should not endanger the person providing the assistance. Do not place yourself at risk to provide First Aid. You become part of the problem if you are injured while attempting to aid. If possible, make the area safe before commencing First Aid or move the victim to a safe location.

Definitions

First Aid Attendant: is a holder of a valid basic or intermediate first aid certificate.

Basic First Aid Certificate: is the certificate issued by an approved organization for the successful completion of a one-day first aid course.

Intermediate First Aid Certificate: is the certificate issued by an approved organization for the successful completion of a two-day first aid course.

First Aid Station: a place, other than a First Aid Room, at which First Aid supplies or equipment is stowed.

Hazards

People:

- First Aider exposed to the hazards that caused the injury to the victim.
- First Aider exposed to the patient's body fluids where a source of infection or bio-hazardous contamination may not be known.

Responsibilities

Employee:

- If trained as a First Aid Attendant, know, and comply with the safe work practices for providing First Aid.
- Provide First Aid in a manner that will not expose you to harm.
- Provide First Aid only at the level of your training. Do not attempt procedures or use equipment for which you have not been trained.

Supervisor

- Ensure that each work area has the appropriate number of First Aid Attendants and the appropriate First Aid supplies to comply with the regulations.
- Establish a First Aid Station inspection process that will ensure that adequate First Aid supplies are available at the workplace and are replenished when used.

Manager

- Provide the necessary resources (personnel, equipment, training, and PPE) for the proper and safe provision of First Aid in the workplace.

Safe Practices

Instructions and Training

Every employee designated as a First Aid Attendant shall be instructed and trained in the proper application of First Aid principles and techniques by an approved organization.

Responsibilities of First Aid Attendants

A designated First Aid Attendant:

- shall be readily available and accessible to the employees during all working hours.
- shall render First Aid to employees who are injured or ill at the workplace.
- shall, if required take the injured or ill employee to the medical treatment facility and render First Aid in transit as appropriate.
- when providing care to an injured or ill employee, shall not be overruled by anyone not trained in First Aid.

- shall be in charge of providing care for the injured or ill employee until the employee is transferred to the care of an equally qualified or more qualified caregiver.
- shall make a record of the treatment provided, including:
 - date, time, location of the occurrence.
 - brief description of the injury/illness.
 - brief description of the First Aid rendered.
 - brief description of the arrangements made for treatment or transportation.
 - names of witnesses (if applicable).

First Aid Stations and Supplies:

- Appropriate First Aid Stations shall be located at the where required based on hazards.
- Instructions for the provision of First Aid for injury or illness are available in each workplace at the First Aid Station. Check with your Supervisor to confirm their locations in your workplace.
- A First Aid Station monthly inspection procedure and checklist has been established to ensure that First Aid Station supplies are maintained in a clean, dry and serviceable condition.

Prior to Treatment:



- wash hands with soap and water, or rinse with antiseptic.
- ensure that hands are washed thoroughly between fingers and under nails.
- always wear the gloves provided within the First Aid Kit.
- take care not to touch any unclean object when wearing gloves or once hands are washed.
- if possible, use a protective cloth over clothing.
- cover any adjacent areas likely to produce infection.

During Treatment:



- use a face shield/mask with one-way-valve when doing active resuscitation.
- use only clean bandages and dressings.
- avoid coughing, breathing, or speaking over the wound.
- avoid contact with body fluids.
- avoid treating more than one casualty without washing hands and changing gloves.

After Treatment:

- clean up both casualty and you.
- clean up the immediate vicinity.
- dispose of potentially bio-hazardous dressings, bandages, gloves and soiled clothing by containing them securely in a properly labeled container and bring them to the medical facility with the victim, for disposal by the healthcare facility.
- wash hands with soap and water thoroughly even if gloves were used.

First Aiders on Staff:

First Aiders	Phone Numbers

Emergency Response Team

1	
2	
3	
4	
5	
6	
7	
8	

Muster Area: _____

Hospital Address: _____

Hospital Phone Number: _____

First Aid Kit Log: Injury & Supplies

Date	Time	Time of First Aid Administered?	Location of Injury?	Nature of Injury?	First Aid Treatment Provided?	Injury Person Name?	To Whom was the First Aid Report to?	Who Provided the First Aid?

(KEEP THIS RECORD ON FILE FOR 5 YEARS)

WORKPLACE FIRST AID GUIDE

Contents

Section 1 | Information for Employers

1.1 First aid kits

How many do you need? Where should you keep them? Contents

1.2 First aiders and other medical professionals

When can you substitute medical professionals for first aiders?

1.3 Transportation and first aid rooms

1.4 How many first aid kits and first aiders do you need at each workplace?

How to find the number of employees at a workplace How to determine your type of workplace How to determine the travel time to emergency services Police and firefighters

1.5 Record keeping

Checklist

Section 2 | Information for First Aiders

2.1 Certification

*Training and certification renewal How long does it take to become certified or to renew a certification? **Record keeping***

2.2

Section 3 | First Aid Rooms

3.1 Do you need a first aid room?

3.2 Who is responsible for the first aid room? 3.3 What is required in a first aid room?

Section 4 | Isolated Workplace First Aid Plan

4.1 Do you need an isolated workplace first aid plan?

4.2 What to include in your written isolated workplace first aid plan

Definitions

Appendix A | First Aid Compliance Worksheet

Appendix B | Employer first aid checklist

Appendix C | Types of first aid kits and their contents

Section 1 | Information for Employers

As an employer, you must provide first aid supplies, trained first aiders, and other first aid services, such as emergency transportation, at each of your workplaces at your own expense.

Note: If your workplace has several employers represented onsite at once, you can enter into a written agreement with the other employers to either

- collectively supply the first aid requirements
- have one employer supply them for everyone

In accordance with the first aid requirements, as an employer you may be required to provide a copy of this agreement if requested by an Occupational Health and Safety Officer.

This section covers

- 1.1 first aid kits
- 1.2 first aiders and other medical professionals
- 1.3 transportation and first aid rooms
- 1.4 how to determine the number of first aid kits and first aiders you need record
- 1.5 keeping

First aid kits

1.1

Nova Scotia has approved three types of first aid kits for use in Nova Scotia workplaces:

Type 1 – Personal first aid kit. Available in only one size.

Type 2 – Basic first aid kit. Available in three sizes (small, medium, large).

Type 3 – Intermediate first aid kit. Available in three sizes (small, medium, large).

How many do you need?

The type, size, and number of kits you will need depend on three factors: how many employees are in your workplace, whether your workplace is an office or not, and how far away you are from emergency medical services. *See Table 1 in section 1.4 to determine your needs.*

Where should you keep them?

Your kits should be accessible at all times during workplace hours. Keep them in a clean, dry location.

If you have more than one first aid kit, place them throughout the workplace so they can be reached quickly. First aid kits should be in a prominent location at the workplace. Ensure you have clear signage indicating where the first aid kits are located and include the name and phone number of any first aiders you have on staff.

Contents

Different types of kits have different contents. *See Appendix C for a full list of items that come in each type of kit.* Check your kits regularly to make sure they are

- clean and dry
- fully stocked with no expired items
- visible and in accessible locations
- in line with the regulations

Note: If you have identified hazards that are unique to your workplace, you may need extra items that are not included in a first aid kit. For example: products that treat chemical burns to the skin or eyes are not standard in first aid kits. You will need to have appropriate first aid supplies available based on the hazards in the workplace.

1.2 First aiders and other medical professionals

First aiders are employees at the workplace who are trained and certified to promptly provide injured employees with a level of care within the scope of practice appropriate for their level of workplace first aid training.

First aiders are certified at three levels: basic, intermediate, or advanced *See section 2.1 for more information on certification.*

As an employer, you must

- ensure the training your first aiders take meets the requirements in the latest version of CSA Standard Z1210
- pay the cost of your first aiders' training
- pay them their regular wages and benefits while they are taking the training
- keep a copy of each first aider's certificate until it expires. Certification is good for a maximum of three years. Check with your training agency as some may specify a shorter period.

Electronic certificates are acceptable.

The number of first aiders you will need, and their level of certification, depends on three factors: how many employees are in your workplace, whether your workplace is an office or not, and time to access emergency medical services. *See Table 1 in section 1.4 to find the minimum number of trained first aiders required in your workplace.*

When can you substitute medical professionals for first aiders?

If your workplace is a hospital^{*}, emergency care facility^{*}, or long-term care facility^{*}, you can substitute a medical professional for a workplace first aider if the medical professional

- has current CPR - Cardiopulmonary Resuscitation training and
- is available for first aider duties during all shifts

1.3 Transportation and first aid rooms

As an employer, you must provide safe and timely emergency transportation to a hospital or emergency care facility.

Along with first aid kits and first aiders, you may also need to provide one or more first aid rooms. *See section 3 to determine if you need a first aid room.*

1.4 How many first aid kits and first aiders do you need at each workplace?

The number and type of first aid kits you need, as well as the number of first aiders and their certification levels depends on three factors:

1. the number of employees at the workplace during each shift
2. the type of workplace (office or other)
3. the travel time to emergency services or for emergency health services to arrive at your workplace

Use table 1 to determine your needs. You can also use the compliance worksheet in Appendix A.

Table 1: Number of first aid kits and first aiders required in Nova Scotia workplaces based on number of employees per shift, type of workplace (office or other), and surface travel time to emergency services

	Offices			Other workplaces	
Surface travel time	Number of employees per shift	Number of first aiders & certification level	Number and type of first aid kits	Number of first aiders & certification level	Number and type of first aid kits
Close workplace 20 min from emergency medical care	1	—	1 type 1	—	1 type 1
	2-25	1 basic	1 type 2 (small)	1 basic	1 type 2 (small)
	26-50	1 basic	2 type 2 (small)	1 Intermediate	2 type 2 (small)
	51-99	1 basic	3 type 2 (small)	2 Intermediate	3 type 2 (small)
	100-199	2 basic	6 type 2 (small)	2 Intermediate	6 type 2 (small)
	200 or more	3 basic	6 type 2 (small)	3 Intermediate	6 type 2 (small)
Distant workplace 20-40 min from emergency medical care	1	-	1 type 1	1 basic	1 type 1
	2-25	1 basic	1 type 2 (small)	1 intermediate	1 type 2 (small)
	26-50	1 basic	2 type 2 (small)	1 intermediate	2 type 2 (small)
	51-99	1 basic	3 type 2 (small)	2 intermediate	3 type 2 (small)
	100-199	2 basic	6 type 2 (small)	1 intermediate 1 advanced	6 type 2 (small)
	200 or more	3 basic	6 type 2 (small)	2 intermediate 1 advanced	6 type 2 (small)
Isolated workplace 40+ min from emergency medical care	1	1 basic	1 type 1	1 intermediate	1 type 1
	2-25	1 basic	1 type 2 (small)	1 intermediate	1 type 3 (small)
	26-50	1 basic	2 type 2 (small)	1 advanced	1 type 2 (small) 1 type 3 (small)
	51-99	2 basic	3 type 2 (small)	2 advanced	2 type 2 (small) 1 type 3 (small)
	100-199	2 basic	6 type 2 (small)	3 advanced	4 type 2 (small) 2 type 3 (small)
	200 or more	3 basic	6 type 2 (small)	4 advanced	4 type 2 (small) 2 type 3 (small)

Note: Kit sizes can be replaced based on one medium kit being equivalent to two small kits; and one large kit being equivalent to four small kits.

How to find the number of employees at a workplace

Include all full-time, part-time, and casual employees that are in the workplace on any one shift. If employees come and go during a shift, use the maximum number of employees present during that shift to determine your needs.

If any one shift (for example, the night shift) has fewer employees than another (for example, the day shift), you may need fewer first aiders with a different level of certification for that shift.

See Table 1 for the type and size of kit needed (depending on the type of workplace and travel time from medical services).

How to determine your type of workplace

Under Nova Scotia's current Workplace Health and Safety Regulations, there are two types of workplaces:

Office

- Administrative, professional, or clerical work only
- No substantial physical exertion
- No exposure to potentially hazardous processes, substances, or other conditions

Other

- All workplaces that are not offices

Employers must ensure that a vehicle that is regularly used to transport employees is equipped with a size small Type 2 first aid kit.

For a vehicle that is regularly used to transport only the driver of the vehicle, the driver's employer must ensure that the vehicle has at least a Type 1 first aid kit.

How to determine the travel time to emergency services

Your workplace will be considered either close, distant, or isolated based on

- the time it takes under normal circumstances to transport an injured employee by surface* from the workplace to a hospital** or emergency care facility** or
- the time required under normal circumstances for Emergency Health Services (EHS)** to arrive at the workplace

*Surface travel time includes travel by land or water under normal conditions. ** See definitions page 19

Close: 20 minutes or less
Distant: More than 20 minutes but less than 40 minutes
Isolated: 40 minutes or more

Police and firefighters

The response time estimates provided here do not include response time by police. Police officers have first aid training; however, they are not considered emergency health services in the context of the First Aid regulations.

Some fire departments participate in the Nova Scotia Emergency Health Services (EHS) Medical First Response Programme. The Medical First Response Programme is voluntary. It is recommended to contact your local fire department to determine whether they are a registered Medical First Response agency when determining EHS response times.

Employers should do a risk assessment to determine whether the workplace is close, distant or isolated. There are various tools and information available to assist employers.

Annual Accountability report available through the Department of Health and Wellness

- [Emergency-Departments-Report-2020-2021.pdf](#) (novascotia.ca)
- Contact your local EHS department to determine if the Fire department participates in the Programme
- Consult your joint occupational health and safety committee or health and safety representative if there is one in your workplace.

1.5 Record keeping

Employers must keep detailed records of every injury in the workplace and keep these records confidential. A record must include the following:

- the name of the injured person
- the date and time of the injury
- the location and nature of the injuries on the person's body
- the time when first aid was administered
- the first aid treatment provided
- the name of the person who provided the first aid and the workplace first aid certificate they hold
- the name of the person the injury was reported to

Records must be maintained for five years. The definition of written include physical copies (e.g., on paper), but electronic records are permitted so long as they are readily accessible at all times.

Checklist

We encourage you to consult your organization's joint occupational health and safety committee or your health and safety representative to reduce the risk of harm in your workplace and prevent injuries and illnesses before first aid measures are needed.

Use the employer checklist in Appendix B to ensure you have the right number and type of first aid supplies and trained people for your workplace.

Section 2 | Information for First Aiders

As a first aider, you are trained and certified to promptly provide injured employees with a level of care within the scope of practice appropriate for your level of workplace first aid training.

The section covers

2.1 certification 2.2 record keeping

2.1 Certification

Nova Scotia recognizes three levels of first aid certification under the Workplace Health and Safety Regulations: basic, intermediate, and advanced. The level of certification you require will be determined by

- the number of employees on any one shift at the workplace
- the type of workplace (office or other)
- whether the workplace is close to, distant from, or isolated from emergency medical services

See Table 1 for which certification levels are required and when.

Note: If you were certified as having emergency (now called basic), standard (now called intermediate), or advanced (still called advanced) first aid skills under the Occupational Health and Safety First Aid Regulations (2001), your certification remains valid until it expires.

Training and certification renewal

Your employer must pay for your training to become certified or to renew your certification. They must also give you wages and benefits to complete the training. Training must be given by a training agency that adheres to the requirements of CSA Standard Z1210 “First aid training for the workplace – Curriculum and quality management for training agencies.” First aid providers approved in another Canadian jurisdiction who are compliant with CSA Z1210 are approved to deliver training in Nova Scotia.

Certification is good for a maximum of three years. Check with your training agency as some may specify a shorter period.

How long does it take to become certified or to renew a certification?

First aid training that meets the CSA first aid training standard includes a combination of classroom learning and practical skills demonstration. If you are renewing a currently valid certificate, your training agency may offer a recertification course that is shorter than the times listed below

Length of training courses:

- **basic** – approximately one day (7 hours)
- **intermediate** – approximately two days (14 hours)
- **advanced** – approximately 10 days (70 hours)

2.2 Record keeping

Employers must keep detailed records of every injury in the workplace and should keep these records confidential. As a first aider you may be required to make a record of treatment and provide that record to the employer. A record must include the following:

- the name of the injured person
- the date and time of the injury
- the location and nature of the injuries on the person's body
- the time when first aid was administered
- the first aid treatment provided
- the name of the person who provided the first aid and the workplace first aid certificate that they hold
- the name of the person the injury was reported to

Your employer is responsible for maintaining these records. Records must be maintained for five years. The definition of written include physical copies (i.e. on paper), but electronic records are permitted so long as they are readily accessible at all times.

Section 3 | First Aid Rooms

A first aid room is a room at a workplace that is used exclusively for administering first aid.

Having a first aid room does not replace your requirement to have first aid kits and first aiders, as listed in the regulations.

This section covers

3.1 when you need a first aid room

3.2 who is responsible for maintaining the first aid room 3.3 requirement of a first aid room

3.1 Do you need a first aid room?

As an employer, you must provide at least one first aid room if

- your workplace is not an office, and
- you have 200 or more employees regularly employed on any one shift at the workplace, and
- your workplace is not a hospital* emergency care facility* or long-term care facility*

**See definitions page 19*

3.2 Who is responsible for the first aid room?

The employer is responsible for controlling and supervising the first aid room, ensuring it

- is accessible during working hours, clean, heated, well ventilated, and well lit
- has an entrance big enough to accommodate a stretcher
- has a means of communicating with the other areas of the workplace
- has emergency telephone numbers posted
- has appropriate first aid supplies that meet the regulations, including a bed

3.3 What is required in a first aid room?

Equipment and furniture

- 1 sink with running water
- 1 refuse pail with a cover
- 1 chair with arm rests that ensure that the chair is suitable to treat injured employees
- 1 bed, covered with a plastic sheet
- pillows and blankets
- 1 cabinet suitable for storing dressings and instruments

Materials and supplies

- 1 first aid guide
- 12 assorted safety pins
- 1 wash basin
- 1 package of paper towels
- hand soap
- 1 package of disposable paper cups
- 1 kidney basin
- 1 set of assorted splints
- 1 portable medium size type 2 first aid kit
- supplies equivalent to those in a large size type 2 first aid kit
- 1 flashlight
- 20 additional pairs of disposable latex gloves or gloves made of material that provides an equivalent level of protection against the spread of infections or contagious conditions
- instructions on how to record first aid treatments
- 1 pencil

Section 4: Isolated workplace first aid plan

A workplace is considered to be isolated if

- the surface travel time under normal circumstances to transport an injured employee from the workplace to a hospital or emergency care facility takes more than 40 minutes
or
- the time required under normal circumstances for EHS to arrive at the workplace takes more than 40 minutes

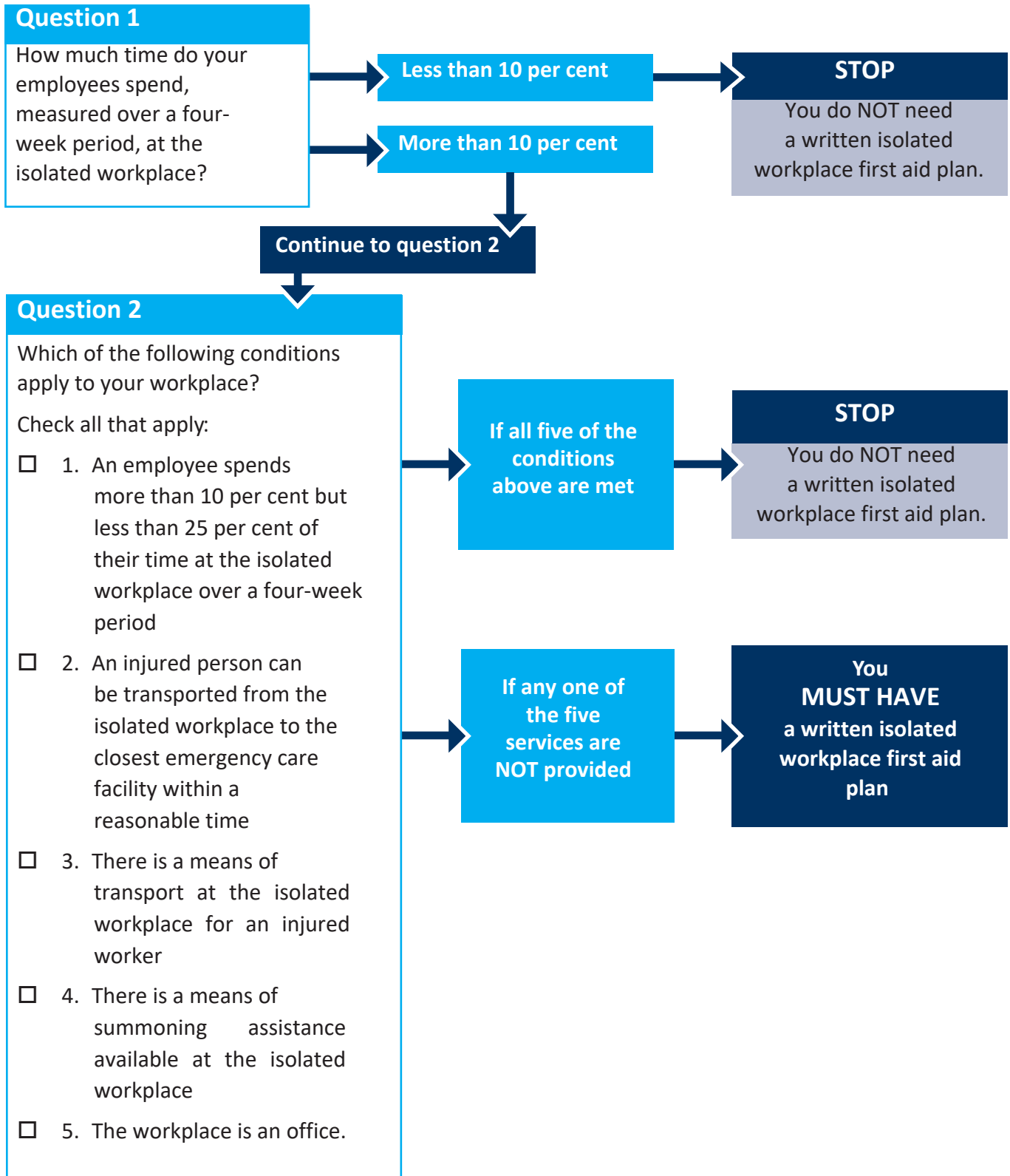
If your workplace fits that description, you may need to have a written isolated workplace first aid plan.

The section covers

4.1 How to determine if you need an isolated workplace first aid plan 4.2 What to include in your plan

4.1 Do you need an isolated workplace first aid plan?

Follow this flow chart to determine if you need an isolated workplace first aid plan:



4.2 What to include in your written isolated workplace

first aid plan

You must have a first aid plan for each of your isolated workplaces. Be sure to consult your joint occupational health and safety committee or representative to create your plan.

Your plan must include

- a description of how each isolated workplace will comply with at least the minimum standards set out in the regulations
- a method of transportation for injured employees from each isolated workplace
- a method of communication with and from each isolated workplace
- a description of the nature of the work being performed at each isolated workplace

Definitions

Emergency Health Services (EHS): means the co-ordinated delivery of services provided by registered pre-hospital first responders, and by paramedics and other medical professionals under the Emergency Health Services Act, to prevent and manage medical, trauma and health conditions.

Emergency Care Facility: means a healthcare facility that meets all of the following criteria: (i) it is equipped to provide immediate treatment of injuries and illnesses, (ii) it has a medical practitioner, registered and licensed to practice medicine under the Medical Act, on call.

Hospital: means a hospital, as defined in the Hospitals Act, that provides emergency services during all hours of operation.

Long-term Care Facility: means any of the following, as defined in the Homes for Special Care Act:

- (i) nursing home,
- (ii) residential care facility.

Medical Professional: means any of the following:

- (i) a medical practitioner who is registered and licensed to practice medicine under the Medical Act,
- (ii) a nurse practitioner who is registered and licensed to engage in the practice of a nurse practitioner under the Nursing Act,
- (iii) a registered nurse who is registered and licensed to engage in the practice of a registered nurse under the Nursing Act,
- (iv) a licensed practical nurse who is registered and licensed to engage in the practice of a licensed practical nurse under the Nursing Act,
- (v) a paramedic who is licensed to practice paramedicine under the Paramedics Act.

Note: These definitions are found in Part 4 of the Workplace Health and Safety Regulation.

Appendix A | First Aid Compliance Worksheet

First Aid Compliance Worksheet

Basic Information

1. Name of workplace: _____

Note: Please use a separate worksheet for each workplace¹.

2. How would an injured person be transferred from the workplace to a hospital or an emergency care facility? _____

First Aid Kits and First Aider Training

3. Is the workplace a hospital, emergency care facility, or long-term care facility?

- ☐ **YES.** An employer at a hospital, emergency care facility, or long-term care facility, which of the following substitutions will be made:
- a medical professional who maintains current training in cardio-pulmonary resuscitation for a workplace first aider;
 - medical supplies maintained at the workplace for a first aid kit if the supplies include all of the items required by regulation;
 - first aid supplies and facilities equivalent to those required in a first aid room for a first aid room, as specified in regulation. Proceed to next question.
- ☐ **NO.** Proceed to the next question.

4. Is the workplace a vehicle? Note that the definition of “vehicle” includes boats and aircraft.

- ☐ **YES.** Consider how many employees may require first aid in the vehicle at a given time:
- If the work vehicle is regularly used to transport only the driver of that vehicle, then the driver’s employer must ensure that the vehicle has at least a type 1 first aid kit.
 - If the work vehicle is regularly used to transport employees in addition to the driver, then the driver’s employer must ensure that the vehicle has at least a small type 2 first aid kit. Proceed to next question.
- ☐ **NO.** Proceed to the next question.

5. Number of employees per shift including full-time, part-time, and casual employees

☐ 1	☐ 51 – 99
☐ 2-25	☐ 100 – 199
☐ 26 – 50	☐ 200 or more

6. Surface travel time to transport an injured employee from the place where they are injured to a hospital or an emergency care facility, or for EHS to arrive and attend to an injured employee

- ☐ **Close:** No more than 20 minutes
- ☐ **Distant:** More than 20 minutes but less than 40 minutes
- ☐ **Isolated:** More than 40 minutes¹

7. Does the definition of “office”² apply to this workplace?

- ☐ **YES.** See table of minimum first aid kit and first aider training requirements for an office
- ☐ **NO.** See minimum first aid kit and training requirements in for “other workplaces”

Results

Number, type, and size of first aid kits: _____

Number of first aiders and level of first aid training required: _____

Transportation needs: _____

Is a first aid room required? _____

Is an isolated workplace first aid plan required? _____

Signature

Name: _____

Signature: _____

Date: _____

Others consulted (joint occupational health and safety committee; health and safety representative): _____

¹A written isolated workplace first aid plan must be prepared for each isolated workplace unless otherwise specified in the Workplace Health and Safety Regulations (see “*No isolated workplace first aid plan required*” for exceptions to the requirement for a workplace first aid plan).

² “office” means a workplace that meets all the following criteria:

- (i) the only work carried out at the workplace is of an administrative, professional or clerical nature;
- (ii) the work carried out at the workplace does not require substantial physical exertion or exposure to processes, substances or other conditions that are potentially hazardous to the health and safety of persons at or near the workplace.

Appendix B | Employer First Aid Checklist

Complete this checklist to help ensure compliance with the workplace first aid requirements

- ☐ Find the number of employees per shift
- ☐ Find the number of first aid services, supplies, equipment, and transportation (*see the First Aid Compliance Worksheet in Appendix A*)
- ☐ Pay for first aider training that is provided by a training agency that meets the minimum requirements of the Canadian Standards Association (CSA) first aid training standard
- ☐ Pay wages for the time that employees need to attend first aid training
- ☐ Keep a copy of first aid certificates and expiry dates (certificates may be digital)
- ☐ Post the names, locations, and contact info for first aiders in a prominent location at the workplace
- ☐ Ensure there are first aiders, or first aid services, available during all work hours
- ☐ Ensure that first aid supplies are provided and remain accessible during working hours
- ☐ Keep first aid supplies fully stocked, properly stored, in good condition, and current (not expired)
- ☐ Keep a record of injured persons and the first aid services that are provided in the workplace
- ☐ Develop a plan to provide a safe and timely means of transporting an injured person from the workplace to a hospital or an emergency care facility
- ☐ If an employee is injured and requires assistance, allow another employee to accompany the injured worker while being transported to a hospital or emergency care facility
- ☐ Train employees to promptly report all injuries to the employer
- ☐ Determine if you require an isolated workplace first aid plan and write one, if necessary
- ☐ When developing your isolated workplace first aid plan, consult your committee or representative, if one exists
- ☐ Determine if you need a first aid room
- ☐ If a first aid room is required, ensure it is accessible during working hours and meets all requirements under the regulations

Appendix C | Types of First Aid Kits and their Contents

Type 1: Personal First Aid Kit		
Item #	Description of item	Quantity
1	Adhesive bandages, sterile, assorted sizes (standard strip, large fingertip knuckle, large patch)	16
2	Gauze pads, sterile, individually wrapped, 7.6 cm x 7.6 cm (3 in x 3 in)	6
3	Conforming stretch bandage, relaxed length, individually wrapped, 5.1 cm x 1.8 m (2 in x 2 yd)	1 roll
4	Compress/pressure dressing with ties, sterile, 10.2 cm x 10.2 cm (4 in x 4 in)	2
5	Triangular bandage, cotton, with 2 safety pins, 101.6 cm x 101.6 cm x 142.2 cm (40 in x 40 in x 56 in)	1
6	Adhesive tape 2.5 cm x 2.3 m (1 in x 2.5 yd)	1 roll
7	Antiseptic wound cleansing towelettes, individually wrapped	6
8	Emergency Blanket, aluminized, min 132 cm x 213 cm (52 in x 84 in)	1
9	Hand/skin cleansing towelettes, individually wrapped (or equivalent)	4
10	Examination gloves, disposable, medical grade, one size, powder-free, non-latex	2 pairs
11	Biohazard waste bag (single use)	1
12	Splinter forceps/tweezers, fine point stainless steel, minimum 11.4 cm (4.5 in)	1
13	Contents list	1

Type 2: Basic First Aid Kit

Item #	Description of item	Minimum quantities required		
		Small	Medium	Large
1	Adhesive bandages, sterile, assorted sizes (standard strip, large fingertip, knuckle, large patch)	25	50	100
2	Gauze pads, sterile, individually wrapped 7.6 cm x 7.6 cm (3 in x 3 in.)	12	24	48
3	Abdominal pad, sterile, individually wrapped, 2.7 cm x 22.9 cm (5 in x 9 in)	1	2	4
4	Conforming stretch bandage, relaxed length, individually wrapped, 7.6 cm x 1.8 m (3 in x 2 yd)	1 roll	2 rolls	4 rolls
5	Conforming stretch bandage, relaxed length, individually wrapped, 5.1 cm x 1.8 m (2 in x 2 yd)	1 roll	2 rolls	4 rolls
6	Compress pressure dressing with ties, sterile, 10.2 cm x 10.2 cm (4 in x 4 in)	2	4	8
7	Triangular bandage, cotton, with 2 safety pins, 101.6 cm x 101.6 cm x 142.2 cm (40 in x 40 in x 56 in)	2	4	8
8	Adhesive tape 2.5 cm (1 in)	2.3 m	4.6 m	9.1 m
9	Antiseptic wound cleansing towelettes, individually wrapped	25	50	100
10	Abdominal pad, sterile, individually wrapped, 12.7 cm x 22.9 cm (5 in x 9 in)	1	2	4
11	Torniquet, for arterial bleeds	1	1	1
12	Hand/skin cleansing towelettes, individually wrapped (or equivalent)	6	12	24
13	CPR resuscitation barrier device, with a one-way valve	1	1	1
14	Examination gloves, disposable, medical grade, one size, non-latex, powder-free	4 pairs	8 pairs	16 pairs
15	Biohazard waste bag single use	1	2	2
16	Safety bandage scissors, stainless steel (with angled, blunt tip) minimum 14 cm (5.5 in)	1	1	1
17	Splinter forceps/tweezers, fine point stainless steel, minimum 11.4 cm (4.5 in)	1	1	1
18	Emergency blanket, aluminized, non-stretch polyester, minimum 132 cm x 213 cm (52 in x 84 in)	1	1	1
19	Contents list	1	1	1

Type 3: Intermediate First Aid Kit

Item #	Description of item	Minimum quantities required		
		Small	Medium	Large
1	Adhesive bandages, sterile, assorted sizes (standard strip, large fingertip, knuckle, large patch)	25	50	100
2	Gauze pads, sterile, individually wrapped 7.6 cm x 7.6 cm (3 in x 3 in)	12	24	48
3	Gauze pads, sterile, individually wrapped 10.2 cm x 10.2 cm (4 in x 4 in)	6	12	24
4	Non-adherent dressing, sterile, individually wrapped, 5.1 cm x 7.6 cm (2 in x 3 in)	4	8	16
5	Abdominal pad, sterile, individually wrapped, 12.7 cm x 22.9 cm (5 in x 9 in)	2	4	6
6	Conforming stretch bandage, relaxed length, individually wrapped, 7.6 cm x 1.8 m (3 in x 2 yd)	1 roll	2 rolls	4 rolls
7	Conforming stretch bandage, relaxed length, individually wrapped, 5.1 cm x 1.8 m (2 in x 2 yd)	1 roll	2 rolls	4 rolls
8	Compress pressure dressing with ties, sterile, 10.2 cm x 10.2 cm (4 in x 4 in)	1	2	4
9	Compress pressure dressing with ties, sterile, 15.2 cm x 15.2 cm (6 in x 6 in)	1	2	4
10	Triangular bandage, cotton, with 2 safety pins, 101.6 cm x 101.6 cm x 142.2 cm (40 in x 40 in x 56 in)	2	4	8
11	Tourniquet, arterial	1	1	1
12	Adhesive tape, 2.5 cm (1 in)	2.3 m (2.5 yd) total length	4.6 m (5 yd) total length	9.1 m (10 yd) total length

Item #	Description of item	Minimum quantities required		
		Small	Medium	Large
13	Elastic support compression bandage, 7.5 cm (3 in)	1	2	2
14	Eye dressing pad, sterile, and eye shield with elastic strap	2 sets	2 sets	4 sets
15	Cold pack, instant or equivalent	1	2	4
16	Antiseptic wound cleansing towelette, individually wrapped	25	50	100
17	Abdominal pad, sterile, individually wrapped, 12.7 × 22.9 cm (5 in × 9 in)	2	4	8
18	Hand/skin cleansing towelettes, individually wrapped (or equivalent)	6	12	24
19	A source of glucose as recommended by Diabetes Canada	1 dose	2 doses	2 doses
20	CPR resuscitation barrier device, with a one-way valve	1	1	1
21	Examination gloves, disposable, medical grade, one size, non-latex, powder-free	4 pairs	8 pairs	16 pairs
22	Biohazard waste bag (single use)	2	4	8
23	Safety bandage scissors, stainless steel (with angled, blunt tip) minimum 14 cm (5.5 in)	1	1	1
24	Splinter forceps/tweezers, fine point stainless steel, minimum 11.4 cm (4.5 in)	1	1	1
25	Splint, padded, malleable, minimum size 10.2 cm x 61 cm (4 in x 24 in)	1	1	2
26	Emergency blanket, aluminized, non-stretch polyester, minimum 132 cm x 213 cm (52 in x 84 in)	1	2	2
27	Contents list	1	1	1

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

SCOPE

This chapter outlines precautionary, protective, and control measures for the handling, storage and disposal of hazardous chemicals.

GUIDELINES

Personnel commencing work with hazardous chemicals are to consult with the Safety Data Sheet (SDS) that provides detailed safety information on chemicals and their handling. It is most important that the employees know the first-aid procedures before accidents happen.

Employees shall take the following precautions when handling hazardous chemicals:

- Be aware of unusual odours when dealing with gases. If in doubt, move to fresh air and improve ventilation;
- Flush skin with water if it is irritated. If tests reveal an acid or base on the skin, neutralize with dilute sodium bicarbonate or dilute acetic acid, as appropriate, and again flush with water;
- Flush irritated eyes in the eye wash station, advise your supervisor and seek medical attention;
- Know the location of and use of antidotes, and neutralizers;
- Know the location of the first-aid kit.

Flammables

Store in a grounded flammable liquid storage cabinet. Separate from oxidizing materials. Examples:

- Acetone
- Ethanol

Non-Flammable Solvents

Store in cabinet. Can be stored with flammable liquids. Separate from oxidizing materials.

Examples:

- Carbon tetrachloride
- Ethylene glycol
- Mineral oil

Acids

Store in cabinet of non-combustible material. Separate oxidizing acids from organic acids. Separate from caustics, cyanides, and sulfides.

Examples:

- Hydrochloric acid
- Sulfuric acid

Caustics

Store in dry area. Separate from acids.

Examples:

- Ammonium hydroxide
- Sodium hydroxide
- Potassium hydroxide

Water Reactive Chemicals

Store in cool, dry location. Separate from aqueous solutions. Protect from fire sprinkler water.

Examples:

- Sodium
- Potassium

Oxidizers

Store in cabinet of non-combustible material. Separate from flammable and combustible materials.

Examples:

- Sodium hypochlorite
- Benzoyl peroxide

Corrosives

- Spill trays shall be used for corrosives.
- Flammable solvents shall be stored in properly ventilated cabinets or in flammable explosion proof cabinets.

The corresponding SDS (Safety Data Sheets) must be provided in attachment to the list for all shipments.

Note: A list of incompatibles and an inspection list for storage can be found in annex A & B

CHEMICAL STORAGE ROOMS

Chemical storage rooms are specially designed according to National Building Code, National Fire Code and Provincial Regulations.

The regulations restrict the volume of certain chemicals stored in such rooms. The users of these rooms shall insure the segregation of non-compatible chemicals and shall maintain an inventory of all chemicals stored.

Labels

All chemicals in the workplace shall have WHMIS labels or identifiers. There are two types of WHMIS labels, supplier labels and workplace labels. Supplier labels come on the product when received. Workplace labels are applied to containers that either have damage supplier label or on new containers into which the chemicals have been decanted.

Note: WHMIS Symbols can be found in Annex C

Safety Data Sheets (SDS)

SDS for all chemicals in the workplace are to be readily available to all staff. SDS is a technical document, which provides detailed and comprehensive information on chemicals. This information includes product information, hazardous ingredients, physical data, fire or explosion hazard, reactivity data, toxicological properties, preventive measures, first aid measures, and date of preparation of SDS.

NOTE: SDS - No expiry – Employers must check regularly for updates. Employers have 90 days to implement new SDS within their WHMIS Programme.

Training

Training is an integral part of the WHMIS system. The WHMIS training provides information about labels and SDS and also the safe storage, handling, use and disposal of chemicals. Supervisors are responsible for ensuring that employees receive specific instruction on the hazards in the workplace

Appendix A—Incompatible Chemicals

Acetic Acid	Chromic Acid, nitric acid, hydroxyl-containing compounds, ethylene glycol, perchloric acid, peroxides, and permanganates.
Acetone	Bromine, chlorine, nitric acid, sulfuric acid, and hydrogen peroxide.
Acetylene	Bromine, chlorine, copper, mercury, fluorine, iodine, and silver.
Alkaline and Alkaline Earth Metals such as calcium, lithium, magnesium, sodium, potassium, powdered aluminum	Carbon dioxide, carbon tetrachloride and other chlorinated hydrocarbons, water, Bromine, chlorine, fluorine, and iodine. Do not use CO₂, water or dry chemical extinguishers. Use Class D extinguisher (e.g., Met-L-X) or dry sand.
Aluminum and its Alloys (especially powders)	Acid or alkaline solutions, ammonium persulfate and water, chlorates, chlorinated compounds, nitrates, and organic compounds in nitrate/nitrate salt baths.
Ammonia (anhydrous)	Bromine, chlorine, calcium hypochlorite, hydrofluoric acid, iodine, mercury, and silver.
Ammonium Nitrate	Acids, metal powders, flammable liquids, chlorates, nitrates, sulfur and finely divided organics or other combustibles.
Aniline	Hydrogen peroxide or nitric acid.
Bromine	Acetone, acetylene, ammonia, benzene, butadiene, butane and other petroleum gases, hydrogen, finely divided metals, sodium carbide, turpentine.
Calcium Oxide	Water
Carbon (activated)	Calcium hypochlorite, all oxidizing agents.
Caustic (soda)	Acids (organic and inorganic).
Chlorates or Perchlorates	Acids, aluminum, ammonium salts, cyanides, phosphorous, metal powders, oxidizable organics or other combustibles, sugar, sulfides, and sulfur.
Chlorine	Acetone, acetylene, ammonia, benzene, butadiene, butane and other petroleum gases, hydrogen, finely divided metals, sodium carbide, turpentine.
Chlorine Dioxide	Ammonia, methane, phosphine, hydrogen sulfide.
Chromic Acid	Acetic acid, naphthalene, camphor, alcohol, glycerine, turpentine and other flammable liquids.
Copper	Acetylene, hydrogen peroxide.
Cumene Hydroperoxide	Acids
Cyanides	Acids
Flammable Liquids	Ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, bromine, chlorine, fluorine, iodine.

Fluorine	Isolate from everything.
Hydrazine	Hydrogen peroxide, nitric acid, and other oxidizing agents.
Hydrocarbons	Bromine, chlorine, chromic acid, fluorine, hydrogen peroxide, and sodium peroxide.
Hydrocyanic Acid	Nitric acid, alkali.
Hydrofluoric Acid	Ammonia, aqueous or anhydrous.
Hydrogen Peroxide (anhydrous)	Chromium, copper, iron, most metals or their salts, aniline, any flammable liquids, combustible materials, nitromethane, and all other organic material.
Hydrogen Sulfide	Fuming nitric acid, oxidizing gases.
Iodine	Acetylene, ammonia (aqueous or anhydrous), hydrogen.
Mercury	Acetylene, alkali metals, ammonia, fulminic acid, nitric acid with ethanol, hydrogen, oxalic acid.
Nitrates	Combustible materials, esters, phosphorous, sodium acetate, stannous chloride, water, zinc powder.
Nitric acid (concentrated)	Acetic acid, acetone, alcohol, aniline, chromic acid, flammable gases and liquids, hydrocyanic acid, hydrogen sulfide and nitratable substances.
Nitrites	Potassium or sodium cyanide.
Nitroparaffins	Inorganic bases, amines.
Oxalic acid	Silver, mercury, and their salts.
Oxygen (liquid or enriched air)	Flammable gases, liquids, or solids such as acetone, acetylene, grease, hydrogen, oils, phosphorous.
Perchloric Acid	Acetic anhydride, alcohols, bismuth and its alloys, paper, wood, grease, oils or any organic materials and reducing agents.
Peroxides (organic)	Acid (inorganic or organic). Also avoid friction and store cold.
Phosphorus (white)	Air, oxygen.
Phosphorus pentoxide	Alcohols, strong bases, water.
Potassium	Air (moisture and/or oxygen) or water, carbon tetrachloride, carbon dioxide.
Potassium Chlorate	Sulfuric and other acids.
Potassium Perchlorate	Acids.
Potassium Permanganate	Benzaldehyde, ethylene glycol, glycerol, sulfuric acid.
Silver and silver salts	Acetylene, oxalic acid, tartaric acid, fulminic acid, ammonium compounds.
Sodium	See Alkali Metals
Sodium Chlorate	Acids, ammonium salts, oxidizable materials and sulfur.
Sodium Nitrite	Ammonia compounds, ammonium nitrate, or other ammonium salts.
Sodium Peroxide	Any oxidizable substances, such as ethanol, methanol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulfide, glycerol, ethylene glycol, ethyl acetate, methyl acetate, furfural, etc.
Sulfides	Acids.

Sulfur	Any oxidizing materials.
Sulfuric Acid	Chlorates, perchlorates, permanganates, compounds with light metals such as sodium, lithium, and potassium.
Water	Acetyl chloride, alkaline and alkaline earth metals, their hydrides and oxides, barium peroxide, carbides, chromic acid, phosphorous oxychloride, phosphorous pentachloride, phosphorous pentoxide, sulfuric acid, sulfur trioxide.

Appendix B—

INSPECTIONS FOR THE SAFE STORAGE and HANDLING OF HAZARDOUS MATERIALS	
The checklist below is designed to help YOU inspect your hazardous materials storage areas. Mark each statement with an "X". An "X" in the Yes column indicates a proper storage/handling condition. An "X" in the No column shows where improvement can make for safe storage and handling of hazardous materials.	
YES	NO
	SDS in place and valid (No expiry SDS)
	Employees Trained on hazardous substances
	Emergency procedures known and practiced
	Adequate PPE available and used
	Employees familiar with equipment used
	Accidents and spills reported promptly
	Emergency showers and eye wash facilities available
	HOUSEKEEPING
	Floors and stairways slippery, are there spills? (water, oil, chemicals)
	Tripping hazards present
	Treads on stairs or floor mats defective
	Cleanliness and order are maintained in the storage areas. AT ALL TIMES
	Proper disposal of unlabelled, contaminated or used hazardous materials
	Hazardous materials and containers in storage are inspected on a regular basis for decomposition and leakage
	Inspection logs are being maintained
	Packaging material an empty containers are immediately removed from the storage area
	Waste receptacles are properly marked and easily located
	Separate containers for the disposal of broken glass are available
	A "recouping" area is being used for damaged/leaking hazardous materials worth keeping
	STORAGE AREAS
	Storage areas are well lighted and have two or more clearly marked exits
	Hazardous storage area is well ventilated
	Hazardous materials that require cool/dehumidified conditions have such conditions
	Open flame, smoking or any type of localized heat are not permitted in the hazardous areas
	Mixing or transfer or hazardous materials is done outside the storage areas and in authorized "recouping" areas
	STORAGE CONTAINER
	Authorized specification containers are being used
	Containers are inspected for rust, corrosion, and leakage
	Damaged containers are removed immediately or repackaged properly
	Safe stacking heights are being observed
	Containers being stored at corners are protected from contact
	LABELLING OF CONTAINERS
	Approved hazard labels and identification system are used for labeling all hazardous materials
	All containers are clearly and properly labeled as to their contents
	Labels are readable, durable and bilingual
	Labels are firmly attached to the packages

		GAS CYLINDERS
		All gas cylinders are secured against falling
		Gas cylinders are stored in a cool, dry place away from corrosive materials or highly flammable substances
		Empty cylinders are marked "empty" and stored separate from full cylinders
		Flammable or toxic gases are stored at or above ground level, and not in basements
		Valves of empty cylinders are closed
		When storing or moving cylinders, THE VALVE CAP is securely in place to protect the valve stem and the valve
		A hand truck is available for transporting gas cylinders
		FIRST AID and SAFETY EQUIPMENT
		Adequate eye wash stations are available, stocked and inspected
		Adequate safety showers are available and functional
		Adequate spill control equipment is available and serviceable
		Fire extinguishers are at fire points with properly dated inspection tags
		Smoke/fire sensors, automatic alarms and vapour alarms are available, working and properly inspected
		Adequate ventilation equipment is available and functional
		First aid kits are available, stocked and inspected
		First aid cabinets are clearly marked
		Sufficient personnel are trained in first aid with required number of first aid qualified personnel available on each shift
		Emergency response numbers are posted, telephone location(s) and telephone(s) working
		Hand washing facilities are readily available
		HAZARDOUS MATERIALS STORAGE
		Hazardous materials are stored to prevent exposure to direct sunlight or located heat
		Incompatible materials are stored by hazard class
		Information on the incompatibility of materials is available for consultation for safe storage arrangement
		Incompatibility charts are posted
		ACIDS
		Large bottles of acid are stored on a low shelf or in a approved cabinets
		Oxidizing acids are segregated from organic acids, flammable and combustible materials
		Acids are kept separate from bases and alkaline metals such as sodium and potassium
		Spill control plans and equipment are available for acid spills
		BASES
		Bases are stored away from acids
		Solutions of inorganic hydroxides are stored in polyethylene containers
		Spill control plans and equipment are available for caustic spills
		OXIDIZERS
		Oxidizers are stored away from flammable and combustible materials and reducing agents such as zinc, alkaline metals and formic acid
		WATER REACTIVE MATERIALS
		Materials are kept in a cool, DRY place
		A dry chemical fire extinguisher system is used
		FLAMMABLE
		All flammable liquids are kept in approved storage area in approved containers
		All electrical service equipment is explosive-proof
		Firefighting equipment is readily available
		When dispensing flammable liquids into a metal container, a static bonding line is used to connect the drum and receptacle (decanting)
		All storage containers larger than gallons are properly grounded to an approved grounding point

		TOXIC MATERIALS
		Toxic material, carcinogens and teratogens are kept in a secure area accessible only to authorized personnel
		Emergency response actions are posted
		SPECIAL IN-HOUSE PROBLEMS
		Identify protective requirements and add to this
		MATERIALS HANDLING EQUIPMENT (MHE)
		MHE is grounded
		MHE is checked daily for defective operation
		The right type of MHE is being used around hazardous materials
		Moving (electrical) parts are guarded
		Wiring, switches, and fuses are free of defects
		STORAGE AREAS
		Hazardous storage area is properly and prominently marked or identified
		Hazardous area is secured at all times when not in use with access only to authorized personnel
		Emergency response drills are known by all and have been practiced

WHMIS Pictograms			
	This pictogram is used for indicating flammable gases, aerosols, liquids and solids; pyrophoric liquids, gases and solids; self-heating substances and mixtures; substances and mixtures that produce flammable gases when in contact with water; organic peroxides; and self-reactive substances and mixtures.		For hazardous products that can cause death or acute toxicity after exposure to small amounts of the products, this Pictogram is used to warn users of the potential dangers. It is placed on labels of materials with acute oral, dermal and inhalation toxicity. For instance, the pictogram can be used on containers for cleaning chemicals
	The pictogram is flame over a circle plus a distinctive red "diamond" shaped border. It is used to indicate oxidizing gases, liquids and solids.		This Pictogram is used to indicate a product that causes or is suspected of causing serious health effects. It forms part of labels of products that cause respiratory sensitivity, skin toxicity, germ cell mutagenicity, carcinogenicity, reproductive toxicity, aspiration hazard, specific target organ toxicity after single exposure, and specific target organ toxicity after repeated exposure.
	This pictogram is used to indicate the hazard of gases under pressure such as dissolved gas, liquefied gas, compressed gas and refrigerated liquefied gas.		Used for hazardous products that cause less serious health effects, the Exclamation Mark Pictogram indicates acute toxicity (oral, dermal or inhalation), skin corrosion (irritation), eye irritation, skin sensitivity, respiratory damage, and specific target organ toxicity on single exposure.
	The corrosive pictogram indicates a substance that can irritate the skin and eyes, and damage metals. It is used for hazardous products that are corrosive to metals, cause skin irritation (corrosion), and cause serious eye irritation or damage.		Indicates the presence of organisms or toxins that can cause diseases in humans and animals, The Biohazardous Infectious Materials pictogram has been retained from WHMIS 1988. The pictogram is used on labels of biohazardous infectious materials. For instance, it is used on growths of micro-organisms like E. coli or salmonella bacteria cultures.
	Used to indicate explosion or reactivity hazards, the Exploding Bomb Pictogram is placed on the labels of self-reactive substances and mixtures, and on labels of organic peroxides.		This GHS pictogram has not been integrated into WHMIS, however it stands for Environmental Hazards.

The Workplace Hazardous Materials Information System (WHMIS) is a system for providing information on the safe use of hazardous products in the workplaces. This information is provided in three ways: product labels, safety data sheets (SDS) and employee education and training.

Under Part 3 of the Workplace Health and Safety Regulations, there is a distinction made between "education" and "training". Education refers to the delivery (for example a generic online education programme) of general or portable information, such as content required on a supplier label, workplace label and SDS, and the purpose and significance of that information. This information does not change from one workplace to another, and an employee educated in these aspects of WHMIS can make use of that information if they move on to a different workplace.

Training means the delivery of workplace and job-specific information to employees. Employees must be trained in how to safely use the specific hazardous products they use in the workplace. This includes:

- Procedures for safe use, storage, handling, and disposal of a hazardous product
- Procedures to be followed where fugitive emissions are present, and employees may be exposed.
- Procedures to be followed in case of an emergency involving a hazardous product.
- How to locate a safety data sheet at the workplace and the format in which it may be found.

An employee receiving WHMIS training must have already completed WHMIS education and be familiar with WHMIS classes and pictograms, labeling and SDS so they can understand the training.

The following guideline and worksheet have been developed to assist employers in providing effective WHMIS training to their employees.

Training is best kept informal and must be delivered by a competent person, as defined in the Regulation. For new employees, training can be performed as part of their orientation. Training for existing employees, or when a new product enters the workplace, can be performed in an informal session, one on one, a shift starter meeting or in a general staff meeting.

To prepare for training, first gather the products and SDS. Review the supplier label and SDS to identify all the key information (as listed below). Check any information or terms of which you are unsure by contacting the Safety Branch at 1-800-9LABOUR. When providing the training, cover the following points:

- Point out the product supplier label (on the container), and explain where to find the SDS
- Explain what it is used for and how it is used (ex: does it need to be diluted, any special use instructions, etc)
- **Review the product SDS focusing on:**
 - » Hazard classes and categories
 - » Signal words, hazard statements and precautionary statements
 - » Personal protective equipment and any other controls (ex: ventilation) needed
 - » First aid measures, and where to find first aid kits and eye wash stations/emergency showers (if applicable)
 - » Any other safe handling/use instructions
 - » Spill procedures and fire precautions
 - » Where product is stored and any storage issues or restrictions

The attached "WHIMS Training Worksheet" can be used to prepare for and record the training.

In accordance with the Regulations, WHMIS training must be reviewed at least annually, or more frequently if made necessary by a change in work conditions or available hazard information.

WHMIS Training Worksheet

Product Name: _____

How is the Product Used

Where is it stored? Any restrictions?

Hazard Classes/Categories

Hazard Statements and Precautionary Statements

First Aid Measures

☐ Skin	_____

☐ Eye	_____

☐ Inhalation	_____

☐ Ingestion	_____

WHMIS Training Worksheet

Personal Protective Equipment Needed

Other Controls

Any other Safe Handling/Use Instructions

Spill Procedures/Fire Precautions

Safety Data Sheet Location/Format

Other Notes

Employee name _____

Trainer name _____ Date _____

UNSAFE WORK REFUSAL

Purpose

The purpose of this policy is to ensure that no employee knowingly undertakes work that they believe could pose an imminent danger to themselves, any other workers on the jobsite or the general public.

Policy

NSADSA members believe that the safety of their employees is of utmost importance so it is our policy that employees will be supported if they present a valid reason for refusing to undertake work which they believe is unsafe. All work refusals will be investigated, and work shall not be completed until it can be done in a safe manner. In the event that an employee has a safety concern that they do not feel poses an imminent threat so does not require a work refusal, that employee will immediately report it to their supervisor and document it as a safety concern.

Responsibilities

Employees are expected to use the policy responsibly and only refuse work when there is an honest concern. They are also responsible to work with management to find a suitable solution if one exists.

Supervisors/Managers and Safety Reps are responsible to take all work refusals seriously, ensure that they are properly documented and to work with the employee to find a suitable solution. They are also responsible to ensure that there are no negative consequences against any employee who invokes their right to refuse in good faith.

The Process to Follow for Refusal of Unsafe Work:

If you are asked to do something which you believe may be dangerous to yourself or others, you must:

- ⇒ Tell your supervisor right away
- ⇒ If your supervisor doesn't do anything about the situation as quickly as you think you should, then you should tell a member of the Safety Committee/Safety Rep.
- ⇒ If the Safety Committee/Safety Rep doesn't act suitable to you in this matter, then you should contact the Department of Labour **(1-800-9-LABOUR)**.

You have the right to go with a member of the Safety Committee/Safety Rep or the Department of Labour officer when they inspect the workplace, so that they can see your reason for refusing. During this investigation you have a right to be paid your regular wages.

If you refuse to do a certain job your employer may ask you to do something else and you may not refuse. However, you may continue to be paid at your regular rate or pay.

When one employee refuses to do a certain job, the employer may ask another employee to do that job, provided the second is told the following:

- ⇒ Another employee has refused this work
- ⇒ The reason the employee refused
- ⇒ You also have the “right to refuse.”

No one can threaten or take retaliatory action against you because of the actions you’ve taken under the Act. If you feel this has happened, you should contact the Department of Labour **(1-800-9-LABOUR)**.

THESE COMMENTS SUMMARIZE PARTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT.
FOR DETAILS, PLEASE SEE THE ACT.

Work Refusal Reporting Form (Page 1 of 2)

Person Making the Report: _____ Date: _____
Location: _____ Time: _____

Describe the situation:

Employee's Signature _____

Were there any injuries? (check one) No ☐ Yes ☐ (describe) _____

Was there any damage? (check one) No ☐ Yes ☐ (describe) _____

LEVEL I: Reported to Supervisor? (check one) No ☐ Yes ☐ Name _____

Supervisor's Response _____

Supervisor's Signature _____

Feedback to Employee? (check one) No ☐ Yes ☐ (When) _____

Employee Satisfied? (check one) No ☐ Yes ☐ (Employee Initials) _____.

If the employee is satisfied, and the issue is resolved, the matter may be closed. The original of this report should be placed on file, and a copy given to the employee. If the employee is not satisfied, and continues with the concern or work refusal, he/she must immediately refer the matter to the Joint Occupational Health and Safety Committee (see page 2 of this form).

Work Refusal Reporting Form (Page 2 of 2)

LEVEL II: Referral to JOHS Committee (or H&S Representative) to Investigate

Describe the reason for the referral (why the employee is not satisfied):

Employee's Signature _____

JOHS Committee's (or H&S Representative's) Response

_____ Co-chair's Signature _____

Feedback to Employee? (check one) No ☐ Yes ☐ (When) _____

Employee Satisfied? (check one) No ☐ Yes ☐ (Employee Initials) _____

If the employee is satisfied, and the issue is resolved, the matter maybe closed. The original off this report should be placed on file, and a copy given to the employee. If the employee is not satisfied and continues with the concern or work refusal, the matter must be referred to the Occupational Health and Safety Division of NS Department of Labour.

LEVEL III:

Referral to Occupational Health and Safety Division, of the Department of Labour to Investigate Describe the reason for the referral (why the employee is not satisfied, or the JOHS Committee's inability to reach a unanimous decision to send the employee back to work):

Co-chair's Signature _____ Employee's Signature _____

Note: Use additional pages as required

WORKING AT HEIGHTS—FALL PROTECTION

Introduction

Where employees conduct work at heights over 10' (3m) above the nearest permanent safe level and sometimes conducts work on permanent and temporary structures that are more than 20' (6m) above a permanent safe level the following procedures shall be followed.

Definitions

'Working at height' covers a wide range of scenarios which involve employees performing work duties which put those workers and/or others at risk of serious personal injury. Falls from height are the biggest single cause of fatal injuries, and historically the second biggest cause of major injuries at work.

The legal definition of Working at Height is surprisingly broad: "Any work on, below, or above ground level where there is risk of personal injury through falling and/or a potential risk to people below the work site being injured by falling objects."

Requirements

The following procedures shall be followed to meet the requirements in accordance to the Workplace Health and Safety Regulations of Nova Scotia for work at less than or greater than 7.5 (25 ft)

LESS THAN 7.5M

21.3 (1) Except as provided in subsection (2), an employer must establish a written fall- protection procedure for the type of work to be performed in any work area where fall protection is required, and the maximum fall distance is LESS THAN 7.5m (25 ft).

21.3 (2) A written fall-protection safe work procedure **is not required** under subsection (1) if any of the following condition apply. (a) all persons performing the work are protected by a permanent guardrail (b) the work is performed from a work-platform describe in Section 23.12 to 23.15 of Part 23 Scaffolds & Other Elevated Work Platform and all persons performing the work are using adequate fall protection.

21.3 (3) A fall protection safe work procedure must be based on a hazard assessment of the work typically performed by the employer and must include the following information.

GREATER THAN 7.5M

21.4(3) A fall protection safe work procedure must be based on a hazard assessment of the work typically performed by the employer and must include the following information.

21.4(3) A fall protection safe work procedure must be based on a hazard assessment of the work typically performed by the employer and must include the following information.

21.4 (1) Except as provided in subsection (2), an employer must establish a written fall- protection procedure for the type of work to be performed in any work area where fall protection is required, and the maximum fall distance is GREATER THAN 7.5m (25ft).

21.4 (2) A written fall-protection safe work procedure **is not required** under subsection (1) if any of the following condition apply. (a) all persons performing the work are protected by a permanent guardrail (b) the work is performed from a work-platform describe in Section 23.12 to 23.15 of Part 23. Scaffolds & Other Elevated Work Platform and all persons performing the work are using adequate fall protection (c) the work is performed by an emergency services agency in accordance with Section 1.16

Hazards

People

- ⇒ Injury to an Employee by falling to another level.
- ⇒ Injury to any person by being struck by falling objects when passing beneath the work.

Equipment

- ⇒ Damage to equipment by being dropped from another level.
- ⇒ Damage to equipment by being struck by falling objects.

Responsibilities

Employee

- ⇒ Refer to the Job Safety Analysis (where one exists) for working at heights and comply with all of the requirements, including the proper wearing and/or use of the required PPE and Job Protective Equipment (fall arrest equipment).
- ⇒ When required to use equipment to reach a location above a permanent safe level, ensure that the equipment (ladder, powered lift equipment, etc.) is in good operating condition and is fit for the purpose you intend (adequately long enough or has adequate safe reach).
- ⇒ Operate any mechanical lifting equipment only if you have received the appropriate training in its use.

Supervisor

- ⇒ Where appropriate, ensure a Job Safety Analysis has been conducted for the proper use of the climbing or lifting equipment and the JSA requirements are being followed by the employee, including the proper use of the appropriate PPE.
- ⇒ Ensure the equipment being used by the Employees is appropriate for the job, is in good repair and is being used properly.
- ⇒ Ensure that the Employee has successfully completed any required training involving the use of the climbing or lifting equipment.
- ⇒ Monitor the worksite for compliance to this safe work practice.

Employer

- ⇒ Provide the necessary resources (safe equipment, training and PPE) for the proper and safe conduct of the work.

Safe Practices

Portable Ladders

Some basic ladder safety steps:

- ⇒ if you have to climb, **use a ladder** that is a CSA approved .—*NOTE Grade 3 ladders are not to be used in any workplace.

Grade	Description of Grade	Maximum Length
1AA	Construction and industrial use; special duty with load rating of 170 kg (375 lbs)	6 m (20 ft)
1A	Construction and industrial use; extra heavy duty with load rating of 136 kg (300 lbs)	6 m (20 ft)
1	Construction and industrial use; heavy duty with load rating of 113 kg (250 lbs)	6 m (20 ft)
2	Tradesmen and farm; medium duty with a load rating of 102 kg (225 lbs)	3.6 m (12 ft)
3	Household; light duty with load rating of 91 kg (200 lbs)	2 m (6.5 ft)

- ⇒ Determine if a ladder is the correct device to use for the situation. Your assessment will include the physical condition of both the ground and the area being reached, the height of the work, the type of work being done, and if other hazards are present.
- ⇒ Determine which type of ladder will be best. Always inspect the ladder before use, and set the ladder up correctly.

What should you do when climbing up or down a ladder?

Always make sure the ladder is tied or secured correctly before using. When climbing up or down, always:

- ⇒ Face the stepladder.
- ⇒ Keep your body centered between side rails.
- ⇒ Maintain three-point contact by keeping two hands and one foot, or two feet and one hand on a ladder always.
- ⇒ Keep a firm grip.
- ⇒ Make sure that footwear is in good condition.
- ⇒ Clean your footwear by removing mud, water, snow, ice or grease.
- ⇒ Place feet firmly on each rung.
- ⇒ Wearing footwear with heels can help to stop the foot from slipping forward.

- ⇒ You have climbed too high if your knees are above top of the ladder or if you cannot maintain a hand-hold on the ladder.
- ⇒ Rise or lower tools and materials using a hoist, hand-line, bucket or other device.
- ⇒ If using an extension ladder, be careful when stepping or gripping near the locks as the locks will obscure part of the rung.
- ⇒ In most cases, only allow one person on a ladder at a time. Wait until the other person has stepped off the ladder before another person uses it.
- ⇒ Have a second person hold the bottom of a long ladder, especially when tying or untying an extension ladder.
- ⇒ Use the appropriate safety devices when needed (e.g., safety belt, fall restraint, etc.). Check with your jurisdiction for requirements when working at heights near or above 3 metres (10 feet).
- ⇒ Make sure that any harnesses or ties do not interfere with safe travel when on the ladder.



What should you not do when climbing up or down a ladder?

- ⇒ Do not hurry up or slide down a ladder.
- ⇒ Do not jump from a ladder. Check footing before descending a ladder.
- ⇒ Do not carry tools or materials in your hand while climbing.

What are other tips when working on or near ladders?

Other tips include:

- ⇒ If working near electricity, do not use an aluminum ladder.
- ⇒ Set up warning signs, barricades, lock the door, etc. as necessary to prevent other employees from bumping into the ladder.
- ⇒ Work from the center of the ladder. If you cannot reach, climb down and move the ladder.
- ⇒ Do not "shift" or "walk" a stepladder when standing on it.
- ⇒ Do not use tools that require a lot of leverage (such as a pry or pinch bar) as this motion may cause you to be unbalanced or fall.
- ⇒ Do not stand, climb, or sit on the stepladder top or pail shelf.
- ⇒ Do not stand on or above the top two rungs or steps of the ladder.
- ⇒ Do not allow another person to work below the ladder.

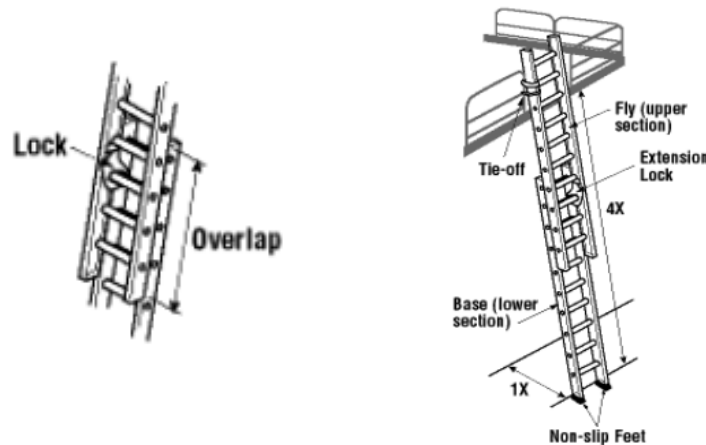
EXTENSION LADDERS

What is an extension ladder?

Extension ladders usually have two sections that operate with brackets or guides that allow for the ladder to be used at adjustable lengths. Extension ladders are not self-supporting and require a stable structure that can withstand the intended load.

What should you do to safely secure extension ladders?

- ⇒ Place ladders on a firm, level surface and ensure the footing is secure.
- ⇒ Erect extension ladders so that the upper section rests on (e.g., in front of) the bottom section. This placement means the bottom section "faces" a wall or other supporting surface (see figures below).
- ⇒ Place the ladder feet so that the horizontal distance between the feet and the top support is $\frac{1}{4}$ of the working length of the ladder. The ladder will be leaning at a 75 degree angle from the ground.



- ⇒ Raise and lower ladders from the ground. Ensure that locking ladder hooks are secure before climbing.
- ⇒ For access to an elevated work surface, erect ladders so that a minimum of 1 m (3 ft) extends above a landing platform. Tie the top at support points.
- ⇒ Use care when getting on and off the ladder at the top or bottom in order to avoid tipping the ladder over sideways or causing the ladder base to slide.
- ⇒ Brace or tie off the ladder near the base. If there is no structure to tie off to, use a stake in the ground.
- ⇒ Leave all tie-off devices in place until they must be removed before taking the ladder down.
- ⇒ Maintain the minimum overlap of sections as shown on a ladder label. Refer to safety regulations.
- ⇒ Set up barricades and warning signs when using a ladder in a doorway or passageway.

Note: When working 3 metres (10 feet) or more above ground, a fall protection programme may be necessary. Wear a safety belt or harness with the lanyard tied appropriately to the structure. Make sure that you follow working at heights training that includes how to use fall protection devices safely.

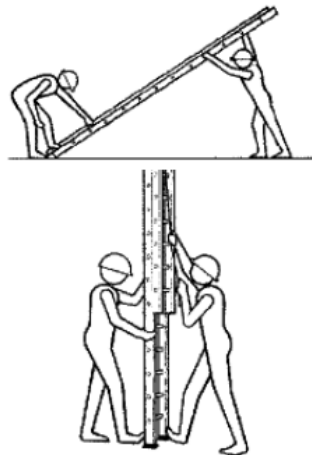
What should you avoid when using extension ladders?

- ⇒ Do not use ladders near power lines. Keep ladders and other tools at least 10 feet away from power lines.
- ⇒ Do not use ladders unless they have been inspected by a trained or competent person.
- ⇒ Do not set up or take a ladder down when it is extended.
- ⇒ Do not overextend. Maintain minimum overlap of sections.
- ⇒ Do not climb higher than the fourth rung from the top of a ladder.
- ⇒ Do not use ladders on ice, snow or other slippery surfaces without securing ladders' feet.
- ⇒ Do not extend top section of a ladder from above or by "bouncing" on a ladder.
- ⇒ Do not leave ladders unattended.

What should you do to avoid overexertion while setting up an extension ladder?

