

# STANDARD OPERATING PROCEDURE

Safe use of Manual and Mechanical Parts Washers

Document Number: 960C-SOP-121

Original Approval Date: Jul 13, 2020

Revision Number: 2

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Latest Revision Date: Dec 11, 2023

Next Revision Date: Dec 11, 2026

Document Approval Level: 4

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## SAFE USE OF MANUAL AND MECHANICAL PARTS WASHERS

					<i>Tammy Siver</i>	
2	APP	DEC 11, 2023	Approved	Andre Brule	Lisa Norris	Tammy Siver
1	APP	JULY 13, 2020	Approved	Andre Brule	Tammy Siver	Stan Miller
Rev	Status	Rev. Date	Status Description	Prepared by	Reviewed by	Approved by

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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 using the manual and mechanical parts washers.

## 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

- Improper use of mechanical parts washer and associated lifting equipment resulting in injury and/or property damage.
  - Supervisors will ensure workers are competent to use the mechanical parts washer and associated lifting equipment. Workers who are not familiar with the parts washer must work with the supervisor or another competent worker to become familiar with the equipment.
  - Pre-use inspection must be completed, and the manufacturer's manual must be reviewed and understood. Familiarize yourself with all the controls and know how to stop the washer before use.
  - Keep the operating area clean and clear from tripping hazards.
  - Monitor the total number of hours of washer cycle time for scheduled maintenance on the mechanical parts washer. Do not use if hours exceed the requirement for scheduled maintenance.
- Improper isolation during inspection and maintenance resulting in personal injury.
  - Follow 950C-C-028 Hazardous Energy Isolation Code and ensure that the unit is locked out and de-energized before performing any inspections or maintenance, or before going into the mechanical parts washer cabinet.
- Chemical exposure resulting in severe skin, eye, and throat irritation.
  - Review the SDS information on the specific chemical used in the parts washer. You should know and understand the physical health hazards, safety precautions and protective measures used for handling and storing the product. Additionally, you should review the SDS on specific personal protective

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equipment (PPE) required to work with the chemical. This may include additional hand, face, and respiratory protection.

- Ensure hazardous products have a supplier label or a workplace label.
- Follow the manufacturer's recommendation for specific chemical solution used in the parts washer.
- Ensure there is adequate ventilation when using the manual parts washer.
- Explosion or flammable hazards.
  - When using a manual parts washer that contains combustible or flammable solvent, ensure the tank has a lid and a fusible safety link. Ensure the lid is kept closed when the tank is not in use.
  - Eliminate all potential ignition sources, such as welding, gouging, grinding, or any other activities that create spark or a heat source. Ensure any electrical wiring and light fixtures attached to or near the parts washer are in good working condition.
- Rigging failure causing personal injury and/or property damage.
  - Only competent workers will perform rigging activities.
  - Before hoisting any components or parts into the parts washer, the equipment must be thoroughly inspected. This includes the hoist/crane, rigging/rigging components and parts and components to be lifted.
  - Know the weights of all the components/parts that are going to be lifted and placed on the washer platform. All rigging equipment, including shackles, hooks, and slings, must be rated and exceed the lifting capacity required for the load to be lifted.
  - Do not stand or pass under suspend parts or components. Keep limbs out of pinch points and line of fire hazards. Use tagline(s) to control the load.
- Unstable load on mechanical parts washer turntable platform.
  - All parts and components must fit within the diameter of the turntable platform. The load should also be centered on the turn table and must not extend beyond the edge.
- Manually lifting heavy or awkward parts/components resulting in personal injury.
  - Identify the weight of the load. Be sure you can lift the load without overexertion. Do not lift if you cannot handle the load safely. Do not lift any load greater than 50 lbs. without assistance from another person or a mechanical lifting aid. Follow 962C-SOP-009 Manual Lifting and Carrying Heavy Objects.
  - Use proper body mechanics when lifting (i.e., shoulders and feet square to load, lift with your legs from squat position, keep back straight, and use proper footing).

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- Inspect travel route prior to task; remove tools, debris, rocks, and other tripping hazards from lift/travel area.
- Crushing, pinch points and line of fire hazards.
  - Keep body parts and limbs away from any potential pinch points. When inspecting the mechanical parts washer, keep body limbs away from rotating, crushing, pinch point, or line of fire hazards.
  - Use extreme caution when opening the mechanical parts washer door after use. Parts and components may shift during the washing process.
- Handling hot parts and components after using the mechanical parts washer resulting in personal injury.
  - Allow the parts and components to cool down after washing, handle parts with caution and use gloves when handling hot parts and components.

## 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 Automatic Fill

Adds water to machine which is lost through evaporation. Some units require chemical to be added manually to maintain proper strength.

### 5.2 Company

Means North American Construction Group Ltd. (NACG) and all directly or indirectly owned subsidiary companies, including joint ventures.

### 5.3 Limit switch

Automatically stops pump/motor and skimmer motor if door is opened.

## 6.0 PROCEDURE

### 6.1 Mechanical Parts Washers

- 1) Supervisor will ensure employees are competent to operate the parts washer.
- 2) Read and understand the manufacturer's manual, safe operating procedure (SOP) and familiarize yourself with all equipment operations and controls.

