

**FORD:**

1997-2005 Expedition, F-150  
2002-2005 Explorer

**LINCOLN:**

1998-2005 Navigator  
2003-2005 Aviator

**MERCURY:**

2002-2005 Mountaineer

This article supersedes TSB **05-12-6** to update the Service Kit and Service Procedure information.

**ISSUE**

Some vehicles may exhibit an axle whine or hum during acceleration, deceleration and/or cruise.

**ACTION**

An axle repair kit has been developed which incorporates most parts required for a comprehensive axle repair. The kit should be used instead of installing a complete axle assembly to repair an axle whine/hum. Replace Ring and Pinion with Axle Kit and Components.

**NOTE**

REFER TO THE "DIFFERENTIAL RING AND PINION" IN-VEHICLE REPAIR PROCEDURE IN THE ONLINE WORKSHOP MANUAL SECTION 205-00, FOR THE LATEST AXLE DIAGNOSIS AND REPAIR PROCEDURES.

**NOTE**

FOR 1999 AND PRIOR MODEL YEAR VEHICLES, USE THE 2000 MODEL YEAR WORKSHOP MANUAL.

**NOTE**

WHEN SERVICING THE REAR AXLE ON ANY 2002-2004 F-150, EXPEDITION, NAVIGATOR, EXPLORER OR MOUNTAINEER BUILT BEFORE 3/30/2004, IF FLUID REPLACEMENT IS REQUIRED, REPLACE THE ORIGINAL FUEL EFFICIENT HIGH PERFORMANCE (FEHP) SAE 75W-90 REAR AXLE LUBRICANT WITH SAE 75W-140 HIGH PERFORMANCE SYNTHETIC REAR AXLE LUBRICANT. WHEN THE FLUID TYPE IS CHANGED, REPLACE THE CURRENT "FEHP" METAL TAG WITH A NEW "75W-140" TAG (F3TZ-4121-AA). IN ADDITION, REMOVE OR BLOCK-OUT THE FEHP REFERENCE ON THE MULTI-COLORED LABEL LOCATED ON THE RIGHT SIDE AXLE TUBE. IF THE AXLE IS A LIMITED-SLIP MODEL, USE XL3 ADDITIVE FRICTION MODIFIER IN THE QUANTITY RECOMMENDED BY THE WORKSHOP MANUAL.

**KIT ORDERING: REFER TO THE VEHICLE AXLE TAG FOR AXLE RATIO IDENTIFICATION**

- 5L3Z-4209-A = (8.8-Inch Ring Gear/3.31 ratio) (1997-2005 F-150)
- 5L3Z-4209-B = (8.8-Inch Ring Gear/3.55 ratio) (1997-2005 F-150, 2002-2005 Explorer/Mountaineer/Aviator)
- 5L3Z-4209-C = (8.8-Inch Ring Gear/3.73 ratio) (1997-2005 F-150, 2002-2005 Explorer/Mountaineer/Aviator, 2003-2004 Expedition/Navigator)
- 5L3Z-4209-D = (9.75-Inch Ring Gear/3.31 ratio) (1997-2005 F-150, 2005 Expedition/Navigator, 1997-2002 Expedition/Navigator)
- 5L3Z-4209-E = (9.75-Inch Ring Gear/3.55 ratio) (1997-2005 F-150, 1997-2002 Expedition/Navigator)

**NOTE:** The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford, Lincoln, or Mercury dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.

## TSB 05-23-3 (Continued)

- 5L3Z-4209-F = (9.75-Inch Ring Gear/3.73 ratio) (1997-2005 F-150, 1997-2005 Expedition/Navigator)

### **NOTE**

9.75 REAR AXLE HOUSINGS WERE REDESIGNED IN MID-1999, INCREASING FRONT PINION BEARING SIZE. REPLACING RING & PINIONS IN AN OLD-STYLE AXLE ASSEMBLY WILL REQUIRE INSTALLATION OF SPACER P/N YL3Z-4662-CA. SPACER IS TO BE INSTALLED BETWEEN INNER PINION BEARING AND COLLAPSIBLE SPACER.

