

2005 DRIVELINE/AXLE

Rear Drive Axle/Differential - Ford 8.8-Inch Ring Gear - Explorer & Mountaineer

SPECIFICATIONS

AXLE LUBRICANTS AND CAPACITIES

AXLE LUBRICANTS AND CAPACITIES

Lubricant	Specification	Capacity
Rear Axle - Conventional		
SAE 75W-140 High Performance Rear Axle Lubricant XY-75W140-QL	WSL-M2C192-A	1.65 liters (3.5 pints)

GENERAL SPECIFICATIONS

GENERAL SPECIFICATIONS

Item	Specification
Lubricants and Sealants	
Premium Long-Life Grease XG-1-C	ESA-M1C75-B
Silicone Gasket and Sealant F7AZ-19554-EA	WSE-M4G323-A4
Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A
Stud and Bearing Mount TA-27	WSK-M2G349-A1
Threadlock and Sealer TA-25	WSK-M2G351-A5
Rear Axle	
Backlash between ring gear and pinion teeth	0.208-0.305 mm (0.008-0.012 in)
Ring gear maximum variation between teeth	0.102 mm (0.004 in)
Differential case maximum runout	0.076 mm (0.03 in)
Pinion bearing preload	1.8-3.3 Nm (16-29 lb-in)
Pinion flange maximum radial runout in assembly	0.25 mm (0.010 in)
Maximum carrier spread	0.75 mm (0.030 in)
Available drive pinion bearing adjustment shim in steps of 0.25 mm (0.010 in)	0.254 mm (0.010 in) - 0.965 mm (0.038 in)

REAR AXLE BACKLASH SHIM ADJUSTMENT TABLE

REAR AXLE BACKLASH SHIM ADJUSTMENT

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Backlash Change Required		Thickness Change Required	
mm	in	mm	in
0.025	0.001	0.050	0.002
0.050	0.002	0.050	0.002
0.076	0.003	0.101	0.004
0.101	0.004	0.152	0.006
0.127	0.005	0.152	0.006
0.152	0.006	0.203	0.008
0.177	0.007	0.254	0.010
0.203	0.008	0.254	0.010
0.228	0.009	0.304	0.012
0.254	0.010	0.355	0.014
0.279	0.011	0.355	0.014
0.304	0.012	0.406	0.016
0.330	0.013	0.457	0.018
0.335	0.014	0.457	0.018
0.381	0.015	0.508	0.020

TORQUE SPECIFICATIONS**TORQUE SPECIFICATIONS**

Description	Nm	lb-ft	lb-in
ABS sensor bolt	27	20	-
Axle assembly front lower insulator bolt	103	76	-
Axle assembly rear insulator bolts	150	111	-
Brake disc caliper bolt	32	24	-
Differential bearing cap bolt	105	77	-
Differential front lower insulator bolt	103	76	-
Differential housing cover bolt	32	24	-
Differential pinion shaft lock bolt	30	22	-
Differential rear insulator bolt	150	111	-
Drain plug	34	25	-
Driveshaft flange bolts	112	83	-
Fill plug	34	25	-

Handle (adapter)	2.2	-	20
Ring gear bolts	105	77	-

DESCRIPTION AND OPERATION

REAR DRIVE AXLE AND DIFFERENTIAL

- The differential housing consists of a cast aluminum housing and a cast aluminum differential housing cover. The differential housing cover uses silicone sealant as a gasket.
- The hypoid-design gearset consists of an 8.8-inch differential ring gear and a drive pinion gear. Two opposed pinion bearings support the drive pinion gear in the differential housing.
- A differential drive pinion collapsible spacer, located on the drive pinion gear shaft, maintains pinion bearing preload. The pinion nut adjusts the preload.
- Differential bearing shims, located between the differential bearing cups and the differential housing, adjust the differential ring gear backlash and the differential bearing preload.
- The differential case is a one-piece design with 2 openings to allow for assembly of the internal components and lubricant flow. Two opposed differential bearings support the differential assembly in the differential housing. Removable differential bearing caps retain the differential assembly in the differential housing.
- Inside the differential assembly, the differential pinion shaft supports 2 differential pinion gears. The pinion gears engage the differential side gears to which the halfshafts are splined. The differential pinion shaft lock bolt retains the differential pinion shaft in the differential assembly.
- A circlip, located on the inboard CV joint stub shaft, holds the halfshaft in the differential assembly. When installed, the circlip engages a groove in the differential side gear.
- An embossed metal tag, bolted to the differential housing cover, contains rear axle identification. For additional information, refer to **DRIVELINE SYSTEM-GENERAL INFORMATION** .
- The conventional rear axle requires SAE 75W-140 High Performance Rear Axle Lubricant XY-75W140-QL.

DIAGNOSIS AND TESTING

REAR DRIVE AXLE AND DIFFERENTIAL

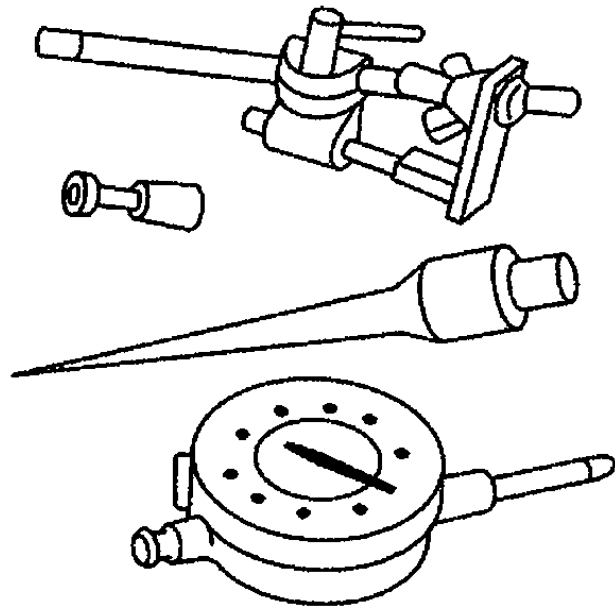
Special Tool(s)

SPECIAL TOOLS SPECIFICATIONS

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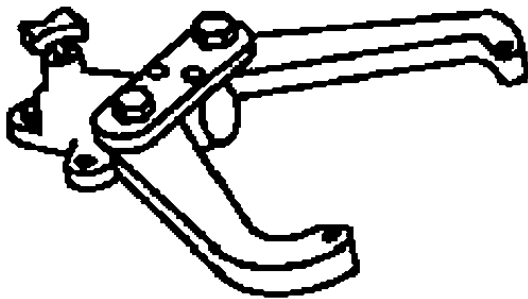
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Dial Indicator Gauge with Holding Fixture 100-002 (TOOL-4201-C) or equivalent

ST1214-A

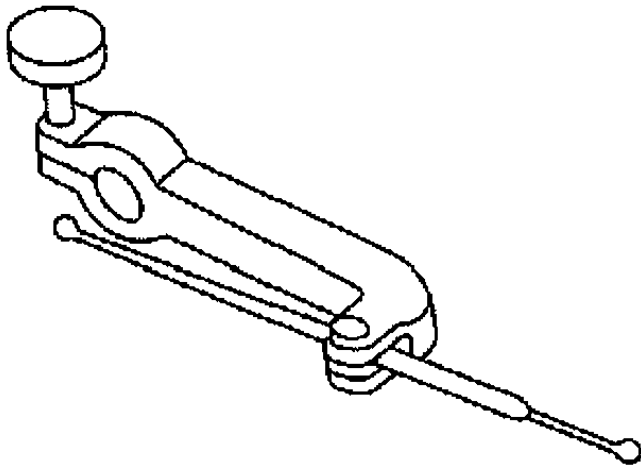


Holding Fixture, Transmission 307-003 (T57L-500-B)

ST1186-A

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ST1348-A

Gauge, Clutch Housing 308-021 (T75-4201-A)

Inspection and Verification

The technician should have a thorough knowledge of driveline system operation and accepted general driveline guidelines to detect any problems.

A gear driven unit will produce a certain amount of noise. Some noise is acceptable and audible at certain speeds or under various driving conditions. Certain conditions, such as road conditions and weather, will amplify normal vehicle noise.

Certain rear axle and driveline concern symptoms are also common to the engine, transmission, rear wheel bearings and tire. For this reason, be sure the cause of the concern is in the axle before repairing or installing any axle components.

The following is a guide to diagnose a driveline concern:

- Verify and document the customer concern.
- Perform a preliminary investigation.
- Road test the vehicle.
- Find the cause of the problem.
- Inspect the components.

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1. Verify and document the customer concern.
 1. When was it first noticed?
 2. Did it appear suddenly or gradually?
 3. Did anything unusual occur that would coincide with it or precede it?
 4. Has the driveline system been repaired before or new components installed?
 - Check the vehicle service record. Note any repairs other than driveline, such as brakes or suspension.
 5. Are there any special conditions affecting the concern or will alter the concern? For example,
 - road speed.
 - type of road.
 - drive mode.
 - temperature.
 - vehicle loaded or unloaded.
 6. Is the condition constant or intermittent? Can the concern be duplicated at any time?
 7. Check for TSBs.

NOTE: If the inspection reveals an obvious concern, repair the vehicle.

2. Do a preliminary investigation. Visually inspect for obvious signs of damage.
 1. Inspect the driveshaft:
 - for build up of any foreign material.
 - for damage, such as a bent tube or missing weights.
 - U-joints, CV joints or flex couplers for wear or damage.
 2. Inspect the axle:
 - for signs of leakage at the drain or fill plug, differential seal, vent or halfshaft seals.
 - a plugged vent or vent tube will cause a leak.
 - for damage, such as cracks, bent halfshafts or dented rear cover.
 - for missing fasteners.
 3. Inspect other suspect components/systems:
 - inspect the suspension for broken springs, damaged shock absorbers and worn suspension bushings.
 - inspect the rear brake components - lines, cables and calipers.

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- inspect the tires; are they in good condition and do they match?

NOTE: A road test is necessary for any customer concern of noise or vibration.

3. Road test the vehicle.

1. During the road test, use the following driving methods to diagnose the problem. Is the concern most noticeable:

- from a stop?
- on shifts from REVERSE to DRIVE?
- on turns?
 - sweeping type turn.
 - tight turn (to the stop).
- in DRIVE?
 - accelerating the vehicle, definite throttle depression, applying engine torque?
- in CRUISE?
 - maintain a constant speed with the throttle applied?
- in COAST?
 - decelerating with the throttle closed?

2. Record when the concern occurs. Write down the kph (mph) range at which the noise/vibration occurs.

4. Find the cause of the problem.

1. Compare the inspection and road test results with the following chart.
2. Use the following diagnostic routine chart to identify the probable cause and know what corrective actions should be taken to repair the component/vehicle and to prevent a reoccurrence.

