

1998-2001 DRIVE AXLES**Axle Shafts - Catera****TROUBLESHOOTING****CLICK NOISE IN TURNS**

The following conditions may cause a clicking noise in turns:

- Worn outboard joint
- Damaged outboard joint
- Cut seal
- Damaged seal

CLUNK WHEN ACCELERATING FROM COAST

The following may cause a clunk when accelerating from coast to drive:

- Worn universal joint
- Damaged universal joint
- Bad motor mount
- Worn differential bushing
- Damaged front differential bushing
- Worn rear differential bushing
- Damaged rear differential bushing

SHUDDER OR VIBRATION DURING ACCELERATION

The following may cause a shudder or a vibration during acceleration:

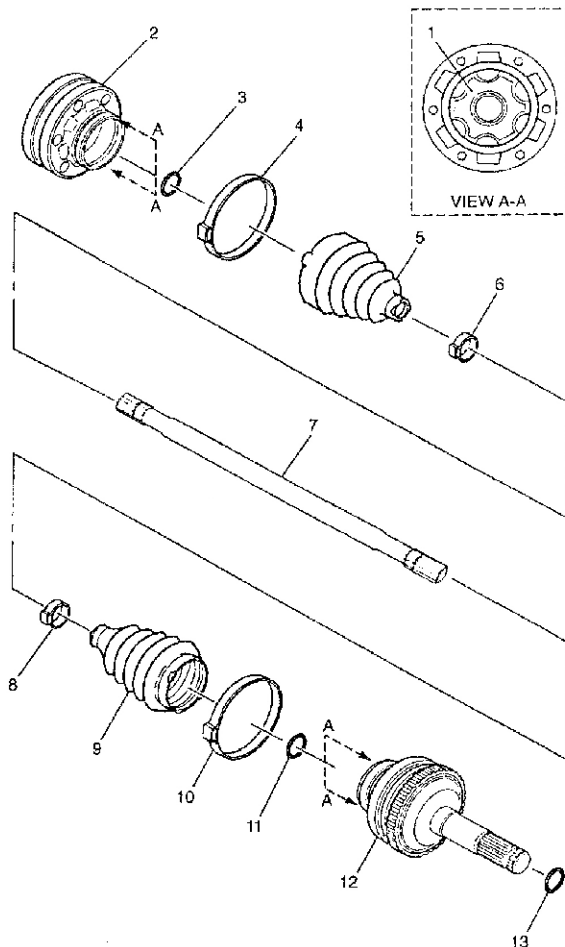
- Incorrect trim height
- Worn inboard damage
- Damaged inboard joint
- Worn outboard joint
- Damaged outboard joint

REMOVAL & INSTALLATION

2001 Cadillac Catera

1998-2001 DRIVE AXLES Axle Shafts - Catera

NOTE: Axle shafts are also known as drive axles.



Legend

- | | |
|---|---|
| (1) Inner Race | (8) Small Seal Retaining Clamp |
| (2) Cross Groove Inboard Housing Assembly | (9) Drive Axle Outboard Boot |
| (3) Retaining Ring | (10) Large Seal Retaining Clamp |
| (4) Large Seal Retaining Clamp | (11) Retaining Ring |
| (5) Drive Axle Inboard Boot | (12) Cross Groove Outboard Housing Assembly |
| (6) Small Seal Retaining Clamp | (13) Retaining Ring |
| (7) Axle Shaft | |

