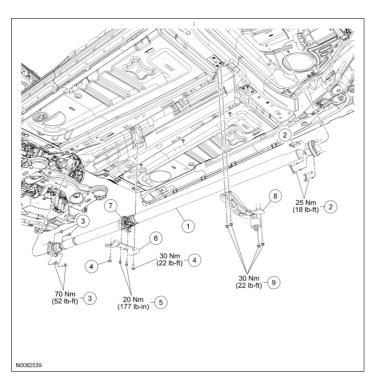
Procedure revision date: 07/06/2009

SECTION 205-01: Driveshaft REMOVAL AND INSTALLATION

Driveshaft

Driveshaft



	Part		
Item	Number	Description	
1	4R602	Driveshaft assembly	
2	W790063	Rear Drive Unit (RDU) pinion flange bolt and washer assemblies (3 required)	
3	W711918	Power Transfer Unit (PTU) flange bolts (4 required)	
4	W701834	Outer center bearing bracket bolts (2 required)	
5	W500220	Inner center bearing bolts (2 required)	
6	4B403	Center bearing bracket	
7	-	Center bearing (part of 4602)	
8	5A204	Exhaust support brace	
9	-	Exhaust support brace bolts (part of 5A204) (4 required)	

Removal and Installation

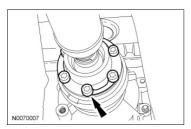
NOTE: Index-mark both driveshaft flanges.

- 1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to $\underline{\text{Section}}$ $\underline{100-02}$.
- 2. Remove the muffler and tailpipe. For additional information, refer to Section 309-00.
- 3. Remove the 4 exhaust support brace bolts and the exhaust brace.
 - To install, tighten to 30 Nm (22 lb-ft).

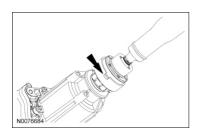
4. NOTICE: Do not reuse the bolt and washer assemblies for the rear Constant Velocity (CV) joint flange. Install new assemblies or damage to the vehicle may occur.

Remove and discard the 3 Rear Drive Unit (RDU) pinion flange bolt and washer assemblies.

• To install, tighten to 25 Nm (18 lb-ft).



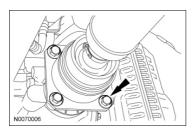
5. Separate the driveshaft CV flange from the RDU flange using a flat-blade screwdriver in the area shown.



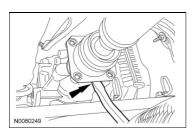
6. NOTICE: Do not reuse the Constant Velocity (CV) joint bolts. Install new bolts or damage to the vehicle may occur.

Remove and discard the 4 Power Transfer Unit (PTU) flange bolts.

• To install, tighten to 70 Nm (52 lb-ft).

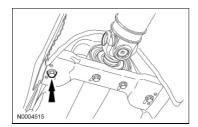


7. Using a suitable prybar as shown, separate the driveshaft flange from the PTU flange.



8. With the help of an assistant, remove the 2 outer center bearing bracket bolts and the driveshaft.

• To install, tighten to 30 Nm (22 lb-ft).



- 9. If necessary, remove the 2 inner center bearing bolts and remove the bracket.
 - To install, tighten to 20 Nm (177 lb-in).
- 10. **NOTE:** If a driveshaft is installed and driveshaft vibration is encountered after installation, index the driveshaft. For additional information, refer to <u>Section 205-00</u>.

To install, reverse the removal procedure.

SECTION 205-02: Rear Drive Axle/Differential SPECIFICATIONS

2010 MKS Workshop Manual Procedure revision date: 07/06/2009

Material

Item	Specification	Fill Capacity
Clear Silicone Rubber TA-32	ESB-M4G92-A	-
Motorcraft® SAE 80W-90 Premium Rear Axle Lubricant XY-80W90-QL (US); CXY-80W90-1L (Canada)	WSP-M2C197-A	1.15L (2.43 pt)
Premium Long-Life Grease XG-1-C or XG-1-K (US); CXG-1-C (Canada)	ESA-M1C75-B	-

Torque Specifications

Description		lb-ft
Differential housing cover bolts	23	17
Differential housing-to-front insulator bracket bolts	90	66
Filler plug	29	21
Pinion nut	244	180
Side insulator bracket-to-rear axle differential bolts		66

Procedure revision date: 07/06/2009

SECTION 205-02: Rear Drive Axle/Differential DESCRIPTION AND OPERATION

Rear Drive Axle and Differential

The rear drive axle consists of the following components:

- Dished circular flange
- Full-time Active Torque Coupling (ATC)
- Aluminum housing with steel housing cover
- Matched ring and pinion
- Conventional open differential
- Rubber bushing isolated mounting points
- Cover-mounted axle vent

The rear axle drive pinion receives power from the engine through the transaxle, Power Transfer Unit (PTU), driveshaft and ATC, and is always engaged. The All-Wheel Drive (AWD) system on this vehicle is equipped with a bar-coded rear axle to reduce the tolerance of electrical current-to-torque delivered by the ATC. The 4X4 control module uses this bar code information to match the clutch characteristics of the ATC with the desired output torque. The pinion gear then rotates the differential ring gear, which is bolted to the differential case outer flange. Inside the differential case, 2 differential pinion gears are mounted on a differential pinion shaft, which is pinned to the differential case. These differential pinion gears are engaged with the differential side gears to which the halfshafts are splined. The halfshafts are held in the differential case by a driveshaft bearing retainer circlip that is located on the inboard CV joint stub shaft pilot bearing housing. When each halfshaft is installed, the driveshaft bearing retainer circlip engages a step in the differential side gear. As the differential case turns, it rotates the halfshafts and rear wheels. When it is necessary for one wheel and halfshaft to rotate faster than the other, the faster turning differential side gear causes the differential pinion gears to roll on the slower turning differential side gear. This allows differential action between the 2 halfshafts. The pinion seal and the differential halfshaft seals are the only serviced components of the rear drive axle. There are no stub shaft bearings in the differential housing and the differential housing cover uses a silicone sealant rather than a gasket. If other components of the rear drive axle or the ATC are worn or damaged, a new axle assembly must be installed.

