

2008 Isuzu Ascender LS
2008 Driveline/Axle Wheel Drive Shafts - Ascender, Envoy & Trailblazer

### 2008 Driveline/Axle

### Wheel Drive Shafts - Ascender, Envoy & Trailblazer

## SPECIFICATIONS

### FASTENER TIGHTENING SPECIFICATIONS

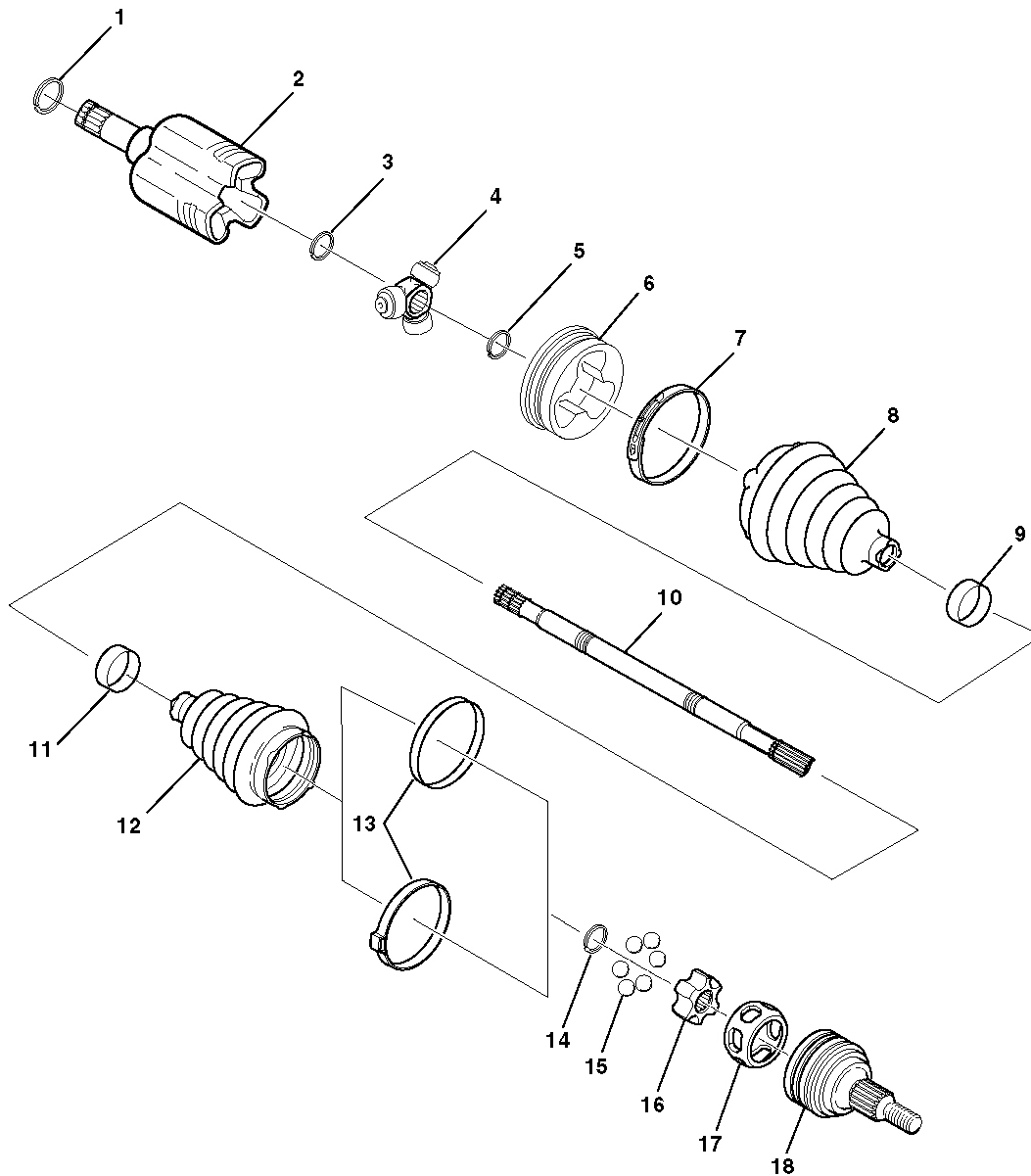
Application	Specification	
	Metric	English
Brake Caliper Mounting Bracket Bolts	70 N.m	52 lb ft
Wheel Drive Shaft Boot Torque	176 N.m	130 lb ft
Wheel Drive Shaft Nut	140 N.m	103 lb ft

## COMPONENT LOCATOR

### WHEEL DRIVE SHAFTS DISASSEMBLED VIEWS

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**Fig. 1: View Of Halfshaft Components**  
**Courtesy of GENERAL MOTORS CORP.**

Callout	Component Name
1	Differential Shaft Ring
2	Tripot Housing Assembly
3	Spacer Ring
4	Tripot Joint Spider Assembly

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5	Spacer Ring
6	Tripot Bushing
7	Boot Retaining Clamp
8	Tripot Joint Boot
9	Halfshaft Swage Ring
10	Halfshaft Bar
11	Halfshaft Swage Ring
12	CV Joint Boot
13	Swage Ring/Clamp
14	Race Retaining Ring
15	Ball
16	CV Joint Inner Race
17	CV Joint Cage
18	CV Joint Outer Race

## DIAGNOSTIC INFORMATION AND PROCEDURES

### DIAGNOSTIC STARTING POINT - WHEEL DRIVE SHAFTS

Begin the system diagnosis by reviewing the system Description and Operation. Reviewing the Description and Operation will help you to determine the correct symptom diagnostic procedure when a malfunction exist. Reviewing the Description and Operation information will also help you determine if the condition described by the customer is normal operation. Refer to **Symptoms - Wheel Drive Shafts** in order to identify the correct procedure for diagnosing the system and where the procedure is located.

### SYMPTOMS - WHEEL DRIVE SHAFTS

Before beginning diagnosis, review the system description and operation in order to familiarize yourself with the system function. Refer to **Wheel Drive Shafts Description and Operation**.

#### Classifying the Symptom

Wheel Drive Shaft symptoms can usually be classified into the following categories:

- Noises
- Vibrations

Noise related concerns are diagnosed within the Wheel Drive Shafts section. For vibration related symptoms, refer to **Diagnostic Starting Point - Vibration Diagnosis and Correction** for diagnosis.

#### Visual/Physical Inspection

- Inspect the system for aftermarket devices which could affect the operation of the wheel drive shafts.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could

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cause the symptom.

### Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **Click Noise In Turns**
- **Clunk When Accelerating from Coast**
- **Clunk Noise When Accelerating During Turns**

### CLICK NOISE IN TURNS

Step	Action	Yes	No
DEFINITION: Clicking noise while turning in drive under load.			
1	Check for worn or damaged outer CV joints. Are the outer CV joints/seals worn?	Go to <b>Step 2</b>	System OK
2	Replace the outer CV joints/seals. Refer to <b><u>Wheel Drive Shaft Outer Joint and Boot Replacement</u></b> . Is the repair complete?	System OK	-

### CLUNK WHEN ACCELERATING FROM COAST

Step	Action	Yes	No
DEFINITION: A clunking noise present when accelerating from coast to drive under load.			
1	Check for a loose wheel drive shaft to hub assembly nut. Is the wheel drive shaft nut loose?	Go to <b>Step 2</b>	Go to <b>Step 3</b>
2	Tighten the wheel drive shaft to hub assembly nut to specification. Refer to <b><u>Fastener Tightening Specifications</u></b> . Is the repair complete?	System OK	-
3	Check for a damaged inner CV joint. Is the inner CV joint damaged?	Go to <b>Step 4</b>	System OK
4	Replace the inner CV joint. Refer to <b><u>Wheel Drive Shaft Inner Joint and Boot Replacement</u></b> . Is the repair complete?	System OK	-

### CLUNK NOISE WHEN ACCELERATING DURING TURNS

Step	Action	Yes	No
1	Check for worn or damaged outer wheel drive shaft joints and/or seals. Are the outer wheel drive shaft joints/seals worn?	Go to <b>Step 2</b>	System OK
	Check for proper clearance between the wheel drive		

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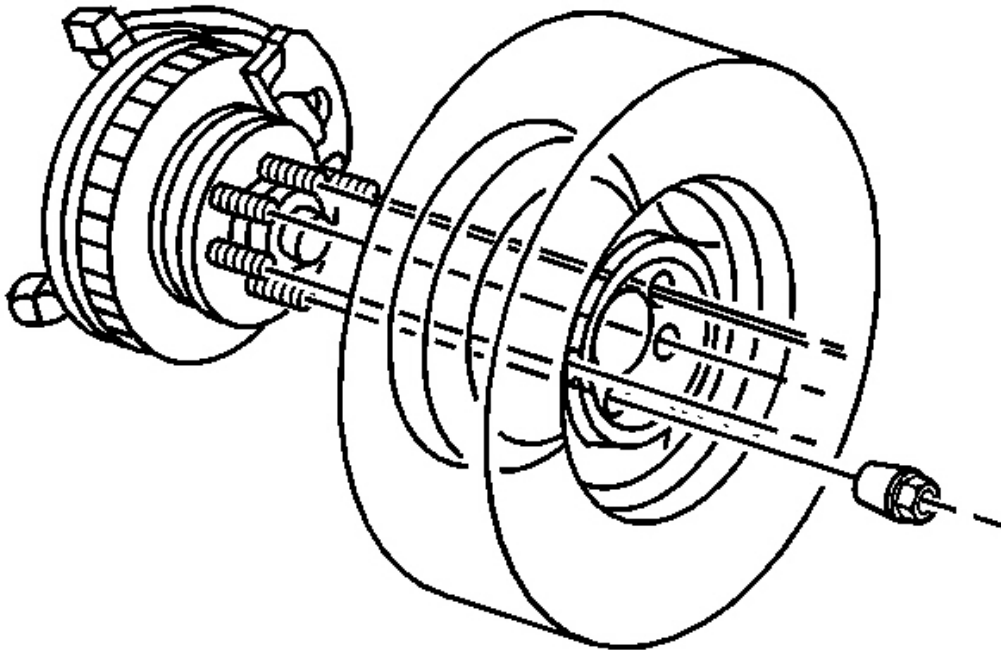
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2	shaft and other components. Correct as necessary. Is the repair complete?	System OK	Go to <b>Step 3</b>
3	Replace the outer CV joints/seals. Refer to <b><u>Wheel Drive Shaft Outer Joint and Boot Replacement.</u></b> Is the repair complete?	System OK	-