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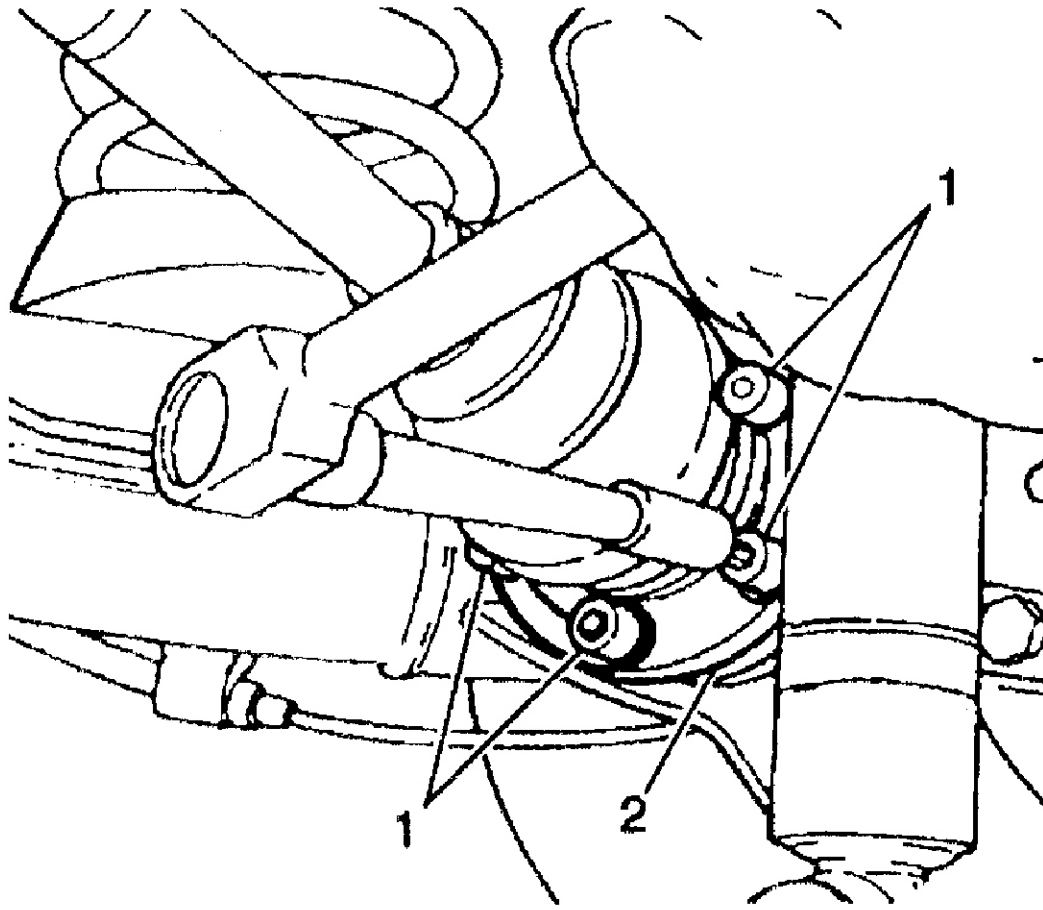
Fig. 1: Exploded View Of Drive Axle Components
Courtesy of GENERAL MOTORS CORP.

DRIVE AXLE

NOTE: Numbers in parenthesis correspond with numbers in illustrations.

Removal

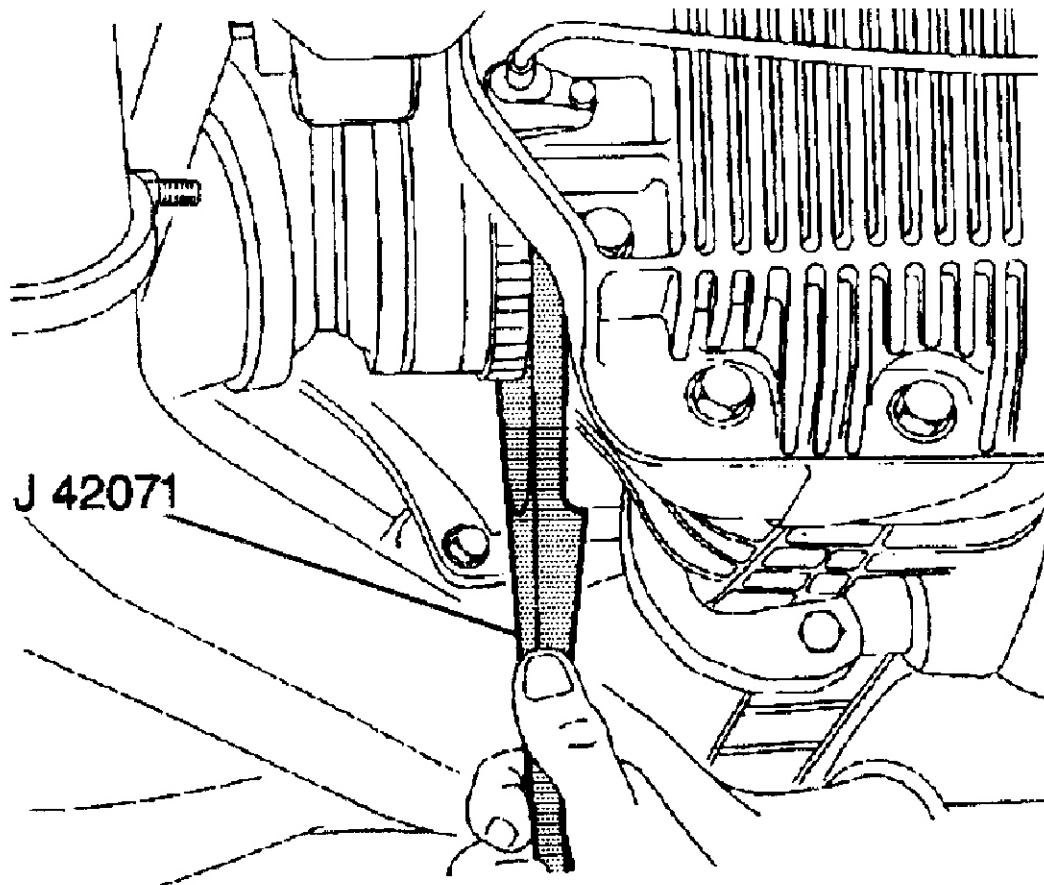
1. Place the gear selector in the NEUTRAL position.
2. Raise and support the vehicle.
3. Remove the tire and wheel assembly.
4. Install the wheel Hub Flange Holding Adapter (J 42066) to the wheel hub flange with the wheel bolts. See **Fig. 10**.
5. Remove the bolts (1) from the drive axle flange (2) while holding the Wheel Hub Flange Holding Adapter (J 42066) with a ratchet. See **Fig. 2** & **Fig. 10**.