DIAGNOSTIC ROUTINE CHART

Condition	Action
• Fluid loss	• GO to <u>DIAGNOSTIC ROUTINE - FLUID LOSS</u>
• Noise louder on turns (sweeping turn)	• GO to <u>DIAGNOSTIC ROUTINE - NOISE LOUDER ON TURNS (SWEEPING)</u>

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• Axle noise (growl)⁽¹⁾ in tight turn	• GO to <u>DIAGNOSTIC ROUTINE - NOISE (GROWL) IN TIGHT TURN ></u>
• Axle noise (whine)⁽¹⁾ in all or more than one drive mode	• GO to <u>DIAGNOSTIC ROUTINE - NOISE (WHINE) IN ALL OR MORE THAN ONE DRIVE MODES</u>
• Axle noise (tick/click)⁽¹⁾ in all or more than one drive mode (drive, cruise, coast)	• GO to <u>DIAGNOSTIC ROUTINE - NOISE (TICK/CLICK) IN ALL OR MORE THAN ONE DRIVE MODES</u>
• Axle noise (howl/moan)⁽¹⁾ in all or more than one drive mode (drive, cruise, coast)	• GO to <u>DIAGNOSTIC ROUTINE - NOISE (HOWL/MOAN) IN ALL OR MORE THAN ONE DRIVE MODES</u>
• Axle noise (clunk)⁽¹⁾ on changes in speed or direction of power	• GO to <u>DIAGNOSTIC ROUTINE - NOISE (CLUNK) ON CHANGES IN SPEED OR DIRECTION OF POWER</u>
• Front axle will not engage/disengage	• GO to <u>DIAGNOSTIC ROUTINE - FRONT AXLE WILL NOT ENGAGE/DISENGAGE</u>
• Vibration	• REFER to <u>NOISE, VIBRATION AND HARSHNESS</u> .
(1) Refer to <u>NOISE, VIBRATION AND HARSHNESS</u> for a glossary of noise-related terms.	

NOTE: If the conclusion of the road test points to an axle assembly section (ring and pinion or differential case) concern, carry out a visual inspection of the rear axle.

5. Inspect the axle components.

1. Remove the axle assembly.
2. Remove the differential housing cover. Drain the axle lubricant through a white cloth. Check the fluid for:
 - any foreign material.
 - metal particles.
 - burnt odor.

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NOTE: When inspecting the axle, do not clean the components immediately. Cleaning may remove diagnostic evidence.

3. Inspect the axle components.

- Look for:
 - loose fasteners.
 - notches or visible steps or grooves created by wear.
 - pitting or cracking along gear contact lines.
 - scuffing or deformations.
 - discolorations.
 - nicks or ridges on gear teeth.
- Clean the axle components for inspection.
 - Remove as much lubricant as possible with clean solvent. Wipe the components or blow them dry with compressed air.
- Re-inspect for:
 - loose fasteners.
 - notches or visible steps or grooves created by wear.
 - pitting or cracking along gear contact lines.
 - scuffing or deformations.
 - discolorations.
 - nicks or ridges on gear teeth.
- Check backlash and carry out a ring and pinion pattern test. Refer to **CHECKING DIFFERENTIAL RING GEAR BACKLASH** and **CHECKING TOOTH CONTACT PATTERN AND CONDITION OF THE RING AND PINION.**

Diagnostic Routines

Diagnostic Routine - Fluid Loss

DIAGNOSTIC ROUTINE - FLUID LOSS

Possible Component	Reference/Action
• Vent	• CLEAN the axle vent and vent hose.
• Overfilled axle	• CHECK the lubricant level for specific amount.
• Fill plug	• CLEAN the area around the plug. REMOVE the plug.

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	APPLY pipe sealant and INSTALL the plug.
• Halfshaft oil seal	• INSTALL a new halfshaft oil seal.
• Pinion seal	• INSTALL a new pinion seal.
• Differential housing cover	• RESEAL the differential housing cover.

Diagnostic Routine - Noise Louder On Turns (Sweeping)

DIAGNOSTIC ROUTINE - NOISE LOUDER ON TURNS (SWEEPING)

Possible Component	Reference/Action
• Wheel end bearing	• CHECK the wheel end bearing for wear or damage. INSTALL a new bearing.

Diagnostic Routine - Noise (Growl) In Tight Turn, Conventional Differential

DIAGNOSTIC ROUTINE - NOISE (GROWL) IN TIGHT TURN, CONVENTIONAL DIFFERENTIAL

Possible Component	Reference/Action
• Differential side gears and differential pinion gears	• DISASSEMBLE the differential carrier. INSPECT the differential case assembly. INSTALL new side gears and differential pinion gears or case assembly.

Diagnostic Routine - Noise (Whine) In All Or More Than One Drive Modes

DIAGNOSTIC ROUTINE - NOISE (WHINE) IN ALL OR MORE THAN ONE DRIVE MODES

Possible Component	Reference/Action
• Axle ring and pinion	• REMOVE and INSTALL a new gear set and bearings.

Diagnostic Routine - Noise (Tick/Click) In All Or More Than One Drive Modes

DIAGNOSTIC ROUTINE - NOISE (TICK/CLICK) IN ALL OR MORE THAN ONE DRIVE MODES

Possible Component	Reference/Action
• Axle ring and pinion	• REMOVE and INSTALL a new ring gear, pinion and bearings.

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Diagnostic Routine - Noise (Howl/Moan) In All Or More Than One Drive Modes

DIAGNOSTIC ROUTINE - NOISE (HOWL/MOAN) IN ALL OR MORE THAN ONE DRIVE MODES

Possible Component	Reference/Action
• Axle bearings	• INSPECT differential and pinion bearings. INSTALL new bearings.

Diagnostic Routine - Noise (Clunk) On Changes In Speed Or Direction Of Power

DIAGNOSTIC ROUTINE - NOISE (CLUNK) ON CHANGES IN SPEED OR DIRECTION OF POWER

Possible Component	Reference/Action
• Axle and pinion system	• MEASURE total backlash. If end play and total backlash are within specification, INSTALL a new differential case assembly.
• Differential pinion shaft	• INSTALL a new differential pinion shaft and pin.
• Pinion bearings	• INSTALL new pinion and differential bearings and bearing cups.

Diagnostic Routine - Front Axle Will Not Engage/Disengage

DIAGNOSTIC ROUTINE - FRONT AXLE WILL NOT ENGAGE/DISENGAGE

Possible Component	Reference/Action
• Mode switch • Wiring • Shift motor	• REFER to <u>FOUR- WHEEL DRIVE SYSTEMS</u> .

Diagnostic Routine - Vibration

DIAGNOSTIC ROUTINE - VIBRATION

Possible Component	Reference/Action
• For driveline vibration, REFER to <u>NOISE, VIBRATION AND HARSHNESS</u> .	

Checking Differential Ring Gear Backlash

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1. Remove the differential assembly.
2. Remove the differential housing cover.
3. Secure the differential assembly in a holding fixture.
4. Using a suitable dial indicator and the special tool, measure and record the differential ring gear backlash in 4 opposing points on the ring gear.

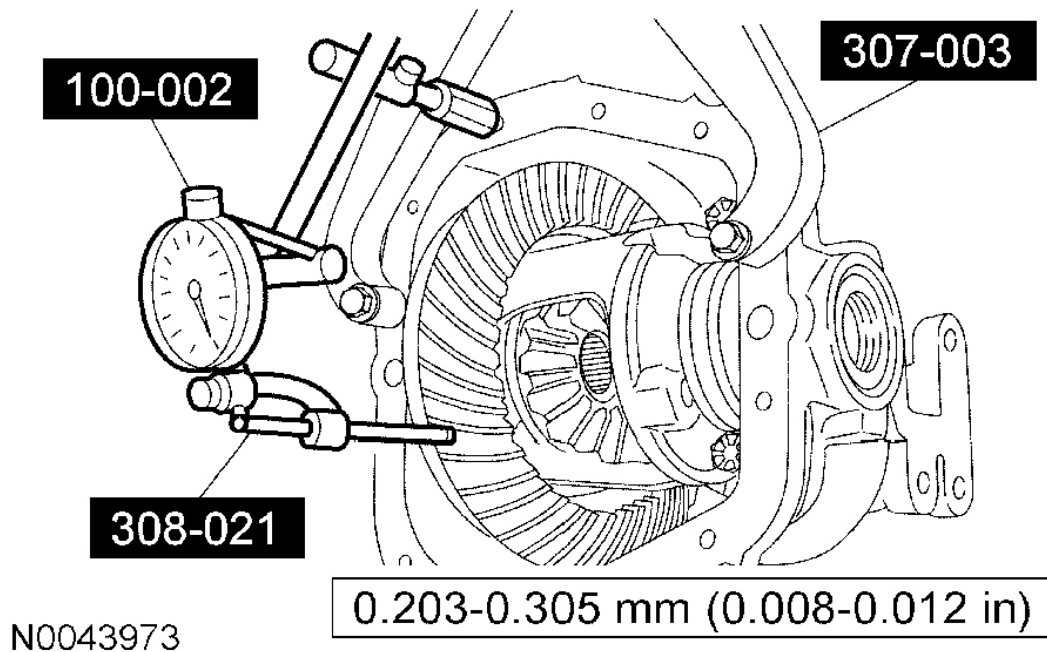
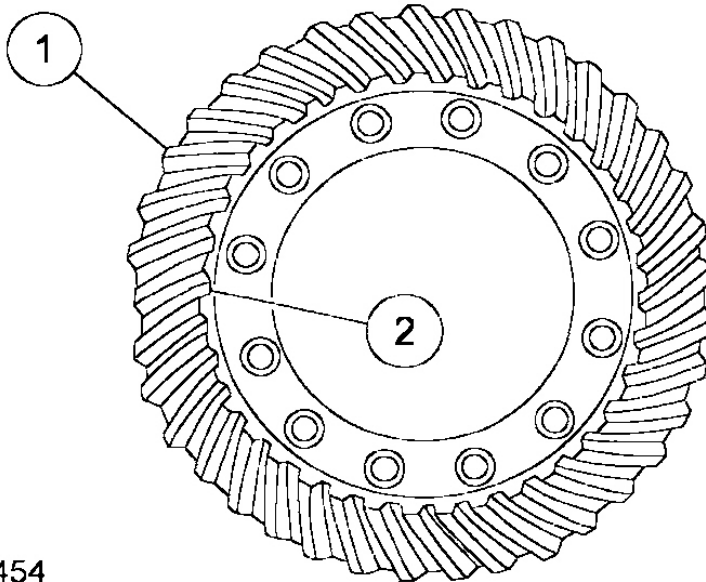


Fig. 1: Measuring Differential Ring Gear Backlash
Courtesy of FORD MOTOR CO.

Checking Tooth Contact Pattern and Condition of the Ring and Pinion

There are 2 basic types of conditions that will produce ring and pinion noise. The first type is a howl or chuckle produced by broken, cracked, chipped, scored or forcibly damaged gear teeth and is usually quite audible over the entire speed range. The second type of ring and pinion noise pertains to the mesh pattern of the gear pattern. This gear noise can be recognized as it produces a constant pitch or whine. Ring and pinion noise tends to peak in a narrow speed range or ranges, and will tend to remain constant in pitch.

NOTE: In the following steps, the movement of the contact pattern along the length is indicated as toward the "heel" or "toe" of the

differential ring gear.

N0029454

Item	Description
1	Heel
2	Toe

Fig. 2: Identifying Ring Gear Heel And Toe
Courtesy of FORD MOTOR CO.

Apply a marking compound to a third of the gear teeth on the differential ring gear. Rotate the differential ring gear several complete turns in both directions until a good, clear tooth pattern is obtained. Compare the contact patterns on the ring gear teeth with the following graphics.

Good Contact Pattern

Pattern inspection allows the technician to detect gross errors in set up prior to complete assembly of the differential assembly. Pattern contact should be within the primary area of the ring gear tooth section. Avoid narrow or hard contact with the outer perimeter of the ring gear tooth. Pattern inspection should be on the drive side of the tooth. Correct assembly of the drive

pattern will result in satisfactory coast performance.

NOTE: If a gross pattern error is detected with the correct backlash, check the pinion shim selection.