## REPAIR INSTRUCTIONS

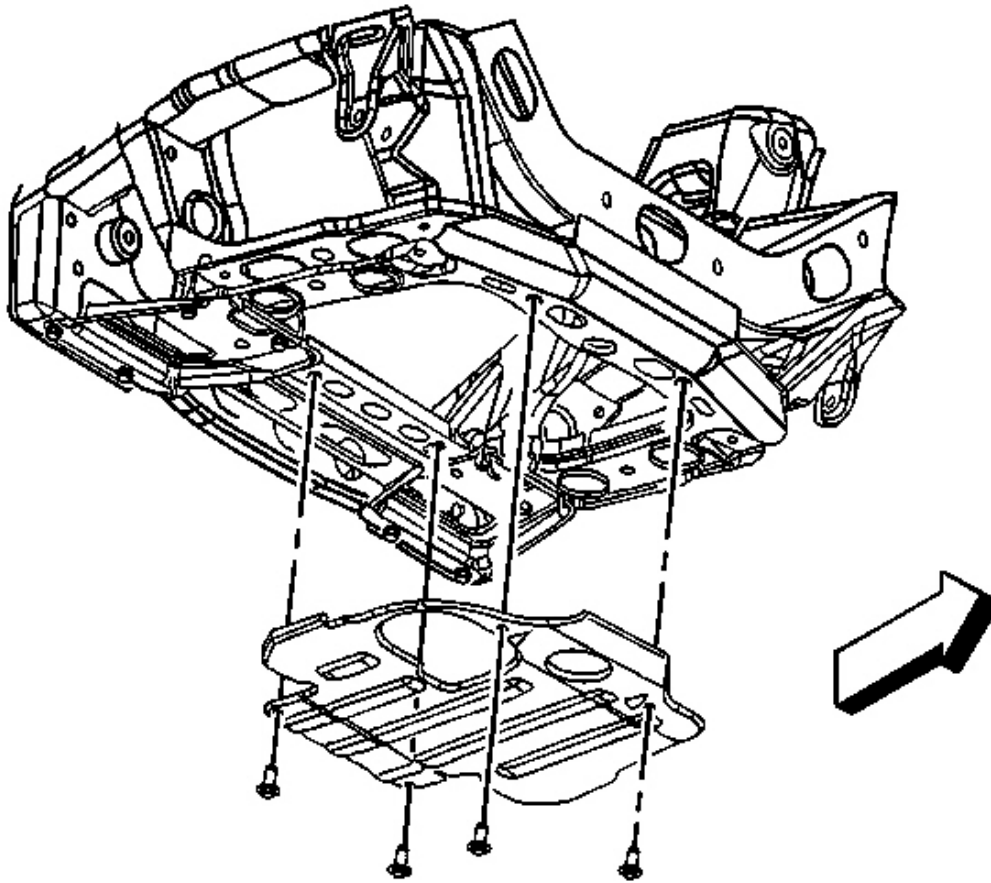
### WHEEL DRIVE SHAFT REPLACEMENT

#### Removal Procedure



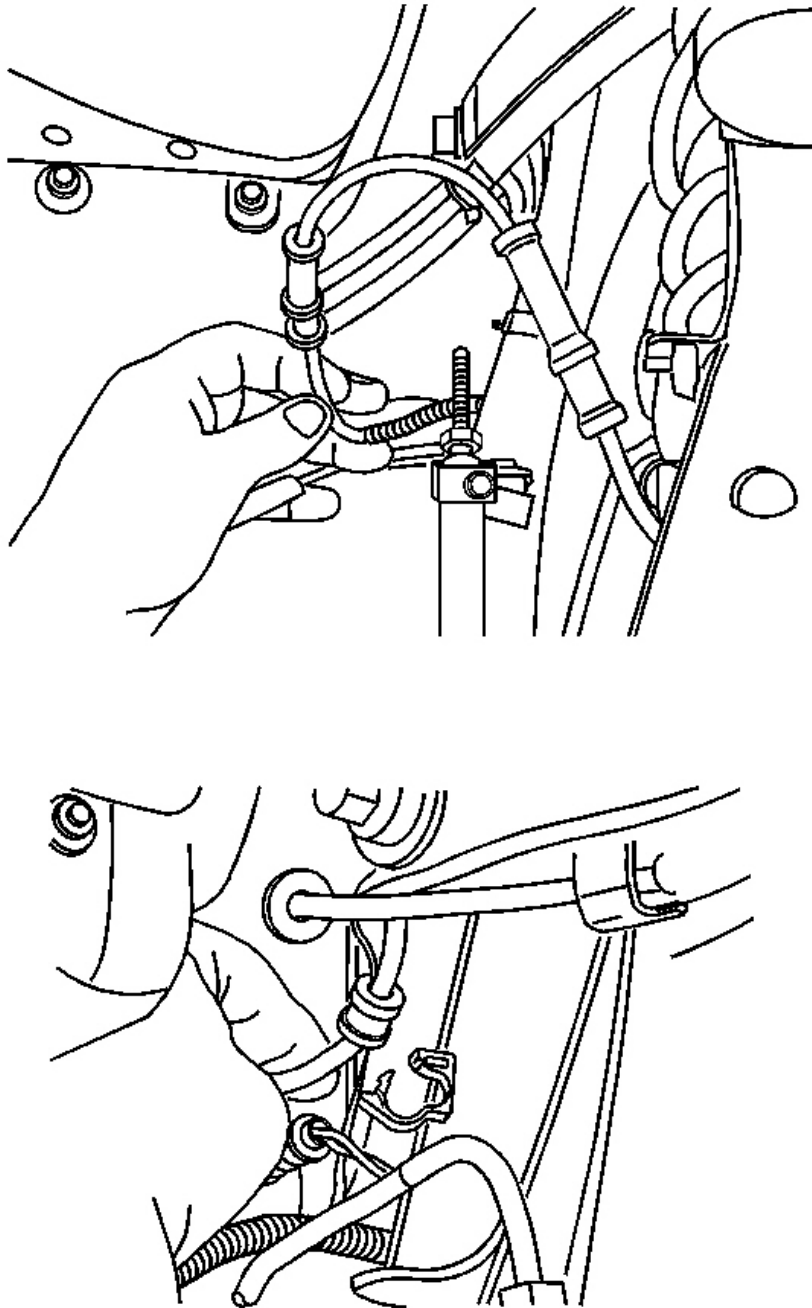
**Fig. 2: View Of Tire/Wheel Assembly, Hub Assembly & Wheel Nuts**  
Courtesy of GENERAL MOTORS CORP.

1. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .



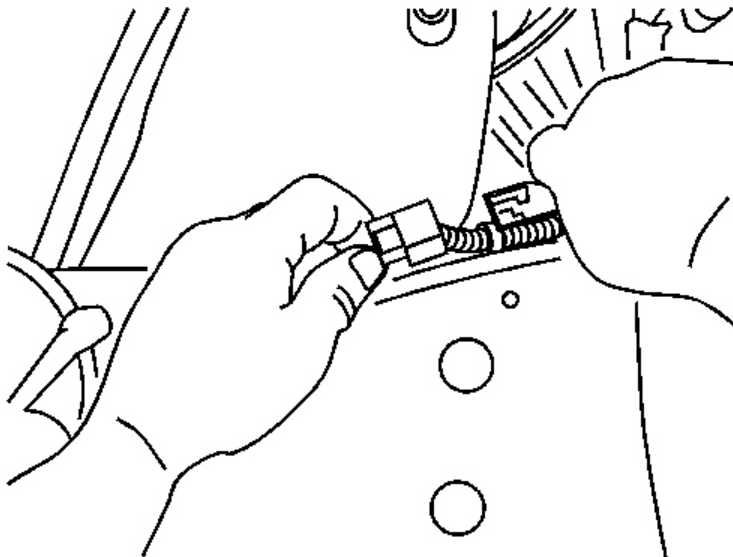
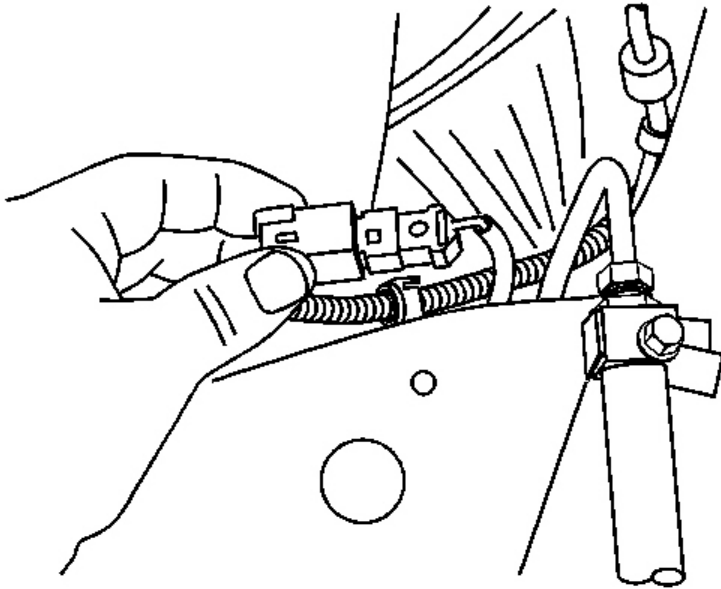
**Fig. 3: Identifying Engine Shield**  
Courtesy of GENERAL MOTORS CORP.