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Fig. 2: Removing Bolts From Drive Axle Flange
Courtesy of GENERAL MOTORS CORP.

6. Separate the outer end of the drive axle from the wheel bearing hub inner flange.
7. Use the Drive Axle Separator (J 42071) and a deadblow hammer to separate the drive axle from rear axle differential. See **Fig. 3** and **Fig. 10** .
8. Remove the drive axle from the vehicle.
9. Clean the drive axle spline.
10. Clean the seal surfaces.



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Fig. 3: Separating Drive Axle From Rear Axle Differential
 Courtesy of GENERAL MOTORS CORP.

Installation

1. Lubricate the drive axle spline with differential lubricant.
2. Lubricate the seal surfaces with differential lubricant.

CAUTION: Use only enough force necessary to seat the drive axle into the rear axle differential.

3. Use a rubber faced mallet to drive the outer end of the drive axle into the wheel bearing hub inner flange.
4. Use a ratchet to hold the Wheel Hub Flange Holding Adapter (J 42066) while installing the bolts to the drive axle flange. See **Fig. 10** .
5. Tighten the bolts. See **TORQUE SPECIFICATIONS** .
6. Remove the Wheel Hub Flange Holding Adapter (J 42066) from the wheel hub flange. See **Fig. 10** .
7. Install the tire and wheel assembly.
8. Lower the vehicle.

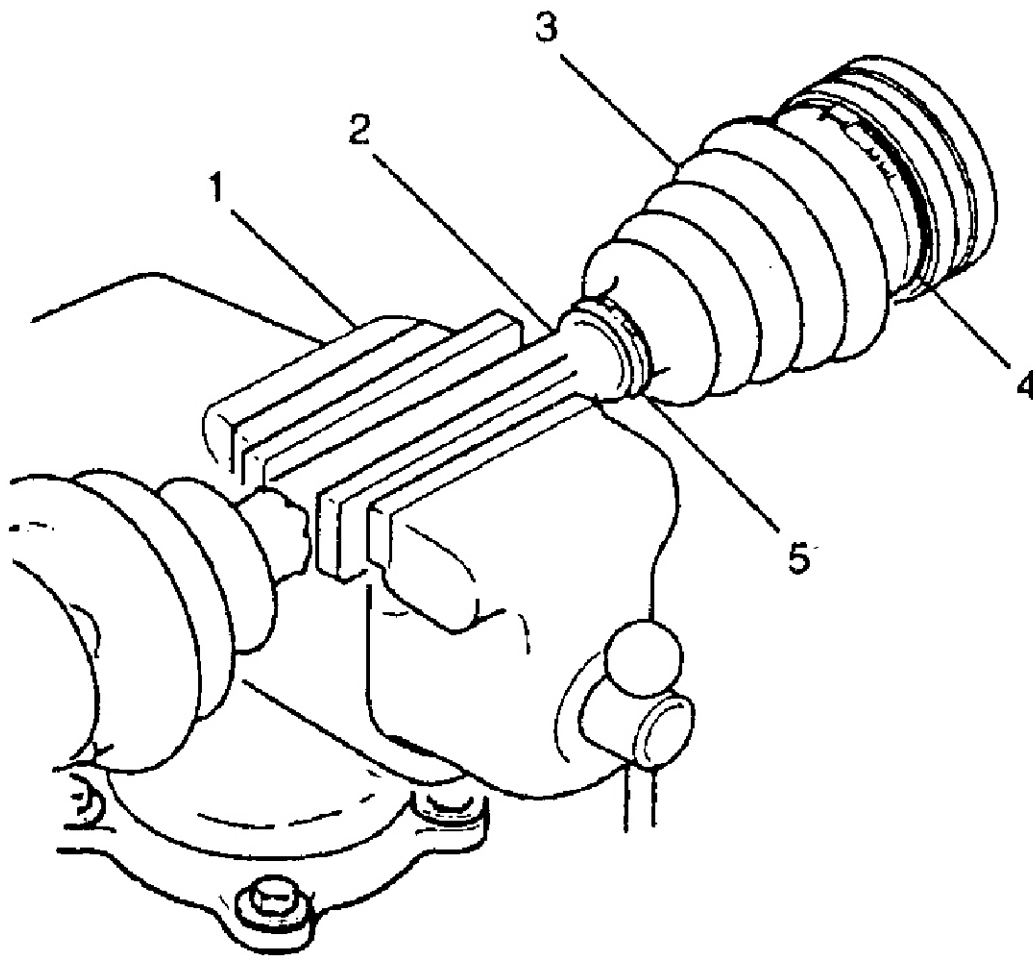
DRIVE AXLE INNER JOINT & BOOT REPLACEMENT

NOTE: Axle shafts are also known as drive axles.

