

STANDARD OPERATING PROCEDURE

Removal and Installation of Regular Budd Wheel Assemblies for Medium Trucks

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REMOVAL AND INSTALLATION OF REGULAR BUDD WHEEL ASSEMBLIES FOR MEDIUM TRUCKS

						<i>Tammy Siver</i>
5	APP	OCT 22, 2025	Approved	Andre Brule	Lisa Norris	Tammy Siver
4	APP	APR 01, 2019	Approved	Lisa Norris	Tammy Siver	Tammy Siver
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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 the removal and installation of regular Budd wheel assemblies for medium trucks.

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

- Uncontrolled movement of equipment.
 - Ensure all sources of hazardous energy are properly isolated and apply wheel chocks to secure the equipment.
 - Conduct a thorough inspection of equipment before each use.
- Tool failure.
 - Inspect all tools prior to the task and ensure they have been calibrated as required.
 - Only use impact-rated sockets in conjunction with impact wrenches.
 - Confirm correct socket size by hand-fitting sockets to wheel nuts before removal.
 - Clean all studs and nuts with a wire brush prior to removal.
 - Keep work area clear of unnecessary tools and equipment.
 - Stay out of the line of fire when using a Tire Bead Axe.
- Tire rupture during installation and removal of tires and wheel components.
 - Ensure tire-wheel assemblies are fully deflated prior to mount-dismount.
 - Do not stand in the line of fire or trajectory zone when inflating the tire.
 - Use appropriate restraining devices (i.e., tire cages) when inflating tires.
- Contact with foreign objects when deflating tires.
 - Do not stand in the line of fire; always stand to one side to avoid contact with dirt and debris.

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- Heavy and awkward lifting of wheel-tire assemblies.
 - Follow 962C-SOP-008 Manual Lifting; do not lift more than 50 lb. without assistance (second person, picker, etc.).
- Uncontrolled work area.
 - Maintain clear communication with all co-workers involved in the removal and installation process.
 - Limit access to the work area by removing unnecessary personnel and installing appropriate barriers or signage as required.

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.

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

6.1 Removal

1. Complete hazard assessment (i.e., FLRA) for the task. Notify your supervisor if you are unsure of the task or if there are any hazards beyond your control.
2. If the wheel assembly is multi-piece, proceed to steps two (2) and three (3). If the wheel assembly is a single piece, proceed to step four (4).
3. Using a standard bore core tool, deflate the tire/wheel assembly by removing the valve core from the valve. Deflate the inner and outer assemblies for dual applications.

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4. Ensure all the air has been removed from the tire/wheel assemblies by inserting a piece of wire into the valve stem.
5. Select the appropriate $\frac{3}{4}$ or 1" drive impact socket for the job and test its fit on the wheel nuts by hand.
6. Clean all studs and nuts with a wire brush or steam hose to allow for easy removal of nuts.
7. Remove wheel nuts and washers from studs using a $\frac{3}{4}$ or 1-inch impact wrench and the appropriate socket. For dual-wheel applications, remove the outside wheel nuts, ensuring the inner and outer wheel nuts do not stretch the studs if they come off simultaneously.
8. Place wheel nuts in a secure, designated area away from the immediate work zone.
9. Grasp the tire/wheel assembly with two hands and remove. Use a tire bar if necessary.
10. Inspect the studs, nuts, and hub for damage or distortion and replace or repair if necessary.
11. For dual application, remove the outside assembly.
12. Remove any inner cones and outer nuts that have come out together with the aid of a Budd Nut Remover.
13. Remove the cones from the inner wheel assembly using the appropriate impact wrench.
14. Remove the inside wheel assembly using a tire bar, if necessary. If the inside assembly will not move by hand, use a bead axe to tap on the wheel until it breaks free. Do not use a bead axe on aluminum wheels. Use a rubber mallet only.

6.2 Installation

1. Clean and remove dirt and debris from all tire/wheel assemblies, vehicle hub assemblies, mounting surfaces, and studs prior to installation.
2. Install tire/wheel assembly onto hub and line up studs with holes in wheel assembly. For single wheel applications, proceed to step eight (8).
3. In a dual wheel assembly, install the inner wheel assembly first, ensuring the studs are lined up with the stud holes on the wheels.
4. Install the inner cones by hand and snug them with the appropriate impact wrench using a star pattern (Do not over-tighten).
5. Torque the inner cones to the manufacturer's specifications (see SOP 960C-SOP-824 – Torqueing of Tire-Wheel Assemblies).
6. Install the outer wheel assembly, ensuring the valve stem of the outer wheel is directly opposite the valve stem of the inner wheel.
7. Line up studs with stud holes and slide the outer wheel assembly onto the studs.
8. Install all lug nuts by hand.
9. Using a "star" pattern, gently snug the wheel nuts.
10. Use a standard bore inflator with an in-line gauge to inflate the tire/wheel assembly to the manufacturer's recommended cold tire inflation pressure.

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11. Torque the wheel assembly (see SOP 960C-SOP-824 – Torqueing of Tire-Wheel Assemblies).

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

- Alberta Occupational Health and Safety Act, Regulation and Code
- Tire Industry Association Earth Mover Tire Service Training Program
- Vehicle/Equipment Manufacturer Service Manuals
- Jack Manufacturer's Operation Manual
- 962C-SOP-008 Manual Lifting
- 960C-SOP-501 Rad Gun Use
- 960C-SOP-504 Hand Tools; Use of
- 960C-SOP-824 Torquing of Tire-Wheel Assemblies
- 950C-C-028 Hazardous Energy Isolation Code

9.0 APPENDICES

- No appendices.