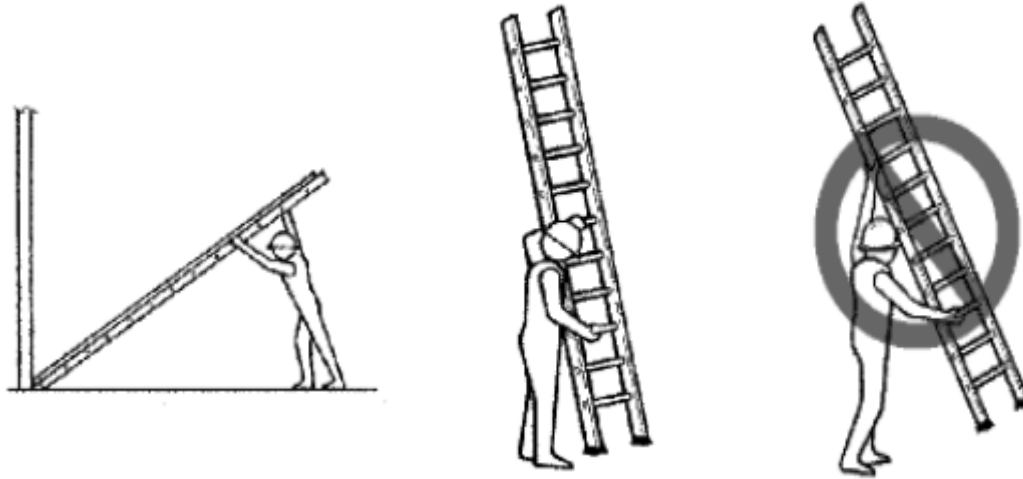
When setting up an extension ladder, use the following method to avoid straining muscles or losing control of a ladder. With ladders weighing more than 25 kg (55 lb), or where conditions complicate the task, have two persons set up a ladder, step by step, as follows:

- ⇒ Lay a ladder on the ground close to intended location.
- ⇒ Brace ladder base using helpers' feet.
- ⇒ Grasp the top rung with both hands, raise the top end over your head and walk toward the base of a ladder. Grasp the centre of the rungs to maintain stability.
- ⇒ Move the erect ladder to the desired location. Lean it forward against the resting point.



One person can erect a short ladder, step by step as follows:

- ⇒ Place the bottom of a ladder firmly against the base of a building or stationary object.
- ⇒ Lift the top of ladder, and pull upwards to raise a ladder to a vertical position.
- ⇒ Transfer a ladder to its required position when it is erect.
- ⇒ Keep a ladder upright and close to the body with a firm grip.

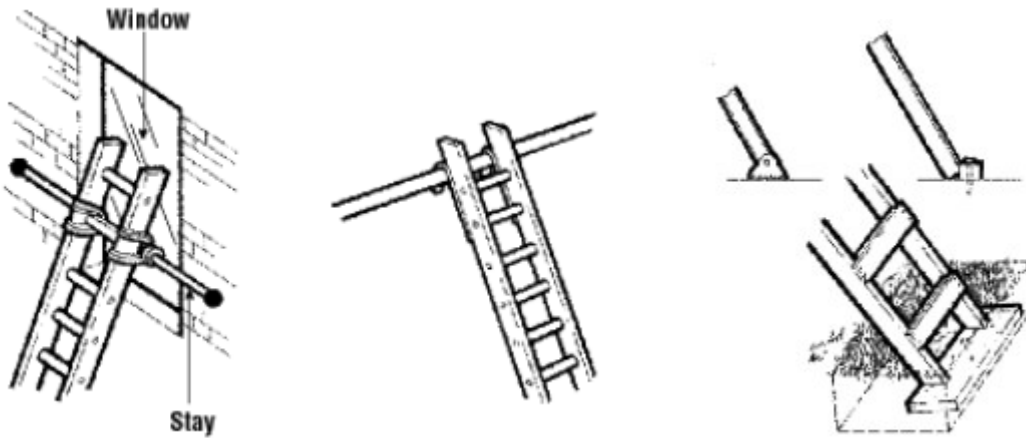


The method for lowering any ladder is the reverse procedure of erecting it.

How do you secure extension ladders?

- ⇒ Begin securing and stabilizing the ladder from the bottom up (from the footing).
- ⇒ Set up your ladder on a firm, level, and stable surface.
- ⇒ Secure both the base and top of a ladder to prevent movement. Securing a ladder at the foot does not prevent a side slip at the top.
- ⇒ Brace or tie off the ladder near the base. If there is no structure to tie off, use a stake in the ground. Do not use a barrel, box, or another loose object as a support for a ladder.
- ⇒ Use ladders equipped with non-slip feet. Otherwise, nail a cleat to the floor or use a device designed for this purpose.
- ⇒ Remove all the debris and clutter around the base of the ladder.
- ⇒ Rest the top of the ladder against a solid surface that can withstand the load. Do not let the top of the ladder rest on a gutter, window sash, windowpane, or anything that can break or move.
- ⇒ Use wall grips on the risers to prevent side slipping when a ladder is leaning against a smooth surface.
- ⇒ Attach a ladder stay (i.e., ladder stabilizer) across the back of a ladder where a surface cannot stand the load. Extend the stay across a window for firm support against the building walls or window frame.

- ⇒ Guard or fence off the area around a ladder that is placed in an area where persons have access. If a barricade is not possible, have someone hold and guard the bottom of the ladder to prevent another person from bumping into the ladder.
- ⇒ Attach hooks on top of ladder rails where the ladder is to be used at a constant height.
- ⇒ Test the ladder to verify that it is secure.
- ⇒ When not in use, do not rest a ladder on any rung. Only the side rails are designed for this purpose.



Note: When working 3 metres (10 feet) or more above ground, a fall protection programme may be necessary. Wear a safety belt or harness with the lanyard tied appropriately to an adequate point independent of the ladder. Make sure that you follow working at heights training that includes how to use fall protection devices safely

STEP LADDERS

What should you do when using a stepladder?

- ⇒ Conduct a risk assessment when working at heights. It may be necessary to use fall protection equipment while working on a ladder.
- ⇒ Check the load rating that is marked on the stepladder. The rating should cover the person's weight and the weight of tools that will be used.
- ⇒ Use a stepladder that is about 1 m (3 ft) shorter than the highest point you have to reach. This length of ladder gives a wider, more stable base and places shelf at a convenient working height.
- ⇒ Check the ladder for cracks, loose or corroded rivets, defective braces, or parts (including the slip resistant feet) that are in poor condition. Make sure it is free of grease or oil or other slippery substances.
- ⇒ Open the stepladder spreaders and shelf fully and lock the braces.
- ⇒ Check stability. Make sure that all ladder feet are on a firm, level, and non-slippery surface.
- ⇒ Place a stepladder at right angles to the work, with either the front or back of the steps facing the work.
- ⇒ Keep the stepladder close to the work.



- ⇒ Lift and carry the ladder when moving it. Do not push or pull stepladders from the side. Repeated side-ways movement can make ladders unstable since they are weaker in those directions.
- ⇒ Face the stepladder when climbing up or down.
- ⇒ Keep your body centered between side rails. The ladder can become unstable if your body or equipment you are holding move beyond the side rails.
- ⇒ Work at an appropriate height for the ladder. Generally speaking, you have climbed too high if your knees are above top cap of the stepladder or if you cannot maintain a handhold on the ladder.
- ⇒ Maintain a firm grip. Use both hands when climbing.
- ⇒ Keep both feet on the ladder. Do not stand on a ladder and other object at the same time (for example, 1 foot on the ladder and 1 foot on another object).

What are step ladder ratings, and is there a maximum length for a step ladder?

⇒ The Canadian Standards Association (CSA) Standard Z11-18 recommends different lengths for different rating (or grades) of step ladders. —*NOTE Grade 3 ladders are not to be used in any workplace.

Grade	Description of Grade	Maximum Length
1AA	Construction and industrial use; special duty with load rating of 170 kg (375 lbs)	6 m (20 ft)
1A	Construction and industrial use; extra heavy duty with load rating of 136 kg (300 lbs)	6 m (20 ft)
1	Construction and industrial use; heavy duty with load rating of 113 kg (250 lbs)	6 m (20 ft)
2	Tradesmen and farm; medium duty with a load rating of 102 kg (225 lbs)	3.6 m (12 ft)
3	Household; light duty with load rating of 91 kg (200 lbs)	2 m (6.5 ft)

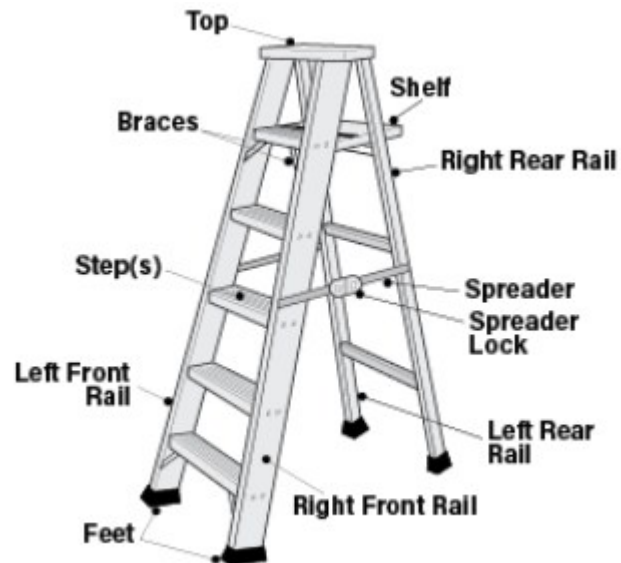
How high should a person stand on a step ladder?

The Canadian Standards Association (CSA) Standard Z11-18 recommends different standing levels, depending on the size of the step ladder. Note that these are the highest levels recommended. Persons should stand lower on the ladder if they feel unstable.

Step ladder size	Recommended highest standing level
1.22 m (4ft)	0.58 m (2 ft)
1.52 m (5 ft)	0.89 m (3 ft)
1.83 (6 ft)	1.17 m (4 ft)
2.13 (7 ft)	1.47 m (5 ft)
2.44 m (8 ft)	1.78 m (6 ft)
3.05 m (10 ft)	2.36 m (8 ft)
3.66 m (12 ft)	2.95 m (10 feet)

What should you avoid when using a stepladder?

- ⇒ Do not overreach. Move a stepladder when needed.
- ⇒ Do not "shift" or "walk" a stepladder when standing on it.
- ⇒ Do not stand, climb, or sit on the stepladder top or pail shelf.
- ⇒ Do not overload. Stepladders are meant for one person.
- ⇒ Do not use a stepladder as a brace or as a support for a work platform or plank.
- ⇒ Do not climb a stepladder that is leaning against a wall. Use a straight ladder instead.
- ⇒ Do not use stepladders on slippery surfaces
- ⇒ Do not use stepladders on soft ground where one leg may sink farther into the ground than others.
- ⇒ Do not place stepladders on boxes, barrels, unstable bases, or on scaffolds to gain additional height.
- ⇒ Do not climb the back of a stepladder.
- ⇒ Do not push or pull stepladders sideways.
- ⇒ Do not use ladders in passageways, doorways, driveways or other locations where a person or vehicle can hit it. Set up suitable barriers or lock doors shut.
- ⇒ Do not carry tools or equipment while climbing.



LADDER INSPECTION

When should you inspect ladders?

- ⇒ Inspect new ladders promptly upon receipt.
- ⇒ Inspect ladders before each use.
- ⇒ Check the condition of ladders that have been dropped or have fallen before using them again.
- ⇒ Inspect ladders before storing to make sure they are in good condition to store, or need repair, replacement or removal from the site.
- ⇒ Perform a written inspection by a competent person at least annually.

What should you look for when inspecting any ladder?

- ⇒ missing or loose steps or rungs (they are loose if you can move them by hand)
- ⇒ damaged or worn non-slip feet
- ⇒ loose nails, screws, bolts or nuts
- ⇒ worn or loose or faulty spreaders, locks, and other metal parts in poor repair
- ⇒ rot, decay or warped rails in wooden ladders
- ⇒ cracks and exposed fibreglass in fibreglass ladders
- ⇒ cracked, split, worn or broken rails, braces, steps or rungs
- ⇒ sharp edges on rails and rungs
- ⇒ rough or splintered surfaces
- ⇒ corrosion, rust, oxidization and excessive wear, especially on treads
- ⇒ twisted or distorted rails. Check ladders for distortion by sighting along the rails. Using a twisted or bowed ladder is hazardous.
- ⇒ damage or wear on other items such as spreaders, locking devices, hinges, springs or ropes. Check that these items are working properly before using the ladder.
- ⇒ missing identification labels

What other things should I look for when inspecting stepladders?

- ⇒ wobble
- ⇒ loose or bent hinges and hinge spreaders
- ⇒ broken stop on a hinge spreader
- ⇒ loose pail shelf

What should you look for when inspecting extension ladders?

- ⇒ loose, broken, or missing extension locks
- ⇒ defective locks that do not set properly when the ladder is extended
- ⇒ sufficient lubrication of working parts
- ⇒ defective cords, chains and ropes
- ⇒ missing or defective pads or sleeves

What should you do after inspecting any ladder?

- ⇒ Tag any defective ladders and take them out of service.
- ⇒ Clean fibreglass ladders every three months. Spray lightly with a clear lacquer or paste wax.
- ⇒ Protect wooden ladders with a clear sealer or wood preservative.
- ⇒ Replace worn or frayed ropes on extension ladders.
- ⇒ Lubricate pulleys on extension ladders regularly.
- ⇒ Tag and take out of service any ladder that has defects, or is broken or bent. Destroy ladders that cannot be repaired safely by a person authorized by the manufacturer. Ladders should be destroyed in a way that makes them useless.

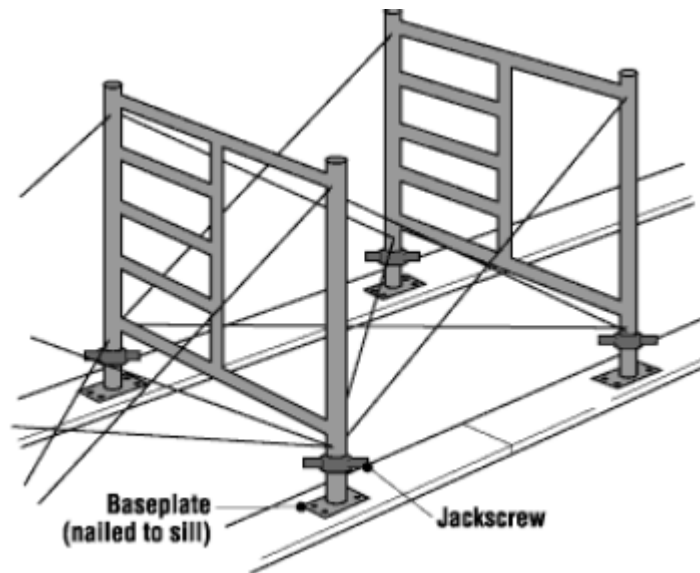
What are some things you should not do after inspecting ladders?

- ⇒ Do not make temporary or makeshift repairs.
- ⇒ Do not try to straighten or use bent or bowed ladders.

FRAME SCAFFOLDING

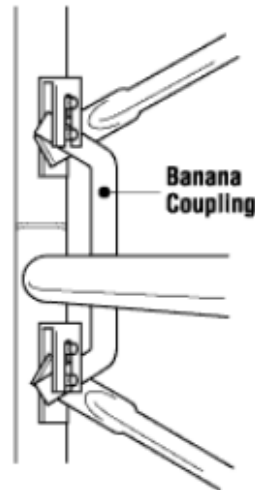
What are some general safety tips for erecting scaffolding?

- ⇒ Choose the right scaffold system for the job.
- ⇒ Erect all scaffold parts according to the manufacturer's instructions.
- ⇒ Select scaffold according to:
 - ◇ height required
 - ◇ type and duration of work
 - ◇ range of weather conditions
 - ◇ weight of workers, materials and equipment
 - ◇ location
 - ◇ requirements for pedestrian traffic
- ⇒ Erect scaffold on a base that will support all the loads that will be applied including materials and equipment.
- ⇒ Make sure the backfill is compact and level. Replace mud and soft soil with gravel or crushed stone.
- ⇒ Provide adequate sills for scaffold posts and use base plates.
- ⇒ Set scaffold feet centrally on mudsills consisting of 50x250 mm (2x10 inches) planks. Sills should extend at least 610 mm (2 feet) beyond the scaffold base and be long enough to extend under at least two scaffold feet.



- ⇒ Install scaffold with jackscrews (adjusting screws). They allow for minor adjustments to help keep scaffold plumb and level.
- ⇒ Take extra precautions when erecting scaffold on frozen ground. Thawing soil can become water-soaked and lose its ability to bear weight.

- ⇒ Brace both sides of every frame for the vertical plane. Install horizontal bracing at the joint of every third tier of frames. This bracing is often attached to the point where the scaffold is tied to the structure.
 - ⇒ Do not force braces to fit. Level the scaffold until a proper fit can be made easily.
 - ⇒ Use coupling devices to join frames to prevent the joints from pulling apart.
 - ⇒ Do not use nails or other devices in the place of proper retention parts as recommended by the manufacturer.
 - ⇒ Tie or brace the scaffold to a solid structure as appropriate.
- Use a debris net, catch platform, or similar structure where appropriate to catch falling objects.



What should I consider when installing guardrails?

Install guardrails consisting of:

- ⇒ a top rail 1 m (40 inches) above the platform
- ⇒ a midrail about halfway between the platform and the top rail on the inside of the posts
- ⇒ a toe board 100 mm (4 inches) high fastened to the inner side of posts
- ⇒ posts and rails capable of withstanding a force of at least 900 N (200 lb.) applied at any point, or withstanding any load likely to be applied.

What must I remember about the stability of the scaffold?

Do not allow the ratio of scaffold height to base width to exceed 3 to 1 unless the scaffold is:

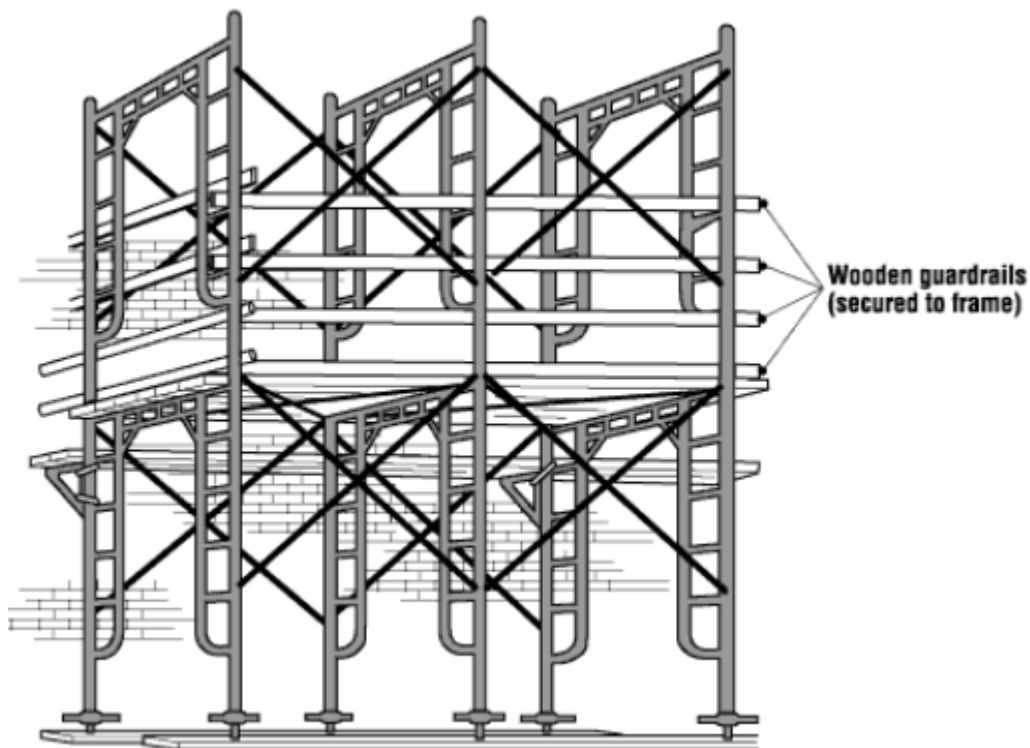
- ⇒ tied into a structure
- ⇒ stabilized by guy wires
- ⇒ secured by outriggers or stabilizers to maintain the ratio

What should I know about the assembly of a frame scaffold?

- ⇒ Make sure you are trained properly to set up scaffolding.
- ⇒ Check location for:
 - ◇ ground conditions
 - ◇ overhead wires
 - ◇ obstructions
 - ◇ changes in surface elevation
 - ◇ tie-in problems
- ⇒ Inspect frames, braces and all other components for damage, bends and excessive rust or wear.
- ⇒ Use a safety harness tied to the scaffold, building, or lifeline.
- ⇒ Assemble frame scaffolds with one other person so that one person is on the scaffold and one is passing materials from the ground.
- ⇒ Check for squareness and alignment of all scaffold parts.
- ⇒ Remove debris and mud from the setup area, and level the ground before placing the staging legs.
- ⇒ Set up the staging legs on a stable, solid base. Use mudsills when the scaffolding is erected on soil.
- ⇒ Use appropriate mud sills 50 x 250 mm (e.g., 2 x 10 inches planks) that are continuous under at least two support feet. Where possible, the sill should extend at least 600 mm (2 ft) beyond the scaffold feet at the end.
- ⇒ Nail or screw the base plates to the mudsills.
- ⇒ Use jackscrews to reduce hazards created by temporarily jacking up the erected scaffold to add shims when sections settle or are not level.
- ⇒ Inspect locking devices frequently.
- ⇒ Make sure all sections of the first level are level and square.
- ⇒ Install ladders as the erection proceeds. When scaffolds are to be in place for an extended period, install a stairway. Ladders must extend 1 m (3 ft) above the platform and be tied securely to the staging.
- ⇒ Fasten all braces and guardrails securely. Make sure all cross bracing fits and locks onto each post in every section.
- ⇒ Install all of the required guardrails: top, mid and toe.
- ⇒ Inspect planks before use. Check the weight the planks will have to carry, including the weight of the crew, tools, and materials.
- ⇒ Complete the platform fully at each working level before assembling the next level.
- ⇒ Secure the scaffolding to the adjacent building structure.
- ⇒ Assemble all equipment according to manufacturer's specifications or engineer's design.

What should I not do when assembling a scaffold?

- ⇒ Do not mix frames and parts from different manufacturers.
- ⇒ Do not use nails or other devices in the place of proper retention parts as recommended by the manufacturer.
- ⇒ Do not substitute concrete blocks, bricks or scrap lumber for a proper mud sill base, plates and jackscrews.
- ⇒ Do not overextend jackscrews.
- ⇒ Do not use ladders or makeshift devices on top of scaffolds to increase the height.
- ⇒ Do not use the same planks for sills as you do for platform bases.
- ⇒ Do not rig braces that do not fit properly.
- ⇒ Do not use cross-braces as guardrails.
- ⇒ Do not use scaffold frames to climb up to work platforms.



What should I know when dismantling a scaffold?

- ⇒ Make sure the structure will remain stable at all times.
- ⇒ Clear the platform of all materials and debris before dismantling.
- ⇒ Proceed in the reverse order of erection.
- ⇒ Dismantle each tier completely before starting on the one below.
- ⇒ Work from full platform decks while removing braces and frames.
- ⇒ Remove jammed or rusted components with caution.
- ⇒ Do not throw or drop boards or parts from heights.
- ⇒ Check and maintain all scaffold parts. Repair or discard all damaged pieces immediately.
- ⇒ Lubricate moving parts of all fittings.

What should you check before using a scaffold?

Check the following before using scaffolding and inspect on an adequate basis:

- ⇒ the base is sound, level and adjusted,
- ⇒ legs are plumb, and all braces are in place,
- ⇒ locking devices and ties are secured,
- ⇒ cross members are level,
- ⇒ planks are of the proper grade (s) of lumber and have no weak areas, deterioration, or cracks.
- ⇒ planks, decks, and guardrails are installed and secure, and
- ⇒ keep a log of inspections and related items or repairs.

What should you do when using a scaffold?

- ⇒ Make sure all platforms above 2.4 metres (8 feet) are fully decked
- ⇒ Use an access ladder, not the scaffold frame, unless it is specially designed to be climbed. Build a stair case if the scaffold will be used for a length of time.
- ⇒ Build a rest platform for every 10 m (30 ft) in height beside the ladder.
- ⇒ Remove snow and ice from scaffold platforms, ladders, and access areas.
- ⇒ Ensure that the scaffold is securely attached to the building structure.
- ⇒ Make sure scaffold planks are in good condition and are cleated properly.
- ⇒ Make sure the planks have an appropriate amount of overhang – too much and the planks may tip, and too little and the planks may slip off.
- ⇒ Use all of the components required, including base plates, connections, braces, and securing devices
- ⇒ Protect all planked or working levels with proper guardrails, mid rails, and toe boards along all open sides and at the ends of scaffold platforms.
- ⇒ Replace any guardrails that were removed while hoisting materials. Wear fall protection until guardrails are reinstalled.

What should you not do when using a scaffold?

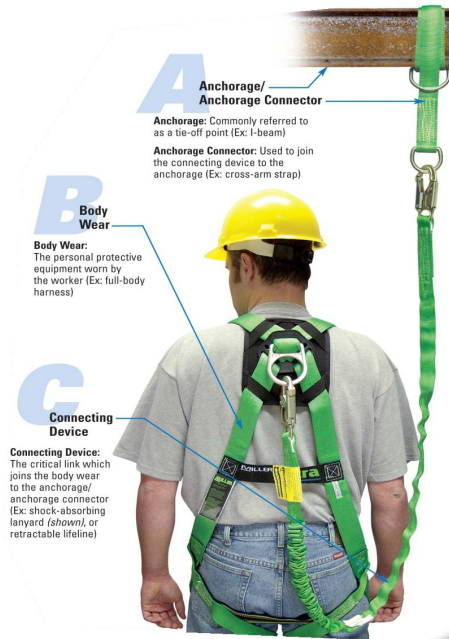
- ⇒ Do not use a scaffold without guardrails.
- ⇒ Do not load in excess of its rated working load.
- ⇒ Do not jump on planks or platforms.
- ⇒ Do not force braces to fit. Level the scaffold until a proper fit can be made easily.
- ⇒ Do not climb or stand on cross braces or guardrails.
- ⇒ Do not work on scaffolds during storms or high winds.
- ⇒ Do not use ladders or makeshift devices on top of scaffolds to increase height.
- ⇒ Do not overload scaffold frames or platforms.
- ⇒ Do not load in a way that affects its stability.
- ⇒ Do not rest materials or equipment on guardrails.
- ⇒ Do not try to repair bent or kinked frames. Throw them out.
- ⇒ Do not work below a scaffold without head protection.
- ⇒ Do not roll a scaffold while workers are on the platform.
- ⇒ Do not use scaffolds near electrical wires.

FALL PROTECTION

COMPONENTS OF A PERSONAL FALL ARREST SYSTEM

There are three vital components that make up a complete fall protection system. These are the ABC's of fall protection:

- ⇒ **A** Anchorage.
- ⇒ **B** Body support.
- ⇒ **C** Connection device.



Each one must be in place and properly used to provide maximum worker protection.

While each of these components is vital to worker safety, the connecting device is the critical link in assembling a safe fall protection system since it bears the greatest force during a fall. Careful consideration must be given to the selection, materials, construction and inspection/maintenance of fall Protection equipment before, during and after a connecting device has been selected.

ANCHORAGE/ ANCHORAGE CONNECTOR

An anchorage, as defined by the NS Workplace Health & Safety Regulations , is a means a secure connecting point capable of safely withstanding the impact forces, as prescribed in these regulations or an applicable standard, applied by a fall-protection system.

Examples of anchors would be fixed structural components such as a beam, girder, column or floor that can support the forces exerted in arresting a fall, and the term “anchorage connector” to refer to the component by which the connecting device is coupled to the anchorage. It may be a beam anchor, crossarm strap, D-bolt, hook anchor, tripod, davit or other secure device that serves as a point of attachment for lifelines, lanyards or deceleration devices.

Anchorage and anchorage connectors must be independent and capable of supporting 5,000 lb per employee attached, or an engineered anchorage that is designed, installed and used under the supervision of a qualified person as part of a complete personal fall arrest system which maintains a safety factor of at least two. They must also be located high enough for a worker to avoid contact with a lower level should a fall occur.

BODY SUPPORT

A body support, or body wear, is the component that is worn on or around the torso. Body belts and full body harnesses are the two most common body supports.

Body Belt

A body belt is a belt that circles the waist and is used for worker positioning and fall prevention. A body belt may be supplied with D-rings on the hips and/or middle of the back. A body belt must NEVER be used for personal fall arrest.

Full Body Harness

A full body harness is a body support device that distributes fall arrest forces across the shoulders, thighs and pelvis. Full body harnesses have a center back fall arrest attachment for connection to the fall arrest connecting device and may have other D-rings for use in worker positioning, fall prevention, suspension or ladder climbing.

- ⇒ The only form of body-wear acceptable for fall arrest is the full body harness.
- ⇒ Full body harnesses should be selected based on work to be performed and the work environment.
- ⇒ Front D-rings on full body harnesses are used only for ladder-type fall arrestors, work positioning, travel restraint or rescue. Side D-rings are for positioning only.



MEANS OF CONNECTION

The connecting subsystem is the critical link which joins the body wear to the anchorage/ anchorage connector. It can be an energy-absorbing lanyard, fall limiter, self-retracting lanyard, rope grab, or retrieval system. Connecting means will vary depending on whether the worker is equipped for personal fall arrest or work positioning and travel restriction.

Connecting Means for Personal Fall Arrest

The connecting means for personal fall arrest is often a lanyard equipped with an energy-absorbing element to reduce the energy transmitted to the user's body in the event of a fall. Self-retracting lifelines or fall limiters reduce free-fall distance as well as reducing energy loads from a fall.

Connecting Means for Positioning and Travel Restriction

The connecting means for positioning and travel restriction is often a simple lanyard, constructed of rope, web or wire rope. These may also include specialized positioning assemblies for rebar work, constructed of chain or web. All positioning devices are intended to reduce the potential for free fall to a distance of less than two feet. Restraint lanyards are specified in length to prevent the user from reaching a fall hazard zone.

SELECTION OF PERSONAL FALL PROTECTION EQUIPMENT

FALL ARREST

Fall arrest system is the name given to the group of equipment, components, and systems used to arrest (stop) a fall from height. These systems can be used to protect workers who that are working at heights.

A fall arrest system should only be used when other methods of fall protection are not available or possible, including engineering controls (e.g., elevated platform), guardrails, safety nets, or travel restraint. Fall arrest systems should:

- ⇒ keep the free fall distance as short as possible,
- ⇒ minimize the forces of the fall experienced by the worker,
- ⇒ protect the worker from striking other surfaces while falling, and
- ⇒ protect the worker from the pendulum effect or swing falls.

It must consist of:

- ⇒ **Anchorage** - Support structure capable of supporting 5,000 lb per employee attached, or designed, installed and used under the supervision of a qualified person as part of an engineered fall arrest system which maintains a safety factor of at least two.
- ⇒ **Anchorage Connector** - Anchor sling, I-beam trolley, or other anchorage connector.
- ⇒ **Body Support** - Full body harness.
- ⇒ **Connecting Means** - Energy-absorbing lanyard or self-retracting lanyard, and lifeline and fall arrester.

WORK POSITIONING

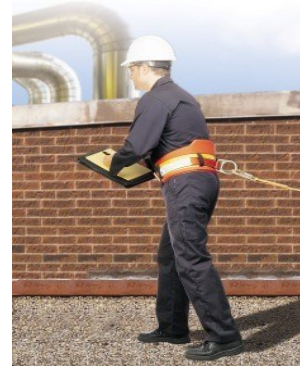
A work positioning system is used to hold a worker in place while allowing a hands-free work environment at elevated heights. The free fall must be limited to 2 feet or less. A fall arrest system should be used in conjunction with a work positioning system when the user is at an elevated height. The following is recommended:

- ⇒ **Anchorage** - Support structure such as a ladder or vertical rods.
- ⇒ **Body Support** - Full body harness or body belt with D-rings for attachment of work positioning equipment.
- ⇒ **Connecting Means** – Anchor bolt, trolley, carabiner or rebar assembly.

RESTRAINT

A restraint system will prevent the worker from reaching a location where a free fall hazard exists. The following is recommended:

- ⇒ **Anchorage** - Support structure.
- ⇒ **Anchorage Connector** - Anchor sling, roof anchor system.
- ⇒ **Body Support** - Full body harness or body belt with back-mounted D-ring.
- ⇒ **Connecting Means** – Positioning lanyard.

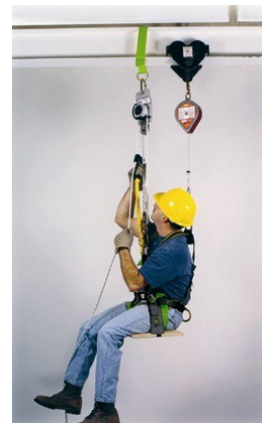


SUSPENSION/ PERSONNEL RIDING SYSTEMS

Suspension systems are used widely in the window washing and painting industries and are designed to lower and support a worker vertically while allowing a hands-free work environment.

The following is recommended:

- ⇒ **Anchorage** - Support structure.
- ⇒ **Anchorage Connector** - Anchor sling, tripod or davit crane.
- ⇒ **Body Support** - Full body harness.
- ⇒ **Connecting Means** - Vertical lifeline ascender/ descender and backup vertical lifeline with rope grab.



RETRIEVAL/ RESCUE

The retrieval system is primarily used in confined space applications where workers must enter tanks, manholes, etc. and may require retrieval from above should an emergency occur.

The following is recommended:

- ⇒ **Anchorage** - Support structure.
- ⇒ **Anchorage Connector** - Tripod or davit crane.
- ⇒ **Body Support** - Full body harness.
- ⇒ **Connecting Means** - Self-retracting lifeline with retrieval capabilities and a personnel rated hoist when ladder access is not available.



LADDER CLIMBING PERMANENT FIXED LADDERS

Flexible Line Fall Arrest Systems

- ⇒ **Anchorage** - Permanent ladder meeting the CSA requirements.
- ⇒ **Anchorage Connector** – Fixed wire rope lifeline with intermediate supports and a mobile fall arrester.
- ⇒ **Body Support** - Full body harness equipped with front or hip D-rings for attachment to ladder climbing fall arrest system.
- ⇒ **Connecting Means** - Connecting hardware, such as a locking carabiner, compatible with the fall arrester and body support harness.



Rigid Rail Fall Arrest Systems

- ⇒ **Anchorage** -Permanent ladder meeting the CSA requirements.
- ⇒ **Anchorage Connector** - Rigid rail or track with mobile fall arrester.
- ⇒ **Body Support** - Full body harness equipped with front or hip D-rings for attachment to ladder climbing fall arrest system.
- ⇒ **Connecting Means** - Connecting hardware, such as a locking carabiner, compatible with the fall arrester and body support harness.



LADDER CLIMBING TEMPORARY/PORTABLE LADDERS

Rope Grab Systems

- ⇒ **Anchorage** - Overhead structural member of suitable size, shape and strength to support the fall arrest system.
- ⇒ **Anchorage Connector** - Vertical lifeline with “rope grab” mobile fall arrester.
- ⇒ **Body Support** - Full body harness equipped with back mounted D-ring for fall arrest.
- ⇒ **Connecting Means** - Lanyard or energy-absorbing lanyard as specified by the manufacturer of the rope grab fall arrester



EVACUATION/ CONTROLLED DESCENT SYSTEMS

- ⇒ **Anchorage** - Support structure.
- ⇒ **Anchorage Connector** – Tie-off sling is an option.
- ⇒ **Body Support** - Full body harness with either front or shoulder mounted D-ring.
- ⇒ **Connecting Means** - Controlled descent device.



Task	Anchorage	Anchorage Connector	Body Support	Connection Means
General Fall Arrest	Support structure capable of supporting 5,000 lb per employee attached, or an engineered system, installed and used under the supervision of a qualified person as part of a complete personal fall arrest system which maintains a safety factor of at least two	Anchor sling, I-beam trolley, or other anchorage connector	Full body harness	Energy-absorbing lanyard or self-retracting lanyard, and lifeline and fall arrester
Work Positioning	Support structure such as a ladder or vertical rods		Full body harness or body belt with D-rings for attachment of work positioning equipment	Anchor bolt, trolley, carabiner or rebar assembly
Restraint	Support structure	Anchor sling, roof anchor system	Full body harness or body belt with back-mounted D-ring	Positioning lanyard
Suspension/ Personnel Riding System	Support structure	Anchor sling, tripod or davit	Full body harness	Vertical lifeline ascender/ descender and backup vertical lifeline with rope grab
Retrieval/Rescue	Support structure	Tripod or davit crane	Full body harness	
Ladder Climbing – Permanent Fixed Ladders – Fixed Line Fall Arrest Systems	Permanent Ladder meeting the CSA requirements.	Fixed wire rope lifeline with intermediate supports and a mobile fall arrester	Full body harness equipped with front or hip D-rings for attachment to ladder climbing fall arrest system	Connecting hardware, such as a locking carabiner, compatible with the fall arrester and body support harness
Ladder Climbing – Permanent Fixed Ladders – Rigid Rail Fall Arrest Systems	Permanent ladder meeting the CSA requirements	Rigid rail or track with mobile fall arrester	Full body harness equipped with front or hip D-rings for attachment to ladder climbing fall arrest system	Connecting hardware, such as a locking carabiner, compatible with the fall arrester and body support harness
Ladder Climbing – Temporary, Portable Ladders – Rope Grab Systems	Overhead structural member of suitable size, shape and strength to support the fall arrest system	Vertical lifeline, synthetic rope or wire type, with “rope grab” mobile fall arrester	Full body harness equipped with back mounted D-ring for fall arrest	Lanyard or energy-absorbing lanyard as specified by the manufacturer of the rope grab fall arrester
Evacuation/ Controlled Descent Systems	Support structure	Tie-off sling is an option	Full body harness with either front or shoulder mounted D-ring	Controlled descent device

PLANNING THE USE OF SYSTEMS

FIRST STEPS

Begin by performing a hazard identification and evaluation of your work site. Then plan the system (s) before starting work. Consider all possible paths of user movement and all factors that could affect the user's safety before, during and after a fall anywhere along these paths. All hazards identified in the workplace assessment must be addressed and suitable controls planned and implemented.

A qualified person must select the components, materials, anchorage and anchorage connectors to match the system application, the work, workplace hazards and the environment. Consider the following points when planning the system (s):

- ⇒ **Warnings** – Always read all instructions and warnings contained on the product and packaging before using any fall protection equipment.
- ⇒ **Inspection** – All fall protection equipment must be inspected prior to each use. **Training** – All workers should be trained by a competent person in the proper use of fall protection products.
- ⇒ **Regulations** – Understand all federal, provincial and local regulations pertaining to fall protection before selecting and using the equipment.
- ⇒ **Rescue Planning** – Minimizing the time between a fall occurrence and medical attention of the worker is vitally important. A thorough rescue programme should be established prior to using fall protection equipment.
- ⇒ **Product/System Preferences** – If there are any doubts about which fall protection products to use, contact your preferred fall protection manufacturer for assistance.
- ⇒ **System Components** – Only components that are fully compatible with one another should be used. Fall arrest systems are designed and tested as complete systems and should be used in this way.
- ⇒ **Equipment Removal** – After a fall occurs, all components of the fall arrest system should be removed from service.
- ⇒ **Sharp Edges** - if work must be performed near unavoidable sharp edges, plan to protect against cutting by use of heavy padding or other means of covering the sharp edge.

ANCHORAGES AND ANCHORAGE SYSTEMS

Determine the necessary locations of anchorages to assure that the user will be continuously connected when exposed to hazards of falling. Select anchorages that are stable and have the strength required. Carefully select the locations of the anchorages to:

- ⇒ Reduce possible free fall distance.
- ⇒ Prevent swing fall hazards.
- ⇒ Provide clear space in the potential fall paths to avoid striking an object.

Do not select anchorage locations that will require the user to work above the anchor as this will increase the potential free fall and total fall distances. Plan the types of anchorage connectors you will need.

FREE FALL DISTANCE, TOTAL FALL DISTANCE, AND SYSTEM ELONGATION

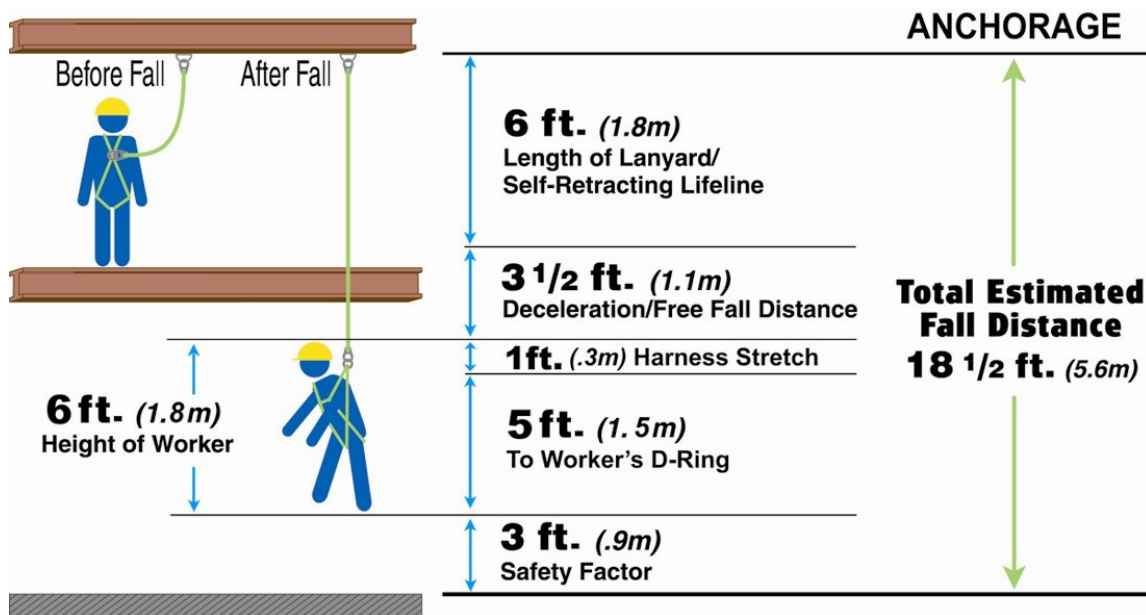
Personal fall arrest systems must be selected and rigged to ensure that potential free fall distances will never exceed 4 ft (1.2 m) as required by Nova Scotia regulations. See manufacturer's instructions for connecting subsystems to determine the deceleration distance and elongation that must be taken into consideration.

Total fall distance is the sum of free fall distance and deceleration distance. Dynamic elongation of the system (temporary elastic stretch of connecting components and subsystems) and the worker's height must be added to total fall distance and the user must allow for clearance. It is prudent to allow for an additional safety factor of 3 ft (1 m) below the fallen worker's feet.

Potential fall distance must be calculated to determine how to rig the system, and selection of the appropriate type of connecting device. For example, when using a 6-foot lanyard, the illustration below shows a typical calculation of total estimated fall distance. For the example shown:

- ⇒ When fall clearance is under 18.5 ft (5.6m), an alternative solution such as a shorter lanyard length, or a different connecting device such as a self-retracting lanyard or fall limiter, is needed to reduce the total fall distance.
- ⇒ When fall clearance is over 18.5 ft (5.6m) there is sufficient total fall distance available, and the 6 ft lanyard is acceptable to use. Note that energy absorbing lanyards can expand up to 3.5 ft (1.1m) or more. Consult manufacturer's instructions.

Note: Never tie a knot in any lanyard to make it shorter, as it reduces the strength by more than 50%. Instead, purchase an adjustable lanyard and adjust it to proper working length.

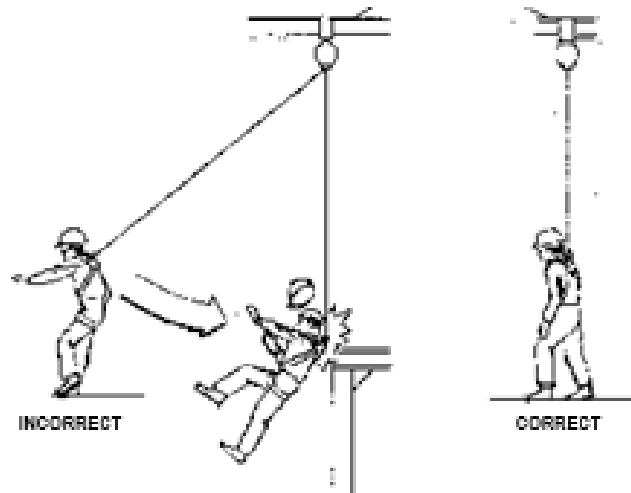


USER MOVEMENTS

Identify all necessary movements of the user and the materials and equipment needed to perform the planned work. The plan should ensure there is no crossing or tangling of connecting subsystems of two or more workers. Make certain users do not clamp, knot or otherwise prevent the connecting subsystem from functioning properly. Establish controls to prevent these occurrences.

PENDULUM (SWING) FALLS

Swing falls can occur when the system is not anchored directly above the user. The force of striking an object in a pendular motion can cause serious injury. Always minimize swing falls by working as directly below the anchorage point as possible.



CLEAR SPACE IN FALL PATH

Make certain that enough clearance is available in all potential fall paths to prevent striking an object. The amount of clearance needed depends upon the type of connecting subsystem used, and the location of the anchorage. Consult the manufacturer's instructions for the particular connecting subsystem or component for clearance needed.

RESCUE AND EVACUATION

Before workers use any fall-arrest system on a project, the employer must develop written rescue procedures. If the risk of falling more than 7.5m then the rescue procedure must be written in the Fall Protection Plan.



The Recue Procedure should include the following:

⇒ Pre-Work Information

- ◇ Rescue capabilities of the facility, internally (volunteer rescuers) and externally (emergency services)
- ◇ Hazards – confined space, vehicle maintenance, electrical hazard, chemical hazards, etc.
- ◇ Types of system used – travel restraint or fall arrest system, using self- retracting equipment or ladder climbing systems.
- ◇ Type of Equipment used – Ability to raise or lower the person requiring rescue, where the anchor is located, type of D-Rings, using self-retracting equipment, etc.
- ◇ Rescue Options – Elimination, Self-rescue, Assisted Rescue (ladder/lift or PPE), Response Rescue (fire department or high angle rope access) or Special Case (evacuation).

⇒ During Use Information

- ◇ Any changes or alterations to the system or work being done
- ◇ Buddy System or Supervisor amendments

⇒ Post Fall

- ◇ Status of person being rescued
- ◇ Emergency contact
- ◇ Completion of Rescue
- ◇ First Aid.
- ◇ Also note if a fall occurs then an incident investigation must be completed.

A worker involved in a fall protection accident must be brought to a safe area as quickly as possible without causing injury or putting rescuers at risk. Maximum time limit for rescue is 30 minutes.

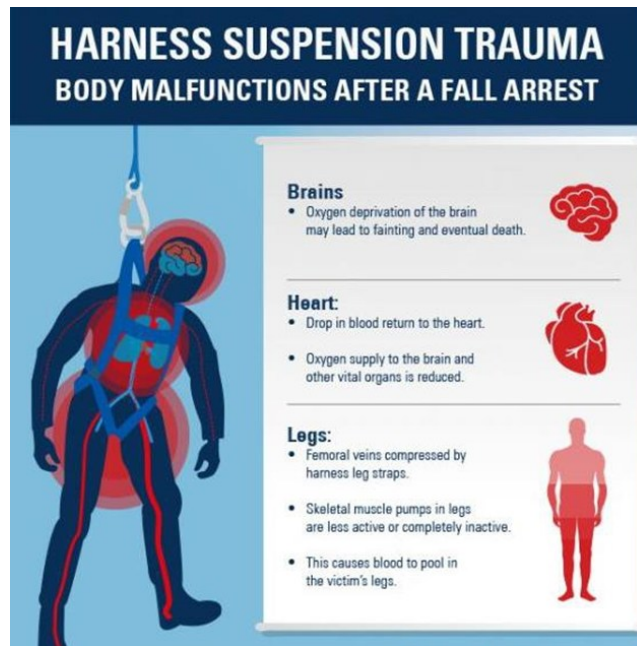
In many cases, the rescue plan can be simple. A ladder or elevating work platform can be used to reach suspended workers and get them down safely. Other workers may be hauled back up to the level from which they fell or pulled in through a nearby window or other opening.

In other cases, procedures may be more complicated. For instance, workers trapped on a failed swing stage, or hanging from it, may need to be rescued by specially trained and equipped personnel from the local fire department. Aerial ladder trucks or other high- reach equipment may be necessary. In extreme cases, the fire department may use rappelling techniques to reach trapped workers and lift or lower them to In other cases, procedures may be more complicated. For instance, workers trapped on a failed swing stage, or hanging from it, may need to be rescued by specially trained and equipped personnel from the local fire department. Aerial ladder trucks or other high- reach equipment may be necessary. In extreme cases, the fire department may use rappelling techniques to reach trapped workers and lift or lower them to a safe level.

⇒ Plans should cover the on- site equipment, personnel, and procedures for different types of rescue.

⇒ Any off-site rescue services that might be required should be contacted and arranged in advance to familiarize them with the project.

- ⇒ Site management must ensure that:
- ◇ Everyone on site is aware of the rescue plan
 - ◇ Equipment and other resources are available
 - ◇ Designated personnel are properly trained

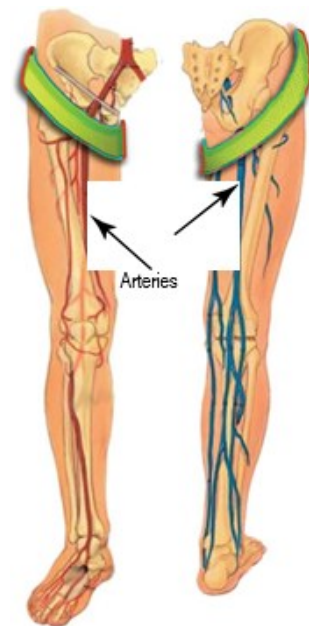


- ⇒ If not rescued in time. Too often, a worker is saved by a personal fall arrest system (PFAS), only to succumb to suspension trauma while waiting for rescue.

What Is Suspension Trauma?

Suspension trauma happens when a fallen worker is suspended in a harness with legs hanging. While arteries near the *fronts* of the legs continue pumping blood, the harness straps act like tourniquets on the veins in the *backs* of the legs and prevent used (deoxygenated) blood returning to the heart. If circulation is impeded enough, the heart rate will abruptly slow and reduce oxygen to the brain.

Even under ideal circumstances, with a rescue plan in place, suspension trauma must be treated as an *emergency*. It can be fatal in as little as 10 minutes. Typically, suspension trauma causes death in 15 to 40 minutes.



Immediate Steps to Reduce the Risk of Suspension Trauma

The best way to slow progression of suspension trauma is to stand. When a worker stands, the leg muscles must contract, which puts pressure on the veins. This pressure, along with a series of one-way valves within the veins, helps blood return to the heart and reduces the amount of blood pooling in the legs. A fallen worker can stand in one of several ways:

Suspension trauma relief straps:

A fallen worker can deploy trauma relief straps, creating a loop that the worker steps into and presses against to stand up. Relief straps are typically packaged in two pouches that attach to each side of a harness.



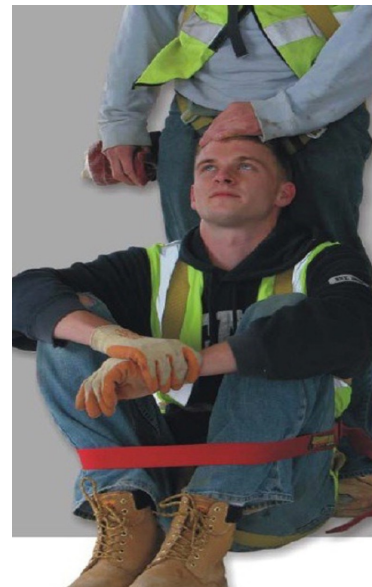
Onsite work equipment:

The onsite rescue team may be able to bring a ladder, an aerial lift, or other equipment for the suspended worker to stand on.

Structural member:

The onsite rescue team may be able to pull the suspended worker over to a structural member, a lower level, or the ground.

- ⇒ A person who has had an arrested fall and has been suspended in a harness for any significant length of time should **not** be placed in a horizontal position too quickly.
- ⇒ Treating someone with these conditions is not basic first aid. Call 911 when there is an arrested fall and have paramedics/emergency services on the way.



INSPECTION OF FALL PROTECTION EQUIPMENT

Fall protection equipment must be visually inspected before each use. Regular inspection by a competent person for wear on the equipment must be performed at least every 12 months. Severe service or wear should result in more frequent inspections.

Inspection procedures should be written, and each inspection should be documented. It is also important to follow any specific instructions that are provided with the equipment at the time of purchase. Instructions should be stored in a location where they are readily available to the users.

Inspect all equipment according to the manufacturer's instructions. If required by the manufacturer, return the equipment to the manufacturer for inspection, repair, or recertification.

Remove equipment from service if a stress indicator or warning system has been activated. Follow manufacturer's instructions for disposition of the equipment.

If a fall has been arrested, remove all components of the system from service and follow the manufacturer's instructions for disposal.

HARNESS AND BODY BELT INSPECTION

To inspect your harness or body belt, perform the following procedures.

- ⇒ **Webbing** – Grasp the webbing with your hands 6 in. (152mm) to 8 in. (203mm) apart. Bend the webbing in an inverted “U” as shown. The surface tension resulting makes damaged fibers or cuts easier to detect. Follow this procedure the entire length of the webbing, inspecting both sides of each strap. Look for frayed edges, broken fibers, pulled stitches, cuts, burns and chemical damage.
- ⇒ **D-Rings/Back Pads** – Check D-rings for distortion, cracks, breaks, and rough or sharp edges. It should pivot freely. D-ring back pads should also be inspected for damage.
- ⇒ **Attachment of Buckles** – Inspect for any unusual wear, frayed or cut fibers, or broken stitching of the buckle or D-ring attachments.
- ⇒ **Tongue/Grommets** – The tongue receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted or broken grommets. Webbing should not have additional punched holes.
- ⇒ **Tongue Buckles** – Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. Roller should turn freely on frame. Check for distortion or sharp edges.
- ⇒ **Friction and Mating Buckles** – Inspect the buckle for distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment points at the center bar.
- ⇒ **Quick-Connect Buckles** – Inspect the buckle for distortion. The outer bars and center bars must be straight. Make sure dual-tab release mechanism is free of debris and engages properly.



LANYARD INSPECTION

When inspecting lanyards, begin at one end and work to the opposite end, slowly rotating the lanyard so that the entire circumference is checked. Additionally, follow the procedures below.

Hardware

- ⇒ **Snaps** - Inspect closely for hook and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should seat into the nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly close the keeper. Keeper locks must prevent the keeper from opening when the keeper closes.
- ⇒ **Thimbles** - The thimble must be firmly seated in the eye of the splice, and the splice should have no loose or cut strands. The edges of the thimble must be free of sharp edges, distortion, or cracks.

Lanyards

- ⇒ **Wire Rope Lanyard** – While rotating the wire rope lanyard, watch for cuts, frayed areas, or unusual wearing patterns on the wire. Broken strands will separate from the body of the lanyard.
- ⇒ **Web Lanyard** – While bending webbing over a pipe or mandrel, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Swelling, discoloration, cracks and charring are obvious signs of chemical or heat damage. Observe closely for any breaks in stitching.
- ⇒ **Energy-Absorbing lanyard** - Examine as a web lanyard (described above). However, also look for the warning flag or signs of deployment. If the flag has been activated, remove this energy-absorbing lanyard from service.
- ⇒ **Rope Lanyard** – Rotate the rope lanyard while inspecting from end-to-end for any fuzzy, worn, broken or cut fibers. Weakened areas from extreme loads will appear as a noticeable change in original diameter. The rope diameter should be uniform throughout, following a short break-in period.
- ⇒ **Energy- Absorber Pack** – The outer portion of the pack should be examined for burn holes and tears. Stitching on areas where the pack is sewn to D-rings, belts or lanyards should be examined for loose strands, rips and deterioration.

An energy-absorbing lanyard or self-retracting lifeline is composed of only one strength member (i.e., webbing, rope, steel cable). Substandard design, poor quality workmanship, excessive exposure to UV light or chemicals, physical damage, improper storage or inadequate inspection can lead to lanyard/lifeline failure.

SELF- RETRACTING LIFELINE INSPECTION

To inspect your self-retracting lifeline, perform the following procedures.

- ⇒ **Check Housing** – Before every use, inspect the unit's housing for loose fasteners and bent, cracked, distorted, worn, malfunctioning or damaged parts.
- ⇒ **Retraction and Tension** – Test the lifeline retraction and tension by pulling out several feet of the lifeline and allow it to retract back into the unit. Always maintain a light tension on the lifeline as it retracts. The lifeline should pull out freely and retract all the way back into the unit. Do not use the unit if the lifeline does not retract.

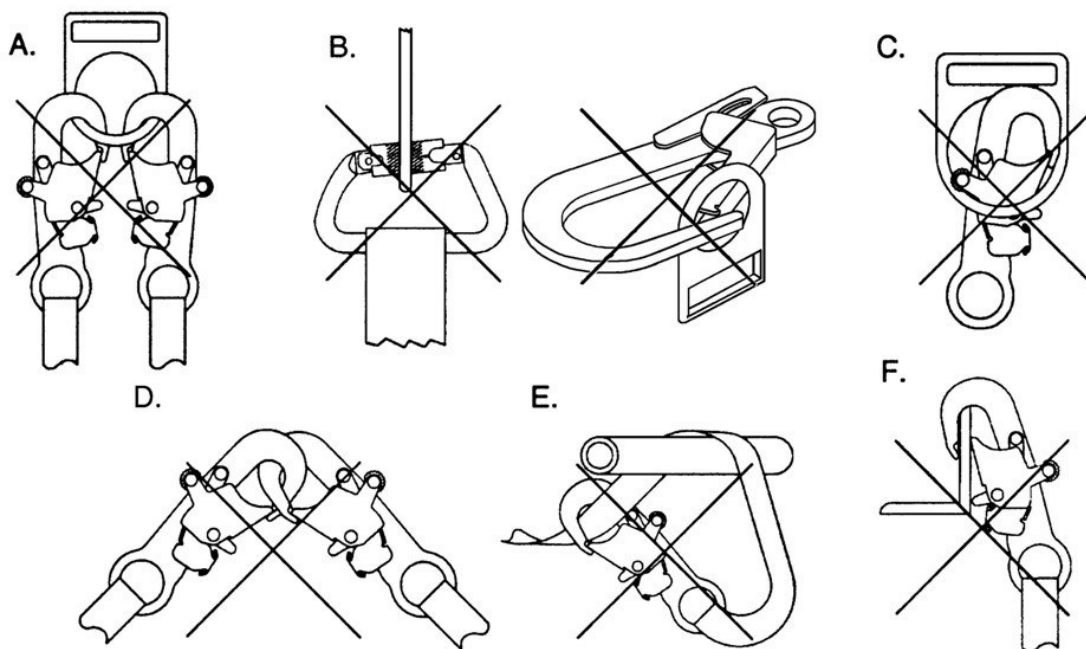
- ⇒ **Lifeline** - The lifeline must be checked regularly for signs of damage. Inspect for cuts, burns, corrosion, kinks, frays or worn areas. Inspect any sewing (web lifelines) for loose, broken or damaged stitching.
- ⇒ **Braking Mechanism** – The braking mechanism must be tested by grasping the lifeline above the impact indicator and applying a sharp steady pull downward which will engage the brakes. There should be no slippage of the lifeline while the brakes are engaged, once tension is released, the brakes will disengage, and the unit will return to the retractable mode. Do not use the unit if the brakes do not engage.

The snap hook load indicator is located in the swivel of the snap hook. The swivel eye will elongate and expose a red area when subjected to fall arresting forces. Do not use the unit if the load impact indicator has been activated.

EXAMPLES OF IMPROPER CONNECTIONS

Just as a chain is only as strong as its weakest link, the integrity of a fall protection system depends on proper connection of all its components. The following are some examples of improper connections:

- ⇒ Do not attach two or more snap hooks or carabiners to a single D-ring.
- ⇒ Do not load a carabiner or snap hook at the gate.
- ⇒ Ensure that connections are compatible and secure.
- ⇒ Do not attach two snap hooks or carabiners together.
- ⇒ Do not tie back on a lanyard unless specifically designed to do so by the manufacturer.
- ⇒ Ensure that the snap hook is closed and locked



CLEANING, MAINTENANCE AND STORAGE

Basic care of your fall protection equipment will prolong the durable life of the unit and will contribute toward the performance of its vital safety function. Proper storage and maintenance after use are as important as cleansing the equipment of dirt, corrosives or contaminants.

- ⇒ **Nylon or Polyester** – Remove all surface dirt with a sponge dampened in plain water. Squeeze the sponge dry. Dip the sponge in a mild solution of water and commercial soap or detergent. Work up a thick lather with a vigorous back and forth motion; then wipe with a clean cloth. Hang freely to dry, but away from excessive heat.
- ⇒ **Housing** – Periodically clean the unit using a damp cloth and mild detergent. Towel dry.
- ⇒ **Drying** – Equipment should dry thoroughly without close exposure to heat, steam or long periods of sunlight.

When not in use, fall protection equipment should be stored in a cool, dry and clean place out of direct sunlight. Avoid areas where heat, moisture, light, oil, chemicals (or their vapours) or other degrading elements may be present.

Equipment that is damaged or in need of maintenance should NOT be stored in the same area as usable equipment. Heavily soiled, wet or otherwise contaminated equipment should be properly cleaned and dried prior to storage.

Prior to using equipment which has been stored for long periods of time, a formal inspection by a competent person should be performed.

How to properly wear a Full Body Harness



1 Hold harness by back D-ring. Shake harness to allow all straps to fall in place.



2 If chest, leg and/or waist straps are buckled, release straps and unbuckle at this time.



3 Slip straps over shoulders so **D-ring is located in middle of back between shoulder blades.**



4 Pull leg strap between legs and connect to opposite end. Repeat with second leg strap. If belted harness, connect waist strap after leg straps.



5 **Connect chest strap and position in midchest area.** Tighten to keep shoulder straps taut.



6 After all straps have been buckled, **tighten all buckles so that harness fits snug but allows full range of movement.** Pass excess strap through loop keepers.

- ⇒ If the equipment doesn't fit properly then the fall protection system cannot be used.
- ⇒ Consult your supervisor for proper instruction for proper fitting.
- ⇒ Keep all loose straps tucked in snugly so they don't snag or cause tripping.

GUARDRAILS

Guardrails are a stationary (or "fixed") system used to protect workers from falls when working at heights. Guardrails are a preferred means of protecting workers because the system does not rely on the worker to be trained to use, inspect, and wear a fall protection system.

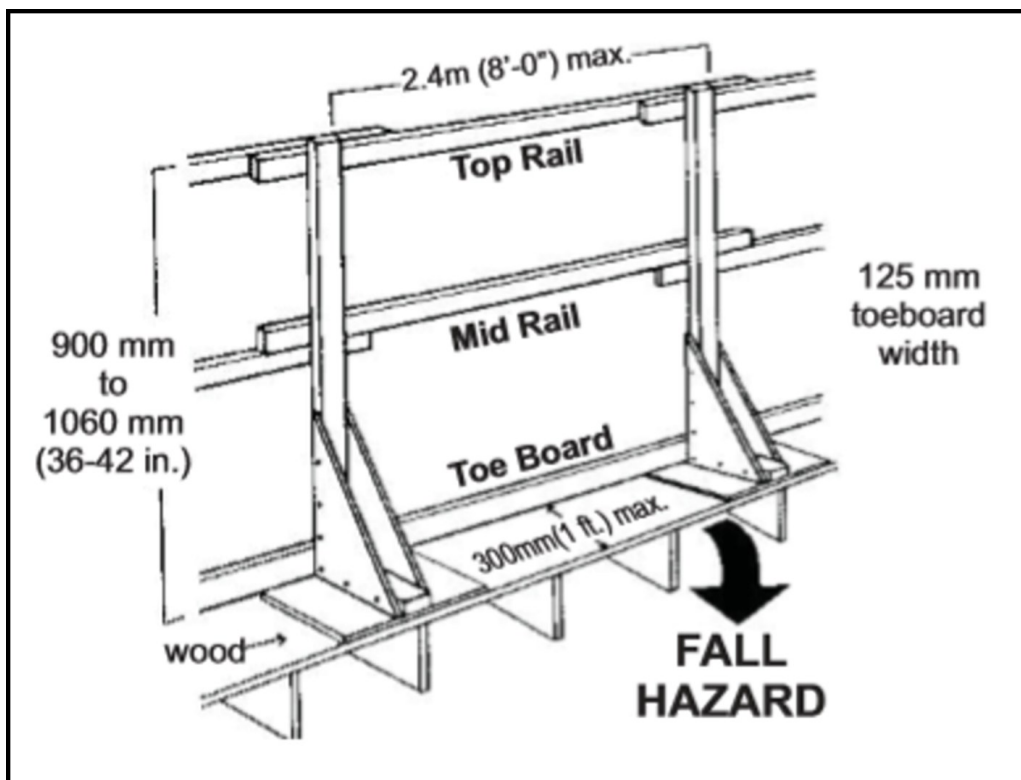
Well built guardrails are a reliable and convenient means of fall protection because they act as a visible and physical barrier to help prevent falls from heights or between levels including falls from roofs, balconies, stairwells or falls into open holes. Guardrails are used where covers, floors or walls cannot be installed or are not practical.

There are two main types of guardrails –

Job-built guardrails and **manufactured** guardrail systems. While job-built guardrails are typically made of wood, manufactured guardrail systems are available in a variety of materials and may have parts made of mesh, netting or fencing.

A guardrail must be designed and installed in compliance with the latest version of CSA standard CSA Z797, "Code of Practice for Access Scaffolds"

- ⇒ Posts secured against movement, spaced no more than 2.4 m (8ft)
- ⇒ Top rail 1.0m +/- 75mm(39 in +/- 3 in.)
- ⇒ Toe board, resting on platform and extending up 75 mm (3.5 in.)
- ⇒ Mid-rail centered in between top rail and toe board
- ⇒ Must resist a 200 lb. force applied vertically and horizontally to the top rail
- ⇒ Guardrail may be omitted at the edge of a platform where the gap between the wall and the platform does not exceed 0.3 m (12 in.)



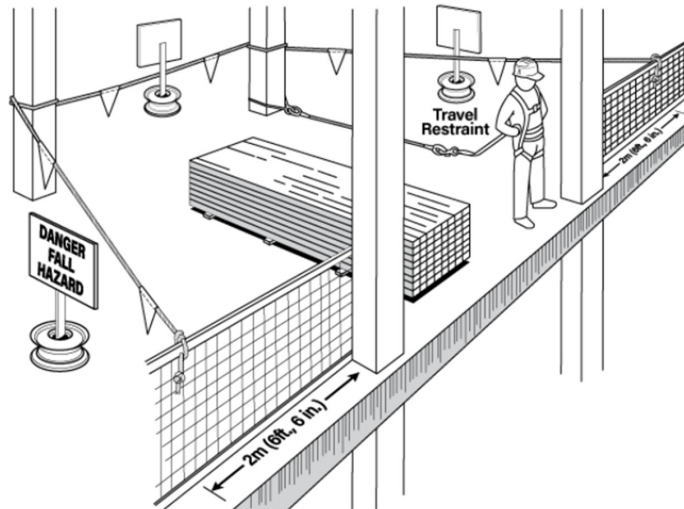
What should be done if you need to remove the whole or part of a guardrail?

It may be necessary to remove guardrails or sections of a guardrail in a working area, such as unloading materials at a site above ground level. Follow good practice to ensure there are not falls through an unprotected opening. Improper removal of the guardrails can leave protruding edges or parts, like nails, that may injure workers, so use the right tools and follow all established construction procedures.

Before removing a guardrail:

- ⇒ Identify the work area that will be affected by the removal of the guardrail. Mark an area large enough to keep unprotected employees away from the fall hazard.
- ⇒ Clear that area so it is free from slip or trip hazards such as ice and debris.
- ⇒ Mark it off as a fall hazard area with caution tape or a warning barrier.
- ⇒ Alert all those working nearby that a guardrail is being removed. Post warning signs outside the roped off area alerting anyone of the danger from the unprotected fall hazard.
- ⇒ Set up travel restraint or fall arrest systems for everyone working in the fall hazard area after the guardrail is removed.

After the guardrail is removed, everyone working inside the marked off area must use a travel restraint or fall arrest system at all times.



FALL PROTECTION FORM

Note: Employees must review the requirements of this fall protection work procedure prior to starting work.
Employees must have valid NS Fall Protection Training

LOCATION OF WORK SITE:

COMPANY:

NATURE OF THE WORK:

JOB DESCRIPTION:

DURATION AS APPLICABLE:

Start Date: _____ Finish Date (Estimated): _____ Start Time (If applicable): _____ Finish Time (Estimated): _____

WEATHER CONDITIONS: Wind _____ km/hr Wind Chill Factor: _____ Temperature: _____
☐ Sun ☐ Cloudy ☐ Rain ☐ Snow ☐ Freezing Rain ☐ Other _____

1. **IDENTIFY ALL FALL HAZARDS IN THE WORK AREA AS REQUIRED IN THE WHSR'S SECTION 21.2:**
 (3m or more above a safe surface or water; less than 3m and above an unsafe surface or water; or above exposed hazardous material eg. open pit / tank.)