NOTE: Numbers in parenthesis correspond with numbers in illustrations.

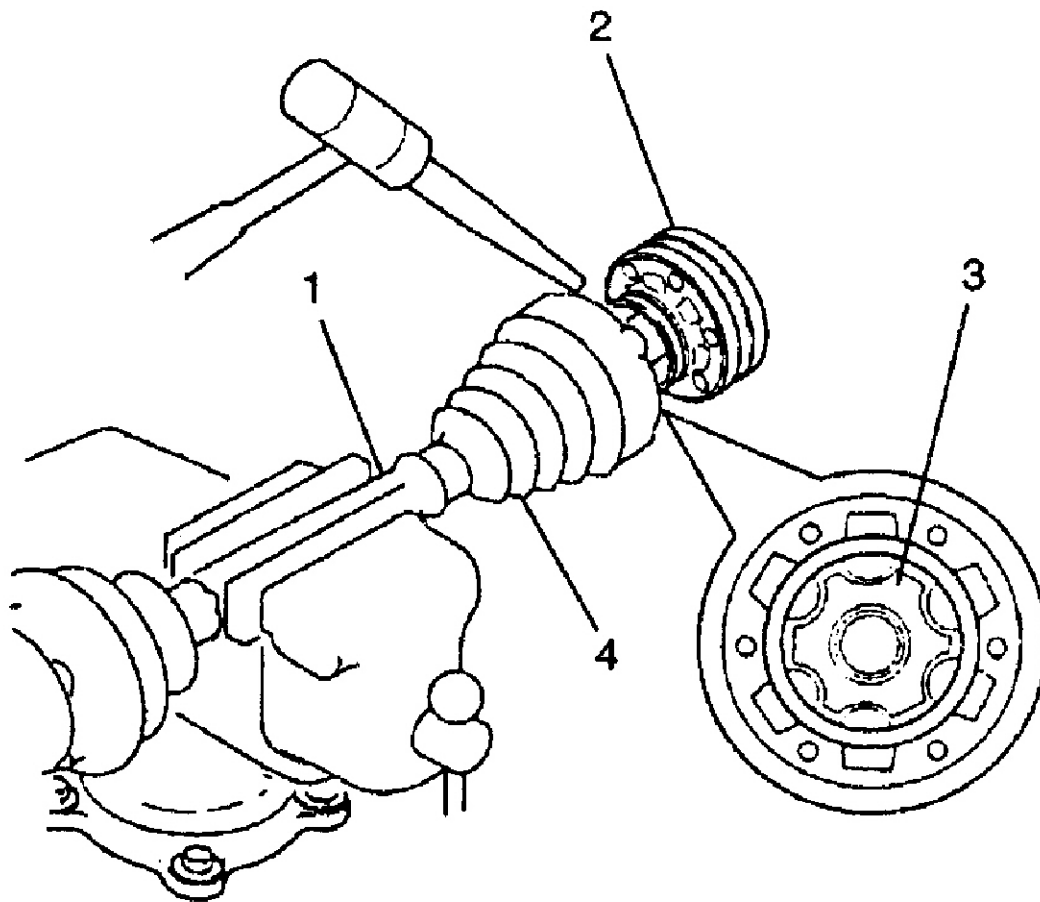
Removal

1. Clamp the drive axle assembly into a vise (1) which has brass inserts. See **Fig. 4** . Remove the large boot retaining clamp (4) from the inboard cross groove joint with a side cutter.
2. Discard the large boot retaining clamp (4). See **Fig. 4** . Remove the small boot retaining clamp (5) from the axle shaft (2) with side cutter.
3. Discard the small boot retaining clamp (5). Slide the boot (3) up the axle shaft (2) away from the joint. See **Fig. 4** .
4. Wipe grease from face of cross-groove inner race.
5. Use a brass drift and a hammer to tap on the inner race (3) of the cross groove (2). This may take several taps before the cross groove (2) assembly disconnects from the axle shaft (1). Take care not to damage the inner race (3). See **Fig. 5** .Remove the retaining ring from the drive axle shaft (1). Discard the retaining ring.
6. Remove the old seal (4) from the drive axle shaft (1). See **Fig. 5** .Discard the old seal (4).
7. Check the inboard joint for any wear. Replace if necessary.



