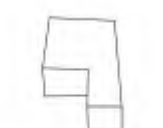
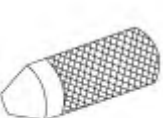


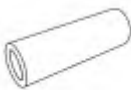
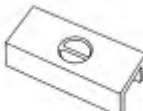
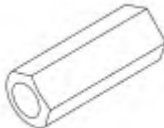
SECTION 205-02A: Rear Drive Axle/Differential — Ford 8.8-Inch Ring Gear
IN-VEHICLE REPAIR

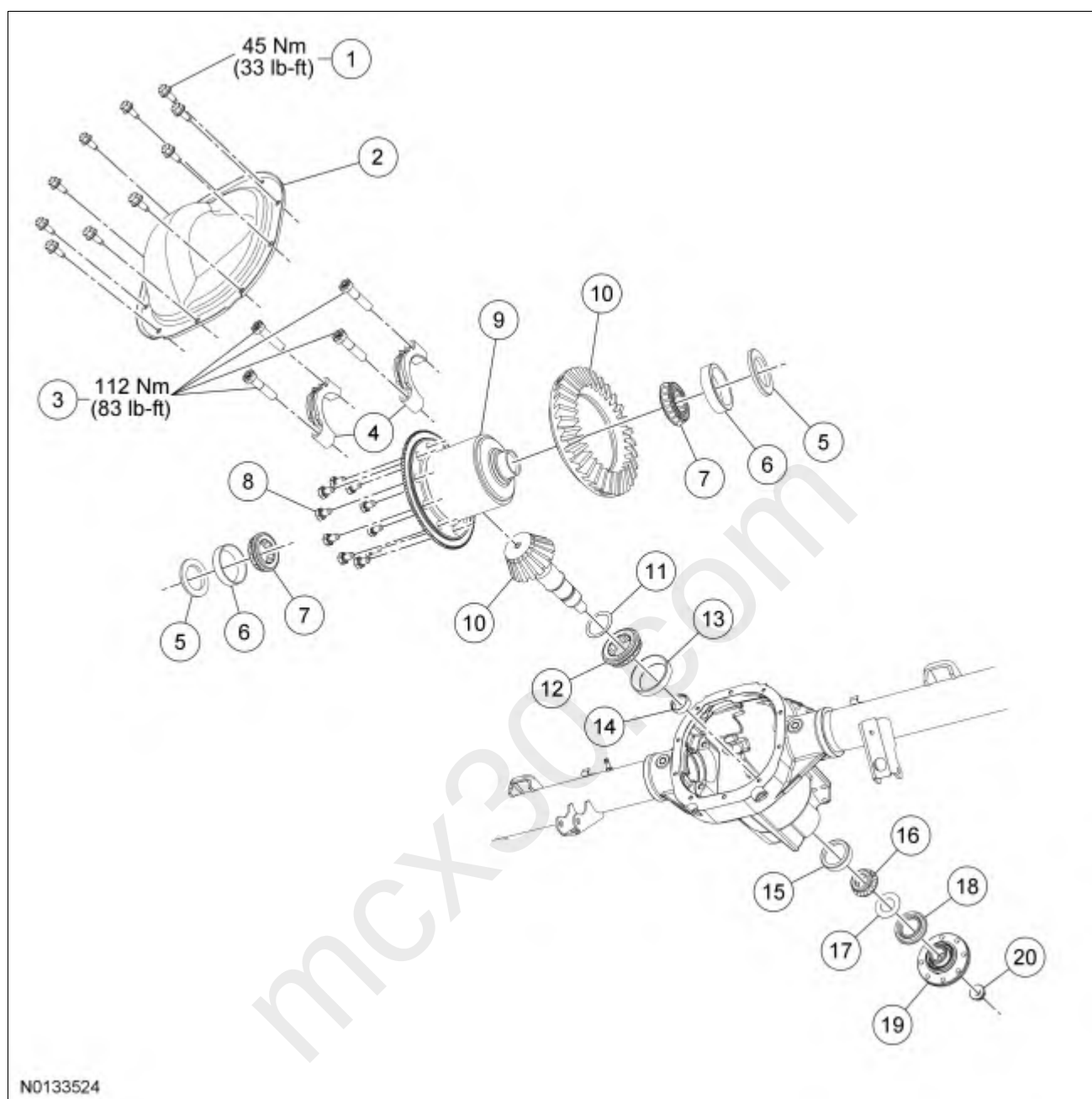
2014 F-150 Workshop Manual
Procedure revision date: 10/25/2013

