



VUL-SWP-072a 008- Tyre Deflation & Inflation

STANDARD WORK PROCEDURE (SWP)	
Description	<i>Tyre Deflation & Inflation</i>
Site	<i>Vulcan Mine</i>
Department	<i>Maintenance – Tyres</i>
Purpose	<i>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.</i>
PPE Required	Job Step Analysis Reference
    	CTMS-WI-GNC-002A. This integrated SWP forms part of VUL-SOP-072a-Tyres, Wheels & Rims Mgmt.
Other Relevant Information	
☐ Relevant OEM instructions & specification available	
Task Specific PPE	
  	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.	<i>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.</i>
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 • VUL-SOP-094-Check, Examine and Restrict Work Areas
2. Inflating & deflating <u>OTR</u> tyres
The work instruction outlines the safest and most efficient approach to inflating & deflating OTR tyres.
3. Deflation
The deflation process is for all tyres, regardless of the position. CAUTION: Ensure that there are no personnel within the vicinity, park the tyre handler in-front of the tyre to be deflated (line of fire) as a physical hard barrier. 1. Demarcate Restricted Work Zone for the working location (position) for deflation. a. Zone to be demarcated with High Visibility Barricades b. Refer to VUL-SWP-072a-004-Establish Work Zone 2. Ensure that Jacks and Stands are in the correct jacking and standing points supporting the position prior to deflation. 3. Connect the deflation tool / silencer device to the valve assembly & remove valve (R520) ensuring the deflation valve located in the RIDS is switched off. 4. Position the tyre handler in front of the wheel position to serve as a barrier. NOTE: Personnel must not be within the Restricted Work Zone (RWZ) whilst performing inflation or deflation tasks. 5. Begin Deflation. a. Open the valve at the RIDS and listen for air flow. b. Monitor deflation airflow during task from the remote inflation deflation station by routinely checking deflation gauge and listening for air discharge (deflation noise) through the deflation device / silencer. NOTE: If sudden stoppage of airflow during deflation / gauge suddenly reads zero, this may indicate blocked valve or ice in the air line. FULL DEFLATION Tyre removal; (strip & fit) a. Tyre must be delated to 0 psi. Replace Componentry (Rim or Valving Components) b. Tyre must be delated to 0 psi. PARTIAL DEFLATION Removal / installation of a Wheel / Rim Assembly (unbolt & bolt) a. Tyre must be deflated to 10 psi (70 kPa). 6. Disconnecting the deflation tool / silencer device from the valve assembly: a. Open the purge/dump valve to deplete any build up pressure. b. Ensure that there is no build-up of pressure within the air hose and c. disconnect the tool from the valve assembly. 7. Repeat steps for other wheels. NOTE: in a dual situation all wheels/Rims must be deflated to above deflation options before any tyre work can commence.



4. Inflation

The inflation process is for all tyres, regardless of the position. If unsure, check the site specification plan or consult the supervisor for the correct inflation pressure.

CAUTION: Over-pressuring or under-pressuring the tyre can lead to tyre explosion. The incorrect seating of beads or components during inflation can contribute to tyre explosion.

1. Demarcate Restricted Work Zone for the working location (wheel position) for deflation of the machine.

- a. Restricted Work Zone shall be centred from centreline of wheel position at distance 6m wide (3m each side of centre line of wheel position) x 18m long.
- b. Zone to be demarcated with High Visibility Barricades
- c. Refer to **VUL-SWP-072a-004-Establish Work Zone**

2. Inspect valving is in good condition.

3. Ensure valve stem is not blocked.

4. Connect the inflation tool to the valve assembly.

NOTE: ensure the valve core housing (R520) is installed in the inflation tool.

5. Position the tyre handler in front of the wheel position as a hard barrier.

NOTE: Personnel must not be within the Restricted Work Zone (RWZ) whilst performing inflation or deflation tasks.

