REMOVAL OF STUCK OR SEIZED PINS ON EARTH MOVING EQUIPMENT

2	APP	Mar 29, 2022	Approved	Lorie Hayward	Tammy Siver	Tammy Siver
1	APP	May 7, 2015	Approved	R. Hecktus	T. Siver	S. Miller
Rev	**Status**	**Rev. Date**	**Status Description**	**Prepared by**	**Reviewed by**	**Approved by**

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 of stuck or seized pins and retainers on earth moving equipment.

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

- Pinching, crushing and line of fire hazards.
    - Ground personnel must maintain a safe distance. An exclusion zone may be used. When pulling pins or components using rigging, personnel must maintain a distance of 1.5 times the length of the rigging away from it.
    - Ensure workers are wearing appropriate PPE.
    - Ensure everyone involved in the task is aware of the pinching, crushing and line of fire hazards, document on hazard assessment and mitigate accordingly. Keep fingers/hands away from the pinch points.
- Rigging failure or release of stored energy causing personal injury and/or property damage.
    - Always place a dampening device, such as a heavy blanket over the component to reduce energy.
    - Ensure that the operator is protected. Equipment operators must wear safety glasses when inside the cab of equipment.
    - If slings are required ensure they are inspected prior to use. Damaged or defective slings cannot be used. The use of nylon or synthetic slings is not permitted. Slings that are used for pulling cannot be used for lifting.
    - Prior to the use of any sling ensure that the working load limit (WLL) is within the specification of the slings being used.
    - The rated load of the sling shall not be exceeded.
    - Welding must be performed by a competent welder.
    - Welding must be sufficient for the force being applied. Use rigging WLL as a guideline when determining the size of pulling eyes and cables.
    - If pulling a component with a cable sling, attach a second shorter sling to act as a whip check or safety sling. Ensure it is securely fastened to a stationary object that will not cause additional

damage. Ensure the pulling sling is as short as possible to minimize the risk area of rigging and/or pin travel.

- When pulling pins or components using rigging, personnel must maintain a distance of 1.5 times the length of the rigging away from it.

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.

5.4 Stored Energy

Stored energy, such as coiled springs, spring-loaded devices, or suspended loads.

5.5 Working Load Limit

Only load-rated hardware (such as slings) that is stamped with its safe working load shall be used.

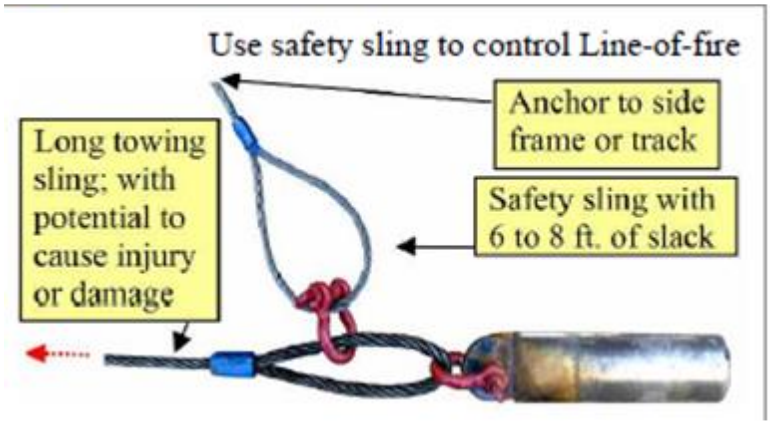
5.6 Whip Check

An additional device to control the trajectory of a component while being pulled with a cable sling.

6.0 PROCEDURE

1) Review OEM procedures for the task.
2) Conduct a hazard assessment (FLRA) prior to starting the task and report any unsafe conditions to supervision immediately.
3) When removing any seized or stuck component the first attempt should be either a pushing (pressing) or pulling movement. This movement must be slow, deliberate and controlled.
4) Uncontrolled release of stored energy must be controlled using dampening devices.

5) When using slings and pulling eyes to a pull stuck or seized components with mechanical equipment (i.e. wheel loader), a whip check or safety sling must be installed on the sling and attached to a solid base.



6) Pulling eyes must be welded to the stuck or seized component by a competent welder and be of sufficient strength to withstand the pulling force being applied.
7) Ensure cable pulling sling is of minimal length.
8) Do NOT jerk or use unnecessary force when pulling stuck or seized components. **Only slow and controlled movements are permitted.**
9) In the event the component does not release with a reasonable amount of force, contact supervision to proceed with heating and cooling of the area or lancing the component.

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 19, Section 269, Guards and Screens}
- 950C-C-028 Hazardous Energy Isolation Code
- 950-C-008 Cranes, Hoists and Rigging Code
- Caterpillar Hoist Cylinder Remove & Install SMCS 5102

9.0 APPENDICES

No appendices.