Differential Ring And Pinion

Special Tool(s)

 ST2026-A	2 Jaw Puller 205-D072 (D79L-4221-A1) or equivalent
 ST1743-A	Adapter for 205-S127 205-105 (T76P-4020-A3)
 ST1429-A	Adapter for 205-S127 205-109 (T76P-4020-A9)
 ST1431-A	Adapter for 205-S127 205-110 (T76P-4020-A10)
 ST1432-A	Adapter for 205-S127 205-111 (T76P-4020-A11)
 ST1743-A	Adapter for 205-S127 205-129 (T79P-4020-A18)
	Adapter for 205-S127 205-130 (T79P-4020-A19)

 ST1434-A	
 ST1375-A	Installer, Differential Side Bearing 205-010 (T57L-4221-A2)
 ST1678-A	Installer, Drive Pinion Bearing Cup 205-024 (T67P-4616-A)
 ST1367-A	Installer, Shaft Bearing Cone 308-169 (T88T-7025-B)
 ST1254-A	Plate, Bearing Oil Seal 205-090 (T75L-1165-B)
 ST1744-A	Protector, Drive Pinion Thread 205-460 or equivalent
 ST1543-A	Step Plate 205-D016 (D80L-630-5) or equivalent

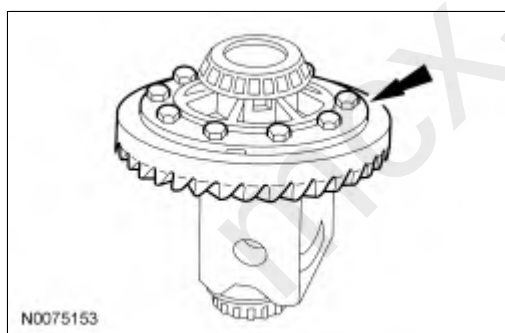


Item	Part Number	Description
1	4346	Differential housing cover bolt (10 required)
2	4033	Differential housing cover
3	46108	Differential bearing cap bolts (part of 4010) (4 required)
4	—	Differential bearing caps (part of 4010) (2 required)
5	4067	Differential bearing shims (2 required)
6	4222	Differential bearing cups (2 required)
7	4221	Differential bearings (2 required)
8	4216	Ring gear bolt (10 required)

9	4204	Differential assembly
10	4209	Ring gear
10	4209	Drive pinion
11	4663	Pinion bearing alignment shim
12	—	Inner pinion bearing cup (part of 4625)
13	4625	Inner pinion bearing
14	4662	Collapsible spacer (part of 4320)
15	—	Outer pinion bearing cup (part of 4621)
16	4621	Outer pinion bearing
17	4670	Oil slinger
18	4676	Drive pinion oil seal
19	4851	Drive pinion flange
20	4C121	Drive pinion nut (part of 4320)

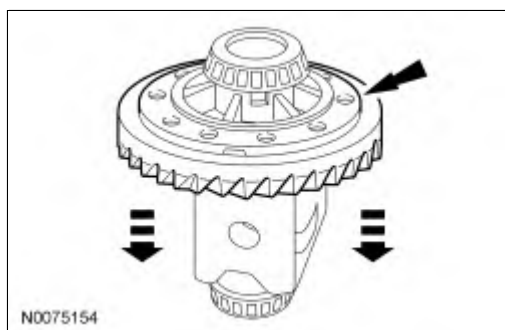
Removal

1. Remove the drive pinion flange seal. For additional information, refer to [Drive Pinion Flange and Drive Pinion Seal](#) in this section.
2. Remove the differential carrier assembly. For additional information, refer to [Differential Carrier](#) in this section.
3. Remove and discard the 10 differential ring gear bolts.