6. Begin Inflation

- a. Turn on the air supply from the remote inflation / deflation device.
- b. Once the tyre reaches 10 psi (70 kPa), turn off the air supply and check that the components are seated correctly, visually check the lock ring(s) have seated. Use a soft face hammer to tap the components into place.

NOTE: If components have not been pre-seated into the tyre, the maintainer will be required to continuously check the beads have evenly moved into the Bead Seat Band (BSB) before reaching 30 psi. If the bead has not moved on evenly, you will be required to deflate and inspect why the bead has not seated correctly to ensure beads are not damaged.

7. Monitor inflation:

Option 1:

- a. If fitted with a Temperature Pressure Monitoring System (TPMS) integrated with inflation station, routinely check the air pressure until it reaches the recommended cold inflation pressure TPMS system.
- b. Use master gauge post inflation to ensure correct pressure.

Option 2:

- a. Use master gauge to routinely check the air pressure until it reaches the recommended cold inflation pressure.

8. Inflate to recommended cold inflation pressure:

- a. Inflate tyre to recommended pressure as per machine specifications.

9. Turn off the inflation device.

NOTE: ensure airline has been deactivated before entering RWZ

10. Install valve core.

11. Disconnecting the inflation tool to the valve assembly:

- a. Open the purge/dump valve to deplete any build up pressure.
- b. Ensure that there is no build-up of pressure within the inflation air hose and disconnect the tool from the valve assembly.
- c. Remove the inflation tool.

12. Post inflation checks:

- a. Spray critical areas (Valving / O-ring, Lock ring and bead areas) with suds and water to detect air leaks (bubbles will form from the soapy solution).

13. Repeat steps for other wheels.



14. In the case of storing the tyres, inflate the tyres to 30 psi (200 kPa). Refer to "Storage Method" in VUL-SWP-072a-003- Storage of Tyres, Wheels & Rim Assemblies
5. Inflating & deflating <u>Non-OTR</u> tyres
The work instruction outlines the safest and most efficient approach to inflating & deflating Non-OTR tyres.
6. Deflation
The deflation process is for all tyres, regardless of the position. CAUTION: Ensure that there are no personnel within the vicinity, park the tyre handler in-front of the deflating tyre (line of fire) as a physical hard barrier. - Demarcate Restricted Work Zone for the working location (wheel position) for deflation of the machine. - Zone to be demarcated with High Visibility Barricades - Refer to VUL-SWP-072a-004-Establish Work Zone - Ensure that Jacks and Stands are in place supporting the position prior to deflation. - Connect the deflation tool / silencer device to the valve assembly. - Position the tyre handler in front of the wheel position to serve as a barrier. NOTE: Personnel must not be within the Restricted Work Zone (RWZ) whilst performing inflation or deflation tasks. - Begin Deflation. - Monitor deflation airflow during task from the remote inflation deflation station by routinely checking deflation gauge and listening for air discharge (deflation noise) through the deflation device / silencer. NOTE: If sudden stoppage of airflow during deflation / gauge suddenly reads zero, this may indicate blocked valve or ice in the air line. FULL DEFLATION Tyre removal; (strip & fit) - Tyre must be delated to 0 psi. - Replace Componentry (Rim or Valving Components) - Tyre must be delated to 0 psi. PARTIAL DEFLATION Removal / installation of a Wheel / Rim Assembly (unbolt & bolt) - Tyre must be deflated to 10 psi (70 kPa). - Disconnecting the deflation tool / silencer device from the valve assembly: - Open the purge/dump valve to deplete any build up pressure. - Ensure that there is no build-up of pressure within the air hose and disconnect the tool from the valve assembly. - Repeat steps for other wheels. NOTE: in a dual situation all wheels/Rims must be deflated to above deflation options before any tyre work can commence.
7. Inflation
The inflation process is for all tyres, regardless of the position. If unsure, check the site specification plan or consult the supervisor for the correct inflation pressure. CAUTION: Over-pressuring or under-pressuring the tyre can lead to tyre explosion. The incorrect seating of beads or components during inflation can contribute to tyre explosion. - Demarcate Restricted Work Zone for the working location (wheel position) for deflation of the machine. - Restricted Work Zone shall be centred from centreline of wheel position at distance 6m wide (3m each side of centre line of wheel position) x 18m long. - Zone to be demarcated with High Visibility Barricades - Refer to VUL-SWP-072a-004-Establish Work Zone - Inspect valving is in good condition.