3. Remove the engine protection shield. Refer to **Engine Protection Shield Replacement** .



**Fig. 4: Identifying Wheel Speed Sensor Wiring Harness**  
Courtesy of GENERAL MOTORS CORP.

4. Remove the wheel speed sensor wiring harness from the retainers.

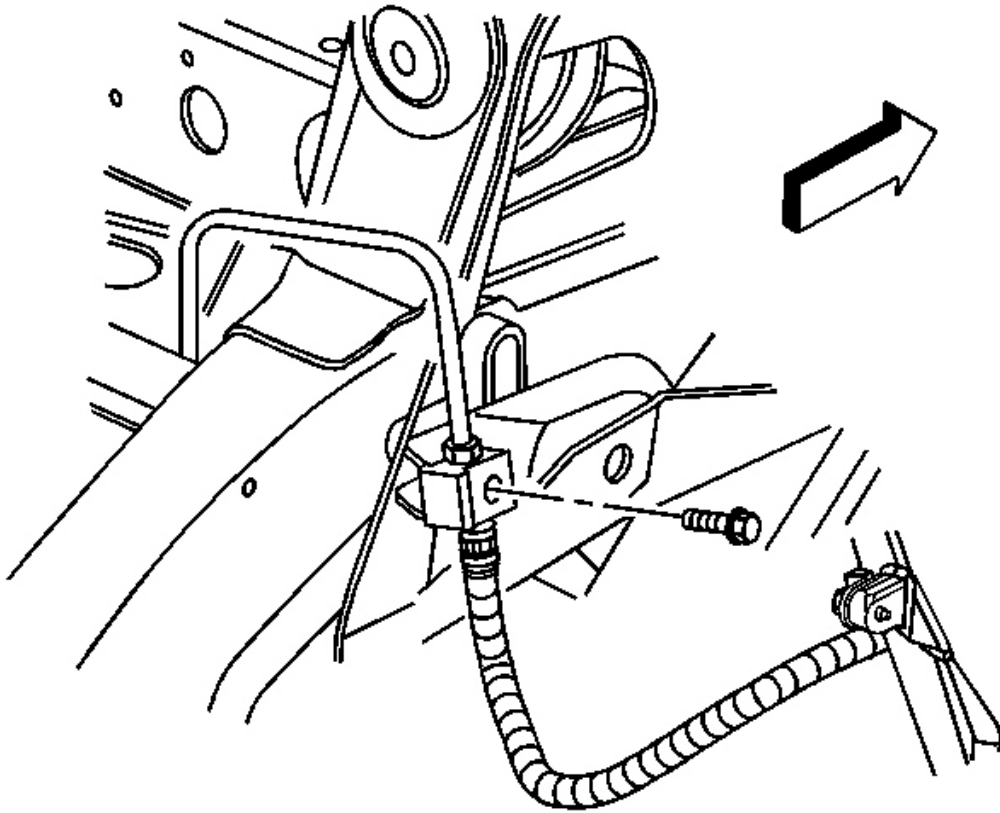


**Fig. 5: Locating Connector**

**Courtesy of GENERAL MOTORS CORP.**

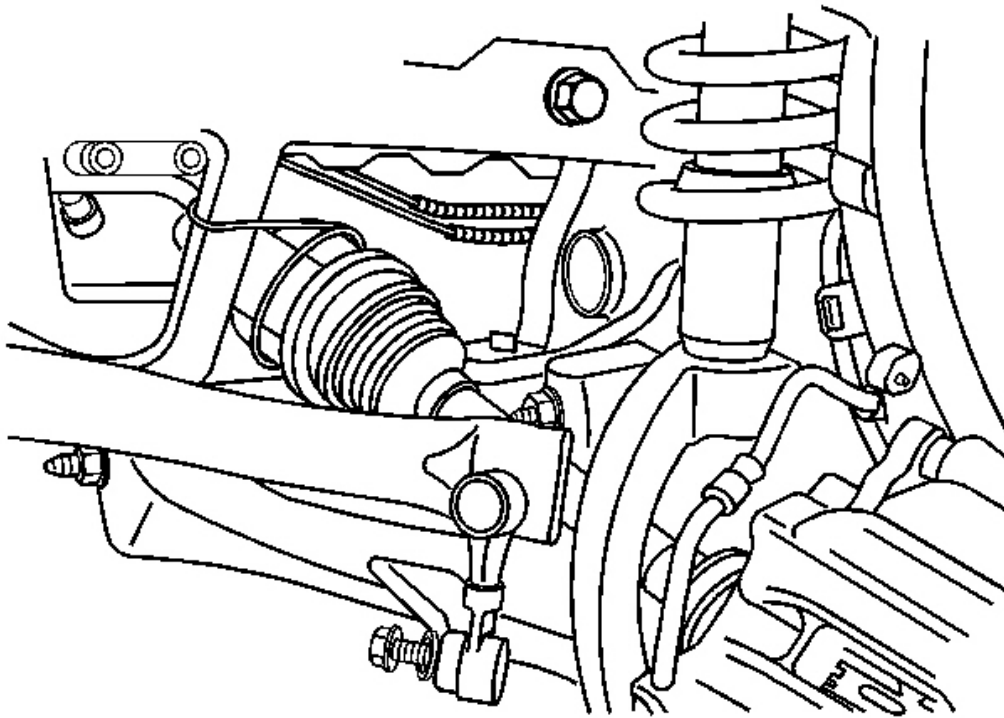
5. Disconnect the wheel speed sensor from the harness.





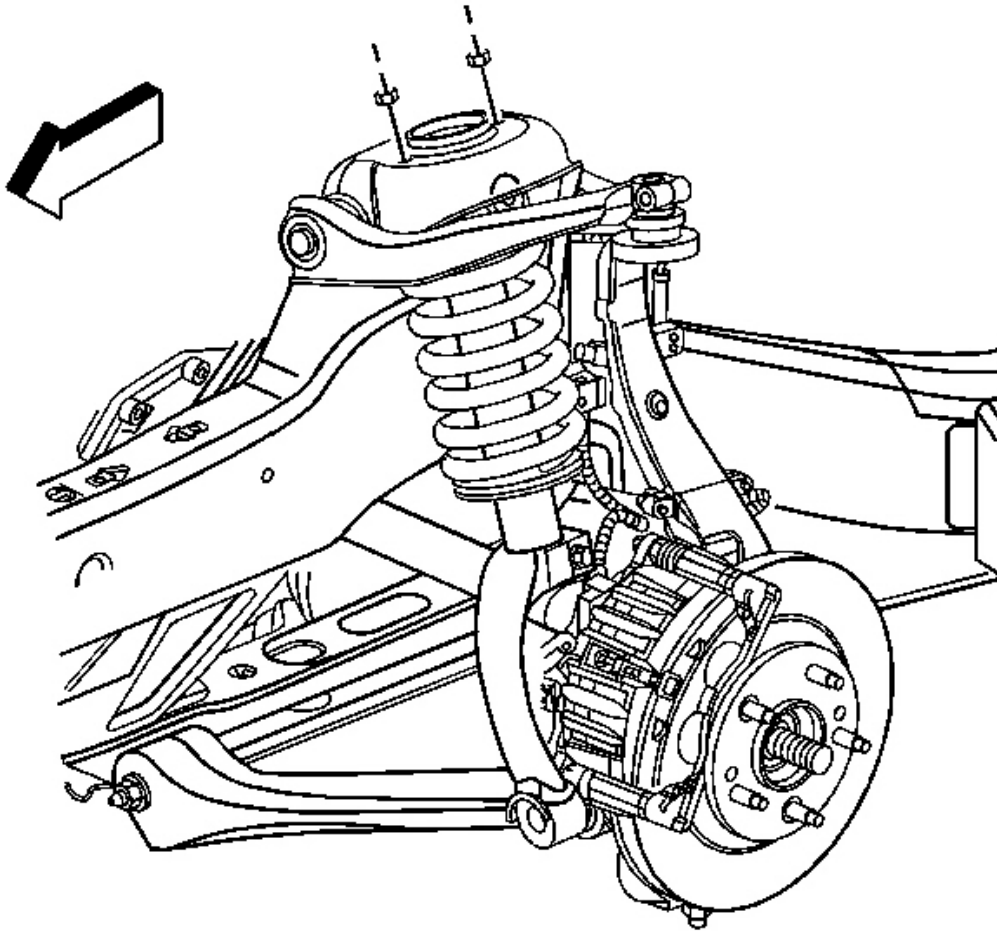
**Fig. 6: Front Brake Hose Retaining Bolt**  
Courtesy of GENERAL MOTORS CORP.

6. Remove the retaining bolt for the front brake hose.



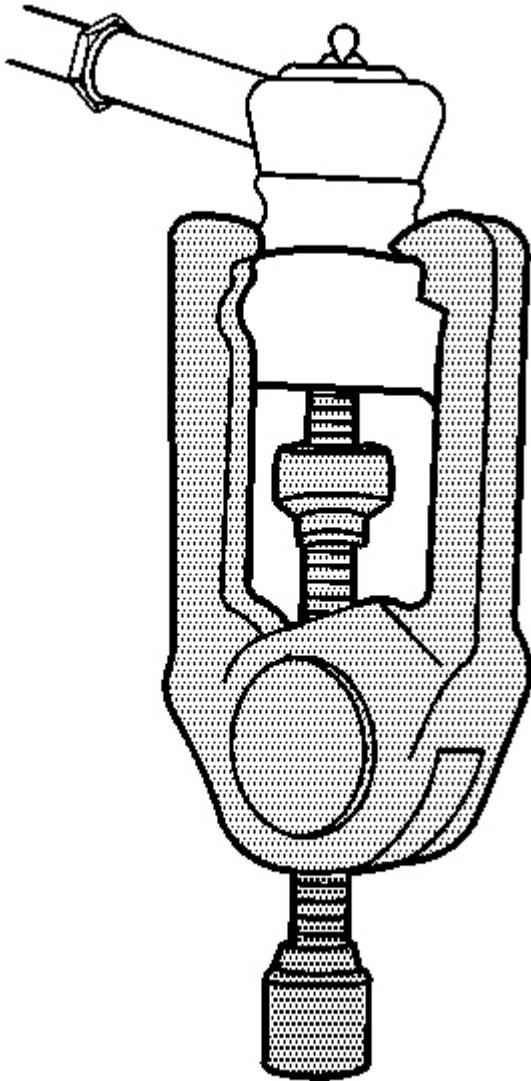
**Fig. 7: View Of Lower Control Arm**  
Courtesy of GENERAL MOTORS CORP.

