



VUL-SWP-072a-006- Jacking and Supporting of Machine – Grader

STANDARD WORK PROCEDURE (SWP)	
Description	Jacking and Supporting of Machine – Grader
Site	Vulcan Mine
Department	Maintenance – Tyres
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 eg 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:	    

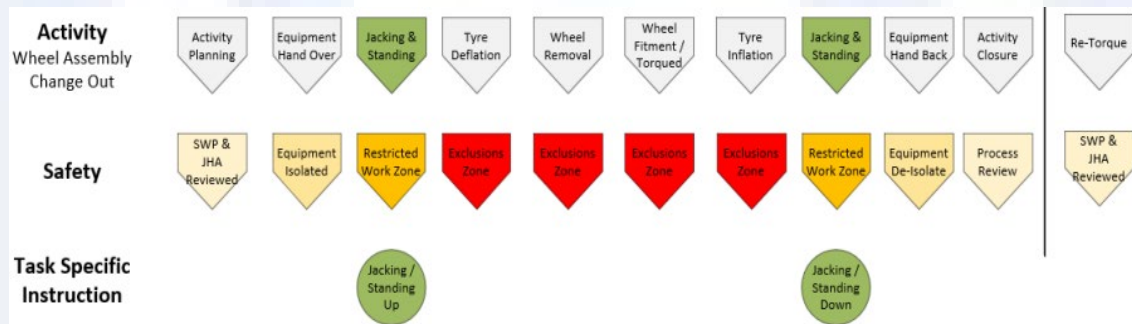


1. Planning and preparation

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

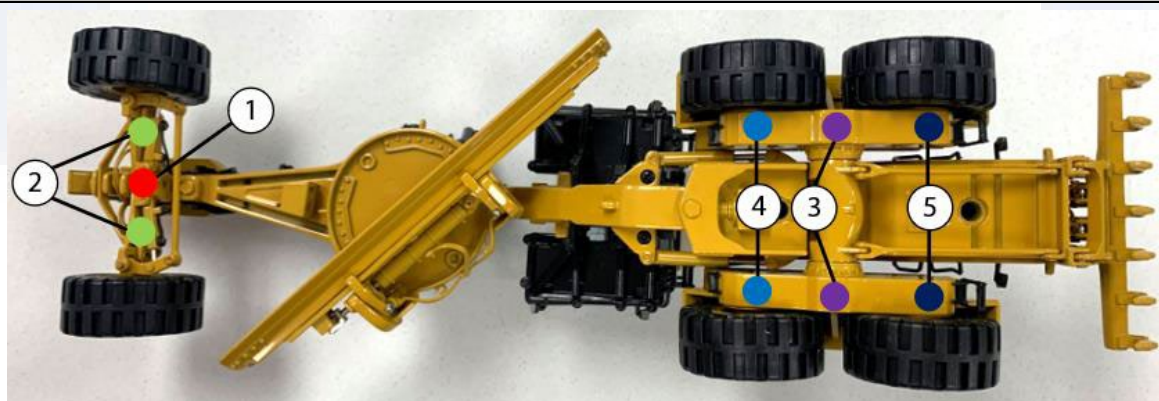
1. Conduct a personal pre-task risk assessment to identify hazards and controls before commencing task.
2. Ensure that machine and in particular wheels/rims/tyres are clean with no hang up or debris prior to jacking.
3. Ensure vehicle is chocked & fundamentally stable before jacking.
4. Tyre fitters 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 a flat, stable concrete ground that can support the weight of the equipment.



3. Machine Weights

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

4. Machine Jacking and Supporting Locations





Jacking/Supporting Points	
1	Front axle beam - centre (Painted RED)
2	Front axle beam – left and right (Painted GREEN)
3	Rear-wheel tandem housing – centre (Painted PURPLE)
4	Rear-wheel tandem housing – front (Painted BLUE)
5	Rear-wheel tandem housing – rear (Painted DARK BLUE)

5. Install Steering Frame Lock

1. Switch the machine's transmission to the NEUTRAL position. Engage the parking brake.
2. Ensure vehicle is fundamentally stable and chocked.
3. Ensure all accumulated energies are removed and isolate equipment.
4. Install the lean locking bolt to the front axle locking point.