3. Ensure valve stem is not blocked.
4. Connect the inflation tool to the valve assembly.
NOTE: ensure that a valve core housing is installed in the inflation tool.
5. Position the tyre handler in front of the wheel position as a hard barrier.
NOTE: Personnel must not be within the Restricted Work Zone (RWZ) whilst performing inflation or deflation tasks.
6. Begin Inflation
 - a. Turn on the air supply from the remote inflation / deflation device.
 - b. Once the tyre reaches 10 psi (70 kPa), turn off the air supply and check that the components are seated correctly, visually check the lock ring(s) have seated. Use a soft face hammer to tap the components into place.

NOTE: If components have not been pre-seated into the tyre, the maintainer will be required to continuously check the beads have evenly moved into the Bead Seat Band (BSB) before reaching 30 psi. If the bead has not moved on evenly, you will be required to deflate and inspect why the bead has not seated correctly to ensure beads are not damaged.

Monitor inflation:

Option 1:

 - a. If fitted with a Temperature Pressure Monitoring System (TPMS) integrated with inflation station, routinely check the air pressure until it reaches the recommended cold inflation pressure PMS system.
 - b. Use master gauge post inflation to ensure correct pressure.

Option 2:

 - a. Use master gauge to routinely check the air pressure until It reaches the recommended cold inflation pressure.
8. Inflate to recommended cold inflation pressure:
 - a. Inflate tyre to recommended pressure as per machine specifications.
9. Turn off the inflation device.
NOTE: ensure airline has been deactivated before entering RWZ
10. Install valve core.
11. Disconnecting the inflation tool to the valve assembly:
 - a. Open the purge/dump valve to deplete any build up pressure.
 - b. Ensure that there is no build-up of pressure within the inflation air hose and disconnect the tool from the valve assembly.
 - c. Remove the inflation tool.
12. Post inflation checks:
 - a. Spray critical areas (Valving / O-ring, Lock ring and bead areas) with suds and water to detect air leaks (bubbles will form from the soapy solution).
13. Repeat steps for other wheels.
14. In the case of storing the tyres, inflate the tyres to 30 psi (200 kPa). Refer to "Storage Method" in **VUL-SWP-072a-003- Tyre Bay Requirements**

8. No Go Zone

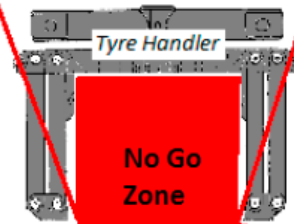
1. A No-Go Zone must be in place when tyres and rims are removed, installed, and inflated to protect all personnel. The No-Go Zone will prevent any person from being in a direct line from the front of the tyre whilst this work is being undertaken.
 - a. The No-Go Zone will be demarcated with signage and barricading.
 - b. The No-Go Zone will contain, as part of its perimeter, a hard barrier such as a tyre handling equipment, forklift, or other mechanical barrier.
 - c. Personnel directly involved in removal, installation and inflation will not cause their body to enter the No-Go Zone whilst inflating tyres occurs. Air flow must be stopped before approaching the tyre.
 - d. For any such task, tyre inflators will have suitable length hose to extend to outside of the No-Go Zone.



Do Not Enter whilst Inflating or Deflating

*Always stop
inflating/deflating
before approaching the
tyre & wheel/rim*

Always Consider the Trajectory Zone
and limit where required, eg. position
of Tyre Handler



**No Go
Zone**

3m

