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Service Tips and Best Practices

Damaged Knuckles and Bearings

Brand	BXT and TITAN-XF	Product	Bearing and Hub Assemblies	Date	June 2020
Part Number(s)	Various				

Issue: Multiple wheel bearing failures due to knuckle deformation

Deformation of the knuckle bore may arise from a severe impact (a wheel hitting a curb or an accident) or from an improper bearing press-in. As the diameter is now out of spec, the bearing and or hub assembly cannot truly seat into the bore. This deformation can lead to consistent and repeated failure of bearings and or hub assemblies on the damaged knuckle.

It is critical to inspect and verify the integrity of the knuckle bore when servicing a vehicle which has experienced these multiple failures. Knuckle bores which are determined to be 'out-of-round' require replacement of the knuckle to prevent continued premature failure of bearings and or hub assemblies.

Solution

1. Clean knuckle bore and surrounding area of all grease and dirt and remove all rust and corrosion. Inspect knuckle bore for cracks, grooves, nicks and other signs of visible damage.

2. With the knuckle removed from the vehicle, use a tubular inside micrometer or tapered bore gauge to inspect for an 'out-of-round' bore. Consult factory service manual for exact specifications but generally, deviations of ~0.25mm or greater (micrometer) or significant looseness/binding (bore gauge) require replacement of the knuckle.

3. If other knuckle damage or distortion is suspected and steps (1) and (2) are inconclusive, perform vehicle alignment to assist in diagnosis.

By following this procedure, the knuckle bore can be inspected for deformation and premature failure of bearings and or hub assemblies are prevented.

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