Wheel Maintenance Process

Equipment Required 1

To complete the process you will need:

- Suitable air gun
- Suitable jack for the weight of the vehicle/ trailer
- Suitable axle stands to support the weight of the vehicle/trailer
- Hand wire brush
- ½ inch air wrench
- Centralising collars (in correct size)(x2)
- Emery cloth
- Wheel Trolley (VMU only)
- Calibrated torque wrench

Supporting Documents
Continental / Bandvulc Method Statement / Service Provider Method Statement

Wheel Removal Process 2

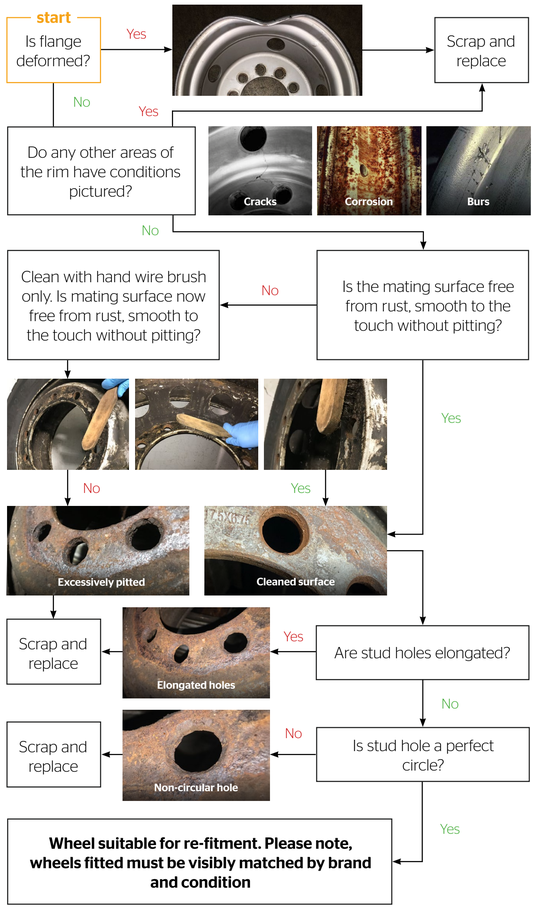
- **Prior to starting the process of wheel removal always refer to the Bandvulc / Continental and/or Service Provider Method Statement**
- Ensure that the work can be carried out safely, that the park brake is applied and that wheel chocks are in place.
- Ensure that a suitable jack is used at the recommended jacking points and that the jack is on stable ground or spread plates are used.
- Ensure the axle is supported by a suitable axle stand.
- Before removing wheels/wheel nuts they should be checked for any damage (see part two for information).
- Remove the wheel nuts using a suitable air tool.
- In the event of difficulty in the removal of a wheel from a hub or drum, under no circumstances should direct hammer blows be made to the wheel rim.
- Ensure that a rubber mat is placed on the ground to protect the wheel from damage and scratches.
- If wheel cracks or damage is detected, deflate the tyre prior to removal.

If any of the below are used in the removal of wheels, that wheel must be scrapped and a replacement fitted:

Heat | Porta press | Excessive blows with a sledgehammer

Wheel Inspection 3

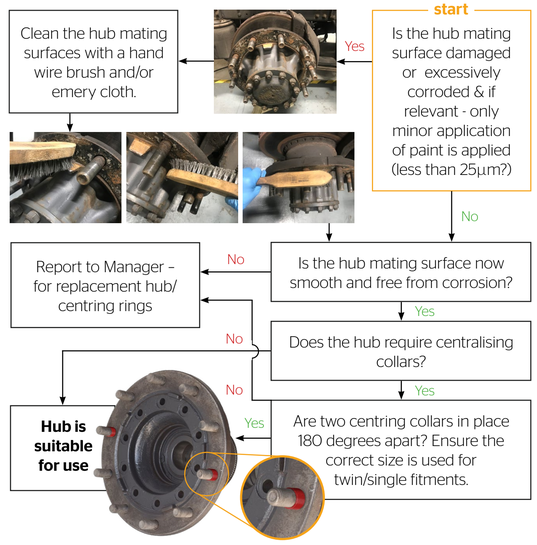
Limiting corrosion and carefully managing wheel condition is essential to ensuring safety. Below are some simple steps you must take to ensure all wheels fitted are safe for use.



Ongoing Recommendations

- 1 wheel retorque completed on every routine service.
- All wheels removed and full inspection complete on MOT every three, six and nine years.
- If vehicle defected for loose wheel nuts, you must follow full process indicated above rather than just completing the retorque.
- During normal vehicle use, wheels should be visually regularly checked (preferably at the start of each shift). Wheels should be examined for signs of damage, cracks, distorted rims, displaced spring flanges or locking rings, broken or loose fittings and signs of wheel looseness, e.g. bright metal or rust marks in the area of nuts or captive washer seating.

