

RECOMMENDED MAINTENANCE PROCEDURES

1. When replacing a broken stud, the studs on each side of it should be replaced. If more than one stud is broken, all studs in the wheel should be replaced.
 2. Verify the studs being used are the correct length for the type of wheels used. Stud stand-out must extend beyond both wheels as shown above.
 3. Check the inner cap nuts to be sure they are correct for the type of wheels. Make sure the stud does not "bottom out" in the inner nut.
 4. Follow the recommended torque and tightening procedures. Use a calibrated torque wrench to check air wrench output and adjust line output accordingly. Various impact wrenches with the same size drive can produce different torque readings at the same line pressure. An air line regulator can be used to adjust for differences. Pneumatic torque controllers and sensors are also recommended to control air wrench torque adjustment.
 5. Inspect studs, nuts and wheels at regular maintenance intervals. Replace broken studs immediately. It is important to re-torque wheel fasteners on newly delivered vehicles and periodically on vehicles in service. Any maintenance involving wheel fasteners should be rechecked immediately after road testing and again within 50 miles of use. Road testing should include several right and left hand turns or "figure eight's" in a safe area. This also applies to new vehicles after initial retorquing on delivery.
 6. Do not substitute ball seat mount fasteners for hub piloted fasteners or vice versa, unless specified as allowable by the hub and wheel manufacturer.
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MAINTENANCE, SAFETY AND SERVICE TIPS

Brake Drums:

When replacing steel brake drums with thicker cast drums (or vice-versa) be sure to check for proper stud stand-out. Changing drum thicknesses can reduce the number of available stud threads or cause the inner nut to bottom out on the stud threads or cause the inner nut to bottom out on the stud before clamping the inner wheel. The thickness difference between both types is approximately 1/4" in most cases.

Wheel end separations can occur because of :

- Improper torque on wheel nuts
- Worn or damaged threads failing to retain torque
- Incorrect assembly
- Incorrect application parts
- Incorrect length or diameter

Overtorquing can cause studs to stretch then break. Overtorquing can also create a raised ridge to form on stud piloted wheels. Unless removed, nuts will not seat properly, dual wheels will not be flush and torque retention will degrade quickly.

Undertorquing can cause loose wheels, nuts and load additional stress on studs and inner nuts. Failure to hold the air wrench on the nut for at least five seconds may not allow the desired torque to be applied.

Excessive paint can compress at a bolt hole reducing nut torque substantially and loosen within short time use after installation. Avoid heavy paint coating and allow paint sufficient time to cure. A coating of 1-1/2 Mil. is the maximum thickness recommended at the nut contact surface.

Use of lubricants on the cap nut seat, cap nut contact surface and nut or stud threads can result in false torque readings, torque multiplication and damage to parts. Anti-seize compounds on threads will produce torque up to 40% above the actual gauge reading.

Note:

For further Service information see *OSHA Vol. 49 No. 24*, available from the US Department of Labor.

