

STANDARD OPERATING PROCEDURE

Jacking Up Axle Housings on Haul Trucks

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JACKING UP AXLE HOUSINGS ON HAUL TRUCKS



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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 jacking up axle housings on haul trucks.

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

- Equipment falling off jacks and stands.
 - Use jacks rated for the weight of the equipment and install under manufacturer designated lifting points.
 - Never support a load or an axle end with a jack by itself. Use stands with sufficient safe working load or cribbing to support the equipment. Jack stands with load holding rings or u-rings may be used to temporarily support the load providing personnel are not under the equipment.
 - Ensure vehicle, jacks and stands are on firm level ground. Use steel plates if unit is being jacked in an area without a concrete pad.
 - Ensure jack is level. If jacking surface is not level place the jack on blocks and level it by using shims or wedges. Shims and wedges must be placed securely so that they cannot be crushed or forced out of place.
 - To prevent load from slipping, metal to metal contact between jack head and load is NOT permitted. Ensure a barrier (i.e., piece of rubber, softener, etc.) is placed between the jack head and the contact surface of the load.
 - Always ensure three (3) points of contact when jacking up axle housings. Use rig mats, blocking/cribbing or jack stands with load holding rings when alternating lifting between sides. Where possible use the Tri-Lift jack to raise both sides of the haul truck at the same time. The Tri-Lift jack can also be used as an engineered stand.
 - Lift the axle housing in small increments to ensure the jack is not side loaded.
 - Do not stand under equipment when jacking or when the load is not secured. Do not stand near the jack or equipment while it is being raised in the event the jack is side loaded and is pushed out from under the equipment or the equipment falls off the jack.

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- Uncontrolled movement of equipment.
 - Isolate all forms of hazardous energy, use wheel chocks on the opposite side of the equipment being jacked.
 - Inspect equipment prior to use.
 - Ensure implements are grounded.
- Tool failure causing personal injury and damage.
 - Inspect all tools prior to use. Ensure they have been calibrated as required. Any signs of damage or hydraulic fluid leakage will eliminate the jack from use until repairs can be made and the mechanical integrity can be verified.
 - Stands must be engineered and inspected on an annual basis.
 - Use tools as per manufacturer's instructions.
 - Disconnect airline from compressor when jacks have been raised to the required height.
- Uncontrolled work area.
 - Keep work area clear of unnecessary tools, equipment, and 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

Note: The Company uses multiple types of jacks. Personnel must review the manufacturer's instructions to understand the jack's operations, limitations, and safety requirements prior to using the tool.

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- (a) Determine location for jacking the unit. If the unit is not on a concrete slab, the jacks are to be placed on steel plates of minimal dimension of 4' x 4' x 1" and 1.5" thickness for the large trucks or equipment. Ensure the ground is level and compact between the tires so as to prevent shifting and settling of the steel plate.
- (b) Park the unit on level, solid ground (over steel plates if required). Apply Park brake, isolate hazardous energy (lockout) and chock the wheels.
- (c) Inspect jacks and components prior to use. Ensure all components are available.
- (d) Place the axle stand on the flat surface, in front of the axle box. Rig it with slings so it may be dragged under the axle box once it is raised.
- (e) Confirm jack will support the weight of the unit and position jack(s) under the axle or manufacturer approved lifting points.
- (f) Jack only one side until the tires are high enough to place rig mats or blocking/cribbing under. Lower the tires to the rig mat or blocking/cribbing. This will maintain 3 points of contact – the two jacks and the tires. Repeat the process from side to side until there is adequate height to get the stand under the axle box. Both sets of tires are supported on rig mats or jack stands at this point.
- (g) Pull the stand under the axle box using a forklift or loader/ tire manipulator attached to the slings.
- (h) Raise the side on which the tires are coming off and remove the rig mats. Lower the jack. Drop the jack low enough that it is not taking any of the weight.
- (i) Lower the jack until the stand and other-side tires are supporting all the weight.
 - If the unit is sloping toward the other side, jack it up and place another rig mat under.
 - If the other side is higher than the stand, bleed air from the tires until level is attained.
 - Watch carefully and be prepared to use the jacks to take the weight if the stability on the stand becomes questionable.
- (j) NOTE: The TriLift model 300 twin jack stand incorporates two jacks and two stands in one unit. The system can be used to raise AND support a load. When connected, the two jacks operate simultaneously to lift the load and the self-locking jaw teeth ensure the jack functions as an engineered stand when lifting has stopped.

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TriLift Jack Stand positioned under haul truck axle housing

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

- Jack manufacturer's operation manual
- Equipment manufacturer's manual for appropriate lifting / jacking points
- 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
- 960C-SOP-504 Hand Tools; Use of
- 950C-C-028 Hazardous Energy Isolation Code

9.0 APPENDICES

No appendices.