Wheel Hubs and Bearings

Preliminary Inspection

1. Visually inspect the housing, seals, and pinion flange for obvious signs of mechanical damage.
2. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step
3. If the cause is not visually evident, verify the symptom. REFER to Symptom Chart: NVH.

Symptom Chart(s)

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

Symptom Chart: NVH

Symptom Chart

Condition	Possible Sources	Actions
Axle shaft broken	• Overload the vehicle	• INSTALL a new axle shaft. REFER to: Axle Shaft (205-02E Wheel Hubs and Bearings - Full Floating Axle - Vehicles With: Ford 10.5 Inch Ring Gear, Removal and Installation).
	• Misaligned axle shaft tube	• INSPECT the axle for damage. INSTALL a new axle shaft. REFER to: Axle Shaft (205-02E Wheel Hubs and Bearings - Full Floating Axle - Vehicles With: Ford 10.5 Inch Ring Gear, Removal and Installation). CHECK axle shaft tube alignment. INSTALL a new axle housing if necessary. REFER to: Axle Assembly (205-02D Rear Drive Axle/Differential - Vehicles With: Ford 10.5 Inch Ring Gear, Removal and Installation).
Lubricant leaking from the axle shaft	• Damaged axle shaft O-ring	• INSPECT axle shaft O-ring. INSTALL new axle shaft O-ring if necessary. REFER to: Axle Shaft (205-02E Wheel Hubs and Bearings - Full Floating Axle - Vehicles With: Ford 10.5 Inch Ring Gear, Removal and Installation).
Lubricant leaking from the hub oil seals	• Plugged vent	• CLEAN the axle housing vent.
	• Worn hub seal	• INSPECT hub seal. INSTALL new hub seal if necessary. REFER to: Wheel Bearings, Wheel Hub Seal and Wheel Bearing Cups (205-02E Wheel Hubs and Bearings - Full Floating Axle - Vehicles With: Ford 10.5 Inch Ring Gear, Removal and Installation).
Noise while braking â€" Noises occurring during this condition result from rearward and downward force applied to the suspension and subframe such as rearward force applied to the lower control arm.	• Rear wheel bearing(s)	• INSPECT rear wheel bearing(s). REPAIR or REPLACE as necessary. REFER to: Wheel Bearings, Wheel Hub Seal and Wheel Bearing Cups (205-02E Wheel Hubs and Bearings - Full Floating Axle - Vehicles With: Ford 10.5 Inch Ring Gear, Removal and Installation).

Condition	Possible Sources	Actions
Whine, roar or groan	• Axle lubricant low	• CHECK the lubricant level. FILL the axle to specification. REFER to: Differential Fluid Level Check (205-02D Rear Drive Axle/Differential - Vehicles With: Ford 10.5 Inch Ring Gear, General Procedures).
	• Loose or damaged wheel bearings	• INSPECT the rear wheel bearing(s). INSTALL new bearing(s) as necessary. REFER to: Wheel Bearings, Wheel Hub Seal and Wheel Bearing Cups (205-02E Wheel Hubs and Bearings - Full Floating Axle - Vehicles With: Ford 10.5 Inch Ring Gear, Removal and Installation).

Analysis of Leakage

Clean up the leaking area enough to identify the exact source. A wheel hub leak can be caused by worn or damaged hub seals, worn or damaged axle shaft O-ring or a plugged differential vent.

A plugged rear differential housing vent can cause excessive wheel hub seal wear due to internal pressure buildup.

Verify the differential fluid level is at the correct level.
REFER to: Differential Fluid Level Check (205-02D Rear Drive Axle/Differential - Vehicles With: Ford 10.5 Inch Ring Gear, General Procedures).

Wheel Hub Oil Seals

Wheel hub oil seals are susceptible to damage if installed incorrectly. The seal bore must be clean and the lip handled carefully to avoid cutting or tearing it. Spindle journal surface must be free of nicks, gouges and rough surface texture.
REFER to: Wheel Bearings, Wheel Hub Seal and Wheel Bearing Cups (205-02E Wheel Hubs and Bearings - Full Floating Axle - Vehicles With: Ford 10.5 Inch Ring Gear, Removal and Installation).