☐ Leading edge	☐ Stairways	☐ Floor / uncovered openings
☐ Perimeter edge	☐ Ladders	☐ Steel erection
☐ Scaffold erection/disassembly	☐ Through a roof	☐ Pit / Vat
☐ Access / Egress	☐ Drowning	
☐ Hazardous material	☐ Other (describe):	

2. **METHOD OF FALL PROTECTION TO BE PROVIDED:**

☐ Fall/travel restraint	☐ Guardrails	☐ Safety net
☐ Fall arrest	☐ Temporary flooring	☐ Other:

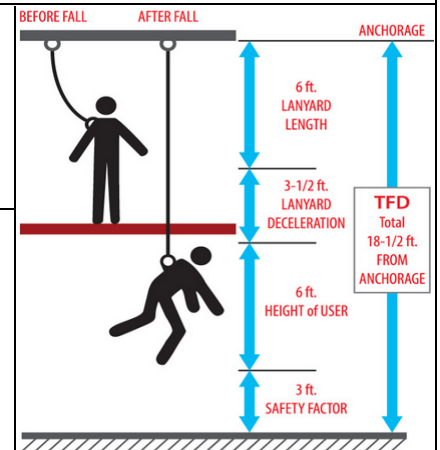
3. **TYPE & PLACEMENT OF ANCHOR(S):**

4. **TOOLS / EQUIPMENT TO BE USED:**

5. **Fall Calculation:**

_____ = _____ + _____ + _____ + _____
 Total Fall Distance (TFD) Lanyard Length Deceleration Distance Worker Height Safety Factor

6. **RESCUE PROCEDURE:**



Fall Protection Procedure Completed By:

Date Procedure Completed:

Names of Employees Qualified to Work on this job and Informed of Completed Fall Protection Form - and company Fall Protection Programme through Briefing / Toolbox Meeting:

PRINT	SIGNATURE	PRINT	SIGNATURE

Responsible Supervisor:

Signature of Responsible Supervisor:

MOBILE ELEVATING WORK PLATFORM (MEWP)

The operation of any Mobile Elevating Work Platform (MEWP) is subject to certain hazards that can be protected against only by the exercise of intelligence, care and common sense, and not by any device. It is essential to have persons who are medically and physically fit for the task selected to be trained and qualified in the intended use, safe operation, maintenance, and service of this type of equipment.

It is critical to ensure that good job management, safety control and the application of sound principles of safety, training, inspection, maintenance, repair, application and operation are strictly adhered to at all times.

All available information regarding the parameters of intended use and the expected work environment must be taken into consideration. Decisions on the use and operation of MEWPs must always be made with due consideration for the fact that the MEWP will be carrying persons whose safety is dependent on those decisions, as well as others in the operating vicinity.

With all of that considered, this safe use programme specific to MEWPs has been developed to instruct the user in the following:

- ⇒ Access, preparation and maintenance of the site, as required, to include an assessment that the support surface is adequate to support the weight of the MEWP;
- ⇒ MEWP maintenance, including inspection and repairs as required by the applicable standards and by the manufacturer;
- ⇒ Allowing only trained and authorized personnel to operate and/or occupy the MEWP;
- ⇒ Ensuring that the authorized MEWP operators have been familiarized with the specific MEWP to be used;
- ⇒ Ensuring that the operators are informed of local site requirements and has been warned and provided the means to protect against identified hazards in the areas where the MEWP will be operated;
- ⇒ Having a trained and qualified supervisor monitor the performance and the work of the operator to ensure compliance with provisions of the applicable standards;
- ⇒ The safety of persons not involved in the operation of the MEWP; and
- ⇒ Proper documentation and record retention.
- ⇒ Performing a site risk assessment to identify hazards, evaluate risk, develop control measures and communicate with everyone affected;
- ⇒ Planning of the operation, including rescue plans for the safe recovery of persons and/or the MEWP in the event of an emergency;
- ⇒ The selection, provision and use of an appropriate MEWP for the task as well as any work equipment associated with it;

MOBILE ELEVATING WORK PLATFORMS WORKPLACE RISK ASSESSMENT

Risk assessments are a critical element of jobsite and worker safety. The risks associated with the task specific to MEWP operations must be identified before the work begins.

These might be associated with the location where the work is to be carried out, the nature of the MEWP, or the personnel, materials and equipment to be carried.

This involves visiting the location where the work is to be performed, preferably with site personnel or their representatives who can identify the hazards associated with the area and the ground on which the MEWP will be required to operate.

Once the hazards and risks involved in the task have been identified, the procedures and measures required to eliminate or mitigate them must be identified and implemented.

The risk assessment results are used to plan safe work procedures, including any contingencies required, in carrying out the identified tasks.

Rescue planning is a necessary component of a risk assessment when working at height. There are situations that require prior planning to ensure a safe and timely rescue. For more information, please refer to the Genie® Rescue Plan Overview document.

The user, which is most commonly the employer, is responsible for communicating the results of the risk assessment to everyone involved in the operation.

Before a job starts and periodically throughout a long-term job, the risk assessment must be reviewed to determine if any components of the tasks or the work environment have changed and the effect that it could have on the safety of the operation. If any modifications to the risk assessment are required, these must be communicated to everyone involved prior to resuming the job.

PARTIAL SAMPLE OF A RISK ASSESSMENT:

Company Name: _____ Date: _____

Job site Location: _____

Primary Risk Assessor(s): _____

Does this risk assessment replace a previous assessment? ☒ No ☐ Yes

If yes, date of previous assessment: _____

HAZARD	RISK	CONTROL MEASURE
Periods of high wind in the work area	Tip-Over	• Use an anemometer to determine wind speed. • Do not operate the MEWP if wind speed or gusts are expected to exceed 28 mph.
Power lines in the vicinity of the work area	Electrocution	• Review the appropriate operator's manual. • Maintain safe distance from the power lines in accordance with the Required Clearance chart.
Overhead obstructions where the MEWP needs to operate	Collision/Crushing	• Always look in the direction you are moving • Use extreme care and slow speeds • Wear personal protective equipment as required
Some areas of the work location may exceed the maximum slope rating for the MEWP	Tip-Over	• Do not operate the MEWP on a slope that exceeds the manufacturer's recommendation. • Elevate only on a firm, level surface. • If alarm sounds, follow the instructions in the operator's manual to lower the MEWP safely

MOBILE ELEVATING WORK PLATFORMS WORKPLACE RISK ASSESSMENT

Before any operation begins and during the use of the MEWP, it is critical that the user ensures that the operator performs a workplace inspection in the area in which the MEWP is to be used.

The workplace inspection should be performed prior to moving the machine to the workplace.

The site must be walked and checked for all possible hazards, such as, but not limited to:

- ⇒ Drop-offs or holes, including those concealed by water, ice, mud, etc.
- ⇒ Slopes
- ⇒ Bumps, floor obstructions and electric cables
- ⇒ Confined spaces
- ⇒ Debris
- ⇒ Overhead obstructions
- ⇒ Electrical conductors
- ⇒ Hazardous atmospheres and/or hazardous locations
- ⇒ Surfaces inadequate to sustain the ground-bearing pressures imposed by the MEWP in all operating configurations
- ⇒ Wind and bad weather conditions
- ⇒ Traffic hazards
- ⇒ The presence of personnel (authorized and unauthorized) and other mobile equipment

An important aspect of MEWP operation is the safety of workers and the general public who can be exposed to potential hazards in the work area. Always maintain a controlled area below and around the MEWP to prevent persons and objects from being struck-by the MEWP itself or objects that may fall from the elevated platform.

When a MEWP is being loaded or unloaded from a transport vehicle on a public road, the users and operators must ensure that appropriate measures are taken to protect everyone in or near the area.

These measures may include, but are not limited to:

- ⇒ Warning cones or hazard tape
- ⇒ Signs and signal personnel wearing reflective clothing
- ⇒ Flag personnel to warn people and other vehicles of the presence of the MEWP and the transport vehicle

This is only an overview. Additional information can be found in CSA B354.7:17

RESCUE PLANS FOR MOBILE ELEVATING WORK PLATFORMS

WHY ARE RESCUE PLANS CRITICAL WHEN OPERATING MOBILE ELEVATING WORK PLATFORMS (MEWPs)?

MEWPs are designed and manufactured to include fall protection in the form of platform guardrails, and the CSA B354.7 standard also require personal fall protection equipment (PFPE) on all MEWPs. However, there are situations where an individual may fall or be ejected from the platform, the platform may become entangled, or the machine may experience a breakdown and the operator and any occupants in the platform will require a timely rescue response.

Even a person properly fitted with a full body harness may receive injuries during the fall or begin to experience suspension trauma (blood pooling in their legs) within a very short period of time. Research indicates that suspension in a fall arrest device can result in unconsciousness, followed by death, in less than 30 minutes. The recommended goal for rescue subject contact is less than six minutes.

In the event of platform entanglement or machine breakdown that would prevent the operator from lowering the platform safely to the ground, it is critical to have a plan in place to ensure a timely rescue.

A rescue plan is a necessary component of a risk assessment when working at height.

CSA B354.7 standard require employers to have a rescue plan in place and ensure that workers are trained on procedures to follow if they fall and await rescue or witness another worker's fall. The plan must be put in writing and become part of your company's training programme.

Rescue Plans Should Include the Following:

- ⇒ NSADSA and location
- ⇒ Work site location (if different)
- ⇒ Identification of fall hazards associated with the operation of the MEWP
- ⇒ Identification of work procedures to eliminate or mitigate the risk
- ⇒ Training on:
 - * Self-rescue (by the person involved)
 - * Assisted rescue (by others in the work area)
 - * Technical rescue (be emergency services)

It is critical to ensure that:

- ⇒ only properly trained, qualified and authorized personnel operate the MEWP;
- ⇒ all occupants wear the appropriate personal fall protection equipment (PFPE) for the task at hand; and
- ⇒ all occupants have received instruction on how to properly inspect, don and adjust the PFPE.

RESCUE PLANS FOR MOBILE ELEVATING WORK PLATFORMS

Options for Rescue (to be covered in detail on the following pages):

- ⇒ Use of platform auxiliary controls by the operator
- ⇒ Use of the primary ground controls by others in the work area
- ⇒ Use of the auxiliary ground controls by others in the work area in the case of main system malfunction
- ⇒ Platform-installed self-rescue systems
- ⇒ Personal self-rescue systems
- ⇒ Secondary MEWP for mid-air rescue
- ⇒ Agreement with local authorities to provide technical rescue

RESCUE PLANS FOR MOBILE ELEVATING WORK PLATFORMS

Options for Rescue – Self-Rescue (by the person involved):

Platform Auxiliary Controls

In the case where the primary platform controls stop responding, the operator should first attempt to activate the platform auxiliary controls to lower the machine to the ground.

Platform-Installed Self-Rescue System

In the case where the platform controls are not responding and there are no other workers in the area who can aid, a platform-installed self-rescue system may be employed.

These systems are typically after-market devices that can be mounted in the platform that allow the operator to self-rescue by attaching the system to the front D-ring on their harness, exiting the platform and using the device to lower themselves to the ground.

Operators must receive extensive training on the use of the system and machine manufacturer approval prior to installing the system on the machine.

Whenever an individual is suspended in air, it is critical that they continuously pump their legs (as if riding a bicycle) to minimize the likelihood of suspension trauma injury.

Personal Self-Rescue System

These systems can be used to lower the individual from the platform, or to self-rescue after experiencing a fall or ejection from the platform.

These systems are also after-market devices that can be mounted directly onto the operator's full-body harness. The PFPE lanyard is then attached to the device prior to commencing the work.

The system allows the operator to self-rescue by exiting the platform and activating the device to lower themselves to the ground or to within rescue range from another MEWP.

Operators must receive extensive training on the use of the system and approval from their employer prior to installing the system on their harness.

Suspension Trauma Safety Straps

Another personal self-rescue option that should be a consideration in any rescue plan is a suspension trauma strap system.

These lightweight systems mount onto the side straps of the operator's harness. In the case of fall or ejection from the platform, the operator opens the case to release the straps, connects them at the proper length, and steps into the loop created by the straps.

This allows the operator to stand up in their harness and relieve the pressure being applied to the arteries and veins around the top of the legs until they can be rescued.

RESCUE PLANS FOR MOBILE ELEVATING WORK PLATFORMS

Options for Rescue – Self-Rescue (by others in the work area):

Please note: Rescue should only be carried out by appropriately trained personnel.

All rescue procedures near electrical conductors must comply with section 6.1DV.2.6 of the CSA B354.7:17 standard.

Primary Ground Controls

In the case where the operator cannot lower the platform to the ground by means of the primary or auxiliary platform controls, or if the operator has been incapacitated, a person on the ground who has been familiarized on proper use of the controls may use the primary ground controls to lower the machine.

Auxiliary Ground Controls

In the case where the primary ground controls are not responding, the person on the ground should attempt to activate the auxiliary ground controls. If all ground controls are not responding, the ground personnel should immediately contact onsite qualified personnel to assess the situation and provide further guidance.

Use of a Secondary MEWP

- ⇒ Consideration must always be given to the rescue of MEWP occupants if the machine is unable to be lowered for any reason, such as complete machine malfunction or work platform entanglement.
- ⇒ In the case of platform entanglement, it is critical for the operator and occupants to be removed from the platform prior to attempts being made to free the platform.
- ⇒ MEWPs that have tipped beyond their center of gravity must be stabilized and secured before attempting any rescue.
- ⇒ Rescue using another MEWP should be carried out only after a thorough site review by a qualified person has been performed and a plan has been created. The plan should take into account the following:
 - ⇒ The rescue machine should be positioned to allow the rescue to be performed without compromising the safety of personnel involved in the rescue;
 - ⇒ The platforms of both machines shall be adjacent to each other with a minimal gap between them. The power on both machines should be shut off during the transfer;
 - ⇒ Safeguards should be taken to prevent unintended movement of either platform during the transfer.
- ⇒ All personnel in the platform, including the person being rescued, must be wearing the proper fall protection equipment and the lanyard must be attached to the anchor point on the rescue machine before the transfer takes place;
- ⇒ The rescue machine must not be overloaded at any time during the rescue. This could mean making more than one trip to complete the rescue; and
- ⇒ Always comply with the manufacturer's requirements stated in the operator's manual.

If there is injury, illness or risk of exposure, emergency personnel must immediately be contacted.

RESCUE PLANS FOR MOBILE ELEVATING WORK PLATFORMS

Options for Rescue – Self-Rescue (by emergency personnel):

Technical rescue might also be necessary in the event of illness, injury or risk of exposure.

- ⇒ Any rescue procedure must consider the reasons why the platform may be stranded at height and any need for prompt action.
- ⇒ Although firefighters and other rescue professionals are trained in technical rescue, their response time and the equipment they use may not be the best option to meet the requirements for prompt rescue after a fall arrest and should be considered to be a last resort.

If a professional rescue agency is going to be used, the employer's competent person or programme administrator must contact the rescue agency to review the location of the elevated workplace before starting workplace activities and shall review with that agency the types of fall protection being used and the environment where the agency may be called to perform a rescue.

The rescue agency must advise the employer in writing of its availability and capability, any limitations on the types of rescue it can perform, and detailed instructions regarding how they are to be called and if they need to be advised when certain activities are planned, or certain conditions exist so that they may ensure the fastest possible response.

RESCUE PLAN EXAMPLE:

Company Name: _____

Worksite Location: _____

Date of Rescue Plan Implementation: _____

	SITUATION	PROPOSED RESPONSE
1	Primary platform controls are not responding	Operator should activate platform auxiliary controls to lower the machine to the ground
2	Auxiliary platform controls are not responding, or the operator is incapacitated or unable to function	Person on the ground who is familiar with the machine ground controls should use the primary ground controls to lower the machine.
3	Primary ground controls are not responding	Person on the ground who is familiar with the machine ground controls should use the auxiliary ground controls to lower the machine.
4	All ground controls are not responding	Immediately contact onsite qualified personnel to assess the situation and provide further guidance.

Ground personnel who have received familiarization and are authorized to operate the ground controls:

Name: _____ Location: _____ Phone/Radio/Page: _____

Name: _____ Location: _____ Phone/Radio/Page: _____

Onsite Qualified Personnel:

Name: _____ Location: _____ Phone/Radio/Page: _____

Name: _____ Location: _____ Phone/Radio/Page: _____

MOBILE ELEVATING WORK PLATFORMS SELECTION

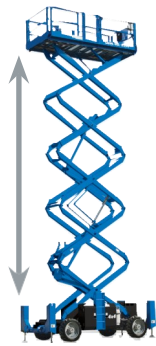
MEWP is an acronym for **Mobile Elevating Work Platforms**.

MEWP classifications are made up of a combination of two key distinguishing descriptions:

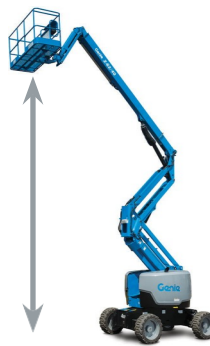
- a) A MEWP group, which is determined by where the platform location is in reference to the tipping line, and
- b) A MEWP type, which is in reference to traveling. There are two MEWP Groups: Group A and Group B

A **Group A** machine has a design that does not allow the main platform to extend beyond the tipping line. In other words, the platform does not go outside of the drive chassis envelope. A perfect example of a Group A would be a scissor lift.

Conversely, a **Group B** machine has a design that allows the platform to extend beyond the tipping line. A great example of a Group B machine would be an articulating or telescopic boom.



Group A



Group B

MOBILE ELEVATING WORK PLATFORMS SELECTION

In addition to a MEWP Group, we have a MEWP Type. A MEWP Type is in reference to traveling.

There are three MEWP Types:

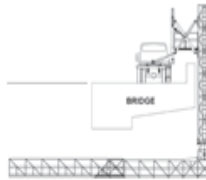
- Type 1** - Traveling is allowed only with the MEWP in its stowed position. A great example of a Type 1, Group A (1A) MEWP would be manually propelled vertical lifts, while trailer-mounted booms are perfect examples of a Type 1, Group B (1B) MEWP.
- Type 2** - Traveling with the work platform in the elevated position is controlled from a point on the chassis. An example of a Type 2 MEWP would be an under-bridge inspection machine.
- Type 3** - Traveling with the work platform in the elevated travel position is controlled from a point on the work platform. A great example of a Type 3, Group A (3A) MEWP would be electric or rough terrain scissor lifts, while articulated and telescopic booms are perfect examples of a Type 3, Group B (3B) MEWP.



**Type 1,
Group A
(1A)**



**Type 1,
Group B
(1B)**



**Type 2,
MEWP**



**Type 3,
Group A (3A)**



**Type 3,
Group B (3B)**

MEWPs come in a variety of designs, each with its own unique performance characteristics. Understanding what each machine's capabilities are is essential to the selection of the proper MEWP for the work to be performed.

Manually propelled vertical lifts are classified as Type 1, Group A MEWPs. They are economical and easy to transport and are often a good alternative to self-propelled vertical lifts.

They're compact. Most models can roll through single or double doorways. They can also go on some elevators, depending on elevator load capacity.

They utilize outriggers so they have some leveling capabilities and they're relatively lightweight so they are ideal for use on floors that can only support limited loads.

They're simple machines that are easy to operate and easy for one person to set up.

They're versatile. Multiple options such as narrow, ultra narrow and insulated platforms, rough terrain tires, and accessories such as tool trays, fluorescent tube caddy and locating laser light are available to customize the lift for every application.

MOBILE ELEVATING WORK PLATFORMS SELECTION

Common applications include indoor construction, contractors, HVAC installation, schools, universities, churches, hospitals and shopping malls. They are also often used for maintenance and cleaning, as well as work in light-floor - load areas such as gymnasiums, theaters and stages.

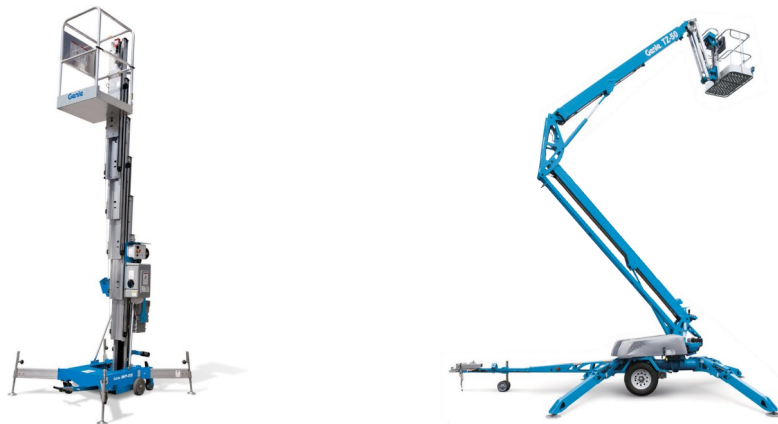
Trailer-mounted booms are classified as Type 1, Group B MEWPS. They combine the up-and-over access of an articulating boom with the convenience of a built-in trailer.

A contractor can easily tow one of these units behind a pickup truck or utility vehicle, saving on delivery charges from the rental store.

They provide an excellent working envelope with the ability to reach up and over obstacles, allowing workers to perform tasks faster and more efficiently than smaller manually propelled products at a significantly lower cost than that of a self-propelled boom.

A variety of hitch coupler options allow these machines to be towed behind pickups or SUVs while hydraulic outriggers with automatic self-leveling allow an operator to quickly set up the machine for maximum productivity.

Common applications include schools, museums, casinos, parks, retail, home construction, tree trimming and lighting, window washing, signs and mechanical and electrical contractors.



MOBILE ELEVATING WORK PLATFORMS SELECTION

Single-personnel vertical lifts are classified as Type 3, Group A MEWPs. They are compact, low-weight machines that increase productivity on the job thanks to their ability to fit through doorways and in most passenger elevators.

They are self-propelled and some models can be driven through doorways with the operator on board. A zero inside turning radius and full elevation drive feature also contributes to these models' increased productivity.

Quiet and powerful front wheel drive motors and dual rear wheel brakes provide efficient operation, and some models feature an extension deck which provides a large workspace for up to two operators.

Multiple options such as workstation trays, bicycle hooks, motion alarm and flashing beacon make these machines versatile in a variety of applications.

Common applications include warehousing, stock-picking, transporting, inventory management and general maintenance.

Scissor lifts are also classified as Type 3, Group A MEWPS and they are available in electric and rough terrain models.

Scissor lifts offer outstanding maneuverability and productivity-enhancing features. They are self-propelled and most models have the ability to drive while fully elevated.

Scissor lifts offer either zero degree or high angle turning radius for outstanding maneuverability in tight or congested jobsites, and some electric models are lightweight enough to fit in an elevator, depending on the elevator load capacity.

Rough terrain scissor lifts are engine-powered machines with large platforms capable of lifting up to 2,500 lb (1,134 kg) depending upon the model. They are built to handle the rigors of the toughest jobsite, and many can be equipped with automatic self-leveling outriggers.

With platform heights from 12.8 ft (3.9 m) up to 54 ft (16.15 m), these machines are perfect for a variety of applications.

Common applications include HVAC, indoor maintenance and construction, painting and drywall, exterior finishing, rugged worksites, tilt-up construction, warehouse, stock-picking, transporting, inventory management, general maintenance and light-duty construction.



MOBILE ELEVATING WORK PLATFORMS SELECTION

Booms are classified as Type 3, Group B MEWPS. They fall into two categories of design: Articulating and Telescopic.

Self-propelled articulating boom allows workers to access areas inside warehouses and other facilities that were previously inaccessible without the use of ladders or scaffolding.

Articulating boom lifts are MEWPs with multiple boom sections that hinge or articulate, allowing the operator to gain access to work areas over obstacles and barriers.

Also referred to as knuckle booms, or up and over booms, these versatile products are perfect for tight access and hard-to-reach areas, or when reaching over obstacles.

Common applications include indoor construction and maintenance, confined workspaces, outdoor construction, airports, shopping centers and theatres, routine outdoor maintenance, building maintenance, sports arenas and manufacturing plants.

Telescopic booms are MEWPs with boom sections that extend telescopically.

They are also commonly known as stick booms because of their straight appearance.

Telescopic booms offer greater horizontal outreach than any other type of MEWP. Perfect for work in areas with limited access, telescopic booms deliver incredible outreach and capacity throughout a full-working envelope for incredible operational accessibility.

Booms with powerful engines, traction-controlled four-wheel drive and active oscillating axles are designed for maximum terrain-ability and traction.

Some models have a platform capacity up to 1,000 lb (454 m) and can hold up to three occupants, depending upon the application.

Common applications include large construction projects, steel erection, tilt panels, refineries, mechanical and electrical contractors, factories, food processing, manufacturing, maintenance, schools and hospitals.



MOBILE ELEVATING WORK PLATFORMS SELECTION

The proper selection of an appropriate MEWP for the task is critical to the safety of the operator, occupants and others in the work area. Using the wrong machine for the job could result in injury or death, damage to the machine itself, or damage to the work location.

To identify the correct machine, a series of questions must be answered:

Who?

Who will use the equipment?

How many people need to be on the platform at once?

What?

What kind of work will be performed?

What are you lifting, and how much does it weigh?

What are the obstacles on the worksite?

What is your power source preference?

How?

How will the equipment be used?

How high and far do you need to reach or work?

How will you transport the equipment?

Where?

Where will the equipment be used?

Are you working on a single site or multiple sites?

Is the work indoors, outdoors or a combination?

What site characteristics influence the lift's use?

Do you need to drive up or down a ramp?

Do you need doorway access? Single, double or larger?

Is the terrain level?

Is there a slab, concrete or asphalt floor?

Will you have narrow or congested access?

Is it a caustic or hazardous environment?

Will fuel be readily available?

Is there access to electricity on site?

When?

When and for how long will the equipment be needed?

MOBILE ELEVATING WORK PLATFORMS SELECTION

The following features and options are some of the key factors you should consider before selecting a machine for a job:

MANUALLY PROPELLED VS. SELF-PROPELLED

Manually propelled equipment must be physically pushed or pulled to transport it. Self-propelled units are equipped with hydraulic or electric drive systems that allow the machine to be driven to the work area.

POWER OPTIONS

Manual products do not have power for lifting. The load platform is typically operated by a winch, which is controlled by a hand-crank that moves it up and down to position the load in place. Manually propelled units are typically on wheels or casters and must be pushed or pulled to move.

AC Electric/AC Drive

Some MEWPs are available with 110-volt or 220-volt AC power.

DC Electric

DC electric models are designed primarily for industrial, institutional and retail environments where indoor use is standard, because electric energy is clean and pollution free. Electric-powered aerial work platforms utilize 12-volt, 24-volt or 48-volt systems with a series of deep-cycle batteries that power the hydraulic pumps and electric wheel motors when applicable. These models are equipped with battery chargers that automatically turn off when the battery is fully recharged. Most engine-powered units also include a DC backup system.

Bi Energy

Bi-energy machines are electrically powered machines with onboard diesel engines that recharge the batteries while the machine is actually in use. These models are designed primarily for indoor applications where a great deal of driving is required, since driving the unit demands significantly more energy than operating the lift functions. Bi energy is also a valuable feature when multi-duty cycle applications are required, and external recharging is difficult.

Internal Combustion (IC)

Internal combustion engine models are designed primarily for construction work where heavy-duty outdoor use is standard. The engines provide the horsepower to produce the hydraulic pressure and flow that is necessary for high performance.

There are two types of internal combustion engines:

Gas/LPG: Most gasoline-fueled models also operate on Liquid Petroleum Gas (LPG) and are referred to as Dual Fuel machines. This feature allows both indoor and outdoor operation with LPG-powered engines. The fuel sources can usually be switched from the ground or platform controls while the engine is running.

Diesel: Diesel-fueled engines are powerful and very durable, making them popular for construction applications. The availability of diesel fuel on construction sites may be another benefit.

MOBILE ELEVATING WORK PLATFORMS SELECTION

TIRE/TRACK OPTIONS

Where will you use the lift?

What are the ground conditions?

Non-Marking Tires

Tires without the carbon black found in common tires. They leave no black marks on the floor and are standard on most industrial models. They're most commonly made of hard rubber but are also available in some pneumatic styles. These tires are good for indoor use where marking is a concern.

Foam-Filled Tires

Pneumatic tires that are injected with a polyurethane-type substance that adds rigidity to the tires and prevents flats. These are required on some models to provide necessary stability. These tires are also good for environments with nails and other ground debris that tend to puncture tires.

Rough-Terrain Tires

Tires with an aggressive tread design for improved rough-terrain capability. Standard on rough-terrain models. These tires are best for unimproved sites and muddy, wet ground conditions.

Fixed Tracks

This four-point track system provides extra traction when travelling over mud, sand, gravel and soft-soil conditions while also minimizing damage to grass.

ROUGH TERRAIN OPTIONS

Rough Terrain (RT) Model

Describes a unit designed to travel over unimproved construction site terrain. Some units receive the "RT" designation with only the addition of lug tread tires. Others feature packages that include patented active oscillating axles, more powerful gas/LPG or diesel engines, and two- or four-wheel drive.

Oscillating Axle

Axles that are designed to pivot in the middle to compensate for uneven terrain and keep all tires on the ground. Genie® active oscillating axles feature a patented automatic hydraulic adjustment system that maintains ground contact and a solid four-point stance even while fully elevated.

Full-Time Positive Traction Drive

This option maintains equal hydraulic power to all drive wheels, even if one wheel loses traction in mud, snow or sand.

MOBILE ELEVATING WORK PLATFORMS SELECTION

STEERING OPTIONS

Where will you use the lift? What are the ground conditions? Will you need to maneuver in tight spaces or close to walls?



Two-Wheel Steering

A standard type of steering on most models in which the two front tires steer the machine.



Four-Wheel Steering

A feature on some larger models in which

all four wheels can be utilized to steer the machine, making it much more maneuverable. The operator can often select from four steer options, including two-wheel steer front, two-wheel steer rear, crab steer or coordinated steer.



Coordinated Steering

A four-wheel steering option in which the front wheels turn in one direction and the rear wheels are coordinated to turn in the opposite direction, allowing the machine to turn a sharp corner within a minimum amount of space.



Crab Steering

A four-wheel steering feature in which all four wheels turn in the same direction, allowing the machine to be driven diagonally for greater maneuverability.

MOBILE ELEVATING WORK PLATFORMS SELECTION

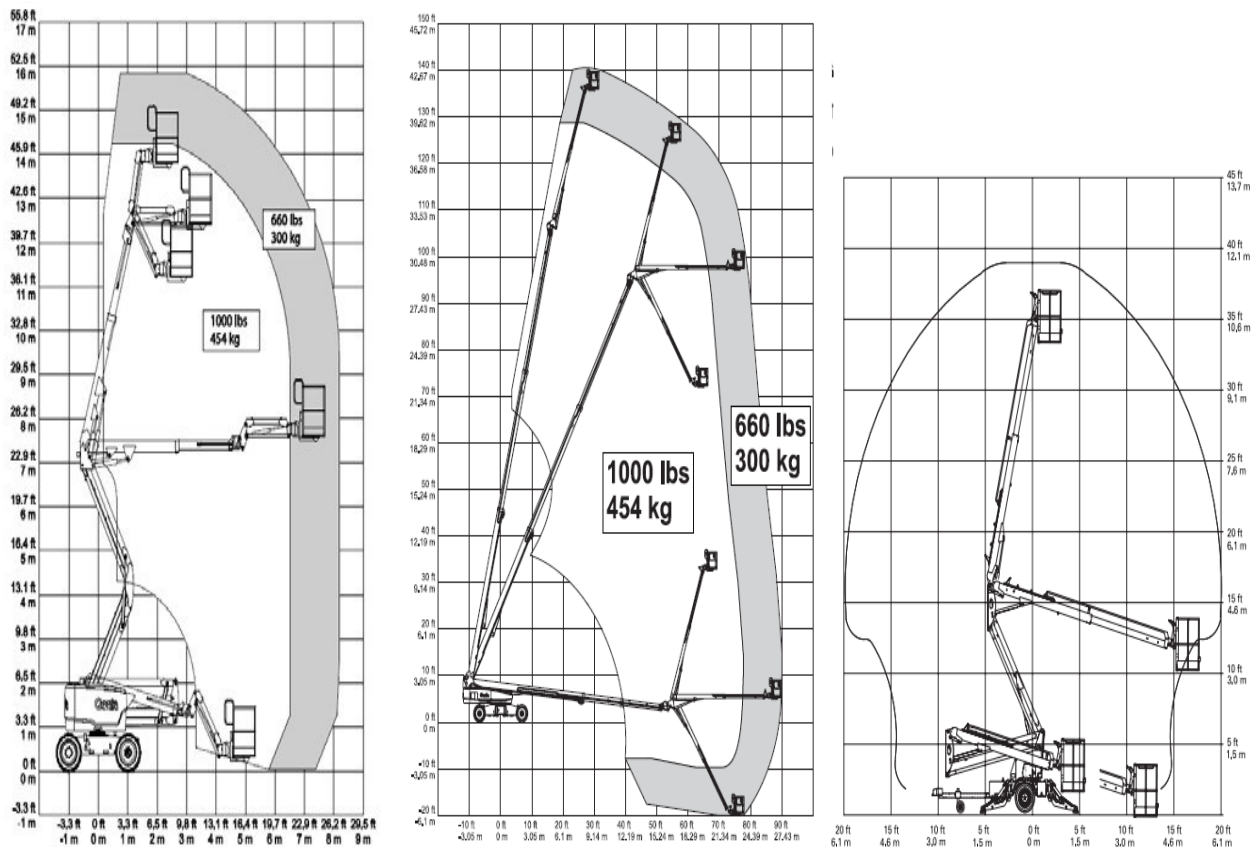
RANGE OF MOTION

The Range of Motion chart is an extremely valuable tool for selecting the best MEWP for the application.

Telescopic and articulating booms rotate, elevate and extend multiple boom sections. The work area that each boom model can access is determined by the combination of its vertical height and horizontal outreach capabilities — commonly referred to as its range of motion, or working envelope.

Range of Motion charts are provided with each telescopic and articulating boom model. These charts feature a picture of the arc-like area in which each boom is able to perform, laid over a graph that makes it easy to determine the unit's access capabilities.

Range of Motion Charts



MOBILE ELEVATING WORK PLATFORMS WORKPLACE CHECK SHEET

This check sheet should only be used in conjunction with a properly performed jobsite risk assessment and will assist the user, supervisor, operator and occupants with complying with the requirements.

The following is an example of a workplace check sheet:

Company Name: Genie, a Terex Brand Date: February 10th, 2019
 Jobsite Location: 6464 185th Ave, Redmond WA 98052
 Primary Assessor(s) Scott Owen

Has a risk assessment been performed? ☒ Yes ☐ No – If Yes, review the risk assessment before completing this sheet. If No, immediately stop all operations until a proper risk assessment has been performed and documented by a qualified person and has been communicated to everyone involved on the jobsite.

CHECK ALL THAT APPLY		NOTES
Has the risk assessment been reviewed by everyone involved with the work to be performed, taking into consideration the safety of those not involved with the operation?	☒ Yes ☐ N/A	Risk assessment performed and communicated on 2/4/2019
Have all hazards on the jobsite been identified and the methods to eliminate or mitigate them been documented?	☒ Yes ☐ N/A	Power lines on the North side must be avoided – area coned off to alert operators to the hazard.
Has an assessment been made to ensure that the support surface can support the weight of the MEWP, occupants and materials?	☒ Yes ☐ N/A	One area identified as not adequate – has been roped off and all personnel have been notified
Has a rescue plan been developed and communicated to everyone on the jobsite?	☒ Yes ☐ N/A	Utilizing self-rescue and assisted rescue methods – everyone on the site has been trained on the plan.
Have all operators been properly trained to the ANSI A92.24-2018 and/or CSA B354.8:17 standards?	☒ Yes ☐ N/A	All operators completed updated Genie training, including practical training on 3A and 3B MEWPs
Have operators selected the correct MEWP(s) for the work and been familiarized on the specific MEWP(s) they will be operating?	☒ Yes ☐ N/A	Operators worked with the supervisor to select correct MEWPs and have been familiarized on all
Have all occupants received instruction on how to work safely on the MEWP?	☒ Yes ☐ N/A	Operators have been instructed on how to use the laminated Occupant Instruction Sheet in the storage box
Has the operator been informed of local site requirements and provided the means to protect against identified hazards?	☒ Yes ☐ N/A	Met with site HSE Team to understand site rules and to identify and mitigate or avoid all hazards
Is there a trained and qualified supervisor to monitor the performance and the work of the operator to ensure compliance?	☒ Yes ☐ N/A	Two supervisors on site have received Genie MEWP Supervisor training and have been assigned
Have all maintenance and inspections been performed on the machine as required? Is the Annual Inspection decal up to date?	☒ Yes ☐ N/A	Daily maintenance is performed during each pre-operation inspection. Annual decal dated 07/18
Have personnel received instructions on how to prevent unauthorized use of the MEWP?	☒ Yes ☐ N/A	Keys are removed and batteries are disconnected and locked out at the end of each shift.

MOBILE ELEVATING WORK PLATFORMS OCCUPANT INSTRUCTIONS

It is your responsibility, as the MEWP operator, to either provide instruction or confirm that all occupants have previously received instruction to achieve a basic level of knowledge to work safely on the MEWP.

This instruction does not give the occupant authorization to operate the controls at any time except in an emergency situation.

Do not take any occupant up in the machine until this document has been thoroughly reviewed and you have confirmed the occupant (s) understanding and agreement.

1) Personal Fall Protection Equipment (PFPE) is required on all MEWP.

⇒ Explain the purpose of the harness and lanyard, ensure that all occupants are properly fitted with the appropriate PFPE, identify the locations of the lanyard attachment points and ensure that all occupants are properly secured.

2) Explain how their actions in the platform could affect the stability of the machine:

⇒ Do not lean over the platform guardrail.

⇒ Maintain a firm footing on the platform floor at all times. Do not climb up on the toe guard, mid rail or top rail.

⇒ Do not jump up and down or shake the platform.

⇒ Do not push off or pull toward any object outside the platform.

⇒ Do not touch the platform controls.

3) Will the occupant (s) be using any accessories on this job (Access Deck, Panel Cradle, Fall Arrest Bar, etc.)?

⇒ No – Continue to #4

⇒ Yes - Explain the proper and safe use of the accessory, including any hazards that may be associated with its use.

4) Explain any site-specific work procedures the occupants must follow related to the operation of the MEWP.

⇒ This will vary from site to site but may include the requirements of other personal protective equipment (PPE) such as hard hat, steel toed boots, gloves, and safety vest; vehicle or pedestrian right of way; driving in the stowed position only; honking the horn prior to driving the machine, etc.

MOBILE ELEVATING WORK PLATFORMS OCCUPANT INSTRUCTIONS

5) Discuss all hazards related to the task at hand and their avoidance and include any applicable site risk assessment.

- ⇒ This will also vary from site to site. It is a requirement that a detailed risk assessment be performed prior to bringing the MEWP into the workplace. Have a copy of the most current one, review the entire assessment with the occupants and answer any questions they may have.

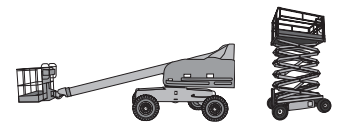
6) Review the manufacturer's warnings and instructions for the MEWP being operated.

- ⇒ Remove the Operator's Manual from the weather-resistant storage box on the platform and review the various warnings and instructions identified by the manufacturer. Explain that the Operator's Manual must be kept on the MEWP at all times when not in use by the operator.

7) Review with at least one of the occupants:

- ⇒ The intended purpose and function of the MEWP platform controls;
- ⇒ The intended purpose and function of the safety-related items specified by the manufacturer, including secondary guarding systems and emergency shut-down procedures; and
- ⇒ The intended use and function of the lowering procedures, to the extent required to lower the MEWP safely to the ground or the stowed position.

Please remind the occupant (s) that this does not constitute training. It is only considered to be emergency instruction in the case where, for some reason, the operator has become incapacitated or is otherwise unable to operate the machine.



Pre-use Inspection: Mobile Elevating Work Platforms

Inspector: _____ **Date:** _____ **Shift:** _____

Unit Make/Model/No.: _____

POWER OFF CHECKS				OK	AR	NA	POWER ON CHECKS				OK	AR	NA
1) Wheels/Tires/Tracks				☐	☐	☐	20) Unit starts & runs properly				☐	☐	☐
2) Lights/Strobes				☐	☐	☐	21) Instruments/System warning indicators				☐	☐	☐
3) Engine/Battery:							22) Fuel/Charge level				☐	☐	☐
a) Cover panel(s)				☐	☐	☐	23) Audible/Visual warning devices				☐	☐	☐
b) Debris				☐	☐	☐	24) Function controls:						
c) Belts/Hoses				☐	☐	☐	a) Control markings				☐	☐	☐
d) Air filter indicator				☐	☐	☐	b) Drive				☐	☐	☐
e) Wires/Cables/Terminals				☐	☐	☐	c) Steering				☐	☐	☐
f) Battery-Batteries clean/dry/secure				☐	☐	☐	d) Braking				☐	☐	☐
4) Fluids:							e) Work platform				☐	☐	☐
a) Engine oil	Level	Leaks		☐	☐	☐	f) Slewing (turret rotate)				☐	☐	☐
b) Engine coolant	Level	Leaks		☐	☐	☐	g) Boom/Jib/Lift arms				☐	☐	☐
c) Hydraulic oil	Level	Leaks		☐	☐	☐	h) Accessories/Optional equipment				☐	☐	☐
d) Fuel/Battery	Level	Leaks		☐	☐	☐	i) Function-enable (deadman) devices				☐	☐	☐
5) Hydraulics:							25) Emergency/Auxiliary controls				☐	☐	☐
a) Cylinders/Rods/Pin locks				☐	☐	☐	26) Safety interlocks				☐	☐	☐
b) Hoses/Lines/Fittings				☐	☐	☐	27) Other:				☐	☐	☐
6) Capacity decal/plate				☐	☐	☐					☐	☐	☐
7) Applicable inspection notices				☐	☐	☐	WORKSITE INSPECTION				OK	AR	NA
8) Counterweight/Counterweight bolt(s)				☐	☐	☐	28) Drop-offs or holes				☐	☐	☐
9) Accessory plugs & cables				☐	☐	☐	29) Bumps & floor/Ground obstructions				☐	☐	☐
10) Boom/Lift arms/Extending structure				☐	☐	☐	30) Debris				☐	☐	☐
11) Power track				☐	☐	☐	31) Overhead obstructions				☐	☐	☐
12) Safety prop				☐	☐	☐	32) Electrical conductors				☐	☐	☐
13) Work platform/Guardrails/Anchor points				☐	☐	☐	33) Hazardous locations				☐	☐	☐
14) OEM/Approved options/accessories				☐	☐	☐	34) Slopes				☐	☐	☐
15) Manufacturer's operation manuals				☐	☐	☐	35) Ground/Surface & support conditions				☐	☐	☐
16) Decals/Plates/Markings				☐	☐	☐	36) Pedestrian/Vehicle traffic				☐	☐	☐
17) Personal protective equipment (as required)				☐	☐	☐	37) Weather conditions				☐	☐	☐
18) Housekeeping				☐	☐	☐	38) Other possible hazards				☐	☐	☐
19) Other:				☐	☐	☐					☐	☐	☐

Report any problems found to your supervisor/employer. ALWAYS lock/tag-out unsafe equipment.

NOTES

ADDITIONAL INSPECTIONS		
Operator	Confirm	Notes
PRINT NAME	Yes / No	
PRINT NAME	Yes / No	
PRINT NAME	Yes / No	
PRINT NAME	Yes / No	

MONTHLY SAFETY STATISTICS POLICY

Policy

NSADSA members are committed to maintaining a safe and healthy work environment for all employees. This Monthly Safety Statistics Policy outlines the guidelines and procedures for tracking, analyzing, and improving safety performance within the organization. The policy aims to collect and review safety data monthly to identify trends, risks, and areas for improvement, and to promote a proactive approach to safety management.

Data Collection

Types of Safety Data: Management shall collect and record the following safety data monthly:

- ⇒ Number and type of incidents: near misses, first aid injuries and lost time injuries
- ⇒ Property damage incidents
- ⇒ Safety inspection findings

Data Sources: The sources for safety data collection may include, but are not limited to:

- ⇒ Incident reports
- ⇒ Near miss reports
- ⇒ Safety observation reports
- ⇒ Safety inspection reports
- ⇒ Employee feedback and suggestions

Reporting and Analysis

Reporting Mechanism: All employees are encouraged to report safety incidents, near misses, and provide safety suggestions promptly using the designated reporting channels. Reporting channels may include:

- ⇒ Incident reporting forms
- ⇒ Safety suggestion boxes
- ⇒ Digital reporting systems
- ⇒ Direct communication with supervisors or safety representatives

Reporting Timelines: Employees should report safety incidents and near misses as soon as possible, preferably within the same day. Management should ensure that reporting channels are easily accessible and clearly communicated to all employees.

Data Analysis: The collected safety data will be analyzed on a monthly basis to identify trends, common causes, and potential risks. This analysis will help in determining appropriate corrective and preventive measures to improve safety performance.

Performance Metrics

Key Performance Indicators (KPIs): Management will monitor the following safety metrics on a monthly basis:

- ⇒ Total number of incidents
- ⇒ Lost workday rate (LWD)
- ⇒ Near-miss reporting rate
- ⇒ Property damage incidents
- ⇒ Employee compliance with safety protocols

Reporting and Communication

Monthly Safety Reports: A monthly safety report summarizing the collected data, analysis, and key findings will be prepared and circulated among relevant stakeholders, including management, supervisors, and safety representatives.

Safety Meetings and Briefings: Regular safety meetings or briefings will be conducted to communicate safety statistics, discuss trends, and share lessons learned. These meetings will provide an opportunity for employees to contribute to safety improvement initiatives and provide feedback.

Internal Communication Channels: Safety statistics, initiatives, and updates will be communicated through Internal communication channels, such as emails, newsletters, bulletin boards, or intranet platforms. This ensures widespread awareness and engagement in safety matters.

Continuous Improvement

Review and Analysis: The monthly safety statistics will be regularly reviewed and analyzed to identify opportunities for improvement. Root causes of incidents or trends will be investigated, and corrective actions will be implemented to prevent recurrence.

Safety Initiatives and Training Programs: Based on the analysis of safety statistics, management will develop and implement targeted safety initiatives, including training programs, awareness campaigns, and process improvements, to address any shortcomings.

Monthly Safety Summary

Date_____

Month of_____

New Hires

1 Number of Employees Hired _____
 Number Completed _____
 Orientation _____

Safety Meetings

2 Number of Toolbox Talks Scheduled _____
 Number of Toolbox Talks Conducted _____
 Number of Safety Meetings _____
 Conducted _____

Formal Inspections

3 Monthly Walk-Around Inspection _____
 Total Unsafe Acts/Conditions _____
 Identified Number Corrected _____
 Number Outstanding _____

Incident Investigations

4 Total Number of Incidents/ _____
 Accidents Damage Only _____
 Injury Only _____

 Injury with time _____
 lost Days lost _____

Illness _____
Violence _____
Near Misses _____
Number of Investigations _____
Conducted Number of _____
Investigations Outstanding _____

Number of Recommendations _____
Made Completed _____
Outstanding _____

Notes:

SAFE WORK PRACTICES AND JOB PROCEDURES POLICY

Policy

NSADSA members are committed to ensuring the safety of all employees, contractors, and visitors by developing, maintaining, and enforcing Safe Work Practices (SWPs) & Safe Job Procedures (SJPs). These practices & procedures are designed to guide workers in the safe use of tools and equipment and to create an environment that minimizes risks to personnel, property, and equipment.

Development and Review

Development of SWPs & SJPs:

- ⇒ Safe Work Practices are developed with input from all levels of the organization, including managers, supervisors, and workers.
- ⇒ These practices are tailored to address the specific tools, equipment, and tasks encountered in regular operations.

Employee Involvement:

- ⇒ Employees are encouraged to provide feedback, suggestions, or recommendations to improve or expand the Safe Work Practices & Job Procedures.
- ⇒ This open communication ensures that the practices and procedures remain practical and effective.

Regular Review:

- ⇒ Supervisors and employees performing tasks are required to regularly review SWPs to ensure they remain relevant and applicable.
- ⇒ The Joint Health and Safety Committee or Representative will conduct an annual review of all SWPs.

Communication and Accessibility

Availability:

- ⇒ Safe Work Practices & Procedures are readily available to all employees at work.
- ⇒ SWPs & SJPs are considered a mandatory policy and must be adhered to at all times.

Training:

- ⇒ Employees will receive training on practices and procedures during orientation and ongoing re-fresher sessions.
- ⇒ Training includes instructions on the proper use of tools, equipment, and protective measures.

Implementation and Enforcement

Adherence to SWPs & SJPs:

- ⇒ All employees are expected to follow the established Safe Work Practices & Job Procedures to ensure a safe working environment.
- ⇒ Supervisors are responsible for monitoring compliance and addressing deviations promptly.

Non-Compliance:

- ⇒ Failure to adhere to SWPs & SJPs may result in disciplinary action, up to and including termination of employment.
- ⇒ Contractors and visitors who fail to comply may be removed from the dealership.

AIR-CONDITIONING FILLING STATION	PAGES: 1 OF 3
	DEPARTMENT(s): SERVICE - COLLISION

Operator must have the CFC Handling Course and be familiar with air conditioning and refrigeration systems, refrigerants, and the dangers of pressurized components.

- **Hazards:** -Pressurized tank contains liquid refrigerant.
 - overfilling of the tank may cause violent explosion and possible injury or death
 - Liquid refrigerant contact could cause frostbite
 - Mist can irritate eyes

Required Personal Protective Equipment



Eye Protection Required



Work Gloves Required



CSA Approved Safety Footwear Required

Do



- Verify all safety devices are functioning correctly before operating the unit.
- Use with proper refrigerant only.
- Never cross-contaminant with other refrigerant types.
- Verify the vehicle is in PARK before turning on the engine

Do Not



- Vent to the atmosphere

Safe Work Procedure

1. Press the **SNAPSHOT** key or the **SCROLL MENU** key to reach a screen with the **SNAPSHOT** key.
2. You will be prompted to perform the following steps: Connect service hoses. Open the service couplers. Connect both the red (15 ft.) and the blue (30 ft.) duct temperature probes. Start the vehicle, and turn the vehicle A/C system to Maximum Cool or Recirculate setting.
3. Press the **START** key.
4. After identifying the vehicle refrigerant, the ACR2000 displays and updates minimum and maximum values described above. Pressing the **RESET MIN/MAX** key resets and begins tracking new minimum and maximum values. You may press the **PRINT** key at any time to capture and print the screen information

AIR-CONDITIONING FILLING STATION	PAGES: 2 OF 3
	DEPARTMENT(s): SERVICE - COLLISION
5. When you have the necessary information, turn OFF the engine. Press the RECOVERY key to go directly into Recovery, or you can exit to the MAIN MENU using the MAIN MENU key. If all data is satisfactory, and you will not be doing any service work, allow the system to equalize in order to minimize refrigerant loss. Close the service couplers on the high and low side hoses. Disconnect the hoses from the vehicle access ports. TO RECOVER REFRIGERANT NOTE: Recovery speed and accuracy are highly dependent on under hood temperature and air flow across components. Cold refrigerant can pool in the accumulator, evaporator, or condenser, and will continue to increase system pressures even after the recovery process has ended. For maximum recovery speed and accuracy, bring the engine to operating temperature before recovering refrigerant. Run the heater on maximum temperature, maximum blower, and recirculate. DO NOT run the A/C system, as excessive oil loss will result. NOTE: There must be 25 psi in the system to recover refrigerant. If there is not sufficient pressure, you will be prompted to evacuate the system. This step prevents inadvertent recovery of air or other contaminants from a leaking system. 1. Verify the vehicle engine is OFF. 2. From the MAIN MENU, press the RECOVER key, or the SCROLL MENU key to move to the screen showing the RECOVER key. 3. Follow the on-screen prompts to connect the service hoses to the vehicle and open the service couplers, if they are not already connected. 4. Empty the ACR2000 oil drain bottle before starting. 5. Press the START key to begin the recovery process. 6. If sufficient pressure is detected, the ACR2000 tests the vehicle system to determine the purity of the refrigerant in the vehicle system. If the purity is sufficient, recovery begins. 7. Before and immediately after recovery the ACR2000 will, if necessary, go into a clearing mode. This mode clears all refrigerant from hoses and internal components into the tank to provide maximum recovery accuracy. 8. When the system has been recovered to a vacuum of 9" Hg, the recovery process stops automatically. Several things occur at this time: • The red indicator light flashes and the beeper sounds at completion. • The display reads RECOVER COMPLETE, and shows the weight of the recovered refrigerant. • System oil is automatically drained into the oil drain bottle.	

AIR-CONDITIONING FILLING STATION	PAGES: 3 OF 3
	DEPARTMENT(s): SERVICE - COLLISION
9. You now have the following options: • Proceed with evacuation or repairs, if needed. • Press the RESTART RECOVERY key to remove any additional refrigerant which may have vaporized in the system. • Wait for the ACR2000 to automatically restart and pull any additional refrigerant which has vaporized in the system. (This occurs after five minutes if a positive pressure is detected). Additional recovered refrigerant is added to the amount shown on the screen. CAUTION: Always close the service couplers before disconnecting from the system to prevent any release of refrigerant. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	

AIR BAGS	PAGES: 1 of 2
	DEPARTMENT(s): SERVICE - COLLISION

Safe Work Procedure must be reviewed with Manager or experienced Technician

Hazards: - Accidental deployment
- Bodily injury

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do



- Always disconnect the battery ground cable and disable the air bag system before performing any service or installation procedures.
- Always carry a live air bag module with the bag and trim cover pointed away from your body. An accidental deployment will then deploy with a minimal chance of injury.
- Always place a live air bag module on a bench or other surface with the trim cover facing up.

Do Not



- **Never** probe the connectors on the air bag module, doing so may result in air bag deployment which could result in personal injury.
- **Do not** pull or stretch wires.

Safe Work Procedure

Removal

1. Disconnect the negative battery cable **and** remove the air bag fuse from the fuse panel (see owner's manual for the location of this fuse). Disconnect the orange connector position assurance clip (CPA) from yellow SIR connector (locations will differ between vehicles). Some vehicles may have two connectors; you must disconnect them both and separate the connector(s).
2. Remove airbag(s) as per manufactures specifications.

Re-Install

3. Install the new airbag. Tighten nuts/bolts to manufactures specifications.
4. Reconnect the horn and any other parts that were removed and ensure that everything is tightened.
5. Reconnect the yellow air bag connector from column onto wire coming from air bag module and reinstall the CPA clip. Install wire into harness routing clips on back of module.

AIR BAGS	PAGES: 2 of 2
	DEPARTMENT(s): SERVICE - COLLISION
NOTE: - Improperly installed harness wiring may cause the steering shaft to damage the harness when the wheel is turned. 1. Reinstall the air bag fuse into the fuse panel. Reconnect the battery cable. 2. Check for airbag dash lights. If light is on, codes may have to be cleared. NOTE: Because you have disconnected power to the vehicle, your computer will have to relearn its settings. You may notice some roughness or other abnormal drive symptoms until it has reset. Also, remember to reset all your radio stations. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	

ALIGNMENT HOIST	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE

- Technician must be instructed on the use of this hoist by a manager or competent technician.
- Safe Work Procedure must be reviewed

Hazards:

- Hoist could lower unexpectedly
- Unsecured locks
- Various pinch points
- Tripping Hazard

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do 

- Inspect Lift DAILY. Do NOT operate if malfunctions or problems have been encountered.
- Ensure that the Sliding Jack Beams are positioned at the front or mid travel, fully down, with the risers removed and stored.
- Locking pins should always be installed on front and rear plates before attempting to drive a vehicle on or off the lift.

Do Not 

- Never attempt to overload the lift.
- Never work under the lift unless the mechanical safety locks are engaged.
- Never raise the vehicle with passengers inside.
- Never store Jack Beam(s) at the rear of the lift.

Safe Work Procedure

1. Position the vehicle on the lift ensuring that the resulting load on each deck is distributed as evenly as possible.

NOTE: The vehicle is positioned correctly when the distance from the centre of the tires to the inside edge of the runways is equal for all four tires.

2. Check that there are no obstructions above the lift that could cause damage to the lift or to the vehicle.
3. Raise the lift by pressing the up button on the control console. Raise the lift up past the desire working height until the mechanical safeties drops into position. Press the down button to lower the lift down onto the mechanical safeties.

ALIGNMENT HOIST	PAGES: 2 OF 2
	DEPARTMENT(S): SERVICE
To Lower the Lift 4. Check that there are no obstructions under the lift. 5. Ensure that the Sliding Jack Beams are fully lowered and positioned as the front or mid-section of the lift. 6. Raise the lift until the mechanical safeties are off their stops. Stop raising 7. Depress the mechanical safety release button to disengage the mechanical safeties. Continue to hold the button while depressing the down button. 8. Continue lowering the lift until the lift is approximately 34" above the floor. Then release the mechanical safety release button, allowing the mechanical safeties to be readied for their next use. Continue to depress the down button until the lift is completely lowered. 9. Remove the vehicle from the lift. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR INSTRUCTOR/SUPERVISOR IMMEDIATELY	
Housekeeping • The roller tracks should always be kept clean and free of debris. This should be checked before raising or lowering the lift	

AUTOMOTIVE HOIST	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION - UNDERCOATING

- Technician must be instructed on the use of this hoist by a manager or competent technician.
- Safe Work Procedure must be reviewed

Hazards: - Hoist could lower unexpectedly

- Unsecured locks
- Various pinch points
- Tripping Hazard

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do



- Inspect Lift DAILY. Do NOT operate if malfunctions or problems have been encountered.
- Before driving vehicle over lift, position arms and supports to provide unobstructed clearance.

Do Not



- Never attempt to overload the lift.
- Do NOT operate if malfunctions or problems have been encountered.
- Never work under the lift unless the mechanical safety locks are engaged.
- Never raise the vehicle with unauthorized passengers inside.
- Do not hit or run over lift arms, adapters, or axle supports.

Safe Work Procedure

1. Position the vehicle ensuring that the resulting load on each side is distributed as evenly as possible.

NOTE: The removal (or installation) of components may cause a critical shift in the centre of gravity, and result in raised vehicle instability. Refer to the vehicle manufacturer's service manual for recommended procedures when vehicle components are removed.

2. Position lift supports to contact at the vehicle manufacturer's recommended lifting points. Raise lift until supports contact vehicle.
3. Check supports for secure contact with vehicle.
4. Check that there are no obstructions above the lift that could cause damage to the lift or to the vehicle.

AUTOMOTIVE HOIST	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE – COLLISION - UNDERCOATING
5. Raise the lift by pressing the up button on the control console. Raise the lift up past the desire working height until the mechanical safeties drops into position. Press the down button to lower the lift down onto the mechanical safeties. To Lower the Lift 6. Check that there are no obstructions under the lift. 7. Raise the lift until the mechanical safeties are off their stops. Stop raising. 8. Disengage the mechanical safeties. 9. Lower the lift completely allowing the mechanical safeties to be readied for their next use. 10. Slide the lift arms out from under the vehicle positioning the lift arms to provide an unobstructed exit. 11. Remove the vehicle from the lift. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR INSTRUCTOR/SUPERVISOR IMMEDIATELY	
Housekeeping Always keep lift area free of obstructions, grease, oil, trash and other debris.	

BACKING VEHICLES OUT OF BAYS	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE - COLLISION

Hazards: - Motor Vehicle Accident - Personal Injury & Property Damage

<u>Do</u>  - Check to be sure hoist legs are not under vehicle - Check for and remove obstruction located behind the vehicle - Check to make sure the exhaust hose has been removed - Check brake pedal for firmness before starting vehicle - Check that the way is clear of all persons and vehicles	<u>Do Not</u>  Do not operate vehicles in an unsafe manner i.e. spinning tires, driving fast, etc

Safe Work Procedure

- If required ask for assistance before backing out of bay
- Ensure all other persons working in the same area are aware that you are moving a vehicle by sounding the horn before you start backing the vehicle out of the stall.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

- Ensure vehicle is off, in appropriate gear and locked.

SAFework PRACTICES & PROCEDURES

BALL HITCH TRAILERS	PAGES: 1 OF 3		
	DEPARTMENT(s): All Departments		
Required Training: - Trailer towing - Defensive Driving Hazards: - Accidents (personal injury or property damage) due to improper towing procedures. - Injury to driver or assistant while hooking up the trailer. - Trailer breaking free of the tow vehicle. - Trailer rolling and injuring personnel or doing damage to equipment. <table border="0"> <tr> <td> <u>Do</u>  • Ensure the vehicle, hitch and trailer are sized properly and compatible. • Inspect the trailer to ensure it is safe to use • Inspect the tow vehicle • Properly load the trailer </td> <td> <u>Do Not</u>  • Never exceed the maximum gross trailer weight </td> </tr> </table>		<u>Do</u>  • Ensure the vehicle, hitch and trailer are sized properly and compatible. • Inspect the trailer to ensure it is safe to use • Inspect the tow vehicle • Properly load the trailer	<u>Do Not</u>  • Never exceed the maximum gross trailer weight
<u>Do</u>  • Ensure the vehicle, hitch and trailer are sized properly and compatible. • Inspect the trailer to ensure it is safe to use • Inspect the tow vehicle • Properly load the trailer	<u>Do Not</u>  • Never exceed the maximum gross trailer weight		

Safe Work Procedure

Pre-trip Planning:

1. Ensure staff has received appropriate training
2. Ensure the vehicle, hitch and trailer are sized properly and compatible.
3. Inspect the trailer to ensure it is safe to use:
 - Depending on the size of trailer and vehicle an equalizing hitch may be required.
 - Ensure the hitch coupler mechanism is free from dirt or rust and the parts move smoothly and freely.
 - Check the coupler pins and fasteners for signs of looseness or excessive wear.
 - Ensure safety chains are in good condition.
 - Ensure safety chains are of the proper size and length, i.e. strong enough for the weight of trailer and long enough to cross but not drag on the ground.
 - Ensure the attaching devices at the end of the chains are not damaged and work easily.
 - Ensure the trailer is structurally sound: check that braces, struts, spring hangers, fenders, tailgate hinges, etc are securely welded or bolted in place.
 - Ensure the axle springs are solidly attached to both anchor and pivot points.
 - Ensure the wheel bearings and spring pivot points are adequately greased.
 - Check the tires (including the spare) for wear, cracks, cuts, bulges and for proper inflation.
 - Ensure the wheel studs/nuts are tightened to specifications.
 - If so equipped, ensure the electrical brakes work on all wheels.
 - If so equipped, ensure the emergency break-away brake mechanism works.
 - If so equipped, ensure the rip cord for the break-away brake switch is of the proper length (if the trailer comes loose, the cord will activate the trailer breaks before the safety chains come tight).
 - Check the trailer electrical cable and plugs for cracks, fraying or wear.
4. Inspect the tow vehicle to ensure:
 - It has sufficient power and adequate cooling system to safely haul the trailer (see Appendix A)
 - The suspension and tires meet or exceed the vehicle's gross combined weight rating.
 - It has adequate side-view mirrors and they are properly adjusted.

BALL HITCH TRAILERS	PAGES: 2 OF 3
	DEPARTMENT(s): All Departments

- If the vehicle is equipped with a receiver type frame hitch with a removable steel ball block, ensure the pin and cotter key holding them together are in good condition and in place.
- Check the frame hitch for signs of bending or twisting and signs of cracked or broken welds.
- Ensure the ball and socket are the same size.
- Ensure the ball is the correct height for the trailer coupler.

5. Properly load the trailer.

- Never exceed the maximum gross trailer weight (includes the load and the trailer itself).
- Ensure the trailer is loaded so that 10% to 15% of the load weight is on the hitch.
- Ensure all cargo is secured to prevent shifting.
- If covering the load with a tarpaulin, ensure it is strong enough and adequately tied down.

Hooking up the Trailer:

1. When assisted in hooking up and un-hooking a trailer ensure that:
 - The assistant can be seen at all times by the driver
 - That both the driver and assistant understand the hand signals to be used
 - The assistant is not caught between the vehicle and the trailer
 - The driver makes no attempt to move the vehicle while the assistant is connecting the trailer tongue to the tow ball
 - Keep hands clear at all times.
2. Attach safety chains to the diagonally opposite point on the hitch.
3. Ensure all trailer lights work and that they are sufficiently bright.
4. Remove tires blocks after the trailer is hooked to the tow vehicle.

Driving Techniques:

1. When towing a trailer, you must be fully aware of the restrictions on manoeuvrability, visibility and acceleration. You should also know that the way your vehicle brakes changes considerably with the added weight of a trailer. Here are some other points you should pay attention to:
 - Never go over 80 km per hour.
 - Allow extra distance for passing and take care when returning to the driving lane.
 - When turning drive beyond the normal turning point of conventional vehicles to ensure that sufficient clearance is allowed to make the turn safely.
 - Signal well in advance of any move.
 - When following another vehicle, keep back at least one full length of the vehicle plus trailer for each 16 kilometres per hour of speed.
 - Before reversing, leave the vehicle and check for hazards. If someone is available, ask them to stand outside the vehicle to direct the backing manoeuvre.
2. Trailer fishtailing, with the resulting loss of steering control, is a major cause of trailer accidents. Fishtailing is usually caused by:
 - poor load distribution on the trailer;
 - excessive speed;
 - an overloaded trailer;
 - the towing vehicle being too light or having inadequate suspension;
 - the effects of wind from passing vehicles;

BALL HITCH TRAILERS	PAGES: 3 OF 3
	DEPARTMENT(s): All Departments
• improper tire inflation or defective tires; and/or • improper application of the brakes (the trailer brakes should always be applied before hitting the brakes on the towing vehicle). 3. If your trailer is fishtailing, slow down immediately and pull over when it is safe to do so. Stop your vehicle, assess the problem and take corrective measures. Parking and Un-hooking the Trailer: 1. Ensure the ground or surface where the trailer will rest is firm and is not on an unreasonable incline. 2. Ensure both trailer tires are blocked front and back to prevent movement. 3. Ensure there is a solid surface on which the tongue support can rest. 4. If so equipped, ensure that the pivoting front trailer jack is securely locked into place. • the effects of wind from passing vehicles; • improper tire inflation or defective tires; and/or • improper application of the brakes (the trailer brakes should always be applied before hitting the brakes on the towing vehicle). 5. If your trailer is fishtailing, slow down immediately and pull over when it is safe to do so. Stop your vehicle, assess the problem and take corrective measures. Parking and Un-hooking the Trailer: 6. Ensure the ground or surface where the trailer will rest is firm and is not on an unreasonable incline. 7. Ensure both trailer tires are blocked front and back to prevent movement. 8. Ensure there is a solid surface on which the tongue support can rest. 9. If so equipped, ensure that the pivoting front trailer jack is securely locked into place. REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	

BATTERY BOOSTER	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION - DETAIL

Safe Work Procedure must be reviewed

Hazards: Failure to follow instructions may cause damage or explosion, always shield eyes.

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do



- Remove personal metal items such as rings, bracelets, necklaces and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring, etc. to metal, causing a severe burn.

Do Not



- Use the Booster PAC for jump starting lead-acid batteries only. Do not use for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.
- NEVER charge or jump start a frozen battery.
- To prevent arcing, NEVER allow clamps to touch together or to contact the same piece of metal.

Safe Work Procedure

Charging

- Insert the wall charger pin into the CHARGING JACK (located in the rear of the Booster PAC).
- Connect the wall charger AC/DC ADAPTOR to the AC outlet (the yellow CHARGING light will light).
- Allow the Booster PAC to charge until the CHARGE COMPLETE light comes on (you can monitor the progress by checking the red POWER LEVEL lights – when all three POWER LEVEL lights are lit the CHARGE COMPLETE light should come on).
- Once the CHARGE COMPLETE light comes on, charge another three to six hours, (three hours is acceptable, but to ensure maximum output capability, six hours is preferred).

Note: The CHARGING COMPLETE LED indicates that the charging process is complete. It may illuminate for a short period after the charger is unplugged from the unit due to the surface charge, but this will only occur for a short time, which is normal. To assess the unit's readiness, monitor the Power Level LED's .

- If you are not planning to use your Booster PAC right away, you may leave it connected to the wall charger. We recommend that the wall charger remain connected to the Booster PAC when not in use.

Boosting a Vehicle

- Use in a well ventilated area.
- Shield eyes. Always wear protective eyewear when working near batteries.

BATTERY BOOSTER	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL
3. Review this instruction manual and the instruction/safety manual provided by the manufacturer of the vehicle being jump started. 4. Turn ignition off before making cable connections. 5. Clamp the positive (red +) clamp to the positive terminal on the vehicle battery (for negative ground system), or an alternate vehicle starting point as recommended by vehicle manufacturer. 6. Clamp the negative (black –) clamp to the vehicle frame (ground). 7. Make sure the cables are not in the path of moving engine parts (belts, fans, etc.). 8. Stay clear of batteries while jump starting. 9. Start the vehicle (turn on the vehicle ignition). Note: If the vehicle doesn't start within 6 seconds, let the Booster PAC cool for 3 minutes before attempting to start the vehicle again or you may damage the Booster PAC. 10. When the vehicle is started, disconnect the negative (–) battery clamp from the vehicle frame and return it to its holster. 11. Disconnect the positive (+) clamp and return it to its holster. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping • Safety storage holsters prevent accidental sparking of clamps and rotate 90° for easy clamp removal and replacement. Always re-holster the clamps after use. • Cable grooves lock the cables for clean storage (no hazardous or unsightly dangling wires). Always re-wrap cables and properly secure clamps after each use. • Place all materials in their proper storage areas. • Ensure the equipment is safe, clean and tidy before you leave it.	

