

**No:**

SB208-21

**Date:**

15/09/21

**Issue:**

1.

**Subject:**

Ten Point Wheel Check List

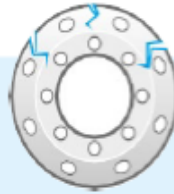
Making these simple checks part of your routine will ensure your vehicles are safer – all of which can be completed during a standard walkaround of the truck.

The consequences of damaged wheels may be severe; including failure, or the wheel becoming detached from the vehicle.



### CHECK 1 Dents & damage

- A badly dented wheel will not run true and may not seal correctly, so look for any damage that distorts the wheel from its original shape.
- If there is excessive wear in the flange, the wheel is effectively defective and should be replaced; it is not repairable. Use a Flange Wear Gauge to measure the tolerance.

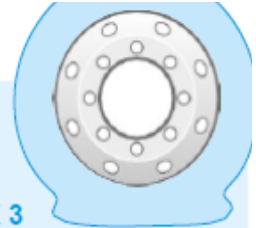


### CHECK 2 Cracks

- As a result of overloading or sharp edges caused by impact, cracks can appear:
- From ventilation hole to ventilation hole.
  - From ventilation hole to stud hole.
  - From ventilation hole to rim.
  - From stud hole to stud hole, caused by over tightening, loose wheel nuts, or over tightening in the wrong sequence.
  - On the disc curve, due to incorrectly sequenced fitting, damaged hub, or overload.

Look for circumferential cracks (all round cracking):

- At the tyre bead seat, because of moisture or pitting.
- In the wheel well, due to over-inflation, corrosion or overload.
- At the attachment weld, due to overload/over-inflation, or a loose wheel.



### CHECK 3 Signs of under-inflation

- Under-inflation of a tyre can damage the wheel rim, distorting the flange.
- Look for wear and damage along the circumference of the tyre bead seat on the rim.

Use a flange checker to ensure there is a gap between the checker and the flange. If the flange is damaged, it should not be re-fitted.

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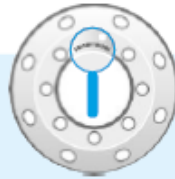


### CHECK 4 Corrosion

- Any surface corrosion of the wheel can be wire brushed and cleaned (taking care not to use any abrasive materials on the centre bore).
- Excessive flaking or badly pitted metal indicates a need to scrap the rim.

Areas to check include:

- Around stud holes on the nave.
- Both mating surfaces of the nave
- Around the centre hole or bore on the nave.
- Bead seat on the rim.
- Around the valve hole on the rim.
- All welds.
- Around vent holes, front & back.
- The wheel well.



### CHECK 5 Markings

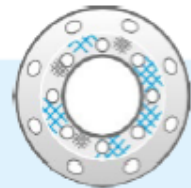
Located in different places on forged aluminium and steel wheels, markings include:

- Wheel size.
- Date of manufacture.
- Name of manufacturer or manufacturer's stamp.
- Part number.

These markings are to assist with wheel compatibility between the tyre and vehicle. No tyre should be fitted to a wheel without these markings as they do not conform to ETRTO standards.

Additional markings may be found on wheels:

- Offset.
- Maximum load. If not seen on the Wheel always refer to the manufacturer's specifications.



### CHECK 6 Mating surface

- All contact or mating surfaces on the wheel nave and axle hub must be clean, smooth and corrosion free.
- Look for any signs of heat damage, there can be a variety of causes, overheating brakes, attempted removal of seized wheel nuts...

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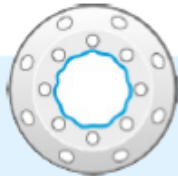
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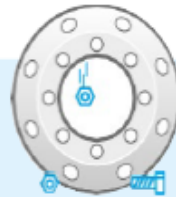
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**CHECK 7**  
**Centre hole or bore**

- Check the centre hole or bore for signs of warping, a dent or buckle in the nave.
- Look for damage to the edge or severe corrosive pitting around the circumference, that would be sufficient to affect the centring and full contact mating of the wheel.
- No abrasive materials should be used when cleaning the centre bore, to avoid going beyond manufacturers' tolerances.


**CHECK 8**  
**Stud holes**

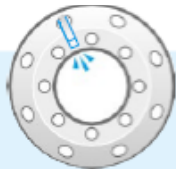
Thoroughly inspect all stud holes for any sign of wear or damage. As an aid, you may use a stud hole checker as a No-Go Gauge. Any 'ovality' will mean the stud hole is not fit for purpose, with a possibility of stress lift, leading to breakdown between nut washer and wheel surface, effectively loosening the wheel nuts.

In terms of a tightening sequence, ensure that all nuts run freely over the stud by hand. Final tightening of each nut must be carried out in the correct sequence with a calibrated torque wrench set to the vehicle manufacturer's torque value.


**CHECK 9**  
**Paint thickness**

To protect steel wheels, they are coated with anti-corrosion primer and top coat. In line with the Association of European Wheel Manufacturers' Standard 3.03. This standard advises what resistance tests must be carried out and certified on any paint prior to applying to the wheel.

Note: Paint is degradable and any additional paint added to a wheel attachment face must not exceed 60 microns of the total paint thickness as this will affect the clamping strength of the wheel nuts.


**CHECK 10**  
**Valve hole**

- The valve hole surface must have a clean and even surface.
- The valve hole area must be free from burrs and sharp edges.
- Any leak at the valve hole is caused by damage or severe corrosion.

Note: To perform some of these checks you may have to remove protective hub covers from the wheels. The inside wheels on a twinned axle are also difficult to check whilst still attached to the vehicle or trailer.