7. Remove the front stabilizer bar link from the lower control arm. Refer to **Stabilizer Shaft Link Replacement** .



**Fig. 8: View Of Upper Shock Module Retaining Nuts**  
Courtesy of GENERAL MOTORS CORP.

8. Remove the upper shock module retaining from the shock tower.

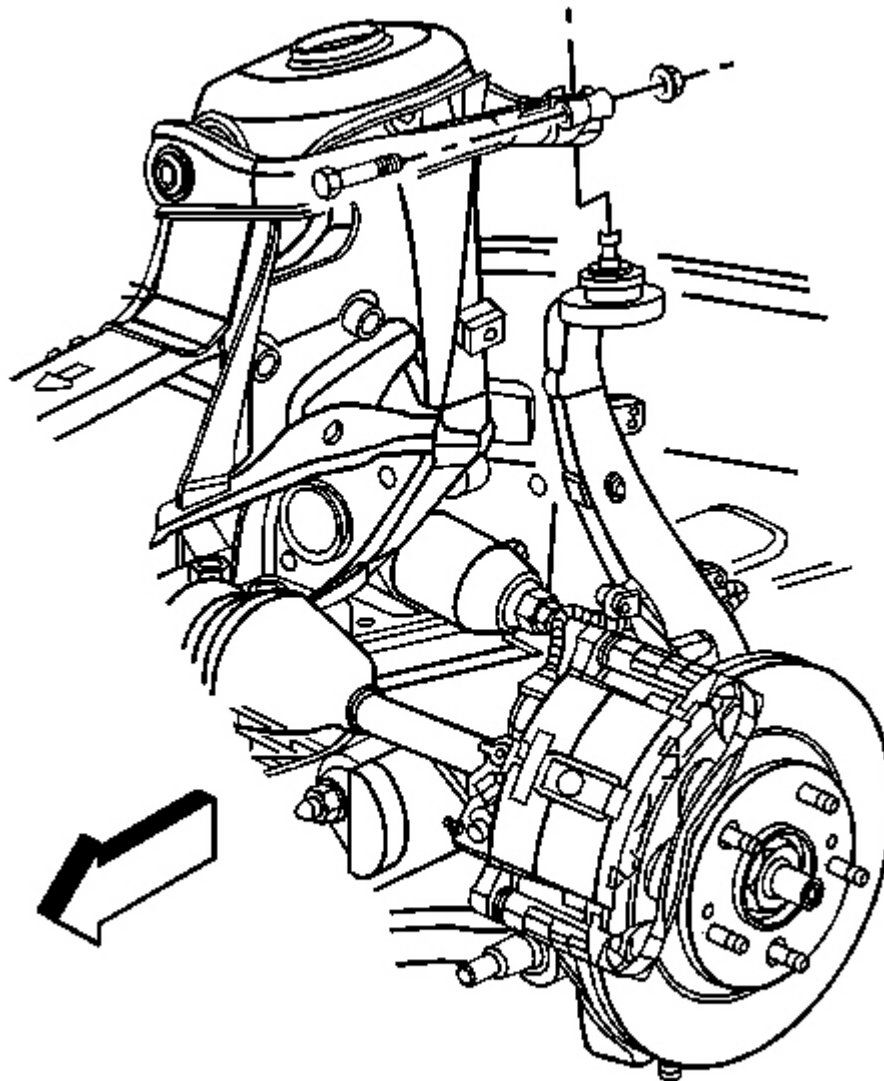


**Fig. 9: Using Special Tool To Separate Outer Tie Rod From Steering Knuckle**  
Courtesy of GENERAL MOTORS CORP.

9. Remove the tie rod end from the steering knuckle. Refer to **Rack and Pinion Outer Tie Rod End Replacement** .

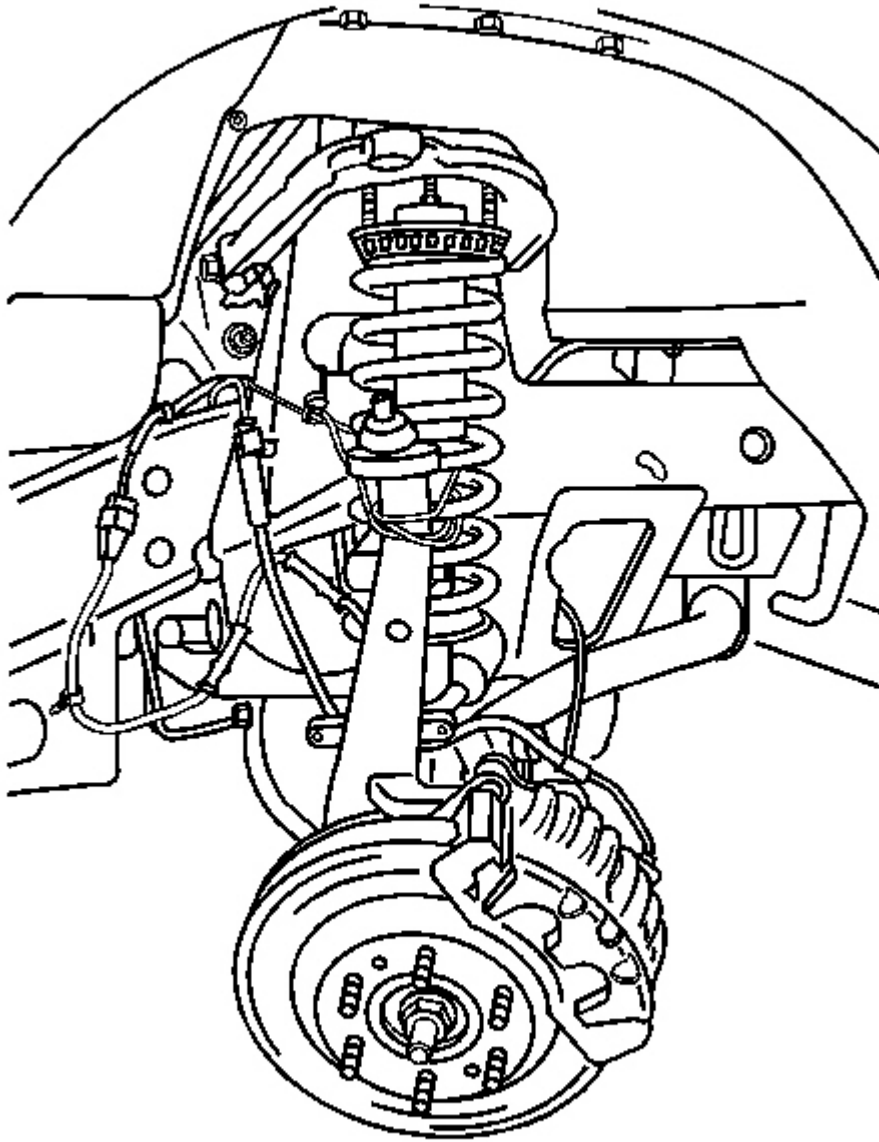
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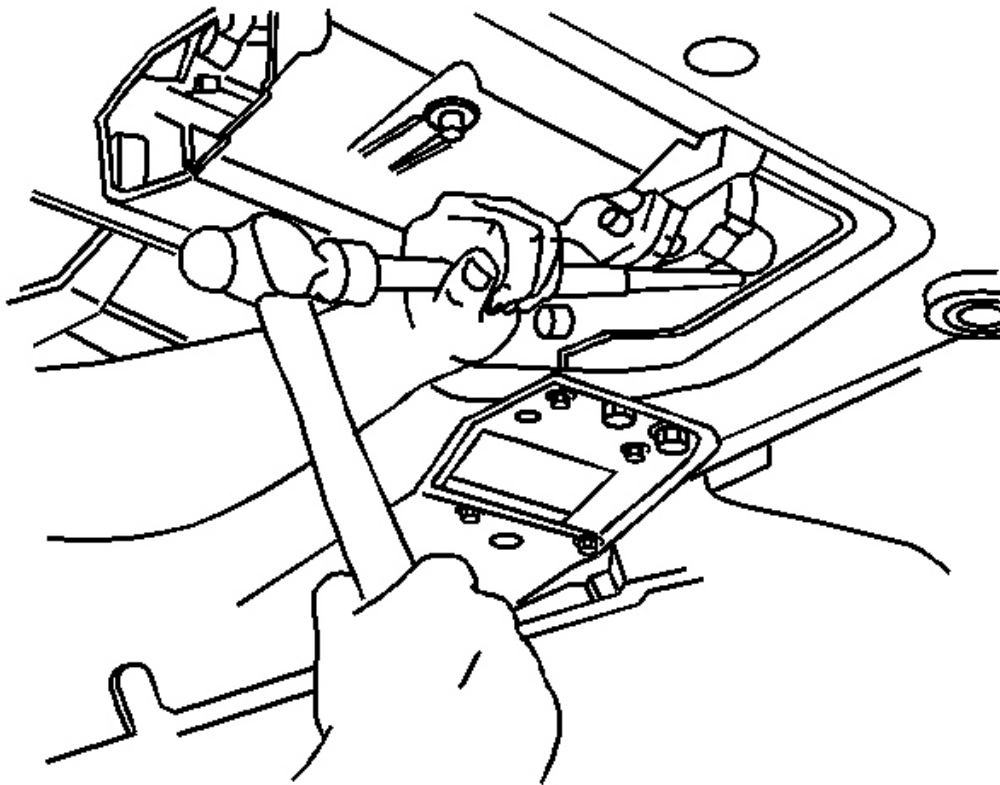
**Fig. 10: View Of Upper Control Arm To Steering Knuckle Pinch Bolt & Nut**  
**Courtesy of GENERAL MOTORS CORP.**

10. Remove the left and right upper ball joint pinch bolt and nut.
11. Remove the shock module from the shock tower.
12. Remove the steering knuckle from the upper control arm.
13. Remove the front wheel drive axle from the steering knuckle.



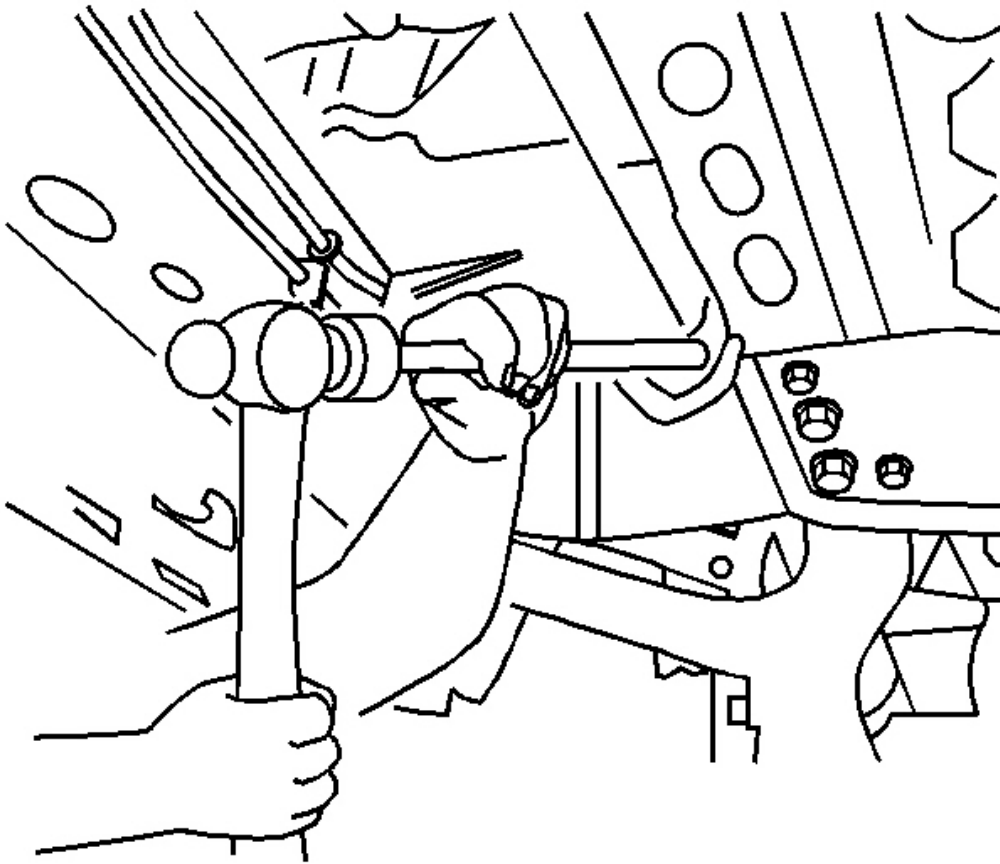
**Fig. 11: View Of Shock Module/Steering Knuckle**  
**Courtesy of GENERAL MOTORS CORP.**

14. Using mechanics wire or hook, support the front shock module/steering knuckle to the frame.



**Fig. 12: Removing Left Side Wheel Drive Shaft**  
Courtesy of GENERAL MOTORS CORP.

15. Disconnect the left side wheel drive shaft from the differential carrier assembly by placing a brass drift against the tripot housing. Firmly strike the brass drift outward from the case with a hammer. Strike hard enough to overcome the snap ring pressure holding in the shaft.