BATTERY CHARGER	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION - DETAIL

Safe Work Procedure must be reviewed

Hazards: - Failure to follow instructions may cause damage or explosion, always shield eyes.

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required



No jewelry, watches, rings, necklaces etc.

Do



- Remove personal metal items such as rings, bracelets, necklaces and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
- Check that all cables are away from any moving parts.

Do Not



- **ALWAYS** keep flames, matches, lighters, cigarettes or other ignition sources away from battery.
- **DO NOT** put flammable material on or under charger.
- **DO NOT** use near gasoline vapours.

Safe Work Procedure

STEP 1. CONNECTING THE CHARGER TO BATTERY

- If charger has switch with OFF position, it **MUST** be set to OFF.
- AC power cord **MUST** be unplugged.

CHARGING BATTERY IN VEHICLE

If car has negative ground: (Most cars do, but if you are not sure have it checked.)

1. Connect POSITIVE (RED) charger clip to POSITIVE post of battery. Some newer cars have a remote positive terminal located away from the battery. Use this remote terminal for charging connections.
2. Next connect NEGATIVE (BLACK) charger clip to car frame or engine block away from battery.

TURNING THE CHARGER ON

- If equipped with voltage switch, set switch to voltage of battery: 6, 12 volts.
- If equipped with rate switch, set switch for charge rate desired: 2, 6, 12, 30 Amps.
- If equipped with automatic/manual charge mode switch, set switch to battery type for automatic charging of conventional batteries, maintenance free batteries, or manual for non-automatic charging of all battery types.

BATTERY CHARGER	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE – COLLISION - DETAIL
• If equipped with timer, set to charge time desired. • Plug the AC cord in a grounded outlet. Stand away from battery. • DO NOT touch charger clips when the charger is on. • The charger should now be on and the ammeter showing the rate at which the battery is charging. The initial rate may be somewhat higher or lower than the charger's nameplate rating depending on battery condition and AC voltage at the outlet. • See CHARGING TIME table for length of charge. STEP 3. TURNING THE CHARGER OFF • Unplug the AC power cord from the outlet. • Set the selector switch to OFF. • Remove charger clip connected to car frame: If charging battery outside a vehicle, remove clip connected away from battery. • Remove clip connected to battery post. ENGINE STARTING • For models with Engine Starting Feature. • Connect in the same manner as for battery charging, following STEP 1. Make sure cords are away from moving engine parts. • Charge the battery, following STEP 2, for at least 3 minutes before trying to start the engine. • Set the selector switch to the proper start position and crank the engine in the normal manner. DO NOT CRANK FOR MORE THAN 15 SECONDS. Check car's owner's manual for recommended cranking time limit. If car does not start or the charger's overload circuit breaker trips, allow the charger to cool for at least 3 minutes before trying again. • When the engine has started, turn off charger following STEP 3. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping • Ensure equipment is off. • Place all materials in their proper storage areas. • Ensure the equipment is safe, clean and tidy before you leave it.	

BATTERY DISCONNECT AND HOOK-UP	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE - COLLISION

Safe Work Procedure must be reviewed with Manager or experienced person

Required Personal Protective Equipment

 No jewelry, watches, rings, necklaces etc.

<u>Do</u>  Ensure vehicle is shut off, in Park and that the Park brake is engaged	<u>Do Not</u>  ALWAYS keep flames, matches, lighters, cigarettes or other ignition sources away from battery. - To prevent arcing, NEVER allow wrench to touch both terminal at the same time

Safe Work Procedure

- Lift the hood. Find your battery and the two battery cables attached to the battery. One cable is red and the other cable is black.
- Loosen and remove the nut or bolt holding the battery cable to the negative post first.
- Loosen and remove the nut or bolt holding the battery cable to the positive post.
- Battery is now disconnected.
- To reconnect, reverse order.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

BEAD SEATING TOOL	PAGES: 2
	DEPARTMENT(s): SERVICE - COLLISION

Safe Work Procedure must be reviewed

Hazards:

- Compressed air
- Flying debris

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do



- Keep By-Standers 20 feet away when tank is charged
- Always store and transport with discharge valve open
- Be sure pressure release is clear of foreign matter (i.e. ice or dirt)
- Check for worn or damaged parts
- Always ensure the Tornado™ bead seating tool is in good operating condition before use.
- Always ensure the unit has been vented of all pressure before carrying out any planned maintenance, inspection, or service.
- Use only factory authorized attachments and/or parts. Unauthorized components may be dangerous and will invalidate your warranty.
- Keep all work areas clean, tidy and well lit.
- Always wear safety glasses and ear defenders when using the bead seating tool.
- Do not use the bead seating tool to perform tasks for which it was not designed.

Do Not



The bead seating tool is a pressure vessel and the following measures apply:

- Do not direct compressed air towards people.
- Do not use the bead seater without an operational safety valve.
- Do not tamper with the pressure safety release.
- Do not modify or alter the bead seater in any way.
- Do not subject the bead seater to impact, vibration or heat.
- Do not allow contact with abrasives or corrosives.
- Do not store in charged condition

Safe Work Procedure

- Lay a mounted tire flat on the floor with narrow bead up (inflating stem facing down) place stand under rim near inflating stem.
- Fill bead seater tank to 60psi from compressed air supply. Increase air pressure as necessary. Safety pop off set at 160psi.

NOTE: Extremely difficult tires may require higher pressure.

- Attach self holding chuck from air supply to inflating stem on rim.
- Hold bead seater at an approximately 45 degree angle from the floor with guide on top of rim.
- Hold handle tight and quickly open discharge valve.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

- Ensure discharge valve is open.
- Place tool in its proper storage area.
- Ensure the equipment is safe, clean and tidy before you leave it.

BEARING PRESS	PAGES: 2
	DEPARTMENT(s): SERVICE - COLLISION

Safe Work Procedure must be reviewed

- **Hazards:** - Parts being pressed may splinter, shatter, or be ejected from the press.

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do 

- The press **MUST BE** located on firm level ground, or a sturdy workbench, with adequate light. The operator must never work in his/her own shadow.
- Before applying a load, be certain that all press bed support pins are fully engaged, and the hydraulic ram is fully located into the ram mount. Ensure also that hydraulic hoses and couplings are completely sound.
- Before use always ensure the workpiece is firmly secure and stable.
- Always clean spills of hydraulic oil immediately as this can be extremely dangerous in a workshop environment.
- Use **ONLY** the recommended hydraulic oil.
- Components of this press are specially designed to withstand the rated capacity. Do not substitute bolts, pins, or any other components.
- Always apply the load on the centre of ram plunger. Offset loads can damage the ram or ram mount and may cause work piece to eject.
- Before operating, check for signs of cracked welds, bent bed pins, loose or missing bolts, or any other structural damage. Do not operate if any of these conditions exist. Have repairs made only by authorised service centres.
- Remove all loads from press bed before attempting to adjust bed height.
- Beware of possible falling bed.
- Press only on a work piece supported by the press bed.

Do Not 

- Do not exceed the rated capacity.
- Do not allow any person, who is inexperienced in the use of hydraulic presses, to use the machine unless they are under direct supervision.
- Do not allow anyone to work directly in front of the machine when it is in use.
- Never tamper with the machine. The safety valve is calibrated and sealed at the factory, do not attempt to change these settings.
- Never use the machine for any purpose other than that for which it is designed.
- **NEVER** operate the ram without the bed locating pins fully in place.
- **DO NOT** use extension tubes on the pump handle. Excessive effort can cause severe damage.
- **DO NOT** stand directly in front of the work

- When using accessories such as arbor plates, be certain they are centered on press bed, and are in full contact with the bed.
- Keep hands and fingers out of the press and away from the parts that may pinch and shift.
- It is the owners' responsibility to keep warning decals legible and intact.
- Failure to heed these warnings may result in damage to the equipment, or failure resulting in property damage, personal, or even fatal injury.

Safe Work Procedure

1. Position the bed to the desired height, so as it will be as close as possible to the ram when the workpiece is mounted.
 - Raise one side of the bed, and insert a pin into a locating hole directly beneath the bed. Repeat the process at the other side, until the bed is level and at the desired height, with the pins fully 'home'.

2. The workpiece is placed on top of the bed, or on top of the arbour, or clover leaf, plate and must be completely stable. To achieve this, you must use packing or shims where required.

NOTE: Any packing pieces or shims used, MUST be capable of withstanding the extreme pressure that will be brought to bear, and MUST be of sufficient size with sufficient surface contact, so as to avoid the possibility of slipping or springing taking place. Mating surfaces MUST be horizontal so that the force being exerted will be vertical and NOT at an angle.

3. Turn the Pump Handwheel, fully clockwise and pump the handle to bring the ram very lightly into contact with the workpiece. Manoeuvre the workpiece so that the desired point of contact is directly beneath the centre of the ram.
4. When satisfied that the workpiece is correctly lined up and is completely stable in that position, slowly pump the handle so that the ram begins to exert pressure on the workpiece. Continue to pump the handle, whilst standing to the side of the press (**DO NOT stand directly in front of the work**), and constantly monitor the process, ensuring the ram and work remain completely in line, and there is no risk of slipping.
5. When the process is complete, turn the Pump Handwheel anticlockwise to release ram pressure

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

BENCH VISE	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE - COLLISION

Safe Work Procedure must be reviewed

- **Hazards:** - Pinch Point
- Flying Parts or pieces

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do



- Check for bent or broken parts and that vise is secure

Do Not



- Do not over tighten--vise can develop a large clamping force. Use only force which is needed.
- Do not try to hold work-pieces which exceed the jaw capacity of vise.
- Do not use vise as a press to assemble or disassemble objects.
- Never use hammer, pipe extension or cheater bar on handle of vise.

Safe Work Procedure

1. Open jaws of vise and place work-piece between jaws in desired position.
2. Secure work-piece between jaws by rotating lead-screw handle.
3. Be sure work-piece is held securely in vise.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

- Keep machined surfaces and all moving parts clean and free of dirt, chips and foreign materials.

BONDING & GROUNDING	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION - DETAIL

Safe Work Procedure must be reviewed

Electric charges can build up on an object or liquid when certain liquids (e.g., petroleum solvents, fuels) move in contact with other materials. This can occur when liquids are poured, pumped, filtered, agitated, stirred or flow through pipes. This buildup of electrical charge is called static electricity. Even when liquids are transported or handled in non-conductive containers, something rubbing the outside surface of the container may cause a static charge to build up in the liquid. The amount of charge that develops depends, in part, on how much liquid is involved and how fast is it flowing or is being agitated or stirred.

Transferring a liquid from one metal container to another may result in static electrical sparks. To prevent the build-up of static electricity and prevent sparks from causing a fire, it is important to bond metal dispensing and receiving containers together before pouring. Bonding is done by making an electrical connection from one metal container to the other. This ensures that there will be no difference in electrical potential between the two containers and, therefore, no sparks will be formed.

The best way to bond containers is to securely attach a special metal bonding strap or wire to both containers. Some liquid transfer pumps have self-bonding hoses. Bonding can also be done by keeping a solid metal-to-metal contact between the containers themselves or between a metal container and a conducting nozzle. These latter two methods are usually not reliable because a good electrical contact is often hard to make and maintain during the entire transfer.

Hazards:

- Fire
- Explosion
- Toxic Effects

Required Personal Protective Equipment

 Eye Protection Required	 CSA Approved Safety Footwear Required
 Approved mask may be required	 Face Shield may be required
 Protective Apron may be required	 Nitrile Gloves required

<u>Do</u>  - Always use clamps with two sharp points that are clean and in good condition - Connections should be made before containers are opened. Always make sure there is good metal-to-metal contact - Stretch wrap must be removed in a solvent-free area prior to moving material to the mixing or spray areas. Stretch wrap may cause static electricity	<u>Do Not</u>  - Do not use alligator clamps. Alligator clamps are more of a generic clamp and may not provide the best contact needed on a rim-type container. - Do not store or use flammable liquids around any sources of ignition including heat, sparks, flame, motors, burners, heaters, pilot lights, welding and static electricity.

BONDING & GROUNDING	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE – COLLISION - DETAIL
Safe Work Practices 1. The manufacturer's instructions in the Material Safety Data Sheets and on container labels must be strictly followed 2. All equipment and containers of more than 1 gallon or 5 litres must be properly grounded or bonded to eliminate static charge 3. Adequate ventilation must be provided 4. All open flames and sources of ignition that may be present in the area itself must be assessed and controlled 5. All equipment present in the area should be fire-resistant and explosion-proof 6. Adequate product-specific education must be provided to workers 7. Workers must be trained in and provided with appropriate respiratory protection where needed and its use ensured 8. Where needed a respirator programme must be instituted for the proper selection, use and maintenance of respirators 9. Where needed protective gloves or cream barriers must be used to prevent direct skin contact with these products 10. Where available the use of less hazardous products is suggested 11. Ensure incompatible products are not stored together such as flammable liquids and oxidizers Grounding and bonding is a method for dealing with static electricity. Bonding reduces the difference in electrical potential <u>between containers</u> by connecting them with a conductive wire. Grounding reduces the potential difference <u>between an object and ground</u>; a proper ground wire will continuously discharge a conductive object to ground. The first step is to ground the 55 gallon drum. Grounding means you attach a copper conductive wire to ground and to the metal 55 gallon drum. Grounding is done by connecting the container to an already grounded object that will conduct electricity. This could be a buried metal plate, a metallic underground gas piping system, metal water pipes or a grounded metal building framework. DON'T ASSUME THAT BUILDING IS GROUNDED. Be sure the copper wire connects solidly with the metal surface of the ground and to the metal surface of the 55 gallon drum. The metal drum must not be painted at the point where the ground wire is connected. If you are using a water pipe as the ground, this surface must also not be painted. You must make a metal to metal connection. The next step is to bond a conductive wire from the metal 55 gallon drum to the metal 5 gallon container. Again, be sure the two contact surfaces are not painted. It's always a good idea to test the bonding and grounding to make sure it is correctly bonded and grounded, especially when you initially implement a bonding and grounding programme for flammable liquid dispensing areas. When you have a properly grounded drum and have properly bonded the smaller container, both bonded and grounded containers permit the liquid to flow in, the electrons to go to ground, thus eliminating sparks from static electricity. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	

BRAKE BLEEDER	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE - COLLISION

DO NOT perform this procedure until you have been appropriately trained and authorized to do so by your supervisor.

Hazards: - Spill hazard
- Eye and skin hazard
- Compressed air

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required



Nitrile Gloves Required

Do



- Test drive the vehicle before and after performing the brake fluid service to ensure proper operation of the braking system
- Thoroughly inspect all the brake system components and that on all necessary repairs before proceeding with the brake fluid service

Do Not



- Never perform brake fluid service on a vehicle requiring brake repairs

Safe Work Procedure

1. Connect the bleeder to a source of clean and dry compressed air
2. Clean the master cylinder reservoir In the area around the To prevent dirt or debris from entering the system
3. Remove the cap
4. Insert the evacuation tube onto the universal so every adapter at the end of the bleeder hose. Use the bleeder to evacuate old brake fluid from the master cylinder reservoir.
5. Fill the master cylinder reservoir to the full line with brake fluid.

NOTE: If you are not using the automatic re-filler system you must top off the master cylinder reservoir periodically to avoid drawing air into the brake circuit. If using the automatic re-filler system position the automatic re-filler bottle so that the end of the re-filler spout is approximately even with the maximum level marking the master cylinder reservoir. Turn valve to the open position. The re-filler will automatically fill the master cylinder reservoir and the level will be maintained.

BRAKE BLEEDER	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE - COLLISION
6. Starting with bleeder furthest from master cylinder, connect the universal rubber bleeder fitting onto the wheel bleed screw. Depress the lever on the top of the bleeder and open the screw slightly until brake fluid is visible in the hose. Keep the bleed screw open for 20 to 30 seconds or until clean brake fluid is visible in hose. Close the bleeder screw and release the lever. Reinstall bleeder screw dust cap if so equipped. Repeat the process all remaining wheels 7. depress the lever on the top of the bleeder and open the bleeder screw slightly until brake fluid is visible in hose continue bleeding until only a single green LED remains lit, or, if unit is not equipped with a LED light, continue until clean fluid is visible. Note: Erratic LED readings may be caused by excessive air in the fluid. Remove the bleeder screw and apply PTFE taped to the screw threads if required due to a leak. 8. Close the bleeder screw and release the lever on the bleeder unit. Reinstall bleeder screw dust cap. Repeat the process all remaining wheels 9. Check the brake pedal action for firmness. 10. If the vehicle's proportioning valve was opened prior to bleeding, return it to its normal position. Remove auto re-filler assembly from the master cylinder. Adjust fluid level in master cylinder if necessary. Replace master cylinder tap. 11. Test drive vehicle to verify proper braking system operation. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping • Ensure equipment is off. • Empty equipment to avoid spills. • Place all materials in their proper storage areas. • Ensure the equipment is safe, clean and tidy before you leave it.	

BRAKE LATHE	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE - COLLISION

DO NOT perform this procedure until you have been appropriately trained and authorized to do so by your supervisor.

Hazards: - Rotating shaft

- Electrical shock
- Metal dust and filings

Required Personal Protective Equipment



Eye Protection Required Approved



CSA Approved Safety Footwear Required



Dust Mask Required

Do



- Keep guards in place and in working order.
- Remove adjusting keys and wrenches from the tool before turning it on.
- Make sure drums and rotors are properly and squarely mounted before starting lathe, and that all parts are secure.
- Check that ventilation is working properly.

Do Not



- Do not remove any safety equipment, belt guards, or shortcut controls or operations.
- Never use compressed air to blow the tool clean. Chips and dust may be driven between machined parts and into bearings, causing undue wear. They may also contact persons in the area causing personal injury.
- Do not attempt to hold a drum or rotor steady on the arbour with your hands. Both hands must be free to operate unit.
- Do not attempt to cut too much at once.

Safe Work Procedure

1. Thoroughly clean the surface of the rotor or drum that will be mounted on the double chuck.
2. Place the hubless rotor or drum on a flat clean surface. Install the double chuck by positioning the appropriate jaws in the center hole. Tighten the jaws by inserting the key into one of the key slots in the side of the chuck turning counter clockwise. The double chuck will automatically self center the rotor or drum.
3. Install the backing plate onto the brake lathe arbour with offset facing outward.
4. Install the double chuck, with rotor or drum installed, onto the 1-inch arbour. Use the spacers supplied with the brake lathe so that it extends out to the arbour threads.
5. Use the arbour nut supplied with the machine and tighten the nut against the spacers.
6. After tightening the double chuck, turn on the brake lathe to check for run out of the rotor or brake drum.
7. Make sure that the tool bits clear the rotor surfaces and the silencer band. Give the rotor a full turn by hand and watch for clearance all the way around.

BRAKE BLEEDER	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE - COLLISION
8. Turn the lathe ON. 9. Adjust the spindle speed to match the rotor size. Use the faster speeds for passenger car and most light duty truck rotors. Choose lower speeds when machining medium duty and larger truck rotors and some solid rotors. 10. Turn each tool bit control clockwise until the tool bits just contact the rotor surfaces. 11. When the tool bits make contact, rotate each of the inner depth-of-cut collars to zero and back the tool bits away from the rotor. 12. Turn the cross-feed hand wheel until the tool bits are at mid-point of the rotor face. 13. Turn the left-hand tool bit control until the tool bit contacts the rotor surface and makes a scratch cut. 14. After the cut is made, back the tool bits off and turn the lathe OFF. 15. Inspect for quality of cut and continue as necessary. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping Delete this text and enter any housekeeping items that are required after completing the job. For Example: • Ensure equipment is off. • Place all materials in their proper storage areas. • Ensure the equipment is safe, clean and tidy before you leave it.	

BRANICK STRUT COMPRESSOR	PAGES: 1 OF 4
	DEPARTMENT(s): SERVICE - COLLISION

- Technician must be instructed on the use of this equipment by a manager or competent technician
- Safe Work Procedure must be reviewed

Hazards: Spring compression creates a potentially dangerous situation because of the energy stored between the spring mounts. Failure to correctly position the strut assembly in the tool could result in serious injury from a sudden release of strut assembly parts

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do



- Check the condition of the strut spring compressor before each use; do not use the equipment if it is damaged, worn, or modified.
- Align the strut assembly before compressing

Do Not

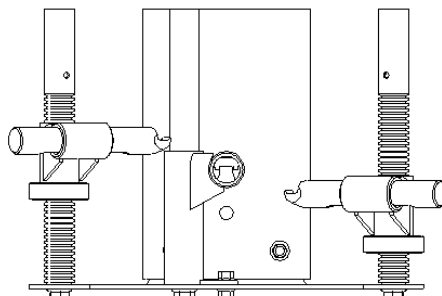


- Do NOT operate if malfunctions or problems have been encountered
- Do NOT stand in front of spring compressor while a load is being applied

Safe Work Procedure

Step 1. Positioning the Strut Assembly

- A) Adjust lower right hook to a position just below the lower center hook. Adjust lower left hook to a position just above the lower center hook.



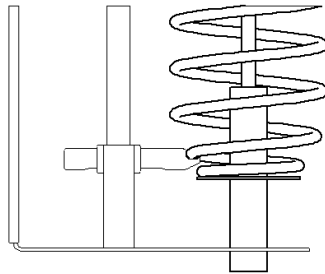
BRANICK STRUT COMPRESSOR

PAGES: 2 OF 4

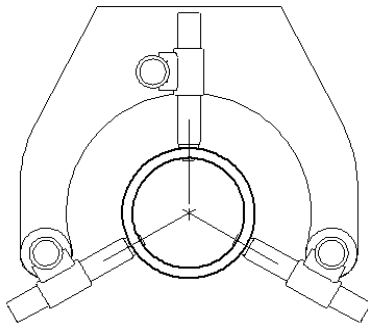
DEPARTMENT(s):

SERVICE - COLLISION

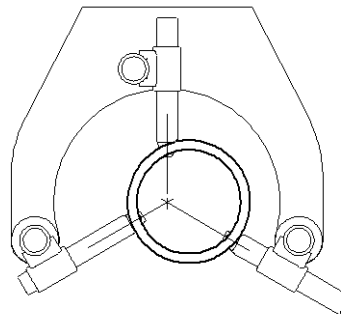
B) Place strut assembly on the lower center hook using the lowest possible coil of the spring



C) Engage lower left and right hooks with spring. Center the spring within lower hooks. The three lower hooks should be equally extended.



CORRECT



INCORRECT

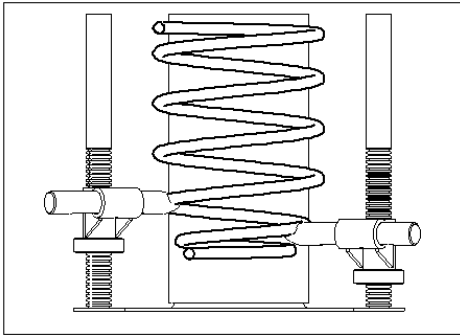
BRANKICK STRUT COMPRESSOR

PAGES: 3 OF 4

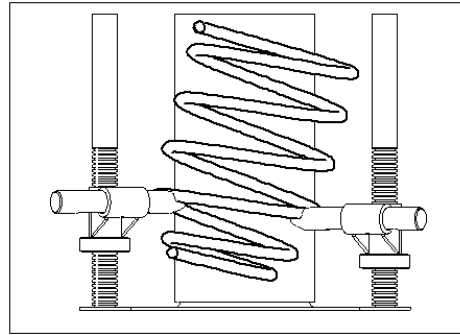
DEPARTMENT(s):

SERVICE - COLLISION

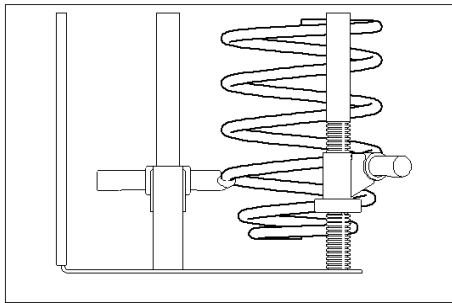
D) Align strut assembly by adjusting the lower left and right hooks. When properly aligned, the spring of the strut assembly will be parallel to the posts of the tool when viewed from both the front and side.



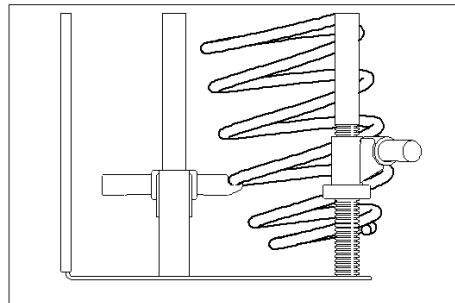
Front
CORRECT



Front
INCORRECT



Side
CORRECT



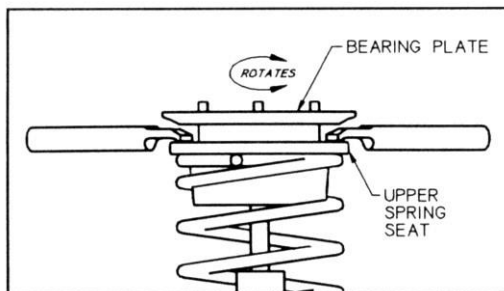
Side
INCORRECT

NOTE

ONCE SPRING IS PROPERLY IN PLACE, LOOP THE SAFETY CHAIN THROUGH ONE OR MORE COILS AND SECURE. BE SURE TO KEEP THE CHAIN SHORT ENOUGH TO LIMIT THE SPRINGS MOVEMENT IN THE EVENT THAT THE SPRING BREAKS FREE.

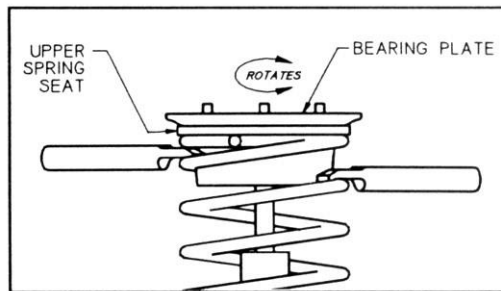
BRANICK STRUT COMPRESSOR	PAGES: 4 OF 4
	DEPARTMENT(S): SERVICE - COLLISION

E) Identify the strut assembly type you are servicing.



Type 1

This type of strut has a bearing plate (which Rotates) and upper spring seat. Place upper Hooks on the upper spring seat. Do not Place hooks on bearing plate.



Type 2

This type of strut has a bearing plate (which rotates) and upper spring seat without space hooks on the upper spring seat. Do not place hooks on bearing plate.

Housekeeping

- Ensure equipment is off.
- Place all materials in their proper storage areas.
- Ensure the equipment is safe, clean and tidy before you leave it.

BULK WINDSHIELD WASHER FLUID	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE

DO NOT perform this procedure until you have been appropriately trained and authorized to do so by your supervisor.

Hazards:

- Fire
- Explosions
- Spills
- Static Charge
- Eye & Skin Contact
- Burns in event of fire
- Property Damage

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do 

- Always inspect for leaks
- Sources of heat
- Grounding cable is in place
- Fire Extinguisher is available / nearby
- Labelling (WHMIS)
- Spill Kit Available

Do Not 

- Bulk containers cannot contain more than 600 litres

Safe Work Procedure

- 1) Keep away from any heat sources, sparks, open flame, and oxidizing chemicals.
- 2) Install a grounding cable directly to the metal drum, metal tote cage or the pumping equipment to reduce the possibility of static spark fire or explosion
- 3) Keep the containers closed at all times
- 4) Make sure there is a fire extinguisher nearby.
- 5) Ensure your staff is properly trained in the safe use and handling of the product.
- 6) Ensure all secondary containers are labeled.

REPORT ANY SPILLS OR ACTION ITEMS TO YOUR SUPERVISOR IMMEDIATELY

BULK WINDSHIELD WASHER FLUID	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE
Housekeeping • Store all flammables materials in their proper storage areas in safe distance of this product. • Ensure the area is safe, clean and tidy before you leave it.	

CHILDREN'S CAR SEATS	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL
In the event that a child's car seat has to be removed to complete a repair or to detail a customer's car, the following steps must be followed to avoid a customer placing their child in a car seat that is not properly connected, putting the child at risk of injury: TECHNICIAN OR DETAILER <u>Do</u>  • ALWAYS place the child's car seat upside down or backwards so that the owner knows immediately that the seat is not connected. • ALWAYS leave the reinstallation to the owner as they know the product best. • ALWAYS inform the service advisor that the child's car seat has been disconnected. <u>Do Not</u>  • NEVER reinstall the child's car seat yourself. There are too many different types and styles of car seats for you to know them all well and some of them are difficult to install properly. • NEVER place the child's car seat upright and in the same place from which it was removed. This may cause the owner to think that the seat is connected. SERVICE ADVISOR <u>Do</u>  • ALWAYS make a note on the customer's invoice informing them that their child's car seat was removed to complete the servicing of their vehicle and that it is still disconnected. • ALWAYS point out to the customer the note on their invoice about the child's car seat and be sure that they understand that they need to reconnect the child's car seat themselves.	

COMPRESSED AIR	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL

Hazards:

- Air entering the blood stream
- Noise
- Flying objects; dust or particles

Required Personal Protective Equipment



Eye Protection Required



Face-Shield Required in some cases



Nitrile Gloves Required in some cases



CSA Approved Safety Footwear Required



Approved Mask Required in some cases



Hearing Protection Required in some cases

Do



- Check mating surfaces of connectors and fittings, deburr or replace if necessary.
- Inspect airlines for cracks and leaks, replace if necessary. All hose connections must be secured to the hose with proper crimping clips. Do not use hose clamps.

Do Not



- Do not use compressed air for any other purpose than which it is provided.
- Do not use unfiltered compressed air for breathing purposes.
- Do not use compressed air to blow dust from clothes or hair.
- Never direct a stream of compressed air toward the body or another person.

Safe Work Procedure

1. Inspect required personal protective equipment and replace if required.
2. Put on all required personal protective equipment.
3. Connect tool by inserting fitting into connector until locked in.
4. Disconnect tool by pulling sleeve of connector down until tool is released.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, stop immediately and get appropriate assistance.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

COMPRESSED AIR	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL
Housekeeping • Drain water traps on fixed lines periodically. • Periodically inspect fixed airlines for leaks or damage Roll up airlines at all times when not in use.	

COMPRESSED GASES	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE - COLLISION

Safe Work Procedure must be reviewed with Manager or experienced Technician

Hazards:

- Fire
- Explosion

<u>Do</u>  • Always check for damage to the cylinder, gauges, hoses etc. before using	<u>Do Not</u>  • Never roll a cylinder on its side regardless of whether it is full or not • Never store compressed oxidizers and flammables together

Safe Work Procedure

1. Handle cylinders of compressed gases as high-energy sources and therefore as potential explosives.
2. Prior to working with any chemical review the Safety Data sheet and understand the chemical and physical hazards associated with this chemical
3. Restrain cylinders of all sizes, whether empty or full. Use straps, chains, or a suitable stand to prevent them from falling.
4. When storing or moving cylinders, have the protective caps securely in place to protect the valve stems.
5. When moving compressed gas cylinders, strap them to properly designed, wheeled carts to ensure stability.
6. Do not store compressed oxidizers and flammables together. Keep them at least 20' apart.
7. Never use cylinders if their contents cannot be identified positively.
8. Never lubricate, modify, force, or tamper with cylinder valves.
9. Never direct high-pressure gases at a person.
10. Close the main cylinder valves tightly when not in use.
11. Evacuate excess gas from lines after closing cylinders for storage.

ATTENTION: Promptly remove the regulators from empty cylinders and replace the protective caps at once. Label the cylinder empty.

12. Use the appropriate regulator on each gas cylinder. The threads on the regulators are designed to avoid improper use.
13. Never use adaptors or homemade modifications.
14. Do not put oil or grease on the high-pressure side of the oxygen, chlorine, or other oxidizing agent cylinder. A fire or explosion can result.
15. Check for leaks using an approved agent when changing cylinders.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

COMPRESSED GASES	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE - COLLISION
Housekeeping • Drain water traps on fixed lines periodically. • Periodically inspect fixed airlines for leaks or damage • Roll up airlines at all times when not in use.	

CUSTOMER ACCESS TO HAZARDOUS AREAS	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL

Hazards:

- Slips, trips and falls
- Falls from elevations
- Falling or flying objects or particles (from grinding, chiselling, sanding, etc.)
- Contact with moving vehicles
- Walking into stationary objects (work tables, lifts, etc.)
- Electrical hazards
- Caught in between equipment or vehicle
- Burns, cuts and lacerations

Do Not



- Do not allow unsupervised visitors in areas that require PPE

Safe Work Procedure

- Make sure visitors are always escorted by an employee when allowed in the service area(s).
- Designate hazardous areas as "off limits" to visitors near operational equipment such as grinders, air compressors, tire balancers, etc.
- Cordon off work areas where hybrids, electric vehicles or their batteries are being worked on - as is often recommended by the manufacturers.
- Challenge or ask politely all unescorted or unknown visitors, "May I help you?" No one should be allowed to walk through the work area without an employee escort.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

- Ensure the floor surface is slip-resistant for the safety of visitors and employees.
- Clean up liquid spills immediately, especially oils and other automotive fluids. Isolate all spill areas by placing cones or barriers around them.

DEALING WITH A POTENTIALLY VIOLENT PERSON	PAGES: 1 OF 3
	DEPARTMENT(s): ALL DEPARTMENTS

Hazards:

- Physical Harm
- Stress

Do Not



- DO NOT pose in a challenging stance, such as:
 - Standing directly opposite someone
 - Putting your hands on your hips
 - Pointing your finger
 - Waving your arms
 - Crossing your arms
- DO NOT glare or stare, which may be perceived as a challenge
- DO NOT make sudden movements which can be seen as threatening
- DO NOT fight.

Safe Work Procedure

Tips for Verbal Communication

- Focus your attention on the other person to let them know you are interested in what they have to say.
- Remain calm and try to calm the other person. DO NOT allow the other person's anger to become your anger.
- Remain conscious of how you are delivering your words.
- Speak slowly, quietly and confidently.
- Speak simply. DO NOT rely on official language or complex terminology.
- Avoid communicating a lot of technical or complicated information when emotions are high. Listen carefully. DO NOT interrupt or offer unsolicited advice or criticism.
- Encourage the person to talk. DO NOT tell the person to relax or calm down.
- Try to understand. Ask questions like "Help me understand why you are upset."
- Once you think you understand, repeat it back to the person so they know you understand.
- Remain open-minded and objective.
- Use silence as a calming tool.
- Use delaying tactics to give the person time to calm down, e.g. offer a drink of water.
- Identify troublemakers and learn their names.
- Acknowledge the person's feelings. Indicate that you can see he or she is upset.

Tips for Non-Verbal Behaviour and Communication

- Use calm body language - relaxed posture with hands unclenched, attentive expression.
- Arrange yourself so that your exit is not blocked.
- Position yourself at a right angle rather than directly in front of the other person.

DEALING WITH A POTENTIALLY VIOLENT PERSON	PAGES: 2 OF 3
	DEPARTMENT(s): ALL DEPARTMENTS
• Give the person enough physical space.. this varies by culture, but normally 2-4 feet is considered an adequate distance. • Get on the other person's physical level. If they are seated try kneeling or bending over, rather than standing over them. <i>Tips for Problem Solving</i> • Try to put yourself in the person's shoes, so that you can better understand how to solve the problem. • Ask for his or her recommendations. • Repeat back to the person what you feel he or she is asking of you, to clarify what you are hearing. • Accept criticism in a positive way. When a complaint might be true, use statements like "You are probably right" or "It was my fault." If the criticism seems unwarranted, ask clarifying questions. • Be honest. DO NOT make false statements or promises you cannot keep. • Be familiar with your organization's complaint procedures and apply them fairly. Remain professional and take the person seriously. Be respectful. • Ask for small, specific favours, such as asking the person to move to a quieter area. • Break a problem or an issue down into smaller units and offer step-by-step solutions so that the person is not overwhelmed by the situation or issue. • Be reassuring and point out choices. • Try to keep the person's attention on the issue at hand. • Try to avoid escalating the situation. • Find ways to help the person save face. • Establish ground rules if unreasonable behaviour persists. • In a calm and non-threatening manner, clearly state that violence is unacceptable and will not be tolerated. • Calmly describe the consequences of violent or aggressive behaviour. Suggest alternatives to violent behaviour. • Avoid issuing commands and making conditional statements. • If the nature of the situation involves punishment or sanctions (e.g. enforcement); delay the punitive action until you have back-up or the situation is safer. If you feel threatened: Try to politely and calmly terminate the interaction in a non-threatening manner, if possible. Know what back-up and advice is available to assist you in handling a difficult individual. • Get help. • Send for security or someone more senior • Use a silent alarm • Use a code word. • If you threaten to call the police, call them Terminating a Negative Interaction • Interrupt the conversation firmly but politely. • Tell the person that you: ○ do not like the tone of the conversation	

DEALING WITH A POTENTIALLY VIOLENT PERSON	PAGES: 3 OF 3
	DEPARTMENT(s): ALL DEPARTMENTS
○ will not accept abusive treatment ○ will end the conversation if necessary Tell the person that you will ask him or her to leave the building, or that you will leave (if working off-site). • If the behaviour persists, end the conversation • Ask the person to leave the building, or leave yourself • If the person does not agree to leave, remove yourself from the scene and inform your manager or supervisor immediately. • DO NOT return to the meeting if you believe the person poses a physical threat. Advise other staff and have them leave the immediate area. • Call your local police. • File an incident report with management.	

DEFECTIVE TOOLS	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL

Hazards:

- Detective tools can cause serious and painful injuries



Do Not



Watch for problems like:

- Broken or inoperative guards;
- Insufficient or improper grounding due to damage on double insulated tools;
- No ground wire (on plug) or cords of standard tools;
- The on/off switch not in good working order;
- Tool blade is cracked; and
- The wrong grinder wheel is being used, or the guard has been wedged back on a power tool.
- Unusual operational characteristics

- If a tool is defective in some way, **DO NOT USE IT.**

Safe Work Procedure

- Remove all defective tools from the work area and mark, **“DEFECTIVE – DO NOT USE.”**
- Report all defective tools to your Manager immediately.

CAUTION: All tools need to be repaired by qualified persons only.

NOTE: By tagging out defective tools, you are preventing an injury to you and your co-workers!

DEPLOYING AIRBAGS FOR DISPOSAL	PAGES: 1 OF 3
	DEPARTMENT(s): SERVICE - COLLISION

DO NOT perform this procedure until you have been authorized to do so by your supervisor.

Hazards:

- While pyrotechnic ingredients contained in the device represent an explosion hazard, the ingredients can only be released by destructive disassembly of the device.
- Impact hazard of an uncontrolled activation of the safety device due to: fire; heat; electrostatic discharge; inductions through electromagnetic radiation; or, excessive mechanical load.
- Potential for frostbite injuries due to sudden release of pressure from compressed gas air bag inflators.
- Burn hazard when there is direct contact with safety device during activations
- Potential eye and respiratory tract exposure and irritation from safety device particles and gases.
- Temporary impact to hearing from high level noise impulse during device activation.
- Contact with eyes may cause irritation and reddening, especially if direct impact occurs.
- Irritation to the skin may occur if direct impact occurs. No other skin effects are expected.

NOTE: The gas generant mixture within the Airbag Inflator may contain one or more of the compounds listed below.

-Oxalyldiamidobis	-Guandinium Nitrate	-Silica
-Ammonium Perchlorate	-Guanidine Nitrate	-Sodium Azide
-Copper Ammonium Bitetrazole Complex	-Guar Gum	-Sodium Nitrate
-Copper Nitrate	-Hexaamminecobalt (III) Nitrate	-Strontium Nitrate
-Copper Oxide	-Lead Trinitroresorcinate	-Sulfur
-Cyanuric Acid	-L-Tartaric Acid	-Talc
-Diammonium Bitetrazole	-Molybdenum Disulfide	-Titanium Hydride
-Ferric Oxide	-Potassium Nitrate	-Titanium Powder
-Graphite	-Potassium Perchlorate	- Zirconium Hydride

First Aid Measures

No first aid measures are likely to be necessary when handling intact Airbag Inflators. The first aid procedures discussed are for the gas generant mixture.

Eye:

Immediately flush eye with water for at least fifteen minutes, occasionally lifting the upper and lower lids. If irritation develops, seek medical attention.

Skin:

In case of contact with skin, wash the area with plenty of soap and water for at least fifteen minutes. If irritation develops, seek medical attention.

Inhalation:

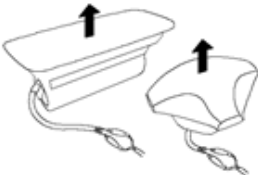
Remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, give oxygen. If breathing is impaired in any manner, seek medical attention.

DEPLOYING AIRBAGS FOR DISPOSAL	PAGES: 2 OF 3
	DEPARTMENT(s): SERVICE - COLLISION

Ingestion:
Although unlikely, should ingestion occur, drink several large glasses of water and induce vomiting. Seek medical attention. If victim is unconscious, do not administer water or induce vomiting. Instead, wash mouth out with a small amount of water and seek medical attention.

Do Not 

- DO NOT deploy airbag while it is facing downward
- DO NOT deploy airbag near other people or equipment or vehicles that could be harmed or damaged

Safe Work Procedure 1. Confirm that the deployment tool is functioning properly by following the proper check procedure on the tool label. 2. Position the airbag face up, outdoors, on flat ground, at least 30 feet (10 meters) from any obstacles or people or inside container large enough to allow the airbag to completely expand with a lid that can be latched or a room with a ventilation fan (i.e. brake lathe room) where the door can be shut and the cable for the deployment tool can run under the door.  3. Cut off each connector, strip the ends of the wires, and connect the deployment tool alligator clips (A) to the wires. 4. Connect a 12 volt battery to the tool. • If the green light on the tool comes on, the igniter circuit is defective and cannot deploy the component. • If the red light on the tool comes on, the component is ready to be deployed. 5. Push the tool's deployment switch. The airbags and tensioners should deploy (deployment is both highly audible and visible: a loud noise and rapid inflation of the bag, followed by slow deflation). • If the components deploy and the green light on the tool comes on, continue with this procedure.

DEPLOYING AIRBAGS FOR DISPOSAL	PAGES: 3 OF 3
	DEPARTMENT(s): SERVICE - COLLISION
• If a component doesn't deploy, yet the green light comes ON, its igniter is defective. • During deployment the airbag can become hot enough to burn you. Wait 30 minutes after deployment before touching the airbag. 6. Dispose of the complete airbag. No part of it can be reused. Place it in a sturdy plastic bag, and seal it securely.  REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	

DIE GRINDER	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE - COLLISION

Hazards:

- Sparks
- Rotating grinding wheel
- Excessive noise
- Flying metal shavings
- Flammable or combustibles near-by

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required



Face-Shield may be Required



Hearing Protection may be Required

Do



- Inspect die grinder components for safe operation
- Inspect grinding head to ensure it is properly secure to the tool.

Do Not



- Never use damaged tool
- Never use a cutting wheel on a die grinder

Safe Work Procedure

1. Energize the die grinder:
2. Ensure that the grinding head is pointed away from you and anyone else in the area.
3. Operate the die grinder:
4. Apply steady, even pressure.
5. Do not apply excessive force to the die grinder. (May cause it to stall/overheat, create excessive sparks).

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY SPILLS OR ACTION ITEMS TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

- Place all materials in their proper storage areas.
- Ensure the equipment is safe, clean and tidy before you leave it.

DONNING & FIELD TESTING A ½ FACEPIECE RESPIRATOR	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION - DETAIL

All respirator users must be trained and fit tested annually

Do



- Ensure that respirator is clean and free of damage.

Safe Work Procedure

To put on an respirator:

The following shall be performed in an area with uncontaminated air.

- Remove your eyewear (if worn), then grasp the front of the respirator with one hand and the upper headband with your other hand. Then place the portion of the face-piece containing the exhalation valve under your chin.
- Position the narrow portion of the respirator on your nose bridge and place the cradle suspension system on your head so that the top headband rests across the top of your head and the bottom headband rests above your ears, on the back of your head. Then hook the piece on your face for best fit and comfort.
- The length of the headbands are adjustable; tighten or loosen by holding the respirator body or headband yoke with one hand and pulling on the elastic material in the appropriate direction with your other hand.
- Position the face-piece so that the nose section rests as low on the bridge of your nose as is comfortable, and tighten the upper headband on both sides just tight enough so that the respirator does not slide down on your nose. Do not over tighten. If the respirator pinches your nose, loosen the upper headband slightly.
- Then, tighten the lower headband on both sides just tight enough to secure the respirator under your chin.
- If you previously removed your eyewear, put it back on at this time.

Field Testing

- Conduct a negative fit test check as follows
 - To conduct a negative pressure fit test, place the palms of your hands over the openings in the cartridges or fit check / filter covers (if so equipped) or, unscrew the air-purifying elements from the respirator and place the palms of your hands over the inhalation connectors, inhale and hold your breath for about 5 seconds.
 - If the face-piece collapses slightly and no air leaks between the face-piece and your face are detected, an effective fit has been obtained. If air leaks are detected, reposition the face-piece on your face and / or readjust the tension of the headbands and repeat the negative pressure check until an effective seal is obtained. If the air-purifying elements were removed, once an effective face-piece-to-face seal is obtained, a co-worker must assist you by screwing the air-purifying elements onto the inhalation connectors mounted on the face-piece. Check to be sure that each air-purifying element is effectively sealed against the face.

DONNING & FIELD TESTING A ½ FACEPIECE RESPIRATOR	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL
• Conduct a positive fit test check as follows: ○ To conduct a positive pressure fit check, block the openings in the exhalation valve guard using the palm of your hand and simultaneously exhale. If the face-piece bulges slightly and no air leaks between the face-piece and your face are detected, an effective fit has been obtained. If air is detected to be leaking out between the face-piece and your face, reposition the face-piece on your face and / or readjust the tension of the headbands to eliminate the leakage. This check must be repeated until an effective seal of the face-piece to your face is obtained.	

ELECTRICAL CORDS	PAGES: 1 OF 1
	DEPARTMENT(s): ALL DEPARTMENTS

Hazards:

- Electrical shock
- Fire cause by sparks
- Trip hazard

Do



- Check Extension cord before each use making sure that there are no rips/tears, that the housing is not separated from the plug and that all prongs are in place.
- If cord is running across a walking area, ensure that it is taped to the floor to prevent it from becoming a safety hazard.
- Ensure cord is rated for the load electricity being used

Do Not



- Hands may not be wet when plugging and unplugging flexible cords and cord and plug-connected equipment, if energized equipment is involved.
- Extension cords should not be laid in water.

Safe Work Procedure

1. All extension cords must be grounding type, made with UL listed parts, and be in good physical condition.
2. Extension cords may not be lengthened, or “repaired” with tape.
3. Power outlet strips are for equipment needing surge protection (e.g., computers) not to increase the number of plugs available.
4. Extension cords shall not be run through holes in walls, ceilings or floors.
5. Extension cords may not be plugged into power strips. Power strips may not be connected to each other (i.e., “piggy-backed”).
6. An extension cord should not be run across high traffic areas or used in applications where potential damage to the cord might occur.
7. The use of an extension cord must not create a trip hazard.
8. Extension cords shall not be attached to building surfaces or used in lieu of fixed wiring of a structure.
9. Use Ground Fault Interrupters (GFI’s) when working outside or near wet areas.

REPORT ANY SPILLS OR ACTION ITEMS TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

- Return extension cord to its proper storage area.
- Ensure the equipment is safe, clean and tidy before you leave it.

ENERGIZED SYSTEMS LOCK-OUT PROCEDURES		PAGES: 1 OF 1
		DEPARTMENT(s): SERVICE – COLLISION – DETAIL
Safe Work Procedure		
Energy Form	Energy Source	General Lockout Guideline
Electricity	Machine power cords, motors, solenoids, capacitors (stored electrical energy).	Turn off power at machine first (ie.-at point of operation switch) and then at the main disconnect switch for the machine, lock and tag main disconnect switch (or remove fuses from box, and then lock and tag box). Fully discharge all capacitive systems (eg.-cycle machine to drain power from capacitors) according to manufacturer's instructions.
Fluid Pressure	Hydraulic Systems (eg.- hydraulic presses, rams, etc).	Shut off and tag valves, bleed off and blank lines as necessary.
Air Pressure	Pneumatic Systems (eg.- lines, pressure reservoirs, air tanks, rams etc).	Shift off, and tag valves, bleed off excess air, if pressure cannot be relieved block any possible movement of machinery.
Kinetic Energy	Blades, flywheels	Stop and block machine parts (eg.-stop flywheels and ensure that they do not recycle), review entire cycle of mechanical motion; ensure that all motions are stopped.
Potential Energy	Springs, actuators, raised loads, top or movable part of a press or lifting device.	If possible, lower all suspended parts and loads to the lowest (rest) position, block parts that might be moved by gravity, release or block spring energy.
Pressurized Liquids and Gases	Supply lines, storage tanks and vessels.	Shut off, (with chains built-in lockout devices, or lockout attachments) and tag valves. Weed off excess liquids or gases, blank lines as necessary.
<i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR INSTRUCTOR/SUPERVISOR IMMEDIATELY		

ENGINE LIFT	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE

The weight of an engine makes it difficult to remove from a vehicle. An engine hoist consists of an adjustable boom attached to stand with a hinge pin. A hydraulic ram connected to both the boom and the stand provides the power for lifting an engine from a vehicle. Swivel castors mounted to the bottom of the stand frame allow you to roll the engine hoist and move the engine around a smooth, stable area.

Safe Work Procedure must be reviewed with Manager or experienced Technician

Hazards:

- Pinch Points/Sharp edges
- Tipping Hazard
- Foot & Back injury
- Equipment/property damage

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required

Do

- Always inspect for leaks, bent or damaged parts.
- Inspect chains before hooking them to engine and/or Engine Lift
- Always lock the legs and jib in position before lifting the load.
- Ensure that there isn't any clutter in work area that will interfere with moving Engine Lift into position.

Do Not

- Do not overload. Overloading could cause damage or failure of the engine crane.
- Never use the Engine Lift on an uneven floor surface.
- Do not use the equipment for supporting loads. They have been designed for lifting only
- Parts such as the nuts and bolts supplied with the equipment are of superior strength and should not be substituted with inferior types.
- Never work under a loaded Engine Lift
- Never use a rope to lift and engine.

Safe Work Procedure

1. Turn the locking lever located at the bottom of the hydraulic cylinder clockwise to seal the cylinder. Slide the open end of the hoist handle into the actuating arm sitting above the locking valve. Pump the hoist handle to lift the engine hoist boom. Raise the boom until it sits higher than the object you are lifting.
2. Move the engine hoist into position over the object. Loosen the bolt locking the boom length with a wrench. Slide the bolt from the boom. Slide the inner boom arm until the hook hanging from the end of the boom sits over the center of the object. Slide the bolt into the aligned holes of the boom. Tighten the bolt with a wrench.

CAUTION: Always lock the legs and jib in position before lifting the load.

ENGINE LIFT	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE
3. Slide the open end of the arm over the locking valve. Turn the locking valve counter clockwise one-quarter turn to lower the adjusted boom. Turn the valve clockwise one-quarter turn to lock the boom arm in position. 4. Connect a chain to the object. Hook a link of the chain into the hook located at the end of the boom. Slide the hoist handle into the actuating valve. Pump the hoist handle to lift the object above any obstructions. 5. Move the engine hoist into a clear area. Turn the actuating valve slowly with the hoist handle to lower the lifted object. Disconnect the boom hook from the chain to free the engine hoist from the object. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping • When not using the long ram, always leave the jib in the fully lowered position. • Place all materials in their proper storage areas. • Ensure the equipment is safe, clean and tidy before you leave it.	

ERGONOMICS	PAGES: 1 OF 1
	DEPARTMENT(s): ALL DEPARTMENTS

Work Safely

Problem: eyestrain, irritated eyes, blurred vision, headache.

Causes: Glare, ambient light, workstation layout, display quality, visual disorders, work habits/job design
Adjustments: Minimize glare and ambient lighting, Improve workstation layout, Use workstation accessories, Enhance your screen display, Ensure proper eye care,

Reduce Reflectance:

- Minimize the amount of white paper posted or lying about
- Use a darker desk pad if your desk surface is too bright
- Use Monitor Placement to avoid glare
- Adjust all sources of light to achieve ~50 foot candles.
- Supplement with a task light if necessary
- Suggest that workers wear medium or dark colours rather than white or light colours

Problem: neck/shoulder pain

Causes: Awkward postures, Excessive reaches

Adjustments: Adjust the chair, the monitor and use appropriate keyboard surfaces. Reduce Harmful Positions:

- Avoid placement that requires extreme reaches, especially to the sides or behind
- Provide space for material to be located 16-18" in front of your body and between your elbows and shoulder
- Place the most important items directly in front of you

Problem: back pain

Causes: Constrained or fixed posture

Adjustments: Use of appropriate posture, Frequent changes in posture, Proper seating, Appropriate work surfaces

Problem: arm / hand disorders

Causes: Repetitive motions, Force, Emotional stress

Adjustments: Use document holder, Use footrests, Use palm rests, Adjust furniture and equipment to maximize comfort, Take rest pauses/exercises,

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

FILING CABINETS	PAGES: 1 OF 1
	DEPARTMENT(s): ALL DEPARTMENTS
Hazards: - Pinch Points/Sharp edges - Tipping Hazard - Foot & Back injury - Equipment/property damage	

Safe Work Procedure • Only have one drawer open at a time - opening more may cause the cabinet to overbalance and tip. • Do not leave drawers open when not in use as they become a dangerous obstruction/obstacle. • Keep hands well clear when closing drawer. • Only one person should use a filing cabinet at one time. • Keep the top clear of loose objects. • Bend your knees to access lower drawers - do not bend from the waist. • Do not store heavy items in drawers. • Be careful when opening drawer fully as the drawer may drop at the end of its run. • Always lock the cabinet before attempting to move it. REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

FIRE EXTINGUISHER	PAGES: 1 OF 2
	DEPARTMENT(s): ALL DEPARTMENTS

Hazards:

- Fire
- Smoke
- carbon monoxide
- oxygen deficient atmospheres
- carbon dioxide
- use of improper extinguisher for type of fire

Do



- Check that tank is full and ready for use
- Ensure that you have the correct type of extinguisher

Do Not



- Do not fight a fire that is too large or will put you in further danger by doing so

Safe Work Procedure

Class A: Consist of wood, paper, rags, rubbish, and other ordinary combustible materials. Water from a hose, pump-type water-can or pressurized extinguishers are recommended for these fires. Soak the fire completely, particularly the smoking embers.

Class B: Consist of flammable liquids, oil, and grease. ABC-dry chemical, foam and Carbon Dioxide extinguishers are recommended for these fires. Start at the base of the fire and use a swinging motion from left to right, always keeping the fire in front of you. Never use water on a class B fire.

Class C: Consist of electrical equipment on fire. Carbon dioxide and dry chemical (ABC units) extinguishers are recommended for these fires. Never use water on electrical fires. Use short bursts on the fire. When the electrical current is shut off on a Class C fire, it can become a Class A fire if the materials around the electrical fire are ignited.

Class D: Consist of combustible metals on fire. Examples are titanium, magnesium, lithium, sodium, zirconium and potassium. Such metal fires can be very difficult to extinguish and require special extinguishers and agents. The extremely high temperature of the burning metals makes many of the commonly used agents, ineffective and dangerous. These metals may explode should the wrong agent be used. Water alone, may cause such a reaction. NEVER ATTEMPT TO FIGHT A CLASS D FIRE. ALERT OTHERS IN THE BUILDING AND EVACUATE IMMEDIATELY.

Class K: Consist of cooking media on fire such as oil, lard and fat found in kitchens. Due to new and improved cooking appliances, higher heating rates and industry trends towards using more unsaturated oils, the potential for severe restaurant fires is greater than ever. The Class "K" extinguisher rating is designed for these commercial "combustible cooking media" fire hazards in kitchens. The agent has been designed to offer the best portable fire protection available to supplement pre-engineered restaurant suppression systems.

FIRE EXTINGUISHER	PAGES: 2 OF 2
	DEPARTMENT(s): ALL DEPARTMENTS

Fire Extinguishing Methods

Some fires can be extinguished by cutting off the supply of oxygen while others can be more effectively put out by removing the heat or fuel. Others require cooling, removal of oxygen and fuel in sequential steps. Four extinguishing methods include:

1. Remove the fuel
2. Exclude the oxygen
3. Reduce the heat
4. Interrupt the chain reaction

Choose the Correct Type of Extinguisher

It is natural to use the extinguisher located nearest to a fire, making it essential that the correct type and size be placed close to a potential hazard. The following classes of extinguishers are suitable for the corresponding types of fires.

EXTINGUISHER TYPES

A		Common Combustibles	Wood, Paper, Cloth, Etc.
B		Flammable Liquids & Gases	Gasoline, Propane, other Solvents
C		Live Electrical Equipment	Computers, Fax Machines, Etc.
D		Combustible Metals	Magnesium, Lithium, Titanium
K		Cooking Media	Oils, Lards, Fats

Fire Prevention

- Ensure that there are sufficient trash containers and that they are emptied daily.
- Use covered metal containers for oily rags and combustible debris and keep them away from sparks and flames.
- Store flammable liquids away from heat and sources that produce sparks or flames.
- Minimize storage of flammable liquids inside a building and ensure approved storage containers are used.
- Keep flammable liquids stored in tightly sealed containers and ensure covers are kept on the containers.
- Use flammable liquids only in well ventilated areas.
- Ensure that fuses are not rated higher than what is specified for a circuit.
- Inspect electrical equipment for poor wiring conditions and remove defective equipment from service.
- Keep electrical motors from overheating by keeping them clean and in good working order.
- Investigate any strange smells from equipment as it is often a sign of fire.
- Do not overload wall sockets and avoid multiple socket electrical connections.
- Do not plug more than one heat-producing equipment unit into an outlet.
- Ensure that electric cords do not hang over nails or pipes and are not behind radiators, across walkways, hidden under carpet, or passed through door jambs

FIRST AID	PAGES: 1 OF 2
	DEPARTMENT(s): ALL DEPARTMENTS

First Aid Training from an approved source i.e. Red Cross; St. John's Ambulance etc.

Do 

- Ensure that you and the victim are in an area free from further injury

Safe Work Procedure

Bleeding

1. Apply hand pressure over top of the wound.
 2. Apply a compress bandage (if available) and secure the bandage.
- NOTE:** If the bandage becomes blood soaked, **DO NOT REMOVE**. Apply another Bandage over top.
3. Check to ensure that circulation has not been cut off below the wound site. This will be noticeable by a change in skin colour or by numbness.
 4. Elevate the injured limb on a pillow or blanket, or by means of a sling, and transport to medical aid.

Electrical Shock

The care for victims of electrical shock is:

1. Before treating ensure that the hazard of electrical shock has been removed.
2. If the casualty is unconscious check for breathing. If he is breathing, position him on his side. If he is non-breathing administer mouth to mouth resuscitation, if the casualty does not have a pulse, administer CPR.
3. Check for further injuries that may result from a fall, such as fractures. If you suspect a spinal injury do not move the person.
4. Check for entry and exit wounds of the electrical charge. Treat as open wounds by covering with clean dressings.
5. Seek medical assistance.

Emergency Breathing

1. Is the person breathing?
Check for breathing by placing your ear close to the casualty's mouth, to feel and hear air movement, and by looking at the chest to see if there is any chest movement.
2. Is there the possibility of neck injury?
Check by running the tips of your fingers down the vertebrae at the base of the skull, and down between the shoulders. Remember, movement of the neck could make the injury worse. Some

FIRST AID	PAGES: 2 OF 2
	DEPARTMENT(s): ALL DEPARTMENTS
types of accidents often result in neck injuries - such as falls where the casualty lands on their feet - or falls when the casualty strikes their head. CAUTION: Do not move them. If history of the accident suggests a possible neck injury, then artificial respiration should be administered using the jaw thrust. This is accomplished by first positioning the rescuer at the side of the casualty's head. The rescuer's fingers are placed under the angle of the casualty's lower jaw, one hand on each side, thus lifting the neck upward and forward to lift the tongue off the back of the throat. The rescuer's cheek then seals off the nose of the casualty as breaths are given. 3. If the casualty is not breathing, and no neck injury is suspected: (i) <u>Kneel beside the casualty.</u> Place hand on forehead and tilt backward at the same time. Lift the chin by hooking your thumb under the chin and pulling the chin up toward the ceiling (sky). This will lift the base of the tongue off the back of the throat. This is referred to as opening an airway . (ii) <u>Second Breathing Check.</u> Look inside the mouth to ensure there are no objects such as gum or food. (If there is, clean these out with your finger.) (iii) <u>Close the air passage to the nose</u> by pinching close the soft lower portion of the nose. This is to be done in such a way that air will not be allowed to escape through this air passage. (iv) <u>Place your mouth over the casualty's mouth</u> and blow over the casualty's mouth and deliver two long breaths. Look toward the casualty's chest to see if the chest is rising and falling. Continue to blow air into the casualty's lungs once every five seconds or 12 times per minute CAUTION: For your safety, use an approved CPR valve as a protective barrier. Continue until the casualty revives or until a doctor pronounces the casualty dead, or until a trained person can relieve you, or until you are physically unable to carry on. When the casualty revives, and if injuries permit, turn the casualty on their side. (vi) Anyone who has been unconscious and/or has stopped breathing and had to be resuscitated, must seek medical attention.	

SAFework PRACTICES & PROCEDURES

Fuel Storage & Dispensing	PAGES: 1 OF 2
	DEPARTMENT(s): All Departments

DO NOT perform this procedure until you have been appropriately trained and authorized to do so by your supervisor.

- Hazards:**
 - Fire
 - Explosion
 - Inhalation of harmful fumes
 - Static Electricity buildup
 - Burns from contact with gasoline or hot surfaces

Required Personal Protective Equipment



Eye Protection Required (if using to fill up open containers)



Flame-Resistant Gloves Required (if using to fill up open containers)

Do



- Inspect the tank, hoses, and nozzles daily for leaks, damage, or wear.
- Ensure the area is well-ventilated and free of ignition sources before fueling.
- Always bond and ground equipment before dispensing fuel to prevent static discharge.
- Keep spill containment materials nearby and immediately clean up any spills.
- Follow proper lockout/tagout procedures before performing maintenance on the tank.
- Store gasoline only in approved, clearly labeled containers.

Do Not



- Do not smoke or use open flames within 15 meters (50 feet) of the tank.
- Do not overfill containers or vehicles—leave space for fuel expansion.
- Do not leave the fueling area unattended while dispensing fuel.
- Do not use electronic devices, such as cell phones, while fueling.
- Do not ignore signs of leaks or fuel odours — report them immediately.
- Do not fuel the vehicle while the vehicle is turned on.

Safe Work Procedure:

1. Pre-Use Inspection

- Check for leaks, visible damage, and proper signage.
- Verify that fire extinguishers and spill kits are available.

2. Fuel Dispensing

- Ensure all equipment and containers are properly grounded and bonded.
- Slowly remove the nozzle cap to release pressure safely.
- Dispense fuel carefully to avoid splashing or spills.
- Never leave the nozzle unattended while fueling.

Fuel Storage & Dispensing	PAGES: 2 OF 2
	DEPARTMENT(s): All Departments

3. After Dispensing Fuel

- Secure the fuel cap and wipe up any minor drips.
- Store hoses and nozzles properly to prevent damage.
- Dispose of contaminated rags or absorbents in designated fireproof containers.

4. Stopping Work

- If an emergency occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately using the emergency shut off button and follow the lock out procedure.
- The emergency shut-off button is located on the southwest corner of the VPC building.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

- Maintain a clean and organized fueling area.
- Regularly check and refill spill kits as needed.
- Keep emergency shut-off controls easily accessible and operational.

HAND TOOLS	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL

Hazards:

- Bodily Injury
- Property Damage

Required Personal Protective Equipment



Eye Protection Required Face-Shield may



CSA Approved Safety Footwear Required



be Required



Approved Mask May Be Required

Do



- Power tools and hand tools to be used and maintained in compliance with manufacturers guidelines.

Safe Work Procedure

1. Electrical tools must have 3 wire (grounding) cord and plug, excluding double insulated tools.
2. Grinder discs, buffers and stones to be used only for designed application and at rated speed.
3. Stationary grinders must have properly adjusted tool rests and stones to be properly dressed.
4. Angle grinders to have Original Equipment Manufacturer (O.E.M.) guard.
5. On/off switches must be functional and positioned so Operator has access.
6. Accessories can only be used that are designed for use with the tools specified.
7. Saw blades must be designed for the product being cut and at the rated speed, O.E.M. guards must be in place and functional.
8. Chisels, punches, hammer, wrenches, etc. to have all burrs ground from striking area.
9. Chisels, punches, screwdrivers, etc. to have tips properly dressed.
10. Cracked and/or splintered handles to be replaced.
11. All tools must be cleaned after use and repairs made before being properly stored.
12. Tools to be used for designed purpose only.
13. Repairs to tools must be performed by qualified personnel, using O.E.M. parts or equivalent.
14. Follow tool safe work procedures step by step.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

HIGH SPEED BUFFING	PAGES: 1 OF 1
	DEPARTMENT(s): COLLISION – DETAIL

Safe Work Procedure must be reviewed with Manager or experienced Technician

Hazards:

- Wet floors
- electrical cords,
- tripping,
- electrocution,
- flying debris,
- falling from step ladders

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required



Nitrile Gloves Required



Hearing Protection may be Required

Do



- Ensure buffing pad is attached to buffer head and in good condition

Do Not



- Do not drape cord around neck
- Do not use buffer with only one hand

Safe Work Procedure

1. Turn on the lights and the clean air fan
CAUTION: Only perform this task in a well-ventilated area.
2. Remove bug deflector and antenna if possible
3. Put on safety glasses, dust mask, and apron
CAUTION: Make sure wires are not frayed, or wires exposed
4. Plug in buffer
5. When changing buffer pads, twist on firmly by hand
6. Remove lid from compound and perform scratch removal
7. After buffing, make sure lid is put back on compound
8. After washing and waxing, reinstall bug deflector and antenna

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

- Ensure all chemical bottles are capped
- Place all materials in their proper storage areas.
- Ensure the equipment is safe, clean and tidy before you leave it.

HOUSE KEEPING	PAGES: 1 OF 1
	DEPARTMENT(s): ALL DEPARTMENTS

Hazards:

- Poor housekeeping affects all aspects of safety and can result in both minor and major incidents.

All employees are responsible to ensure:

1. The work areas shall be clean, orderly and in a sanitary condition.
2. The floors and passageways shall be kept clear of obstructions.
3. The storage areas shall be free of materials that cause tripping, fire, or explosion hazards.
4. Return all equipment to the storage area.
5. The trash shall be removed as needed.
6. All spills on the floors and passageways shall be cleaned immediately.
7. All chemicals must be kept covered and in appropriate and labelled containers.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

IMPACT GUN	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL

Hazards:

- Flying debris
- Rotating shaft

Required Personal Protective Equipment



Protection Required



CSA Approved Safety Footwear Required

Do



- Visually inspect tool, airline and coupling for damage

Do Not



- Never use damaged tools

Safe Work Procedure

Choose proper socket size and place on fastener:

- Use only impact sockets. Chrome sockets are not engineered for impact and will break.
- Secure the socket to the fastener prior to supplying air to the impact gun.

Supply air source to the impact gun:

- Do not route air hoses near sharp objects and hot surfaces that may cause damage.
- Ensure that the tool is in the 'off' position prior to energizing.
- Transport the gun with a firm grip in one hand, fingers wrapped around the handle.
- With the other hand, grip the air hose coupling so that your fingers do not protrude over the end (to prevent pinched fingers between gun and coupling).
- Connect hose to gun.
- Never exceed a gun pressure rating of 90 psi

Removing Nuts

Place switch to 'remove' when loosening nuts:

- Make certain the switch is locked properly in place. Place the socket squarely over nut:
- Apply appropriate pressure against nut and socket.
- Add adapters only when necessary, and not for general use. Pull trigger to supply power to the impact gun"
- Do not hold impact sockets, universal joints, or extensions while impact tools are running. (Serious hand and wrist injury can occur).
- Keep constant eye contact with the joints between the gun and fasteners to ensure they are snug. If they become loose, stop the gun and correct the problem.
- Release trigger to disengage power from the impact gun (once nut is off bolt).

Remove nut from socket:

- Ensure your fingers are away from trigger.
- Point the socket towards ground and allow the nut to fall into your other hand. Place the nut into a container.

IMPACT GUN	PAGES: 2 OF 2
	DEPARTMENT(S): SERVICE – COLLISION – DETAIL
Tightening Nuts Place switch to ‘tighten’ when tightening nuts: a) Make certain the switch is locked properly in place. Manually thread nut onto bolt. Finish tightening nut with impact wrench: a) Apply appropriate pressure, squarely against bolt and socket. b) Add adapters only when necessary, and not for general use. c) Pull trigger to supply power to the impact gun: d) Don’t dwell longer than necessary to get torque. e) Do not hold impact sockets, universal joints, or extensions while impact tools are running. (Serious hand and wrist injury can occur). f) Keep constant eye contact with the joints between the gun fasteners to ensure they are snug. If they become loose, stop the gun and correct the problem. Release trigger to disengage power from the impact gun (Once bolt is tight). Remove socket from nut: a) Ensure your fingers are away from trigger. Remove socket from gun and place all tools in their appropriate storage place: a) Remove air hose from gun. b) Transport the gun with a firm grip, fingers wrapped around the handle. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping • Return tools to their proper storage place • Place all materials in their proper storage areas. • Clean area of any debris	

JACK STANDS	PAGES: 1 OF 1
	DEPARTMENT(s): COLLISION – SERVICE – DETAIL

Hazards:

- Trip Hazard
- Tipping

Required Personal Protective Equipment


Eye Protection Required


CSA Approved Safety Footwear Required

Do 

- Visual inspection shall be made before each use, checking for cracks, cracked welds and/or missing parts.

