



VUL-SWP-072a-007- Jacking and Supporting of Machine – Loader

STANDARD WORK PROCEDURE (SWP)	
Description	Jacking and Supporting of Machine – Loader
Site	Vulcan Mine
Department	Maintenance – Tyres
Purpose	The purpose of this SWP is to provide a documented way of working to achieve an acceptable level of risk. The steps outlined pertain to the titled task only. All other SHMS requirements such as SOPs must be followed e.g.: VUL-SOP-065-PPE, VUL-SOP-089-Dust etc.
PPE Required	Job Step Analysis Reference
    	CTMS-WI-GDR-CAT-001 & 002. This integrated SWP forms part of VUL-SOP-072a-Tyres, Wheels & Rims Mgmt.
	Other Relevant Information
	☐ Relevant OEM instructions & specification available
Task Specific PPE	ERT resources available on-site during operations.
  	Personnel performing tyre fitting and maintenance tasks shall be assessed as competent in the specific units of competency according to the state OR national regulations • AURKTJ011 Remove, inspect, and fit earthmoving and off-the-road tyres. • AURKTJ012 Remove, inspect, and fit earthmoving and off-the-road wheel / rim assemblies. • RIIVEH307D Operate heavy rigid vehicle. • RIIHAN307D Operate a vehicle loading crane.
The purpose of this SWP is to provide a documented way of working to achieve an acceptable level of risk. The steps outlined pertain to the titled task only. All other SHMS requirements such as SOPs must be followed e.g., VUL-SOP-065-PPE, VUL-SOP-089-Dust etc.	Work Instruction is based on working in a controlled environment (Tyre Bay) on OEM standard Machine. If the environment, tools, equipment changes and or a deviation from this Work Instruction, a new JHA must be created and approved by all workers conducting the task.
Critical (Hazard) Risks	
Ensure controls are in place for critical risks associated with this task. These include:	    

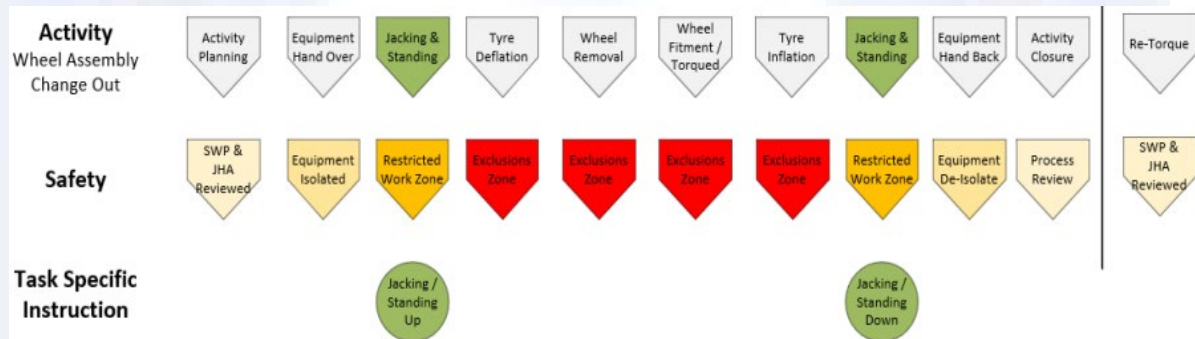


1. Planning and preparation

1. Attend daily pre-start Meeting
2. Confirm tasks with supervisor
3. Complete personal hazard id tool (take five).
4. Establish Work Zone – Refer to
 - **VUL-SWP-072a-004- Establishment of Work Zones;** and
 - **VUL-SOP-094-Check, Examine and Restrict Work Areas**