SECTION 205-02: Rear Drive Axle/Differential DIAGNOSIS AND TESTING

2010 MKS Workshop Manual Procedure revision date: 07/06/2009

Rear Drive Axle and Differential

Refer to Section 205-00.

SECTION 205-02: Rear Drive Axle/Differential IN-VEHICLE REPAIR

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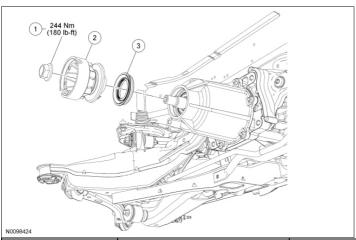
Drive Pinion Seal

Special Tool(s)

	2 Jaw Puller 205-D072 (D97L-4221-A) or equivalent
ST1321-A	Holding Fixture, Drive Pinion Flange 205-126 (T78P-4851-A)
ST1857-A	Pinion Seal Replacer 205-133 (T79P-4676-A)
5T1758-A	Remover, Torque Converter Fluid Seal 307-309 (T94P-77001-BH)
ST1185-A	Slide Hammer 100-001 (T50T-100-A)

Material

Item	Specification
Premium Long-Life Grease	ESA-M1C75-B
XG-1-C or XG-1-K (US); CXG-1-C	
(Canada)	

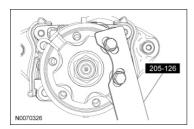


Item	Part Number	Description
1	4320	Pinion nut
2	4858	Pinion flange
3	4N299	Pinion seal

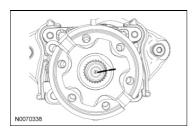
Removal

Drive Pinion Seal 2834

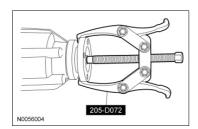
- 1. Remove the drives haft. For additional information, refer to $\underline{\text{Section } 205-01}$.
- 2. Using the Drive Pinion Flange Holding Fixture, hold the pinion flange and remove the nut.
 - Discard the nut.



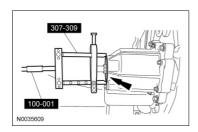
3. Index-mark the location of the pinion to the yoke.



4. Using the 2 Jaw Puller, remove the pinion flange.



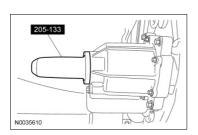
5. Using the Torque Converter Fluid Seal Remover and Slide Hammer, remove the seal.



Installation

1. **NOTE:** Make sure that the mating surface is clean before installing the new seal.

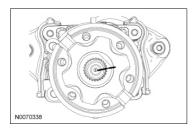
Using the Pinion Seal Replacer, install the seal.



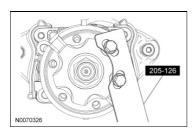
Drive Pinion Seal 2835

2. **NOTE:** Lubricate the pinion flange with grease.

Line up the index marks and position the pinion flange.



- 3. Using the Drive Pinion Flange Holding Fixture, install the new pinion nut.
 - Tighten to 244 Nm (180 lb-ft).



4. Install the drives haft. For additional information, refer to $\underline{\text{Section } 205\text{-}01}$.

Drive Pinion Seal 2836

SECTION 205-02: Rear Drive Axle/Differential IN-VEHICLE REPAIR

2010 MKS Workshop Manual Procedure revision date: 07/06/2009

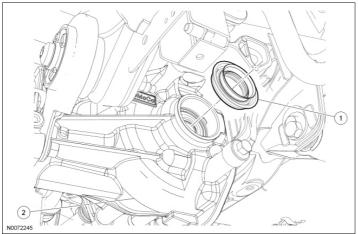
Stub Shaft Seal

Special Tool(s)

E	Handle 205-153 (T80T-4000-W)
ST1255-A	
	Installer, Front Axle Oil Seal 205-350 (T95T-3010-A)
ST1786-A	
	Remover, Torque Converter Fluid Seal 307-309 (T94P-77001-BH)
ST1846-A	G1: 1 TY
	Slide Hammer 100-001 (T50T-100-A)
ST1185-A	

Material

Item	Specification
\mathcal{E}	ESA-M1C75-B
XG-1-C or XG-1-K (US); CXG-1-C	
(Canada)	



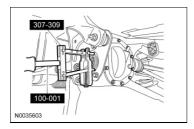
Item	Part Number	Description
1	4B416	Stud shaft seal
2	4010	Differential housing

Removal

NOTE: The Rear Drive Unit (RDU) does not have stub shaft pilot bearings. It has stub shaft seals only.

- 1. Remove the halfshaft assembly. For additional information, refer to $\underline{\text{Section 205-05}}$.
- 2. Using the Torque Converter Fluid Seal Remover and Slide Hammer, remove the stub shaft seal.

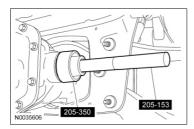
Stub Shaft Seal 2837



Installation

1. **NOTE:** Lubricate the new stub shaft seal with grease.

Using the Front Axle Oil Seal Installer and Handle, install the stub shaft pilot bearing housing seal.



2. Install the halfshaft assembly. For additional information, refer to $\underline{\text{Section } 205-05}$.

Stub Shaft Seal 2838