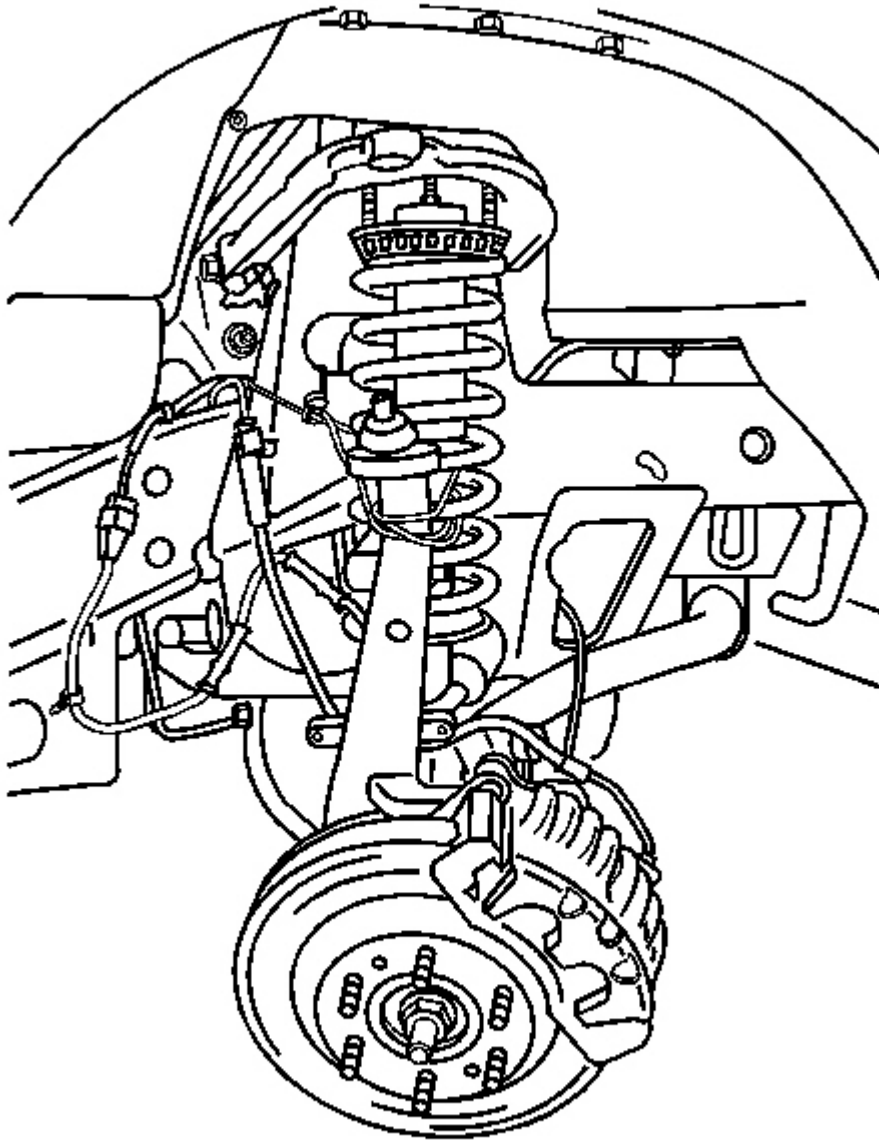


**Fig. 13: Removing Right Side Wheel Drive Shaft**  
**Courtesy of GENERAL MOTORS CORP.**

16. Disconnect the right side wheel drive shaft from the clutch fork housing assembly by placing a brass drift against the tripot housing. Firmly strike the brass drift outward from the case with a hammer. Strike hard enough to overcome the snap ring pressure holding in the shaft.
17. Pull the wheel drive shaft straight out from the differential carrier assembly or the clutch fork housing assembly.
18. Remove the wheel drive shaft.

**Installation Procedure**

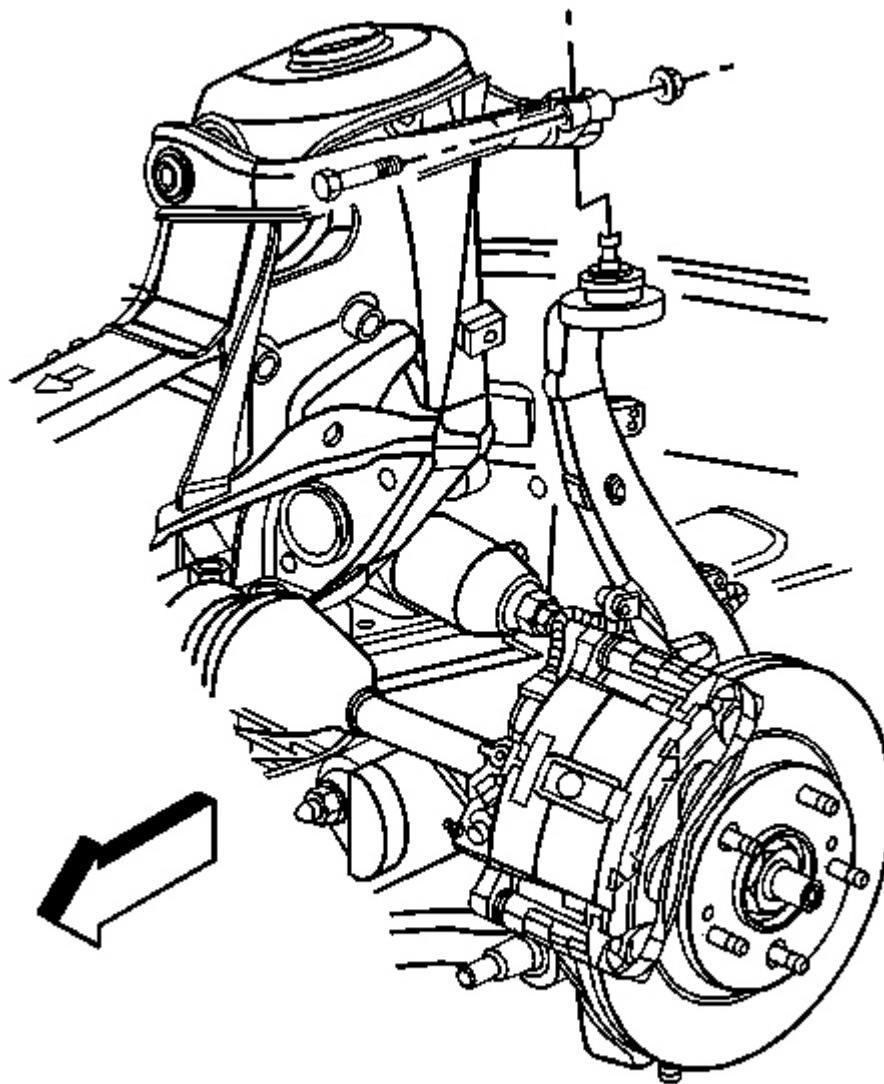




**Fig. 14: View Of Shock Module/Steering Knuckle**  
**Courtesy of GENERAL MOTORS CORP.**

1. Install the front wheel drive axle front differential assembly.
2. Remove the mechanics wire or hook from the front shock module/steering
3. Install the front wheel drive axle in the steering knuckle.

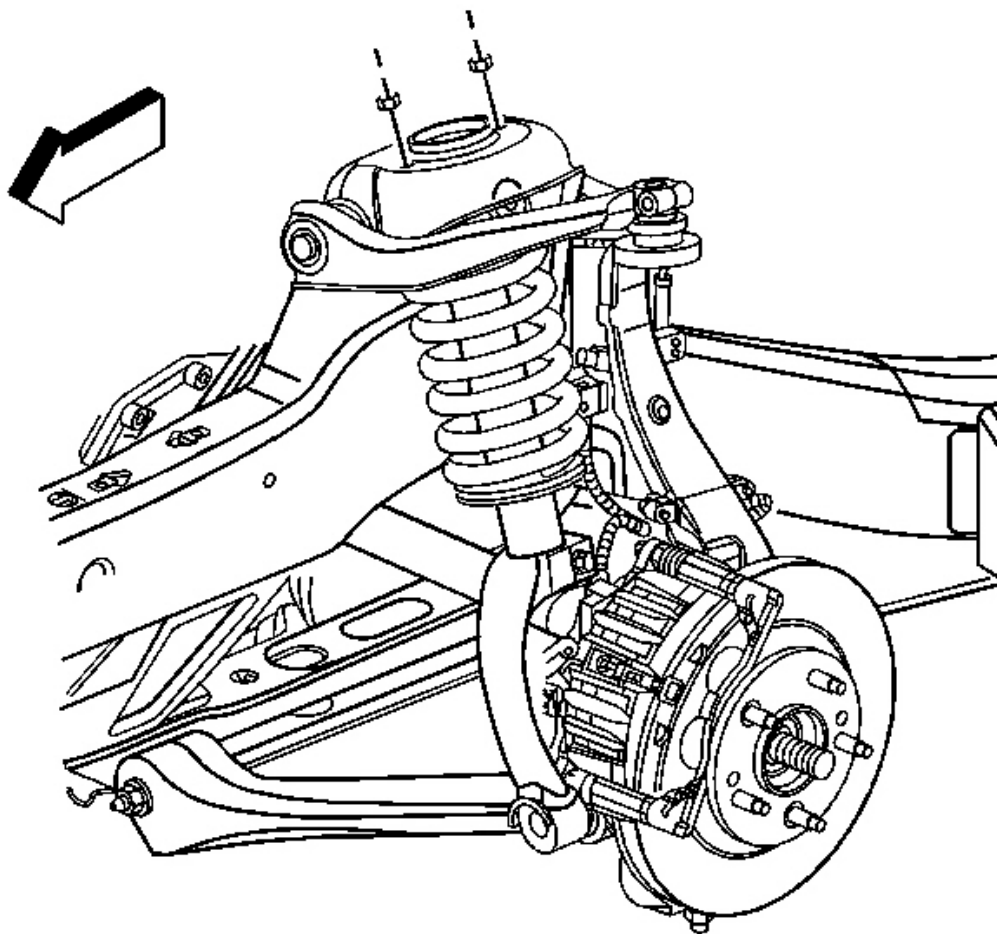
4. Position the shock module in the shock tower.
5. Install the shock module into the shock tower
6. Install the upper ball joint in the upper control arm.