2. Jacking Machine OVERVIEW

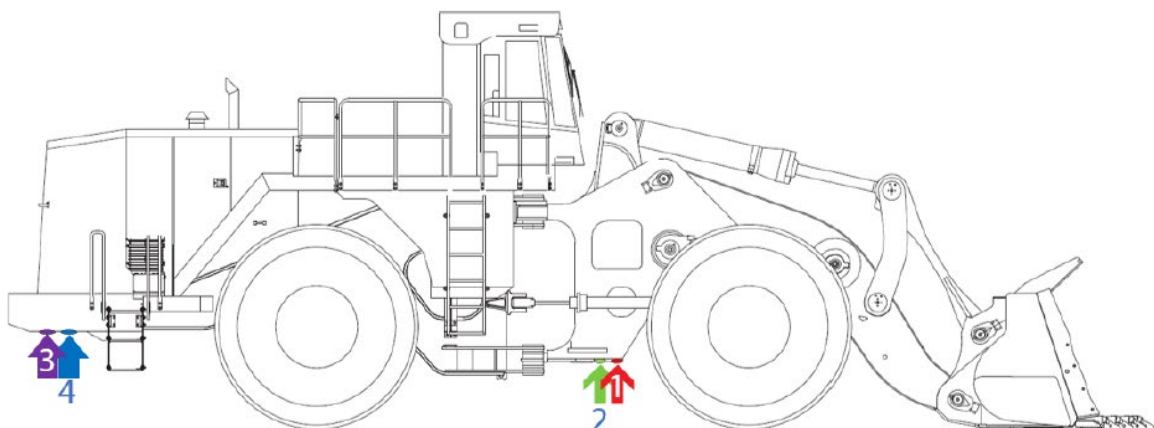
1. Conduct a personal pre-task risk assessment to identify hazards and controls before commencing task.
2. Ensure that machine and in particular wheels/rims/tyres are clean with no hang-up or debris prior to jacking.
3. Ensure vehicle is chocked & fundamentally stable before jacking.
4. Tyre fitters are to identify the correct jacking point location prior to commencing to jack machine.
5. Jacking plates are to be used when the surface is sub-standard (pit work only) (refer to personal pre-task risk assessment).
6. Ensure that the equipment is empty prior to jacking.
7. All jacking tools should be used on flat, stable concrete ground that can support the weight of the equipment.



Machine Weights

1. Machine weights are to be obtained from the Machine itself, or from the OEM for the specific equipment being jacked.

Machine Jacking and Supporting Locations





Jacking/Supporting Locations	
1	Front loader frame (outer) – left and right (RED)
2	Front loader frame (inner) – left and right (GREEN)
3	Rear loader's frame rails (outer) – left and right (PURPLE)
4	Rear loader's frame rails (inner) – left and right (BLUE)

CAUTION: Hydraulic jack could fail and lower the machine unexpectedly with the potential damage to the machine or severe injury to personnel. Lift lock jacks are best practice as no collars, pins, stands are required, which eliminate exposure to personnel underneath the machine

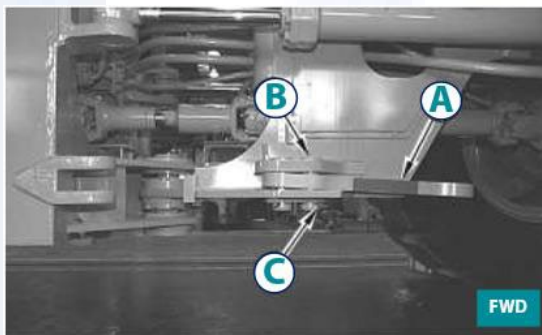
CAUTION: Incorrect positioning of the hydraulic jack or support stand could cause it to slip or be expelled sideways unexpectedly.

3. Install Steering Frame Lock

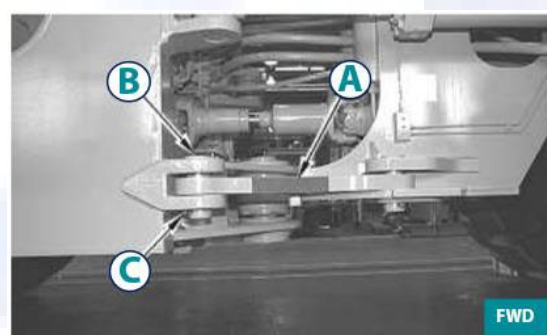
1. Park the machine in the straight-ahead position and engage the parking brake.
2. Remove hitch pin (C) from pin (B) as shown in Figure 2.
3. Move the steering frame lock (A) in position to the rear frame.
4. Install pin (B) and hitch pin (C) as shown in Figure 3.

NOTE: A locking pin may be installed on the bottom end of the frame lock pin. The locking pin must be removed before the frame lock pin can be pulled out.

CAUTION: Articulated vehicles can swivel unexpectedly while jacking. Ensure that the front wheel lean locking bolts and the rear frame lock pins are in place before lifting.