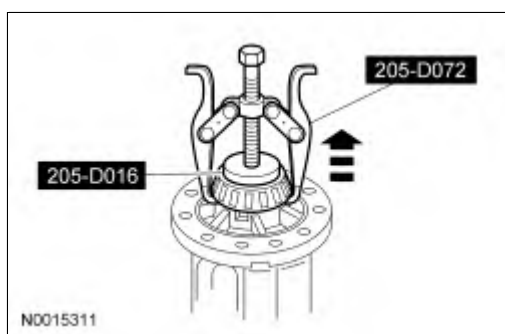


4. **NOTE:** Care should be taken not to damage the differential ring gear bolt hole threads.

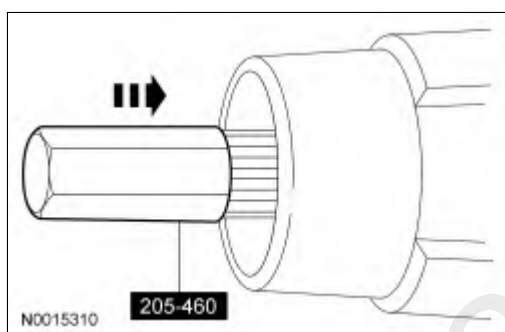
Insert a punch in the differential ring gear bolt holes and drive the differential ring gear off.



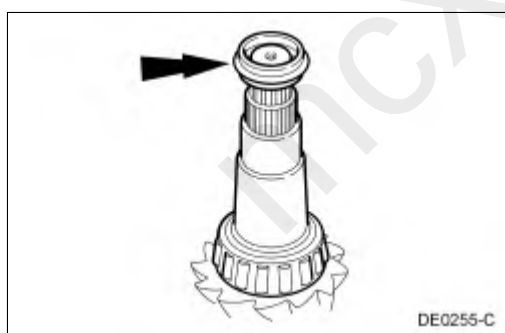
5. Using the 2 Jaw Puller and Step Plate, remove the differential bearings.



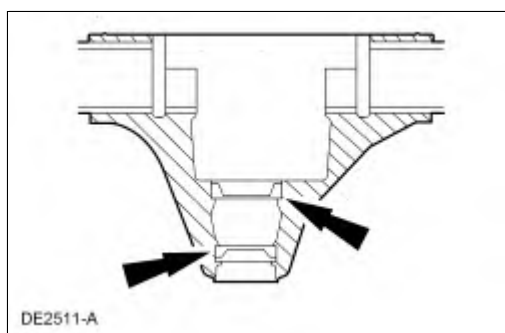
6. Remove the drive pinion shaft oil slinger and the outer drive pinion bearing.
7. Install the Drive Pinion Thread Protector. Using a soft-faced hammer, drive the pinion assembly out of the axle housing.



8. Remove and discard the drive pinion collapsible spacer.

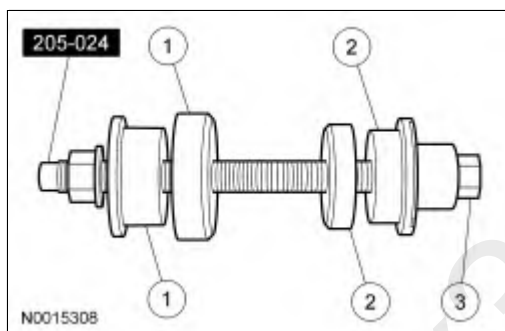


9. Using a brass drift, remove the drive pinion bearing cups by tapping alternately on opposite sides of the drive pinion bearing cups.