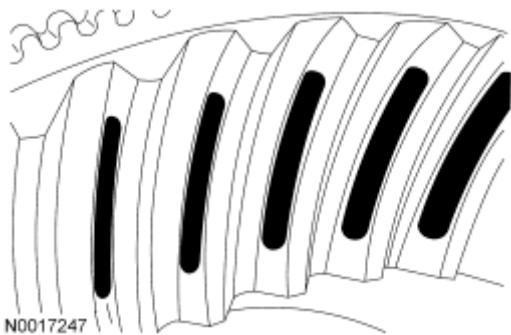


Fig. 3: Identifying Tooth Contact Pattern (Good Contact Pattern)
Courtesy of FORD MOTOR CO.

Low Contact Pattern That Is Contacting More Toward the Heel

Gross Pattern Error

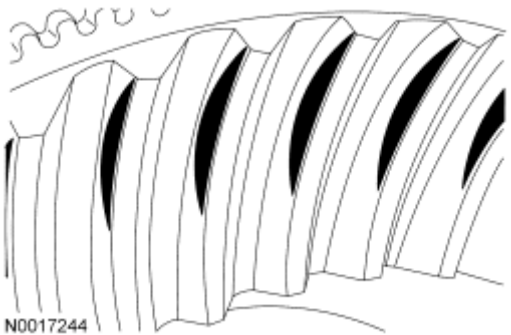


Fig. 4: Identifying Low Contact Pattern (Contacting More Toward Heel)
Courtesy of FORD MOTOR CO.

High, Thin Contact Pattern In the Center Of the Tooth

Gross Pattern Error



Fig. 5: Identifying Tooth Contact Pattern (High, Thin Contact Pattern)
Courtesy of FORD MOTOR CO.

Thick Contact Pattern That Is Contacting Tooth Toward the Heel

Gross Pattern Error

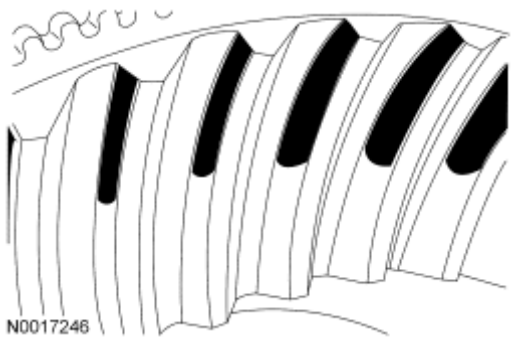


Fig. 6: Identifying Thick Tooth Contact Pattern (Contacting Tooth Toward Heel)
Courtesy of FORD MOTOR CO.

Thick Contact Pattern That Is Contacting Tooth Toward the Toe

Gross Pattern Error



Fig. 7: Identifying Tooth Contact Pattern (Thick Contact Pattern - Toe)
Courtesy of FORD MOTOR CO.

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GENERAL PROCEDURES

DIFFERENTIAL DRAINING AND FILLING

Material

MATERIAL SPECIFICATIONS

Item	Specification
SAE 75W-140 High Performance Rear Axle Lubricant XY-75W140-QL	WSL-M2C192-A

Fluid Check

NOTE: When the fill plug is removed, up to one pint will drain from the filler opening.

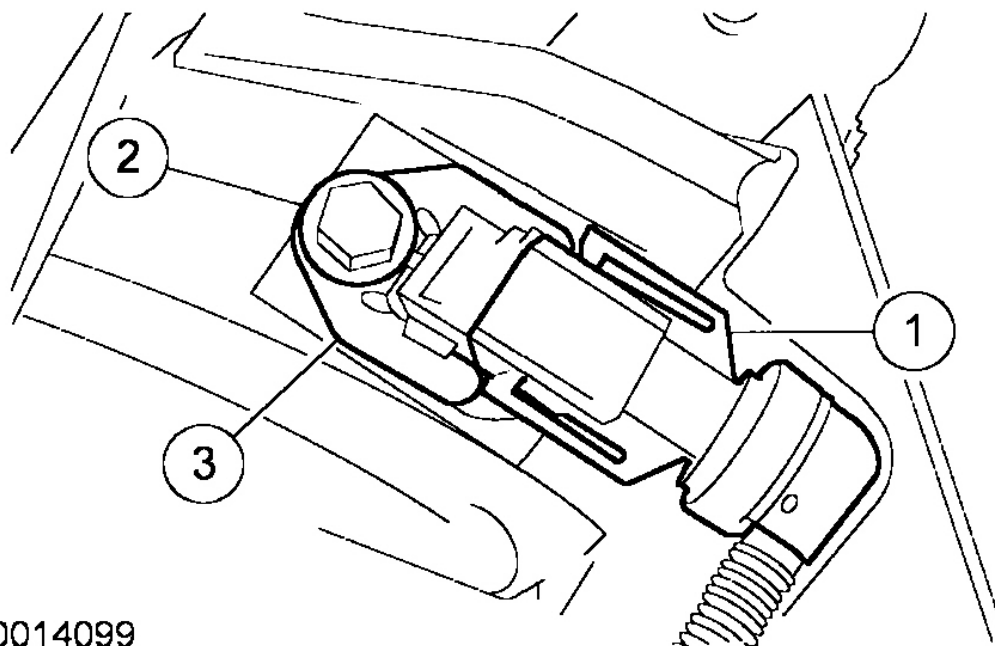
1. Remove the fill plug.

Fluid Drain and Fill

1. Remove the drain plug.
2. Install the drain plug.
 - Tighten to 34 Nm (25 lb-ft).
3. Fill the axle to the bottom of the fill plug hole.
4. Install the fill plug.
 - Tighten to 34 Nm (25 lb-ft).

NOTE: For roll stability control (RSC) equipped vehicles, remove the rear wheel speed sensor plug. For non-RSC vehicles, remove the rear wheel speed sensor.

5. Remove the rear wheel speed sensor.
 1. Disconnect the rear wheel speed sensor electrical connector.
 2. Remove the bolt.
 3. Remove the rear wheel speed sensor.



N0014099

Fig. 8: Removing Rear Wheel Speed Sensor
Courtesy of FORD MOTOR CO.

6. Add one pint of fluid.
7. Install the ABS sensor and ABS sensor bolt.
 - Tighten to 27 Nm (20 lb-ft).

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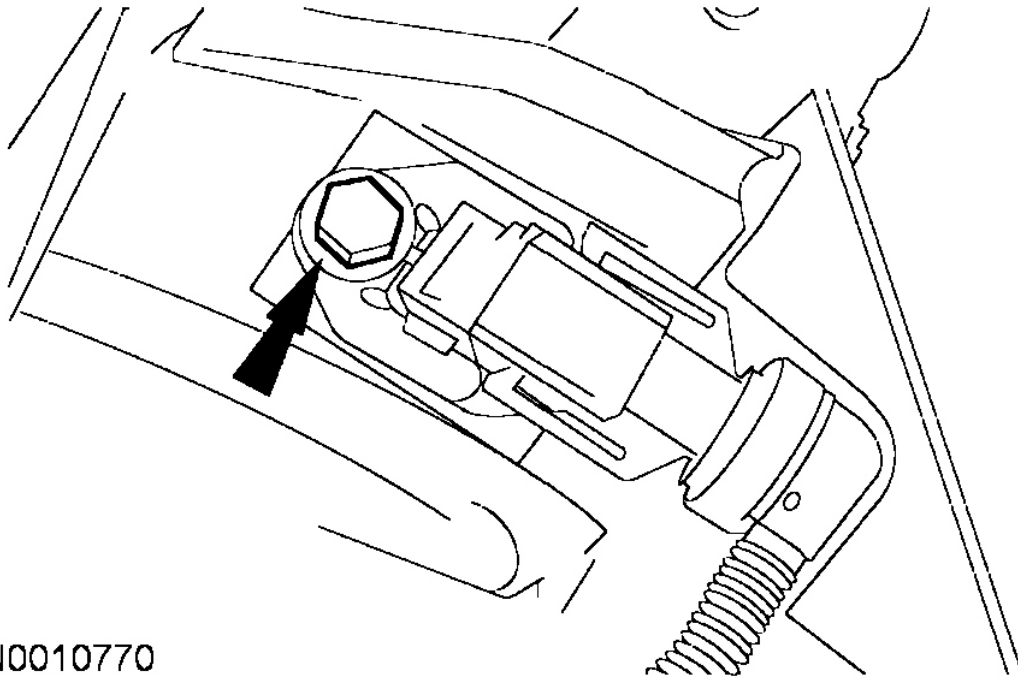


Fig. 9: Installing ABS Sensor And ABS Sensor Bolt
Courtesy of FORD MOTOR CO.

IN-VEHICLE REPAIR

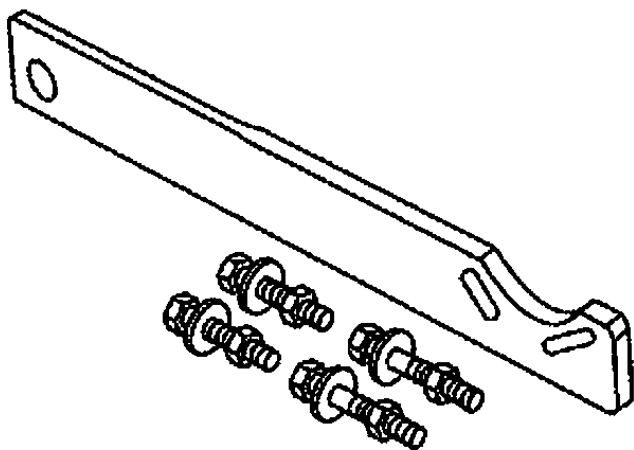
DRIVE PINION FLANGE AND DRIVE PINION SEAL

SPECIAL TOOLS SPECIFICATIONS

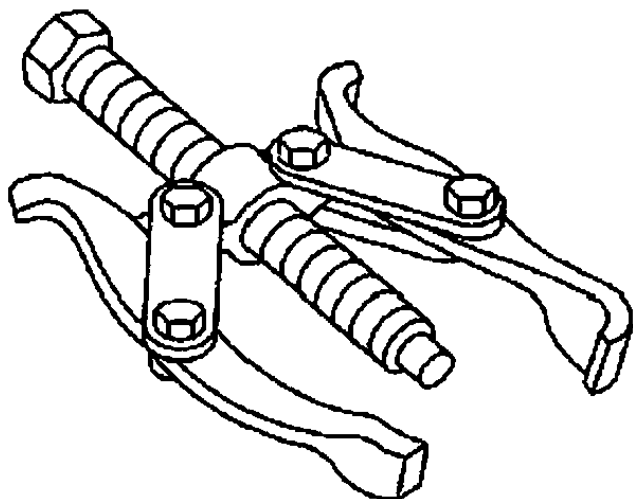
	Holding Fixture, Drive Pinion Flange 205-126 (T78P-4851-A)
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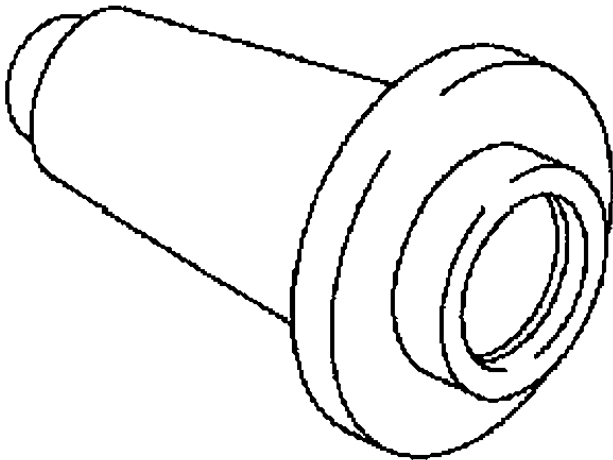