Do Not 

- Don't use if there appears to be any damage. Damaged stands need to be removed from service immediately.

Safe Work Procedure

1. Always block non-raised tires if used on uneven ground that may cause vehicle to roll
2. Secure emergency brake
3. Place Pylons around vehicle if working on vehicle outside of the shop
4. Position stands under vehicle at points specified for the vehicle
5. Adjust stand to proper height and ensure that locking device is engaged
6. Carefully lower vehicle onto stands

Lowering Stands

7. Lift vehicle off of stands following proper procedures for floor jack
8. Disengage locking device and lower saddle shaft to its lowest position and remove from under vehicle

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

- Ensure jack stands are stored in their lowest position.
- Place all materials in their proper storage areas.
- Ensure the equipment is safe, clean and tidy before you leave it.

LADDERS	PAGES: 1 OF 2
	DEPARTMENT(s): ALL DEPARTMENTS

Safe Work Procedure must be read and understood

Hazards:

- Falls
- Trips, Slips
- Pinch Points
- Electrical shocks

Do



- Inspect before each use for damage
- Ensure that ladder is a class 1 or 2

Do Not



- Do not over extend
- Do not work from the top three rungs of the ladder
- Never use a class 3 ladder They are meant for household use only
- Do not place on boxes, unstable bases or on scaffold
- Do not tie or fasten ladders together to gain additional height
- Do not place in front of a door that could open into the ladder causing it to fall
- Do not lean the ladder against an overhead door -beware of automatic operation of the door
- Never have more than one person on a ladder at a time

Safe Work Procedure

1 Inspect before each use for damage

2 Use a ladder that is designed for the work task. Check the ladder's strength/grade, type/use and CSA approval

NOTE: NEVER OVERLOAD A LADDER

LOAD CAPACITY*	DESCRIPTION	CSA CODE	ANSI CODE
200 lbs./91 kg	Household - Light Duty	Grade 3	Type III
225 lbs./102 kg	Tradesman and Farm - Medium Duty	Grade 2	Type II
250 lbs./113 kg	Construction and Industrial - Heavy Duty	Grade 1	Type I

3 Secure base when raising and never set up ladder when it is extended

LADDERS	PAGES: 2 OF 2
	DEPARTMENT(s): ALL DEPARTMENTS
4 Set extension ladder at proper 75 degree angle by placing ladder base a distance equal to 1/4 total working length of ladder away from base of vertical support 5 If the distance is less than 3 ft place base of ladder a minimum of 3 ft from vertical support 6 Set the ladder on firm level ground Do not lean sideways 7 If on icy or slippery site ensure area is cleared of hazards and ensure non-skid devices or securing feet 8 Erect ladders with minimum 3 ft extending above roof line or working surface: tie top at support points 9 Extend top section only from ground, never by bouncing or from the roof 10 Do not over extend, maintain minimum overlap of sections A Up to and including 32 ft - 3 ft overlap B 36 ft - 4 ft overlap C Over 36 ft and including 48 ft - 5 ft overlap 11 Do not place on boxes, unstable bases or on scaffold 12 Do not tie or fasten ladders together to gain additional height 13 Do not place in front of a door that could open into the ladder causing it to fall 14 Do not lean the ladder against an overhead door - beware of automatic operation of the door 15 Whenever possible use a spotter to hold the ladder as added protection & security REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping • Place ladders in their proper storage areas • Ensure the equipment is safe, clean and tidy before you leave it	

LOCK-OUT	PAGES: 1 OF 2
	DEPARTMENT(s): COLLISION – SERVICE – DETAIL

DO NOT perform this procedure until you have been appropriately trained and authorized to do so by your supervisor

Hazards:

- Unexpected start-up or movement of equipment may cause injury
- Faulty equipment may be used unknowingly causing injury

Required Personal Protective Equipment



Protection Required



CSA Approved Safety Footwear Required



Latex type Gloves May Be Required



Approved Dust Mask May Be Required

Purpose
This procedure establishes the minimum requirements for the lockout of energy sources that could cause injury to Personnel. All employees will comply with the procedure.

Rules for Using Lockout Procedure

- All equipment will be locked out to protect against inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy isolating device bearing a lock, tag or cover.

Safe Work Procedure

- Notify all affected employees that a lockout is required and the reason it is required.
- If the equipment is operating, the operator will shut it down by the normal stopping procedure.
- Operate the switch, circuit breaker, valve, or other energy isolating devices so that the energy source(s) is disconnected or isolated from the equipment. In many cases this may be done by simply unplugging the machine from the wall.
- Lockout energy isolating devices with assigned individual locks. Put a lock, tag or cover on all energy sources.
- After ensuring that no personnel are exposed and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

CAUTION: Return operating controls to neutral position after the test.

- The equipment is now locked out.

Restoring Equipment to Service

- When the job is complete, all guards and shields have been reinstalled and equipment is ready for testing or normal service, check the equipment area to see that no one is exposed to a possible hazard
- When equipment is clear, remove all locks, tags and covers and give to supervisor for storage.
- Restore energy to equipment.
- Operator to restart equipment to ensure energy properly restored.

REPORT ANY HAZARDOUS SITUATION TO YOUR INSTRUCTOR/SUPERVISOR IMMEDIATELY

LOCK-OUT	PAGES: 2 OF 2
	DEPARTMENT(s): COLLISION – SERVICE – DETAIL
Housekeeping • Let all affected staff know that machine is back in use. • Place all materials and tools in their proper storage areas. • Re-inspect to ensure the equipment is safe, clean and tidy before you leave it.	

MANUAL LIFTING	PAGES: 1 OF 1
	DEPARTMENT(s): ALL DEPARTMENTS

Safe Work Procedure must be reviewed with Manager or experienced Technician

Hazards:

- Back Strain

Do



- Size up the load and check overall conditions. Don't attempt the lift by yourself if the load appears to be too heavy or awkward. Check that there is enough space for movement, and that the footing is good. "Good housekeeping" ensures that you won't trip or stumble over an obstacle.

Do Not



- Don't attempt to lift an object by yourself that you think may be too heavy or awkward.

Safe Work Procedure

1. Make certain that your balance is good. Feet should be shoulder width apart, with one foot *beside* and the other foot *behind* the object that is to be lifted.
2. Bend (he knees; don't stoop. Keep the back straight, but not vertical. (There is a difference. Tucking in the chin straightens the back.)
3. Grip the load with the palms of your hands and your fingers. The palm grip is much more secure. Tuck in the chin again to make certain your back is straight before starting to lift.
4. Use your body weight to start the load moving, then lift by pushing up with the legs. This makes full use of the strongest set of muscles.
5. Keep the arms and elbows close to the body while lifting.
6. Carry the load close to the body. Don't twist your body while carrying the load. To change direction, shift your foot position and turn your whole body.
7. Watch where you are going!
8. To lower the object, bend the knees. Don't stoop. To deposit the load on a bench or shelf, place it on the edge and push it into position. Make sure your hands and feet are clear when placing the load.

Make it a habit to follow the above steps when lifting anything - even a relatively light object.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

MOVING VEHICLES ON LOT FOR SNOW REMOVAL	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL - SALES

Hazards:

- Personal Injury & Property Damage
- Motor Vehicle Accident

Required Personal Protective Equipment



Eye Protection May Be Required
(provided at the employees request)



Proper winter footwear



Required Safety Vest Required

Do



- **Ensure** proper winter foot wear, gloves and clothing is worn
- **Ensure** ALL windows have had all snow and ice removed allowing for full visibility
- **Ensure** ALL lights have had all snow and ice removed
- **Ensure** all other persons working in the same area are aware that you are moving a vehicle
- **Ensure** that the way is clear of all persons, vehicles and other possible obstructions

Do Not



- **Do not** move vehicles that have windows that have not been cleared of ice and snow
- **Do not** operate vehicles in an unsafe manner i.e. spinning tires, driving fast, etc
- **Do not** relocate vehicles when plow truck is operating in the same area

Safe Work Procedure

1. Clean all snow off of vehicle that will impair vision
2. Clean snow from in front of the vehicle

CAUTION: Do not drive vehicles over mounds of snow and ice. Not only may this cause vehicle damage, but it may also cause loss of control of the vehicle.

3. Enter vehicle with caution, being careful to not slip on ice
4. Move vehicle to desired location slowly
5. Automatic vehicles must be returned to Park and Manual vehicles put in lowest gear or reverse when parked
6. Exit vehicle carefully, watching for ice and other vehicles

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

MOVING VEHICLES ON LOT FOR SNOW REMOVAL	PAGES: 2 OF 2
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL – SALES
Housekeeping • Ensure vehicle is off, in appropriate gear and locked	

OPERATING PLOW TRUCK	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL - SALES

- Plow operator must be in possession of valid Nova Scotia Driver's License
- Plow operator must be approved to do so by appropriate department manager

Hazards:

- Motor Vehicle Accidents
- Personal and/or property damage

Required Personal Protective Equipment



Safety Vest Required



Proper winter footwear Required

Do



- Check vehicle for damage before starting it
- Check and be sure that no persons or other vehicles are directly in front or behind vehicle
- Survey area to ensure that no persons or objects are in the path of vehicle
- Conduct a documented pre-trip to inspect the truck to ensure it is in safe operating condition
- Check the dump box lift mechanism regularly to ensure the pump, reservoir, hoses and other critical components are free of defects and in good working order
- Fill in your log noting when and where you are salting
- Conduct a documented post trip inspection at the end of your day and report any safety issues to the manager. Have him sign off your log book when the repairs are completed
- Remind all staff helping with snow removal to wear reflective safety vests

Do Not



- No Smoking
- Do not start or operate any vehicle if under the influence of alcohol or drugs / medication
- Report any conditions that you feel would temporarily make you an unsafe driver i.e. medication
- Do not carry passengers unless they have proper authorization.

Safe Work Procedure

1. Drive with the headlights and roof mounted amber light on at all times.
2. Drive within safe speeds determined by the weather conditions and whether or not other staff or customers are present.

OPERATING PLOW TRUCK	PAGES: 2 OF 2
	DEPARTMENT(S): SERVICE – COLLISION – DETAIL – SALES
1. Every area to be plowed should be inspected before snowfall for potential hazards. Holes should be repaired, raised manhole covers leveled or noted and obstructions noted to prevent damage to the plow mounting or vehicle undercarriage. 2. The first step in organizing an efficient plan is to locate and mark all utilities, outlets, shutoffs, catch basins and possible emergency equipment that must be reached from outside. KEEP SNOW UNDER CONTROL: Deep or heavy, wet snow, because of its increased weight, calls for more skillful and powerful plowing than light powder snow. 3. Always plow in low gear and keep plowing. Heavy snow may also require clearing a path or area for working room to move snow to another area. Remember that wet snow weighs about 12 pounds per cubic foot. As it piles up in front of a snow plow blade, the weight can quickly be tons. 4. Where packed snow or ice must be plowed, it is sometimes necessary to lower the cutting blade to rest directly on the road surface. In that situation, plow in lowest gear for greatest power to the cutting edge. This method also prevents the plow from “climbing over” the icy surface. 5. If plowing very deep snow, 12 inches or more, you may have to plow with the blade partially raised to shear off successive layers of snow until a working area is clear. Then work small “bites” into the edge. The “bite” depth should be inversely proportional to the snow depth. A rule of thumb: 6-inch snow may be plowed with the entire blade width; 9-inch snow with 3/4 of the blade width; and 12-inch snow with only 1/2 of the width. Experience will show what work can be done without stalling or getting stuck. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping • Be sure to leave vehicle in same cleanliness condition or better • Be sure that vehicle is parked in an appropriate location • Return keys immediately to the proper place	

OVERHEAD DOORS	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL

Hazards:

- Failing doors
- Broken door springs
- Hands and arms caught in door chains
- Falling glass
- Pinch points

Do



- Overhead doors need to be checked and serviced regularly to ensure proper working order. A regular inspection of the complete counterbalance system, including cables, springs and hardware is necessary. The hinges, brackets and rollers require lubrication. The reversing sensors must be tested.
- Only professional service technicians should service overhead doors. If a torsion spring is released it can lash out with enough force to cause serious injury or death.
- If a door is not working correctly or is having maintenance or inspections performed, the power to the door should be locked in the off position and tagged with the initials of the person responsible for the safety of persons working on the door or in the area.

Do Not



- Avoid standing in the path of an overhead door. A jammed door may have tremendous potential energy that may be released suddenly when the jam is cleared.
- Never prop open an overhead door that is in need of repair.

Safe Work Procedure

1. Always be aware of the condition of the overhead door and report any conditions that may prevent door opening all the way
2. Drive slowly toward the door and wait until automatic door opens fully before driving in or out. **CAUTION:**
3. If closing door by hand with the buttons, be sure that there are no persons or obstruction that may be harmed or damaged or may damage the door.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

Keep all overhead doors clean and free of rust or dirt at hinges.

REMOVING AND INSTALLING UNDERCOATING BARREL PUMP	PAGES: 1 OF 1
	DEPARTMENT(s): SERVICE - COLLISION

Hazards: - If air is not turned off, a small amount of undercoating may spray from gun if triggered
 - If dolly is not used, you could injure your back

Do



- Be sure the air line is disconnected before changing the pump
- Always use a dolly when moving a barrel

Safe Work Procedure

1. Move empty barrel to the side
2. Using a dolly, put the new barrel in place.
3. Unscrew lid from new barrel and remove the lid
4. Place pump on the new barrel
5. Re-connect the air line
6. Ensure the pump is still grounded

Housekeeping

- Ensure equipment is off.
- Empty equipment to avoid spills.
- Place all materials in their proper storage areas.
- Ensure the equipment is safe, clean and tidy before you leave it.

SAFework PRACTICES & PROCEDURES

Sandblasting Cabinet	PAGES: 1 OF 2
	DEPARTMENT(s): Service Department

DO NOT perform this procedure until you have been appropriately trained and authorized to do so by your supervisor.

Hazards:

- Exposure to high-pressure abrasive material
- Dust Inhalation (Silica or other Particulates)
- Eye and Skin Irritation
- Noise Exposure
- Pinch Points from Glove Ports or Cabinet door
- Electrical Hazard (Lighting/Fan Faults)

Required Personal Protective Equipment



Eye Protection Required



CSA Approved Protective Gloves



CSA Approved Safety Footwear



Respirator (If Applicable)

Do



- Inspect cabinet DAILY before use. Do NOT operate if damaged or malfunctioning.
- Ensure the ventilation/dust collection system is active and functioning properly.
- Use correct abrasive media for the material and task.
- Confirm gloves, seals, and door latches are intact and secure.
- Always wear required PPE.
- Use proper lifting techniques when placing items in or removing from cabinet.

Do Not



- Do not operate the cabinet with a damaged viewing window, torn gloves, or loose seals.
- Do not bypass or disable safety interlocks or ventilation systems.
- Do not blast toward the viewing window or light fixtures.
- Do not leave the cabinet while operating.
- Do not attempt to clean or maintain while machine is in use

Safe Work Procedure:

1. Preparation

- Inspect the cabinet, hoses, gloves, nozzle, and seals.
- Confirm abrasive level and type are appropriate for the job.
- Turn on ventilation/dust collection system.

Sandblasting Cabinet	PAGES: 2 OF 2
	DEPARTMENT(s): Service Department
2. Operation • Open cabinet door and place the item securely inside. • Close and latch door fully before activating the system. • Insert hands into built-in gloves. • Use foot pedal or trigger to start blasting. • Blast evenly; avoid prolonged exposure to any one area. • Monitor for visibility and ensure good airflow. 3. Completion • Turn off blasting system and allow dust to settle. • Open cabinet door carefully to avoid dust release. • Remove item and inspect. • Clean interior of cabinet if needed. • Turn off ventilation system. • Report any issues or low media levels. REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping • Keep area around cabinet clean and dry. • Do not allow buildup of spent media or dust. • Clean work area after use. Emergency Procedure • In case of equipment malfunction or injury, shut down equipment immediately. • Follow the emergency stop or lockout procedure. • Use eyewash station or first aid kit if needed. • Report hazardous situations to supervisor/instructor immediately.	

SNOW BLOWER	PAGES: 1 OF 4
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL - SALES

Hazards:

- Personal Injury & Property Damage

Required Personal Protective Equipment



Eye Protection



Proper winter footwear



Required Safety Vest Required

Do



- Operate a unit only when there is good visibility and light. Falling snow, fog, etc. can reduce vision.
- Operator must be familiar with all controls, their operations, and how to stop the engine and disengage the controls quickly.
- Exercise caution to avoid slipping or falling, especially when operating the machine in reverse.
- Keep area of operation clear at all times.

Do Not



- Do not operate if you are not familiar with how to use the machine safely.
- Do not operate a unit during or after the use of medication, drugs or alcohol. Safe operation requires your complete and unimpaired attention at all times.

Safe Work Procedure

Training

- Read, understand, and follow all instructions on the machine and in the manual(s) before attempting to
- operate.
- Be familiar with all controls and their proper operation.
- Know how to stop the machine and disengage them quickly.
- Never allow anyone to operate this machine without proper instruction.
- Thrown objects can cause serious personal injury. Plan your snow-throwing pattern to avoid discharge of material toward roads, bystanders and the like.
- Keep bystanders, helpers, pets and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
- Exercise caution to avoid slipping or falling, especially when operating in reverse.

SNOW BLOWER	PAGES: 2 OF 4
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL - SALES
Preparation • Thoroughly inspect the area where the equipment is to be used. • Remove all doormats, newspapers, sleds, boards, wires and other foreign objects, which could be tripped over or thrown by the auger/impeller. • Always wear safety glasses or eye shields during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes. • Do not operate without wearing adequate winter outer garments. Do not wear jewelry, long scarves or other loose clothing, which could become entangled in moving parts. • Wear footwear which will improve footing on slippery surfaces. • Use a grounded three-wire extension cord and receptacle for all machines with electric start engines. • Adjust collector housing height to clear gravel or crushed rock surfaces. • Disengage all control levers before starting the engine. • Never attempt to make any adjustments while engine is running. • Let engine and machine adjust to outdoor temperature before starting to clear snow. Safe Handling of Gasoline • To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapours are explosive. • Serious personal injury can occur when gasoline is spilled on yourself or your clothes which can ignite. • Wash your skin and change clothes immediately. • Use only an approved gasoline container. • Extinguish all cigarettes, cigars, pipes and other sources of ignition. • Never fuel machine indoors. • Never remove gas cap or add fuel while the engine is hot or running. • Allow engine to cool at least two minutes before refueling. • Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to provide space for fuel expansion. • Replace gasoline cap and tighten securely. • If gasoline is spilled, wipe it off the engine and equipment. Move machine to another area. Wait 5 minutes before starting the engine. • Never store the machine or fuel container inside where there is an open flame, spark or pilot light. • Allow machine to cool at least 5 minutes before storing. • Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling. • If possible, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle. • Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete.	

SNOW BLOWER	PAGES: 3 OF 4
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL - SALES
Operation • Do not put hands or feet near rotating parts, in the auger/impeller housing or chute assembly. Contact with the rotating parts can amputate hands and feet. • The auger/impeller control lever is a safety device. Never bypass its operation. Doing so makes the machine unsafe and may cause personal injury. • The control levers must operate easily in both directions and automatically return to the disengaged position when released. • Never operate with a missing or damaged chute assembly. • Keep all safety devices in place and working. • Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odourless and deadly gas. • Muffler and engine become hot and can cause a burn. Do not touch. • Exercise extreme caution when operating on or crossing gravel surfaces. Stay alert for hidden hazards or traffic. • Exercise caution when changing direction and while operating on slopes. • Plan your snow-throwing pattern to avoid discharge towards windows, walls, cars etc. Thus, avoiding possible property damage or personal injury caused by a ricochet. • Never direct discharge at bystanders or allow anyone in front of the machine. • Do not overload machine capacity by attempting to clear snow at too fast of a rate. • Always be sure of your footing and keep a firm hold on the handles. Walk, never run. • Disengage power to the auger/impeller when transporting or not in use. • Never operate machine at high transport speeds on slippery surfaces. Look down and behind and use care when backing up. • If the machine should start to vibrate abnormally, stop the engine, disconnect the spark plug wire and ground it against the engine. Inspect thoroughly for damage. Repair any damage before starting and operating. • Disengage all control levers and stop engine before you leave the operating position (behind the handles). • Wait until the auger/impeller comes to a complete stop before unclogging the chute assembly, making any adjustments, or inspections. • Never put your hand in the discharge or collector openings. Always use the clean-out tool provided to unclog the discharge opening. • Do not unclog chute assembly while engine is running. Shut off engine and remain behind handles until all moving parts have stopped before unclogging. • When starting engine, pull cord slowly until resistance is felt, then pull rapidly. Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go. Broken bones, fractures, bruises or sprains could result.	

SNOW BLOWER	PAGES: 4 OF 4
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL - SALES

Maintenance & Storage

- Never tamper with safety devices. Check their proper operation regularly.
- Before cleaning, repairing, or inspecting machine disengage all control levers and stop the engine. Wait until the auger/impeller come to a complete stop.
- Disconnect the spark plug wire and ground against the engine to prevent unintended starting.
- Check bolts and screws for proper tightness at frequent intervals to keep the machine in safe working condition.
- Also, visually inspect machine for any damage.
- Do not change the engine governor setting or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
- Snow thrower shave plates and skid shoes are subject to wear and damage.
- Check control levers periodically to verify they engage and disengage properly and adjust, if necessary.
- Maintain or replace safety and instruction labels, as necessary.
- Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.
- Prior to storing, run machine a few minutes to clear snow from machine and prevent freeze up of auger/impeller.
- Never store the machine or fuel container inside where there is an open flame, spark or pilot.
- Check fuel line, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.
- Do not crank engine with spark plug removed.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

STARTING & OPERATING OF VEHICLES	PAGES: 1 OF 2
	DEPARTMENT(s): SERVICE – COLLISION – DETAIL - SALES

- Vehicle operator must be in possession of valid Nova Scotia Driver's License
- Vehicle operator must be approved to do so by appropriate department manager

Hazards:

- Motor Vehicle Accidents
- Personal and/or property damage

Do



- Ensure vehicle has not been TAGGED OUT as Non-operational by looking for signage
- Check vehicle for damage before starting it
- Check and be sure that no persons or other vehicles are directly in front or behind vehicle
- Survey area to ensure that no persons or objects are in the path of vehicle
- If starting vehicle in showroom, a tailpipe diffuser must be fitted to the vehicle unless the design of the tailpipe makes this impossible. In such cases where a diffuser cannot fit on the tailpipe, the vehicle must either be pushed while shut-off and in neutral or if that is not possible due to the size of the vehicle, enough showroom doors must be open to create sufficient air-flow through the showroom to carry exhaust fumes outside as quickly as possible.

Do Not



- No Smoking in company or customer vehicles
- Do not start or operate any vehicle if under the influence of alcohol or drugs / medication
- Report any conditions that you feel would temporarily make you an unsafe driver i.e. medication
- Customers, suppliers and Sales staff are not permitted to operate vehicles in the Service repair area

Safe Work Procedure

1. Service and Detail departments must first place set covers and floor mats in vehicle
2. Ensure that parking brake is set
3. Check that Automatic vehicles are in Park or that Manual vehicles are in Neutral and that clutch is fully depressed.
4. Start vehicle

CAUTION: Before attempting to move vehicle, always check that it has a firm brake pedal. Do this at all times, but especially after a brake service has been performed

STARTING & OPERATING OF VEHICLES	PAGES: 2 OF 2
	DEPARTMENT(S): SERVICE – COLLISION – DETAIL – SALES
5. Move vehicle to desired location, driving slowly and carefully while entering/exiting the building and while on the lot. NOTE: All motor vehicle laws must be obeyed while operating a vehicle. REMEMBER: The parking lot is not a roadway. Speed on the lot must be slow enough that you are able to stop quickly 6. Always avoid driving into parking spaces. Always back into parking spaces when possible. 7. Automatic vehicles must be returned to Park and Manual vehicles put in lowest gear or reverse when parked 8. Fully apply Park brake NOTE: If vehicle is being parked in Showroom, the keys must be returned to Key Room. <i>If an emergency situation occurs while conducting this task, or there is an equipment malfunction, shut the equipment off immediately and follow the lock out procedure.</i> REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	
Housekeeping • Be sure to leave vehicle in same cleanliness condition or better • Be sure that vehicle was parked in an appropriate location • Return keys immediately to the proper place	

TOOLBOXES	PAGES: 1 OF 1
	DEPARTMENT(s): COLLISION – SERVICE – DETAIL

Hazards:

- Pinch Points
- Tipping
- Falling objects

Do Not 

- Do not over load
- Do not stack tall items on the top shelf
- If a tool cabinet wheel is broken, never use wood or other objects to prop up the cabinet. Have it properly repaired immediately

Safe Work Procedure

1. Take care not to jamb fingers or tools when opening and closing drawers
2. Use drawers that are an appropriate size for the tool you are storing.
3. Take care to never allow items pile up on the top shelf. These become a tipping hazard.
4. Always ensure that wheel locks are engaged except when you are moving the toolbox to another location.
5. Do not store flammable liquids or items in your toolbox. These must be properly stored as per WHMIS.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

SAFework PRACTICES & PROCEDURES

TRANSPORTING UNDERCOATED VEHICLES	PAGES: 1 OF 1
	DEPARTMENT(s): UNDERCOATING

All vehicles that are being transported to satellite shops after undercoating must have the exterior cleaned to remove undercoating overspray that could impede the driver's vision.

- **Hazards:** - Windows that aren't clean will reduce visibility in vehicle

Required Personal Protective Equipment



CSA Approved Safety Footwear Required



Work Gloves Required



Approved Respirator Required

Do



- Make sure before driving any vehicle that has been undercoated that all glass is clean and free from any undercoating that could obstruct drivers' vision

Do Not



- Drive a vehicle that has a light mist of undercoating on the glass thinking that it is not coated enough to pose a risk

Safe Work Procedure

1. While undercoating vehicle, use drop sheets to cover glass to block overspray
2. Clean entire glass surface with appropriate solution to remove all overspray
3. Make sure there is no undercoating on windshield wipers
4. Check vehicle to ensure that it is safe to drive before releasing to deliver

Before the vehicle is driven off the property, supervisor/manager must inspect it and verify that it is safe to drive

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

WATER HOSE	PAGES: 1 OF 1
	DEPARTMENT(s): DETAIL

Hazards:

- Tripping Hazard
- Wet Floors/Slip Hazard
- Eye Hazard
- Pinch Hazard

Do



- Check hose and Nozzle for leaks or defects
- Ensure no other persons are in the line of the spray
- Ensure all electrical outlets are properly covered and lights have water proof lenses to prevent from electrical shock.

Do Not



- Never spray another person
- No horseplay
- Never drink from a water hose.
- Never use a defective nozzle.

Safe Work Procedure

1. Only spray the water at the object being cleaned.
2. Only use the water pressure necessary for the job. Too much pressure may cause splash back of chemicals and soaps being used.
3. Use "Wet Floor" signage if walk ways are being wet.

REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY

Housekeeping

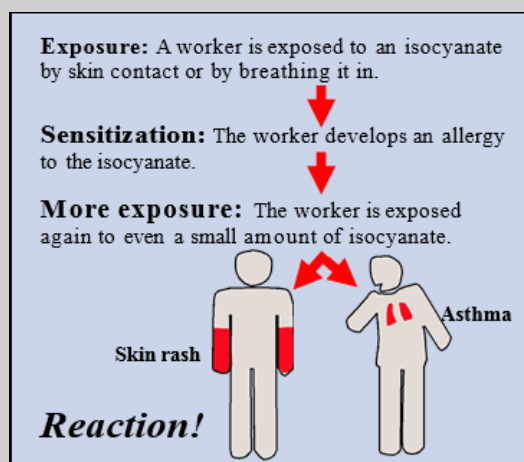
- Ensure hose nozzle closes completely when not in use.
- Dry floor as best as possible to avoid slip hazards.
- Place all hoses in their proper storage areas to prevent trip hazards
- Ensure everything is safe, clean and tidy before you leave it.

WORKING WITH PRODUCTS CONTAINING ISOCYANATES	PAGES: 1 OF 3
	DEPARTMENT(s): PERMASHINE – COLLISION

DO NOT perform this procedure until you have been appropriately trained and authorized to do so by a supervisor

A review of this SWP, product SDS and product usage must be completed

Hazards: Isocyanates can cause skin sensitization, asthma, skin or mucous membrane irritation, and, rarely, a lung reaction called hypersensitivity pneumonitis



Required Personal Protective Equipment



Eye Protection Required



CSA Approved Safety Footwear Required



Fresh Air Supplied Respirator Required when Spraying an Isocyanate Product.

A Respirator with Organic Vapour Cartridges required when using Hand Applied Products



Approved Gloves Required

Do



- Read SDS and other related material about the product
- Ensure PPE is in good condition and put on before opening product
- Ensure working area is clear of any trip hazards
- Ensure mechanical ventilation is in place and turned on
- Ensure area is clear of all unnecessary personnel

Do Not



- DO NOT remove PPE at any time during the application or curing process

WORKING WITH PRODUCTS CONTAINING ISOCYANATES	PAGES: 2 OF 3
	DEPARTMENT(s): PERMASHINE – COLLISION
Safe Work Procedure 1. Substitution Read the Safety Data Sheet to learn about the chemicals in the products you use on-the-job. When practical, choose materials that do not contain isocyanates. 2. Engineering Controls Design work areas to limit contact with isocyanates. ➤ Isolation: When possible, isolate workers from isocyanates by using automated equipment operated from a control booth or room with a separate air supply. ➤ Ventilation: Use ventilation systems to reduce the levels of isocyanates in the air. 3. Cleanup ➤ Clean up isocyanates that get on work surfaces. ➤ Wash skin immediately with soap and water if contact occurs. ➤ Provide an eyewash station for emergencies. 4. Administrative Controls ➤ Exclusion: Where isocyanates are being used, restrict access to protected workers only. ➤ Medical removal: Exposure to isocyanates after sensitization occurs is hazardous. Once sensitized, workers must be protected from further exposure. Personal protective equipment may not be sufficient, and reassignment may be necessary. 5. Personal protective equipment (PPE) Use barriers to protect the skin and eyes. ➤ Cover all exposed skin. Disposable suits protect better than street clothes. ➤ Use gloves made from neoprene, nitrile, or rubber. ➤ Wear eye protection such as chemical safety goggles or a full-face respirator when handling a liquid or spraying isocyanates. Respiratory protection is needed when isocyanate-containing material is being mixed, sprayed, applied by hand, and during clean-up. ➤ Respirator choice is based on the measured or expected levels of isocyanate in the worker's breathing zone, other hazards present, and individual characteristics of the worker.	

WORKING WITH PRODUCTS CONTAINING ISOCYANATES	PAGES: 3 OF 3
	DEPARTMENT(s): PERMASHINE – COLLISION
Since there is no NIOSH approved air-purifying respirator for isocyanates, it is necessary that painters wear a NIOSH certified supplied-air respirator when: ○ spraying paints and primers, ○ cleaning spray guns by passing solvent through the gun under pressure (free isocyanates may be released into the work environment). The breathing air that is provided for the purpose of a respirator must meet the standards set out in the CSA Standard Z180.1 Compressed Breathing Air and Systems. NOTE: Some manufacturers state that for some applications, a half-face or a full-face double cartridge respirator for organic vapours is sufficient to provide limited protection against isocyanates as long as the respirator is worn for no more than one hour – for example, during the dispensing of liquid polyurethane into a container, or the curing process, or touch painting. It may be necessary to change cartridges more frequently or have them completely replaced after each use regardless of the duration. ➤ A fit test ensures each worker has a respirator that seals to their face. ➤ The respirator cartridge replacement schedule is based on information such as air monitoring data and the capacity of the cartridge. 6. Train Workers to: ➤ Recognize the hazards ➤ Know the health effects and early symptoms ➤ Use ventilation systems ➤ Use protective clothing and respirators ➤ Wash up before taking breaks or going home. REPORT ANY HAZARDOUS SITUATION TO YOUR SUPERVISOR IMMEDIATELY	

ERGONOMICS

ERGONOMIC GUIDELINES FOR SELECTING HAND AND POWER TOOLS

Advances in tools also have created new challenges involving the complex interactions between users and their tools. Improper hand tool selection has been known to result in injuries, variable quality of work and decreased efficiency and productivity.

Using the wrong tool or using the right tool incorrectly can cause work-related musculoskeletal disorders (WMSDs). WMSDs are injuries of the muscles, tendons, joints and nerves that usually manifest over a period of time and can affect a variety of body parts. Risk factors associated with the use of hand tools that can increase the risk of WMSDs are awkward wrist and hand postures, static muscle loading, mechanical stress, vibration, noise, torque, temperature and pinch points. When you eliminate or at least minimize exposure to these risk factors, you reduce the risk of WMSDs for the worker.

Ergonomic Guidelines

Ergonomic design can help optimize human performance by ensuring that the hand tools support the task needs as well as the human capacity. Specifically, ergonomic design guidelines have been developed that ensure job demands do not exceed human capabilities.

Begin by gathering information to answer the following questions:

- ⇒ What will be the function of the tool? (What are the specific task requirements, like torque magnitude?)
- ⇒ Where will the tool be used? (Determine the work surface orientation.)
- ⇒ Who will be using the tool? (Gather information about the user's size, height, etc.)
- ⇒ Once you've answered those questions, use this list of ergonomic design guidelines for tool characteristics to reduce ergonomic risk associated with hand tools.

Tool Weight

The weight of the tool and distribution of the load within the tool affect the way the operator holds the tool; whether one or both hands are required to stabilize the tool; the amount of time an operator can hold the tool; and the precision with which it can be manipulated.

It is best to limit the weight of the tool to 3 pounds (1.4 kg) or less for tools operated with one hand. For precision operations, tools should weigh less than 1 pound (.5 kg).

The distribution of weight in the tool also should facilitate comfortable gripping in the orientation that helps align the tool's center of gravity with the center of the gripping hand. For example, drill tools that are front-heavy require more effort to balance while in use. When the tool weight cannot be reduced or if the tool is poorly balanced, use a tool balancer. Other controls include using tool holders and articulating arms, or adding micro-break straps to hand tools to allow the operator to relax his/her grip when the tool is not in use.

Handles

Tools should be designed so they can be held using a power grip. A power grip requires the operator to align the fingers such that they work in conjunction with, rather than against, each other to maximize the hand capacity. Exceptions to this are tools used for precision work. A pinch grip may be more appropriate for precision work to allow better finger control for minute manipulations with the tool.

Shape

Handle shape is an important consideration affecting wrist and arm postures. Determine handle shape after considering the type of task, orientation and layout of the task, and the workplace. Select the handle so that the tool does not require wrist flexion, extension or ulnar or radial deviation, allowing the operator to maintain a neutral wrist posture.

Pistol grips are preferred when the force is exerted in a straight line in the same direction as the straightened forearm and wrist, especially when the force must be applied horizontally. Tools with straight handles are a good choice for tasks in which the force is exerted perpendicular to the straightened forearm and wrist, for instance, when the force must be applied vertically. Bent handles are effective when most tasks are performed in the same plane and height as the arm and hand.

Diameter

Handles should be cylindrical or oval in shape, and the preferred diameter for tools used with a power grip (for example, screwdrivers) is 1.5 inches (3.8 cm). The recommended minimum is 1.2 inches (3 cm), and the recommended maximum is 1.8 inches (4.6 cm). The preferred diameter for tools used with a pinch grip (for example, tweezers) is 0.4 inches (1 cm). The recommended minimum is 0.3 inches (0.8 cm), and the recommended maximum is 0.5 inches (1.3 cm).

Length

A handle that is too short can cause unnecessary compression in the middle of the palm. It should extend across the entire breadth of the palm. The preferred handle length is 5.5 inches (14 cm), with a recommended minimum of 4 inches (10.2 cm). In addition, rounded padded handles will reduce any soft tissue compression that may exist. A longer handle length may be required if work is performed wearing gloves.

Span

Crushing, gripping or cutting tools such as pliers or tongs are equipped with two handles. The preferred handle span for one-handed tools with two handles (for example, pliers) is 3 inches (7.6 cm). The recommended minimum is 2 inches (5.1 cm), and the recommended maximum is 4 inches (10 cm) to fit both male and female users. Tools with larger or smaller spans will reduce the user's maximum grip strength.

Material

To ensure a good grip on a handle, sufficient friction must exist between the hand and the handle. Hand tools should be made of non-slip, non-conductive and compressible materials. Textured rubber handles provide a good grip, reduce the effort needed to use the tool effectively and prevent the tool from slipping out of the hand. Avoid glossy coated and highly polished handles.

The electrical and heat insulation properties of the handles are important for power hand tools. Handles made of plastics or compound rubbers are recommended.

Power Tools

Where possible, power tools should replace hand tools that normally require the exertion of frequent and repetitive force to do the job. The greater the force exerted with a hand tool, and the more the hand must twist to use it, the greater the risk. Power tool triggers should be at least 1 inch (2.5 cm) in length to allow more than one finger to activate them.

Vibration

The goal is to create as much distance as possible between the vibration-generating tool and the user. Use tool covers and anti-vibration gloves to achieve this distance. Proper tool maintenance also may reduce the vibration.

Contact Stress

Mechanical stress or pressure can be transmitted to the palm and the fingers during hand tool use, especially when large forces must be exerted. Forces should not exceed 22 pounds/inch² (10 kg/cm²). Force exerted by the finger (e.g., to activate a trigger or a slide switch, or to steady a heavy tool) can put pressure on the tissues.

Due to the wide range of available alternatives, the process of finding hand tools that support good ergonomics can be difficult and complicated. In addition, lack of objectivity when purchasing ergonomically designed hand tools may create situations in which the product intended to reduce the risk of injury may either have no effect, or in some cases, even increase the risk of injury. The copious use of the term "ergonomics" in marketing products with limited or no support for associated reduction of physical stress or improved human performance may add to confusion for the buyer.

Following the guidelines offered here should help streamline the tool selection process. Applying these guidelines in tool design can help maximize human performance on the job by making the job easier for the worker, improving safety and decreasing injuries.

Sidebar: Take-Away Tips for Tool Selection

- ⇒ Use the right tool for the job, and the right tool for the user.
- ⇒ "Bend" the tool, not the wrist. Use tools with angled or "bent" handles when appropriate.
- ⇒ Avoid high contact forces and static loading.
- ⇒ Reduce excessive gripping force or pressure.
- ⇒ Avoid extreme and awkward joint positions.
- ⇒ Avoid twisting hand and wrist motion by using power tools rather than hand tools.
- ⇒ Avoid repetitive finger movements, or at least reduce their number.
- ⇒ Minimize the amount of force needed to activate trigger devices on power tools.
- ⇒ Avoid thumb triggers.
- ⇒ Use two- or three-finger triggers for power tools; use four-finger triggers only when the tool is balanced.
- ⇒ Maximum grip force for a trigger should not exceed 4 pounds (1.8 kg).
- ⇒ Choose tools with handles that have added friction such as compressible rubber or closed-cell foam, with slightly etched surfaces.
- ⇒ Handles should be 4.5 to 5.5 inches (11.4 to 14.0 cm) long; add .5 inches (1.3 cm) of length, minimum, if wearing gloves.
- ⇒ Select tools with 1.25- to 1.75-inch (3.2- to 4.4-cm) handle diameter, 1.5-inch (3.8-cm) recommended. For precision operations, use .3- to .6-inch handle diameter (.8- to 1.5-cm).
- ⇒ Use torque reaction bars on tool balancers.
- ⇒ Use tools with auto-shutoff clutch to prevent "kick."
- ⇒ Use pulse tools.
- ⇒ Replace torque-producing hand tools with automatic torque drivers mounted in fixtures.
- ⇒ Straight or in-line power tools with a torque output exceeding 28 inches/pound (33 cm/kg) should be equipped with a reaction torque-limiting device.
- ⇒ Pistol grip tools with torque output exceeding 60 inches/pound (69 cm/kg) should be equipped with a reaction torque-limiting device.
- ⇒ Right-angle power tools with more than 442 inches/pound (509 cm/kg) of torque should be mounted on an articulating arm, use multiple spindles or have other torque-limiting devices.

- ⇒ Add micro-break straps to allow users to relax their grip between tasks.
- ⇒ In general, specify in-line tools to work on horizontal surfaces, pistol-grip tools to work on vertical surfaces.
- ⇒ Use a dyna-swivel attachment on pneumatic tools to reduce pressure force.
- ⇒ Avoid or limit vibration; select impact tools that minimize vibration (e.g., impulse tools) rather than mechanical impact tools.
- ⇒ Select pneumatic tools that do not allow air exhaust to vent on the hand, wrist, face or other exposed skin areas.

Office Ergonomics Programme

Glossary

Adaptation: The process by which an individual is able to tolerate small departures from the optimal design of objects and environments with which the person interacts. An example of adaptation is the process by which the eye adjusts to the brightness or dimness of a room. Another example is the tolerance of a chair that may be a little too high or a little too low, but is still considered acceptably comfortable.

Administrative Controls: Procedural control measures that when implemented will eliminate or reduce the severity of the musculoskeletal disorder (e.g., adjustment of work pace, use of rest periods and assignment to a different work station).

Anthropometry: The study and measurement of the dimensions of the body and other physical characteristics.

Anthropometric Dimensions: the dimensions of the human body, of which there are two main types: 1) static anthropometrics, the skeletal dimensions of the body; and 2) dynamic anthropometrics, the distances measured when the body is in motion or engaged in a physical activity.

Awkward posture: any position of the body while performing work activities that is associated with an increased risk for injury. (See Musculoskeletal Disorders)

Biomechanics: The study of the body's physical response to static or dynamic motion, and the effects of internal and external forces that affect that response.

Carpal Tunnel Syndrome: a chronic disorder of the hand and wrist, due to a compression of a nerve; usually caused by repetitive work that puts stress on the wrist joint and heel of the hand. Symptoms can include tingling and numbness in the hand, as well as a loss of dexterity and strength in the hand.

Control: a physical device that allows for a human operator to interact with a machine or perform a task. An example of a control is a keyboard, with which an operator can use to manipulate the functions of a computer. Another example of a control is a light switch.

Control/Display Compatibility: the degree to which relationships between controls and displays are consistent with user expectations. For example, a person may have expectations concerning the movement of a control and its expected effect on a display based on a previously formed stereotype of that movement.

Deviation: Movement of a body part towards the extreme in its range of motion; usually associated with risk of injury.

Engineering Controls: Mechanical measures such as the physical modification of the work station by providing adjustable chairs, tables and/or tools.

Ergonomics: (also called human factors) the scientific discipline concerned with the understanding of the interactions among human and other elements of a system, and the profession that applies theory, principles, data, and methods to design in order to optimize human well-being and overall system performance. [Definition provided by IEA Executive Council 2000.]

External stress: stress on the human system caused by an aspect outside of the body, such as the task itself, the physical environment, work-rest schedules and social relationships.

Fatigue: A loss of work capacity that results when the body depletes its energy stores and is unable to maintain a steady level of performance.

Focused attention: attending to one information source, while disregarding other sources of information.

Frequency of use principle: the notion that the arrangement of equipment, displays, and controls should be laid out in such a way that the most frequently used components are in the most accessible positions.

Glare: Extraneous light from any source can affect visual performance. Glare may reduce contrast and cause a decrease in visual acuity.

Grip span: The distance a hand must span in order to grip an object.

Human factors: Considering design and engineering in order to better match the capabilities, limitations, and needs of people.

User interface: The user interface is the element of the control or system where the human and machine interact. It may be a visual display terminal, a control panel, or another mechanism. The human inputs information and the machine provides feedback. A transfer of information occurs through the user interface.

Local fatigue: Fatigue of one part of the body, such as the wrist, resulting from stress to that area.

Lumbar: The lower end of the spine, often known as the “small of the back”, is known as the lumbar spine. It is an area that may be strained or tired when an individual is seated for extended periods. Office chairs, backrests, or back pillows may be designed to provide lumbar support.

Musculoskeletal Disorder (MSD): Any physical disorder that results from or is aggravated by the cumulative effect of biomechanical stress to tendons, tendon sheaths, synovial lubrication of the tendon sheaths and related bone, muscles, the nerves of the hands, wrist, elbows, shoulders, neck and back. Some examples include carpal tunnel syndrome, pinched nerves, or sciatica.

Neutral posture: A posture aligning the body, minimizing physical stress, maximizing comfort, and reducing risk of musculoskeletal disorders.

Occupational Injury: An occupational injury can be any injury resulting from a work- related event. Some examples that may be related to ergonomic concerns are:

- ⇒ Carpal tunnel syndrome (CTS)
- ⇒ Sciatica
- ⇒ Tendonitis
- ⇒ Low back pain

Performance specification: Describes the ideal function of a system or tool. Indicates the functions necessary for the item to successfully meet objectives.

Radial deviation: A wrist posture characterized by an inward bend of the wrist.

Risk Factors: Factors contributing to an increased risk of problems. Some conditions of a work environment or system may increase physical stress, including awkward postures, repetitive strains, or poor lighting.

Static Load: When a body remains immobile for long period of time, physical stress may increase. The static load is the amount of stress occurring without movement.

Tendonitis: Inflammation of the tendons, which connect muscles to bones in some parts of the body, may result in a condition known as tendonitis.

Usability: Ease of use, or usability, is an important criteria when evaluating tools or controls from an ergonomic perspective. Many factors, including the location, size, shape, and adjustability may affect usability.

VDT: A computer monitor may also be called a Video Display Terminal.

Workplace Ergonomics Programme: A programme that may be instituted by a corporation or organization as a service to employees. Professional ergonomic evaluations may be used to evaluate, prevent and manage work-related musculoskeletal disorders. The main elements of an ergonomics programme often include workstation analysis, training, and education programme

Work Practice Controls: Modifications in the manner an employee performs the physical work activities of a job that decrease or control exposure to MSD hazards.

Workstation: The area where a worker completes tasks or jobs. May be an office, a desk, or other workspace. More than one type of work may happen at a single workstation.

Wrist flexion: A posture where the hand and the wrist are curved downward. Wrist flexion creates friction and tendon stress, leading to fatigue and injury.

What is Ergonomics?

Ergonomics can be defined as the science of matching work or tasks to the body.

Ergonomics can be further defined as the design of the workplace, equipment, machine, tool, product, environment and system taking into consideration a human's physical, physiological, biomechanical and psychological capabilities.

What are the benefits of Ergonomics

- ⇒ Increased productivity
- ⇒ Improved health and safety
- ⇒ Increased job satisfaction
- ⇒ Increased work quality
- ⇒ Increase in overall employee morale.
- ⇒ Decreased injuries, illnesses, and workers' compensation costs.
- ⇒ Decreased absenteeism and turnover.
- ⇒ Less likelihood of DOL fines.

Reporting Procedure

Known or Suspected Injury

Any employee who knowingly or suspects they have a musculoskeletal disorder should immediately have it diagnosed by Health Services or their personal physician. Employees must also alert their manager of the injury immediately. The employee and the manager will fill out an Incident /Accident Report and submit to JOHS Committee.

Worksite Analysis or Ergonomics Assessment

Worksite analysis identifies problem jobs or job tasks and risk factors associated with them. This essential preliminary step helps employers determine what jobs and workstations are the source of the greatest problems. All employees who wish to have a worksite analysis or ergonomics assessment

A worksite analysis or ergonomics assessment shall be initiated by one of the following:

- ⇒ Human Resources ; or
- ⇒ Safety Department

Workplace Ergonomic Related Injuries

Workplace ergonomic-related injuries are defined as any physical disorder that results from or is aggravated by the cumulative effect of biomechanical stress to tendons, tendon sheaths, synovial lubrication of the tendon sheaths and related bone, muscles, the nerves of the hands, wrist, elbows, shoulders, neck and back. Workplace ergonomic-related injuries are also known as musculoskeletal disorders (MSDs), Repetitive Strain Injury (RSI), Cumulative Trauma Disorder (CTD) and Repetitive Motion Injury (RMI).

Some examples include but are not limited to:

- ⇒ Tendonitis
- ⇒ Carpal Tunnel Syndrome
- ⇒ Tennis Elbow
- ⇒ Neck and Back injuries
- ⇒ Strains/Sprains
- ⇒ Bursitis
- ⇒ Thoracic Outlet Syndrome
- ⇒ DeQuervain's Syndrome
- ⇒ Trigger finger

The following is a list of risk factors that are major contributors to workplace ergonomic-related injuries:

Repetition

- ⇒ Occurs when the same or similar movements are performed frequently.
- ⇒ Repetition can also occur when different tasks are performed if those tasks have the same movements.
- ⇒ Injury may result from repetition when the tissues do not have adequate time to recover.

Force

- ⇒ Force is the amount of physical effort required by a person to do a task or maintain control of tools or equipment.
- ⇒ A pinch grip produces 3-5 times more force on the tendons in the wrist than a grip with the whole hand.
- ⇒ With excessive force, the muscles are contracting much harder than normal, this can lead to stress on the muscles, tendons and joints.

Duration

- ⇒ Continuous tasks for long periods of time will contribute to muscle fatigue.
- ⇒ This fatigue can lead to discomfort and even injury.

Recovery time

- ⇒ It is important to have adequate recovery time, to avoid fatigue and injury.
- ⇒ Employees are encouraged to alternate tasks or take micro breaks when they feel to on-set of pain and fatigue.

Awkward Posture

- ⇒ Is a deviation from the “neutral” body position?
- ⇒ A “neutral” body position is safest and most efficient position in which to work.
- ⇒ Awkward posture puts stress on muscles, tendons and joints.

Static Posture

- ⇒ Static posture occurs when one position is held for a prolonged period of time.
- ⇒ During a static posture, the muscles will become fatigued from a lack of blood, oxygen, and nutrient, flow. This will cause lactic acid to build up.
- ⇒ This fatigue can lead to discomfort and even injury.

Contact Stress

- ⇒ Contact stress is caused by any sharp or hard object putting localized pressure on a part of the body.
- ⇒ Contact stress will irritate local tissues and interfere with circulation and nerve function.

Environmental

- ⇒ Environmental conditions such as extreme heat or cold can place stress on tissues.
- ⇒ Extreme cold constricts blood vessels and reduces sensitivity and coordination of body parts.
- ⇒ Excessive heat can result in increased fatigue and heat stress.

Vibration

- ⇒ Exposure to vibration can occur while using power tools or while driving equipment.
- ⇒ Vibration from power tools can place stress on the tissues of the fingers, hand and arms.
- ⇒ Whole body vibration from driving puts stress on the spinal tissues.

Psycho Social

- ⇒ Stress, boredom, job dissatisfaction and anxiety can contribute to the possibility of developing a MSD.
- ⇒ Psycho-social issues can create increased muscle tension and reduce a person's awareness of work technique.

Increased computer use

- ⇒ Due to an increase in technology, we can now accomplish most of our tasks via the computer.

Aging workforce

- ⇒ Now that the Ontario government has passed the bill to abolish mandatory retirement and the lack of succession planning we will continue to see an increase with an aging workforce.

Leaner workforces

- ⇒ With globalization and the increasing competitiveness between countries to attract industries, management is constantly focused on doing more with less.
- ⇒ When you combine leaner workforces with aging workforces, companies are initiating more and higher WCB costs.

More high-tech industry

- ⇒ High-tech industry has grown to exponential levels and although the industry has taken a dramatic hit, it continues to rebound back and flourish.
- ⇒ With more high-tech jobs, comes the increased use of computers

Non-work related issues

- ⇒ diabetes, increase in weight, Rheumatoid Arthritis, Crohn's Disease Thyroid Disease, or had a prior joint injury, hobbies and sports are all potential contributing factors to workplace ergonomic-related injuries.

Common Symptoms of workplace ergonomic-related injuries

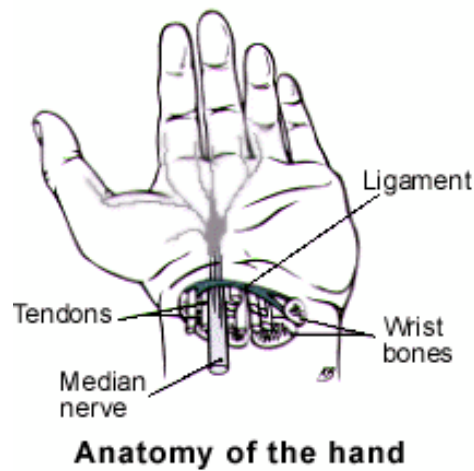
Common symptoms may include:

- ⇒ Joint pain in the wrist, neck, shoulder, elbow, fingers, thumb, back or knees that occurs after activity or after a period of inactivity.
- ⇒ Pain that reoccurs or that may last several days to weeks, or even months.
- ⇒ Joint redness, warmth or swelling.
- ⇒ Loss of joint motion.
- ⇒ Loss of ability to perform daily activities.
- ⇒ Constant need to shake and stretch a limb.

Some Common Workplace Ergonomic-Related Injuries in more Detail

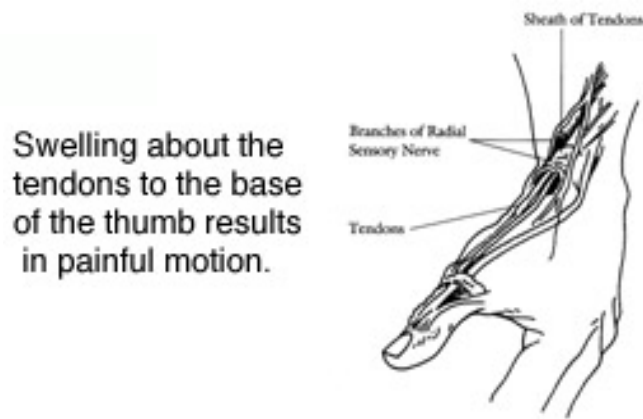
Carpel Tunnel Syndrome

Carpal tunnel syndrome is a painful disorder of the wrist and hand. The carpal tunnel is a narrow tunnel formed by the bones and other tissues of your wrist. This tunnel protects your median nerve. The median nerve gives you feeling in your thumb, and index, middle and ring fingers. But when other tissues in the carpal tunnel, such as ligaments and tendons, get swollen or inflamed, they press against the median nerve. That pressure can make part of your hand hurt or feel numb.



DeQuervain's Syndrome

DeQuervain's Syndrome is a condition brought on by irritation or swelling of the tendons found along the thumb side of the wrist. The irritation causes the compartment (lining) around the tendon to swell, changing the shape of the compartment; this makes it difficult for the tendons to move as they should. The swelling can cause pain and tenderness along the thumb side of the wrist, usually noticed when forming a fist, grasping or gripping things, or turning the wrist.



Tendonitis

A tendon is the end part of a muscle that attaches the muscle to the bone. The normally very elastic and soft muscle tapers off at the end to form the much more dense and stiff tendon. While this density makes the tendons stronger, the lack of elasticity of the tendon and the constant pulling on its attachment to the bone with movement, makes it much more susceptible to a low level of tearing at a microscopic level. This tearing will produce the inflammation and irritation known as tendonitis.



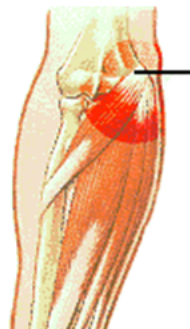
Tennis Elbow (lateral epicondylitis) Outside of Elbow Cause & Symptoms

Tennis elbow is a degenerative condition of the tendon fibers that attach on the bony prominence (epicondyle) on the outside (lateral side) of the elbow. The tendons involved are responsible for anchoring the muscles that extend or lift the wrist and troublesome.



Golfer's Elbow (medial epicondylitis) Inside of Elbow Cause & Symptoms

The causes of golfer's elbow are like tennis elbow, but pain and tenderness are felt on the inside (medial) of the elbow, on or around the joint's bony prominence.



Bursitis Back of Elbow Cause & Symptoms

Often due to excessive leaning on the joint or a direct blow or fall onto the tip of the elbow.

A lump can often be seen, and the elbow is painful at the back of the joint.



Adjusting the Workstation

Many people spend thousands and thousands of dollars on their computers, software, and games and then completely disregard the workstation where they sit day in and day out. But that would be like buying a Ferrari ,and then buying the cheapest tires possible! It just won't work in the long run and it's the person who's going to end up hurting, literally.

By applying ergonomic principles to the office setting, risk factors are minimized, productivity is increased, and overall workplace quality is improved. The workstation must be adjusted to promote a neutral position while a person works. When adjusting a workstation, keep in mind that all of the equipment interacts. Making one adjustment may alter another.

The following is a list of items that are associated the workstation, which needs to be adjusted properly to accommodate the user:

- ⇒ Chair.
- ⇒ Keyboard.
- ⇒ Mouse
- ⇒ Monitor
- ⇒ Adjust reach requirements.
- ⇒ Environmental Factors
 - Lighting
 - Air Quality

The Chair

Can a chair solve all of the ergonomic problems of working in a sitting position?

A well-designed chair allows the user to sit in a balanced position. Buying an ergonomic chair is a good beginning but it may not bring the benefits expected. The actual sitting position depends on an individual's personal habits; he or she has to learn and practice how to sit properly.

Also, remember that the chair is only one of the components to be considered in workstation design. All the elements such as the chair, footrest (if needed), keyboard, work surface, document holders, task lighting and so on need to have flexibility and adjustability to be "designed in."

How to Choose an Ergonomic Chair

Open up any office furniture supplier's catalogue and you will find a wide range of chairs to choose from. The question is which chair should you buy and why? The following is a list of items that may help you make a more informed decision. When you are selecting your chair, keep in mind the chair should at least meet the following criteria:

Does the seat pan feel comfortable and fit your shape?

When you sit in the chair the seat pan should be at least one inch wider than your hips and thighs on either side. The seat pan should not be too long for your legs otherwise it will either catch you behind the knees or it will prevent you from leaning fully back against the lumbar support. Most ergonomic chairs have a seat pan with a waterfall front that prevents the seat from catching you behind the knees. The seat pan should also be contoured to allow even weight distribution and it should be comfortable to sit on.

Is the seat chair height adjustable?

For preference, the chair should be pneumatically adjustable so that you can adjust seat pan height while you are sitting on the chair. Some chairs have a mechanical height adjustment (spinning) mechanism that is also acceptable.

Is the range of height adjustment of the chair sufficient to meet the needs of all users?

You should be able to adjust the height of the seat pan so that the front of your knees are level or slightly below level and your feet are firmly on the ground. In most cases there should be no need for you to use a footrest. The mechanism to adjust seat height should be easy to reach and operate when you are seated.

Does the chair have a comfortable lumbar (lower back) back rest?

Many chairs have cushioned lumbar supports that can be adjusted up and down and forwards and backwards

to best fit your shape. If the chair will be used by multiple users then this level of adjustment may be required. If the chair has a fixed height lumbar support and it feels comfortable when you sit back against this, and you will be the primary user of the chair then a fixed lumbar support may be acceptable. It is extremely important to keep the natural "S" curvature of the spine aligned.



Is the chair back rest large enough to provide good back support?

Many chairs have back supports that are large enough to provide mid-back and upper-back support, in addition to good lumbar support.

When you sit back against the lumbar support is there ample space for hip room?

Insufficient hip room can make you sit too far forwards on the seat pan so that you will not have enough thigh support.

Does the seat pan still feel comfortable after you've been sitting in it for 60 - 120 minutes?

If the seat pan is made from low-density foam then continuous use can cause it to become permanently deformed and then it will not provide adequate cushioned support. Insufficient cushioning and inappropriate contouring can cause discomfort, imbalance and hip and back fatigue.

Does the chair backrest recline and support your back in different positions?

Movement of the back while you are sitting helps to maintain a healthy spine. Look for chairs that allow you to easily recline, that provide you with good back support in different recline postures, and that have a back that tracks where your back is. Locking the chair backrest in one position generally isn't recommended or beneficial to users.

Does the chair have a 5-pedestal base?

If chair mobility is important to help you to do your work then the chair should have at least a 5- pedestal base with casters that glide freely over the floor surface. You may also want to choose a chair that swivels easily.

Do you need armrests on your chair?

If so, are the armrests broad, contoured, cushioned and comfortable? While sitting can you easily adjust the height of the armrests and can you move the armrests closer together or further apart? Can you easily move the arms out of the way if you need to do this?

Other considerations:

Do you need a footrest?

In the vast majority of situations, you should not need a foot support to be able to sit comfortably on your chair? However, if you do need a foot support then choose a free-standing floor-mounted support that allows you to rest your feet out in front of you in a comfortable manner.

What chair covering is best?

Chairs can be covered in a variety of upholstery materials, each of which has benefits and concerns. Vinyl and vinyl-like coverings are easy to clean and spill resistant, but they don't breathe and if the chair begins to heat up under the thighs uncomfortable amounts of moisture can accumulate. Cloth upholstery is the most common covering, but this is less resistant to spills and more difficult to clean. A cloth covered seat pan can also become warm and moisture laden, and cloth covered foam seat pans can be a significant source of dust mite allergen. When selecting your chair covering think about cleaning and maintenance issues and plan appropriately.

Do you need an adjustable tilt seat pan?

In most situations, this is not an essential feature. In some situations, it can be helpful to change the tilt of the seat pan to help to maintain a balanced seated posture.

Adjusting the Chair

You can have the best ergonomic chair on the market, however if it is not properly adjusted, you will not get the full benefit.

Adjust the Chair Height

Start with your seat at the highest setting and then adjust downward until your legs and feet feel comfortable, and the back of your knees is at an open angle (100 degrees or slightly greater, and not compressed).

Sit Back in the Chair

Adjust the height and/or depth of the lumbar support to provide comfortable lower back support.

Adjust the Recline

If the chair has a recline lock, set this at a comfortable position. Remember to unlock this periodically; this will allow the backrest to move with your back as you change posture. It's generally better to be slightly reclined, as this helps relieve tension from your lower back. If the chair allows you to, adjust the recline tension as you move back and forth so that the chair provides consistent support.

Adjust the Seat Pan

When sitting back, make any adjustments to the seat pan (e.g., seat pan tilt) to reach a comfortable position. The seat pan should extend about an inch on both sides of your legs, and should not apply pressure to the back of your knees.



Adjust the Armrest

If possible, adjust the height, width, and position of your armrests to one most comfortable for how you work. Keep in mind that armrests will be used only between typing sessions, not while typing or using your mouse. Consider lowering or swinging the armrests out of the way when not in use so as to not inhibit your movement.

Clear Obstacles

Make sure that the chair's casters (wheels) move smoothly, and that nothing obstructs your ability to position the chair in front of your desk and computer.

Armrests

Armrests can be an important aspect to properly adjusting your chair. Always remember when adjusting armrests ensure that they are not too high or too low, this will help to avoid awkward postures. If the armrests hinder the user from maintaining proper posture, remove them.



- ⇒ Too low may cause you to lean over to the side to rest one forearm. This can result in uneven and awkward postures, fatiguing the neck, shoulders, and back.
- ⇒ Too high may cause you to maintain raised shoulders (Figure 3), which can result in muscle tension and fatigue in the neck and shoulders.
- ⇒ Too wide (Figure 3) cause you to reach with the elbow and bend forward for support. Reaching pulls
- ⇒ the arm from the body and can result in muscle fatigue in the shoulders and neck.
- ⇒ Too close can restrict movement in and out of the chair.
- ⇒ Too large or inappropriately placed may interfere with the positioning of the chair. If the chair cannot be placed close enough to the keyboard, you may need to reach and lean forward in your chair. This can fatigue and strain the lower back, arm, and shoulder.

Armrests that are made of hard materials or that have sharp corners can irritate the nerves and blood vessels located in the forearm. This irritation can create pain or tingling in the fingers, hand, and arm. The best armrests will allow you to rest the area of your forearm that lies halfway between your wrist and elbow, without compressing any part of the arm. Look for those with at least height and width adjustment features.

Research studies have shown that armrests provide many benefits, such as:

- ⇒ Reduced postural strain to the upper body
- ⇒ Reduced muscle loads in the upper arms, shoulders, and neck
- ⇒ Reduced loads on the spine (by redistributing the weight of your upper body)
- ⇒ Reduced forearm exhaustion while typing (when your forearm gets tired, you tend to increase wrist extension)
- ⇒ Reduced key forces while typing (the amount of force with which you hit the keys plays a role in CTD development)

The Keyboard

In creating an ideal typing posture, it is essential to properly position your keyboard and mouse to ensure a comfortable workstation. Not only will a properly positioned keyboard and mouse help you with comfort, but it will also help prevent potential musculoskeletal disorders such as tendonitis and carpal tunnel syndrome.

Proper Positioning of the Keyboard Placement

When placing the keyboard on your desk or keyboard tray, position it directly in front of you to avoid any twisting of your neck or torso.

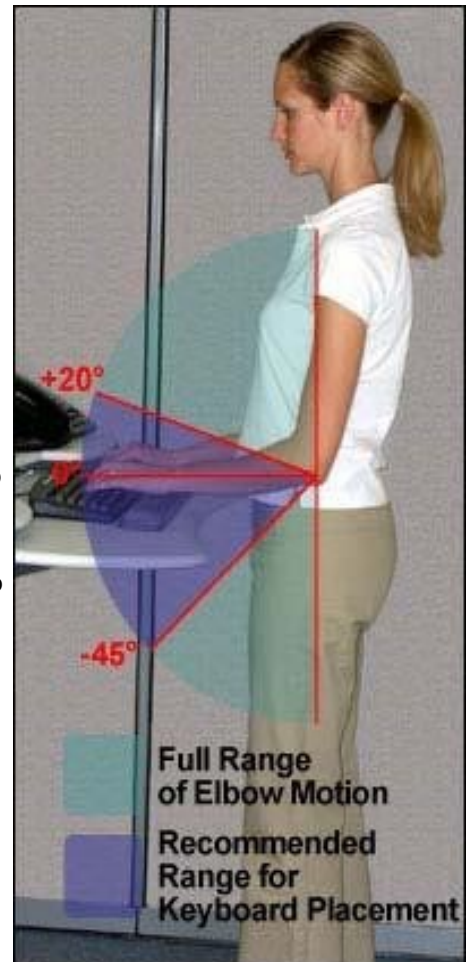
A keyboard tray may be needed if the work surface or chair cannot be properly adjusted. The keyboard tray should

- ⇒ Be adjustable in height and tilt,
- ⇒ Provide adequate leg and foot clearance, and
- ⇒ Have adequate space for multiple input devices (for example, a keyboard and pointer/mouse).

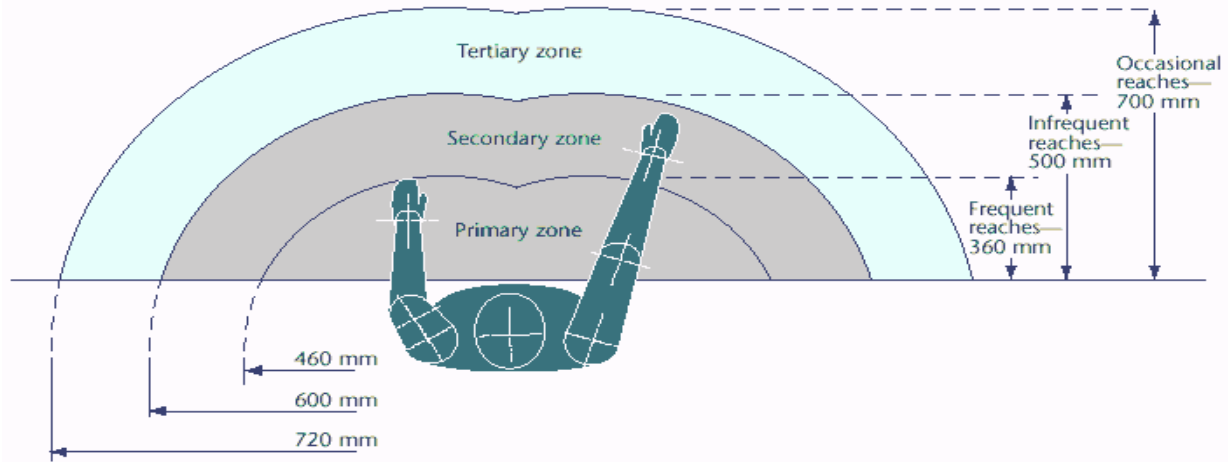
Keyboards or working surfaces that are too high or too low can lead to awkward wrist, arm, and shoulder postures. For example, when keyboards are too low you may type with your wrists bent up, and when keyboards are too high, you may need to raise your shoulders to elevate your arms. Performing keying tasks in awkward postures such as these can result in hand, wrist, and shoulder discomfort.

Height

The keyboard's vertical position should be maintained within the recommended range shown in Figure 4. The tilt of the keyboard may need to be raised or lowered using the keyboard feet to maintain straight, neutral wrist postures while accommodating changes in arm angles.



Reach Envelope – General guideline for reaching. (Picture from CSA Z412-00 Guideline on Office Ergonomics)



Distance

The figure clearly depicts reach areas in a horizontal plane.