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Fig. 4: Identifying Inner Joint & Boot (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

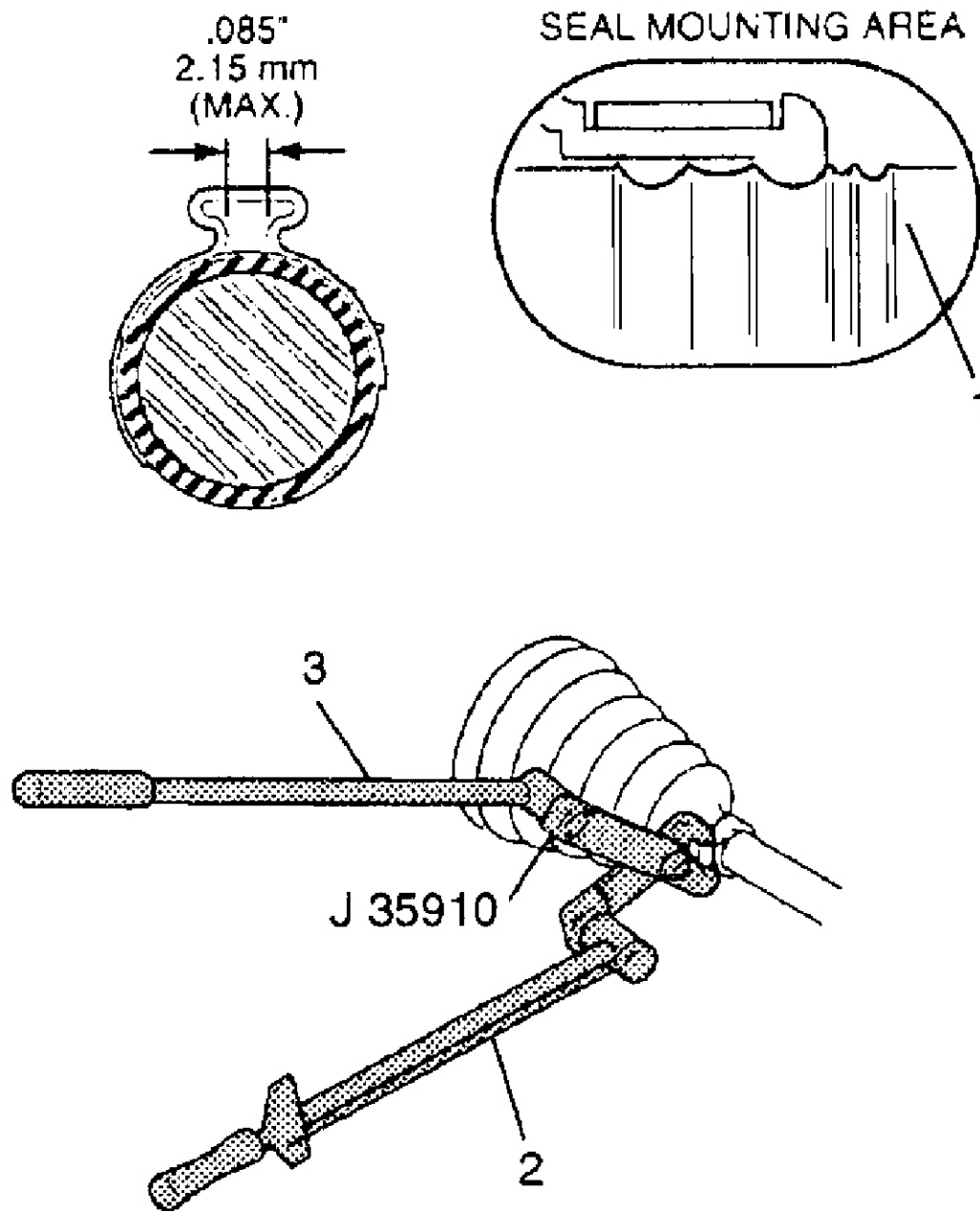


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Fig. 5: Identifying Inner Joint & Boot (2 Of 2)
 Courtesy of GENERAL MOTORS CORP.

Installation

1. Pack the inboard cross groove joint with half the grease provided in the service kit.
2. Place new small boot retaining clamp on neck of boot. Do not crimp.
3. Position the new large boot retaining clamp around the joint boot.
4. Clean the drive axle shaft. Use a wire brush to remove any rust in the boot mounting area (grooves).
5. Place the boot onto the drive axle shaft towards the outboard joint.
6. Place the new retaining ring onto the drive axle shaft.
7. While supporting the outboard cross groove assembly, place the drive axle assembly onto the arbor press with the inboard cross groove assembly under the press head.
8. Place a block of wood over the inboard cross groove assembly before lowering the press head. This will protect the housing from any damage.
9. Lower the arbor press head onto the inboard cross groove assembly until the press cannot move any further.
10. Remove the drive axle assembly from the arbor press.
11. Place the drive axle assembly into the vise.
12. Slide the boot back from toward the inboard joint and place the neck of the joint boot into the boot groove on the drive axle shaft.
13. Crimp the small retaining clamp by using Boot Clamp Tool (J 35910) with a breaker bar (2) and torque wrench (3). See **Fig. 6** and **Fig. 10** . Tighten to 100 ft. lbs.(136 N.m).