2-Jaw Puller 205-D072 (D97L-4221-A)
or equivalent

ST2026-A

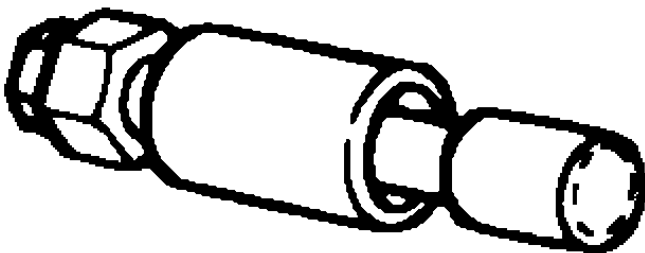
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ST1325-A

Installer, Drive Pinion Oil Seal 205-208
(T83T-4676-A)



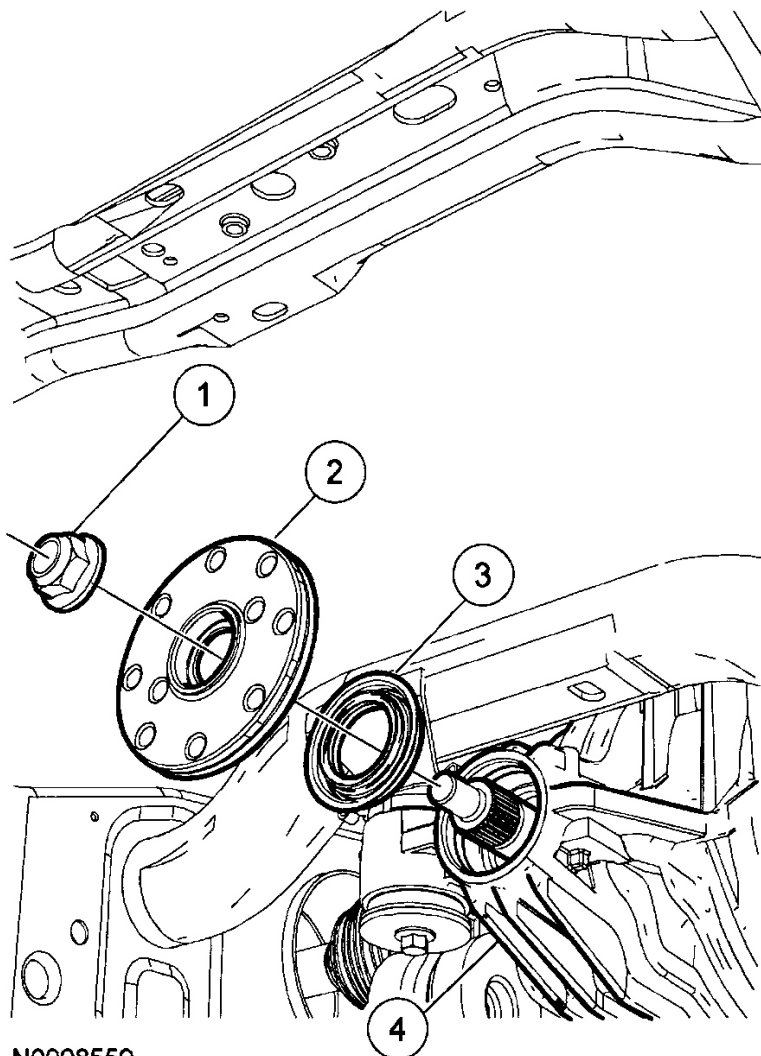
Installer, Drive Pinion Flange 205-002
(TOOL-4858-E)

MATERIAL SPECIFICATIONS

Item	Specification
Premium Long-Life Grease XG-1-C	ESA-M1C75-B
Threadlock and Sealer TA-25	WSK-M2G351-A5
Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A

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Item	Part Number	Description
1	389546-S	Pinion nut
2	4851	Pinion flange
3	4676	Pinion seal
4	4010	Differential housing

Fig. 10: Identifying Drive Pinion Flange And Drive Pinion Seal Components
Courtesy of FORD MOTOR CO.

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1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to **JACKING AND LIFTING** .
2. Remove the rear wheel and tire assemblies. For additional information, refer to **WHEELS AND TIRES** .

CAUTION: Remove the rear brake calipers to prevent drag during the pinion bearing preload adjustment.

CAUTION: Do not remove the guide pins or guide pin boots unless a problem is suspected. The guide pins are meant to be sealed for life and are not repairable. Use silicone brake caliper grease or equivalent for re-lubing the caliper slide pins. Other greases can swell the guide pin boots, resulting in contamination and accelerated corrosion and wear of the caliper slide pin mechanism.

CAUTION: Do not allow the calipers to hang from the brake hoses.

3. Remove the rear disc brake caliper assembly.
 1. Remove the disc brake caliper bolts.
 2. Lift the rear disc brake caliper off the knuckle.
 - Support the caliper assembly with a length of mechanic's wire.

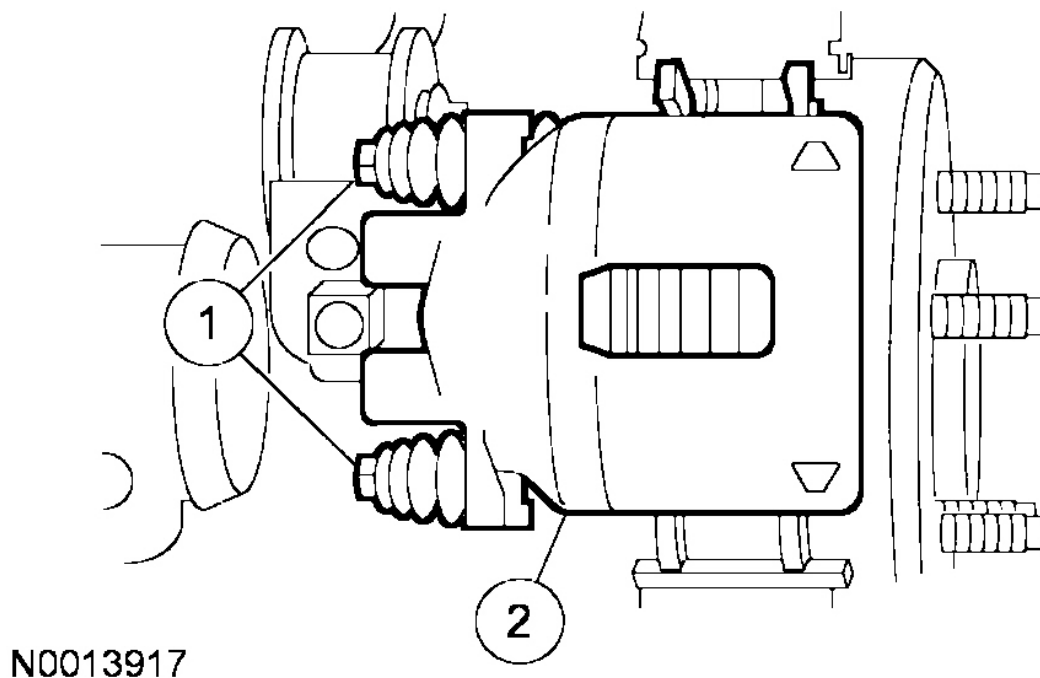


Fig. 11: Removing Rear Disc Brake Caliper Assembly
Courtesy of FORD MOTOR CO.

4. Index mark the driveshaft flange and pinion flange for correct alignment during installation.

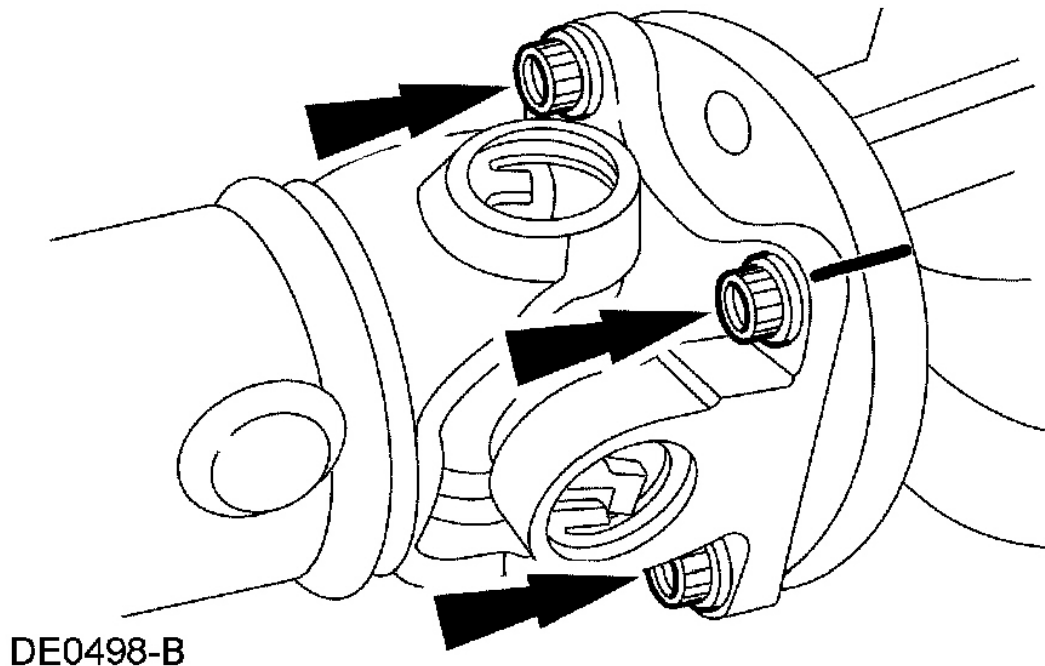


Fig. 12: Identifying Index-Mark To Driveshaft And Flange Bolts
Courtesy of FORD MOTOR CO.

NOTE: If new driveshaft flange bolts are not available, coat the threads of the original driveshaft flange bolts with threadlock and sealer.

5. Remove the driveshaft flange bolts.

CAUTION: The driveshaft flange fits tightly on the pinion flange pilot. Never hammer on the driveshaft or any of its components to disconnect the driveshaft flange from the pinion flange. Pry only in the area shown in Fig. 13, with a suitable tool, to disconnect the driveshaft flange from the pinion flange.

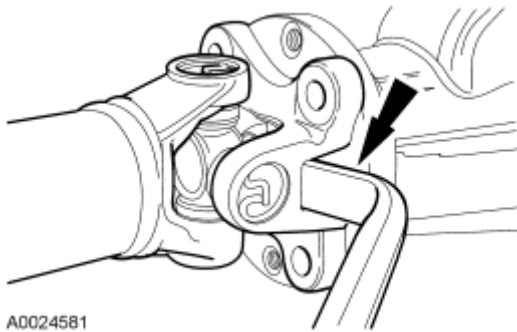


Fig. 13: Disconnecting Driveshaft Flange Yoke From Pinion Flange
Courtesy of FORD MOTOR CO.

6. Using a suitable tool as shown in **Fig. 13**, disconnect the driveshaft flange from the pinion flange, then using mechanic's wire, position the driveshaft aside.
7. Install a Nm (lb-in) torque wrench on the pinion nut and record the torque necessary to maintain rotation of the drive pinion gear through several revolutions.