**Fig. 15: View Of Upper Control Arm To Steering Knuckle Pinch Bolt & Nut**  
Courtesy of GENERAL MOTORS CORP.

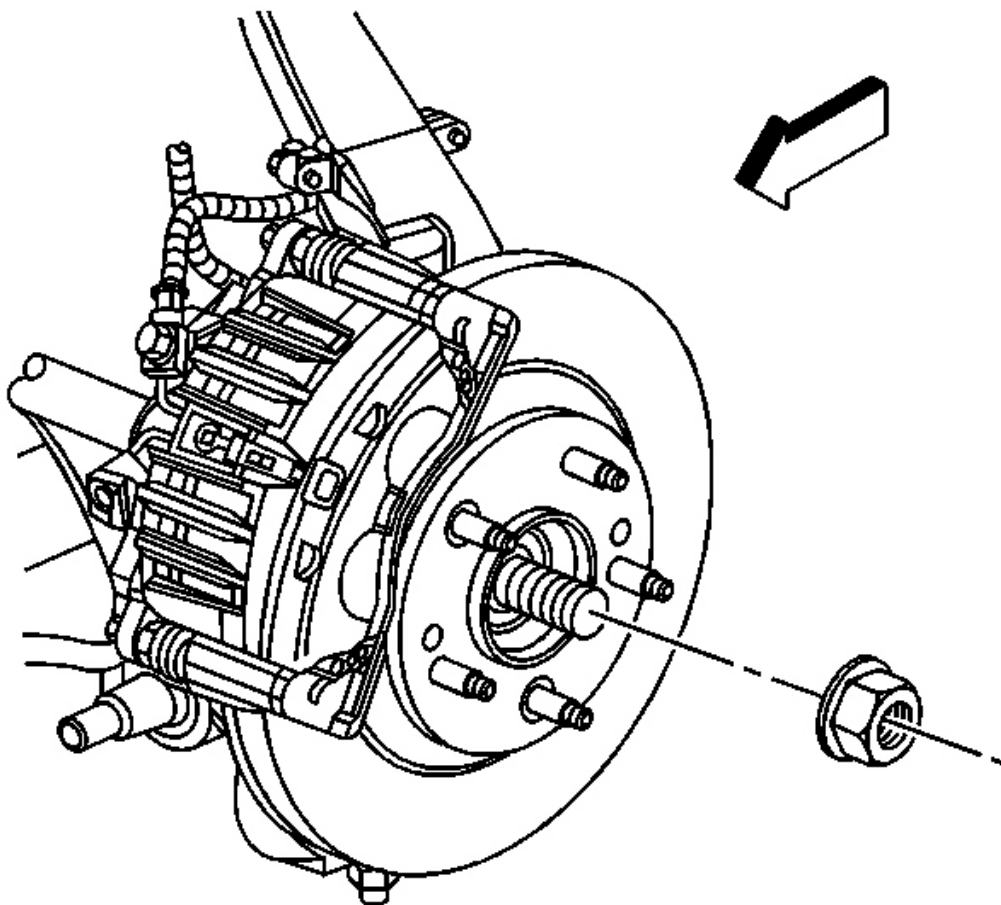
7. Install the pinch bolt and nut. For the proper torque specification, refer to **Steering Knuckle**

**Replacement (4WD) .**



**Fig. 16: View Of Upper Shock Module Retaining Nuts**  
Courtesy of GENERAL MOTORS CORP.

8. Install the shock module retaining nuts. For the proper torque specification, refer to **Shock Absorber and Spring Assembly Replacement** .
9. Install the front wheel drive shaft retaining.

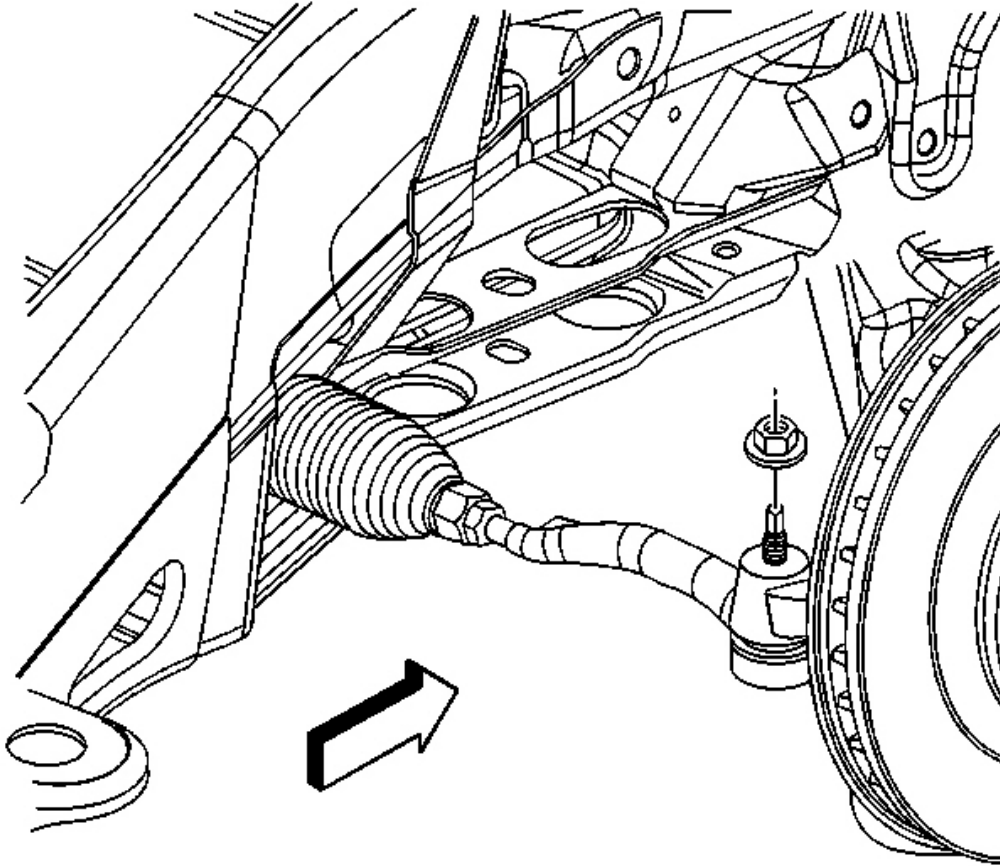


**Fig. 17: View of Wheel Drive Shaft Nut**  
Courtesy of GENERAL MOTORS CORP.

**NOTE:** Refer to Fastener Notice .

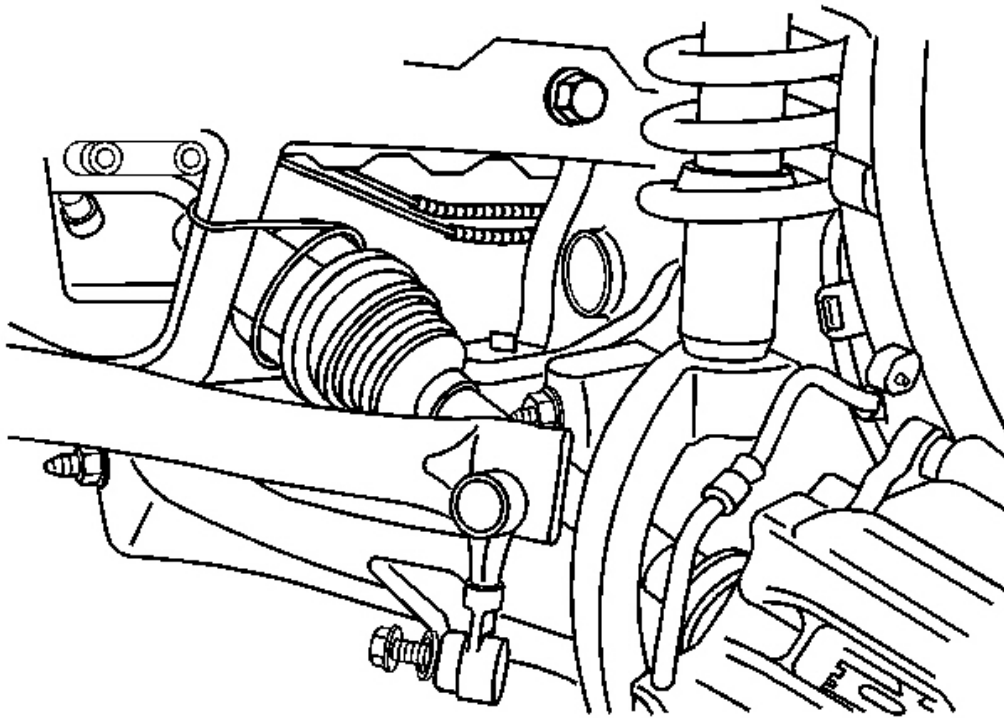
10. Install the new front wheel drive shaft retaining nut.