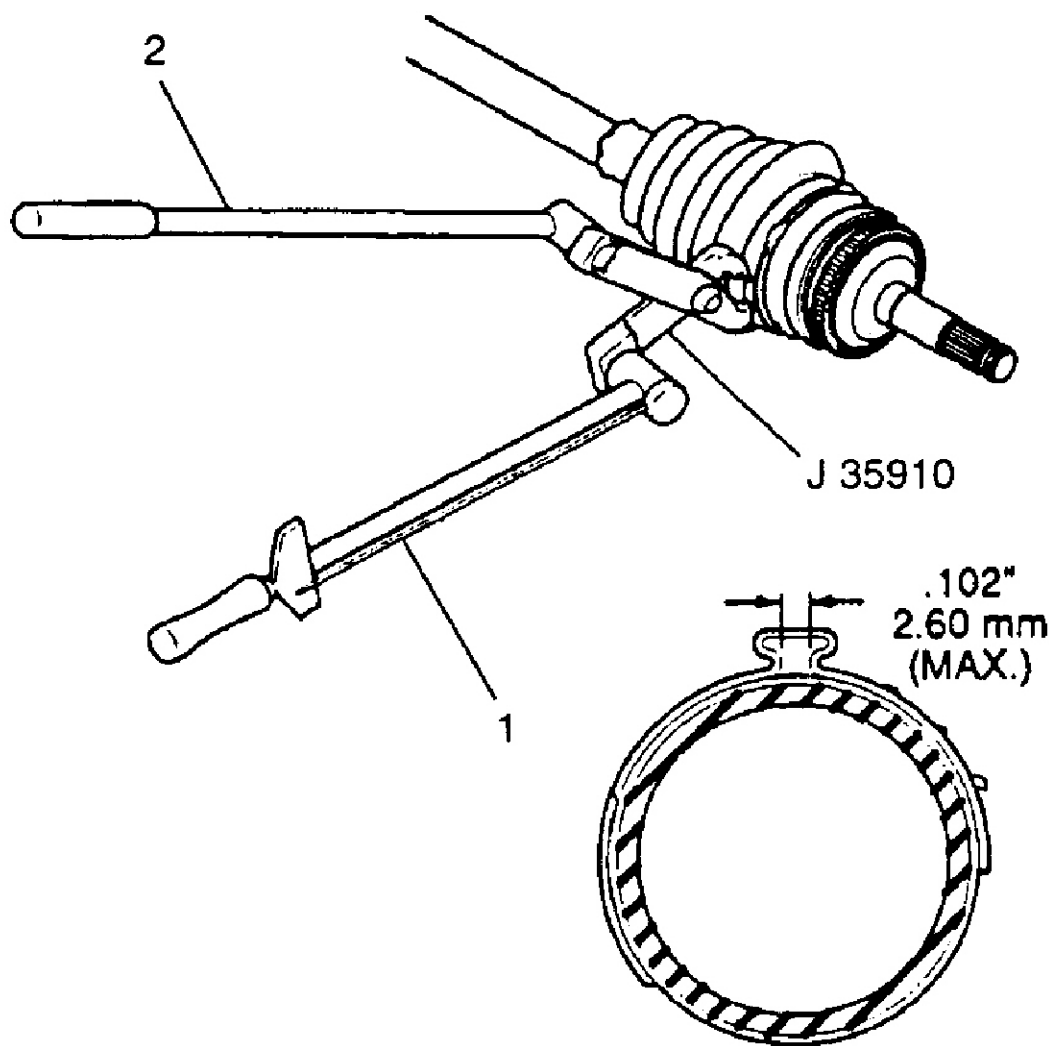


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Fig. 6: Crimping Small Retaining Clamp
 Courtesy of GENERAL MOTORS CORP.

CAUTION: The boot must not be dimpled, stretched or out of shape in any way. If the boot is not shaped correctly, equalize pressure on the boot and shape the boot properly by hand.

14. Place the remaining grease into the inboard boot.
15. Slide large diameter of the boot with the large boot retaining clamp in place over the lip of the inboard joint housing.
16. Clamp the large boot retaining clamp by using Bolt Clamp Tool (J 35910) with a breaker bar (2) and a torque wrench (1). Tighten. See **TORQUE SPECIFICATIONS** & **Fig. 10** & **Fig. 7**.



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Fig. 7: Crimping Large Boot Retaining Clamp
 Courtesy of GENERAL MOTORS CORP.