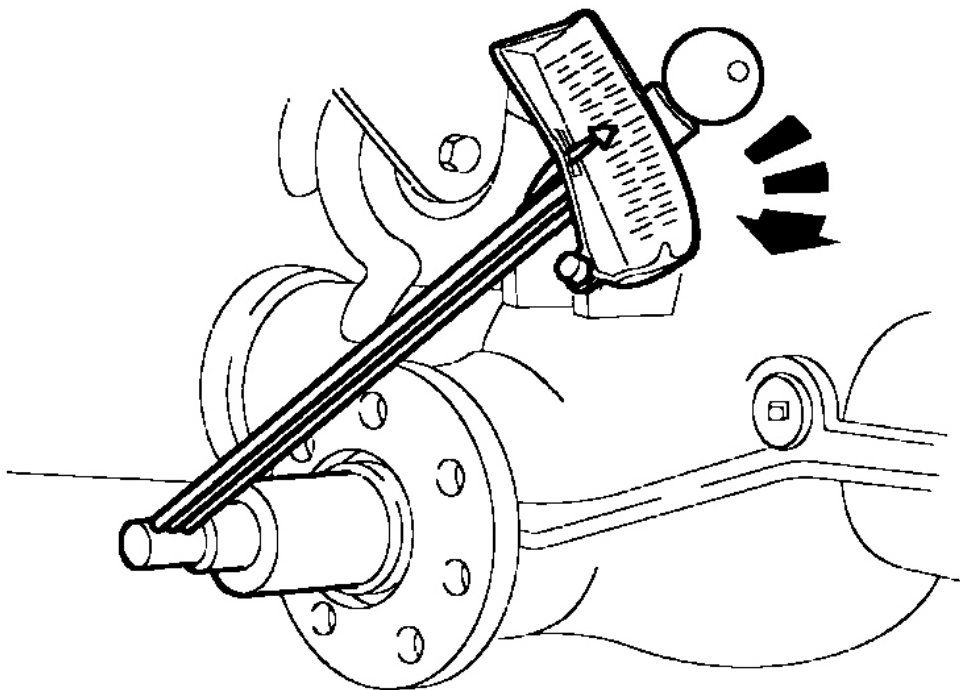


Fig. 14: Checking Drive Pinion Gear Rotating Torque
Courtesy of FORD MOTOR CO.

8. Use the special tool to hold the pinion flange, to remove and discard the pinion nut.

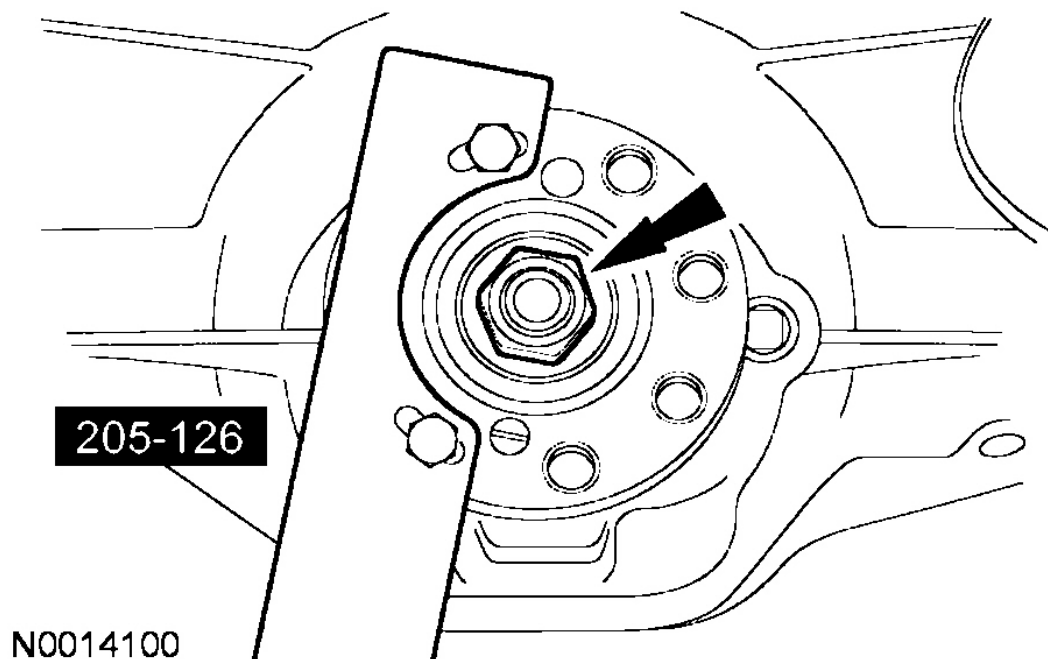
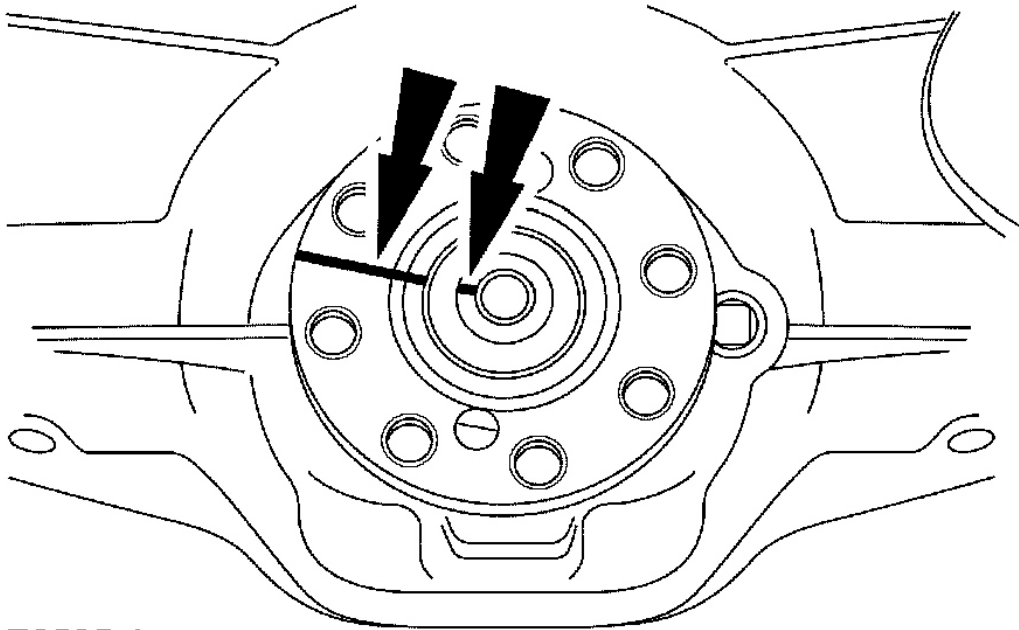


Fig. 15: Removing Pinion Nut
Courtesy of FORD MOTOR CO.

9. Index mark the pinion flange and drive pinion gear to maintain initial balance during installation.



DE2505-A

Fig. 16: Identifying Index-Mark On Pinion Flange And Drive Pinion Gear
Courtesy of FORD MOTOR CO.

10. Using the special tool, remove the pinion flange.

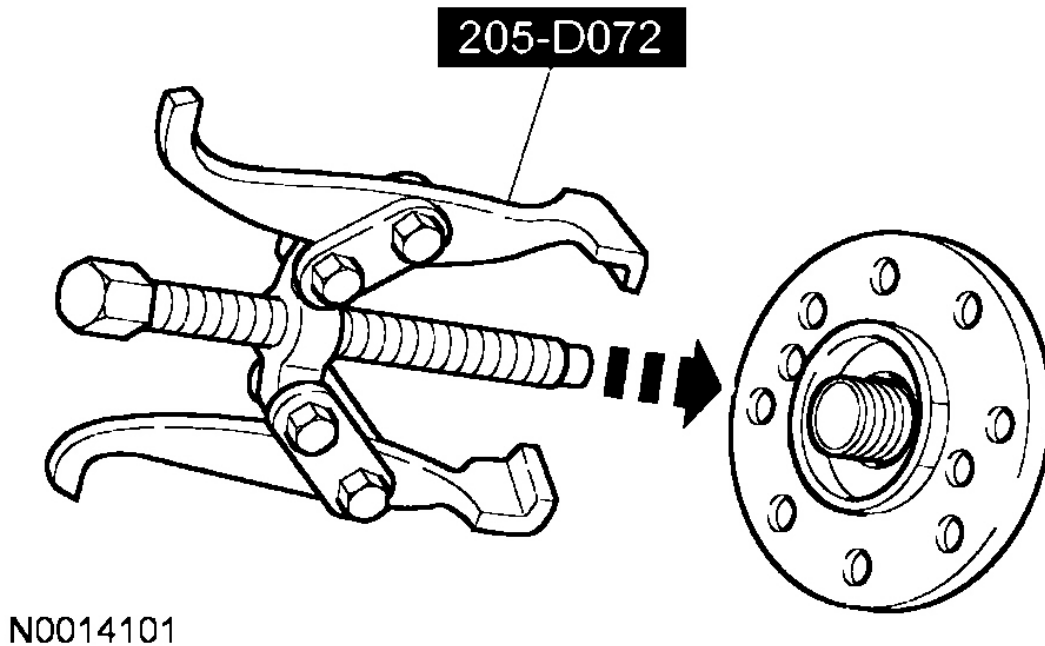


Fig. 17: Removing Pinion Flange
Courtesy of FORD MOTOR CO.

11. If necessary, use a screwdriver to force up the metal flange of the pinion seal. Install gripping pliers and strike with a hammer to remove the drive pinion seal.



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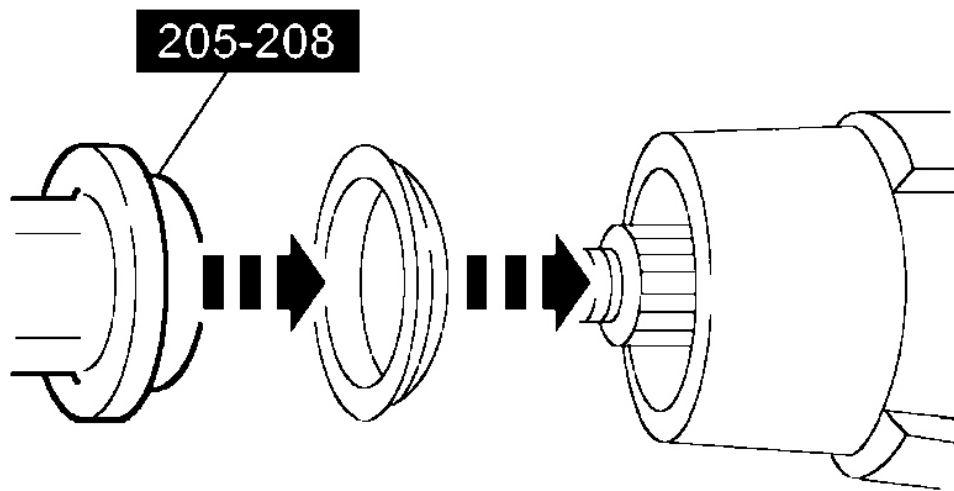
Fig. 18: Removing Drive Pinion Seal
Courtesy of FORD MOTOR CO.

Installation

1. If removed, lubricate the lips of the new drive pinion seal.
 - Use long-life grease.

CAUTION: If the drive pinion seal becomes misaligned during installation, remove the drive pinion seal and install a new drive pinion seal.

NOTE: Always install a new drive pinion seal when removed.