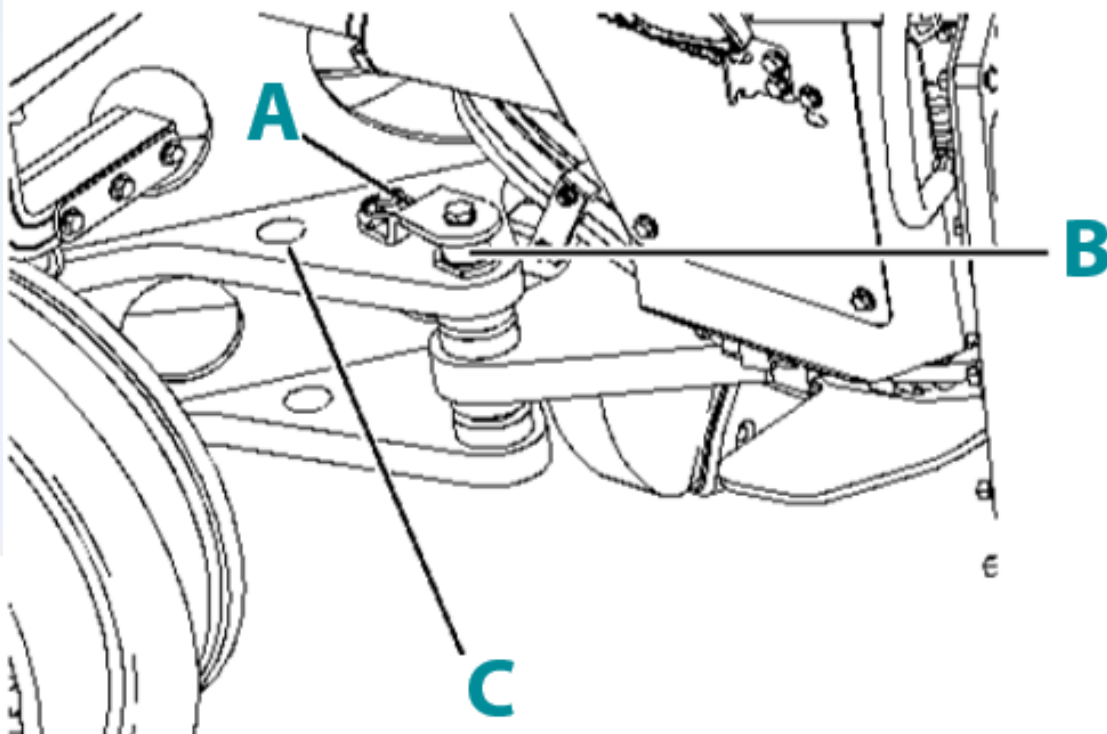
NOTE: The installation of the lean locking bolt prevents the uncontrolled movement of the front wheel during machine lifting.

NOTE: Site Exclusive Control / Live Testing authorisation / procedures may be required to complete step.

5. Pull the pin (A) away and remove the frame lock pin (B) from the storage bracket (C).
6. Secure the frame lock pin (B) in the LOCKED position with pin (A) as shown in the figure below.
7. Secure the frame lock pin (B) with the locking pin.

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



Steering Frame Lock Installed. (A) Pin; (B) Frame Lock Pin; (C) Storage Bracket.



6. Jacking Machine – REAR WHEEL (ONE SIDE)

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	25T Standard Jack (2 Off)	Lifting
2	25T Safety Stand (2 Off)	Support