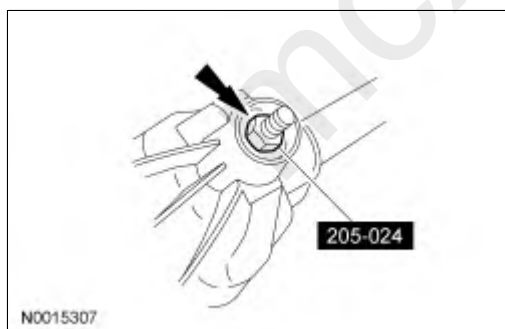


Installation

1. Position the Drive Pinion Bearing Cup Installer and the inner and outer drive pinion bearing cups in their respective bores.
 1. After placing the inner and outer drive pinion bearing cups in their bores, place the Drive Pinion Bearing Cup Installer (inner) on the inner drive pinion bearing cup.
 2. Place the Drive Pinion Bearing Cup Installer (outer) on the outer drive pinion bearing cup.
 3. Install the Drive Pinion Bearing Cup Installer.

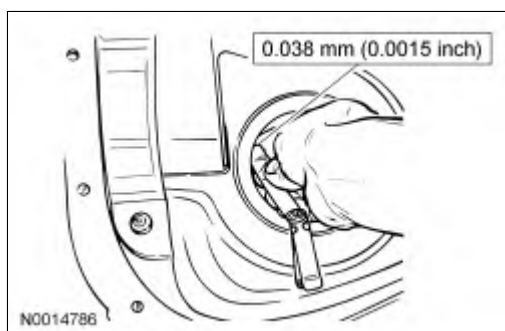


2. Tighten the Drive Pinion Bearing Cup Installer to seat the drive pinion bearing cups into their bores.



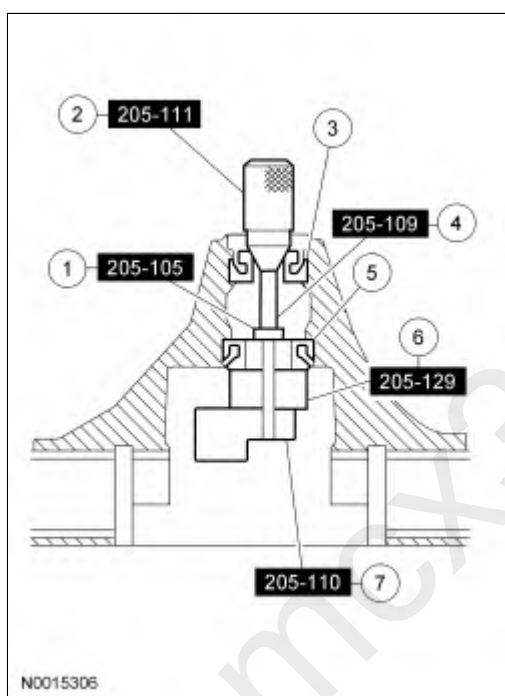
3. **NOTE:** If a feeler gauge can be inserted between a drive pinion bearing cup and the bottom of its bore at any point around the drive pinion bearing cup, the drive pinion bearing cup is not correctly seated.

Make sure the drive pinion bearing cups are correctly seated in their bores.



4. **NOTE:** Install new drive pinion bearings without any additional lubricant since the anti-rust oil provides adequate lubricant without upsetting the drive pinion bearing preload settings.

Assemble and position the Adapters.