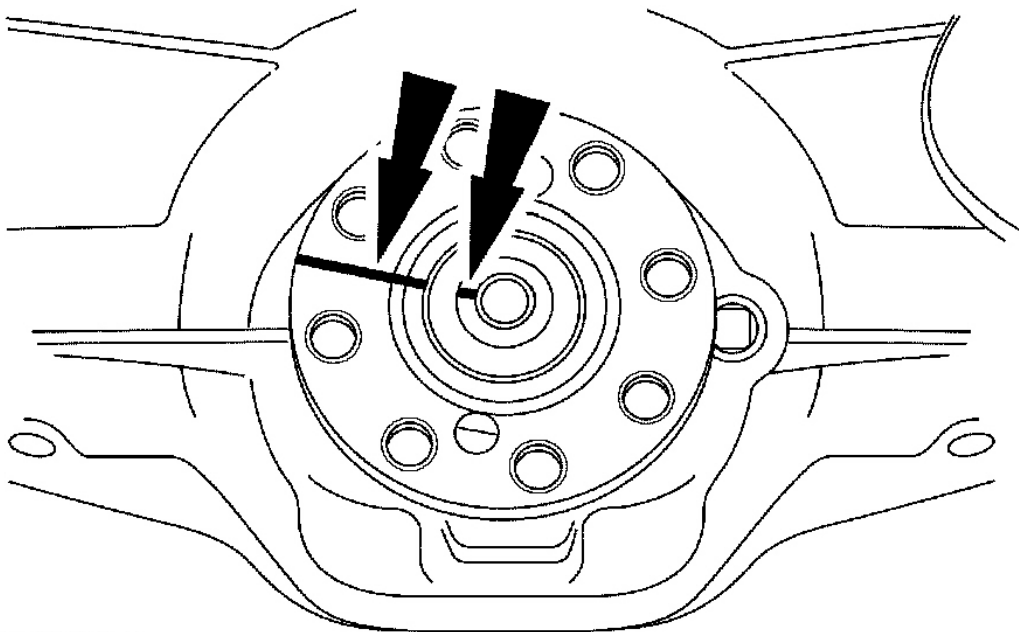


N0014102

Fig. 19: Installing Drive Pinion Seal
Courtesy of FORD MOTOR CO.

2. If the drive pinion seal was removed, use the special tool to install a new drive pinion seal.
3. Inspect the pinion flange seal journal for rust, nicks and scratches prior to installing the pinion flange. Polish the seal journal with fine crocus cloth, if necessary.
4. Lubricate the pinion flange splines.
 - Use long-life grease.

NOTE: Disregard the index marks if installing a new pinion flange.



DE2505-A

Fig. 20: Identifying Index-Mark On Pinion Flange And Drive Pinion Gear
Courtesy of FORD MOTOR CO.

5. Position the pinion flange.
6. Using the special tools, install the pinion flange.

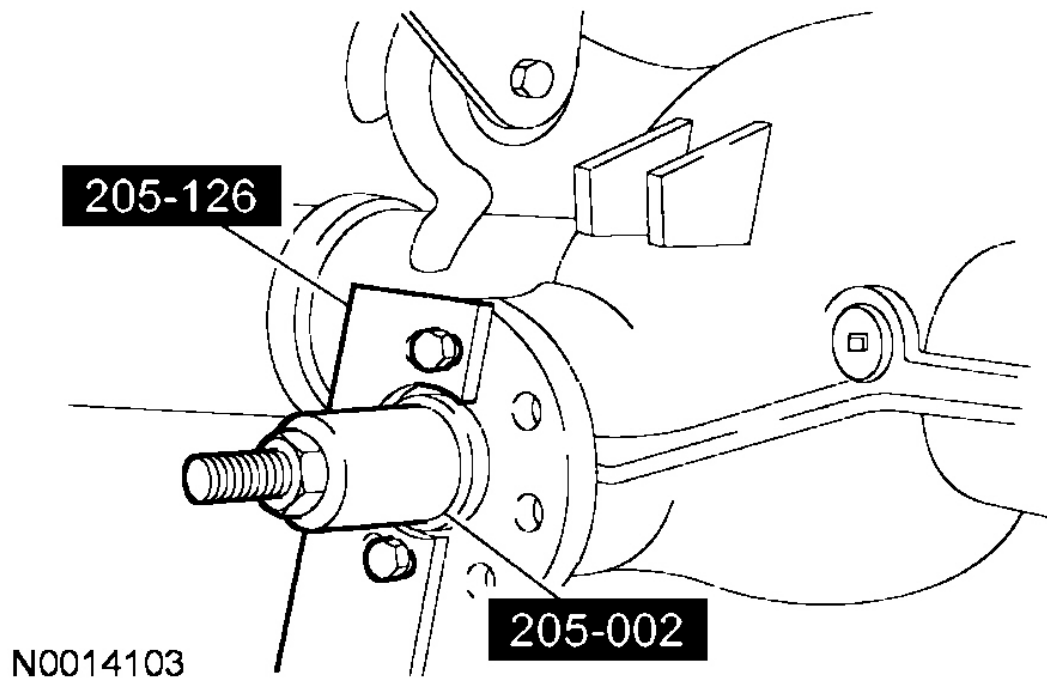
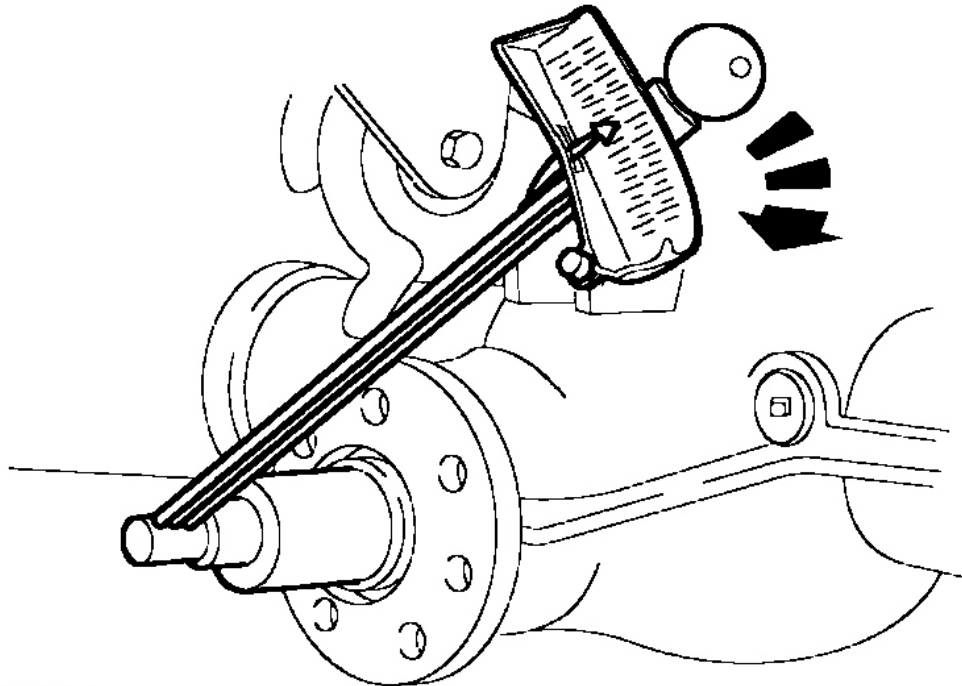


Fig. 21: Installing Pinion Flange
Courtesy of FORD MOTOR CO.

CAUTION: Do not under any circumstance loosen the pinion nut to reduce drive pinion bearing preload. If it is necessary to reduce drive pinion bearing preload, install a new differential drive pinion collapsible spacer and pinion nut.

7. Tighten the pinion nut to set the drive pinion bearing preload.
 - Rotate the drive pinion gear occasionally to make sure the drive pinion bearings seat correctly. Take frequent drive pinion bearing preload readings by rotating the drive pinion gear with a Nm (lb-in) torque wrench.
 - Refer to the **TORQUE SPECIFICATION** for used pinion bearings.



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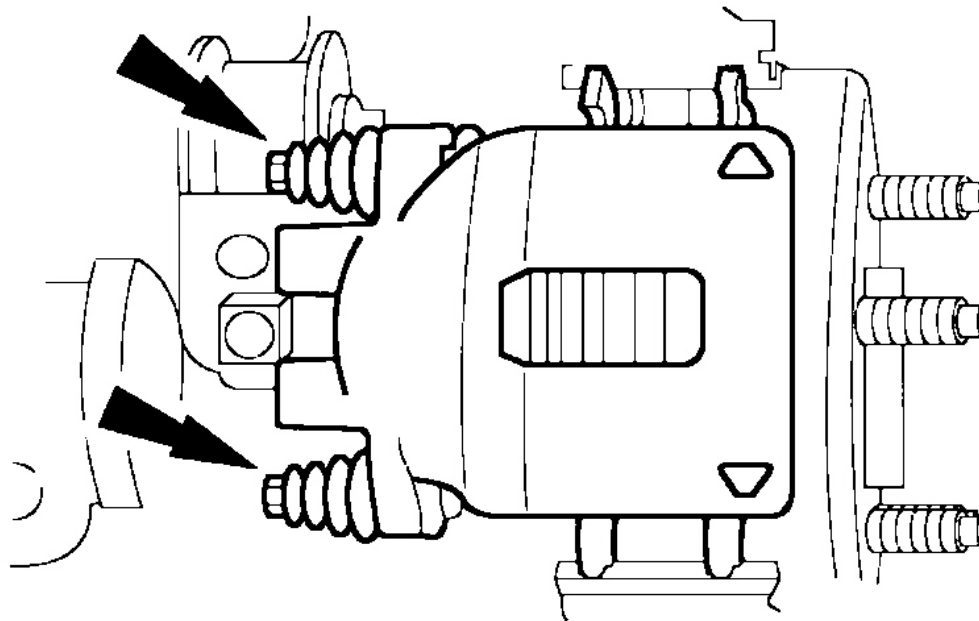
Fig. 22: Checking Drive Pinion Bearing Preload
Courtesy of FORD MOTOR CO.

CAUTION: To prevent interference with the rear disc brake caliper operation, install only the correct disc brake caliper bolt.

NOTE: Make sure the stainless steel shoe slippers are correctly positioned. Install new slippers if worn or damaged.

NOTE: Use the disc brake pad spreader to spread pads for reassembly.

8. Install the brake disc caliper, then install the disc brake caliper bolts.
 - Tighten to 32 Nm (24 lb-ft).



N0008584

Fig. 23: Identifying Disc Brake Caliper And Disc Brake Caliper Bolts
Courtesy of FORD MOTOR CO.

CAUTION: The driveshaft centering socket yoke fits tightly on the pinion flange pilot. To make sure that the yoke seats squarely on the pinion flange, tighten the driveshaft flange bolts evenly in a cross-pattern as shown in Fig. 24.

CAUTION: If new driveshaft flange bolts are not available, coat the threads of the original driveshaft flange bolts with threadlock and sealer.