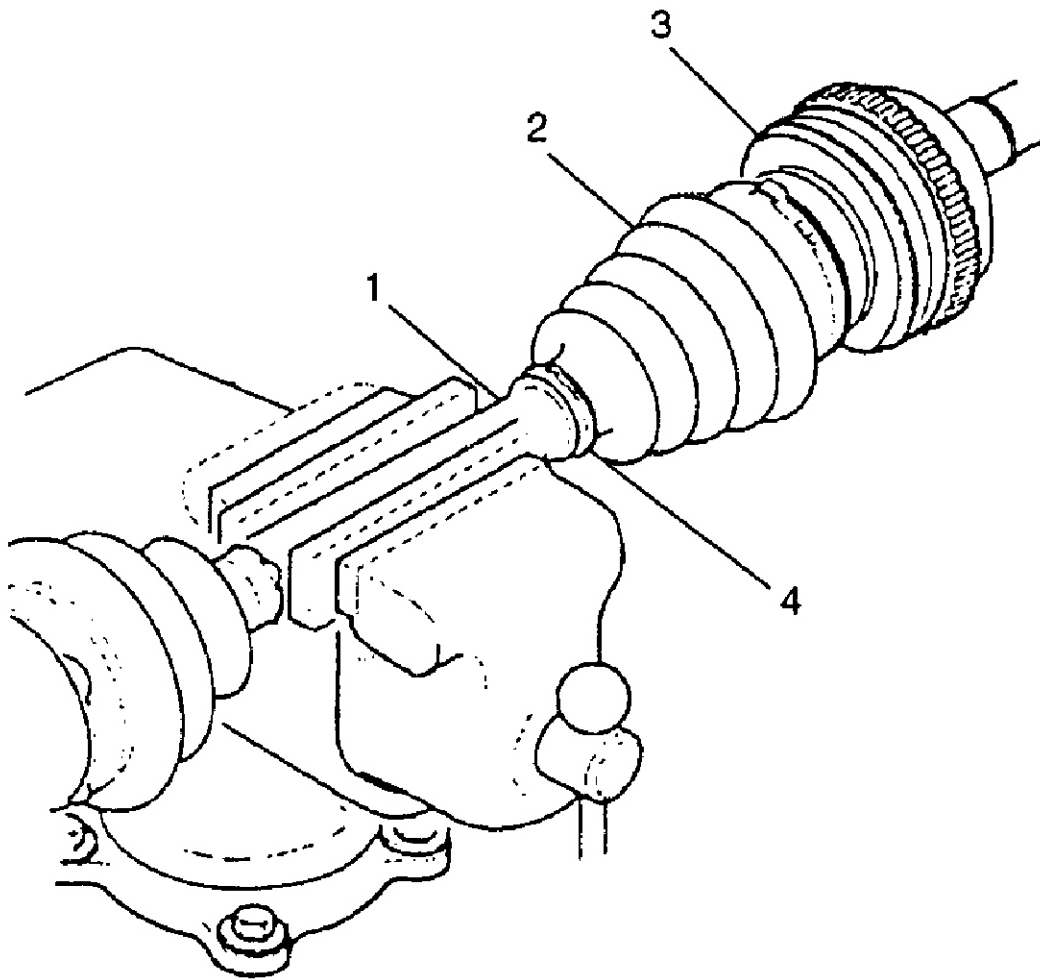
DRIVE AXLE OUTER JOINT & BOOT REPLACEMENT

NOTE: Numbers in parenthesis correspond with numbers in illustrations.

Removal

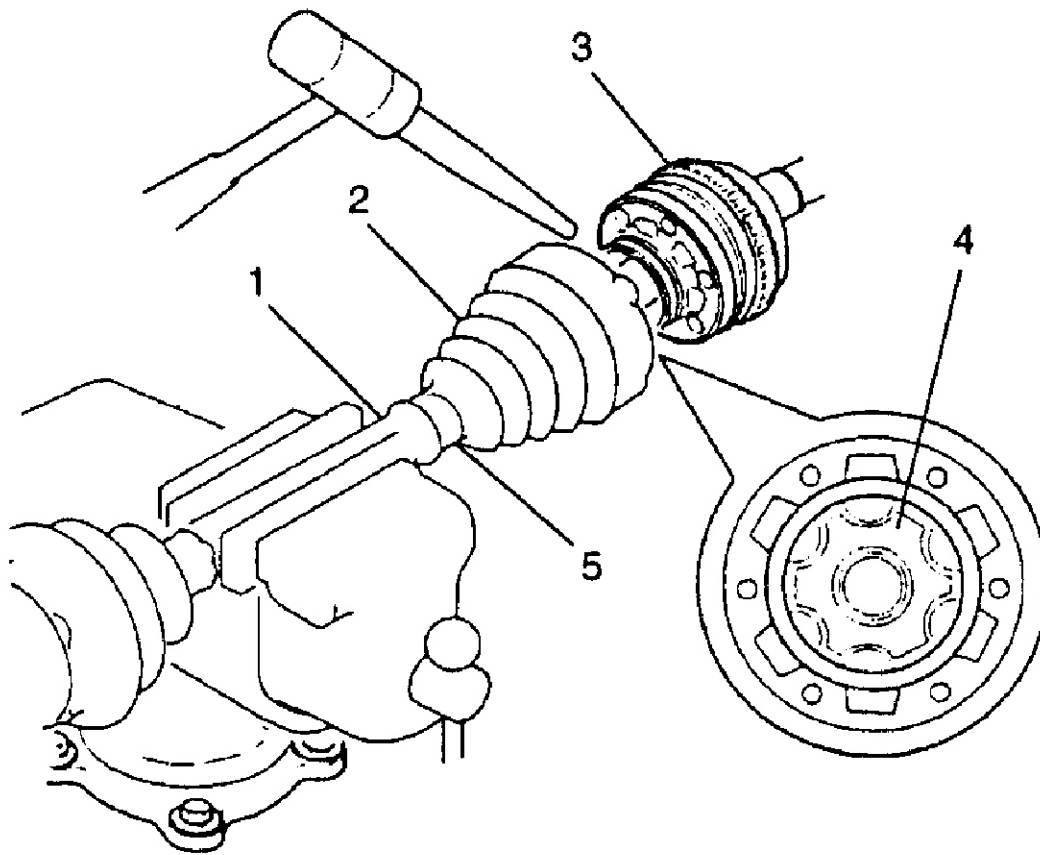
1. Clamp the drive axle assembly into a vice which has brass inserts.
2. Remove the large boot retaining clamp from the outboard cross groove joint with a side cutter.
3. Discard the large boot retaining clamp.
4. Remove the small boot retaining clamp (4) from the axle shaft (1) with side cutter. See [Fig. 8](#). Discard the small boot retaining clamp (4). Wipe grease from face of cross groove outer race (3).
5. Use a brass drift hammer to tap on the outer race of the cross groove (3). This may take several taps before the cross groove assembly (3) disconnects from the axle shaft (1). Take care not to damage the inner race. See [Fig. 9](#).
6. Remove the retaining ring (5) from the drive axle shaft (1). See [Fig. 9](#).
7. Discard the retaining ring (5). See [Fig. 9](#).
8. Remove the old seal (2) from the drive axle shaft (1). See [Fig. 9](#).
9. Discard the old seal (2). See [Fig. 9](#).