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- 3) Supervisor and worker will discuss the task and plan the safest way to approach the work.
- 4) Worker will complete an FLRA to identify the task steps, hazards, and controls.
- 5) Complete pre-use inspection of parts washer. Ensure the mechanical parts washer power source is isolated before the inspection. Report any deficiencies or issues to the supervisor.
- 6) Inspect equipment and rigging used to lift parts and components into position. Ensure the equipment, rigging and turntable are rated for the load being lifted and/or supported.
- 7) Place all parts as near to the center of the turntable as possible. Position parts vertically whenever possible to take advantage of the blasting system.
- 8) Close and lock the door to start the washing process. The door must be closed and locked for the parts washer to function.
- 9) Check the water temperature to verify the washer has reached the minimum operating temperature specified by the manufacturer. Do not operate the washer unless it has reached minimum operating temperature. Excessive foaming and additional water loss may occur.
- 10) Set the wash cycle timer (follow manufacturer's process on setting timer). After the timer is set, start the parts washer.  
  
**Note:** If the load on the turntable is not centered and secured, the load will shift. If this happens press the STOP button. Wait 10 seconds for the pumps to stop running. Open the door slowly (parts may have shifted creating a hazard). Center and secure the parts close the door and start the cycle again.
- 11) Once the cycle is complete open the door slowly, stand back to avoid traces of steam and falling parts or components. Use equipment and rigging to unload the parts washer (use caution, parts and components may still be hot).
- 12) Clean up any spills that may occur during the cleaning cycle.
- 13) At the end of shift shut off the equipment, close the door and leave the work area in a safe, clean and tidy state.

## 6.1.1 QUADRA JET MODEL 250

### Additional Requirements for Quadra Jet Model 250

- Water level will drop due to evaporation and will be automatically filled back up. This will dilute the chemical strength. Chemical strength must be brought back up to correct strength to achieve proper cleaning. Chemical strength can be checked with a titration kit, which is available from the chemical supplier.
- Model 250 takes 30 gallons from minimum to maximum level markers.

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- Never operate with liquid levels below the minimum level marker. If the heating elements are not submerged at all times, damage may occur. Good operating practice is to check the liquid level daily, and each time chemical is added. Allow water to heat to operating temperature before adding chemical (175 F). Chemicals will not dissolve properly in cold water. Add chemical through side tank slowly with pump running. Most chemicals are mixed at a two percent solution.

## 6.2 Manual Part Washers

- 1) Worker will complete an FLRA to identify the task steps, hazards, and controls.
- 2) Wear appropriate task specific personal protective equipment (PPE) as defined by the chemical's SDS.
- 3) Perform pre-use inspection on the parts washer. Report any deficiencies to the supervisor.
- 4) Set up work area and ensure there are no tripping hazards in the travel path when moving parts and components to the parts washer.
- 5) Assess and identify the weight of the load. Use correct lifting technique and use another person or mechanical device if the load exceeds 50lbs.
- 6) Be aware of other personnel in the immediate vicinity and ensure the area is clear before starting equipment. Place components and parts on the washing table, proceed to wash. Never leave the equipment running while unattended.
- 7) Clean up spills immediately. Do not leave dirty rags/parts/tools lying around. Wash hands with soap and water after every use.
- 8) Switch off the equipment and ensure lid is closed. Leave the work area in a safe, clean and tidy state.

## 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

- 950C-C-028 Hazardous Energy Isolation Code
- 950C-C-008 Cranes Hoists and Rigging Code
- 950C-C-022 General Housekeeping Code
- 950C-C-034 Ladders Code
- 950C-C-036 Manual Materials Handling Code
- 950C-C-049 PPE – General Code
- 950C-C-036 Manual Materials Handling Code
- 950C-C-061 WHMIS & Hazard Communication Code
- 960C-SOP-020 Selection and Use of Mechanical Manual Lifting Aids
- 962C-SOP-009 Manual Lifting and Carrying Heavy Objects

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- Alberta Occupational Health and Safety Act, Regulation and Code – {Part 6, Section 93 – 95 – Overhead Crane}
- Alberta Occupational Health and Safety Act, Regulation and Code – {Part 15, Section 212 – 214 – Isolation}
- Alberta Occupational Health and Safety Act, Regulation and Code – {Part 22, Section 292 – 298 (2) - Rigging}
- Alberta Occupational Health and Safety Act, Regulation and Code – {Part 29 – WHMIS}

## 9.0 APPENDICES

- Appendix A - Examples of Manual and Mechanical Parts Washers
- Appendix B - Examples of Turntable and Rating Placards

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## Appendix A Examples of Manual and Mechanical Parts Washers



Example: StingRay Parts Washer.



Example: Quadra JET Model 250.



Example: Manual Parts Washer



Example: Oil Cart



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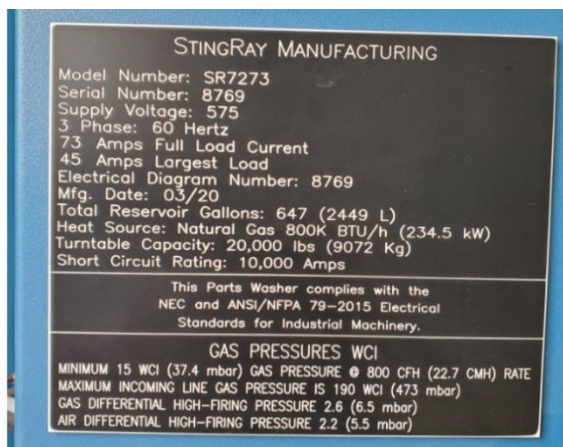
## Appendix B Examples of Turntable and Rating Placards



Example: StingRay Parts Washer – component placement center of turntable.



Example: Quadra JET Model 250 – component turntable.



Example: StingRay Parts Washer – placard.



Example: StringRay Turn Table.