Primary Zone

In this zone, the operator can comfortably reach objects pivoting at the elbows; typically within a radius of 5" to 7" from the center edge of the table surface. This reach zone requires the least amount of time to access and involves little, if any, muscle stress.

Secondary Zone

This reach zone requires arm extension, using the rotary joint and shoulder movement without any body or trunk movement. Normally within a radius of 15" to 18" from the CRP (Center Radius Point) of the operator's body

Tertiary Zone

In this zone, full arm and full trunk movement are needed to reach the area 24" to 30" from the operator's CRP. This zone represents a substantial reduction in efficiency over the first two as it requires more body and head movement.

Potential awkward postures that may help contribute to musculoskeletal disorders.



Computer too close

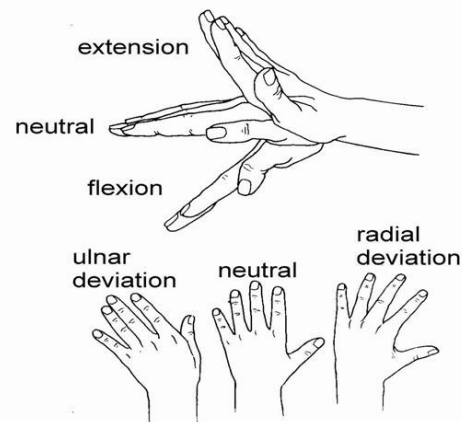


Computer too far away

Deviated Hand Postures

Repeated forceful movements made by the hands while in deviated postures (flexion, extension, ulnar radiation, and radial radiation) are known to dramatically increase the risks of developing musculoskeletal disorders, especially Carpel Tunnel syndrome. Ulnar and radial deviations contribute to CTDs, but it is flexion and, particularly, extension that are the real culprits.

- ⇒ When it comes to preventing deviated hand postures
- ⇒ Keep their body and wrist posture in neutral positions while sitting and keyboarding.
- ⇒ Have an appropriate workstation configuration.
- ⇒ Take breaks at appropriate intervals



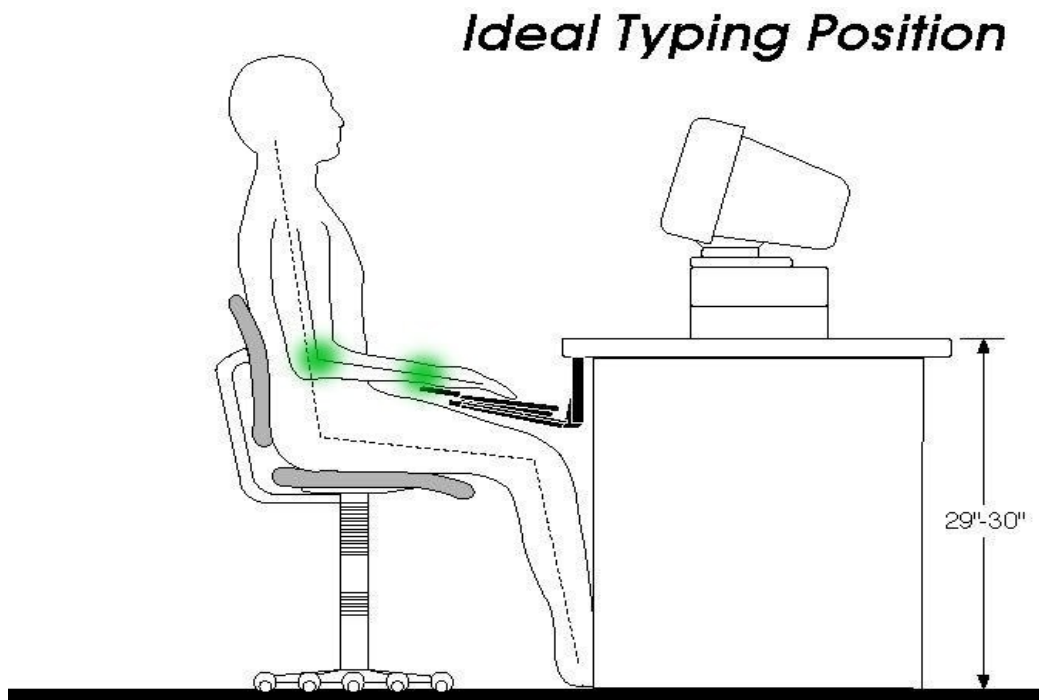
Neutral Keyboard Posture

To ensure a neutral keyboarding posture is kept, conduct the following:

- ⇒ Upper and lower back well supported by chair
- ⇒ Chair height set so that the chair seat does not compress the back of the knees
- ⇒ Feet firmly planted on a surface for support (floor or footrest)
- ⇒ Head balanced on neck (not tilted back or too far forward)
- ⇒ Upper arms close to body and relaxed (not abducted to the side or flexed forward)

Sitting so that the:

- ⇒ Angle formed by the shoulders, hips, and knees is >90 degrees
- ⇒ Angle formed by the shoulder, elbow, and wrist is >90 degrees
- ⇒ Angle formed by the hips, knees, and feet is >90 degrees
- ⇒ Wrists at a neutral position, level with forearm (<15 degrees deviation)
- ⇒ Chair armrests not directly compressing any part of the forearms or elbows



In the ideal typing posture both static and dynamic muscle loads are minimized. This posture is achieved when the keyboard is below seated elbow height and the keyboard base is gently sloped away from the user so that the key tops are accessible to the hands in a neutral posture. In this position the arms, shoulders, neck and back can relax, especially during brief rest pauses. Also, in this slightly reclined sitting position the low back rests against the lumbar support of the chair, the elbow angle is opened to promote circulation to the lower arm and hand, the abdominal angle, and the popliteal angle (behind the knees) are opened to promote blood circulation. The feet rest firmly upon the floor.



The Mouse

The mouse like the keyboard is a critical element to the computer workstation. The computer mouse is by far the most popular and widely used of all pointing devices. It is important to note that the computer mouse can cause users similar problems as a keyboard tray would. Similar symptoms may include:

- ⇒ Sore fingers;
- ⇒ Wrist problems;
- ⇒ Arm and shoulder injuries

To avoid such problems, it is important to look at all aspects of the mouse and how it is used in the workplace.

Selecting a Mouse

If you were to open a computer catalogue and look for a new mouse, you would find a wide range of computer mice out there today. The question is which mouse should I choose, and why?

When selecting a mouse consider the following:

- ⇒ **Size** – Choose a mouse that fits comfortably in your hand, ensure your fingers can curl around the mouse and the buttons are easy to use. People often don't realize that mice may come in different sizes. Companies commonly produce smaller mice as accessories for notebook users, who are constrained to small desks or tray tables - but these also work nicely for users with smaller hands.
- ⇒ **Shape** – Find a mouse with a "contoured" or asymmetrical grip; recent studies have shown that symmetrical mice are a better choice. Mice with a slightly wider base may help improve your grip on the mouse and your comfort while using it. Try to avoid using mice that require you to place the heel of your hand on the desk.
- ⇒ **Features** - Consider the use of a mouse with multiple buttons. This allows the user to perform certain keystrokes, decreasing the amount the user may have to do by hand, therefore lessening the risk of a Musculoskeletal disorder. Users that tend to spend long periods of time surfing the web or editing documents, you may want to try a mouse with a trackball. Scrolling with a trackball instead of the entire mouse can help reduce repetitive arm motions and their resulting discomfort, but beware-this may lead to discomfort in your fingers!

Placement of the Mouse

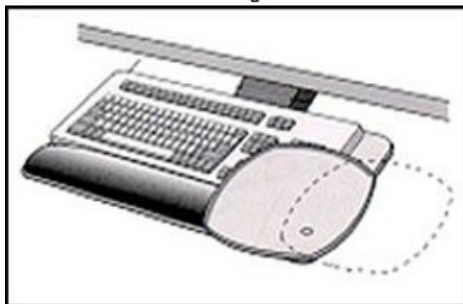
Placement of the mouse is very critical. When using a mouse ensure you position the mouse immediately on the right or left of the keyboard. Also, ensure the mouse is on the same level surface as the keyboard. Users should strive to position their mouse as close to their body as possible, this will help minimize the development of musculoskeletal disorders.



User is reaching for mouse



Unsuitable setup for mouse



Rotating mouse platform



Keyboard tray with side mouse platform

The best arrangement for a mouse is a platform over the number keypad and just above the keyboard. If that is not possible then the next best would be to have the mouse directly next to the keyboard tray.

Tips for Healthy Mousing

The following tips will help computer users avoid a mouse-related musculoskeletal injury. It should be noted that the most important thing to keep in mind when applying ergonomics is postural variation. By varying their posture, a user can minimize their risk of injury.

(The following tips have been taken from Cornell University's Ergonomics webpage, with the permission of Professor Alan Hedge).

Mouse Grip - don't throttle your mouse (it's already dead)! Hold the mouse gently to move it over a mousing surface.

Mouse from the Elbow - don't skate or flick the mouse with your wrist. Make controlled mouse movements using your elbow as the pivot point and keep your wrist straight and neutral.

Optimal Mouse position- sit back in your chair, relax your arms then lift your mousing hand up, pivoting at the elbow, until your hand is just above elbow level. Your mouse should be positioned somewhere around this point. Don't use a mouse by stretching to the desk or out to the side of a keyboard. With a flat mouse platform, position this 1-2" above the keyboard and over the numeric keypad if you are right-handed - you can easily move it out of the way if you need to access these keys. With a downward sloping mouse platform, position this close to the side of the keyboard so that you can use the mouse in a neutral wrist position. Position adjustable mouse platforms are commercially available (e.g. Humanscale, Proforma, Flex rest, 3M etc.)

Protect your wrist - if you look at the anatomy of the wrist it is curved away from any contact surface (you can easily see this by resting your hand/arm on a flat surface - you'll see light under the wrist and can probably even pass a thin pen under this). The forearm is shaped liked this for the wrist to remain free of surface pressure contact.

Avoid restricting circulation - For many people there are exposed blood vessels near the skin at the wrist, which is where the pulse is often taken. Any pressure in this region will disrupt circulation into the hand and this will increase the risks of injury.

Don't use a Wrist Rest - research has shown that using a wrist rest doubles the pressure inside the carpal tunnel, because the floor of the tunnel is a more flexible ligament that transmits external pressure changes directly into the carpal tunnel (the roof of the tunnel is bone, so the pressure doesn't get transmitted on through the hand). Indeed, one test for carpal tunnel syndrome (CTS), known as Tinel's sign, simply involves tapping on the palmar surface of the wrist, which is enough to cause tingling and numbness in someone developing CTS.

Avoid Restricting Arm Movement - with a softly padded wrist rest, especially one that is rounded, or a soft chair arm rest the forearm becomes "locked" into position and this encourages people to make mouse movements by flicking the wrist, which also increases intracarpal pressure.

Keep the Mouse Free Moving - The base of the palm of the hand is the part of the body designed to support the hand when resting on a surface. For keyboard use a broad palm support is best. However, mouse use is different from keyboard use. With a keyboard, the best posture is for users to float their hands over the keyboard when typing and then to rest on the palm support in microbreaks between typing bursts. You can use rest-breaking software (e.g. Magnitude Ergo Manager, Break reminder etc.) to help track and advise on your mouse use. With mousing this doesn't happen. A mouse is used by moving its position over a surface, and resting usually occurs when mouse movements stop but with the mouse still being held in the hand. Mouse movements should be made using the elbow as the pivot point, not the wrist. Anything that impairs free movement of the forearm/hand and mouse will increase injury risks.

Mouse shape - choose a mouse design that fits your hand but is as flat as possible to reduce wrist extension. Don't use a curved mouse. Use a symmetrically shaped mouse. Consider a larger mouse and there are several new interesting products on the market, such as the Whale mouse or the Parfitt mouse, that encourage arm rather than wrist movements or that encourage postural variety and one or two-handed use. Pen-based mice design also allow a more comfortable grip.

Load sharing - if you want to load share between your right and left hands, that is using the mouse for some of the time with each hand. For this you need to choose a mouse platform that can easily be configured to the left or/and right, and a symmetrical shaped mouse that can be used by either hand.

Wrist Rests

Wrist rests these were very popular a few years ago, but research studies haven't demonstrated any substantial benefits for wrist rests. In fact, a wrist rest can increase pressure inside the carpal tunnel by compressing the undersurface of the wrist, look at your wrist and you'll probably see blood vessels that shouldn't be compressed.

If you choose to use a wrist rest, ensure the following:

- ⇒ using one with a broad, flat, firm surface design works best, and
- ⇒ rest the heel of your palm on this NOT your wrist.
- ⇒ Try not to rest while you're typing but rest in between bursts of typing movements.
- ⇒ Avoid soft and squishy wrist rests because these will contour to your wrist, restrict the freedom of movement of your hands, and encourage more lateral deviation during typing.
- ⇒ Look at the surface of a typical wrist rest that's been used and you'll see that it gets eroded away, which means that the user has been sliding their wrists over the surface which also compresses the blood vessels often visible at the wrist.

Remember, your hands should be able to glide above the surface of a wrist rest during typing, don't lock them in place on the rest while you type.

The Computer Monitor

Like other types of equipment in a workstation, a monitor can contribute to the risk of musculoskeletal injuries. Proper setup and positioning is imperative to preventing eye strain, muscle fatigue in the neck, shoulders and upper back.

Setup and Positioning Center the Monitor

When the user sits down at their workstation they should be facing directly in front of the monitor. It is important to avoid scenarios where the user must look off to the side to view the monitor. These scenarios tend to cause neck and shoulder pain due to awkward postures.

Viewing Distance

When placing your monitor, it is recommended that you have a viewing distance of 13-28 inches. Sitting too close or too far from the monitor can cause eyestrain.

Height of Monitor

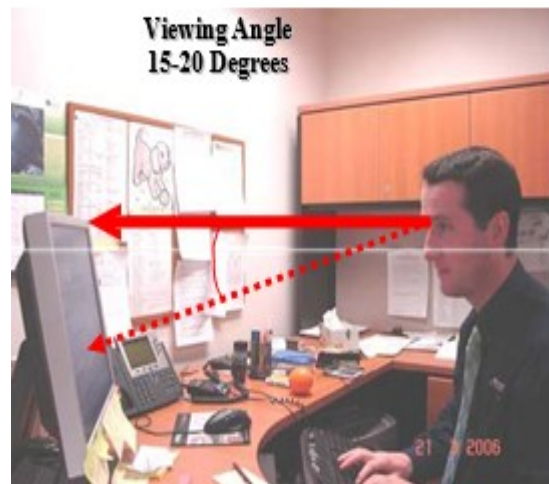
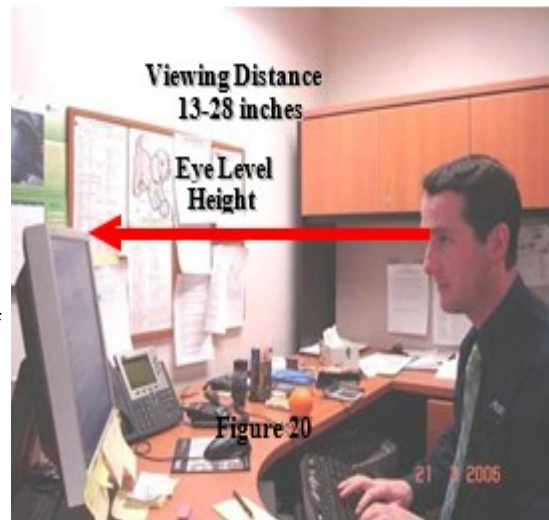
The ideal viewing height is to have your eyes level with an imaginary line across the screen, about 1 inch below the top of the monitor. This can be accomplished in one of two ways - either by lowering your monitor or raising your chair. If your screen is too low, you'll find yourself tilting your head forward to view the monitor (a common cause of neck pain). If it's too high, you may have to tilt your head back, leading to neck and shoulder pain.

Viewing Angle

Tilt the screen so that the base is slightly closer to you than the top. This enables you to view the entire screen and the display more clearly. Tilting the monitor downward is not recommended.

Monitor adjustments for bifocal, trifocal, and progressive lenses

If you wear bifocals, trifocals, or progressive addition lenses, it's especially important to properly adjust your monitor height. Avoid tilting your head back to view the screen through the lower portion of your glasses; this could lead to muscle fatigue in your neck and back. Instead, try lowering your monitor. If that does not work, you may want to consider obtaining glasses that are specially made for computer use. Do not position your monitor too high that you have to tilt your head back to view the screen.



Eyestrain

Eyestrain is when the eyes become irritated and fatigued due to prolonged use, uncorrected defects of vision, or an imbalance of the eye muscles. With the increase in dependency on computers eyestrain has become a more pronounced problem. The following is a list of eyestrain symptoms:

- ⇒ Headaches
- ⇒ Loss of focus
- ⇒ Burning/tired eyes
- ⇒ Double vision
- ⇒ Blurred vision
- ⇒ Neck and shoulder pains



To reduce eyestrain the following recommendations should be followed:

- ⇒ Ensure proper set up of your computer monitor
- ⇒ Take breaks—Follow the 20/20/20 Rule, If you tend to work on your computer for prolonged periods of time, be sure to take a 20 second break every 20 minutes and look at least 20 feet away. This gives your eyes a break and chance to adjust focus-and avoid visual fatigue.
- ⇒ Blink regularly—We tend to blink less while viewing a computer screen than other types of near work. Remember to blink fully and often (a post-it note on the screen can help with reminders).
- ⇒ Keep a clean screen—Dust gathers easily on monitor screens. Be sure to periodically use a recommended solvent to remove any accumulated dust or fingerprints, ensuring a clean and visually consistent display.
- ⇒ Reduce Glare and Reflections—If left uncorrected, glare and reflections can cause discomfort, eyestrain, and headaches. Try to reposition your monitor so that there's no glare on the screen (but avoid putting it in a position that's uncomfortable to view!). If you can't avoid the glare by readjusting your monitor positioning, consider a high-quality glass anti-glare screen.
- ⇒ Adjust your font size and colour—The size of your text should be about two or three times the size of the smallest text that you can read. Black text on a white background is usually the easiest to discern when word processing.
- ⇒ Have your eyes checked—Be sure to have an annual eye examination. Measure your viewing distances and take those numbers to your doctor for the exam.

Lighting

Improper lighting for computer offices can be a major contributing factor to the following visual discomfort:

- ⇒ Eyestrain
- ⇒ Headaches
- ⇒ Irritated dry eyes
- ⇒ Blurred and double vision

Not only does poor lighting affect the ocular system but it can also cause aches and pains in the neck and shoulder areas. This happens when users cannot see the monitor properly due to lack of light or too much glare reflecting. Ultimately, in an attempt to better read the monitor, the user compromises their posture and sits awkwardly to view the screen.

The following is recommended when evaluating office space for lighting:

- ⇒ Whenever ambient lighting is used, ensure it has little to no glare—The best lighting for offices tends to be Indirect or direct/indirect light fixtures. These types of lighting fixtures usually found hanging from the ceiling and they tend to give off a better array of illumination.
- ⇒ Choose task lighting that can also be used for paper documents—Task lighting that is used for paper documents should be; glare free, have an asymmetric lens and be positioned in a way to avoid reflecting onto the monitor screen.
- ⇒ Ensure proper light levels for the task you are doing—Too much ambient light can overpower the effects of your screen, causing a tremendous amount of glare, the screen will seem “washed out” which will make reading the monitor difficult.
- ⇒ Control direct window lighting—Offices with windows are sought after for their view and natural light, however that natural direct light can cause many problems for a user viewing a computer monitor. Use drapes and blinds to adequately control glare and reflection on your computer monitor.
- ⇒ Fluorescent lighting plus task lighting, incandescent or halogen is highly recommended for the Office Environment—If you find it too bright, call physical resources, they may be able to reduce the number of bulbs, fixtures, wattage on a trial basis. Make sure your fluorescent lamp doesn't flicker
- ⇒ Optimize the colour of your room. The room colour can be optimized by:
 - Painting or papering the walls in neutral colors
 - Painting ceilings white or a light colour (avoid dark ceilings)
 - Using a neutral floor covering (carpet, wood, tile) with a low reflectance
Choosing furniture (chairs, desks, file cabinets) with low range reflectance
Choosing office technology with a neutral colour and low range reflectance

Posture

Good posture is the basis of good workstation ergonomics. Computer-related injuries usually occur gradually and often go unnoticed until there is significant discomfort. The single largest factor in office injuries is poor posture. While improper posture may not result in an injury after a week, a month or even a year, prolonged exposure to improper posture will greatly increase the risk of developing an injury. Although it is possible for these injuries to heal themselves when the ergonomic hazard is removed, cases do exist where individuals have done enough damage to require corrective therapy, in addition to removing the hazard. Good posture is the best way to avoid a computer-related injury.



Work Habits

One of the biggest problems associated workplace related injuries is the poor work habits workers inherit. Even if a worker has the most ergonomically sound workstation, they are still prone to developing musculoskeletal disorders. There are a number of risks that help contribute to these injuries, the following are a couple of things that computer users should be conscious of:

Stress

Whether it be stress outside of the workplace or caused by the workplace, stress can pose a significant risk in the development of musculoskeletal disorders. The human body resilience to stress is truly remarkable however it eventually catches up. Here's how it works; stress or stressful situations cause the user to work and think at a faster pace (i.e. I have to get this job finished before my deadline). This causes the user to use the muscle and body parts at a faster pace than what they are normally used to. This causes fatigue and lactic acid to build up more quickly. Given the fact that the user may have a limited time in which to conduct this task they tend to ignore fatigue and pain factors which ultimately cause significant problems down the road.

Repetitive tasks for prolonged periods of time

How many times do users power through repetitive tasks for prolonged periods of time just to meet a deadline? The answer may surprise you. With leaner workforces and an overall mentality to do more with less, musculoskeletal disorders are on the rise. Workers routinely perform mundane and repetitive work for extended periods of time, ignoring pain caused by muscle fatigue. Compound the fact that when users feel this fatigue, they either choose to ignore it, or they change positions putting themselves in an awkward posture. Usually when the user stops what they are doing the fatigue and pain subside, however if the user does this on a continual basis over a couple of years, that is when the repetitive strain injuries (RSI's) and musculoskeletal disorders present themselves. Whenever a user feels the signs of fatigue or pain of any kind, stop what you are doing and take a break.

Breaks

The risk of developing musculoskeletal disorders while using a computer for prolonged periods is well documented. To minimize the risk of developing a musculoskeletal disorder, users should ensure they take regular breaks. The following are a couple types of breaks that users may implement; just remember that breaks and exercises need to be combined with good workstation set-up and/or posture for them to be of most help!

Eye Breaks: Looking at a computer screen for a while causes some changes in how the eyes work, causes you to blink less often, and exposes more of the eye surface to the air. Every 15 minutes you should briefly look away from the screen for a minute or two to a more distant scene, preferably something more than 20 feet away. This lets the muscles inside the eye relax. Also, blink your eyes rapidly for a few seconds. This refreshes the tear film and clears dust from the eye surface.

Micro-breaks: Most typing is done in bursts rather than continuously. Between these bursts of activity, you should rest your hands in a relaxed, flat, straight posture.

Rest Breaks: Every 30 to 60 minutes you should take a brief rest break. During this break stand up, move around, and do something else. Go get a drink of water, soda, tea, coffee, or whatever. This allows you to rest and exercise different muscles and you'll feel less tired.

Ergonomic Software: Working at a computer can be hypnotic, and often you don't realize how long you've been working and how much you've been typing and mousing. Look for software that will run in the background and monitor how much you've been using the computer. It will prompt you to take a rest break at appropriate intervals, and it will suggest simple exercises. You can purchase this software, or you can download simple versions that get the job done just as well.

Exercise Breaks: There are many quick stretching and gentle exercises that you can do to help relieve muscle fatigue. These should be done every 1-2 hours, depending on your needs.

Workstation Exercises (to be done at least once an hour)

Deep Breathing: Breathe in slowly through the nose. Hold for 2 seconds, then exhale through the mouth. Repeat several times.

Head and Neck: Turn head slowly from one side to the other, holding each turn for 3 seconds. Repeat several times.



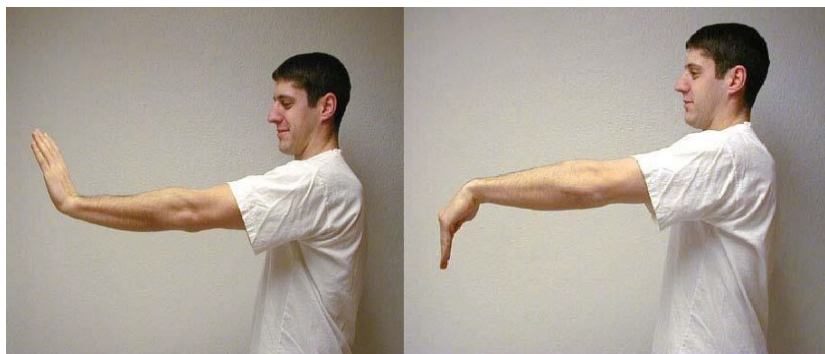
Back: Start with the arms bent, hands near chest area, and push elbows back. Hold for 5 seconds, then relax. Repeat several times. You can also raise arms in the same fashion, this time close to the shoulders, to work out the upper back.



Shoulders: Roll shoulders slowly in a circular fashion, while trying to make the circle as big as possible. Take about 5 seconds to complete one circle. Repeat several times.



Wrists: Hold your hands out in front of you. Slowly raise and lower your hands to stretch the muscles in the forearm. Repeat several times.



Fingers and Hands: Make a tight fist. Hold for a second. Then spread your fingers apart as far as you can. Hold for 5 seconds, then relax. Repeat several times.



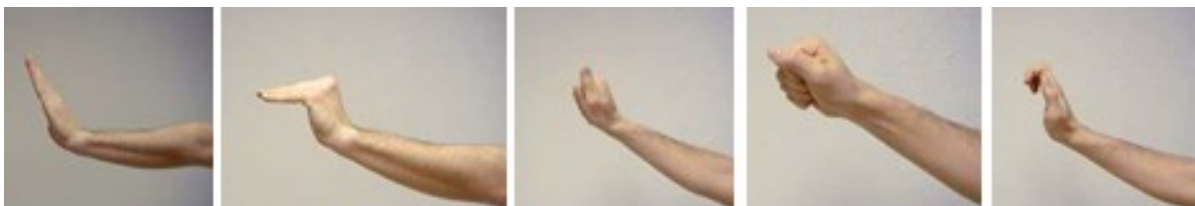
Tendon Gliding Exercises: These relieve tension in the tendons. Do each of the following movements slowly, but do not force any of the positions. Go as far as you comfortably can.

Starting Position: Raise your arm, with the hand extended (you can also rest the elbow on a table and extend the hand).

Roof: Bend your fingers down to a right angle. Return to starting position.

Straight Fist: Touch your fingertips to the base of your palm, keeping the thumb straight. Return to starting position.

Hook Fist: Gently make a hook. Return to the starting position. e) **Full Fist:** Make a fist. Return to the starting position.



Laptops

Laptops have seen a significant growth in popularity over the past couple of years. Unfortunately, due to the design of the laptop, it makes them inherently problematic and contravenes almost all ergonomic principles. The following are some problems laptops may cause users:

- ⇒ It usually turns out that when the screen is at a comfortable height and distance, the keyboard isn't and vice versa. The best way to avoid discomfort here is to place the keyboard at a comfortable distance and enlarge the font, which you can always reduce later.
- ⇒ If you use your laptop for more than one hour at a time, consider obtaining an external keyboard and/or monitor.
- ⇒ The fact that a pointing device on a laptop is almost always located in the middle may not allow you to keep your arm at a neutral position while using it. Consider purchasing a mouse or any other external pointing device.
- ⇒ As in the case of a desktop keyboard, you may use a wrist rest to support your forearms while typing on the laptop keyboard.

Avoid using your laptop on a high surface. This will cause you to abduct your shoulders and lead to shoulder and back pain.

Tips for Using a Laptop Computer

Un-ergonomic Laptops - the design of laptops violates a basic ergonomic requirement for a computer, namely that the keyboard and screen are separated. In the early days of personal computing desktop devices integrated the screen and keyboard into a single unit, and this resulted in widespread complaints of musculoskeletal discomfort. By the late 1970's a number of ergonomics design guidelines were written and all called for the separation of screen and keyboard. The reason is simple - with a fixed design, if the keyboard is in an optimal position for the user, the screen isn't and if the screen is optimal the keyboard isn't. Consequently, laptops are excluded from current ergonomic design requirements because none of the designs satisfy this basic need. This means that you need to pay special attention to how you use your laptop because it can cause you problems.

Laptop User Type - how to you use your laptop? Are you an occasional user who works on your laptop for short periods of time or are you a full-time user with the laptop as your main computer? Occasional users will have less risk of problems than full-time users. All users should pay some attention to how they use their laptop, but full-time users may have more problems.

Laptop Posture - as indicated above, laptops violate basic ergonomic design requirements, so using a laptop is a trade-off between poor neck/head posture and poor hand/wrist posture.

Occasional Users - because the neck/head position is determined by the actions of large muscles, you are better off sacrificing neck posture rather than wrist posture. For occasional use:

- ⇒ find a chair that is comfortable and that you can sit back in
- ⇒ positioning your laptop in your lap for the most neutral wrist posture that you can achieve
- ⇒ angling the laptop screen so that you can see this with the least amount of neck deviation

Full-time Users - Laptops are okay to use for short periods of time, however if users plan to use them for prolonged periods, they should consider the following:

- ⇒ purchase an external monitor, an external keyboard, and a docking station and then arrange your workspace to create a good workstation layout.
- ⇒ position the laptop or main screen in front of you, so you can see the screen without bending your neck. This may require that you elevate the laptop off the desk surface using a stable support surface, such as a computer monitor pedestal.
- ⇒ Follow the postural guidelines for working at a computer workstation.

Laptop dimensions - many laptops offer large screens (15" plus) and can work as desktop replacements (giving the viewing area of a 17" monitor). However, think about where you will most use your laptop to help you choose the best size. The larger the screen the more difficult it will be to use this in mobile locations (e.g. airplane, car, train). There are a number of smaller notebook and ultra portable laptops on the market. Consider issues of screen size and screen resolution. A small screen (e.g. 12.1") will be useful in mobile settings, but if the resolution is high (e.g. XGA - 1024 x 768) make sure that you can read the screen characters and can easily use the input device to point to areas on the screen. The smaller the laptop, the smaller the keyboard, so make sure that you can comfortably type on a keyboard that may be only 75% the size of a regular keyboard.

Laptop weight - if you are a mobile professional who will be frequently transporting your laptop think about the weight of the system. By the word 'system' I mean the weight of the laptop plus the required accessories (e.g. power supply, spare battery, external disk drive, zip drive, CD_RW etc.). Many lightweight portables can become as heavy as regular laptops when you add the weight of all of the components together. If your laptop + components weigh 10lbs or more then you should certainly consider using a carry-on bag that you can pull along. If you want a smaller bag and can comfortably carry your laptop consider a good shoulder bag design.

Ergonomic Gizmos

These days just about everything is labeled as being "ergonomically designed" and much of the time this isn't true. Unfortunately, right now there is relatively no regulation of the term "ergonomic." Some so-called "ergonomic" products can even make things worse!

If you're thinking about buying an "ergonomic" product, ask yourself the following 4 questions:

- ⇒ Does the product design and the manufacturer's claims make sense?
- ⇒ What research evidence can the manufacturer provide to support their claims? Be suspicious of products that haven't been studied by researchers.
- ⇒ Does it feel comfortable to use the product for a long period? Some ergonomic products may feel strange or slightly uncomfortable at first because they often produce a change in your posture that's beneficial in the long-term. Think of some products as being like new shoes that initially may feel strange but then feel comfortable after being used for a while. If a product continues to feel uncomfortable after a reasonable trial period (say at least a week), then stop using it.
- ⇒ What do ergonomics experts say about the product? If they don't recommend it, don't use it.

Noise

Noise can cause stress and that tenses your muscles which can increase injury risks. Try to choose a quiet place for your workstation, to mask the hum of any fans or other sound sources.

- ⇒ Work in an environment with a level of noise that is comfortable for you.
- ⇒ Working in an uncomfortably loud environment stresses the body and, as a result, the muscles tense up. This tension accelerates injury.
- ⇒ If using headphones, make sure they are at a comfortable noise level and that they fit properly.

Noise levels commonly found in office environments.

Office	Equivalent noise level dB(A)
Very quiet, small offices and drawing offices	40-45
Large, quiet offices	46-55
Large, noisy offices	55-65

Indoor Air Quality (IAQ)

Indoor air quality concerns ergonomics in the fact that it may affect the health, comfort and performance of office workers. Office buildings can contain a wide variety of contaminants, however the major air contaminant which are of most concern in an office environment are the following:

- ⇒ Carbon monoxide
- ⇒ Carbon dioxide
- ⇒ Formaldehyde
- ⇒ Allergens and Pathogens
- ⇒ Respirable Suspended Particulates (RSP's)
- ⇒ Moulds
- ⇒ Asbestos
- ⇒ Ozone
- ⇒ Tobacco Smoke

There are a significant number of factors that can affect IAQ, as noted. The following table is an example of a few.

Factor	Sources	Typical IAQ contaminants from identified factors
Emissions from indoor sources	Interior furnishings and finishes (wood products, carpets, fabrics, paints, adhesives, sealants)	Volatile Organic Compounds, and Formaldehyde
Microbial Contaminants	Plumbing leaks, pipe condensation, flooding	Airborne and surface fungi and bacteria, microbial, and VOC's
Poor Ventilation	Improper HVAC System, Poor maintenance	Carbon Dioxide, Fluctuations in temperature and RH
Office Equipment	Photocopiers, laser printers, air cleaners.	Ozone, Particulates, Ammonia, VOC's

How to avoid and reduce MSDs in the upper limbs

Why are your joints hurting?

Many workers suffer from musculoskeletal disorders (MSDs) such as shoulder tendonitis, elbow epicondylitis and other wrist problems. In the automotive service industry, in addition to the approximately 150 occupational injuries reported to the upper limbs each year, many other people have joint pain.

What is a TMS?

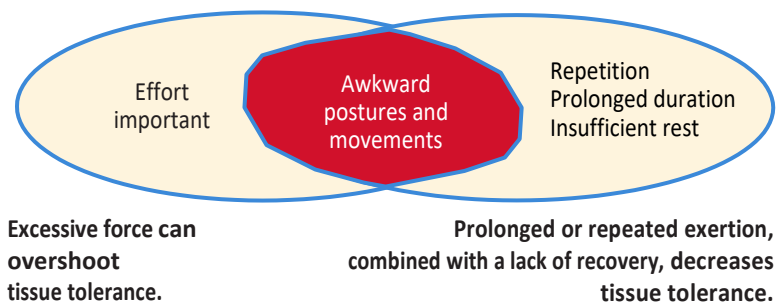
A TMS is a state in which the functions of the joints are disturbed, diminished or abnormal.

What can cause it?

The appearance of a TMS can be explained by the presence of risk factors at work such as heavy exertion, repetitive movements, or maintaining difficult postures over a long period of time. These factors affect muscles and tendons, and reduce their ability to resist the constraints of the profession.



The stages of onset of a MSD (musculoskeletal disorder).



Why are certain postures difficult to maintain?

The stresses on the shoulder and upper limb joints are mainly due to the moment of force and the length of the muscles.

The moment of strength

The evaluation of the moment of a force (which can be compared to the torque of a bolt) depends on the force applied and the lever arm. When the shoulder is in significant flexion, the evaluation of this moment must also take into account the angle between two segments.

The influence of muscle length

When there is significant bending at the of the shoulder, the agonist muscles shorten.

As they shorten, they develop less force, while the antagonistic muscles create additional force on the joint. This makes it more difficult to apply a moment of force.

How to reduce constraints on the shoulder and upper limb joints

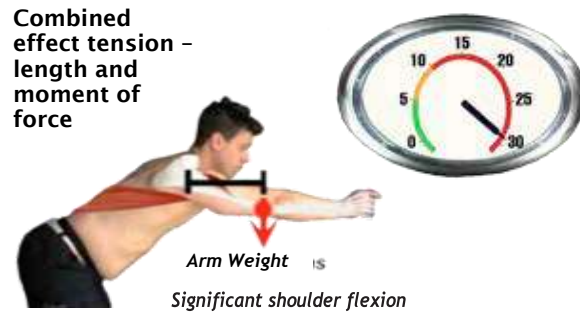
Action is needed on two fronts, as the following illustrations show.

- The situation at the top is the most restrictive. Since the arm is horizontal, its weight and that of the tools are far from the trunk. The necessary moment of force is therefore very important. In addition as the arm is stretched out towards the agonist muscles (those at the front) are very contracted and can hardly provide the necessary muscular strength.
- The two situations of the centre are a little better since it remains one of the two sources of constraints.

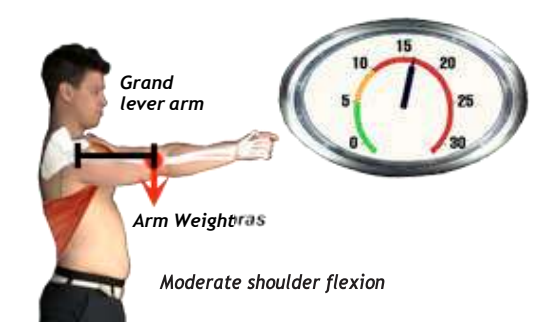
Tension effect – length



Combined effect tension – length and moment of force



Moment of force

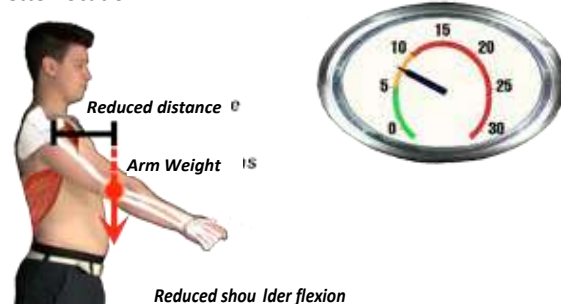


On the left, we know the stress due to the significant flexion of the shoulder, while on the right the stress due to the large lever arm is retained.

- The lower situation is close to ideal, since the arm is kept close to the trunk and the flexion of the shoulder is reduced. The muscles work in better conditions and are therefore less stressed.

To reduce the risk of pain, or even musculoskeletal disorders, we should try to control these two factors as much as possible, in order to lower muscle strain.

Better location



For the same task, bringing the arm closer together and reducing the flexion of the shoulder reduces muscle demand, and therefore the risk of musculoskeletal pain.

Definitions

Agonist muscle: muscle that performs the movement

Antagonist muscle: muscle that opposes movement

Risk factors for MSDs in Bodywork

Elbow constraints

The weight of the tools handled as well as the postures adopted have an important role in the muscular solicitation of the elbow joint. Two factors influence the moment of force at the elbow:

- the orientation of the tool, which varies the length of the lever.
- its weight which affects the force engaged.

Sanding the rocker panel and painting under the hood are two situations where the tool and the position of the forearm cause a significant moment of force at the elbow.



Wrist constraints

The favorable position of the wrist is the neutral position, i.e. without any extension, flexion or deviation. When the wrist is in a non-neutral position, There is an increase in the friction of the tendons of the agonist muscles, and the pressure in the carpal tunnel becomes higher.

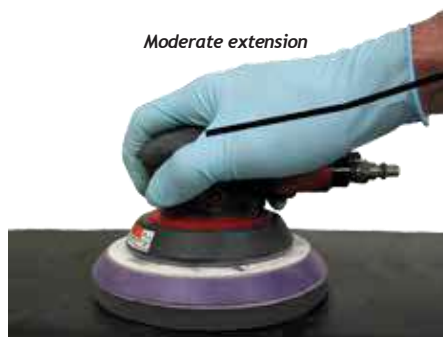
Here are the main factors that influence the constraint:

- **The shape of the tool handle.**

The handle of the tool should be a shape and size that is compatible with the hand of the worker. It should also make it easy to start the tool.

- **The orientation of the work surface and the position of the worker.**

For example, when the paint cup is facing forward, the weight of the liquid causes a greater rotational force on the wrist.



Three wrist positions observed during spraying.

On the left, the wrist is in the neutral position to paint an angled surface.

In the center, the wrist must undergo a radial deviation to paint a vertical and low surface.

On the right, the wrist undergoes an ulnar deviation to paint a horizontal surface. In addition, since the strain on the wrist increases because the cup is very far from the body, we find that this type of gun is not ideal for painting a horizontal surface.

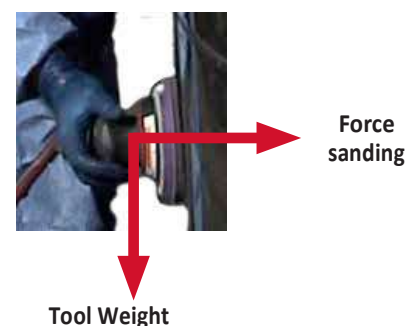
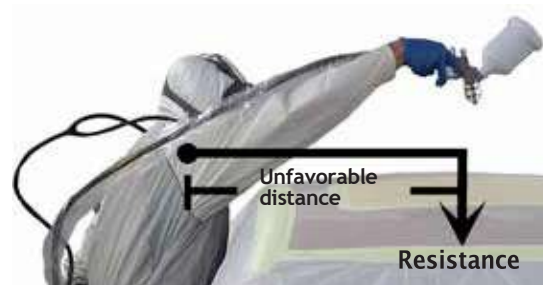
Static charge

Maintaining a posture or supporting a tool in a stable way requires more or less sustained and prolonged muscle tension: this is called static loading.

This interferes with the flow of blood inside the muscles and increases the risk of MSDs.

Two risk factors are particularly harmful.

- **Keep tools away from the body.**
The weight of the tool and the extended arm increase the static load on the shoulder. The load increases even more if force is also required. So, when a worker paints the roof of a vehicle, the static charge is more important.
- **Fighting gravity.**
The tilt of the work surface influences the force required to perform the task. Thus, when you sand a rocker panel or the bottom of a door, gravity looks for to knock down the tool. The worker must therefore force upwards to fight gravity in addition to exerting the pressure necessary for the task, which increases the static load.



Awkward postures

Sanding or painting parts of the vehicle is a precision task. When the worktop interferes with **vision**,

The worker sometimes has to take a constraining posture to see the task properly. For example, painting the underside of a hood flat forces the worker to bend over to see the surface.

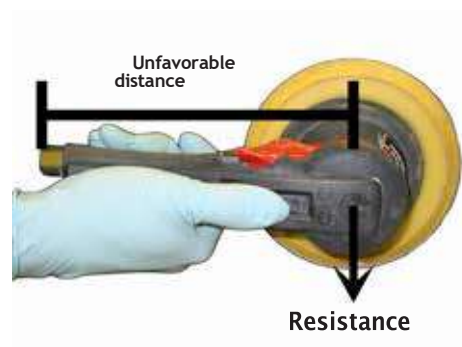


The features of the tool (its design)

The design of the tool influences the physical stresses on the upper limbs. The wrist, elbow and shoulder joints will be more stressed by a **heavy tool**.

The distance from the center of gravity is also an aggravating factor because it contributes to increasing the moments of force exerted on the wrist. Similarly, the position of the spray gun cup can, in certain situations, increase the moments of force exerted on the wrist.

Vibrations from rotary or impact tools are a third factor. Reducing vibrations or isolating yourself from them can therefore help prevent MSDs.



Some interesting solutions

Work methods can be modified to reduce awkward postures and movements. This can reduce the strain on the joints of the upper limbs and, by the same token, the risk of MSDs.

The solutions presented on the following pages will therefore aim to:

- reduce forward bending of the trunk;
- to bring the arms closer to the body
- to reduce the flexion of the shoulder;
- to avoid fighting against gravity;
- to place the wrist in a neutral position.

Sanding

✓ Adjust the height of the surface to be sanded

When sanding the roof, a bench that allows you to raise the worker reduces the angle relative to the shoulder. Thus, in the opposite situation, the angle has increased on average from 105° to 76°.

This simple improvement in posture reduces the use of certain muscles to levels considered less risky for MSDs. For example, some shoulder muscles such as the median deltoid see stress significantly reduce from 13 % to 8 % of maximum voluntary strength (FVM) when using a bench.

✓ Use a leg

A large moment of force is imposed on the shoulder when the arm is supported parallel to the ground with a load in the hand (the sander). To reduce it, it is recommended to use a support such as your own leg.

The shoulder is then relieved of the static load represented by the arm. The worker can therefore perform the sanding task without mobilizing the shoulder and without soliciting two important muscles: the pectoralis major and the anterior deltoid. With a simple support on the leg, the use of these two muscles is reduced by about half.



By lifting the side of the vehicle and sitting on a wheeled bench, the worker can rest their arm on the leg. In addition to reducing shoulder strain, this technique increases the stability of the task.

✓ Tilt the surface to be sanded

Universal lifting equipment allows one side of the vehicle to be raised at a time. The side sections of the car (e.g. the doors) tilt which then allows the worker to rest part of the weight of the tool on the body when sanding. The forces deployed by the worker therefore decrease proportionally

to the inclination and height of the surface to be sanded. To go from the top to the bottom of the door, all you have to do is raise the car to keep the same comfort and efficiency zone.



To sand the top of a door or fender, a jack allows you to raise the vehicle slightly and place it at the right height.

For the bottom of the door, a jack is recommended that allows the side of the vehicle to be raised more; in addition to being at the ideal height, the inclination of the sheet metal makes the work easier since the bodybuilder no longer has to fight against gravity.

Preparing the Paint

✓ Filling the bucket

To make this task easier (reduce the strain on the shoulder), the solution is to use an automatic pourer. Quantity of the prescribed paint is seized from the computer and the filling of the pot is done by itself. The installation of the paint can on the system must be done manually, but since it is, with a short effort, the strain on the musculoskeletal system is virtually eliminated.



Paint spraying

✓ Choosing a spray gun that is best suited to the task

The suggested changes to the spray gun come in part from the orientation of the paint cup. When working on a horizontal plane, the standard position of the cylinder is detrimental to the worker

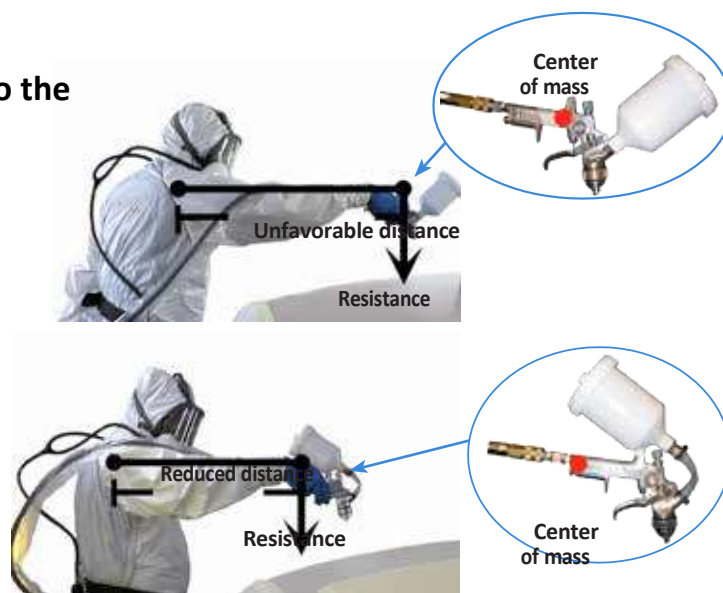
by moving the center of mass of the tool away from the wrist, thereby lengthening the lever arm.

This has the effect of increasing the moment of force at the worker's wrist. By placing the bucket at the back of the gun, the center of mass of the tool can be moved closer to the wrist and thus reduce the moment of force on the wrist.

This improvement has the effect of reducing the muscular stress of the first radial, the muscle responsible for the radial deviation of the wrist. In addition to reducing muscle stress to a

acceptable level, the size of the gun is reduced, which improves the quality of the work.

Spraying a roof with a gun with a bucket at the rear



reduces the load on the first radial from 11% to 9% of the VM

✓ The roof

Two factors increase muscle strain: the height of the roof and its inclination. You can also choose a gun that is better suited to this type of work.

Height

A step stool allows the worker to be raised and thus reduce the angle of the arm to the shoulder. This improvement in posture reduces the muscular strain on the trapezius and the median deltoid. To allow for easy spraying of other surfaces, it is recommended to install a fold-down step attached to the wall.



In this case, a 42 cm high step was used to raise the worker.

With this equipment, the angle between the arm and shoulder was reduced from an average of 141° to 110°, which decreased the stress of the median deltoid from 20% to 13% of the FVM.

Surface inclination

Pneumatic lifting equipment allows one side of the vehicle to be raised, which brings the work surface closer together and tilts it slightly.

This decreases the tilt of the trunk and allows the arm to be brought a little closer, both of which contribute to a smaller angle between the arm and the shoulder.

In addition, the painter has a better visibility and can therefore more easily assess the quality of his work.



In this case, the vehicle was lifted 28 cm with a pneumatic cylinder.

By tilting the roof and thus bringing the task closer, the shoulder angle was increased from 110° to 94°. In addition, the painter sees better and can more easily assess the quality of his work.

✓ The hood

To paint **the top of the hood**,
The main problem is the orientation of the work plan. A pivot support allows the surface to be painted to be tilted towards the worker, thus reducing the flexion required at the shoulder and the ulnar deviation at the wrist. In addition, the reclined position of the hood makes it possible to avoid working by leaning the bucket forward. This keeps the center of mass of the tool close to the wrist, minimizing stress in the wrist joint and therefore, the risks of MSDs. This solution also allows you to see the task better.

To paint **the underside of the hood**, it is recommended to use a pivot bracket to tilt the surface toward the providing better visibility while reducing the flexion required at the shoulder and radial deflection at the wrist.



By tilting the hood towards the worker, we observed that the angle at the shoulder is now only 21°, whereas it was 107° when the hood is flat.



By placing the hood on a pivot support, we observed that the angle from the arm to the shoulder was reduced from 85° to 48°.

✓ The side surfaces of the vehicle

The main problem is the tilt of the worktop. Using a pneumatic cylinder to lift one side of the vehicle, the side surfaces of the car are lifted and tilted, which allows the painter to work upright and reduce trunk flexion and lateral wrist deflection. The constraints to which the the bodybuilder are therefore less important.



The ideal position is to place the target area at waist height. So, we lift the cylinder – and the vehicle – more to paint the rocker panel and the bottom of the fender.

Three Risk Factors Associated with Tire Service

Repeated and excessive exertion

Placing and removing the wheels requires considerable effort depending on the size of the tires, the height of the vehicle, the distance of the worker from the vehicle, the grip of the wheel on the vehicle and the technique used (hitting with a sledgehammer for example). In this case, the risk of MSDs is mainly in the shoulders.



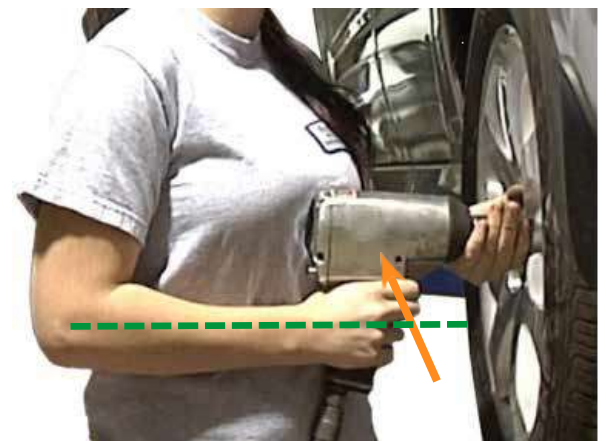
The awkward posture of the wrist

Tire removal starts with unbolting wheels. Depending on the height of the vehicle, an excessive angle (more than 30°) of the wrist may be observed. This awkward posture, combined with the effects of vibration and of the impact of the end of screwing of the tool, can promote the appearance of MSDs.



Vibrations and impacts

The tools produce impacts and vibrations that play a big role in the onset of MSDs in the upper limbs. The effect is even worse when the wrist is in a constraining position. In addition, when bolting, a tool that is too powerful will have a greater impact at the end of the stroke. On the other hand, a light tool will transmit a greater share of the impact to the worker's arms. Choosing a light and powerful tool is therefore not necessarily a good deal!



A vehicle that is too high (first illustration) or too low (in the centre) forces the worker to place his wrist at a restrictive angle. By adjusting the height of the task as in the illustration below, the worker keeps the elbow at 90° and his wrist in a neutral position, properly aligned with the arm. This position reduces the risk of MSDs.

Some interesting solutions

To reduce the constraints, some adjustments can be made to the current techniques. Here are some solutions that can control each of the identified risk factors and reduce the risk of MSDs.

The awkward posture of the wrist

✓ Adjust the height of the vehicle

The deflection of the wrist when bolting the tires is influenced by the height of the vehicle. A vehicle that is too high or too low will result in an excessive deflection of the wrist (an angle of more than 30°). The working height must be adjusted to bolt without breaking the wrist. It is recommended to adjust the height so that the elbow is facing the center of the wheel. Thus, the elbow will be bent at 90° and the wrist will remain in a favorable position.



Vehicle too high



Vehicle too low



Use the lift to place the vehicle at the right height.



Good Vehicle Height Adjustment: the elbow is bent at 90° and the wrist is well aligned.

✓ Holding the pneumatic tool with both hands

One problem that occurs when using the nutrunner is the backlash caused at the end of the screwing process. This backlash causes a very high muscle contraction that can cause long-term damage even when it is very brief. Thus, the use of both hands to hold the tool could reduce the risk of MSDs in the upper limb by distributing the aftershocks over both arms.



Repeated and excessive exertion

✓ Using leverage to force

When removing the wheels, there may be some adhesion between the components. The use of brute force to remove the tire results in a harmful strain on the upper limbs. The use of a hammer can also lead to dangerous repercussions for the worker (elbow and shoulder). So, when a wheel is particularly difficult to remove, it is recommended to use a presser foot as a lever to dislodge it.



Using a lever too aggressively or using only one hand can also lead to a high risk of MSDs. It is recommended to use the leverage principle by making a continuous and progressive movement rather than rapid and jerky blows.

In addition, the use of both hands can reduce the effort expended by the worker and thus delay the onset of muscle fatigue and discomfort.



✓ Positioning yourself correctly in relation to the load

To avoid holding a large load at arm's length, you should be as close as possible to the vehicle when installing or removing the wheels. The height must also be adjusted so that the elbow is in line with the center of the wheel. This allows the worker to pick up the wheel at a height suitable for the shoulders.

The wheel should be placed or picked up by bending the knees and not by bending the trunk. In this way, the lifting effort is made with the leg muscles, and the risk of back injury is reduced.

Finally, by equipping yourself with a tire trolley, you further reduce the necessary handling distance, which reduces the strain on the upper limbs and lower back.



On the left, a manual lift made using the strength of the legs.
On the right, the use of a trolley to eliminate lifting.



Vibrations and impacts

✓ Choosing the right tool for the job

The choice of tool plays a big role in the appearance of MSDs in the upper limbs.

Power and balance

For the bolting task, the power of the impact wrench will often influence the weight of the tool in question.

A heavier tool will usually be more powerful and, as a result, will reduce clamping time by up to 50%. In addition, a heavier tool has more inertia, which decreases the impact felt at the end of the tightening. Therefore, a tool that is powerful enough for the task should be preferred.

In addition, a well-balanced tool fits "naturally" in the hand without trying to tip forward or backward. It reduces the stress felt in the wrists, and therefore, the risks of MSDs.

Features of the compressed air network

The tools are designed to operate at optimal air pressure – for example, 90 psi. However, in many workshops, the air ducts are too small in diameter to be sufficient for the task when the system is under heavy load.

During heavy work, the network sometimes provides only 40 psi to the tools used at the end of the line.

In such cases, an improvement in the compressed air network allows the tools to operate at the recommended pressure. These are then more durable and above all more efficient, leading to a reduction in MSD risks.



Four risk factors in car detailing

Static charge

Static load is present when the position of the body or the holding of a tool implies that the muscles must develop a sustained and prolonged effort.

Even when the stress is low, this static load can overload the muscle structures, as it disrupts the flow of blood inside the muscles and can cause a feeling of discomfort.

For the shoulder, for example, the importance of the static load is strongly influenced by:

- the rotational force exerted by the weight of the segments and tools that are held away from the body;
- the amplitude of the shoulder flexion angle.

So, when a worker polishes the roof of a vehicle, the flexion in the shoulder is often very important and the flexor muscles in the shoulder have to use more energy to produce the required muscle tension.

The fight against gravity

The complexity of work surfaces is a significant problem. For example, during polishing, the force to be applied varies enormously depending on the worktop (roof, doors, hood, etc.).

Thus, when the bottom of a door is polished, gravity accentuates the force to be applied by the worker to maintain his arm and the weight of the tool. On the other hand, when polishing the roof, the worker hardly needs to support the tool. However, you must be careful with the posture adopted during these tasks. The criteria are:

- Orientation of the work plan so that gravity helps.
- the height of the worktop;
- the remoteness of the tool.

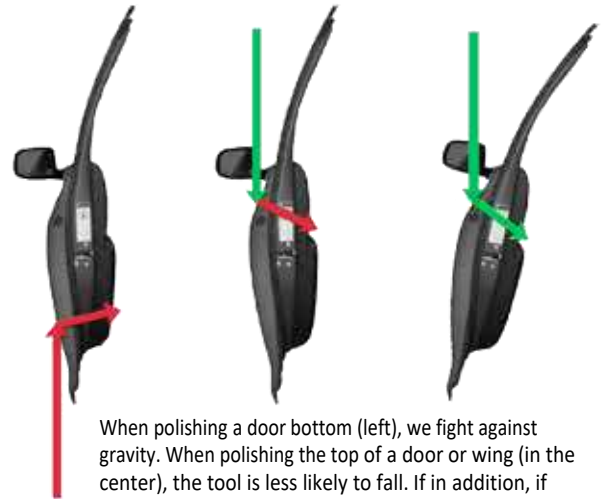
Finally, it should be noted that a heavy tool is not necessarily more harmful to the worker. Indeed, depending on the orientation of the worktop, the weight of the tool can sometimes become an advantage.

The design of the tool

The design of a tool is important in order to reduce the risk of MSDs. Since the wrist, elbow and shoulder joints are almost always involved, the choice of tool plays a decisive role in the occurrence of MSDs. Some of the most important aspects include:

- weight;
- the arrangement of the handle or handle and the grip;
- the form.

Thus, the force required by the worker can be reduced by using a tool that is better suited to the task.



When polishing a door bottom (left), we fight against gravity. When polishing the top of a door or wing (in the center), the tool is less likely to fall. If in addition, if we incline the vehicle (right), gravity helps the tool to stay in contact with the vehicle, so less effort is required.

RED: force produced by the worker
GREEN: force resulting from gravity

Vibrations

The level of vibration in tools tends to increase the gripping force required for a given task. In addition, the vibrations distort the worker's perception and use more force than necessary, which can lead to the crushing of tissue.

This can result in problems such as: carpal tunnel syndrome and Raynaud's syndrome.

Some interesting solutions

It is necessary to improve postures and reduce restrictive movements to reduce muscle load and therefore the risk of MSDs. To do this, adjustments can be made to current techniques.

Here are some possible solutions for the main tasks in car detailing.

Waxing and polishing

Some ergonomic solutions can be considered to reduce the risk of MSDs.

✓ Adjust the height of the station

When polishing a horizontal surface such as the roof, the risk of MSDs increases because the shoulder is flexing. For this, we recommend

This measure:

- Use a stable platform to lift the worker and bring them close to the part of the vehicle where the task is to be performed.

In the example opposite, a platform allows the worker to rise until his or her belt is or at the height of the roof. We have observed that the angle at the shoulder goes from an average of 105° to 76°. This results in a significant reduction in muscle strain and force, resulting in a significant reduction in the risk of MSDs.



A platform allows the worker to position himself at the right height. Markers can be placed on the side to avoid scratching the vehicle.

✓ Raise or tilt the worktop

When polishing a vertical surface, the forces can be reduced by adjusting the height of the vehicle and tilting it slightly.

We therefore recommend these measures:

- Lift the vehicle so that the polishing site is as close to the waist as possible.
- Use a stable rolling bench to position yourself within reach of the task.
- Tilt the vehicle slightly by mounting the side on a jack.

✓ Install a balancer

You can also use a balancer to support the weight of the polisher and make the work easier. The worker then only has to guide the tool to perform the task.

This reduces the muscle strain on the upper limbs.

Be careful, however: such a tool should only be used to treat vertical surfaces.



Surface decontamination and cleaning

When preparing the body for waxing, decontamination and cleaning products are used to remove impurities and traces of wax. Several containers are used depending on the nature of the product and of the task. Here are some possible solutions to reduce the risk of MSDs.

✓ The manual vaporizer

Simple and inexpensive, the vaporizer-style bottle is the basic tool for product application. On the other hand, the mechanism used being activated by the grip of the hand, its use leads to repetitive work of the flexors fingers.



✓ The pump sprayer

The pump sprayer partially compensates this problem of repeated flexion of the fingers. Indeed, it is activated by means of a trigger located on the handle. Beforehand, the worker must still pump air into the product. However, this maneuver is not too demanding on the muscles. On the other hand, this bottle is much larger and therefore heavier than the previous one. In addition, the position of the handle offers a longer resistance arm than on other types of bottles, which causes a slightly higher moment of force on the wrist. This problem could be remedied by attaching the cylinder to the worker's belt with a carabiner and providing it with a flexible hose to direct the product to the necessary locations. Thus, only the weight of the hose will be maintained.



✓ The aerosol can

The pressurized container offers the least energy-intensive option for the worker. A system allows the injection of carbon dioxide into the boiler. Afterwards, the worker simply presses the button on the aerosol bottle to dispense the product effortlessly. In addition, this small can is very light and does not require a lot of muscular effort.



Window and interior cleaning

Several decontamination and cleaning products are used to perform these tasks.

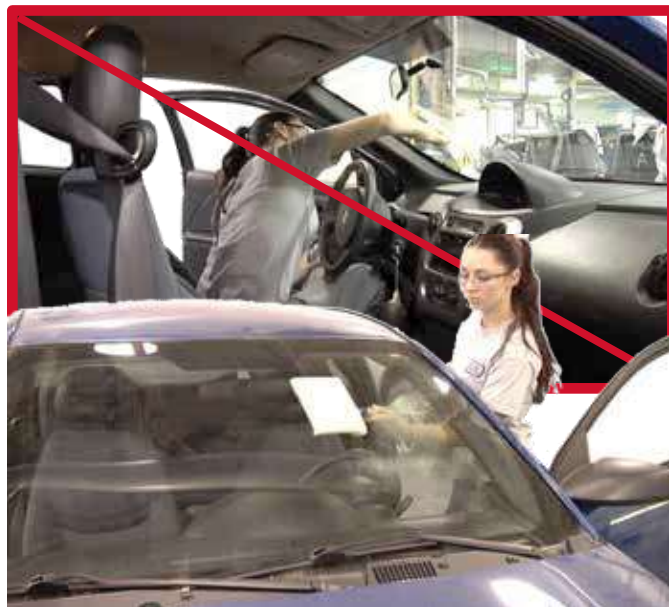
✓ Use the right tools for each task

Cleaning interior windows, and particularly the windshield, poses several problems, including the adoption of awkward postures, a high level of static load and work against gravity.

Using a cloth to clean the windshield causes the worker to internally rotate the shoulder in addition to full pronation so that the palm of their hand can rest on the surface. In order to remedy this kind of situation, the use of a microfiber cloth attached to a telescopic handle could be considered. In this way, internal shoulder rotation and pronation movements will be avoided and the range of flexion required for the shoulder will be reduced.



This kind of microfiber mop allows you to perform a first cleaning of surfaces.



Four risk factors associated with working under the vehicle

Static charge

Static load is present when the position of the body or the holding of a tool implies that the muscles must develop a sustained and prolonged effort. Even when the constraint is low, this static charge can overload muscle structures, as it disrupts the flow of blood inside the muscles and can cause a feeling of discomfort.

For the shoulder, for example, the importance of this static load is strongly influenced by:

- the rotational force exerted by the weight of the segments and tools that are held away from the body;
- the amplitude of the shoulder flexion angle.

When a technician has to hold his arms above his head for an extended period of time, the flexion in the shoulder is very important and the flexor muscles of the shoulder must use more energy to produce the required muscle tension.

Repeated efforts

When working under the vehicle, removing some parts is difficult. To dislodge them, tools are sometimes used of force like the hammer with which one strikes with all one's might. This can be an aggravating factor due to:

- significant and repeated impacts to the joints of the upper limbs, including the wrist, elbow and shoulder;
- the adoption of awkward postures.

The fight against gravity

A lot of the effort developed under the vehicle is made by fighting against gravity. Even when not lifting a tool, the worker must keep his arms elevated.

When working on a horizontal plane (e.g., nailing flat), gravity helps to lower the hammer head to drive the nails in. On the other hand, when

Under the vehicle, the location of a part may require the worker to use a tool upwards, against gravity. This creates a very restrictive posture at the level of the shoulder which is found in abduction beyond 90°.

Because of muscle contraction, the tissues are then supplied with very little blood.

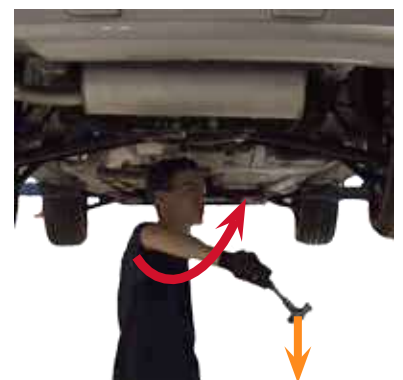
In addition, when using the hammer, two of the muscles responsible for the external rotation of the shoulder experience significant muscle tension during the braking phase of the movement against gravity. This significant muscle stress is also found in the extensor muscles of the wrist.

These movements predispose to the appearance of two types of MSDs: tendonitis in the shoulder and epicondylitis in the elbow. Finally, when the hammer comes into contact with the workpiece, a backlash can be transmitted to the upper limbs involved.

The Vision

It is difficult to see the task clearly, due to the following factors:

- the vehicle provides shade and prevents general lighting from reaching the work area;
- The work area is difficult to reach.



Some interesting solutions

It is necessary to improve postures and reduce restrictive movements to reduce muscle load and therefore the risk of MSDs. To do this, adjustments can be made to current techniques. Here are a few possible solutions for each of the risk factors identified.

Static charge

✓ Adapting the height of the vehicle

The range of shoulder flexion required for working under the vehicle is highly dependent on the clearance space. A car that is raised excessively compared to the height of the worker, forces the task to be carried out at arm's length. Thus, by lowering the vehicle by 15 cm, the angle relative to the shoulder decreases by 42°.

Accordingly, we make the following recommendations:

- Adjust the height of the lift to lower the vehicle as close as possible to the worker's head. When working as a team, the height of the vehicle must therefore be adjusted as much as possible to the size of each person.
- If necessary, adjust the height according to the working area under the vehicle (there is usually more clearance at the rear of the vehicle than at the front).
- Minimize head clearance to reduce the range of flexion required on the worker's shoulder. The height may need to be adjusted following a change in work area (from the front of the vehicle to the rear, usually higher).



Cihaut. A workstation that is too high means the technician to work at arm's length and to keep the shoulders in flexion.

Down there. Lowering the lift allows the technician to reduce shoulder pain and the risk of MSDs.



✓ Choosing Tools better suited to the task

Working under the vehicle often requires the use of different tools.

In the case of **the nutrunner**, an extension can be used to bring the tool closer of the worker.

Installing an extension cord reduces the amount of flex required for the shoulder when performing bolting tasks under the vehicle.

This leads to a decrease in the muscle cost needed.

However, when the muscles are under a lot of stress – especially statically – blood flow is severely restricted, which contributes to the development of MSDs. We will therefore try to reduce the angle at the shoulder.