**Tighten:** Tighten the wheel drive shaft retaining nut to 140 N.m (103 lb ft).



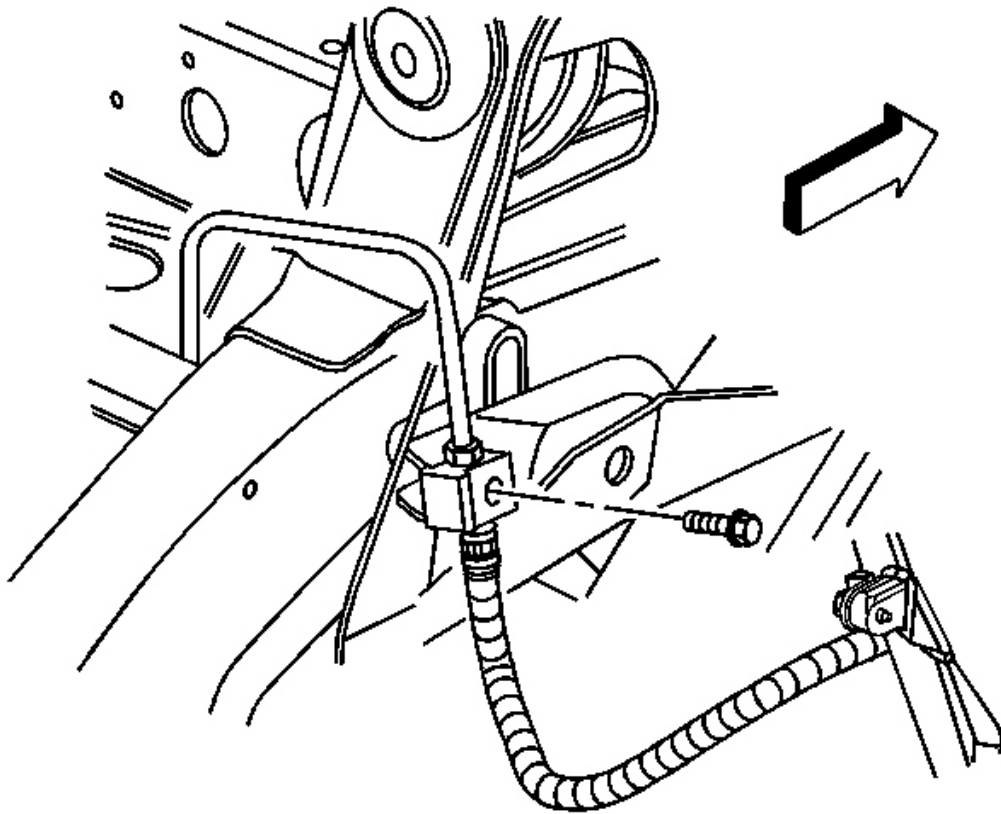
**Fig. 18: View Of Tie Rod Retaining Nut**  
Courtesy of GENERAL MOTORS CORP.

11. Install the tie rod end in the steering knuckle. Refer to **Rack and Pinion Outer Tie Rod End Replacement** .



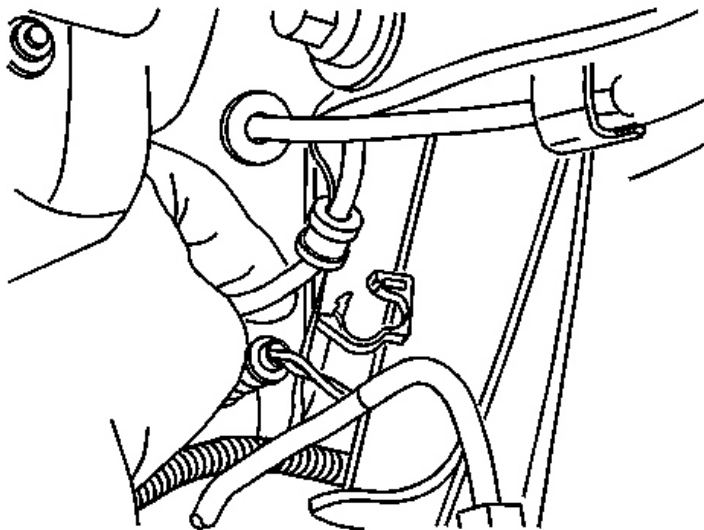
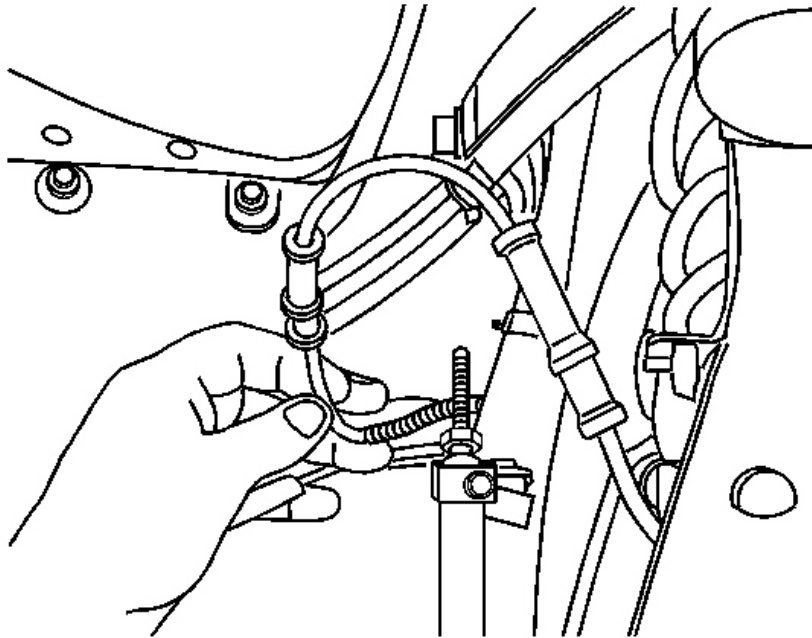
**Fig. 19: View Of Lower Control Arm**  
Courtesy of GENERAL MOTORS CORP.

12. Install the stabilizer bar link. Refer to **Stabilizer Shaft Link Replacement** .



**Fig. 20: Front Brake Hose Retaining Bolt**  
Courtesy of GENERAL MOTORS CORP.

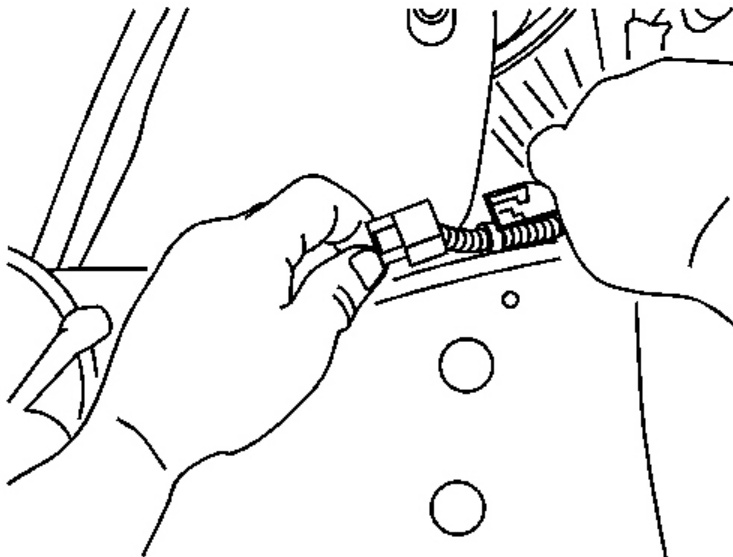
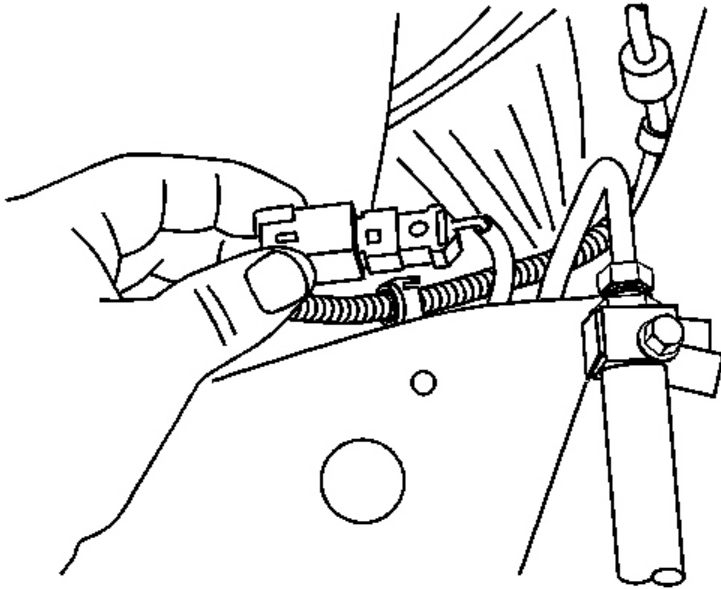
13. Install the front brake hose retaining bolt. Refer to **Front Brake Hose Replacement** .



