Wheel Assembly

Trailer tire and wheels are more likely to fail than car tires and wheels because they carry a heavier load. Therefore, it is critical that you develop the necessary habit of always inspecting the trailer tires before towing. *Proper tire care and safety is important.*

Before each use check the following:

- **Tire Pressure:** Improper tire pressure causes an unstable trailer. Verify the tire pressure is at the value indicated on the sidewall. A tire can lose up to half of its air pressure and not appear to be flat. Tire pressure must be checked while the tire is cold. If the trailer has been towed as much as one kilometre, allow at least three hours for the tires to cool.

- **Treads:** If the tires have too little tread, they will not provide adequate traction on wet roadways. If the tire treads have less than 1/16" depth or the telltale wear bands show, replace the tire before towing.

- **Side Wall:** Inspect both sidewalls of each tire for bubbles, cuts or bulges. Uneven tread wear may be caused by tire imbalance or improper inflation. Such conditions may lead to a tire blowout. Replace any damaged tire before towing.

Worn, damaged or under-inflated tires may result in loss of control of the vehicle, serious injury death or property damage may occur.

- **Lug Nuts :** Lug nuts or bolts may shift and settle quickly after assembly. You must check the lug nuts for tightness after the first 16, 40 and 80 KM (10, 25, and 50 miles) of driving a new trailer (or remounted wheel), and before each tow thereafter. Trailer wheels and lug nuts are subjected to greater side loads than automobile wheels. This may cause the lug nuts to become loose. Failure to perform this check may result in a wheel parting from the trailer, and a crash leading to death or serious injury.

Inadequate lug nut torque may cause a wheel to part while towing. Death or serious injury can result.

Replacing the Wheel Assembly

Assembly of the wheel onto the hub is a critical, safety-related process. The proper method of assembly and the consistency of the torque applied to wheel fasteners are important factors in ensuring reliability of the fastening system and retention of the wheel to the trailer. Torque is the measure of the amount of tightening applied to a fastener (nut or bolt) and is expressed as length force. For example, a force of 90 lbs. applied at the end of a wrench 1 ft. long will yield 90 ft-lbs torque. Torque wrenches are the best way to assure the proper amount of torque is being applied to a fastener. The trailer end user must consistently follow proper torquing technique in order to ensure the hub and wheel are properly seated and use caution to prevent anything from interfering with the flat, full designed mating contact of wheel mounting surface and hub. Excess paint, oil and grease must be removed from the fastener contact surfaces (the mounting surfaces, studs, and lugs nut) or not applied at all. Adherence to all instructions, warnings and procedures set out below will minimize the likelihood of fastener torque-loss and wheel separation.

Instruction Cautions

- Surfaces of contact on a steel wheel (the nut seat and the mounting surface) must be free of excessive paint, contamination and damage. Smooth, clean surfaces provide the most uniform clamping pressure and best retain torque.
- Surfaces of contact on the axle (the flat hub surface and the threaded studs) must be free of excessive paint, oils, grease, contamination and physical damage.
- Lug nut geometry must match that of the wheel nut seat. The threads and nut seat must be free of paint, oils, grease, and other contamination.
- Stud length must be sufficient that after mounting the wheel to the hub, the lug nut is engaged to a depth at least equivalent to the diameter of the stud. For example, a lug nut threaded on a 1/2 inch diameter stud should thread on for a depth of at least 1/2 inch.

Torque Procedures

- Start all bolts or nuts by hand to prevent cross threading.
- Tighten bolts or nuts in the sequence shown below for Wheel Torque Requirements. (See Figure 1.)
- The tightening of the fasteners should be done in stages. Following the recommended sequence, tighten fasteners per Wheel Torque Requirements shown below.
- Wheel nuts/bolts should be torque before first road use and after each wheel removal.

IMPORTANT! Check and re-torque after the first 16, 40 and 80 KM, (25 miles and again at 50 miles.) Check periodically thereafter.

Torque Requirement DO's:

- DO remove all oil and grease from threaded fasteners (studs and lugs).
- DO mask or shield (cover) all fastener contact surfaces (mounting surfaces and studs) before painting axles, whether for improved cosmetics or for corrosion protection.
- DO only use an impact wrench with torque stick as a tool initially to lightly secure the wheel, applying a criss-cross or star pattern. (See Figure 1)
- DO use a calibrated torque wrench to complete the torque fastening process applying the same criss-cross or star pattern. DO re-torque periodically during the trailer's initial towing and thereafter in accordance with the component supplier's recommendations.
- DO maintain records of the maintenance and torque checks performed by transporters, noting any loss of torque or any corrective measures taken.

Torque Requirement DON'T's:

- DON'T deviate from the component manufacturers recommendations regarding compatible components without a competent engineering review.
- DON'T substitute any component for the component the suppliers have specified without a competent engineering review.
- DON'T deviate from the component suppliers fastener torque specifications, where provided, without a component engineering review.
- DON'T use adhesive products to maintain fastener retention.
- DON'T apply any additional paint on fastener contact surfaces (mounting surfaces/hub faces or studs)

To prevent the wheels from coming loose, the lug nuts and bolts must be tightened to the proper torque for the axle size on your trailer. You must use a torque wrench to obtain the proper tightening of the fasteners. If you do not have a torque wrench, use a lug wrench and then have the lug nuts tightened to the proper torque at a service garage. Over-tightening will result in breaking the studs.

Wheel Nut Torque Requirement

Axle Rating (lbs.)	Stud Size (in.)	Torque (ft-lbs)
1,500 to 3,500	1/2"	90-120

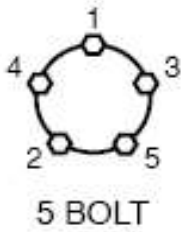

Figure 1: Tightening sequence for bolt or nuts

Do not attempt to repair or modify a damaged wheel. Even minor modifications can cause a dangerous failure of the wheel and result in personal injury or death.