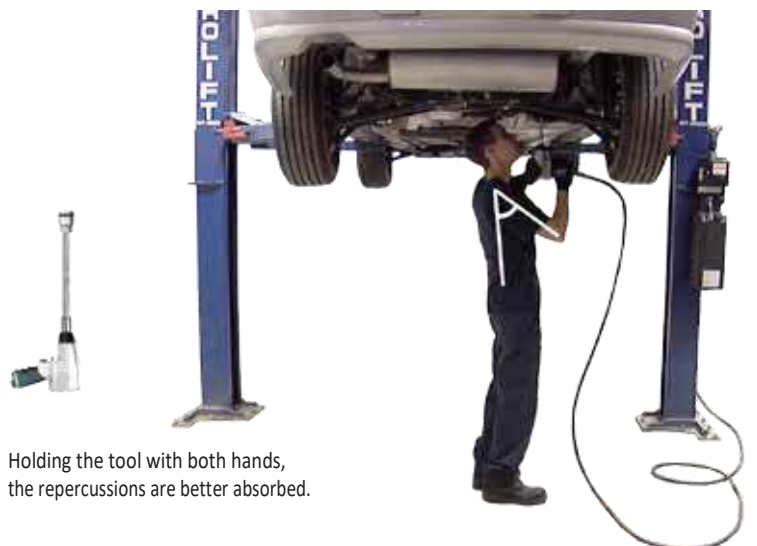
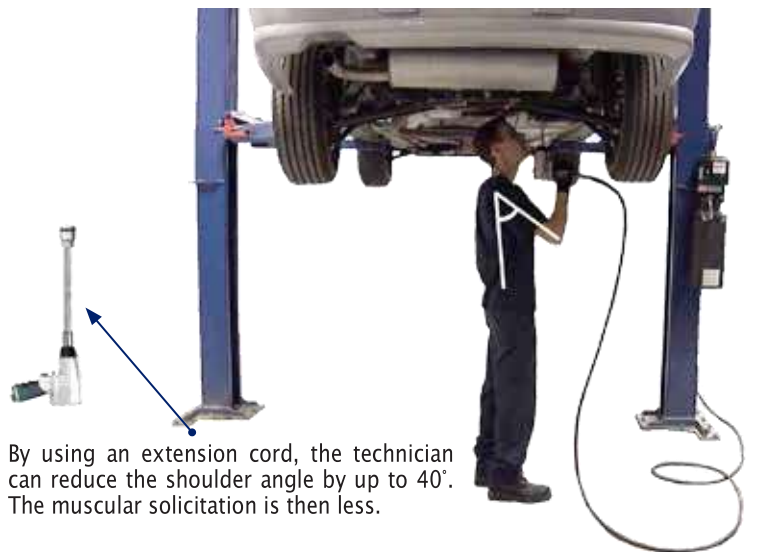
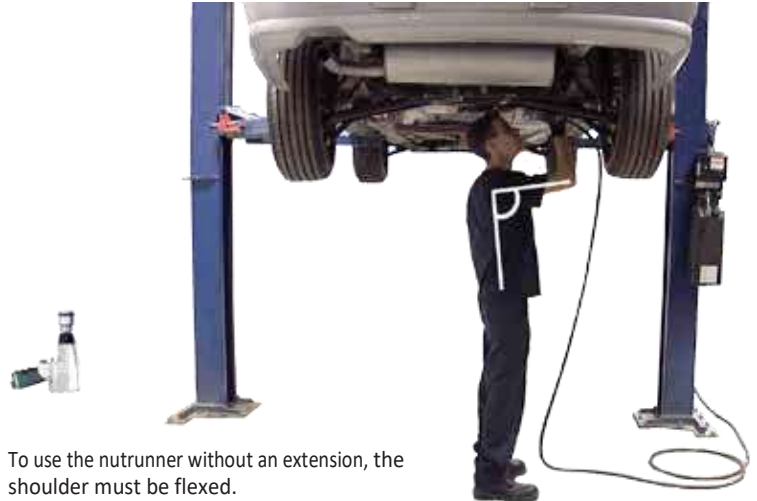
Another important phenomenon is the backlash caused by the tool at the end of bolting. These backlashes cause a very high peak of eccentric muscle contraction. Even if this peak is very brief, it can, in the long term, lead to damage.

When working without an extension, the shoulder is extended, and the arm is extended; it can therefore hardly resist the backlash. By using an extension cord, the arm is better positioned to withstand the backlash.

Finally, holding the tool with both hands, The backlash is distributed over both arms and is thus better absorbed.

Accordingly, we make the following recommendations:

- If the task allows, use an extension cord so that the tool is brought closer to the trunk and thus reduce the extension of the shoulder.
- Hold the tool with both hands so that the effort and especially the aftershocks are equally distributed over both arms.



Repeated efforts and the fight against gravity

One of the main characteristics of working under the vehicle is that a large part of the forces against gravity must be carried out. In addition to accomplishing his work, the technician must therefore develop the necessary efforts to support the tools.

✓ Change the way you work

Some work methods need to be modified to reduce the risk of musculoskeletal disorders. A good approach is to reduce the effects of gravity using support equipment, jacks or mobile tables. Here is an example of a practical application.

Example. The removal of a silencer

The traditional method is to detach the attachments with a torch and pull the silencer with the other hand to cushion

his fall. This operation causes enormous stress on the muscles of the upper limbs, especially when pulling on the workpiece and cushioning its fall (see opposite). However, a trolley could be used to reduce the constraints and therefore the risk of MSDs.

- Approach the cart near the work area.
- Cold detach fasteners, then use the blowtorch to cut the remaining ones and separate the elements.
- Hang the torch on its transport trolley, then place the cut elements on a trolley or lift table. ~~Then~~ remove the silencer with both hands.



✓ **Do not use a sledgehammer or hammer when another tool would be more appropriate**

The sledgehammer or hammer is often used to loosen off stubborn parts. This practice leads to several constraints on the upper limbs and can lead to the development of MSDs.

However, less abrupt methods such as the following (depending on the situation) can be preferred.

- Use a penetrating liquid in moderation (the work area must be ventilated).
It is usually best to use little liquid and to give him time to act rather than abusing it.
- Use an appropriate tool, such as an extractor.
- Use a presser foot; The lever arm allows the technician to reduce muscle stress.



Lighting

Typical lighting illuminates the roof of the vehicle more than the work area. Innovative solutions must therefore be considered.

✓ Make sure to light the work area

Depending on the nature of the work, several solutions can be provided.

When designing a workshop

- Install lighting around the work area rather than directly above the vehicle. Also make sure that the floor is pale to reflect as much light as possible.
- Install lighting close to the ground, on each side of the vehicle, and directed to illuminate the underside of the vehicle when lifted.

This LED lighting must be designed not to dazzle the worker and must be controlled separately.



Head Lamps

- Use a hand lamp that complies with the requirements of the Building Code, Section V – Electrical for hand lamps used in garages. Light emitting diode (LED) lamps have the advantage of being bright, compact and consuming little energy.

They can therefore be powered using rechargeable batteries. Because of their small size, they can be placed closer to the working point.

- Use a headlamp. The lightweight LED headlamp allows you to project light directly onto the work area while leaving both hands of the technician free.



Three Risk Factors Associated with Working Under the Hood

Awkward postures

When working under the hood of the vehicle, several factors increase the risk of MSDs in workers. They are:

- Difficult access to certain components, due to their location or distance from the technician's trunk.
- the adoption of awkward postures at the wrists, elbows and shoulders;
- the use of tools that do not promote a good attack and which make the worker force at arm's length.

Static charge

Static load is present when the position of the body or the holding of a tool implies that the muscles must develop a sustained and prolonged effort. Even when the stress is low, this static load can overload the muscle structures, as it disrupts the flow of blood inside the muscles and can cause a feeling of discomfort.

For the shoulder, for example, the importance of this load is strongly influenced by:

- the rotational force exerted by the weight segments and tools that are kept away from the body;
- the amplitude of the shoulder flexion angle.

When working under the hood, the inclination of the trunk combined with the large angle of flexion of the shoulder make this posture more restrictive than the support of the arms above the head.

The Vision

The worker's view of his or her work area during tasks performed under the hood of the vehicle can be compromised by several factors such as:

- the height of the vehicle;
- the area to be worked on;
- brightness.

In some cases, the size of the worker and its anthropometric characteristics can also have an effect.



Some interesting solutions

To reduce muscle load and therefore the risk of MSDs, adjustments can be made to current techniques. Here are some possible solutions for each of the identified risk factors.

Awkward postures

✓ Change the vehicle's tilt

One of the most problematic aspects when working under the hood of the vehicle is the adoption of awkward postures caused by the difficult access to certain work areas. This causes a high bending angle that leads to increased muscular effort.

To help the technician, we could consider Modify the vehicle's tilt according to the task. These proposed solutions to reduce static load will also have a beneficial effect on postural constraints.

- Raise the rear of the vehicle further to work in the centre of the engine.
- Tilt the vehicle sideways to facilitate side work.
- The hood of some vehicles lifts up from the front. In these cases, removing the hood makes it much easier to access this area.

Careful. We must make sure not to destabilize the vehicle. Such solutions are therefore more easily applicable for very long repairs.



✓ Choosing Tools better suited to the task

In some situations, the worker may benefit from using a compressed air tool rather than a manual tool.

As a result, the compressed air ratchet wrench allows the task to be completed faster than a manual wrench, fits in tight spaces and reduces the muscle effort required to tighten or loosen bolts.



Static charge

One of the main sources of muscle pain comes from the fact that the trunk is held cantilevered above the engine.

✓ Support the trunk and elbow

Static and prolonged muscle work is often caused by the difficulty of access and the distance of the work area that is strongly associated with the dimensions of the vehicle. One of the solutions To overcome these constraints, the aim is to provide support to the areas mainly affected, namely the trunk and shoulders.

To do this, one or more of the following strategies can be applied:

- Raise the car slightly to allow the trunk and arms to rest on the front of the vehicle.
- Place a mattress or elbow pads to allow the technician to lean on without the risk of injury or soiling.

This allows the worker to relax the muscles of the shoulders and lower back. The micropauses thus created allow a better blood supply to the tissues of the shoulders and trunk, which helps to reduce the risk of MSDs in the back, shoulders and upper limbs.



Lighting

The hood darkens the work area. It therefore happens that the worker contorts himself so as not to shade himself and to succeed in seeing the work area well.

✓ Make sure to light the work area

Several solutions can be considered depending on the nature of the task.

- When designing the workshop, install lighting around the work area rather than directly above the vehicle.
- Use portable lamps. Light emitting diode (LED) lamps have the advantage of being bright, compact and consuming little energy. They can be powered by rechargeable batteries. Due to their small size, they can be placed closer to the working point. In some cases, two hand lamps allow for better lighting quality.
- Use a headlamp. The lightweight LED headlamp allows you to project light directly onto the work area while leaving both hands of the technician free. The headlamp is therefore ideal for short-term work and for those where it is practically impossible to hang a traditional hand lamp.
If it is dark, a reflective blanket made of a lightweight material can then redirect the light down.



SAFE DRIVING

NSADSA members are committed to driving safety and minimizing the risk of injury to Employees and members of the public, and loss of property arising from vehicle incidents.

The following policy addresses the important safety issues around automobile use while on the job. This includes the use of your personal vehicle for work purposes.

The following standards will be adhered to by NSADSA members and its employees:

- ⇒ Company vehicles will be selected, equipped, maintained and serviced to ensure the safety of drivers, passengers and members of the public
- ⇒ Drivers will demonstrate safe driving practices
- ⇒ All incidents and near misses will be reported and investigated
- ⇒ Driving safety will be managed, monitored and reviewed as part of our general health and safety programs.

Responsibilities

- ⇒ Managers responsible for drivers and vehicles shall:
- ⇒ Ensure that drivers hold appropriate and current licences
- ⇒ Encourage drivers to use safe driving practices
- ⇒ Select appropriate vehicles for the task
- ⇒ Monitor and take action on motor vehicle incident data
- ⇒ Conduct investigations, including driver interviews following motor vehicle incidents

Employees who must drive for their job shall adhere to the following safe driving practices:

Speed

Speed and speed variance (sudden and unsafe increases or decreases in speed) are critical safety issues that contribute to motor vehicle deaths, injuries and property damage. A worker driving unduly fast may place the safety of co-workers or members of the public, his or her job performance, or the safe and efficient operation of the vehicle at risk. Speeding is not acceptable and adversely affects NSADSA members reputation in the community. The speed driven must be appropriate to existing conditions and the maximum speed in accordance with posted speed limits. Drivers found to be speeding will be disciplined according to company disciplinary policy.

Seat Belt Use

NSADSA members recognizes that seat belt use is an important and effective means of protection for our employees. While traveling on NSADSA members business, drivers and passengers must use seat belts correctly at all times. The driver will operate the vehicle only after others are buckled up. Drivers and/or passengers on company business will be disciplined according to company disciplinary policy if found not to be wearing seat belts while driving.

Distracted Driving

Operating a motor vehicle requires the driver's full attention at all times and readiness to deal with any emergency situation. Employees of NSADSA members who are driving for work should not engage in any activity that results in them being distracted including, but not limited to, reading, writing, grooming, using cellular phones and manually entering information into computers or navigation systems. When it is safe to do so, employees should pull over and park the vehicle in a safe and legal location prior to using an electronic device for any purpose. Drivers found to be distracted during driving will be disciplined according to company disciplinary policy.

Emergency Preparedness

Drivers need to ensure their vehicle is prepared for potential road and weather conditions including equipping it with an emergency kit and a winter survival kit appropriate for the areas in which they drive.

Other Safe Driving Practices

- ⇒ When driving on NSADSA members business, a worker must:
- ⇒ Hold a valid vehicle operator's licence for the class of vehicle being driven.
- ⇒ Comply with the traffic laws and regulations.
- ⇒ Never drive while impaired by drugs (prescription, non-prescription or illicit) or alcohol.
- ⇒ Ensure that all loads and miscellaneous articles are properly secured.
- ⇒ Ensure all equipment is set and adjusted properly (i.e. mirrors, head restraints).
- ⇒ Always avoid driving into parking spaces. Always back into parking spaces when possible.
- ⇒ Drive defensively.

LOCKOUT/TAGOUT (LOTO) - ISOLATION & CONTROL OF HAZARDOUS ENERGIES

Scope

The scope of this programme is to prevent injury from electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other hazardous sources in machines and equipment. Potential hazardous energy sources must be identified, isolated, and locked and/or tagged out before starting a service/maintenance task. Typical tasks requiring LOTO procedures include:

- ⇒ a task requiring an employee to enter a machine's point of operation or any associated danger zone
- ⇒ repairing electrical circuits
- ⇒ cleaning, repairing, and maintaining machinery with moving parts
- ⇒ cleaning jammed mechanisms
- ⇒ removing or bypassing a guard or other safety device

To comply

All affected departments must meet the following minimum general requirements:

- ⇒ develop written, equipment-specific lockout procedures for the control of potentially hazardous energies prior to service/maintenance activities. This may be accomplished by utilizing the Energy Control Procedures form or its equivalent
- ⇒ ensure that LOTO devices are available to all employees as needed
- ⇒ ensure that when new equipment is purchased, or when existing equipment is modified, it has the ability to be locked out
- ⇒ enforce the proper use of LOTO equipment and establish control of energy sources
- ⇒ inform outside contractors of procedures and how coordination of lockout/tagout will occur
- ⇒ provide and/or coordinate employee LOTO training programs
- ⇒ perform at least annual reviews of LOTO procedures
- ⇒ maintain adequate records

Partial Exemption

Equipment is exempt from written, equipment-specific procedures when all of the elements listed below exist. (Note: Equipment covered by this partial exemption must still be locked out following established procedures.)

- ⇒ equipment/machine has no potential for stored or residual energy
- ⇒ equipment/machine has a single energy source that can be readily identified and isolated
- ⇒ isolation and locking out of energy source completely de-energizes and deactivates equipment/machine
- ⇒ equipment/machine is isolated from the energy source and locked out during the course of service/maintenance activities
- ⇒ a single lockout device will achieve a lockout condition
- ⇒ lockout device is under the control of a single individual doing the service/maintenance
- ⇒ service/maintenance does not create hazards for others

Total Exemption

None of the requirements of the Lockout/Tagout programme apply if all conditions of the exemption are met. Total exemptions include:

- ⇒ Equipment that is completely de-energized by unplugging a power cord. The unplugged power cord must be under the exclusive control of the employee(s) conducting the service/maintenance activities. Plug lockouts are recommended as an added level of protection.
- ⇒ Hot tap operations involving gas, steam, water or petroleum products. The employer must show that continuity of service is essential, shutdown is impractical, and proper protection of the employees has been provided for. Any alternative approach used must be fully documented by the department choosing those methods.

Employee Training

Training on the purpose, content and function of the Lockout/Tagout Programme is required for all employees who participate in or are affected by the lockout/tagout of equipment. Site Specific Training, must be documented and kept, showing training dates, times, attendance and items covered.

Authorized Employees

Authorized Employees are those who have received proper training and have been “authorized” by their supervisor to apply LOTO devices when necessary. Training for Authorized Employees shall include:

- ⇒ recognition of locations, types and magnitudes of potential hazardous energy sources in the work area proper LOTO procedures
- ⇒ proper use of LOTO devices (and any related equipment) used by the company lockout or tagout device removal
- ⇒ how to deal with special conditions

Affected Employees

Affected Employees are those employees affected by the shut down or who work in areas where equipment is being serviced/maintained. Training for Affected Employees shall include:

- ⇒ purpose and use of the LOTO procedures
- ⇒ how to recognize LOTO equipment
- ⇒ prohibition on tampering with LOTO equipment

Retraining

Retraining is required when:

- ⇒ there is a new or revised energy control procedure
- ⇒ an Authorized Employee's job duties change (regarding LOTO)
- ⇒ the Lockout/Tagout Programme is changed
- ⇒ additional LOTO hazards arise, such as new equipment, modified processes or the use of different LOTO devices
- ⇒ periodic inspections show employee deficiencies in energy control techniques

Lockout/Tagout Devices

Lockout/tagout (LOTO) equipment consists of tags, locks, hasps, chains, and other hardware used to prevent the operation of equipment being serviced or maintained. Lockout devices must be used whenever possible, to ensure a positive means of energy control, by holding equipment in a SAFE or OFF position. Tags should be used in conjunction with lockout devices to warn against operation.

Regardless of the device used, all LOTO devices must meet the following minimum criteria:

- ⇒ they must be of durable construction and capable of withstanding the conditions in which they are placed
- ⇒ they must be identified as such and must only be used for the control of hazardous energy sources All other uses are prohibited
- ⇒ they must identify the individual applying the device
- ⇒ they must not be bypassed, ignored or otherwise defeated
- ⇒ they should be standardized within each department in colour, size, shape and format
- ⇒ they should be removed by the Authorized Employee originally attaching them. Removal by anyone else must be performed by following the guidelines in Section F, Removal of Lockout/Tagout Devices

Use of Tags

Use of tags alone is allowed only when equipment cannot be physically altered to accept a lockout device. In this case, all other procedures consistent with the lockout programme must be followed. The tags must be affixed as closely as possible to the isolation devices, immediately obvious to anyone attempting to restart the equipment/machine. Additional control measures must be taken to reinforce the tagout device (such as opening an extra disconnecting device, removal of a valve handle, or additional training).

Tags must be legible and understandable by all employees and must contain warnings against energizing the equipment, such as DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, or DO NOT OPERATE. Tags must be in plain view, at the same location as the energy isolation devices and must be securely attached to prevent accidental removal.

Lockout/Tagout Procedures

Before service/maintenance activities begin, the following procedures must be implemented in the order listed below, when locking or tagging out equipment.

1. Prepare for shutdown

The Authorized Employee shall evaluate the equipment to be serviced, identify all sources of hazardous energies and the methods necessary to control them. This information shall be used to complete the Energy Control Procedures form or its equivalent

2. Notify all Affected Employees

The Authorized Employee turning off the power shall notify Affected Employees in the work area that power will be shut off, the reason for the shut-down and that the equipment will be locked/tagged out.

3. Shut down equipment

The equipment/machine shall be shut down by the normal stopping procedure. When appropriate, a "DO NOT OPERATE" tag shall be affixed to the power switch.

4. Isolate equipment

The equipment/machine shall be de-energized, secured and isolated from hazardous energy sources. An orderly shutdown must be utilized to avoid any increased or additional hazard(s) to employees.

5. Lockout/tagout

The Authorized Employee shall place locks and/or tags in the appropriate energy isolating locations.

6. Release stored energy

After lockout devices have been placed on the equipment, all stored electrical, gravitational, mechanical and/or thermal energy must be disconnected and drained to a zero-energy state or otherwise made safe by the blocking or repositioning of equipment. This can be accomplished by:

- ⇒ releasing pressured lines such as hydraulic, air, steam, gas and water
- ⇒ releasing spring-loaded equipment
- ⇒ blocking mechanical equipment having moving, rotating or elevated parts

7. Verify isolation

Before performing maintenance on the machine, the Authorized Employee verifies the system is isolated. This is generally accomplished by first establishing that no personnel are exposed and then turning the machine switch to the ON position using the normal operating controls. Verification of isolation must be continued if there is a chance of the re-accumulation of stored energy during the service/maintenance activity.

8. Perform the service/maintenance activity

LOTO devices should be removed promptly following completion of service/maintenance activities.

Special Conditions

In order to provide continuity of lockout/tagout (LOTO) protection, the following steps are required for the situations identified below.

Group Lockout/Tagout

A group LOTO is necessary when service/maintenance is performed by more than one individual. A procedure must be developed that outlines how group LOTO will occur. This information should be identified on the Energy Control Procedures form or its equivalent. Group LOTO can be accomplished through the use of a lockout device that accepts multiple locks or a group lock box (stores all keys to locks used and can only be opened by one individual). One person from the group should be selected to oversee the LOTO procedure. The group representative will be responsible for:

- ⇒ affixing the group lockout device or maintaining control of the lock box
- ⇒ ensuring that lockout/tagout procedures are followed, including verifying that equipment is de-energized
- ⇒ continually monitoring the work to ensure that employees on the crew are not exposed to lockout/tagout hazards
- ⇒ verifying that all procedures for returning the equipment back into service are completed before lockout/tagout devices are removed

Shift Changes

When equipment/machine maintenance extends beyond one work shift, a procedure must be in place to transfer control of the equipment/machine to the arriving shift. This transfer is the responsibility of all departing and arriving shift supervisors involved with the maintenance project. Responsibilities include:

- ⇒ overseeing the transfer of control of the existing LOTO device(s) or the attachment of a separate device(s)
- ⇒ ensuring that the continuity of the energy control procedure is maintained until the on-coming shift supervisor arrives and takes control of the job
- ⇒ documenting the method used (original device or separate device) on the Energy Control Procedures form or its equivalent

Exchange of Information with Contractors

When some or all maintenance work is to be performed by contractors, information exchange must occur to ensure that all parties know how LOTO of equipment/machines will take place. The department must:

- ⇒ ensure that there is an appropriate exchange of information regarding LOTO procedures to be used by both the department and the contractor
- ⇒ inform Authorized Employees of any differences (such as restrictions and prohibitions) between the two procedures
- ⇒ file all completed forms with the department's Lockout/Tagout Programme

Testing or Positioning of Equipment/Machines

When an employee must move part of a machine to test or position it for service/maintenance, and reenergization is required, the temporary removal of LOTO devices and subsequent reenergization must follow this sequence:

- ⇒ Clear equipment/machine of tools and other miscellaneous materials.
- ⇒ Remove all employees from the equipment/machine area.
- ⇒ Remove LOTO devices.
- ⇒ Energize and proceed with testing or positioning.
- ⇒ De-energize and reapply LOTO devices.

Removal of Lockout/Tagout Devices

Once the specific maintenance or service work has been completed, the person who attached the lock or tag is responsible for promptly removing that device. Removal of lockout/tagout (LOTO) devices will be accomplished by following the steps listed below:

1. Inspect the work area.

Ensure that the equipment/machine is fully assembled and operational, all tools and nonessential items are removed, and all safety guards are reinstalled.

2. Ensure that all employees are clear of the equipment/machine.

3. Remove the LOTO device.

Each device must be removed by the person who put it on unless the conditions listed below in Removal of Another Persons Device are met.

4. Re-energize the equipment/machine.

5. Notify Affected Employees that servicing has been completed and the machine is ready for use.

6. Complete the Energy Control Procedures form.

Removal of Another Person's Device

Before removing a lock or tag that has been affixed by another employee, the supervisor must:

- ⇒ verify that the employee who attached the device is not available to remove the device
- ⇒ make all reasonable efforts to notify the employee that their device will be removed
- ⇒ ensure the Authorized Employee knows that the LOTO device has been removed. This must be done before the employee resumes work

Definitions

Affected Employee

An employee whose job requires operation or use of equipment/machines on which service/maintenance activities are performed under lockout/tagout, or whose job requires work in an area where such service/maintenance activities are being performed.

Authorized Employee

An employee who locks out or tags out equipment/machines in order to perform service/maintenance activities. An Affected Employee becomes an Authorized Employee when that employee's duties include performing service/maintenance activities covered under the NSADSA Lockout/Tagout Programme.

Energized

Connected to an energy source or containing residual or stored energy.

Energy Isolating Device (Mechanism)

A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker, a disconnect switch, a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently, a line valve, a block, and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

Energy Source

Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout

The placement of a lockout device on an energy isolating mechanism in accordance with established procedures. The lockout device will ensure that the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device

A device that utilizes a positive means such as a lock (either key or combination type) to hold an energy isolating mechanism in a safe position and prevent the energizing of equipment/machines. Included are blank flanges and bolted slip blinds.

Service/Maintenance

Includes workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, or servicing/maintaining equipment/machines. These activities include lubrication, cleaning and unjamming of equipment/machines, and making adjustments or tool changes in areas where employees may be exposed to the unexpected energization or startup of the equipment or to the release of hazardous energy.

Tagout

The placement of a tagout device on an energy isolating mechanism in accordance with established procedures. The tag should state that the energy isolating mechanism and the equipment being controlled may not be operated until the tagout device is removed.

ENERGY CONTROL PROCEDURE

Equipment specific lockout/tagout (LOTO) procedures for the control of potentially hazardous energy must be developed, documented and utilized whenever machinery could unexpectedly activate or if the unexpected release of an energy source could cause injury to employees performing any servicing or maintenance. Authorized employees are required to perform the LOTO in accordance with this procedure. LOTO devices must be singularly identified, indicate the employee applying the device, used only for controlling energy for servicing and maintenance, and not be used for other purposes. All employees, upon seeing a machine or piece of equipment which is locked out to perform servicing or maintenance must not attempt to start, energize, or use that machine or equipment.

Each LOTO will follow the process listed below.

- **Applying LOTO** – Follow the general Applying LOTO Steps and specific instructions for each piece of equipment/machinery to identify, disconnect, isolate, lock out and verify the lock out of the appropriate energy sources.
- **Removing LOTO** – Follow the general Removing LOTO Steps and specific instructions returning the equipment to operation.

APPLYING LOTO		
#	Step	Instruction
1	Notify Employees	Notify all affected employees what machine/equipment will be shutdown and locked out.
2	Review Equipment Specific Procedures	Ensure each person performing LOTO (authorized employee) understands the type and magnitude of the energy present, the associated hazards and the proper methods of Control.
3	Shutdown Equipment	If the machine or equipment is operating, shut it down by the normal stopping procedure.
4	Disconnect & Isolate the Energy Source	Disconnect/de-activate the energy isolating devices(s) so the machine or equipment is isolated from the energy source(s).
5	Lockout Controls	Lockout and tag out the energy isolating device(s) as indicated in the specific Instructions
6	Release Energy	Release and/or dissipate any stored or residual energy as indicated in the specific instructions.
7	Try out	Verify the energy source has been isolated as indicated in specific instructions.
REMOVING LOTO		
#	Step	Instruction
1	Inspect Equipment	Check the equipment to ensure the components are operational.
2	Check Area	Check the immediate area to ensure all employees have been safely positioned, and tools and any nonessential items have been removed.
3	Check Controls	Verify that operating controls are off (not on).
4	Re-energize	Remove the lockout device(s) and activate the energy isolating device(s) to re-energize the equipment.
5	Notify Employees	Notify affected employees the servicing or maintenance is completed and the equipment is ready for use.
6	Startup Equipment	Startup equipment and monitor for several operating cycles to ensure it is functioning properly.

Notes

1. Except for operational/shift-change locks, lockout devices may only be removed by the employee who applied the device. When using operational locks, employees working on the equipment must use their assigned individual lock as their means of protection and verify that the applicable energy control procedures were followed.
2. For complex LOTO, a system that designates a primary authorized employee and one or more principal authorized employees may be used. The primary authorized employee exercises primary responsibility for implementation and coordination of the overall LOTO. The authorized employee is designated for each worksite and is responsible for maintaining accountability and for individual exposure status of each employee in their specific group. The procedure must be planned, written and posted at the place where the system is in use. Operational/shift-change locks should be used to ensure the continuity of the LOTO.
3. When the authorized employee who applied the lockout/tagout device is not available to remove it, the device may be removed under the direction of a supervisor in accordance with the requirements provided in the applicable energy control programme.

EQUIPMENT SPECIFIC INSTRUCTIONS

Equipment Name:		Date Created:	
Description:		Person:	
Facility:		Date Revised:	
Location:		Person:	

Energy Source/ Magnitude	Isolation Point	Isolation Method	Verification Method	Visual Reference (Optional)

Additional Precautions/Procedures:

WELDING PROGRAMME

Introduction

Welding is defined as a materials joining process used in making welds. Welding and cutting operations present certain potential hazards to welders that can result in temporary or permanent physical injury, short- or long-term adverse health effects, discomfort and even death. The potential health hazards associated with welding and allied processes include exposure to fumes and gases, heat, noise, radiation, as well as, musculoskeletal injuries (MSI's), such as strains and sprains.

Fumes & Gases

The concentration of welding fumes to which welders are exposed depends on the type of welding process, work area, existing ventilation, personal protective equipment, as well as a welder's position and posture.

The following are the most common types of welding processes:

PLEASE CHECK THE APPROPRIATE BOX TO IDENTIFY TYPE OF WELDING PERFORMED

Shielded Metal Arc Welding (SMAW) Stick Welding	☐	Plasma Arc Welding (PAW)	☐
Gas Metal Arc Welding (GMAW) MIG	☐	Plasma Arc Cutting (PAC)	☐
Flux-Cored Arc Welding (FCAW)	☐	Submerged Arc Welding (SAW)	☐
Gas Tungsten Arc Welding (GTAW) TIG	☐	Air Carbon Arc Gouging (ACAG)	☐
Plasma Arc Gouging (PAG)	☐	Metal-Cored Arc Welding (MCAW)	☐

The type of process including the shielding gas, electrode size and type, manual or mechanized welding, current/voltage and arc time significantly influences the amount of fumes produced and affects the exposure of workers to contaminants. For example, open arc processes that use a flux, higher current and larger electrodes will produce more fumes than gas tungsten arc welding (GTAW) or submerged arc welding (SAW) processes.

Hot Environments

Hot environmental conditions include air temperature, radiant heat, humidity and air movement. Welding and cutting operations, and in particular plasma arc cutting, are known to produce heat, the exposure to which in combination with the internal body heat due to physical activity and clothing requirements may lead to some health disorders or even heat-related illnesses. The most common signs and symptoms of the body response to heat include:

⇒ Sweating	⇒ Small volume of dark-coloured urine
⇒ Discontinued sweating	⇒ Irritability
⇒ Increased heart rate	⇒ Lack of coordination
⇒ Increased body temperature	⇒ Lack of judgement
⇒ Urinating less frequently than normal	

Excessive and prolonged exposure to hot work environment can cause heat-related illnesses such as:

⇒ Heat rash	⇒ Heat syncope (fainting)
⇒ Heat edema	⇒ Heat exhaustion
⇒ Heat cramps	⇒ Heat stroke

Noise

Air carbon arc cutting, gouging and plasma arc processes generate significantly high noise levels. Excessive exposure to noise among welders can cause noise-induced hearing losses.

Radiation

The plasma arc emits intense ultraviolet, visible light and infrared radiation. Laser beam and electron beam welding and cutting processes also produce visible and/or invisible radiation. In addition, whenever the high voltage is on, an electron beam system is capable of generating X-rays.

Musculoskeletal injuries

Musculoskeletal injuries, such as strains and sprains, can occur when a welder is welding in a static awkward or horizontal position with a heavy face shield. The extra weight of the shield can cause strain on the welder's neck. Neck problems are also associated with prolonged use of a combination of a hard hat and a welding helmet. In addition, long and repetitive duration of exposure and high force generation may have cumulative effects that contribute to the increased risk of injury.

Welding and allied processes including hazard identification are outlined in the CSA Standard W117.2 *Safety in Welding, Cutting, and Allied Processes*.

Safety Data Sheet

While investigating potential health hazards with respect to welding, it is important to consider the material safety data sheet (SDS) for each controlled product that is used in the welding operation.

MSDS's/SDS's define which health hazards are associated with the use of these products. These documents also provide recommendations regarding preventive measures such as engineering controls and personal protective equipment (PPE).

Threshold Limit Values

In addition to the material safety data sheets, the CSA Standard W117.2, and other documents that might be helpful in the investigation of health hazards associated with welding, it is essential that the following documents be consulted:

the American Conference of Governmental Industrial Hygienist (ACGIH) *Threshold Limit Values (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®)*, and
the ACGIH *Documentation of the TLVs® and BEIs®*

The TLVs® and BEIs® are developed as guidelines to assist in the control of health hazards, and the Documentation is the source publication that provides the critical evaluation of the pertinent scientific information and data with reference to literature sources upon which each TLVs® or BEI® is based. The ACGIH publication entitled Threshold Limit Values and Biological Exposure Indices is referenced in the Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

Preventive measures

Subsection 10.19 (1)(a) of the *Canada Occupational Health and Safety Regulations* (COHSR) requires that an employee shall be kept free from exposure to a concentration of an airborne chemical agent more than the value for that chemical agent adopted by the ACGIH, in its publication entitled *Threshold Limit Values and Biological Exposure Indices*.

When concentrations to various constituents present in welding fumes and gases exceed specified TLVs, or when the health of the employee is at risk, the employer is required to reduce exposure below the prescribed limits. Section 19.5 of Part XIX of the COHSR states that the employer shall, to address identified and assessed hazards, take preventive measures that consist first of the elimination of hazards, then the reduction of hazards and finally, the provision of personal protective equipment. As part of the preventive measures, the employer

Ventilation

Adequate ventilation must be provided for all welding and allied processes. The combination of general dilution ventilation and local exhaust is the most successful method in controlling welding fumes and gases.

Refer to the table below from CSA W117.2 – 12

Table 5 Ventilation guidelines for welding, brazing, and thermal cutting of uncoated low alloyed or unalloyed steels [with normal chromium content not exceeding 3% and with nominal total alloying content not exceeding 5%]					
		Degree of confinement in work area			
Process	Production level	Outdoor	Open work-space	Limited work-space	Confined space
Gas preheating	Normal	N	N or M	M	LE
Gas, welding,	Normal	N	N or M	M	LE
Cast tungsten arc	Normal	N	N or M	M	LE
Welding [GTAW]	High	N	LE	LE	LE
Brazing & Soldering		N	N or M	M	LE
Flame Cutting	Normal	N	N or M	M	LE
Flame Gouging					
Gas metal arc	Normal	N	N or M	LE	M & LE
Welding [GTAW]	High	N	LE	LE	M & LE
Flux-for arc					
Welding [FCAW]					
Shield metal					
Arc welding [SMAW]	Normal	N	N or M	LE	M & LE
Metal-core arc welding [MCAW]	High	N	LE	LE	M & LE
Plasma arc cutting					
and gouging			LE	LE	
[Assessment by air			LE or	LE or	
sampling is often needed In limited	Normal	N	Water	Water	LE
Or confined spaces)	High	N	Table 4	Table 4	LE & PRP
Submerged arc					
Welding [SAW]					
Electroslag welding,	Normal	N	N	N	M
Electro gas welding	High	N	N	N	M
Thermite welding,	Normal	N	M	LE	LE
Air carbon arc gouging	High	N	LE	LE & PRP	LE & PRP
Resistance welding	Normal	N	N	M	LE

Legend:

N = Natural Dilution ventilation

M = Mechanical dilution ventilation

LE = Local exhaust ventilation

PRP = Personal respiratory protection

Notes: High production refers to duty cycles exceeding approximately 40% or high amperage process exceeding 350 A or both.

Table 6

Ventilation guidelines for welding, brazing, soldering, and thermal cutting of coated alloyed steels and non-ferrous metals [1] [2] [with nominal chromium content over 3% and with nominal total alloying content over 5%						
			Degree of confinement in work area. [2]			
Material	Contaminant	Production	Outdoor	Open work-	Limited work-	Confined space
Aluminum	Aluminum	Normal	N	M	LE	LE
	Oxides, ozone	High	–	M	M	LE
		High	–	M	M & LE	LE & PRP
Barium	Barium oxides and fumes	Normal	LE or PRP	LE	LE	LE & PRP
		[FCAW]				
Beryllium	Beryllium	Any	All locations should have LE & PRP or a special glove box			
	Oxides and fumes					
Cadmium	Cadmium oxide	Any	LE or PRP	LE	LE & PRP or special glove box	
Chromium	Chromium VI Oxide	Normal	M	LE	LE	LE & PRP
		High	LE & PRP	LE	LE	LE & PRP
		High [saw]	–	N	M	LE
Copper	Copper oxides	Normal	M	M	LE	
		High	LE or PRP	LE	LE	LE & PRP
Fluorine	Fluorides	Normal	N	N	M	LE
	Calcium,	High	–	M	LE	LE
	Sodium,	High [saw]	–	N	N	LE

Table 6 (continued)

	Potassium					
Lead	Lead fumes	Normal	M	M	LE	LE & PRP
		High	LE & PRP	LE	LE	LE & PRP
Manganese	Manganese oxides	Any	N	M	LE	LE & PRP
Nickel	Nickel fumes	Normal	M	LE	LE	LE & PRP
		High	LE & PRP	LE	LE	LE & PRP
		High [saw]	–	N	N	LE & PRP
Zinc	Zinc oxide	Any	N	M	LE	LE

Legend:

- N = Natural Dilution Ventilation [See Clause 12.2.2]
M = Mechanical Dilution Ventilation [See Clauses 12 .2 .3]
LE = Local Exhaust Ventilation [See Clause 12.3]
PRP = Personal Respiratory Protection [See Clause 11.4]
GMAW = Gas Metal Arc Welding [MIG]
GTAW = Gas Tungsten Arc Welding [TIG]
FCAW = Flux-Cored Arc
Welding
SAW = Submerged Arc
Welding

Dilution ventilation

Dilution ventilation comprises fans such as roof exhaust fans and wall fans. A dilution ventilation system uses large amounts of air to flush out the whole area and dilute contaminants to the concentrations below prescribed limits. However, it allows the contaminants to enter the welder's breathing zone before the contaminants are removed from the working environment. If used exclusively, dilution ventilation may not be adequate to control the exposure of welders to welding fumes and gases to below the permissible occupational exposure limits.

Local exhaust ventilation

Some welding equipment come equipped with local exhaust ventilation attached to the welding equipment and is designed to remove the fumes and gases close to their point of origin. Other local exhaust ventilation systems are comprised of a hood, fan, duct, and air cleaner. The local exhaust ventilation must be designed and installed in such a way that welding fumes and gases are prevented from entering the welder's breathing zone. For fixed enclosures, local exhaust must be installed such that the fumes and gases are drawn away from the welder's breathing zone. Local exhaust can be discharged outside the building or re-circulated through an air cleaner.

Note: Exhaust air containing carcinogens and/or other toxic contaminants must not be re-circulated.

The employer must ensure that the air cleaning system removes all contaminants, including toxic gases that may be generated during the welding process prior to re-circulating.

There are four types of engineered local exhaust ventilation systems:

- ⇒ a welding bench with a fixed hood,
- ⇒ a down-draft bench,
- ⇒ a portable hood with flexible ducting, and
- ⇒ a fume extraction gun or gun attachments with flexible ducting

The effectiveness of local exhaust ventilation depends on:

- ⇒ the distance of the hood from the source,
- ⇒ exhaust air velocity, and
- ⇒ hood placement.

Hoods must be located as close as possible to the welding points so that the welding fumes and gases are captured at the source.

An air velocity of 0.5 m/s (100 ft/min) across the welding site is recommended. In all processes that use shielding gases, air velocities in excess of 0.5 m/s may strip them away. For down-draft benches, it is necessary that an air velocity be great enough to assure that the fumes and gases generated during welding do not rise into the breathing zone of the welder. In addition, the welder must know that if the work pieces cover too much of the down-draft hood assembly, the exhaust effect is lost.

Practical procedures for controlling welding fumes and gases are outlined in the CSA Standard W117.2. These procedures include the installation of ventilation and fume extraction equipment.

Respiratory protection

Respiratory protection should only be used when engineering controls, such as ventilation are not technically and/or economically feasible. In some cases, the combination of both ventilation and respiratory protection may be necessary to reassure that the welders are protected.

A complete respiratory protection training including selection, fit testing, maintenance and inspection, must be provided to all welders who are provided with and wear respirators. Reference should be made to the CSA Standard Z.94.4, *Selection, Use and Care of Respirators*.

According to the Standard, a respiratory protection programme must consist of the following components:

- ⇒ roles and responsibilities,
- ⇒ hazard assessment,
- ⇒ selection of the appropriate respirators,
- ⇒ respirator fit testing,
- ⇒ training,
- ⇒ use of respirators,
- ⇒ cleaning, inspection, maintenance, and storage of respirators,
- ⇒ health surveillance of respirator users,
- ⇒ programme evaluation, and
- ⇒ record-keeping.



A respirator must be of a type approved for its intended use and listed in the National Institute for Occupational Safety and Health (NIOSH) *Certified Equipment List* published by NIOSH. There are three types of respirators classified according to the mode of operation:

- ⇒ atmosphere-supplying respirators,
- ⇒ air-purifying respirators, and
- ⇒ combination atmosphere-supplying and air-purifying respirators.

Atmosphere-supplying respirators provide a breathing air that is independent of atmospheric conditions. For air-purifying respirators, ambient air, prior to being inhaled, is passed through a filter, cartridge, or canister that removes particles and gases. For welding fumes, particulate-removing respirators must be equipped with 99.97%, referred to as 100% efficiency (He) class filters.

Welders using positive-pressure or negative-pressure respirators must be clean-shaven where the face piece seals to the skin.

Where breathing air is provided for the purpose of a respirator, the air must meet the standards set out in the CSA Standard Z180.1 *Compressed Breathing Air and Systems*.

Other protective equipment

For all welding and cutting operations, welders must wear appropriate eye and face protection, and clothing. Hearing protection may also be required depending on the levels of noise to which welders are exposed. In addition, attention must be paid to the use of screens to prevent the welding arc from affecting other workers. The screens of sturdy opaque or translucent materials with at least 50 cm (20 inch) bottom clearance for ventilation are recommended.

Medical surveillance programme

Medical surveillance programme, when recommended by a qualified person, must be made available to all workers exposed to welding fumes and gases. Particular attention should be paid to the respiratory tract, as well as, each welder's ability to use respiratory protection. As per the CSA Standard Z94.4 requirements, it is necessary that prior to fit testing and respirator use, the programme administrator must ensure that documentation is completed to confirm that the individual is free from any physiological or psychological condition which may preclude them from being assigned the use of the selected respirator.

Prolonged exposure to welding fumes and gases at high concentrations can cause: HEALTH HAZARDS

⇒ siderosis	⇒ irritation of respiratory system
⇒ cancer	⇒ haemorrhage
⇒ metal fume fever	⇒ eye, nose and throat irritation
⇒ fluid in the lungs	⇒ dermatitis, eczema
⇒ nervous system disorders	⇒ chest pain
⇒ headaches and dizziness	⇒ bone and joint problems
⇒ kidney damage	

Usually, a welding operation is associated with the generation of two or more hazardous substances into the working atmosphere. Therefore, the hazard should be evaluated by measurement of each constituent and, if the constituents have similar toxicological effects, or there is no information to the contrary, their synergistic (combined) effect should be given primary consideration. Attention should also be paid to synergism with non-occupational risk factors, such as cigarette smoking. Smoking may enhance the adverse health effects of respiratory hazards related to welding.

Welding fumes and gases and their potential health effects

Fumes	Source	Health effects & symptoms
Aluminum	Aluminum component of some alloys, e.g., Inconel, copper, zinc, steel, magnesium, brass and filler materials.	Respiratory irritant.
Cadmium oxide	Stainless steel containing cadmium, plating	Pulmonary edema, nose irritation and ulceration; chronic effects include kidney damage and emphysema, cancer (prostate, lung), pulmonary fibrosis
Chromium (VI)	Stainless steel, plating, chromium pigment manufacturing, electrode	Skin irritation, respiratory tract irritation, effects on nose, eyes and ears; chronic effects include lung cancer, kidney and liver damage
Copper	Coating on filler wire, sheaths on air carbon arc gouging electrodes, non-ferrous alloys	Metal fume fever, eyes, nose and throat irritation
Iron oxide	All iron or steel welding processes	Acute effects are nose and lung irritation; siderosis (pulmonary deposition of iron dust)
Magnesium oxide	Magnesium or aluminum alloys	Eyes and nose irritation, metal fume fever
Manganese	Most welding processes, high-tensile steel	Chemical pneumonitis; chronic effects include nervous system disorders
Nickel	Stainless steel, nickel-clad steel, plating	Dermatitis, asthma-like lung disease; chronic effects include cancer (nose, larynx, lung), respiratory tract irritation, renal dysfunction
Zinc oxide	Galvanized and painted metals	Metal fume fever
Cadmium oxide	Stainless steel containing cadmium, plating	Pulmonary edema, nose irritation and ulceration; chronic effects include kidney damage and emphysema, cancer (prostate, lung) pulmonary fibrosis
Chromium (VI)	Stainless steel, plating, chromium pigment manufacturing, electrode	Skin irritation, respiratory tract irritation, effects on nose, eyes and ears; chronic effects include lung cancer, kidney and liver damage
Copper	Coating on filler wire, sheaths on air carbon arc gouging electrodes, non-ferrous alloys	Metal fume fever, eyes, nose and throat irritation

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Manganese	Most welding processes, high-tensile steel	Chemical pneumonitis; chronic effects include nervous system disorders
Nickel	Stainless steel, nickel-clad steel, plating	Dermatitis, asthma-like lung disease; chronic effects include cancer (nose, larynx, lung), respiratory tract irritation,
Fluorides	Electrode coating, flux material	Eye, nose and throat irritation, gastrointestinal symptoms; chronic effects include bone and joint problems, fluid in the lungs, kidney dysfunction
Ozone	Formed in the welding arc	Acute effects include fluid in the lungs and haemorrhage; chronic effects include changes in lung function
Nitrogen oxide	Formed in the welding arc	Pneumonitis, pulmonary edema; chronic bronchitis, emphysema; pulmonary fibrosis
Carbon monoxide	Carbon dioxide shielded metal-arc welding, electrode coatings	Headache, nausea, dizziness, collapse, death; chronic cardiovascular effects

Housekeeping

- ⇒ Ensure equipment is off.
- ⇒ Do not leave welded material unattended until it has cooled down and all fire hazards are eliminated.
- ⇒ Place all materials in their proper storage areas.
- ⇒ Ensure the equipment is safe, clean and tidy before you leave it.

Reference material

- ⇒ Operator's Manual
- ⇒ Occupational Safety General Regulations – Part 10 – Welding, Burning and Soldering
- ⇒ Occupational Safety General Regulations – Part 3 – Personal Protective Equipment
- ⇒ Part II of the Canada Labour Code

- ⇒ *Occupational Health and Safety Regulations* made under Part II of the *Canada Labour Code*
- ⇒ *ACGIH Documentation of the TLVs® and BEIs®*. American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio
- ⇒ *CSA Standard W117.2 Safety in Welding, Cutting, and Allied Processes*. Canadian Standard Association, Mississauga, Ontario
- ⇒ *CSA Standard Z.94.4, Selection, Use and Care of Respirators*. Canadian Standard Association, Mississauga, Ontario
- ⇒ *CSA Standard Z180.1 Compressed Breathing Air and Systems*. Canadian Standard Association, Mississauga, Ontario
- ⇒ *Industrial Ventilation. A Manual of Recommended Practice*. American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio
- ⇒ Karpinski, E.: *Worker Exposure to Welding Fumes and Gases in Federally Regulated Workplaces*. Human Resources Development Canada - Labour Programme
- ⇒ *Welding Data Sheet*. Occupational Safety and Health, No. A-1, Canada Safety Council, Ottawa, Ontario
- ⇒ *Guide to the Management Hazardous Substances*. Human Resources and Skills Development Canada - Labour Programme
- ⇒ Godin, C.: *Guide de prévention soudage - coupage*.

COMPRESSED GAS CYLINDER GUIDE

PURPOSE

Following these basic safe practices will help protect you from the hazards of compressed gases:

- ⇒ Obtain and read the Safety Data Sheets (SDSs) for all of the materials you work with.
- ⇒ Be aware of all of the hazards (fire/explosion, health, chemical reactivity) of the materials you work with.
- ⇒ Know which of the materials that you work with are flammable or combustible .
- ⇒ Avoid or eliminate ignition sources (sparks, smoking, flames, hot surfaces) when working with flammables and combustibles.
- ⇒ Practice good housekeeping and equipment maintenance. Keep area clear of burnable materials.
- ⇒ Wear the proper personal protective equipment for each of the jobs you do.
- ⇒ Follow the health and safety rules that apply to your job.

CYLINDERS AND FITTINGS

Compressed gases are stored in heavy-walled metal cylinders designed, produced and tested for use with compressed gases. Cylinders are made in a wide variety of sizes and shapes. They range from small lecture bottles, often used for demonstration purposes, to large cylinders over 3 metres long. Cylinders must comply with regulations of the Canadian Transport Commission (CTC).

CTC regulations require certain permanent markings on every cylinder: the specifications which the cylinder meets, the designed service pressure, a serial number, inspection codes, and identification of the cylinder maker or manufacturer. Cylinders for liquefied gases are also marked with the empty (tare) weight.

These markings are normally stamped into the cylinder's shoulder or the top surface of its neck. Pending Transport Canada Regulations will give specifications for cylinders and their selection for service under Canadian Standards Association standards B339 and B340.

Cylinders are tested under hydrostatic water pressure when they are made. Usually, cylinders must be retested every five or ten years. The date of each test must be stamped on the cylinder. Acetylene cylinders are not tested hydrostatically. It is too difficult to remove the water from the porous filler. Instead, they receive careful visual inspections.

CYLINDER VALVES AND CONNECTIONS

Compressed gas cylinders must be connected only to regulators and equipment designed for the gas in the cylinder. Since connecting the wrong equipment can be dangerous, a number of different standard cylinder valve outlets are available for different classes of gas. For example, these standard connections prevent the valve connection for a flammable gas from fitting the connections for an incompatible gas, such as an oxidizing gas. The current Canadian Standards Association (CSA) Standard B96, "Compressed Gas Cylinder Valve Outlet and Inlet Connections," contains detailed descriptions of the permissible valves and fittings.

Most compressed gas cylinders have valve caps or some other method of protecting the valve from damage during handling and transportation. A dust cap may be placed over the valve outlet itself to help keep it clean.

CYLINDER SAFETY DEVICES

Most cylinders have one or more safety-relief devices. These devices can prevent rupture of the cylinder if internal pressure builds up to levels exceeding design limits. Pressure can become dangerously high if a cylinder is exposed to fire or heat, including high storage temperatures.

There are three types of safety-relief devices. Each relieves excessive gas pressures in a different way:

- ⇒ **Safety- or Pressure-Relief Valves:** These valves are usually a part of the cylinder. They are normally held closed by a spring. The force holding the valve closed is set according to the type of gas in the cylinder. The valve opens if the cylinder pressure exceeds the set safety limit. Gas is released until the cylinder pressure drops back to the safety limit. The valve then closes and retains the remaining gas in the cylinder.
- ⇒ **Rupture Discs** (also known as frangible or bursting discs): These discs are usually made from metal. They burst or rupture at a certain pressure, releasing the gas in the cylinder. The bursting pressure is designed so that the disc ruptures before the cylinder test pressure is reached. These devices cannot be reclosed, so the entire contents of the cylinder are released.
- ⇒ **Fusible Plugs** (also called fuse or melt plugs): Temperature, not pressure, activates fusible plugs. These safety devices are used where heat could initiate an explosive chemical reaction. A pressure-relief valve or rupture disc acts too slowly and too late to prevent rupture of the cylinder if an explosive reaction has already begun. The fusible plug releases the gas before the hazardous reaction can begin. Fusible plugs are made of metals that melt at low temperatures. For example, acetylene cylinders have a fusible plug which melts at about 100°C (212° F). This temperature is safely below the temperature at which hazardous polymerization may occur.

Not all compressed gas cylinders have safety devices. Some gases are so toxic that their release through a safety device would be hazardous. Cylinders for these gases are built to withstand higher pressures than normal cylinders. When these "toxic gas" cylinders are involved in a fire, the area must be evacuated.

PROPER VENTILATION IS IMPORTANT

The amount and type of ventilation needed depends on such things as the type of job, the kind and amount of materials used, and the size and layout of the work area. For this reason the front doors are generally kept open during the welding processes. Other small job using small amounts of inert gases may require no special ventilation system.

Make sure ventilation systems are designed and built so that they do not result in an unintended hazard. Ensure that hoods, ducts, air cleaners and fan are made from materials compatible with the gas used. Systems may require explosion-proof and corrosion-resistant equipment. Separate ventilation systems may be needed for some compressed gases to keep them away from systems exhausting incompatible substances.

RECEIVING OF CYLINDERS

Inspect all incoming cylinders before storing to ensure they are undamaged and properly labelled. Do not accept delivery of defective cylinders. Be sure they are not giving off odours, visible fumes or hissing sounds. Check that the cylinder was last tested within the required time (usually five years). Also check that the cylinder labels are intact and that they match other identifying markings on the cylinder. Do not rely on cylinder colour to identify the gas. Different suppliers may use different colours for cylinders of the same gas. In addition, colours appear different under artificial lights and some people are colour blind.

Call compressed gases by the name on the supplier label. This reduces confusion, promotes recognition of the hazards involved and precautions to take, and can prevent accidental use of the wrong gas. If oxygen is called "air," someone who wants air to run a tool may use oxygen with possible serious results. Leave the valve cap securely in place until the cylinder is to be used. Inspect the cylinder valve by looking through the ports in the valve cap. Do not accept dirty, rusted or otherwise damaged valves and fixtures.

STORAGE AREA

Store compressed gas cylinders separately, away from processing and handling areas, and from incompatible materials. Separate storage can minimize personal injury and damage in case of fires, spills or leaks. Many compressed gases can undergo dangerous reactions if they come in contact with incompatible materials (gases, liquids or solids), so store them apart from each other. For example, store oxidizing gases at least 6 metres (20 feet) away from fuel gases or other combustible materials, or separate them with an approved fire wall. Check the reactivity information and storage requirements sections of the SDS for details about which materials are incompatible with a particular compressed gas. The National Fire Code addresses requirements for segregation of different gases in storage.

A best practice is to store compressed gas cylinders outside, in a well-drained, securely fenced area, on a raised concrete pad or non-combustible rack. Protect cylinders from the weather and do not allow them to stand directly on wet soil as this can cause corrosion.

Always chain or securely restrain cylinders in an upright position to a wall, rack or other solid structure wherever they are stored, handled or used. Securing each cylinder individually is best. Stacking of groups of cylinders together offers some protection, but if this is done improperly, the entire group or individual cylinders could fall.

At all times:

- ⇒ Keep the amount of compressed gases in storage as small as possible.
- ⇒ Inspect storage areas regularly for any deficiencies such as damaged or leaking cylinders and poor housekeeping.
- ⇒ Correct all deficiencies as soon as possible, or bring to the attention of the office.

USE AND DISCHARGE OF COMPRESSED GAS

GENERAL PRECAUTIONS

- ⇒ When moving cylinders, securely fasten them to a suitable cylinder transporting device. At the site, chain or otherwise secure the cylinder in place. Remove the valve cap only after the cylinder has been safely installed then check the cylinder valve and fixture. Remove any dirt or rust. Grit, dirt, oil or dirty water can cause gas leaks if they get into the cylinder valve or gas connection.
- ⇒ Never open a damaged valve, notify your supervisor of any suspected defects.
- ⇒ There are four standard types of cylinder valve outlets to prevent interchanges of gas handling equipment between incompatible gases. Use only the proper equipment for discharging a particular gas from its cylinder. Never use homemade adaptors or force connections between the cylinder valve outlet and gas handling equipment.
- ⇒ Whether a compressed gas is a liquefied, non-liquefied or dissolved gas, the gas supplier can give the best advice on the most suitable gas discharge equipment and the safest way to use it for a specific job.
- ⇒ In general, do not lubricate any cylinder valves, fittings, or regulator threads, or apply jointing compounds and tape. Use only lubricants and sealants recommended by the gas supplier.
- ⇒ Cylinders stored in cold areas may have frozen valves. Use only warm water to thaw the valve or bring the cylinder into a warm area and allow it to thaw at room temperature.
- ⇒ Use only recommended keys or handwheels to open valves. Never use longer keys or modify keys to increase their leverage. Avoid using even the correct key if it is badly worn. Do not use pipe wrenches or similar tools on handwheels. Any of these practices could easily damage the valve seat or spindle.
- ⇒ Always open valves on all gas discharge equipment slowly. Rapid opening of valves results in rapid compression of the gas in the high-pressure passages leading to the seats. The rapid compression can lead to temperatures high enough to burn out the regulator and valve seats. Many accidents involving oxidizing gases result from burned out regulator and valve seats, usually caused by opening valves too quickly.
- ⇒ Do not use excessive force when opening cylinder valves--use no more than three quarters of a turn if possible. If a problem develops, the valve can then be closed quickly. Leave keys on cylinders when valves are open so the valve can be closed quickly in an emergency. Some cylinder valves, such as oxygen valves, have double seating. These valves should be fully opened, otherwise they may leak.
- ⇒ Do not use excessive force when opening or closing a cylinder valve. When closing, turn it just enough to stop the gas flow completely. Never force the valve shut.
- ⇒ Close cylinder valves when the cylinder is not actually in use. Do not stop the gas flow from a cylinder by just backing off on the regulator. Regulators can develop seat leaks, allowing pressure to build up in equipment attached to the regulator. Also if the cylinder valve is left open, foreign matter can enter the cylinder if the cylinder pressure drops lower than the pressure in attached equipment. Close the cylinder valve first and then close the regulator.

LIQUEFIED GASES

Manual valves are normally used on cylinders containing liquefied gases. Special liquid flow regulators are also available. If it is necessary to remove liquid as well as gas from a cylinder, discuss this with the gas supplier before ordering. Some liquefied gas cylinders have eductor tubes which allow the liquid to be withdrawn from the cylinder. The supplier can provide suitable cylinders and special instructions.

Do not remove gas rapidly. The pressure in the cylinder could drop below the required level. If this happens, or if rapid gas removal is needed, follow the gas supplier's advice.

NON-LIQUEFIED AND DISSOLVED GASES

Use automatic pressure regulators to reduce gas pressure from the high levels in the cylinder to safe levels for a particular job.

There are two basic types of automatic pressure regulators: single-stage, and double- or two- stage. Generally, two-stage regulators deliver a more constant pressure under more precise conditions than single-stage regulators. Sometimes, manual flow controls are used on non- liquefied gases. Fine flow control can be obtained, but an operator must be present at all times. Manual flow controls do not automatically adjust to pressure buildups in blocked systems.

GUIDELINES FOR SAFE HANDLING AND USE

Use the smallest practical cylinder size for a particular job. Do not keep cylinders longer than the supplier recommends. Compressed gas cylinders are mainly shipping containers. They are built to be as light as possible while remaining safe and durable. Do not drop cylinders or otherwise allow them to strike each other. Rough handling, including using cylinders as hammers or as rollers to move equipment, can seriously damage them.

Do not strike an electric arc on a cylinder. Arc burns can make the metal brittle and weaken the cylinder.

Never tamper with cylinders in any way. Do not repaint them, change markings or identification, or interfere with valve threads or safety devices.

Apart from the fact that it is illegal, it can be dangerous for non-specialists to refill cylinders or to change their contents. Explosions, cylinder contamination or corrosion can result.

EQUIPMENT FOR COMPRESSED GAS SAFETY

All equipment used with compressed gases must be clean, properly designed and maintained, and made from materials compatible with the gas used. For example, acetylene forms explosive compounds in contact with copper, silver and mercury or their alloys, including bronze or brass containing more than 65 percent copper. Ammonia attacks brass and can react with mercury to form an explosive compound. Do not use mercury pressure gauges in ammonia systems.

In general, avoid pressurizing ordinary glass equipment. Use specially designed glass equipment and protective devices. Where cylinders are connected to a manifold or header, make sure specialists properly design and install the system. Use effective flashback arrestors on acetylene and other flammable gas systems.

Always follow the correct procedures for assembling and disassembling compressed gas equipment. Check that all the connections are clean and do not leak. Check for leaks, using the gas suppliers recommended method, after assembling and before starting to use equipment. Never use old clips or twisted wire for hose connections. If a hose works loose and flails around, serious injury could result. Poor hose connections are a common cause of accidents.

Acetylene under pressure can explode. Never use acetylene outside of the cylinder at pressures over 103 kPa (15 psig) unless you take special precautions. If an acetylene cylinder has been accidentally left on its side, set it upright for at least an hour before use. Otherwise, it will emit a burst of solvent instead of gas when the valve is opened.

Corrosive gases can "freeze" the valve stem, making it hard to open the valve. This results from the gas corroding the valve metal. Minimize "freezing" by rotating the valve stem at least once a day while the cylinder is in use. Also, flush the regulator or manual control valve with dry nitrogen or dry air as soon as possible after use. to run tools designed for compressed air. High oxygen pressure can cause the lubricant in the tool to explode.

COMPRESSED GASES IN CONFINED SPACES

Always comply with applicable occupational health and safety laws when working in a confined space. When using compressed gases, including inert gases, in a confined space, be sure to check that all equipment connections are leak-tight. Remove cylinders or connected equipment that are not in use from confined spaces, even during short breaks. Check the air for oxygen levels (high and low). Also check for any possible toxic, corrosive or flammable gases before entering confined spaces and during prolonged work periods. Never work alone.

EMPTY CONTAINER SAFETY

Non-Liquefied and Dissolved Gases

The amount of material remaining in a non-liquefied or dissolved gas (acetylene) cylinder is directly proportional to the cylinder pressure gauge reading. As the gas is used, the reading on the cylinder pressure gauge drops. When the cylinder pressure gauge reads zero, the cylinder is not really empty. The cylinder still contains gas at atmospheric pressure. Keep a slight positive pressure in the cylinder. Consider it "empty" when the cylinder pressure gauge reads about 172 kPa (25 psig) or when the cylinder will not deliver at least 172 kPa to the outlet pressure gauge.

Liquefied Gases

The pressure in liquefied gas cylinders remains constant at a given temperature as long as any liquid remains in the cylinder. The only way to know how much material remains in a liquefied gas cylinder is to weigh the cylinder. The empty (tare) weight of the cylinder is stamped on its neck or valve stem. Record the net weight of the cylinder contents on a card attached to it. As with non-liquefied and dissolved gases, never empty the cylinder completely. Keep a small amount of material in the cylinder to maintain a slight positive pressure.

Keeping a positive pressure in an "empty" compressed gas cylinder helps to prevent back flow or suck back. This back flow is the drawing-back into the cylinder of contaminants or moist air from a higher pressure system or the atmosphere.

Keep the valves on all "empty" cylinders closed. This practice maintains a positive pressure in them. "Empty" cylinders with open valves can "breathe". Temperature increases or drops in atmospheric pressure can force gas out of the open valve of an empty cylinder. This release could result in hazardous conditions depending on the gas and how much is forced out. Temperature drops or increases in atmospheric pressure can cause air to be drawn in through the open valve. Air could cause a serious contamination and corrosion problem inside the cylinder. When a compressed gas cylinder is "empty," handle it as though it is full since it does contain gas.

Always:

- ⇒ Close the cylinder valve before removing the gas discharge equipment.
- ⇒ Clearly mark or label the cylinder "empty" or "MT."
- ⇒ Place the cylinder in a storage area separate from that used for full cylinders.
- ⇒ Keep incompatible materials away from the cylinder.

Notify the gas supplier if the cylinder or any part of it is damaged or defective, contaminated, or may have been exposed to a possibly hazardous condition such as a fire or electric arc.

Take care when scrapping unserviceable cylinders. Before scrapping, first destroy the cylinder as a pressure vessel. Contact the gas supplier for advice on disposing of unserviceable cylinders.?

Maintain good housekeeping at all times in the workplace:

- ⇒ Never hang clothes or equipment over a compressed gas cylinder.*
- ⇒ Never use oxygen or even compressed air to remove dust from clothing or equipment.
- ⇒ Promptly remove combustible wastes including wood, paper or rags, from the work area.
- ⇒ Properly and promptly dispose of "empty" or unlabelled cylinders.

***Note:** Hanging things over a cylinder makes it harder to operate the valve. In addition, clothing may become saturated with a hazardous gas. Clothing saturated with either an oxidizing gas or flammable gas will catch on fire easily and burn intensely. Hang clothes that are even partly saturated with an oxidizing gas or fuel gas in a well-ventilated area for at least 15 minutes to remove trapped gas.

Personal cleanliness helps protect people working with hazardous materials:

- ⇒ Wash hands before eating, drinking, smoking or going to the toilet.
- ⇒ Remove contaminated clothing since it may be a severe fire or health hazard.
- ⇒ Do not wear or carry items contaminated with oxidizing or flammable gases into areas having ignition sources or where smoking is allowed.
- ⇒ Store food and tobacco products in uncontaminated areas.
- ⇒ Clean yourself thoroughly at the end of the workday.

Regular workplace inspections can help to spot situations where compressed gases are stored, handled, or used in potentially hazardous ways.

Regular inspection of equipment can provide a warning of potential hazards: Examine regulators, pressure relief valves and cylinder connections.

- ⇒ Ensure that cylinders are free of corrosion, leakage, pitting, dents or gouges.
- ⇒ Regular equipment maintenance can prevent hazardous conditions in the workplace.

Ensure that maintenance personnel:

- ⇒ Know the possible hazards of the materials they may encounter and any special procedures and precautions before they begin to work.
- ⇒ Carry out repairs to equipment properly, using equipment suitable for the contents of the compressed gas cylinder.
- ⇒ Avoid forcing connections, using homemade adaptors or tampering with cylinders in any way.

Comply with applicable regulations and contact the gas supplier for advice. protectors. Act fast in emergencies such as chemical fires or gas cylinder leaks.

- ⇒ Evacuate the area at once if you are not trained to handle the problem or if it is clearly beyond your control.
- ⇒ Alert other people in the area to the emergency.
- ⇒ Call the fire department immediately.
- ⇒ Report the problem to the people responsible for handling emergencies where you work.
- ⇒ Obtain first aid and remove all contaminated clothes if you have been exposed to harmful chemicals.

FORKLIFT PROGRAMME

Introduction

Material handling is a significant safety concern. During the movement of products and materials, there are numerous opportunities for personal injury and property damage if proper procedures and caution are not used. This programme applies to forklifts powered by electric motors or internal combustion engines.

Pre-Qualifications for Forklift Operation

All candidates for forklift operators must meet the following basic requirements prior to starting initial or annual training:

- ⇒ No adverse vision problems that cannot be corrected by glasses or contacts.
- ⇒ No adverse hearing loss that cannot be corrected with hearing aids.
- ⇒ No physical impairments that would impair the safe operation of the forklift.
- ⇒ No neurological disorders that affect balance or consciousness
- ⇒ Not taking any medications that affect perception, vision, or physical abilities

Training for Certified Operators; Operator(s)/Trainee

- ⇒ Operators must be trained with the familiarization and be authorizing/designated as competent operators
- ⇒ Trainees may operate equipment during training under the supervision of the trainer or examiner.
- ⇒ All operators must complete a certified operating programme prior to operating the forklift.
 - Defined: testing of the operator's proficiency in, and retention of, the subject matter covered in both the theory and operational portions of the training [retraining] of the operator
- ⇒ All operators must be retrained every three years.

Trainer/examiner

- ⇒ Definition: person who, by possession of a recognized certificate or professional standing, or by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, work, or the project.
- ⇒ Training must be provided by competent trainer
- ⇒ Instruction to enable the trainee to become a qualified person regarding the tasks
- ⇒ Instruction to enable the trainee to become a qualified person regarding the tasks to be performed, including knowledge regarding potential hazards

After the operator has received familiarization, and under the direction of a trainer or examiner, the trainee shall demonstrate verbal and actual-use proficiency regarding the following:

- ⇒ Walk around and familiarization with equipment — identify and review manufacture equipment manual
- ⇒ Major components — identification and function
- ⇒ Stability triangle
- ⇒ Perform pre-start inspection — carry out daily checks and inspections
- ⇒ Starting and stopping the machine.
- ⇒ Planning the route of travel and work site inspection
- ⇒ Setting the machine for work (if applicable)
- ⇒ Operation and function of all controls — completing course tasks
- ⇒ Loading and unloading trailers
- ⇒ Cylinder component-purpose and inspection
- ⇒ Propane safety
- ⇒ Battery inspection, charging and safety
- ⇒ Parking and securing

Selecting a Forklift

When deciding which type of forklift is necessary for your operations, there are many factors to be considered.

Type of Products

The products are one of the big deciding factors in determining which forklift is required. Such factors as the overall size, weight, storage and warehouse requirements, and product types such as palletized materials, drums, containers, and non-palletized materials must all be taken into consideration before purchasing a forklift.

Travel Routes

Consideration must be given to the size and area of your facility, the aisle widths, minimum and maximum, specific tight areas, and the distance to travel for moving products. Other points to consider would be the surface to be driven on, the height of the doorways and building and whether usage is indoors, outdoors, or both.