### **THE AXLE SERVICE KITS INCLUDE THE FOLLOWING COMPONENTS:**

- 4630 - Head Bearing
- 4628 - Head Bearing Cup
- 4676 - Pinion Seal
- 386989-S2 - Washer (Slinger)
- 4621 - Tail Bearing
- 4616 - Tail Bearing Cup
- 4222 - Differential Bearing Cups
- 4221 - Differential Bearings
- 4209 - Gear Set (includes pinion shims, pinion nut and crush spacer)
- 4209 - Instruction Sheet

### **NOTE**

THE KIT DOES NOT INCLUDE THE FOLLOWING ITEMS. SOME OR ALL OF THESE ITEMS WILL BE REQUIRED TO COMPLETE THE AXLE SERVICE, DEPENDING ON AXLE APPLICATION/STYLE.

### **ORDER AS NEEDED:**

### **NOTE**

REUSE OF RING GEAR BOLTS, CARRIER BEARING CAP BOLTS AND DIFFERENTIAL SLAVE PIN RETAINING BOLT REQUIRES CLEANING OF THREADS AND INSTALLATION OF TA-27 STUD AND BEARING MOUNT RETAINING COMPOUND & SEALANT.

- YL3Z-4662-CA - Pinion Bearing Spacer for 1997-1998 9.75 axles
- XG-14 - Gear Marking Compound
- 4067 - Differential Shims 0.241" to 0.307"
- SAE XY-75W140-QL - High Performance Synthetic Rear Axle Lubricant
- XL-3 - Additive Friction Modifier (Limited Slip Axles Only)

- 205-506 - Seal Protectors (Rotunda Tool)
- W710084-S439 - Wheel End Nuts
- 390266-S100 - Differential Slave Pin Bolt (9.75" axles)
- 387426-S100 - Differential Slave Pin Bolt (8.8" axles)
- 4B422 - Axle Circlips
- ZC-21 - Metal Surface Cleaner
- TA-29 - Ultra Silicone Sealant
- TA-27 - Stud and Bearing Mount Retaining Compound and Sealer
- F3TZ-4121-AA - Fluid Tag (REQUIRED IF FLUID TYPE IS CHANGED FROM FEHP DURING REPAIR)

**WARRANTY STATUS:** Eligible Under Provisions Of New Vehicle Limited Warranty Coverage

<b>OPERATION</b>	<b>DESCRIPTION</b>	<b>TIME</b>
052303A	1997-2002 Expedition, 1998-2002 Navigator, 1997-2004 F-150 Heritage, 2004-2005 F-150: Rear Axle Noise Repair (Includes Time For Road Test To Verify Concern (Beam Axle)) (Do Not Use With 4205A Or 4205A4)	4.7 Hrs.
052303A	2003-2005 Expedition: Rear Axle Noise Repair (Includes Time For Road Test To Verify Concern (Irs Axle)) (Do Not Use With 4010D Or 4010D4)	5.8 Hrs.
052303A	2003-2005 Expedition/Navigator With Air Suspension: Rear Axle Noise Repair (Includes Time For Road Test To Verify Concern (Irs Axle)) (Do Not Use With 4010D Or 4010D4)	5.9 Hrs.
052303A	2002-2005 Explorer/Mountaineer, 2003-2005 Aviator: Rear Axle Noise Repair (Includes Time For Road Test To Verify Concern (Irs Axle)) (Do Not Use With 4010D Or 4010D4)	6.6 Hrs.

**DEALER CODING**

BASIC PART NO.	CONDITION CODE
4209	14
<b>OASIS CODES:</b> 509000 , 590000 , 597997, 702000 , 702200 , 703200 , 703300 , 703400 , 790000	