9. Install the driveshaft, then the driveshaft flange bolts.
 - Tighten to 112 Nm (83 lb-ft).

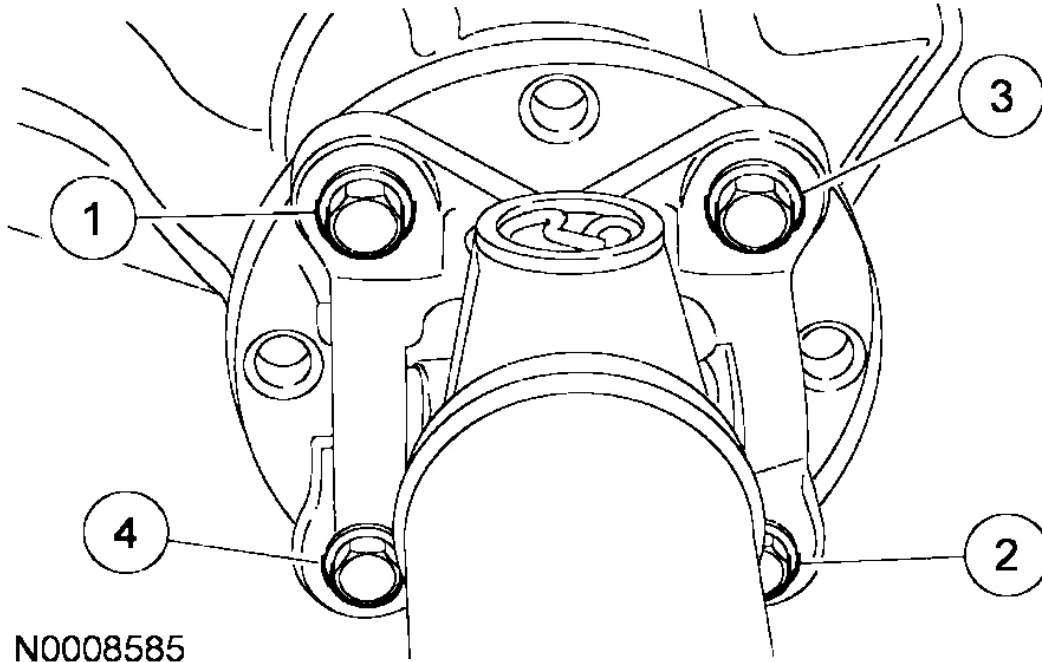


Fig. 24: Identifying Tightening Sequence Of Driveshaft Flange Bolts
Courtesy of FORD MOTOR CO.

10. Install the rear wheel and tire assemblies. For additional information, refer to **WHEELS AND TIRES** .

STUB SHAFT PILOT BEARING AND SEAL

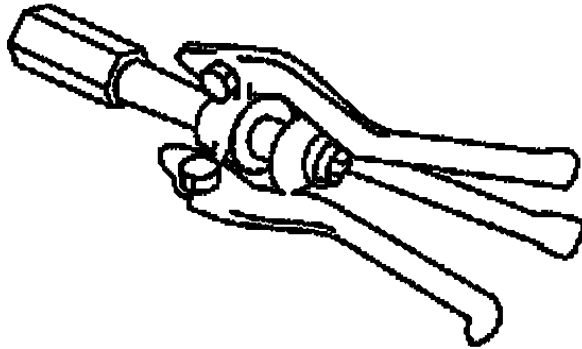
Special Tool(s)

SPECIAL TOOLS SPECIFICATIONS

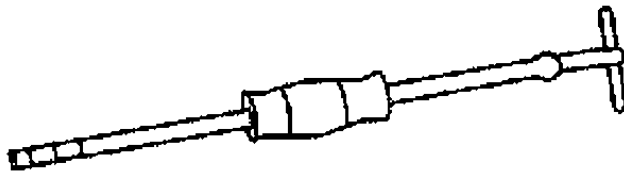
	Remover, Bearing Cup 308-047 (T77F-1102-A)
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2005 Ford Explorer

2005 DRIVELINE/AXLE Rear Drive Axle/Differential - Ford 8.8-Inch Ring Gear - Explorer & Mountaineer



ST1200-A

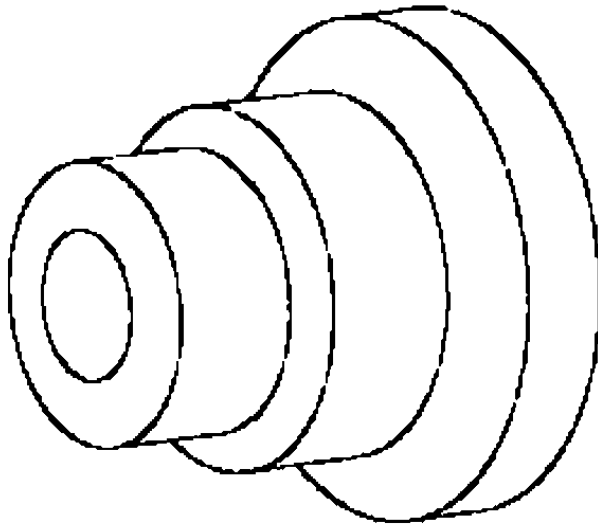


Slide Hammer 100-001 (T50T-100-A)

ST1185-A

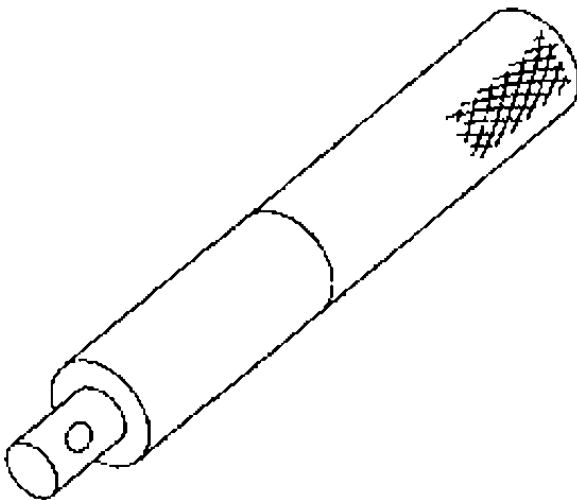
2005 Ford Explorer

2005 DRIVELINE/AXLE Rear Drive Axle/Differential - Ford 8.8-Inch Ring Gear - Explorer & Mountaineer



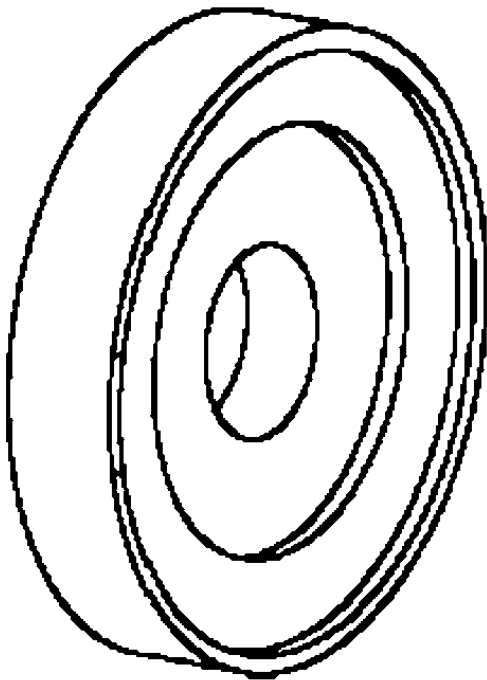
ST1721-A

Installer, Halfshaft Pilot Bearing 205-504



ST1326-A

Adapter for 303-224 (Handle) 205-153
(T80T-4000-W)



ST2369-A

Installer, Wheel Speed Sensor Ring 206-034 (T88P-20202-A)

Material

MATERIAL SPECIFICATIONS

Item	Specification
SAE 75W-140 High Performance Rear Axle Lubricant XY-75W140-QL	WSL-M2C192-A
Premium Long-Life Grease XG-I-C	ESA-M1C75-B

Removal

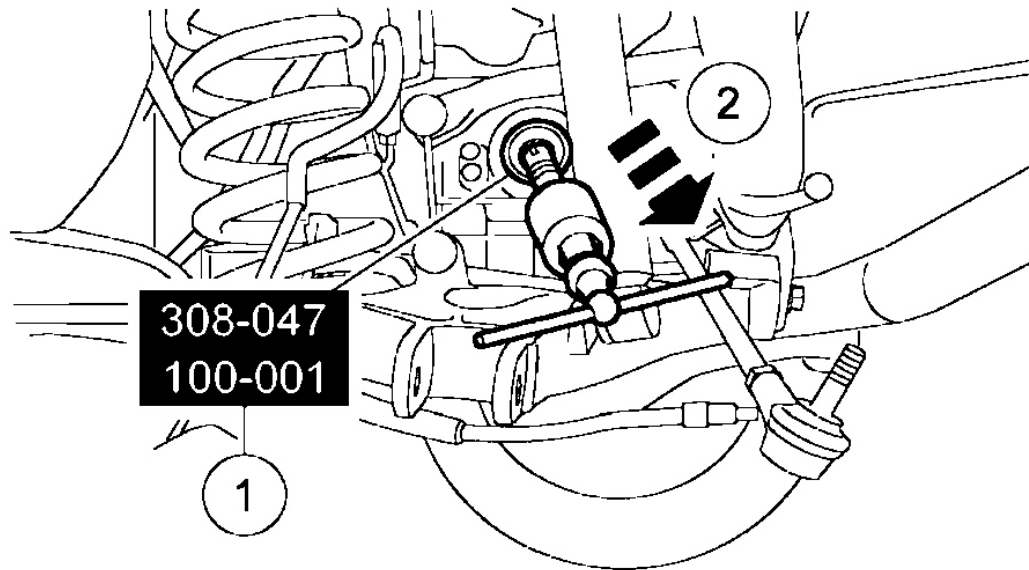
- 1. Remove the halfshaft assembly. For additional information, refer to **REAR DRIVE HALFSHAFTS** .

NOTE: If removing the stub shaft pilot bearing oil seal only, engage the tangs of the special tool on the stub shaft pilot bearing oil seal.

- 2. Using the special tools, remove the stub shaft pilot bearing and stub shaft pilot bearing oil

seal.

1. Firmly engage the tangs of the special tool on the stub shaft pilot bearing.
2. Remove the stub shaft pilot bearing and stub shaft pilot bearing oil seal.



N0014104

Fig. 25: Removing Stub Shaft Pilot Bearing And Stub Shaft Pilot Bearing Oil Seal

Courtesy of FORD MOTOR CO.

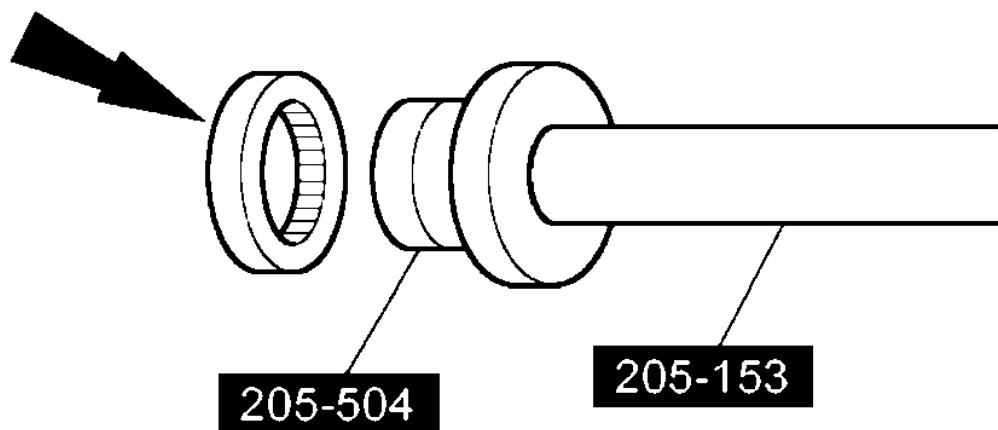
3. Inspect the stub shaft pilot bearing oil seal journal for rust, nicks and scratches. Polish the seal journal surface with fine crocus cloth, if necessary.

Installation

1. Lubricate the new stub shaft pilot bearing.
 - Use high performance rear axle lubricant.

CAUTION: Installation of the stub shaft pilot bearing or stub shaft pilot bearing oil seal without the correct tools can result in early stub shaft pilot bearing or stub shaft pilot bearing oil seal failure. If the stub shaft pilot bearing becomes cocked in the bore during installation, remove it and

install a new stub shaft pilot bearing.



