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Service Tips and Best Practices

Importance of Replacing Hardware- Nut and Bolt Fasteners

Brand	All	Product	All	Date	February 2021
Part Number(s)	Various				

Nuts and bolts are types of fasteners which are commonly used to mate various suspension and wheel end components to the vehicle body or to other components on automotive applications. These may take the form of axle or ball joint nuts and control arm pinch bolts, amongst others.

The OEM determines and specifies fastener type, grade, installation torque values and or sequences, maintenance and replacement conditions at the vehicle design phase. When replacing a component, it is critical to verify and reference the factory manual, with respect to the preceding conditions.

Nevertheless, as best practice, old fasteners should be discarded and not reused for some of the following reasons:

- While in service, fasteners may be exposed to debris, corrosion, water and other contaminants. This exposure may fatigue the fastener. This fatigue may not be visually apparent.
- While in service, fasteners may undergo cyclic stress due to loss of initial pre-load. This may fatigue the fastener. This fatigue may not be visually apparent.
- By design, certain primary and secondary fasteners are considered “one-time” use. This includes but is not limited to:
  - Nylon and locking nuts
  - Crush and locking washers
  - Cotter pins
  - Torque-to-yield (TTY)/stretch bolts
- Certain fasteners which secure dissimilar metals (aluminum to steel) are coated to prevent galvanic corrosion. This coating may lessen while in service. This reduction in protective coating may not be visually apparent.
- Certain fasteners may have a liquid locking compound pre-applied at the factory. Once loosened, the fasteners do not retain the adequate retention force.
- Removing a fastener may distort, over-stress or cause other damage which may cause an out of specification condition. For example, a removing a seized nut and bolt using a heat source may distort one or more of the characteristic material properties (tensile strength, yield strength, shear strength, fatigue strength, torsional strength, hardness, ductility, toughness).

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As part of a successful repair, it is important to adhere to the following:

- Verify and reference OEM fastener inspection, replacement, maintenance procedures and installation torque values and or sequences.
- Replace fasteners when required by OEM or when provided with replacement components.
- If a particular type of fastener is specified, do not substitute with one of inferior characteristics.
- Always replace "one-time" use primary and secondary fasteners.
- Always replace fasteners which require liquid locking compound.
- Always replace nuts once loosened.
- Do not use lubricant or liquid locking compound on a fastener unless specified. These may change friction factors, creating over-tight or under-tight conditions. Typically, OEM will require a non-lubricated or "dry" torque value. Ensure to verify if a "dry" or lubricated "wet" torque value is stipulated.
- Inspect mating components for damage. Replace all damaged or out of specification mating components.
- Remove all rust, burrs and corrosion from mating components.
- Only use a calibrated torque wrench for final fastening.

Failure to adhere to the above and or improper assembly may cause premature failure of the fastener and associated components.

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