REMOVAL AND INSTALLATION OF DAYTON WHEEL ASSEMBLIES FOR SMALL-TO-MEDIUM OTR

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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 Dayton wheel assemblies for small-to-medium Off-The-Road (OTR) vehicles.

2.0 SCOPE AND APPLICATION

- This document applies to all Company Heavy Construction and 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.
    - Isolate all forms of hazardous energy and use wheel chocks.
    - Inspect equipment prior to use.
    - When using tire manipulators to install/remove tires and wheel components:
        (a) Do not stand in the line of fire.
        (b) Do not stand under manipulator arms.
        (c) Ensure Park brake has been set before exiting tire manipulator.
        (d) Follow 960C-SOP-806 Manipulator Use to Remove and Install Tire Wheel Assemblies.
- Tool failure.
    - Inspect all tools prior to task and ensure they have been calibrated as required.
    - Only use impact sockets with impact wrenches.
    - Fit test sockets on wheel nuts by hand prior to removal to ensure proper socket size.
    - Clean all studs and nuts with a wire brush prior to removal.
    - Keep work area clear of unnecessary tools and equipment.
- Tire rupture during installation and removal of tires and wheel components.
    - Ensure tire-wheel assemblies are fully deflated prior to mount-dismount. Run a wire down the valve stem to remove obstructions that would prevent full deflation.
    - Do not stand in the line of fire or trajectory zone when inflating tire.

- 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.
- Noise exposure when deflating tires.
    - Wear hearing protection when deflating tires. Double hearing protection may be required for tires with super large bore or larger valve stems; alternatively, a muffler may be used to reduce the noise.
- Crush point between wheel assembly and ground.
    - Leave two top wheel clamps firmly in place until wheel assembly is secured with tire manipulator.
- Uncontrolled work area.
    - Communicate with co-workers involved in the removal-installation process.
    - Keep work area clear of unnecessary personnel, erect barriers as required.

4.0 CHECKLIST

- ☐ Attend all preparatory meetings (IE: daily PSI; job scope; review of JSA's and SOPs 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

(a) Using a large 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 to 10 PSI or less. This will ensure safety while allowing for easier removal of the wheel assembly and prevent the beads from breaking should the assembly require re-installation.

(b) Select the appropriate ¾ or 1" drive impact socket for the job and test its fit on the wheel nuts by hand.

(c) Clean all studs and nuts with a wire brush or steam hose to allow for easy removal of nuts.

(d) Secure the outer tire/wheel assembly using a tire manipulator or picker truck and sling (see SOP 960C-SOP-806 – Manipulator; Use to Remove and Install Tire-Wheel Assemblies).

(e) Loosen all wheel nuts from wheel clamps but do not remove completely. Tap all wheel clamps with a soft-headed hammer or ball peen hammer until loose.

(f) Remove all wheel nuts and clamps and place in a safe out of the way location.

(g) Remove the outer tire/wheel assembly using the tire manipulator.

(h) Remove the spacer band (dual wheel assembly). Tap the spacer gently around its circumference to loosen it if necessary.

(i) Inspect the spacer band, clamps, studs and nuts for damage or distortion and replace or repair if necessary.

(j) Secure the inner tire/wheel assembly using a tire manipulator or picker truck and sling (see SOP 960C-SOP-806 – Manipulator; Use to Remove and Install Tire-Wheel Assemblies).

(k) Remove the inner tire/wheel assembly.

(l) Inspect the hub for cracks, wear or other damage.

(m) For a front or single wheel application follow steps 1-8 and ignore reference to outer tire/wheel assembly.

6.2 Installation

(a) Clean and remove dirt and debris from all tire/wheel assemblies, vehicle hub assemblies, mounting surfaces, studs, wheel nuts and washers prior to installation.

(b) Install inside tire/wheel assembly onto hub using a tire manipulator or picker truck and sling (see SOP 960C-SOP-806 – Manipulator; Use to Remove and Install Tire-Wheel Assemblies).

(c) Ensure the valve stem is lined up in the appropriate groove.

(d) Install spacer and tap gently with soft headed hammer if necessary.

(e) Install outer tire/wheel assembly as per step two (2).

(f) Ensure the valve stem is lined up in the appropriate groove.

(g) Install all wheel clamps.

(h) Install all lug nuts by hand.

(i) Using a “star” pattern, gently tighten all wheel nuts.

(j) For a single wheel application follow steps 1-3 ignoring references to inside tire/wheel assembly. Then follow steps 7-9.

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

(l) Use a large bore inflator with an in-line gauge to inflate the tire/wheel assembly to manufacturers recommended cold tire inflation pressure.

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 – Part 12, Section 193, Tire Servicing
- Alberta Occupational Health and Safety Act, Regulation and Code – Part 14, Sections 208 & 209, Lifting and Handling Loads
- Tire Industry Association Earth Mover Tire Service Training Program
- Equipment Manufacturer Service Manuals
- Jack Manufacturer’s Operation Manual
- 960C-SOP-501 Rad Gun Use
- 960C-SOP-503 Hytorque Wrench; Use
- 960C-SOP-504 Hand Tools; Use of
- 960C-SOP-806 Manipulator Use to Remove and Install Tire-Wheel Assemblies
- 960C-SOP-824 Torqueing of Tire-Wheel Assemblies
- 950C-C-028 Hazardous Energy Isolation Code

9.0 APPENDICES

- No appendices.