

STANDARD OPERATING PROCEDURE

Light Vehicle Tire Change In Remote Location

Document Number: 960C-SOP-827

Original Approval Date: Jan 17, 2013

Revision Number: 3

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Latest Revision Date: Jun 03, 2025

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LIGHT VEHICLE TIRE CHANGE IN REMOTE LOCATION

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The following is a step-by-step procedure on how to complete a specific task or meet a facility specific requirement. Standard Operating Procedures (SOPs) are written for all identified critical tasks. By virtue of the hazard or complexity associated with critical tasks it is paramount that the SOP be followed as written. SOPs contain a listing of high-level hazards associated with the task, for detailed hazard analysis reference the applicable Task Hazard Assessments. SOPs do not replace the requirements contained in the company Standards, Codes, and Processes nor does it replace the need to comply with required legislation. Section 8.0 references documentation that the worker shall understand before work commences.

1.0 PURPOSE

- To establish a company standard to safely and effectively carry out work as it applies to changing a light vehicle tire in an offsite (remote) location.

2.0 SCOPE AND APPLICATION

- This document applies to all company Heavy Construction Mining operations. Ensure all site specific requirements are being met or exceeded before performing the task.

3.0 HAZARDS AND CONTROLS

- Operating vehicle after getting a flat tire.
 - Grip the steering wheel firmly.
 - Don't slam on the brakes. Let the vehicle slow down gradually by taking your foot off the gas pedal.
 - Work your vehicle toward the breakdown lane or, if possible, toward an exit.
 - If it is necessary to change lanes, signal your intentions to drivers behind and do so smoothly and carefully. Avoid sudden moves.
 - Park on a firm and flat ground.
- Situational awareness.
 - Be vigilant of your surroundings.
 - Perform a visual inspection of the area for wildlife.
 - Ensure the vehicle is parked at a safe distance from the traffic.
 - Do not park on curves, corners, hills from both directions.
 - If the task cannot be done safely, park in a safe location and call for assistance.
- Flying debris from other vehicles including small stones or rocks.
 - Wear eye protection such as safety glasses.
- Uncontrolled light vehicle movement.
 - The disabled vehicle must be parked on firm level ground, set park brake.
 - Follow 950C-C-028 Hazardous Energy Isolation Code. Ensure wheel(s) chocked or prevented from movement and keys are not in the ignition.
 - Jacking and lifting of vehicle must be done as per manufacturer instructions.

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- All lifting must be done with the worker out of the line of fire, should the vehicle fall from the jack.
- Impact from other vehicles.
 - Emergency (4-way) flashers must be activated.
 - Emergency triangles must be placed as described in Appendix A.
 - Hi-visibility vest is to be worn by worker.
 - Safety-watch to be assigned if more than one employee is present.
- Slip, trip and fall hazards due to uneven ground or icy/snowy conditions.
 - Wear footwear traction aids in slippery and icy conditions during winter months.
 - Avoid stepping on uneven ground.
 - Ensure there is adequate lighting for the task.
- Musculoskeletal injuries from over exertion and heavy lifting.
 - Follow all manufacturer guidelines when using the jack.
 - Take micro breaks and stretch as required.
 - Do not exceed personal limitations.
 - Maintain an upright posture and try to work with your elbow close to your body.
- Crush points.
 - At no time should the worker be under a suspended vehicle. The vehicle jack is designed in such a way as to avoid this situation.
 - Do not place hand or fingers between lifting jack, tire iron, and wheel rim.
 - Inspect all tools prior to commencing task.

4.0 CHECKLIST

- ☐ Attend all preparatory meetings (IE: daily PSI; job scope; review of JSA's and SOP's for the job).
- ☐ Complete FLRA cards before starting the work.
- ☐ Ensure all personnel involved in the task are aware of the hazards and the controls to be used, as identified in the SOP's; JSA's; and FLRA's.
- ☐ Conduct a pre-job inspection of all equipment to be worked on and tools to be used.
- ☐ **Standard of Training required for working on this job: On-the job training.**

5.0 DEFINITIONS

5.1 Company

Means North American Construction Group Ltd. (NACG) and all directly or indirectly owned subsidiary companies, including joint ventures.

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5.2 Company Personnel

Includes the Company's employees, officers, directors, agents, associates, consultants/contractors, temporary employees and third-party processors.

5.3 HSE

Refers to the Health, Safety & Environment department.

6.0 PROCEDURE

- 1) Upon realizing a vehicle is disabled, grip the steering wheel firmly, let the car slow down gradually by taking your foot off the gas pedal. Find a safe location for parking. It is acceptable and reasonable to drive a vehicle with a flat tire a short distance to enable you to get to a safe or safer location.
- 2) Park the vehicle on firm level ground. Ensure the vehicle is parked at a safe distance from the traffic.
- 3) Activate emergency (4-way) flashers. Turn off your head lights (they may interfere with the ability of other drivers to see your warning lights). Set your parking brake.
- 4) Once safely parked, watch vehicles approaching and time the oncoming vehicles approach from when you can clearly see the vehicle until the vehicle reaches your location. The timeline should be at least five (5) seconds.
- 5) Assess the situation and determine if you can safely change the tire. If you cannot safely change the tire or do not know how, notify supervision and wait for further direction. If you can safely change the tire and understand how to do so, notify supervision of the task and proceed with the next steps.
- 6) Complete a hazard assessment for the task. If you do not have an FLRA card, complete a mental hazard assessment.
- 7) Locate emergency triangles and place them so that they are easily visible to oncoming traffic. For recommended distance to place the triangles see **Appendix A**.
- 8) Place a wheel chock on the opposite corner for which you have a flat. If your right rear tire is being changed, place a chock in front and behind of the left front tire. If your left rear is flat, place a chock in back and front of the right front tire.
- 9) Locate the vehicle owner's manual and follow procedure as outlined there. The tire change procedures will vary depending on the model and or manufacturer of vehicle. Regardless of the make or model, there are a number of common instructions:
 - a) Locate and obtain the spare tire, lifting jack and tire iron.
 - b) Loosen each lug nut one-half turn counterclockwise.
 - c) Position the jack according to manufacturer's instruction and lift until the disabled tire is completely off the ground.
 - d) Remove the lug nuts off the wheel.
 - e) Replace the flat tire with the spare wheel.