10. Check the inboard joint for any wear. Replace if necessary.



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Fig. 8: Disassembling Outer Joint & Boot (1 Of 2)
Courtesy of GENERAL MOTORS CORP.



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Fig. 9: Disassembling Outer Joint & Boot (2 Of 2)
 Courtesy of GENERAL MOTORS CORP.

Installation

1. Pack the outboard cross groove joint with half the grease provided in the service kit.
2. Place new small boot retaining clamp on neck of boot. Do not crimp.
3. Position the new large boot retaining clamp around the joint boot.
4. Clean the drive axle shaft. Use a wire brush to remove any rust in the boot mounting area (grooves).
5. Place the new retaining ring onto the drive axle shaft.
6. While supporting the inboard assembly, place the drive axle assembly onto the arbor press with the outboard cross groove assembly under the press head.
7. Lower the arbor press head onto the outboard cross groove assembly until the press cannot move any further.
8. Remove the drive axle assembly from the arbor press.
9. Slide the boot back toward the outboard joint and place the neck of the joint boot into the boot groove on the drive axle shaft.
10. Crimp the small retaining clamp by using Boot Clamp Tool (J 35910) with a breaker bar (2) and torque wrench (1). See **Fig. 6** and **Fig. 10**.
11. Place the remaining grease into the outboard boot.

CAUTION: The boot must not be dimpled, stretched or out of shape in any way. If the boot is not shaped correctly, equalize pressure on the boot and shape the boot properly by hand.

12. Slide large diameter of the boot with the large boot retaining clamp in place over the lip of the inboard joint housing.

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13. Crimp the large boot retaining clamp by using boot clamp tool (J 35910) with a breaker bar (2) and torque wrench (1). Tighten to 130 ft. lbs. (176 N.m). See **Fig. 7** and **Fig. 10**.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Drive Axle Bolt	37 (50)

SPECIAL TOOLS

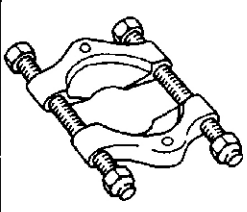
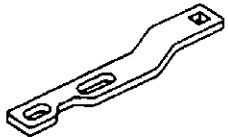
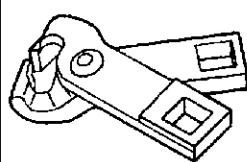
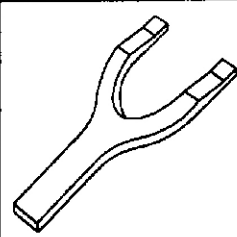
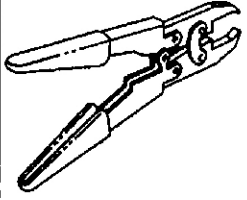
Illustration	Tool Number/ Description
	J 22912-01 Universal Bearing Puller
	J 42066 Wheel Hub Flange Holding Adapter
	J 35910 Boot Clamp Tool

Illustration	Tool Number/ Description
	J 42071 Drive Axle Separator
	J 36566 Boot Clamp Tool

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Fig. 10: Identifying Special Tools
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