*UNLOCKED Steering Frame Lock.
(A) Steering Frame Lock; (B) Pin; (C) Hitch Pin.*



*LOCKED Steering Frame Lock.
(A) Steering Frame Lock; (B) Pin; (C) Hitch Pin*



4. Jacking Machine – FRONT WHEEL

1. Depending on the availability of tooling, the lifting and supporting tools of the machine may change.

OPTION 1 – Standard Jack

Location	Equipment	Purpose
1	60T Standard Jack (2 Off)	Lifting
2	60T Safety Stand (2 Off)	Support

OPTION 2 – Lift ‘n’ Lock Jack

Location	Equipment	Purpose
1	60T Lift & Lock Jack (2 Off)	Lifting & Supporting
2	60T Safety Stand (2 Off)	Support

NOTE: Push arms and blade must be removed before jacking the machine’s front.

2. Lower the implement to the ground.
3. Apply wheel chocks onto the rear tyres (front and behind).
4. Place the lifting tools underneath the corresponding jacking locations, as stated from the table above.
5. Lift the front of the machine by operating the jacks until there is adequate clearance for the tyre handler to perform work. In fitting a new tyre to the machine, allow 80-100mm of extra clearance.
6. Prepare and place the supporting tools (stands) under Location 2.
7. Depending on the jacking tool used, proceed to corresponding steps:
 - a) Standard Jack
 - i. Lower the machine by operating the jacks, allowing the machine to rest on the support stands.
 - b) Lift ‘n’ Lock Jack
 - i. Convert the jacks into the supporting stands by locking the jacks.
8. Inspect the supporting tool, ensuring that the machine is positioned securely on
9. the standpoints.

NOTE: It is not recommended to jack both sides if only one tyre is being changed.

5. Jacking Machine – REAR WHEEL

1. Depending on the availability of tooling, the lifting and supporting tools of the machine may change.

OPTION 1 – Lift ‘n’ Lock Jack

Location	Equipment	Purpose
3	60T Lift & Lock Jack (2 Off)	Lifting & Supporting
4	60T Safety Stand (2 Off)	Support

2. Connect the steering frame lock.
3. Lower the machine’s bucket or blade to the ground.
4. Apply wheel chocks onto the front tyres.
5. Position a suitable block between axle housing and rear main frame on both sides of the machine, as shown in Figure 6. This shall prevent the rear axle housing from oscillating.



NOTE: The rear axle housing is made to oscillate. During the removal of the rear tyres, the rear axle housing must be prevented from oscillating.

6. Place the lifting tool underneath the corresponding jacking locations on a flat surface, as stated in the table above. Lift the machine until there is adequate ground clearance for the tyre handler to perform work.
7. Prepare and place the supporting tools (stands) under Location 4.
8. Convert the jacks into support stands by locking the device.
9. Inspect the supporting tool, ensuring that the machine is positioned securely on the standpoint.

NOTE: At no time is the rear of the machine to be left without one serviceable wheel assembly fitted to the machine.

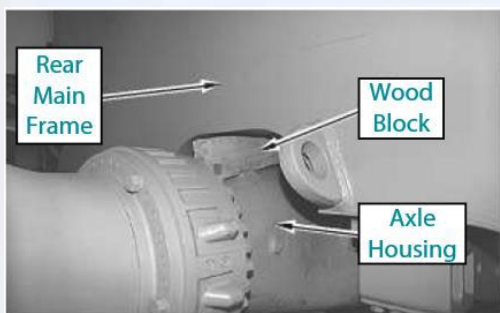


Figure 6 Oscillating prevention of axle housing.

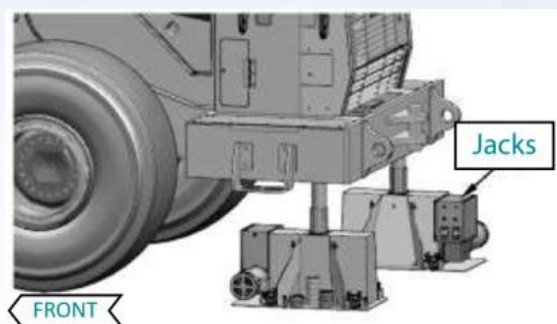


Figure 7 Applying Lift 'n' Lock jack to jack the machine's rear.



Figure 8 Jacking machine's rear.