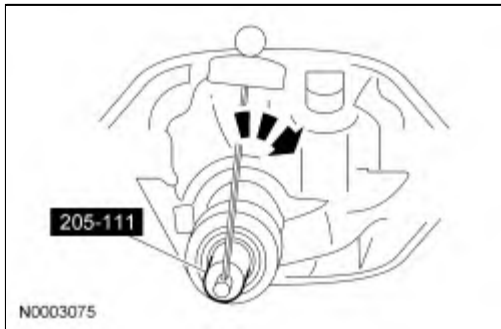


Item	Part Number	Description
1	205-105	Adapter for 205-S127 (1.612 in OD) (T76P-4020-A3)
2	205-111	Adapter for 205-S127 (T76P-4020-A11)
3	4621	Drive pinion bearing (outer)
4	205-109	Adapter for 205-S127 (T76P-4020-A9)
5	4630	Drive pinion bearing (inner)
6	205-129	Adapter for 105-S127 (1.1884 in thick) (T79P-4020-A18)
7	205-110	Adapter for 205-S127 (1.7 in thick) (T76P-4020-A10)

5. **NOTE:** This step duplicates final drive pinion bearing preload.

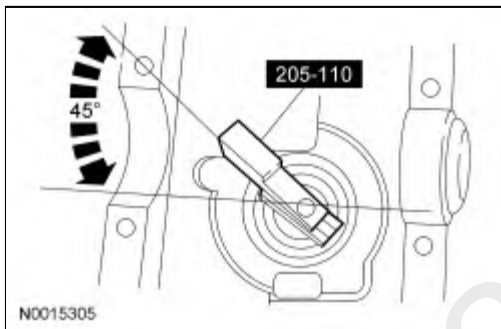
Tighten the Adapter.

- Tighten to 2.2 Nm (20 lb-in) rotational torque.

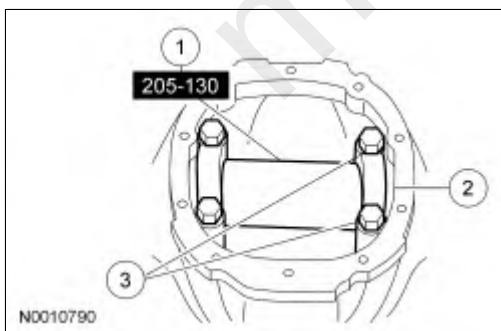


6. **NOTE:** The Adapter must be offset to obtain an accurate reading.

Rotate the Adapter several half-turns to make sure of correct seating of the drive pinion bearings and position the Adapter.



7. Install the Adapter.
1. Position the Adapter.
 2. Install the 2 differential bearing caps.
 3. Install the 4 differential bearing cap bolts.
 - Tighten to 112 Nm (83 lb-ft).



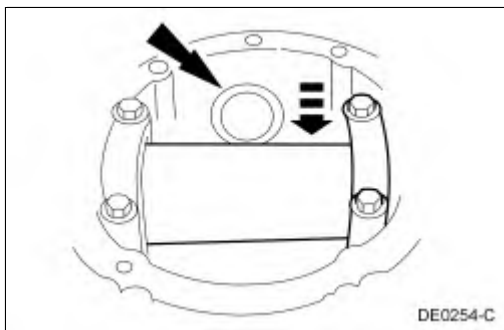
8. **NOTE:** Drive pinion bearing adjustment shims must be flat and clean.

NOTE: A slight drag should be felt for correct drive pinion bearing adjustment shim selection. Do not attempt to force the drive pinion bearing adjustment shim between the Adapter and the gauge tube. This will minimize selection of a drive pinion bearing adjustment shim thicker than required, which results in a deep tooth contact in final assembly of integral axle assemblies.

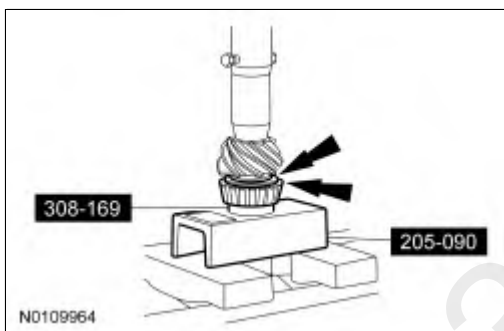
Use a drive pinion bearing adjustment shim as a gauge for drive pinion bearing adjustment shim

selection.