2. Ensure the blade is parallel to the front Axle to avoid any obstruction to tyre maintenance work area.

3. Ensure all implements are placed on the ground prior to isolation.

4. Apply wheel chocks onto both rear tyres (front and behind).

5. Prepare the jack and support stands.

6. Position the jack under Location 1, as shown in the Figure below.

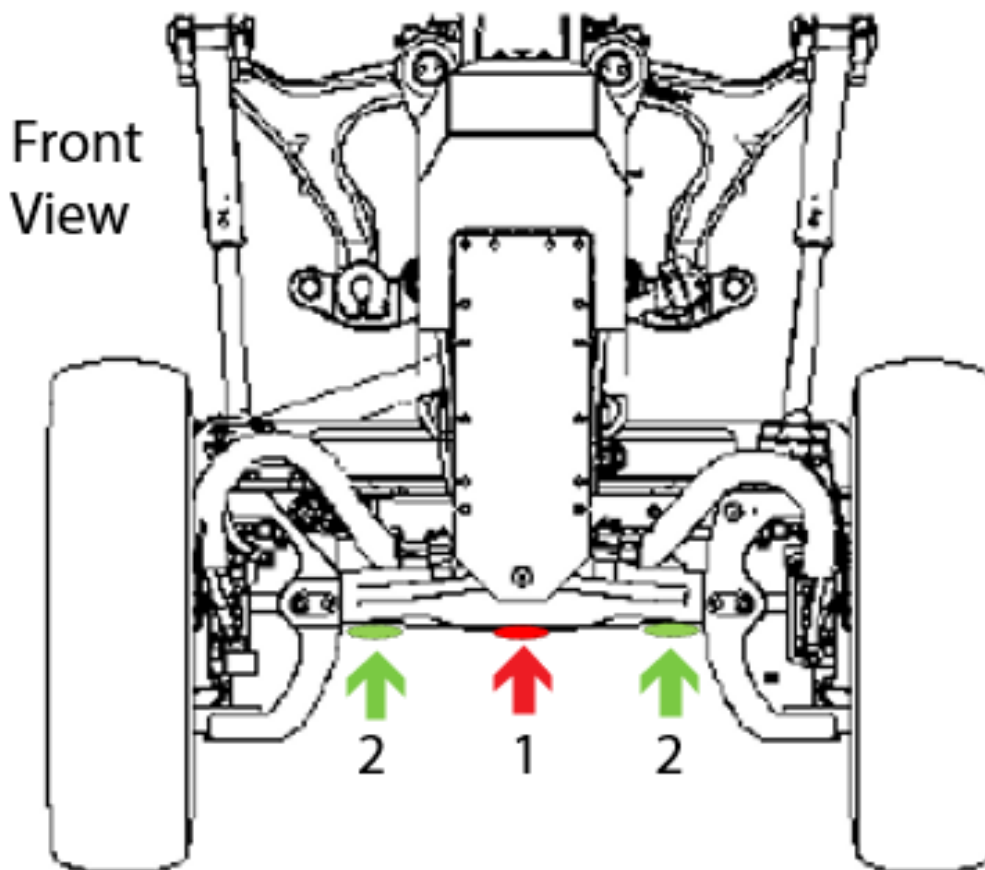
7. Raise the front of the machine by operating the jack until the front tires are off the ground. In the case of fitting a new tyre to the machine, allow 80-100mm of extra clearance.

8. Place the safety stands to support both sides of the front axle (Location 2).

9. Lower the jack until the weight of the machine is fully supported by both safety stands.

10. Visually inspect and ensure the stability of both safety stands.

Perform tyre, wheel, and rim maintenance work.



Jacking and Supporting Location - Front Wheels.



7. Jacking Machine – REAR WHEEL (ONE SIDE)

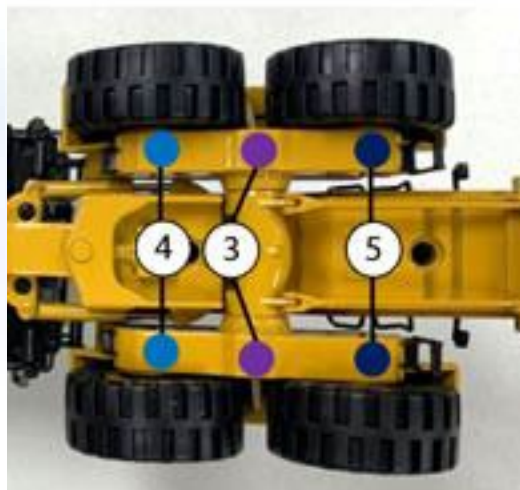
1. Depending on the availability of tooling, the lifting and supporting tools of the machine may change.
2. Apply wheel chocks onto the front wheels (front and behind).

OPTION 1 – Standard Jack

Location	Equipment	Purpose
3	25T Standard Jack (2 Off)	Lifting
4&5	25T Safety Stand (2 Off)	Support

OPTION 2 – Lift 'n' Lock Jack

Location	Equipment	Purpose
3	25T Lift & Lock Jack (2 Off)	Lifting & Supporting
4&5	25T Safety Stand (2 Off)	Support



Jacking and Supporting Location – Tandems.

NOTE: For graders WITHOUT tandem guard modification (reinforced / high raise to allow wheel removal without removing guard), client is required to REMOVE guard to allow tyre fitter to continue with task.

5. Place both jacks under Location 3 on a flat surface. Lift the machine by operating the jacks until sufficient ground clearance for tyre movement.

6. Depending on tool availability, 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.

7. Ensuring the machine is securely positioned on the standpoints.