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- f) Reinstall the lug nuts until the tire is snug to the hub. Do not fully tighten the nuts until the vehicle is lowered to the ground.
 - g) Lower the wheel and remove the jack.
 - h) Torque lug nuts to manufacturer's specifications. Tighten the lug nuts in a star pattern (**see Appendix B**).
 - i) Store the flat tire, tire iron and jack securely.
 - j) Retrieve, collapse and store safety triangles.
 - k) Re-torque lug nuts to manufacturer's specifications.
- 10) Repair or replace the tire once at a maintenance facility. Confirm the wheel is torqued to the proper specifications and re-torqued to manufacturer's specifications.

7.0 NOTES

If this task is to be done by a method different than described in this SOP, the work must **STOP** and the alternate method must be **DOCUMENTED** with an adequate hazard assessment tool such as a JSA. The document must be **APPROVED** by a supervisor before such procedures are implemented.

8.0 REFERENCES

- Vehicle Owner's manual.
- Alberta Occupational Health and Safety Act, Regulation and Code – Part 12, Section 193, Tire Servicing
- Alberta Occupational Health and Safety Act, Regulation and Code – Part 14, Sections 208 & 209, Lifting and Handling Loads
- Traffic Safety Act – Alberta Regulation 304/2002
- Tire Industry Association Earthmover Tire Service Training Program
- 950C-C-028 Hazardous Energy Isolation Code
- 960C-SOP-824 Torquing of Tire-Wheel Assemblies
- 960C-SOP-504 Hand Tools; Use of

9.0 APPENDICES

- Appendix A – Recommended distance for safety triangles
- Appendix B – Star pattern for lug nuts

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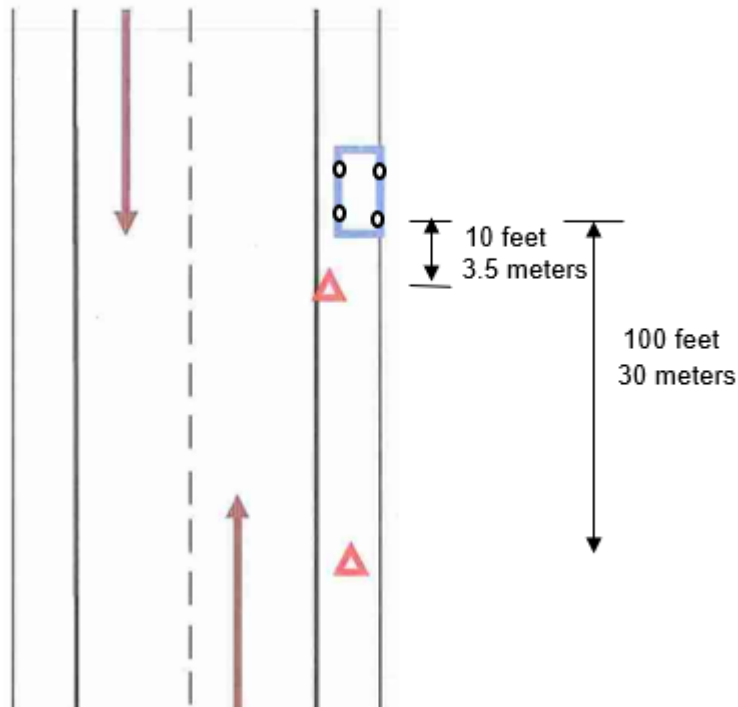
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Appendix A Recommended Distance for Safety Triangles



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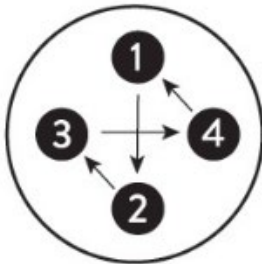
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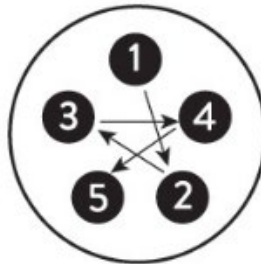
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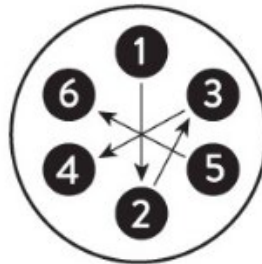
Appendix B Star Patter for Lug Nuts



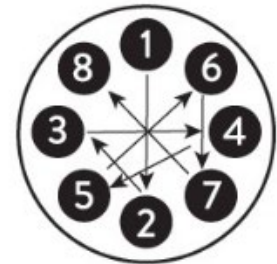
4 Lug Tightening Pattern



5 Lug Tightening Pattern



6 Lug Tightening Pattern



8 Lug Tightening Pattern