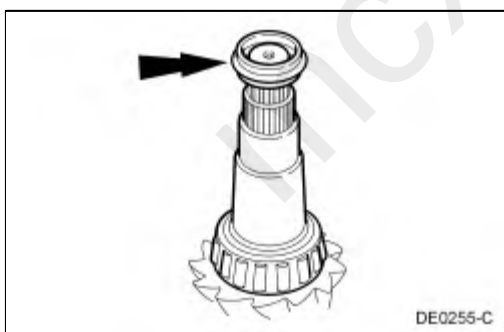
- After the correct drive pinion bearing adjustment shim thickness has been determined, remove all of the special tools.



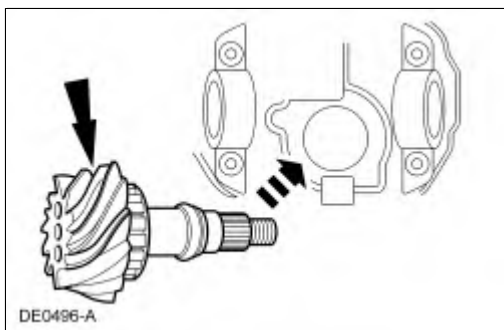
9. Using the Shaft Bearing Cone Installer and Bearing Oil Seal Plate and a shop press, drive the inner drive pinion bearing and the selected drive pinion bearing adjustment shim until they are firmly seated on the pinion shaft.



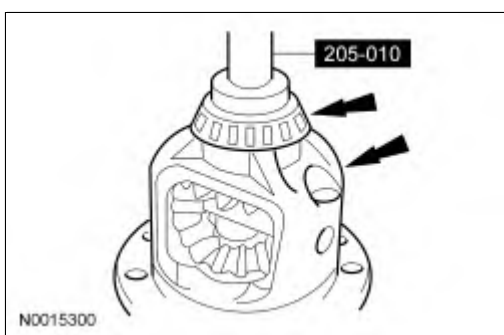
10. Install a new drive pinion collapsible spacer on the pinion shaft against the pinion shaft shoulder.



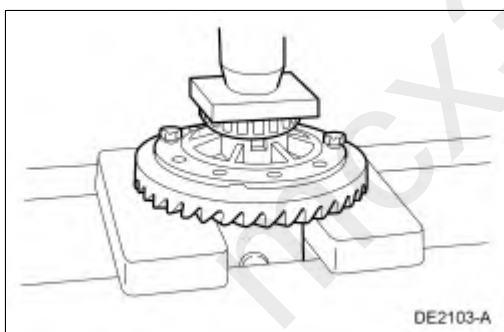
11. Install the drive pinion assembly into the axle housing.



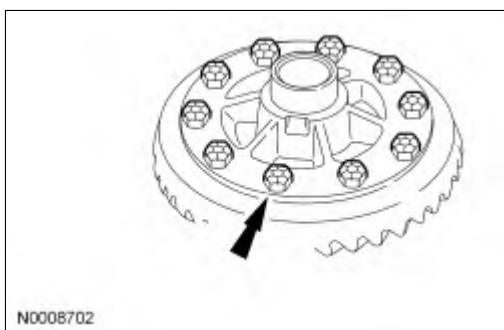
12. Install the outer drive pinion bearing and the drive pinion shaft oil slinger.
13. Using the Differential Side Bearing Installer, install the 2 new differential bearings.



14. Using 2 ring gear bolts as a guide, press the ring gear on the differential assembly.



15. Install the 10 new differential ring gear bolts. Tighten in 2 stages.
 - Stage 1: Tighten to 60 Nm (44 lb-ft).
 - Stage 2: Tighten an additional 90 degrees.



16. Install the drive pinion seal and flange. For additional information, refer to [Drive Pinion Flange and Drive Pinion Seal](#) in this section.
 17. Install the differential carrier. For additional information, refer to [Differential Carrier](#) in this section.
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