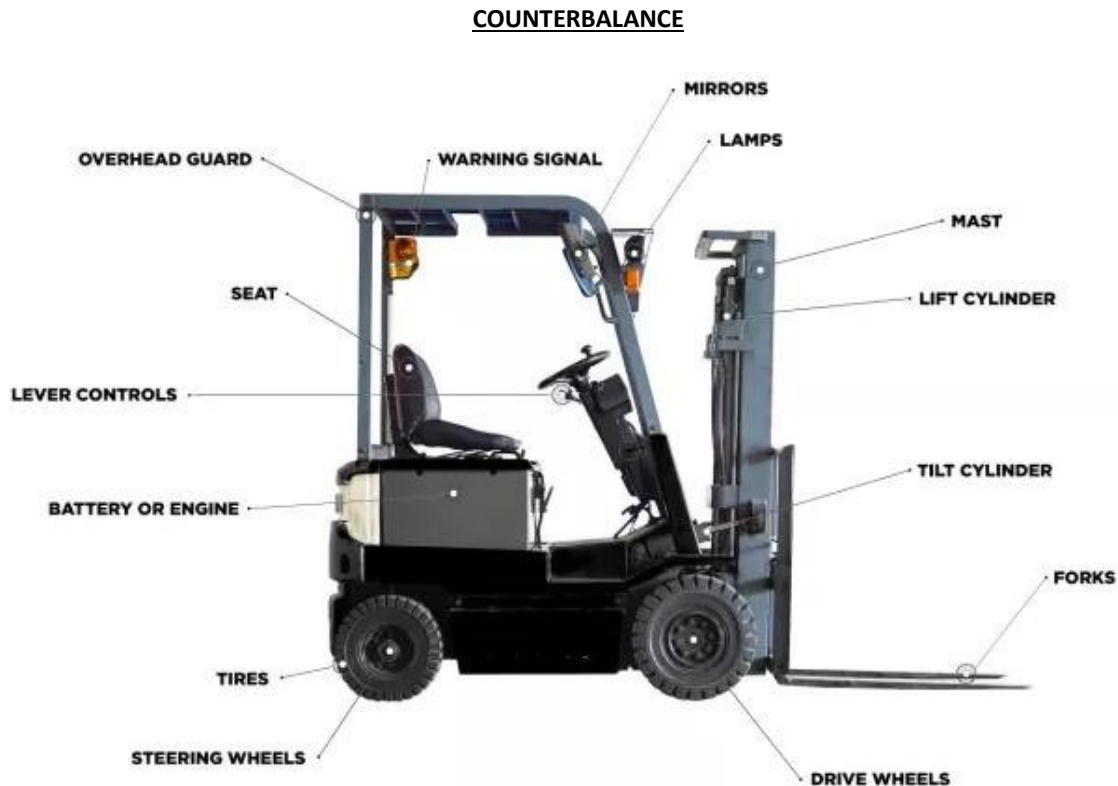
Forklift Classifications

There are two major classifications or types of truck equipment.

- ⇒ COUNTERBALANCE, and
- ⇒ NARROW Aisle

Within each classification there is a wide variety of different equipment. Each operator should be thoroughly familiar with the type of truck, special features such as attachments, the controls, levers, pedals, size, capacity rating, etc. BEFORE they operate that truck.

Below you will see the two most common types of lift truck equipment.



The basic counterbalance truck is one where the entire weight of the load is outside of the stability points of the truck, outside of the pivot or fulcrum point which is the centre of the drive wheels. Counterbalance trucks can be powered by internal combustion engines such as gas, propane, or diesel, as well as be electric powered by using a battery. Counterbalance trucks are usually steered by the rear wheels and driven by the front wheels the opposite of the average car or truck you may drive.

NARROW AISLE



The basic narrow aisle reach truck is designed so that approximately half of the weight of the load is inside the stability points of the truck, inside the pivot or fulcrum point, which is the center of the load or straddle wheels. Narrow aisle trucks, because of their design for use in narrow aisles, are electric powered by using a battery. The narrow aisle equipment is usually driven and steered by the rear wheel or wheels.

General

Both the counterbalance and narrow aisle trucks are very much different to operate, and every operator should have a full training programme and be able to demonstrate proficiency on each type of equipment BEFORE being allowed to operate that particular type of equipment.

Explanation of Terms

Capacity

The capacity of any forklift can be easily defined as how much weight the truck can lift, transport, stack and safely handle. This is the maximum load limit of your truck and should never be exceeded. This load limit is shown on the truck's identification plate. The capacity of your truck is also rated at a given load centre rating which is also shown on the plate.

Load Centre Rating

The load centre rating on your truck can be easily defined as the distance from the heels or vertical surface of the forks to the centre of gravity of the load. Most forklifts are rated and given capacity at a 24-inch load centre rating. This means the centre of gravity of your load should not be more than 24 inches out from the heels of your forks. Should the centre of gravity of your load be more than 24 inches out from the heels of the forks, then the maximum load limit or lifting capacity is reduced.

Maximum Fork Height

The maximum fork height is the distance from the ground or floor to the top surface of the forks when the mast is fully raised, and the forks are level. This is the maximum height you can lift the load on your truck.

Free Lift

Free lift is the distance from the ground or floor to the top surface of the forks without changing the mast height. Some trucks have no free lift, and some will have partial or even full free lift. Free lift is useful for stacking loads in low overhead areas such as trailers. The operator should mechanically lift the forks up using the controls to determine how much, if any, free lift is on the truck to be used.

Forklift Weight

This is the weight of your forklift without the load. The truck weight will be shown on the identification plate on the truck. Operators should check the forklift weight before travelling on restricted floor areas in the building, lot or onto trailers.

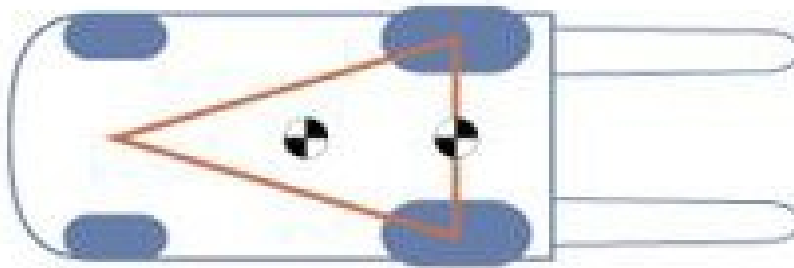
Counterbalance Forklift Stability

The forklift stability triangle is a fundamental concept that operators of counterbalanced forklifts must understand. In order to maintain longitudinal, lateral, and dynamic stability, operators must be able to locate the centre of gravity of a loaded forklift and ensure that it falls within this imaginary triangle that spans the front axle to the centre of the steer axle.

What is the stability triangle?

Most counterbalanced forklifts have a three-point suspension system, meaning that the forklift is supported at the two front wheels and the centre of the steer axle. If you imagine all three points connected into a triangle, this is the forklift's stability triangle. When the forklift's centre of gravity falls within the perimeter of this triangle, a load is safe to carry.

UNDERSTANDING THE FORKLIFT STABILITY TRIANGLE



When there is no load present, the forklift's centre of gravity is firmly inside the triangle. Because there is no load, the centre of gravity is nearly in the centre of the forklift's counterbalance. As you add weight to the forks, the centre of gravity shifts closer to the front axle. Once the centre of gravity reaches the front axle, it is at the edge of the stability triangle, and the load becomes unsafe to carry.

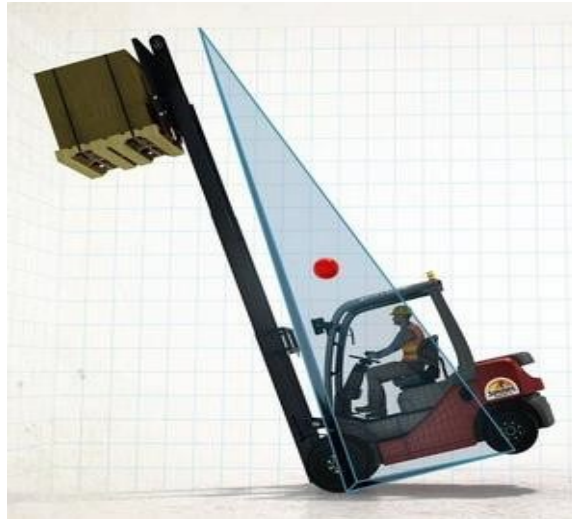
Longitudinal stability isn't the only concern for forklift operators.

There is also lateral stability to consider. A forklift can overturn sideways if the centre of gravity leaves the stability triangle on either of the two sides. For this reason, it is important to keep the centre of gravity as near as possible to the centre of the forks (remembering that the centre of gravity may not be the geometric centre if the load has irregular weight distribution).

Furthermore, operators must consider dynamic stability. This is the idea that a load can shift due to sudden stops, starts, turns, or tilts. Because of these possibilities, operators should be careful to keep the centre of gravity firmly within the stability triangle.

For instance, if a heavy load brings the centre of gravity all the way to the front axle — the theoretical edge of the stability triangle — sudden braking could shift the load forward and out of the triangle altogether. That slight nudge could cause the rear wheels to raise or tip the forklift entirely. What seemed like a stable load became an unstable one due to dynamic forces.

The traditional model of the forklift stability triangle is useful, but it leaves out one important thing: three- dimensional space. In fact, the stability triangle is a pyramid.



As a load moves upward, it shifts the forklift's centre of gravity forward. A safe load at 4 inches off the ground may tip the forklift at 4 feet up. That's why operators must always "carry the load at the lowest position possible, 4 to 6 inches from the ground."

To Improve Forklift Stability

Refrain from accelerating, braking, or turning suddenly. These actions shift the centre of gravity, increasing the chance of tip overs. Never turn while on a grade or ramp; this greatly increases the odds of a lateral rollover.

When operators are arranging a load, they should be aware of hazards, such as tip over, loss of steering control (due to raised rear wheels), falling loads, and collisions. Operators should watch out for the following red flags:

- ⇒ Loads that exceed the capacity stated on the data plate.
- ⇒ Unstable, off-centre loads.
- ⇒ Raised rear wheels — this is an indication that the forklift is overloaded.
- ⇒ Items with a high centre of gravity — keep the load as low as possible.

Types Of Tires and Inspection

Types of Tires

There are basically four major types of tires used on forklift equipment depending upon the usage and application:

- ⇒ Pneumatic Tire
- ⇒ Pneumatic Type Solid Tire
- ⇒ Solid Tire
- ⇒ Cushion Tire

Pneumatic Tire

Pneumatic tires are air filled, the same as the car or forklift you drive. Pneumatic tire equipment is generally used for outdoor purposes to travel over uneven terrain, as well as smooth and level surfaces. Generally, pneumatic tire equipment is larger in size than other machines to accommodate outdoor use.

Pneumatic Type Solid Tire

Pneumatic type solid tires are similar in design to pneumatic tires; however, the pneumatic type solid tires are filled with soft rubber instead of air to eliminate flats or punctures during use.

Solid Tires

The solid tire is constructed using a rim as a base with a solid layer of rubber for wear. Generally, solid tires are used for indoor purposes on fairly smooth and even surfaces. Solid tires are smooth with no treads.

Cushion Tires

Cushion tires are slightly thicker than solid tires and have treads that provide the operator with slightly more comfort and smoother ride, however, this depends on the surface travelled on with the forklift. Generally, cushion tires are for indoor use, however because of the design, they are used outdoors on fairly even terrain, relatively smooth of undulations or major obstacles such as rough gravel, etc.

Tire and Wheel inspection

The operator should be inspecting the wheels and tires looking for the following conditions:

- ⇒ Bent rims
- ⇒ Available tread and wear conditions on tire
- ⇒ Chunks or large pieces missing
- ⇒ Rubber splitting
- ⇒ Rubber separating from the rim
- ⇒ All nuts and/or studs are installed and tight
- ⇒ Tire pressure (pneumatic only - check manufacturer's recommendations)
- ⇒ Type or style of tire and recommended use.

Types of Forks

Forks

There are two major types of forks that are most used on forklifts:

Half Tapered Forks

This fork tapers from the tip to approximately halfway back to the heel and then continues to the heel with a full thickness blade. Generally, these forks are used for heavier loads.



Full Tapered Forks

There are other types of forks available for various load handling applications. All forks are available in a variety of lengths, widths, thicknesses, styles, etc. to suit your specific requirements.



Hydraulics - Valves & Cylinders

Valves

Valves are an important element in control of the hydraulic system. There are many types of valves, however, listed below are the main two valves incorporated into the hydraulic system of the forklift of which you should be familiar with.

Directional Control Valve:

Used to start, stop and reverse the flow of oil. Can be manually or automatically operated.

Flow Control Valve:

Provides a variable restriction for controlling the flow or velocity of the oil. Generally installed at the bottom of the lift cylinder to control lift and lower surges by restricting the maximum amount of oil flow.

Cylinders

A device in a hydraulic or fluid power system that transforms the flow of pressurized fluid into linear motion.

Lift Cylinders

Are classified as single acting cylinders. They only produce force or work in one direction.

Tilt Cylinders

Are classified generally as double acting cylinders. They produce force or work in both the out and in directions.

Cushion Cylinders

Are installed on some forklifts to cushion the lifting or lowering function of the carriage when the control lever is released suddenly. This will reduce/avoid the sudden jerking of the load on the forklift.

Lifting Speed

Lifting speed to elevate the load is generally expressed in feet per minute (FPM). The actual FPM elevation of the load depends on the type and size of the hydraulic pump. The higher volume of hydraulic fluid the pump displaces and the inside diameter size of the hydraulic lines must be proportional to work together with each other. The larger the hydraulic line, the higher the oil velocity it can receive, providing the pump can deliver the same volume of oil.

Operating Procedures & Safety Module

Operating Procedures Load Handling Basics

Approach all loads as squarely as possible and stop approximately one foot away from the tops of the forks. Level off the forks and drive in centre and square on the load.

Lift to take the weight of the load and then tilt to stabilize the load. Only use as much tilt as necessary to secure the load.

If you have a reach forklift, you should lift the load, tilt to stabilize the load, lift the load high enough to clear the load arms, and then reach the load into the forklift.

If another load is up light behind the load you must pick up, then tilt the weight of the load, back out or reach out- depending on the type of forklift- approximately six to 12 Inches and then put your tilt on to stabilize the load.

The above basic procedures should apply to the majority of loads you will be required to lift with your forklift, however, there are special types of loads that will require different procedures to ensure the load can be safely secured and lifted. If you are unsure of the correct procedures required for your specific application, contact your supervisor or manager for assistance.

Depositing a Load

- ⇒ Approach the location the load is to be placed as square as possible.
- ⇒ Stop before entering the location and check the load alignment with the stack or area.
- ⇒ Drive into the location approximately halfway and stop, level off the load, finish driving in and lower the load down slowly and accordingly to the centre of the location or if stacking, accordingly to the centre of gravity of the stack.
- ⇒ Back your forklift out (or reach and back out if you have a reach forklift) until your forks clear the loads or pallets and lower the forks if necessary.
- ⇒ Position the forks into the travel position, which is approximately four to six inches at the tips and one to two inches at the heels. The travel position is dependent upon the surface conditions you are required to drive on with your forklift. In any case, the forks should be tilted slightly back (up) when in the travel position.

The above depositing procedure will help minimize product damage in most cases. Different varieties and types of loads may require different procedures. Make sure you're familiar with the correct procedures in your workplace.

General Operating Procedures

- ⇒ Do not drag your forks into or coming out or any load.
- ⇒ Perform one function at a time. Never travel and lift, lower, reach, etc. at the same time.
- ⇒ All movements should be smooth and gradual. Forklifts are unstable while lifting, turning, etc.
- ⇒ Always LOOK over both shoulders BEFORE backing up.
- ⇒ Don't travel forward with a load you can't see around.
- ⇒ Use your horn at all blind corners, doorways, coming out of a trailer and aisles, turning corners, etc.
- ⇒ Loads should always face uphill on ramps or inclines. If you can't see forward, a signal person/spotter is required.
- ⇒ Without a load, the forks should always face downhill whether going up or down a ramp or incline.
- ⇒ Always check overhead clearances when operating, stacking, etc.
- ⇒ Handle only stable loads.
- ⇒ Use corner mirrors where possible.
- ⇒ Cross railroad tracks and uneven surfaces on a diagonal
- ⇒ Never exceed the capacity, load centre rating or other limitations of your forklift and make sure the load is all the way back to the heels of the forks.

General Safety

- ⇒ Keep hands, legs, feet or any body parts inside the forklift at all times.
- ⇒ Be careful when working around pedestrians.
- ⇒ Do not drive toward anyone with your forklift.
- ⇒ Pedestrian traffic always has the right of way.
- ⇒ Be alert for oil, water and refuse on the floor and have it cleaned up immediately.
- ⇒ Don't allow anyone to stand under, walk under toads or ride on loads or the forklift. Only the operator is allowed on the forklift.
- ⇒ Obey all signs and in-workplace rules and regulations and the applicable legislation.
- ⇒ Hoist personnel only In approved platforms. Never travel with personnel in the basket or platform.
- ⇒ Park your forklift in an approved location, place the lips of the forks into the floor with the heels as close as possible to the floor, place the forklift in neutral, emergency brake on, and tum the key off. Disconnect
- ⇒ batteries or shut off the valve on propane tanks if you're finished for the day or shift.
- ⇒ Only trained and authorized personnel should be allowed to operate forklifts.

Propane Cylinder Tank

Propane Cylinder Components - Purpose and Inspection

Bleed Valve

Used when filling the cylinders to release pressure in the tank and to determine when the cylinder is filled to the safe recommended level. Ensure this valve is always closed tight except during the filling process.

Pressure Relief Valve

Installed on the tank to release any excess pressure build-up in the cylinder due to heat expansion of the fuel. When you install the cylinder on the equipment, ensure the pressure relief valve is positioned straight up in the 12 o'clock position so the valve stays in the top vapour space of the tank. This valve should always have a cap on to keep it clean.

Liquid Service Valve

This valve can be used for two purposes; or connecting the coupling and main fuel line to your forklift and for filling the cylinder if it does not have a filler valve.

Fill or Filler Valve

This valve is installed on the cylinder for filling only. The fill valve should have a protective cap over it to keep the valve clean.

Float or Fuel Gauge

This gauge is to determine the approximate level of fuel left in the cylinder. Never use this gauge for filling. You must use the bleed valve when filling to determine when the cylinder is filled to the maximum safe and recommended level, or the cylinder must be filled by weight.

Cylinder Collar

The collar acts as a guard to protect all or the valves installed on the cylinder.

Base or Foot Ring

This ring is installed at the end of the tank to protect the end of the cylinder as well as enable you to stand the cylinder up for storage and filling.

Cylinder Inspection

Before mounting any cylinder, the cylinder should be inspected to ensure it is safe to use. The following items should be checked on all cylinders:

- ⇒ Rotate the cylinder and check for damage such as cracks, broken welds, obvious dents, or major damage. Damaged cylinders should not be used.
- ⇒ Check the date on the collar to ensure the tank has been inspected and stamped according to the legislation requirements. If a cylinder is out of date, do not use the cylinder. The cylinder should be tagged and returned to the supplier for certification.
- ⇒ Make sure the bleed valve is closed tight.
- ⇒ The pressure relief valve should have a protective cap.
- ⇒ Make sure the liquid service valve is closed. Check inside the nozzle end of the valve. There should be a flat washer and "O" ring in good condition to prevent the valve from leaking when the coupling is installed from the forklift.
- ⇒ If a fill valve is installed on the cylinder, loosen the cap slightly to ensure the valve inside is not leaking, then re-tighten the cap. This valve should have a protective cap installed on the valve.
 - Cylinders are not supposed to leak anywhere. Should you find a leaking cylinder, report it immediately and take the appropriate safety or emergency action necessary to ensure there is no source of ignition for a fire or explosion from the leaking propane.
 - Check the fuel gauge to ensure the cylinder has not been overfilled. The maximum fill is 80%, which is the bleed valve level on the cylinder. The fuel gauge is not always exactly accurate, and the cylinder may have to be rotated to the proper mounting position in order to read properly. If you think a cylinder has been overfilled, do not use it, report it to the supervisor or manager and determine if the cylinder is safe to use after further inspection.

Cylinder Changing Procedures

The following procedure is generally the recommended method of changing a propane cylinder:

- ⇒ Ensure you have protective clothing or equipment covering your eyes, hands and other exposed skin. Vaporization of propane can cause frostbite. Ask your supervisor or propane supplier what protective equipment and clothing is necessary for your application.
- ⇒ Close the liquid service valve.
- ⇒ Run the engine until it stops, making sure the fuel lines are empty.
- ⇒ Turn off the engine.
- ⇒ Disconnect the coupling on the liquid service valve.
- ⇒ Unstrap and remove the cylinder. Do not drop, kick, or roll cylinders. They must be carried by hand or on the appropriate dolly or cart. Never transport cylinders on another forklift, forks or otherwise.
- ⇒ Place cylinders in the proper storage area or facility outside.
- ⇒ Remove full cylinder from the storage area and inspect as previously outlined.
- ⇒ Install the full cylinder on the forklift. Mount the cylinder so the pressure relief valve is in the 12 o'clock position and in the vapour space at the top of the cylinder and strap the cylinder firmly in place.
- ⇒ Reminder: Make sure the liquid service valve is closed before coupling. Attach the coupling to the liquid service valve. Ensure it is not cross-threaded and tighten hand tight. Do not use tools for coupling or uncoupling.
- ⇒ Open liquid service valve slowly and only enough to allow the pressure to equalize from the cylinder into the fuel line. Pause when opening the valve all the way.
- ⇒ Check for any leaks as previously mentioned such as soap/water solution, leak detector, smell, listen and visually see. If there are any leaks, close the liquid service valve and repeat the procedure. Do not use cylinders that are leaking. If you are unsure, report it to your supervisor.

Propane Safety

- ⇒ If you are unsure of any problem or procedures to follow, talk to your supervisor or manager immediately.
- ⇒ Protective clothing and safety equipment should be worn when changing or filling cylinders, as well as working on or around propane equipment.
- ⇒ No matches, open flames, smoking or other sources of ignition around propane.
- ⇒ Always check and be on the lookout for any leaks.
- ⇒ Use only approved cylinders, lines, hoses, materials, and equipment, etc.
- ⇒ Cylinders should be stored, changed and filled outdoors and away from the building. Check your local regulations for all applications and procedures for using propane.
- ⇒ Never mishandle or damage propane cylinders and equipment.
- ⇒ Only trained and authorized personnel should handle propane cylinders and equipment.

Battery Electrics Module

Battery Inspection, Charging and Safety Battery Inspection

Batteries should be inspected regularly to ensure there are no major problems and to obtain maximum life and full daily utilization of their potential. The following basic items should be checked:

- ⇒ The outside casing or battery shell should be inspected for major damage, broken welds, cracks, holes and overall condition.
- ⇒ Check the top surface area of each cell for damage, cracks, splits and ensure each cell is sealed.
- ⇒ The entire battery should be kept clean and free of corrosion.
- ⇒ Ensure battery cables are not frayed anywhere and have a good rubber coating.
- ⇒ Battery cables should be firmly attached to the terminal posts with no loose connections.
- ⇒ Check to ensure vent caps are in place and tight
- ⇒ Make sure the vent holes in the caps are clear and not plugged.
- ⇒ Check the electrolyte (fluid) in each cell to ensure the plates inside are covered with the fluid and not dry.
- ⇒ Use a hydrometer to take a specific gravity reading of the electrolyte. This is the most common and effective way of determining exactly how fully charged or discharged a battery is at that time.
- ⇒ Inspect the connectors on the cables for plugging in a battery to ensure they are not split or cracked and securely attached to the cables.

Battery Charging

- ⇒ Position the battery in front of the correct charger.
- ⇒ Connect the battery connector to the charger connector. Remember, don't connect the charger to the forklift connector, plug the battery to the charger.
- ⇒ Turn on the charger.
- ⇒ When the battery is fully charged, turn off the charger power switch first before disconnecting the cables.
- ⇒ Plug the battery into the forklift's connector. Ensure the cables are not hanging over the side of the forklift.
- ⇒ If you have to install the battery back into the forklift, make sure the battery stops are put back in place, so the battery does not move around or fall out of the forklift.

Note:

If you are unsure or any problems or procedures, contact your supervisor or manager. Only trained and authorized personnel should be allowed to inspect, repair, and charge, change or perform any other work with batteries.

Battery Safety

- ⇒ Protective clothing and equipment such as rubber gloves, rubber apron and a face shield should be worn in the charging area or when working on or around batteries. All exposed skin should be covered.
- ⇒ Charging areas should have a safety shower, eye wash station and proper ventilation.
- ⇒ No smoking in the charging area or around batteries as the hydrogen gas which escapes through the vent cap holes is very explosive.
- ⇒ You should ensure there is a baking soda solution available in the charging area to clean up any acid spills and for cleaning corrosion from the battery. Baking soda solutions (sodium bicarbonate) will neutralize the sulphuric acid.
- ⇒ If you are splashed with the acid anywhere on your body, wash off immediately and thoroughly and seek first aid treatment. Acid can cause severe burns if not properly treated immediately.
- ⇒ When changing batteries, keep your fingers out from around the sides of the batteries. The batteries are heavy enough to break and, in some cases, cut off your fingers or hands. Also keep your feet out from underneath the battery.
- ⇒ An approved fire extinguisher should be installed in the battery charging area.

Preventative Maintenance Inspection

Internal Combustion Engine Forklifts

These forklifts are powered by conventional internal combustion engines. Typically, they require gasoline or diesel as the fuel.

Internal combustion engine forklifts generate more power than electric ones and are therefore suitable for outdoor use.

To prevent yours from breaking down, follow these forklift preventive maintenance tasks:

- ⇒ Check Engine Oil Levels – before anything else, make sure that your engine oil levels aren't below acceptable levels. If the engine is deprived of oil, friction between the intricate parts will eventually result in a seizure.
- ⇒ Inspect Fluid and Coolant Levels – in addition to the engine oil, also check the hydraulic brake fluids to prevent breaks from failing (and clutches from breaking down). Furthermore, check the levels of engine coolant/anti-freeze.
- ⇒ Check Radiator and Air-Filter – make sure that the radiator is clean. And make sure that the air filter doesn't need changing (a rule of thumb is to change them after every 500 hours).
- ⇒ Inspect Hoses and Belts – finally, make sure that there aren't any cracks in the hoses and that the belts haven't worn out.

In addition to the above, make sure that the hood latch is properly secured (this applies to all forklifts).

If you regularly check all of the above, your internal combustion engine forklifts will stay up and running.

Battery Powered Forklifts

Like electric cars/forklifts, forklifts can also be powered with batteries (both lead-acid and lithium).

Compared to internal combustion engine forklifts, electric forklifts can't lift a lot of weight. For that reason, they are most suitable for indoors.

To increase the lifespan of your battery-powered forklift, do the following:

- ⇒ Check Water Levels – if your forklifts are powered by lead-acid batteries, make sure that they are adequately watered on a daily basis.
- ⇒ Check for Sulfur Deposits – again, this applies to only lead-acid batteries. Over time, needle- like deposits can form on the lead plates, which can hinder the performance of the battery. It can even cause a short-circuit in the battery.
- ⇒ Inspect Wiring – finally, ensure that the cables aren't loose and/or frayed. Exposed wires are a recipe for disaster.

Lithium batteries usually don't require much maintenance. Just make sure that you don't operate your forklift in unusually hot environments.

Liquid Propane Forklifts

As the name suggests, these forklifts are powered by liquid propane – a type of liquid petroleum gas (LPG).

They use propane tanks that are usually mounted at the back. Extreme care is warranted since liquid propane is highly flammable.

To create a safe environment for your staff and ensure the longevity of your forklifts, take the following steps:

- ⇒ Inspect the Tank – first and foremost, ensure that the propane tank is mounted properly.
- ⇒ Furthermore, keep an eye out for any visible damage (usually, you'll hear a hissing sound which can indicate gas leakage).
- ⇒ Check the Position of the Relief Valve – the relief valve of the propane tank should always point upwards.

Finally, check the belts and hoses for any visible damage, and replace them from time to time. And as mentioned above, make sure that the hood latch is working properly.

MAINTENANCE SCHEDULE

ELECTRIC FORKLIFT DAILY CHECKLIST	PAGE: 1 of 1 YEAR:

Date: _____ Truck#: _____ Operator: _____
 Start Hour: _____ End Hour: _____ Fuel: _____

Indicate an **X** where a problem is detected and a **✓** to indicate no problems visible.

Visual Inspection

COMMENTS

1. ☐ Battery _____
- ☐ Vent Caps _____
- ☐ Connector Covers _____
- ☐ Cables _____
2. ☐ Overhead Guard _____
3. ☐ Front Tire (Left) _____
4. ☐ Tilt Cylinder _____
5. ☐ Carriage _____
6. ☐ Fork Locking Pin (Left) _____
7. ☐ Fork (Left) _____
- ☐ (Attachment Applicable) _____
8. ☐ Mast _____
9. ☐ Lift Cylinder _____
- ☐ Lift Chains _____
10. ☐ Fork (Right) _____
- ☐ (Attachment Applicable) _____
11. ☐ Fork Locking Pin (Right) _____
12. ☐ Carriage _____
13. ☐ Tilt Cylinder _____
14. ☐ Front Tire (Right) _____
15. ☐ Hydraulic Oil _____
16. ☐ Data Plate _____
17. ☐ Battery Connectors _____
18. ☐ Seat & Seat Belt _____
19. ☐ Operator Manual _____
20. ☐ Rear Tire (Right) _____
21. ☐ Rear Tire (Left) _____

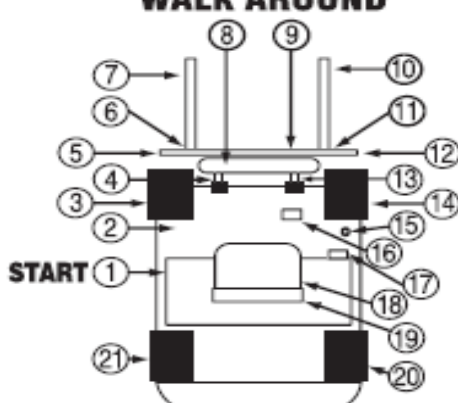
All comments made in reference to any problems should be made on the back of this page in detail and handed to the supervisor immediately.

Operational Inspection

COMMENTS

- A. ☐ Listen for Unusual Noise _____
- B. ☐ Check Service & Parking Brake _____
- C. ☐ Lifting Control _____
- D. ☐ Tilt Control _____
- E. ☐ Forward Driving _____
- ☐ Accelerator _____
- ☐ Steering _____
- ☐ Braking _____
- F. ☐ Reverse Driving _____
- ☐ Accelerator _____
- ☐ Steering _____
- ☐ Braking _____
- ☐ Backup Alarm _____
- G. ☐ Lights _____
- H. ☐ Horn _____
- I. ☐ Gauges _____
- J. ☐ Oil Spots on Floor _____

WALK AROUND



CAUTION: This is not a complete list of all items which may require attention. Operators are responsible for ensuring that the lift truck is in proper working condition in accordance with the manufacturer's specifications.

DO NOT operate lift truck if a problem is detected. Report all problems to the service department immediately.

SIGNATURE: _____

TO BE COMPLETED BY DESIGNATED OPERATOR AND FORWARDED TO SUPERVISOR PRIOR TO SHIFT.

MAINTENANCE SCHEDULE

NARROW AISLE FORKLIFT DAILY CHECKLIST	PAGE: 1 of 1 YEAR: _____

Date: _____ **Truck#:** _____ **Operator:** _____
Start Hour: _____ **End Hour:** _____ **Fuel:** _____

Indicate an **X** where a problem is detected and a **✓** to indicate no problems visible.

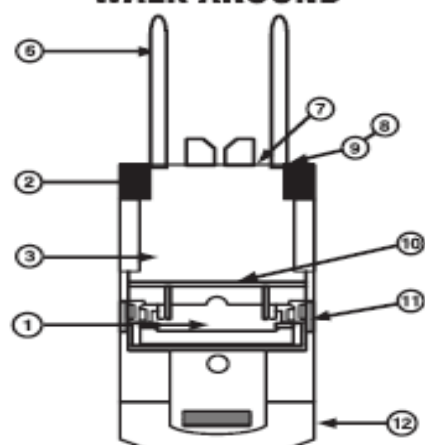
Visual Inspection COMMENTS

1. ☐ Battery _____
☐ Vent Caps _____
☐ Connector Covers _____
☐ Cables _____
2. ☐ Load Wheel _____
3. ☐ Overhead Guard _____
4. ☐ Tilt Cylinder _____
5. ☐ Carriage _____
6. ☐ Forks _____
7. ☐ Mast _____
8. ☐ Cylinder Lift _____
☐ (Tilt and Reach if Applicable) _____
9. ☐ Lift Chains _____
10. ☐ Nameplate _____
11. ☐ Battery Retainer Plate _____
12. ☐ Drive/Steer Tire _____

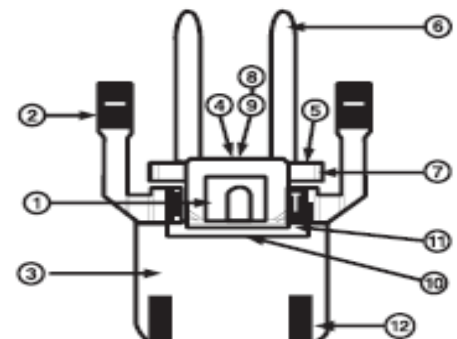
Operational Inspection COMMENTS

- A. ☐ Listen for Unusual Noise _____
- B. ☐ Parking Brake _____
- C. ☐ Lifting Control _____
- D. ☐ Tilt Control _____
- E. ☐ Forward Driving _____
☐ Steering _____
☐ Braking _____
- F. ☐ Reverse Driving _____
☐ Steering _____
☐ Braking _____
☐ Backup Alarm (Optional) _____
- G. ☐ Lights _____
- H. ☐ Horn _____
- I. ☐ Gauges _____
- J. ☐ Oil Spots on Floor _____

**Order Picker
WALK AROUND**



**Reach Truck
WALK AROUND**



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SIGNATURE: _____

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DO NOT operate lift truck if a problem is detected. Report all problems to the service department immediately.

TO BE COMPLETED BY DESIGNATED OPERATOR AND FORWARDED TO SUPERVISOR PRIOR TO SHIFT.

MAINTENANCE SCHEDULE

LOW LIFT FORKLIFT DAILY CHECKLIST	PAGE: 1 of 1 YEAR:

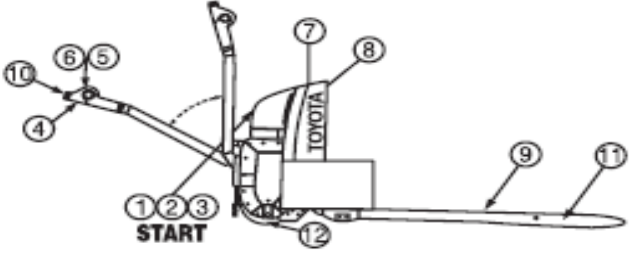
Date: _____ Truck#: _____ Operator: _____
 Start Hour: _____ End Hour: _____ Fuel: _____

Indicate an **X** where a problem is detected and a **✓** to indicate no problems visible.

Visual Inspection	Operational Inspection
1. ☐ Main ON/OFF Switch _____ 2. ☐ Hour Meter _____ 3. ☐ Key Switch _____ 4. ☐ Directional/Speed Control _____ 5. ☐ Horn Button _____ 6. ☐ Lift/Lower Button _____ 7. ☐ Data Plate _____ 8. ☐ Battery _____ ☐ Charger _____ ☐ Connector Covers _____ ☐ Cables _____ 9. ☐ Forks _____ 10. ☐ Emergency Reverse Button _____ 11. ☐ Load Wheel _____ 12. ☐ Driver/Caster Wheel _____ COMMENTS	A. ☐ Listen for Unusual Noise _____ B. ☐ Lifting Control _____ C. ☐ Forward Driving _____ ☐ Accelerator _____ ☐ Steering _____ ☐ Braking _____ D. ☐ Reverse Driving _____ ☐ Accelerators _____ ☐ Steering _____ ☐ Braking _____ ☐ Backup Alarm _____ E. ☐ Horn _____ F. ☐ Gauges _____ G. ☐ Oil Spots on Floor _____ COMMENTS

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WALK AROUND



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DO NOT operate lift truck if a problem is detected. Report all problems to the service department immediately.

SIGNATURE: _____

TO BE COMPLETED BY DESIGNATED OPERATOR AND FORWARDED TO SUPERVISOR PRIOR TO SHIFT.

MAINTENANCE SCHEDULE

INTERNAL COMBUSTION FORKLIFT DAILY CHECKLIST	PAGE: 1 of 1 YEAR:

Date: _____ Truck#: _____ Operator: _____
 Start Hour: _____ End Hour: _____ Fuel: _____

Indicate an **X** where a problem is detected and a **✓** to indicate no problems visible.

Visual Inspection

COMMENTS

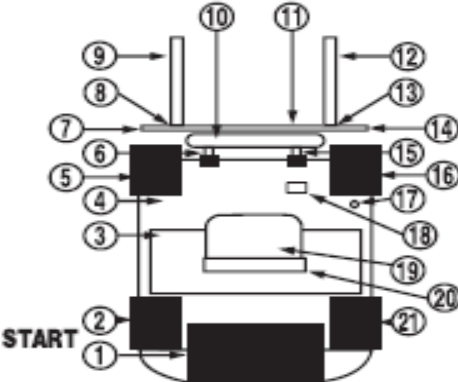
1. ☐ Propane
 - ☐ Relief Valve _____
 - ☐ Fuel Level _____
 - ☐ No Leaks _____
 - ☐ Safety Straps _____
2. ☐ Rear Tire (Left) _____
3. ☐ Engine Compartment
 - ☐ Oil _____
 - ☐ Battery _____
 - ☐ Radiator _____
 - ☐ Air Filter _____
 - ☐ Fan Belt _____
4. ☐ Overhead Guard _____
5. ☐ Front Tire (Left) _____
6. ☐ Tilt Cylinder _____
7. ☐ Carriage _____
8. ☐ Fork Locking Pin (Left) _____
9. ☐ Fork (Left) _____
- ☐ (Attachment Applicable) _____
10. ☐ Mast _____
11. ☐ Lift Cylinder
 - ☐ Lift Chains _____
12. ☐ Fork (Right) _____
- ☐ (Attachment Applicable) _____
13. ☐ Fork Locking Pin (Right) _____
14. ☐ Carriage _____
15. ☐ Tilt Cylinder _____
16. ☐ Front Tire (Right) _____
17. ☐ Hydraulic Oil _____
18. ☐ Data Plate _____
19. ☐ Seat & Seat Belt _____
20. ☐ Operator Manual _____
21. ☐ Rear Tire (Right) _____

Operational Inspection

COMMENTS

- A. ☐ Listen for Unusual Noise _____
- B. ☐ Check Service & Parking Brake _____
- C. ☐ Lifting Control _____
- D. ☐ Tilt Control _____
- E. ☐ Forward Driving
 - ☐ Accelerator _____
 - ☐ Steering _____
 - ☐ Braking _____
- F. ☐ Reverse Driving
 - ☐ Accelerators _____
 - ☐ Steering _____
 - ☐ Braking _____
 - ☐ Backup Alarm _____
- G. ☐ Lights _____
- H. ☐ Horn _____
- I. ☐ Gauges _____
- J. ☐ Oil Spots on Floor _____

WALK AROUND



All comments made in reference to any problems should be made on the back of this page in detail and handed to the supervisor immediately.

SIGNATURE: _____

CAUTION: This is not a complete list of all items which may require attention. Operators are responsible for ensuring that the lift truck is in proper working condition in accordance with the manufacturer's specifications.

DO NOT operate lift truck if a problem is detected. Report all problems to the service department immediately.

TO BE COMPLETED BY DESIGNATED OPERATOR AND FORWARDED TO SUPERVISOR PRIOR TO SHIFT.

FIRE SAFETY

FIRE SAFETY

In Case of Fire

Upon discovery of fire or smoke you shall:

- ⇒ **REMOVE** person(s) from immediate danger.
- ⇒ **ACTIVATE** the nearest fire alarm pull station.
- ⇒ **CALL** 911 from a safe location to notify the fire department.
- ⇒ **EVACUATE** the building using the nearest emergency exit. Close all doors behind you.

Upon hearing the alarm, all occupants shall:

- ⇒ Leave the building immediately in a calm and orderly fashion. Use the nearest exit if safe to do so; if not, use an alternate route.
- ⇒ For staff with offices, close the office doors without locking them.
- ⇒ Staff closest to the customer lounge shall assist all customers to exit the building.
- ⇒ Go directly to the muster station from wherever you exit the building.
- ⇒ Fire wardens, with the assistance of department managers/supervisors, will ensure all staff members are present and accounted for using complete staff list.
- ⇒ The Fixed Operations Manager or General Sales Manager shall meet with the Fire Department, upon their arrival, to let them know if all parties are out of the building and to inform them the location of the fire.
- ⇒ No one shall re-enter the building or leave the premises until the situation has been resolved and/or authorized to do so by Emergency Services or a Manager overseeing the emergency.

SUPERVISORY STAFF DUTIES

The delegated responsibility for fire safety for each position is identified in this section.

Management is responsible for preparing a Fire Safety Plan and must ensure that the building and facilities comply with the provisions of the Fire Code including:

- ⇒ Establishment of emergency procedures to be followed at the time of an emergency.
- ⇒ Appointment and organization of designated supervisory staff to carry out fire safety duties.
- ⇒ Instruction of supervisory staff and other occupants so that they are aware of their responsibilities for fire safety.
- ⇒ Assuring that checks, tests, and inspections as required by the Fire Code are completed on schedule and records are retained and maintained.
- ⇒ Notification of the local fire department or local government regarding changes to the Fire Safety Plan.

FIRE SAFETY DIRECTOR (FSD)

Our appointed FSD is not expected to be in the building on a continuous basis; however, the FSD should be available to respond to the building on notification of a fire emergency, in order to provide assistance as described in our plan. In the event that our FSD is unavailable, our Deputy Fire Safety Director will be available to perform the obligations of the absent director.

Our Fire Safety Director has the following responsibilities and duties:

- ⇒ Administering and maintaining the Fire Safety Plan with the assistance of the JOHS Committee.

This should include:

- ⇒ Updating the plan when alterations are made to the building or processes.
- ⇒ Developing appropriate policies and procedures, or ensuring they are developed, e.g., Hot Work, Storage of Dangerous Products and Materials, Storage and Dispensing of Fuel, etc.
- ⇒ Training of Deputy Fire Safety Director(s) and other appointed supervisory staff.
- ⇒ Ensuring that those expected to use the portable fire extinguishers are trained.
- ⇒ Maintaining records on the following:
 - Fire incidents
 - False alarms
 - Fire drills
 - Training events
 - Name, location, and persons requiring assistance and their volunteer assistants.
 - Accountability list and shift attendance list
- ⇒ Ensuring that fire protection systems are inspected, maintained and serviced in accordance with the plan and
- ⇒ the fire code, and where an inspection, maintenance or testing procedure is beyond in-house capabilities, to have qualified 3rd party personnel complete the procedure.

- ⇒ Ensuring that additional precautions are taken to offset the hazard to occupants when fire protection systems:
 - Checking the fire safety plan and fire code when fire systems are in need of repair.
 - Advising the fire department of the system status.
- ⇒ Ensuring that building maintenance, alteration or renovation does not expose the building or occupants to undue fire hazards, and precautions are taken to ensure building and occupant safety. This should include:
 - Checking the fire safety plan and the fire code when such activities take place to ensure that they meet the requirements of the fire safety plan and fire code regulations.
 - Ensuring that, where a fire watch is required, that the fire watch is provided with the appropriate equipment to properly fulfill the duties.
- ⇒ Ensuring that supervisory staffs are available to respond to the premises in the event of notification of an emergency. This should include:
 - Ensuring the Deputy Fire Safety Director available when the FSD is not.
- ⇒ Providing information to occupants on general fire safety and evacuation procedures. This should include:
 - Providing new occupants with an overview of our Fire Safety Plan and education.
 - Providing the appropriate level of education and training, based on job duties, on policies and procedures designed to control fire hazards, e.g., Hot Work,
 - Compressed Gas Use, Fuel Storage and Dispensing, Storage of Dangerous Goods, etc.
 - Notifying occupants whenever the Fire Safety Director or Deputy Fire Safety Director appointments change.
- ⇒ Resolving any fire hazards which are reported by staff or visitors, guests, clients, customers or the fire department.
- ⇒ Maintaining familiarity with the buildings fire protection systems.
- ⇒ Ensuring that the electrical rooms are not used for storage.
- ⇒ Ensuring that established policies are adhered to.
- ⇒ Notifying the alarm monitoring station when an emergency occurs

DEPUTY FIRE SAFETY DIRECTOR

- ⇒ The responsibilities and duties include:
 - Assisting the FSD in implementing the fire safety plan.
 - Assuming the position of Fire Safety Director in the absence of the appointed FSD.
 - Perform duties assigned by FSD.

ASSIGNED FIRE RELATED INSPECTIONS

Our Fire Safety Director and others are assigned fire related inspections. These inspections include inspections to determine:

- ⇒ The state of repair of the building, other structures, equipment and stored materials.
- ⇒ The state of repair of the fire protection equipment, monitoring equipment and alarms. The responsibilities and duties include:
- ⇒ Conduct all required inspections as per the FSP's outlined frequencies.
- ⇒ Complete and submit an inspection report for each inspection.
- ⇒ Ensure that all corrective actions and recommendation are acted upon.
- ⇒ Report to the Fire Safety Director all actions and recommendations not acted upon in a timely fashion.

FIRE (OR FLOOR) WARDENS

The Fire/Floor Warden's primary responsibility is to manage the evacuation of personnel from his/her designated area during a fire or other emergency. During normal business operation, our fire wardens will conduct daily checks to ensure our fire prevention efforts and emergency evacuation routes are in a good state of repair.

We will assign and train individuals to fulfill fire/floor warden role. The responsibilities and duties are task specific and include:

The following duties have been assigned during an emergency:

- ⇒ Advise all personnel within their area to evacuate by the nearest safe exit during a fire or other emergency
- ⇒ Assist in the evacuation of persons with disabilities
- ⇒ Check washrooms and rest areas and inform any personnel of the emergency situation Close all doors (do not lock) behind you as you exit the building
- ⇒ Leave the building
- ⇒ Ensure that the entrance to the building is not congested by directing persons away from the entrance Co-operate with Security and fire officials
- ⇒ Obey promptly any instructions you may receive from Management or Fire Department personnel Co-operate with Management in any debriefings resulting from an evacuation

The Fire/Floor warden will conduct continuous checks for:

- ⇒ Accumulation of combustible materials, rubbish or flammable liquids.
- ⇒ Dangerous ignition sources, i.e. worn extension cords, oily rags, overheating equipment. Exit lights in good order and adequate lighting in public corridors and stairwells.
- ⇒ Fire and exit doors and their self-closing hardware to ensure that they are in good operating condition. Doors must not be wedged open for any reason.
- ⇒ Unobstructed exit routes. (Definition of exit routes in previous sections). Condition of firefighting equipment.

Assistant Fire/Floor wardens will assist the Fire/Floor warden in fire prevention and emergency evacuation. The assistant will assume the duties of the Fire/Floor warden in his/her absence.

CONDUCTING FIRE DRILLS

Once each year our Fire Safety Director shall conduct a fire drill. The drill will not test any evacuation skills of the occupants; however, it will provide the Fire Safety director, Deputies, and Occupants with the opportunity to hear the fire alarm, and consider their actions in the event that the fire were real. We will use the following procedure when conducting the fire drill:

- ⇒ Notify occupants of the date and time of the drill.
- ⇒ Notify the alarm monitoring service (when applicable) and the fire department, on their non-emergency phone numbers, that you are planning to have a non-evacuation fire drill, and that you will call them back when the drill is complete.
- ⇒ Discuss evacuation procedures with Deputy FSD and those occupants willing to participate.
- ⇒ Have the Deputy FSD perform the If You Discover a Fire scenario and the In Case of Fire procedures for employees. The FSD should perform his or her duties as detailed in the plan. Restore the manual fire alarm pull station, and then reset the fire alarm system.
- ⇒ Notify the alarm monitoring company (when applicable) and the fire department that the fire drill is complete.
- ⇒ Discuss drill with occupants in an attempt to identify problems. Complete the Incident/Activity Report.

INSTRUCTION TO EMPLOYEES

GENERAL FIRE PREVENTION INSTRUCTIONS

- ⇒ Smoke only within designated outdoor areas and only dispose cigarette butts in the provided waste container.
- ⇒ Be alert around electrical equipment. If electrical equipment is not working properly or if it gives off an unusual odour - often the first sign of a problem that
- ⇒ could cause a fire - disconnect the equipment and inform management.
- ⇒ Promptly discontinue use of any electrical cord that is cracked or has a broken connection.
- ⇒ When using extension cords, protect them from damage; do not put them across doorways or any place where they will be stepped on or chafed.
- ⇒ Do not plug one extension cord into another, and do not plug more than one extension cord into one outlet.
- ⇒ Keep all heat-producing appliances away from the wall and away from anything that might burn. Leave plenty of space for air to circulate around equipment that normally gives off heat.
- ⇒ Make sure all appliances in your area - such as coffee makers and hot plates - are turned off when not in use.
- ⇒ Do your part to keep storage areas, stairway landings and other out-of-way locations free of waste paper, empty cartons, dirty rags and other material that
- ⇒ could fuel a fire.
- ⇒ Keep stairways, landings, hallways, passageways and exits (inside and out) clear of any obstructions at all times.
- ⇒ Promptly remove all combustible waste from all areas where waste is placed for disposal. Report fire hazards to the Fire Safety Director

FIRE PREPAREDNESS

- ⇒ Know the location of the two exits closest to your area. Count the number of doors between you and each of those exits - in case you must escape through a darkened, smoke filled corridor where you can't read the names on the doors.
- ⇒ Learn where the nearest pull station is located and how to activate it.
- ⇒ Post the 9-1-1 or Fire Department Emergency Number on your telephone. Learn the sound of your building's fire alarm.
- ⇒ During the annual fire drill which will be conducted by the Fire Safety Director, do the following:
 - Review the basic IN CASE OF FIRE procedures posted in the corridors, and Evacuation Procedures.
 - Ensure you know who the Fire Safety Director and Deputy are, and how to contact them.
 - Read the other information provided in our Fire Safety Plan.
- ⇒ Volunteer to be one of the designated persons who will assist a person requiring assistance, if needed.

FIRE EVACUATION

- ⇒ Use a building telephone only if you are safe from the fire Do not use the elevator. (where applicable)
- ⇒ While exiting, walk, and do not run. Shut all doors behind you and alert those who have difficulty hearing that an emergency evacuation of the building is under-way.
- ⇒ Proceed along corridors and through exits in a quiet and orderly manner. Do not push or shove.
- ⇒ Assist persons requiring assistance to reach the nearest safe exit:
 - Try to keep exits clear by permitting others to pass. It may be necessary to hold persons requiring assistance in or near the exit, and wait for fire department assistance.
- ⇒ If you encounter smoke use an alternate route.
- ⇒ If you must use an escape route where there is smoke, stay as low as possible.
- ⇒ Crawling lets you breathe the cleaner air near the floor as you move toward the exit.
- ⇒ Before you open a closed door, feel it with the back of your hand. If it is hot, leave it closed and use your alternate escape route. If it feels normal, brace your body
- ⇒ against the door and open it a crack - be prepared to slam it shut if heat or smoke starts to rush in.
- ⇒ If all exits are blocked by fire or smoke, enter a room preferably with an exterior window,
- ⇒ and seal the cracks in the door with available materials to prevent smoke entering the room.
- ⇒ Phone 9-1-1 or to report your situation, and attract the attention of someone outside the building by any possible means.
- ⇒ When you have reached the outside of the building, move away from the exit allowing others behind you to emerge and go directly to the muster area.
- ⇒ Do not attempt to drive your vehicle from the parking area.
- ⇒ Do not enter the building again until permitted by a fire department officer or the fire safety director.

Caution

- ⇒ If smoke is heavy in the corridor, it may be safer to stay in your area, close the door and place a wet towel at the base of the door.
- ⇒ Crouch low to the floor if smoke enters the room
- ⇒ Move to the most protected room and partially open the window for air. Close the window if smoke comes in.
- ⇒ Wait to be rescued – Remain calm – Do not panic and jump.

USING A PORTABLE FIRE EXTINGUISHER

Portable fire extinguishers are useful only if you know how to use them, if they are right for the type of fire you are fighting, and if the fire is discovered immediately. You should not attempt to fight even a small fire until people have been evacuated from the area and the Fire Department has been called.

Never attempt to fight a fire if any of the following is true:

- ⇒ You are uncertain about how to use the extinguisher.
- ⇒ The fire is spreading beyond the immediate area where it started. The fire could block your escape route.
- ⇒ You are alone.
- ⇒ The Fire Department has not been called.

TO OPERATE AN EXTINGUISHER...REMEMBER...PASS!

(PULL – AIM – SQUEEZE – SWEEP)



If fire breaks out again, repeat use of the fire extinguisher.

EMERGENCY PROCEDURES

The following duties have been assigned to the Fire Safety Director during an emergency:

- ⇒ Ensure all persons have evacuated the building
- ⇒ Conduct a roll-call at the muster stations
- ⇒ The director shall meet with the Fire Department upon their arrival to let them know if all parties are out of the building and inform them of the location of the fire

The following duties have been assigned to Fire Wardens during an emergency:

- ⇒ Advise all personnel within their area to evacuate by the nearest safe exit during a fire or other emergency
- ⇒ Assist in the evacuation of persons with disabilities
- ⇒ Check washrooms and rest areas and inform any personnel of the emergency situation Close all doors (do not lock) behind you as you exit the building
- ⇒ Leave the building
- ⇒ Ensure that the entrance to the building is not congested by directing persons away from the entrance Co-operate with Security and fire officials
- ⇒ Obey promptly any instructions you may receive from Management or Fire Department personnel Co-operate with Management in any debriefings resulting from an evacuation

METHODS TO ASSIST PERSONS WITH PHYSICAL DISABILITIES

In most cases people with physical disabilities should be placed under the supervision of designated personnel until the Fire Department can rescue them. If it is life threatening for the people with physical disabilities and their supervisors to remain on that floor, it is recommended that the people with physical disabilities be transported via the stairwell to a grade level exit.

Below are some techniques which may be used to perform this transport:

THE BACK PACK LIFT:

The Rescuer would kneel at the front of the person being assisted and place the person's arms up and over the rescuer's shoulders and chest. The rescuer would then lean forward before raising slowly, to a full standing position.





TWO RESCUER EXTREMITIES CARRY:

The person being assisted would be placed on the stairwell landing. One rescuer would lift at the legs, under the knees, while the other would lift under the shoulders with fingers locked across the individual's chest. Rescuers, with backs erect, would lift together, rising slowly to a standing position.

TWO RESCUER SEAT CARRY:

Two rescuers position themselves next to the wheelchair (or beside the person being assisted) in order to grasp each other's upper arm or shoulder. The person being assisted would place his/her arms firmly around both rescuers' necks.

The two rescuers would then lean forward placing their free arm under the individual's legs, firmly grasping each other's wrists. Working together, both rescuers lift, using legs, and carefully step forward.



Evacuation Drill Evaluation

Date:	Time of Alarm:

Method of Alarm and Location:
Total Evacuation Time:

Section 1 – Immediate Response by Designated Fire Wardens

Did occupants upon hearing the fire alarm system immediately begin to vacate the building as directed through established fire plans?	☐ Y	☐ N	☐ N/A
Were doors and windows (if applicable) closed upon exit to limit the spread of fire?	☐ Y	☐ N	☐ N/A
Were exit doors and stairwells clear of obstructions?	☐ Y	☐ N	☐ N/A
Were Fire Wardens identifiable and react in a timely manner?	☐ Y	☐ N	☐ N/A
Were all occupants aware of the location of fire emergency equipment (pull stations, fire extinguishers)?	☐ Y	☐ N	☐ N/A

Section 2 – Building Occupant Knowledge

Did building occupants use the closest and most appropriate exit to vacate their area of work?	☐ Y	☐ N	☐ N/A
Did building occupants display the proper / safe way to evacuate the premises?	☐ Y	☐ N	☐ N/A

EMERGENCY PREPAREDNESS

PURPOSE

The purpose of this chapter is to establish emergency preparedness procedures for all employees, subcontractors, and visitors at all sites. These procedures aim to protect personnel, minimize injuries, reduce property damage, and prevent operational downtime during emergencies. Proper emergency preparedness enhances workplace safety and ensures swift, coordinated responses to various types of incidents.

RESPONSIBILITIES

Management Responsibilities

- ⇒ Develop and maintain an **Emergency Action Plan (EAP)** tailored to address specific risks and hazards.
- ⇒ Ensure all emergency preparedness plans comply with regulations, local fire codes, and other applicable safety standards.
- ⇒ Provide employees with **initial and periodic emergency training**, including hands-on drills.
- ⇒ Ensure that emergency contact information is updated and prominently displayed at all job sites.
- ⇒ Coordinate with local emergency services, including fire departments, medical responders, and law enforcement, to facilitate prompt response during emergencies.

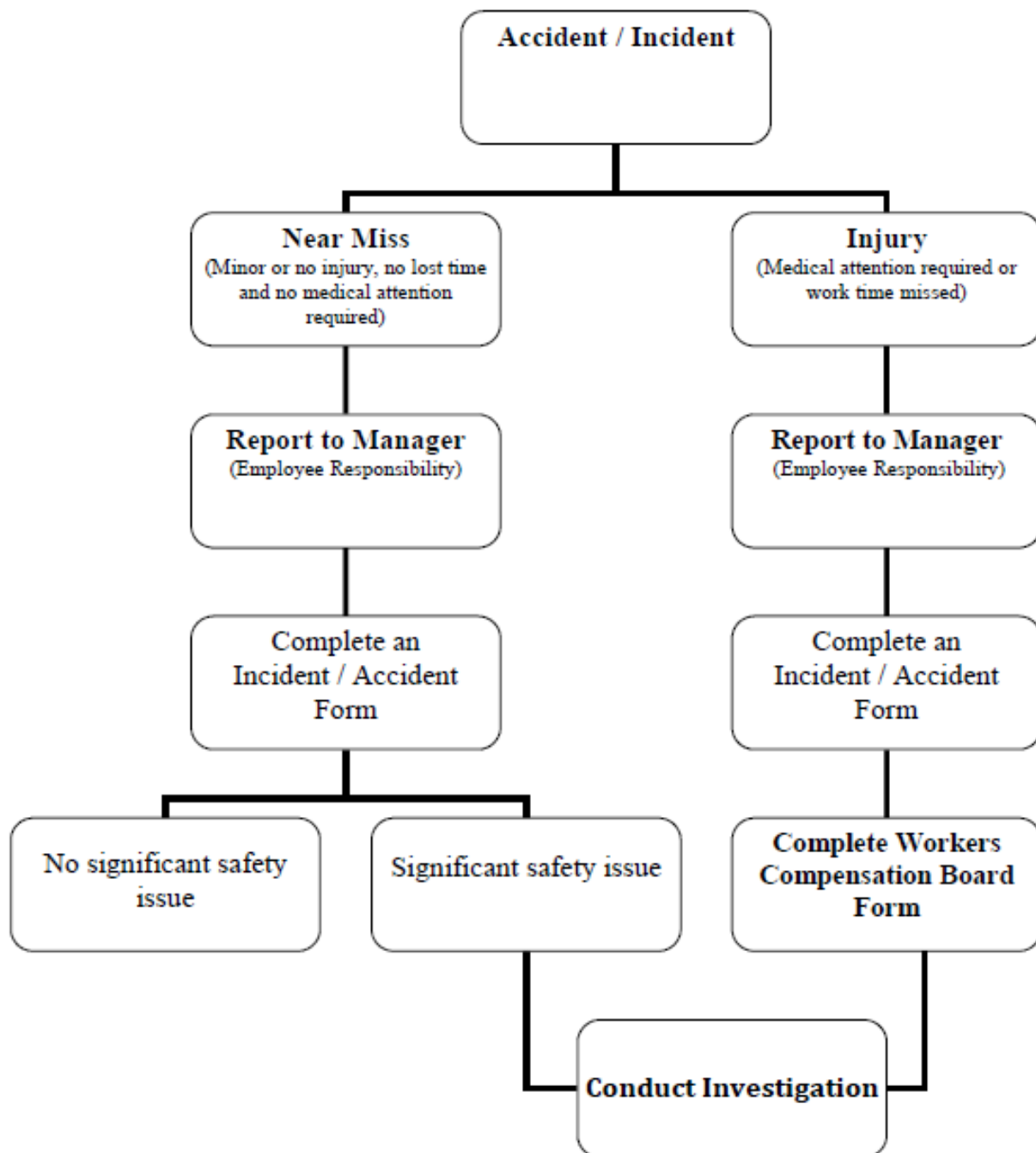
Supervisor Responsibilities

- ⇒ Ensure all employees are **familiar with evacuation routes, emergency exits, and safe assembly points**.
- ⇒ Maintain a **current list of emergency contacts**.
- ⇒ Act as an **emergency coordinator**, providing guidance and assistance during emergency situations.
- ⇒ Ensure that emergency response equipment is **regularly inspected, maintained, and accessible**.

Employee Responsibilities

- ⇒ Follow all **emergency procedures** as outlined in training sessions, manuals, and posted instructions.
- ⇒ Report any emergency situation **immediately** to supervisors or designated personnel.
- ⇒ Assist in evacuations **when necessary** and proceed to designated assembly points.
- ⇒ Stay alert and be aware of potential hazards that could escalate into emergency situations.
- ⇒ Avoid **taking unnecessary risks** during emergency situations and follow supervisor instructions.

EMERGENCY RESPONSE – INCIDENT/ACCIDENT REPORTING



ELECTRICAL SHOCK AND ELECTRIC VEHICLE EMERGENCY RESPONSE

In the event of an electrical accident:

- ⇒ Locate power source and turn off
- ⇒ Dislodge victim from the circuit with the non-conductive “shock stick”
- ⇒ Victim needs immediate medical response
- ⇒ Monitor victim until EHS arrive
- ⇒ Keep victim warm and comfortable

Despite lock-out procedures, safe operating procedures, and electrical safety rules in industry, electrical accidents can still occur in the workplace. The vast majority of the time, these accidents can be the result of not following proper safety procedures. But however they may occur, they still do happen, and anyone working around low or high voltage electrical systems should be aware of what needs to be done for the victim of electrical shock.

If you see someone lying unconscious or “froze on the circuit,” the very first thing to do is shut off the power by opening the appropriate disconnect switch or circuit breaker. If someone touches another person being shocked, there may be enough voltage dropped across the body of the victim to shock the would-be rescuer, thereby “freezing” two people instead of one. Make sure that the situation is safe for you to step into, or else you may be the next victim, and nobody will benefit from your efforts.

One problem with this rule is that the source of power may not be known, or easily found in time to save the victim of shock. If a shock victim’s breathing and heartbeat are paralyzed by electrical current, their survival time is very limited.

If the power disconnect switch cannot be located quickly enough, it may be possible to dislodge the victim from the circuit they are frozen on to, by prying away with a non-conductive material such as, dry wood or an approved “shock stick”.

Another item that can be used to safely disconnect a person from a circuit is an extension cord. By looping a cord around their torso, it can be used like a rope to pull them away. Bear in mind that the victim may be holding on to the conductor with great strength, so pulling them away may require much force.

Once the victim has been safely disconnected from the source of power, the immediate medical concerns should be respiration and circulation. If the rescuer is trained in CPR, they should follow the appropriate steps of checking for breathing and pulse, then applying CPR as necessary. The cardinal rule of CPR is to keep going until you have been relieved by a qualified person.

IN CASE OF MEDICAL EMERGENCY

Upon discovery a medical emergency:

- ⇒ Stay calm and attend to the injured person
- ⇒ Ensure the victim and others are removed from further danger
- ⇒ Check the victim for emergency medical ID tags and medications
- ⇒ Send for first aid trained personnel
- ⇒ Call 911
 - Give the address to your location
 - Identify the best entrance into the building closest to the victim
 - Give information as to what happened, the number of injured and the first aid given
 - Do not hang up until told to do so by the 911 operator
- ⇒ Send someone to watch for the ambulance and to direct them to the injured person
- ⇒ Never give food or liquids to victims that are unconscious, semiconscious, nauseated or severely injured
- ⇒ Do not leave the victim before first aid is administered (Exception: If you are alone with an unconscious, unresponsive adult, call 911 before beginning rescue breathing)
- ⇒ If a body limb has been severed, it should be retrieved, wrapped in a clean wet cloth and given to the ambulance attendant
- ⇒ Assist the first aider administer first aid until emergency help arrives
- ⇒ Notify the department manager ASAP

IN CASE OF HAZARDOUS MATERIAL SPILL

Step 1: Stop the spill.

- ⇒ The leak or spill should be stopped— if this can be done safely. Turn off nozzles or valves from the leaking container, if it can be done safely.

Step 2: Contain and recover the spill.

- ⇒ If the spill or leak cannot be stopped, catch the flowing liquid using a pan, pail, hubcap, shovel or whatever is available. Spread sorbent material, such as Rags, Oil Dry or synthetic sorbent pads, and soak up the liquid.

WARNING: Sorbents do not make petroleum non-flammable.

Step 3: Collect the contaminated sorbent.

- ⇒ Brooms can be used to sweep up the sorbent material and put it into covered metal containers.

NOTE: Remember to control ignition sources.

Step 4: Secure the waste.

- ⇒ Collect and store the sorbent materials in marked containers for later pick-up and disposal.

NATURAL GAS LEAK

A strong odourant (such as ethyl mercaptan) is deliberately added to the otherwise colourless and odourless natural gas so that leaks can be easily detected by smell before an explosion occurs.

NATURAL GAS EMERGENCY – a situation where all of the following conditions are present:

- ⇒ The natural gas odour is persistent, i.e., continues to be detected via sense of smell as you walk from the area;
- ⇒ The odour continues to be substantial, i.e., does not decrease as you continue to walk; and
- ⇒ The source of the odour cannot be readily identified.

If you smell gas and suspect a leak:

- ⇒ CEASE ALL OPERATIONS immediately and DO NOT operate any electrical devices (phones, electrical switches, electrical machines etc.).
- ⇒ IF SMELL IS STRONG REMOVE self from area and call 911, if smell is minor, cease activity and report it immediately to your supervisor.
- ⇒ DO NOT CALL FROM AFFECTED AREA, OR TURN ELECTRIC SWITCHES ON OR OFF (lights, phones or any other electrical equipment can create a source of ignition with enough energy to ignite fumes).
- ⇒ If gas smell is on the inside and windows can be easily opened, open to ventilate the area.
- ⇒ EVACUATE the building by the nearest exit. Notify other building occupants in the affected area to do so as well. If any person for whatever reason cannot safely evacuate the building, assist them to an area of refuge.
- ⇒ DO NOT USE ELEVATORS. Once outside, move away from the building at least 200 feet. Keep driveways and sidewalks clear for emergency crews.
- ⇒ DO NOT RETURN TO AN EVACUATED BUILDING unless authorized to do so by Emergency Services or a Manager overseeing the emergency.

DIABETIC EMERGENCIES

A diabetic emergency happens when the body cannot control the level of sugar in the blood. The blood sugar level may become too high (hyperglycemia) or too low (hypoglycemia). Hyperglycemia develops slowly, so it is less likely to be a first aid emergency.

Symptoms and signs – Not all may be present

- ⇒ extreme tiredness and loss of concentration severe thirst
- ⇒ abdominal pain nausea or vomiting
- ⇒ dizziness and loss of coordination
- ⇒ erratic or argumentative behaviour
- ⇒ rapid loss of consciousness if not treated promptly pale or sweaty skin

How you can help

Check to ensure the scene is safe.

If the patient is unconscious

- ⇒ Support the patient on their side and call EMS/911 for an ambulance

If conscious, give the patient some sugar

- ⇒ If the patient is still fully conscious and able to swallow, give a sweetened drink, chocolate or glucose sweets to suck – an improvement usually occurs within minutes.
- ⇒ When the patient is more alert, offer a more substantial carbohydrate meal of a sandwich or several sweet biscuits.

If the patient does not improve after swallowing the sweet food or drink, or if further deterioration occurs and swallowing becomes difficult – call EHS/911 for an ambulance.

Obtain medical advice

- ⇒ If the patient has improved with the intake of carbohydrate, medical advice is still necessary because a further deterioration may occur at any time. The patient should see a doctor.

WORKER SUSPENDED IN A SAFETY HARNESS

The rescue of a worker who has fallen and is being suspended in his/her safety harness needs to be undertaken as quickly as possible for several reasons:

- ⇒ The worker may have suffered injuries during the fall and may need medical attention.
- ⇒ Workers suspended in their safety harness for long periods may suffer from blood pooling in the lower body and this can result in “suspension trauma.”
- ⇒ The suspended worker may panic if they are not rescued quickly.
- ⇒ The event that led to the fall may create additional risks that need to be addressed.

General Rescue Procedures:

- ⇒ A Rescue Plan located in the Working at Heights section of the Health & Safety Manual must be filled out prior to work.
- ⇒ Use a ladder(s) to reach the victim for rigging separate lifelines for rescuers to use while carrying out the rescue from the ladder(s). (Only use as last resort)
- ⇒ If worker is not conscious or cannot reliably help with his/her own rescue, at least 2 rescuers may be needed.
- ⇒ If worker is suspended from a lifeline, where possible, move the suspended victim to an area that can be safely reached co-workers.
- ⇒ If victim is suspended directly from his/her lanyard or from a lifeline, securely attach a separate lowering line to the victim’s harness.
- ⇒ Other rescuers should lower the victim while he/she is being guided by the rescuer on the ladder.
- ⇒ Once the victim has been brought to a safe location, administer First Aid and treat the person for Suspension Trauma and any other injuries.
- ⇒ Arrange for transport to nearest hospital.

If a person has fallen and is suspended in an inaccessible area:

- ⇒ Due to the inherent risk to the rescuers and/or the victim, this type of rescue should not be undertaken by people without specialized training and experience.

EMERGENCY CONTACT INFORMATION

Ambulance	911
Police	911
Fire Department	911
Hospitals	
Department of Labour and Advanced Education	1-800-952-2687
Environmental Emergencies	1-800-565-1633
Occupational Health & Educational Services (OHES)	1-902-481-0879
Management Contacts	
Safety Committee	
Fire Wardens	
Dangerous Goods – Canutec Chemical Safety	1-613-996-6666