Hub / Spigot, Wheel Nut / Stud & Centring Ring Inspection 4



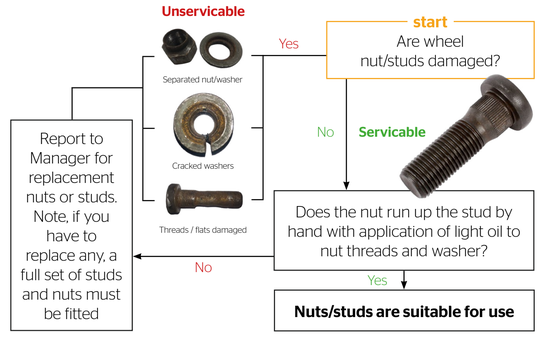
Key Points

Is the mating surface free from rust, smooth to the touch without pitting?

Clean the hub mating surfaces with a hand wire brush and/or emery cloth.

Are two centring rings in place 180 degrees apart? Ensure the correct size is used for twin/single fitments.

Wheel Nut / Stud Inspections



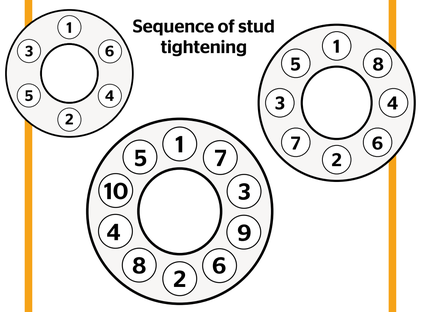
References

- FTA/IRTE (2015). An FTA/IRTE best practice guide. Tunbridge Wells: FTA.
- BS AU 50:27b:2017
- Maxion Wheels (2014). Disc Wheels for Commercial Vehicles. Germany: Maxion Wheels
- Guide to Tyre Management on Heavy Vehicles – TIF 2016
- ISO 14400 Road vehicles – Wheels and Rims - Use, general maintenance and safety requirements and out of service conditions

Wheel Refit Process 5

- **If applicable:** Ensure correct centralising collar is fitted.
- All wheels must be centred correctly on the vehicle to avoid over strained or fractured studs, distortion of the wheels, hub flanges and brake drums, loosening of the wheels, and elongated stud holes.
- Fit and run up all wheel nuts by hand. If using power tools the use of a ½ inch drive wrench only is permitted to pinch tight, 60nm.
- Care must be taken to ensure the correct tightening sequence is followed and that no dirt or foreign matter falls onto the hub or between wheel naves.
- One nut should never be tightened completely while the others are still loose. The final tightening should be gradual and progressive.

Sequence of stud tightening

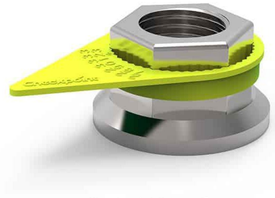


- Final tightening of wheel nuts must be manually applied with a calibrated torque wrench in the correct sequence. Correct torque settings and sequence can be found through the VM maintenance docs. An air impact tool should never be used for the final tightening, and neither should extensions on wheel nut spanners and spiders as over-tightening might result in stretched threads, broken studs and cracked or distorted wheels.
- When the torque wrench clicks or slides open STOP immediately.
- Where applicable lubricate fixing threads. Lubrication of the nut/captive washer interface of spigot mounted fixings is recommended to eliminate undue friction between the nut and its captive washer & nut/capture washer.
- When mounting wheels that have spherical or conical seatings, the vehicle manufacturer's recommendations regarding lubrication should be followed.

Wheel Re-Torque Process 6

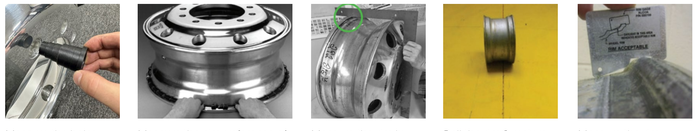
- After 30 minutes a re-torque must be carried out - ensure the correct tightening sequence is followed.
- If when wheel nuts are checked at the final wheel nut tightening, and the wheel or nuts are found to move, the wheel must be removed and the reason for the loss of clamping be investigated and rectified. After this rectification the tightening process and sequence should commence again as shown in section 5. If there are issues found these should reported to the VMU immediately.
- Once the re-torque has been completed yellow, high melting point check points must be fitted to every wheel nut. Any damage check points must be replaced. Please ask VMU for replacement check points.

Dustite LR® (long reach)
Indicators are to be installed in a point to point formation on wheels with rims. Any movement of the Dustite LR needs to be reported. Dustite LR will melt at 125° degrees to alert driver of faulty brakes or bearings. In your daily walk around inspection, if you see movement or melting; report to the Fleet Manager.



Checkpoint Original®
Indicators are to be installed in a point to point formation. Any movement of the Checkpoints needs to be reported. Checkpoints will melt at 125° degrees to alert driver of faulty brakes or bearings. In your daily walk around inspection, if you see movement or melting; report to the Fleet Manager.

Additional Inspection Steps For Aluminium Rims



Measure the holes by using stud holes gauge

Measure the circumference of the bead seat with ball tape or tape measure

Measure the rim by using square ruler

Roll the rim 3 meters over a level surface. If true the wheel will run in a straight line

Measure the rim flanges by using ALCOA wear gauge