TRACK INSTALLATION – SHOP OR FIELD

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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 track installation in a field or shop environment.

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

- Line of fire, pinch, and crush points.
    - Keep fingers, hands, and other body parts away from pinch points when taking up tension on slings and come-alongs, aligning links, setting link pin and press, and when placing and bolting the last pad.
    - Stay out of the area between the front idler and the blade.
    - Do not access undercarriage until unit has been properly raised and blocked or placed on stands.
- Bogie assembly separating from track frame.
    - Use a professional engineered or manufacturer approved bogie strap/suspension strap to secure suspension to track frame.
- Falling or swinging suspended loads striking someone or property.
    - Confirm the weight of the equipment and components/being lifted.
    - Use only jacks and stands certified for the weight to be lifted and supported.
    - Use proper lifting tools. Inspect all lifting equipment and ensure it is of adequate size for the weights involved.
    - Never stand directly in the line of fire. Never stand under a suspended load.
- Uncontrolled movement of equipment.
    - Complete a live work checklist hazard assessment prior to the task.
    - Machine will be shut down and locked out whenever the technician does not need the machine running to turn the tracks.

- Personal injury from manual lifting tracks and master link.
    - Stretch before task. Do not lift greater than 50 lbs without assistance.
    - Use equipment to move and transports tracks. i.e., forklift or front-end loader.
    - Use two people to manually lift and place track pads for replacement.

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

1) Complete a hazard assessment (i.e. FLRA) for the task. Notify supervision if unsure of task and if there are hazards outside of the worker's control.

2) Review OEM procedure for task. Procedures may vary between machine sizes, models and manufacturers.

3) Inspect all tooling and equipment prior to being used. Tagout and remove from service any defective or damaged items. Notify supervision.

4) Complete a live work checklist hazard assessment.

5) Install bogie strap/suspension strap to secure suspension to track frame.

6) Raise the machine and place on suitable stands.

7) Raise the blade and place on a block or stands so that a cable can pass below.

8) Lay both tracks out behind the machine so they are aligned with the rollers/idlers.

9) Using a loader and sling, pull the tracks under the track frame until there is enough to come up over the front idler. Alternatively, a loader or forklift can be used to push the tracks under the track frame until the front link is past the idler with sufficient clearance to bring the end over the idler.

10) Install OEM tooling and a suitable lifting device onto the final drive and master link. In absence of OEM tooling the following methods may be used:

    a. Attach a cable sling to one of the front track links and use a suitable lifting device (i.e. crane) to lift the track over the idler. Wrap the cable around the planetary drum with 4 wraps to use the drum as a winch. *Do not allow the wraps to overlap*. If overlapped, the cable will bind and tighten to the point where it will not easily come undone. Alternatively, the cable may be pulled over the planetary drum using a loader or other suitable equipment.

    b. Bolt a lifting eye to the planetary drum plate. Shackle the cable to the eye and place 2 to 3 wraps around the drum. Once complete, remove the lifting eye and replace the bolt.

11) Under the direction of a spotter, operate the machine slowly in reverse, so it pulls the track on the sprocket. If required, the technician will pull the cable off the planetary drum to maintain tension and the wraps. When the track is over the sprocket and the cable has gone slack, stop the machine. Remove OEM tool or the cable.

12) Slowly continue in reverse until the track is hanging over the back of the sprocket with enough length to drape it over the idler wheel. Reverse the track until the top master link is behind the idler. If the cable is being pulled by a machine, back up until the track end will sit against the idler.

13) Shut down the machine and isolate hazardous energy.

14) Place a block under the track at the front idler to stop the track from folding off the front if the links should it come off the drive sprocket.

15) Clean paint or dirt off the mating surfaces of the master link and track shoe.

16) With the crane and a two-legged cable sling with slip hooks, lift the back end of the track as much as possible and place blocking under it to hold it up. Use the crane and sling to pull the bottom end of the track to meet up with the upper end.

    a. Alternatively, place a track pulling cable across pads of each end of the track with the hooks set behind the grouser. Use a come-along attached to the track pulling cables to pull them together so the master links meet up.

17) Hold the joint with the crane or come-along and couple the jaw-type master links together.

    a. There are some tracks without jaw-type master links and there are multiple links such as a LGP track. If press pins are used, use the pin press to install rather than a hammer.

18) Slide the final track pad in place and bolt. Apply anti-seize to the bolts. Torque the bolts to the manufacturer's specifications. Release come-along.

19) Repeat steps for the second track.

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 Powered Mobile Equipment}
- Alberta Occupational Health and Safety Act, Regulation and Code – {Part 15 Managing the Control of Hazardous Energy}
- 960C-SOP-401 Raising-Blocking Dozers Using Hydraulic Attachments in a Shop or the Field
- 960C-SOP-400 Raising-Blocking Equipment in Shop with Crane
- 950C-C-028 Hazardous Energy Isolation Code
- OEM procedures for track installation

9.0 APPENDICES

- Appendix A – Track Components

Appendix A Track Components