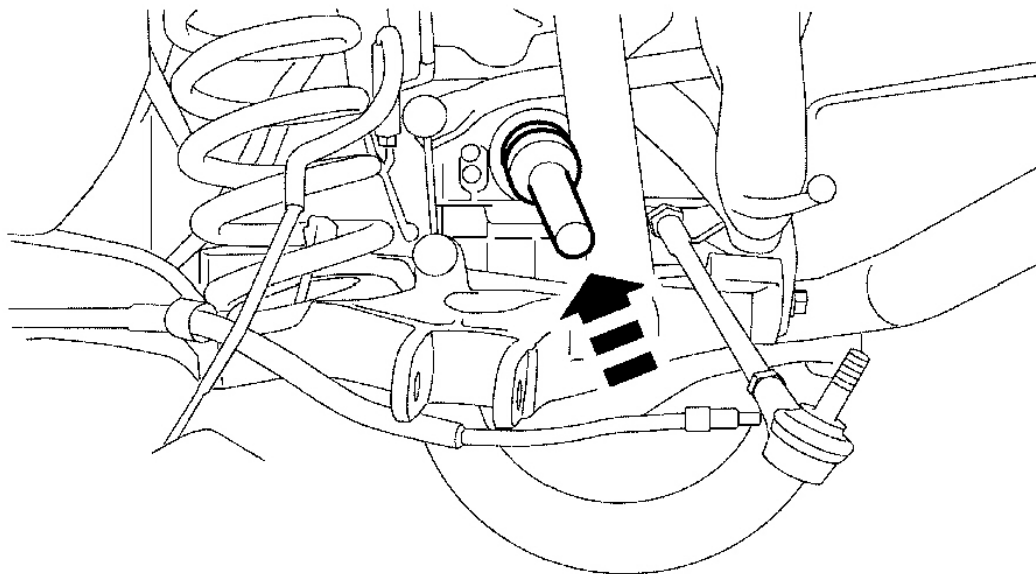
N0014105

Fig. 26: Placing Stub Shaft Pilot Bearing Onto Special Tools
Courtesy of FORD MOTOR CO.

2. Place the stub shaft pilot bearing onto the special tools.
3. Install the stub shaft pilot bearing into the rear axle housing bore.

2005 Ford Explorer

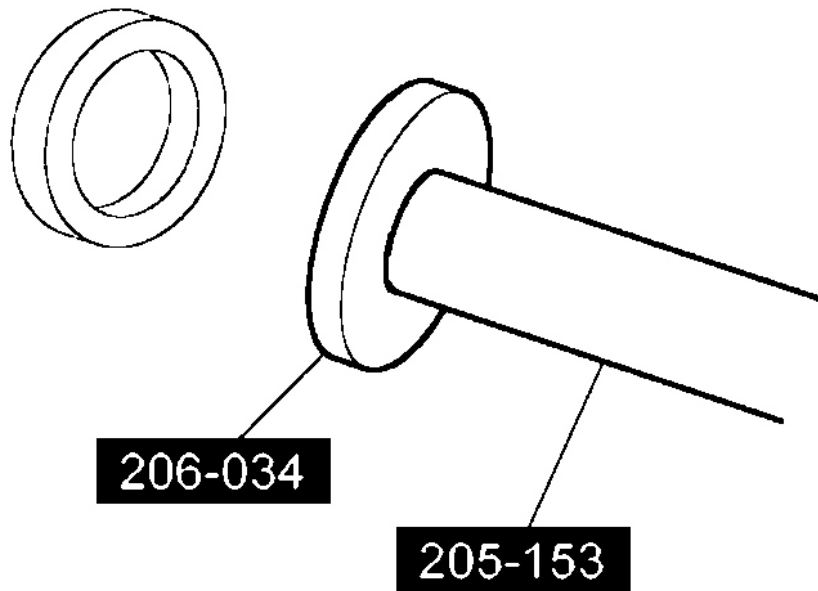
2005 DRIVELINE/AXLE Rear Drive Axle/Differential - Ford 8.8-Inch Ring Gear - Explorer & Mountaineer



A0005320

Fig. 27: Installing Stub Shaft Pilot Bearing Seal Into Rear Axle Housing Bore
Courtesy of FORD MOTOR CO.

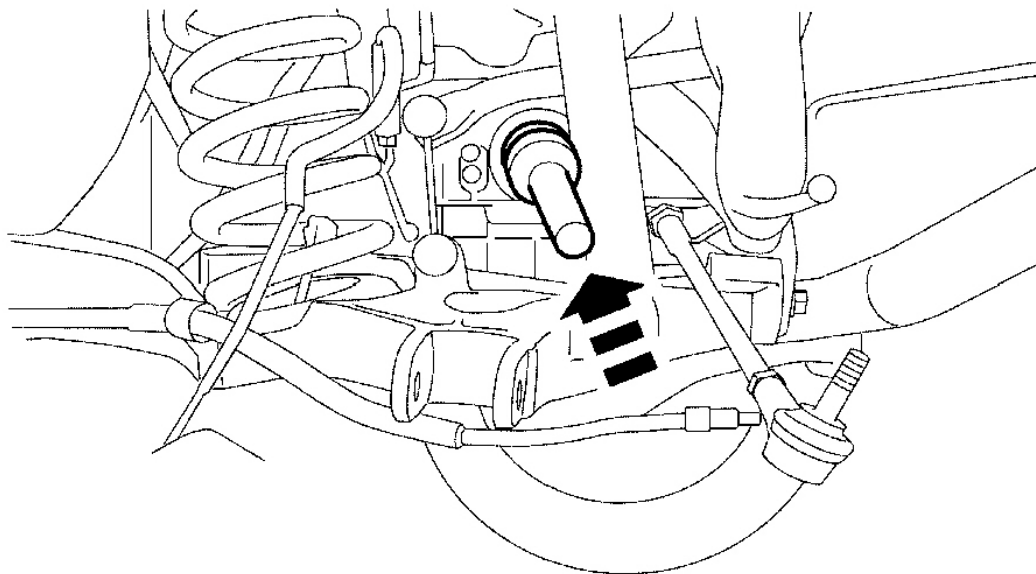
NOTE: Do not disassemble the new oil seal.



N0034454

Fig. 28: Installing Stub Shaft Pilot Bearing Oil Seal Onto Special Tools
Courtesy of FORD MOTOR CO.

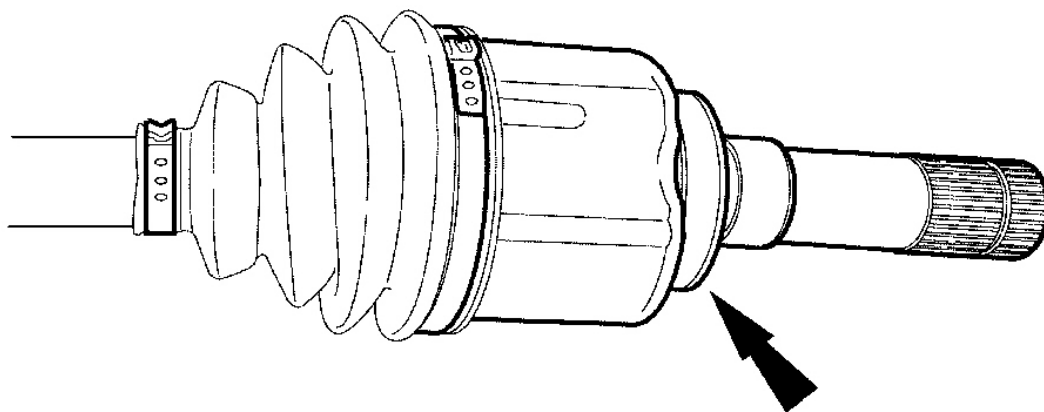
4. Install the stub shaft pilot bearing oil seal onto the special tools.
5. Carefully align the stub shaft pilot bearing oil seal with the housing bore and install the stub shaft pilot bearing oil seal flush in the differential housing.



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Fig. 29: Installing Stub Shaft Pilot Bearing Seal Into Rear Axle Housing Bore
Courtesy of FORD MOTOR CO.

6. Remove and discard the half shaft excluder seal.



N0034455

Fig. 30: Removing Half Shaft Excluder Seal
Courtesy of FORD MOTOR CO.

7. Install the halfshaft assembly. For additional information, refer to **REAR DRIVE HALFSHAFTS** .

REMOVAL AND INSTALLATION

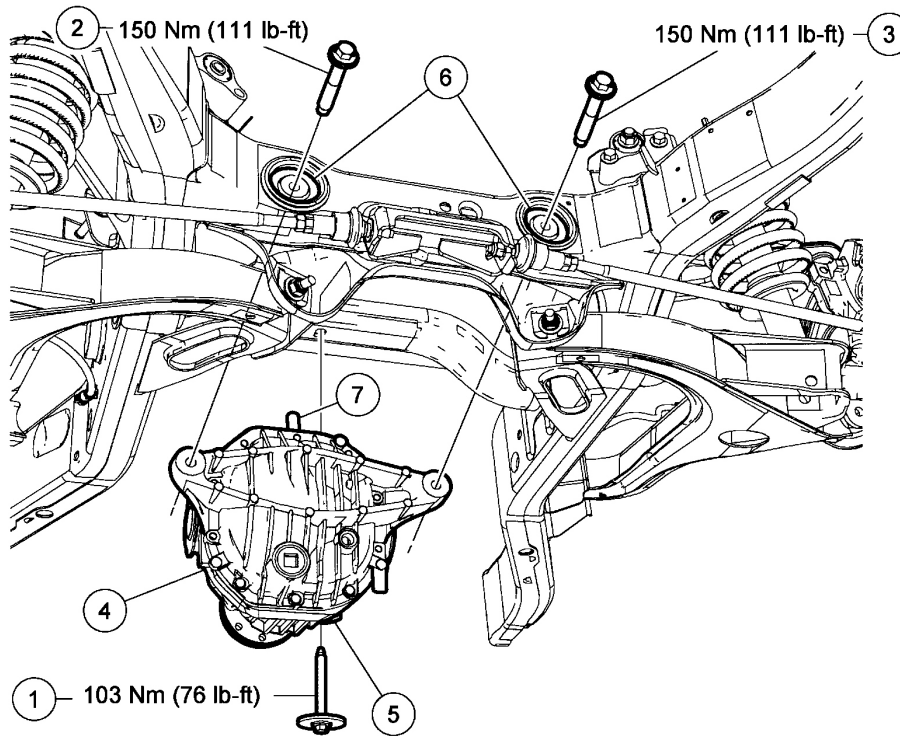
AXLE ASSEMBLY

MATERIAL SPECIFICATIONS

Item	Specification
Threadlock and Sealer TA-25	WSK-M2G351-A5

2005 Ford Explorer

2005 DRIVELINE/AXLE Rear Drive Axle/Differential - Ford 8.8-Inch Ring Gear - Explorer & Mountaineer



N0008597

Item	Part Number	Description
1	W706464-S426	Differential front lower insulator bolt
2	W706356-S426	Differential rear insulator bolt
3	W706356-S426	Differential rear insulator bolt
4	4000	Axle assembly
5	5638	Differential front lower insulator
6	5638	Differential rear insulator
7	4338	Axle vent tube

Fig. 31: Identifying Axle Assembly Components
Courtesy of FORD MOTOR CO.

Removal and Installation

1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to **JACKING AND LIFTING**.
2. Remove the rear halfshafts. For additional information, refer to **REAR DRIVE HALFSHAFTS**.
3. Index-mark the driveshaft flange to the pinion flange.

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for your reading.**

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Information.**