**Fig. 21: Identifying Wheel Speed Sensor Wiring Harness**  
**Courtesy of GENERAL MOTORS CORP.**

14. Install the front wheel speed sensor wiring harness in the retainers.

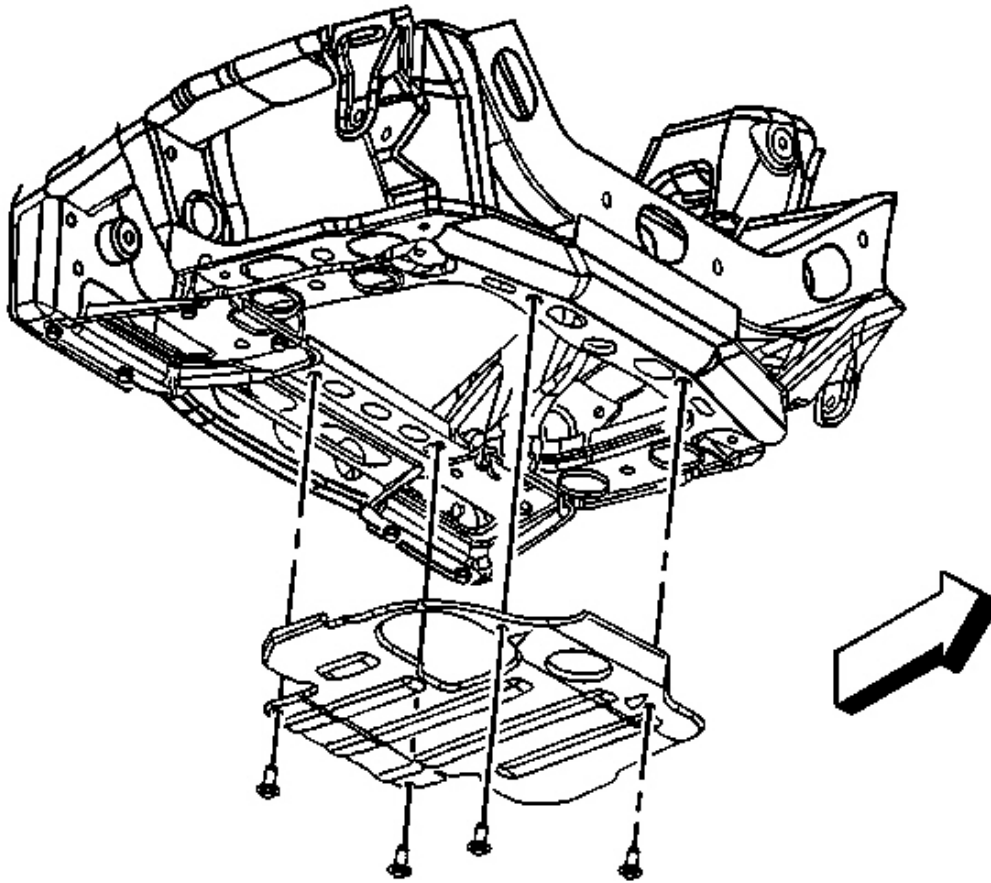




**Fig. 22: Locating Connector**

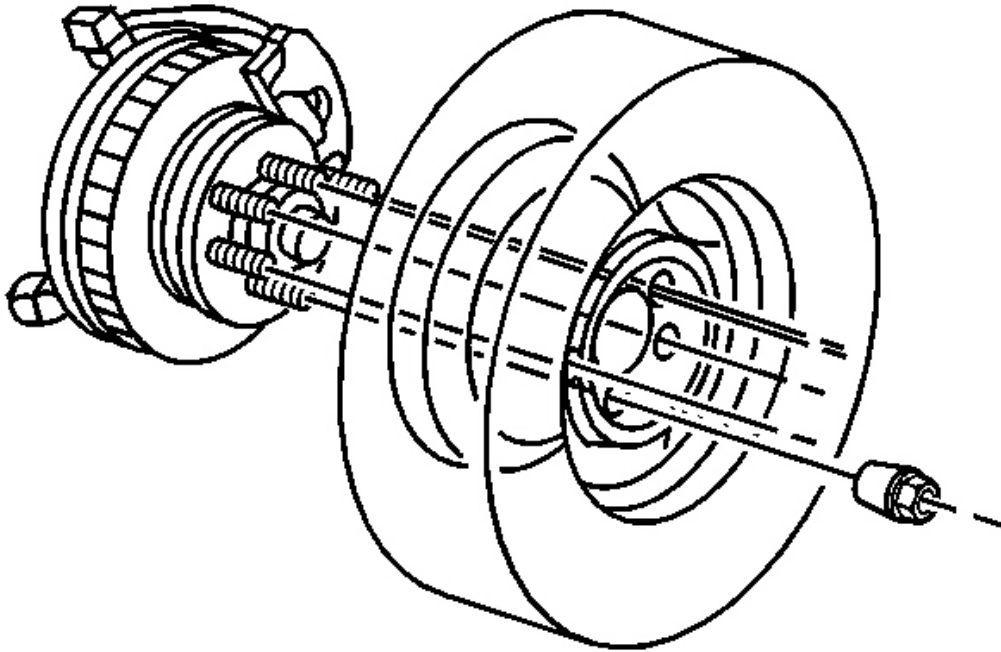
**Courtesy of GENERAL MOTORS CORP.**

15. Reconnect the front wheel speed sensors electrical connector.



**Fig. 23: Identifying Engine Shield**  
Courtesy of GENERAL MOTORS CORP.

16. Install the engine protection shield. Refer to **Engine Protection Shield Replacement** .



**Fig. 24: View Of Tire/Wheel Assembly, Hub Assembly & Wheel Nuts**  
Courtesy of GENERAL MOTORS CORP.

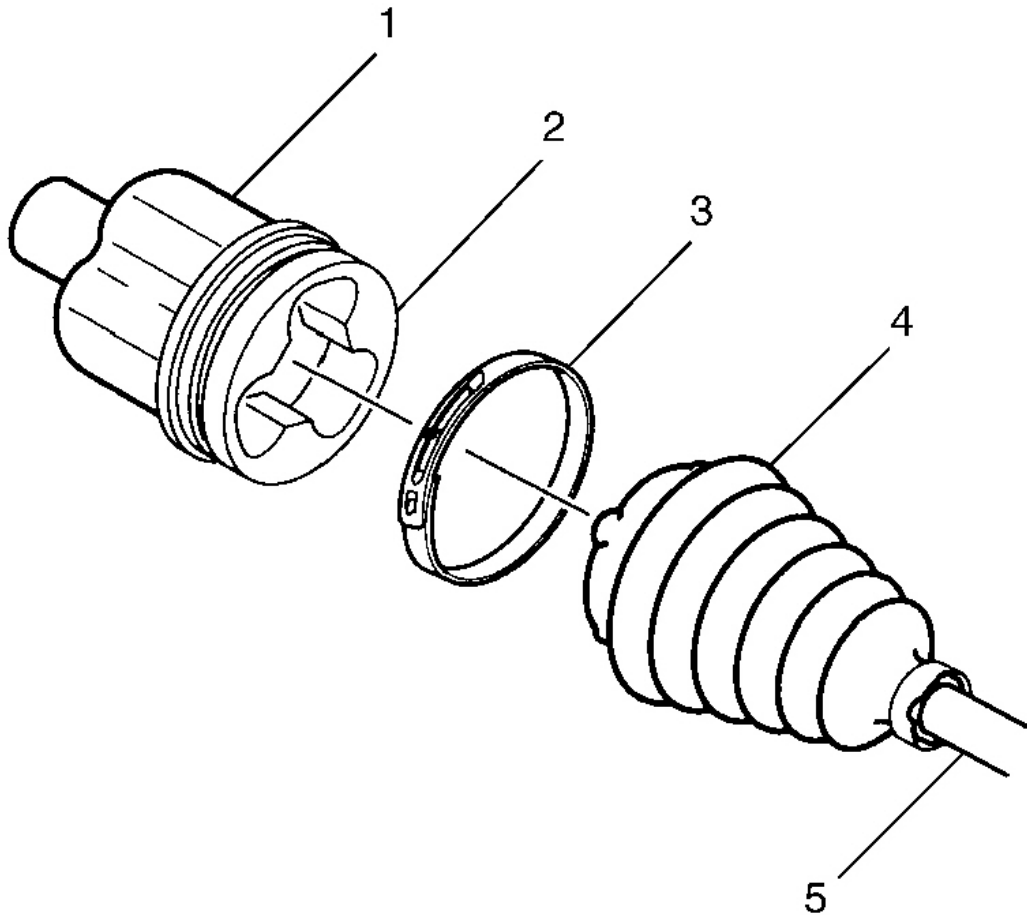
17. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
18. Lower the vehicle. Refer to **Lifting and Jacking the Vehicle** .

## **WHEEL DRIVE SHAFT INNER JOINT & BOOT REPLACEMENT**

### **Tools Required**

- **J 8059** Snap Ring Pliers. See **Special Tools**.
- **J 35566** Drive Axle Seal Clamp Plier
- **J 41048** Drive Axle Swage Ring Clamp Tool. See **Special Tools**.

### **Disassembly Procedure**

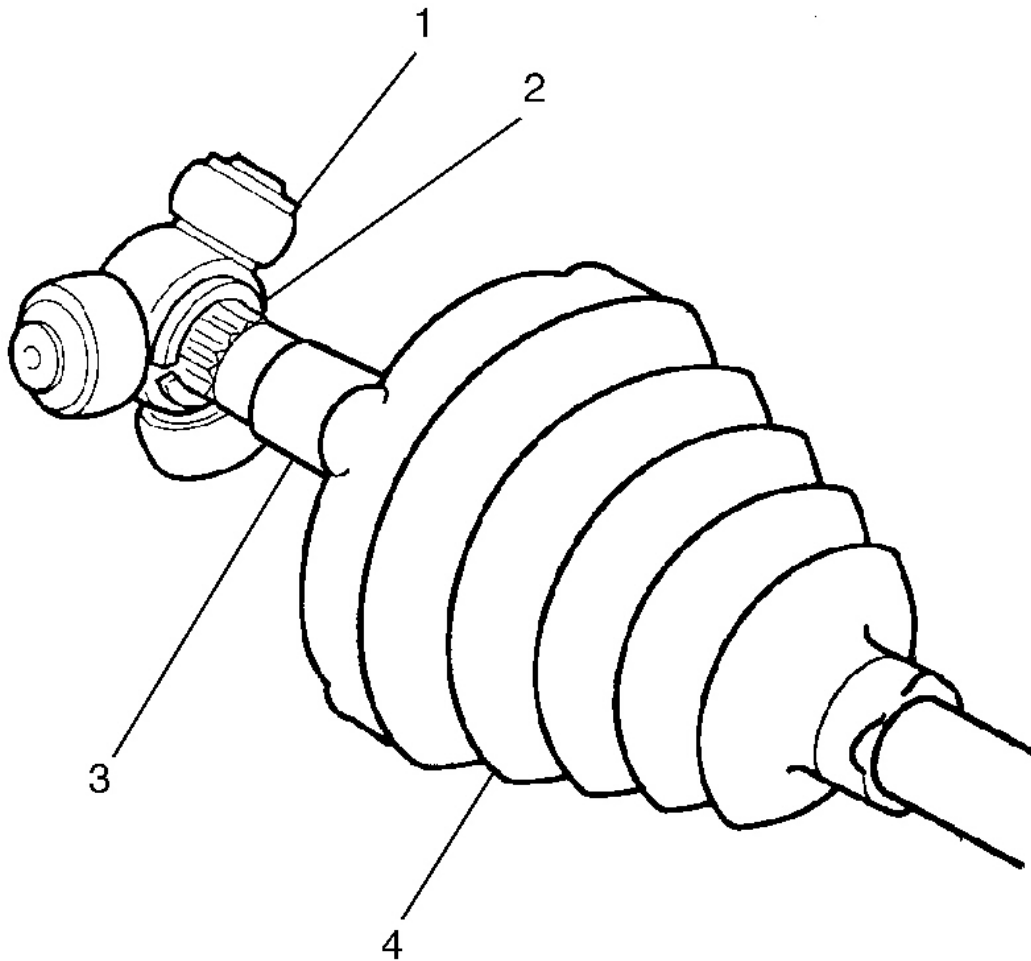


**Fig. 25: Tripot Housing, Bushing & Halfshaft Bar**  
Courtesy of GENERAL MOTORS CORP.

1. Remove the clamp from the boot with a pair of side cutters.

**IMPORTANT: Do not damage the tripot housing (1).**

2. Use a hand grinder to cut through the swage ring.
3. Remove the tripot housing (1) and the trilobal tripot bushing (2) from the halfshaft bar (5).
4. Thoroughly degrease the housing (1) and the spider assembly.
5. Discard the tripot bushing.
6. Use 320 grit 3M cloth, or equivalent, to remove any evident corrosion in the transmission sealing surface.
7. Allow the housing (1) and the spider assembly to dry.



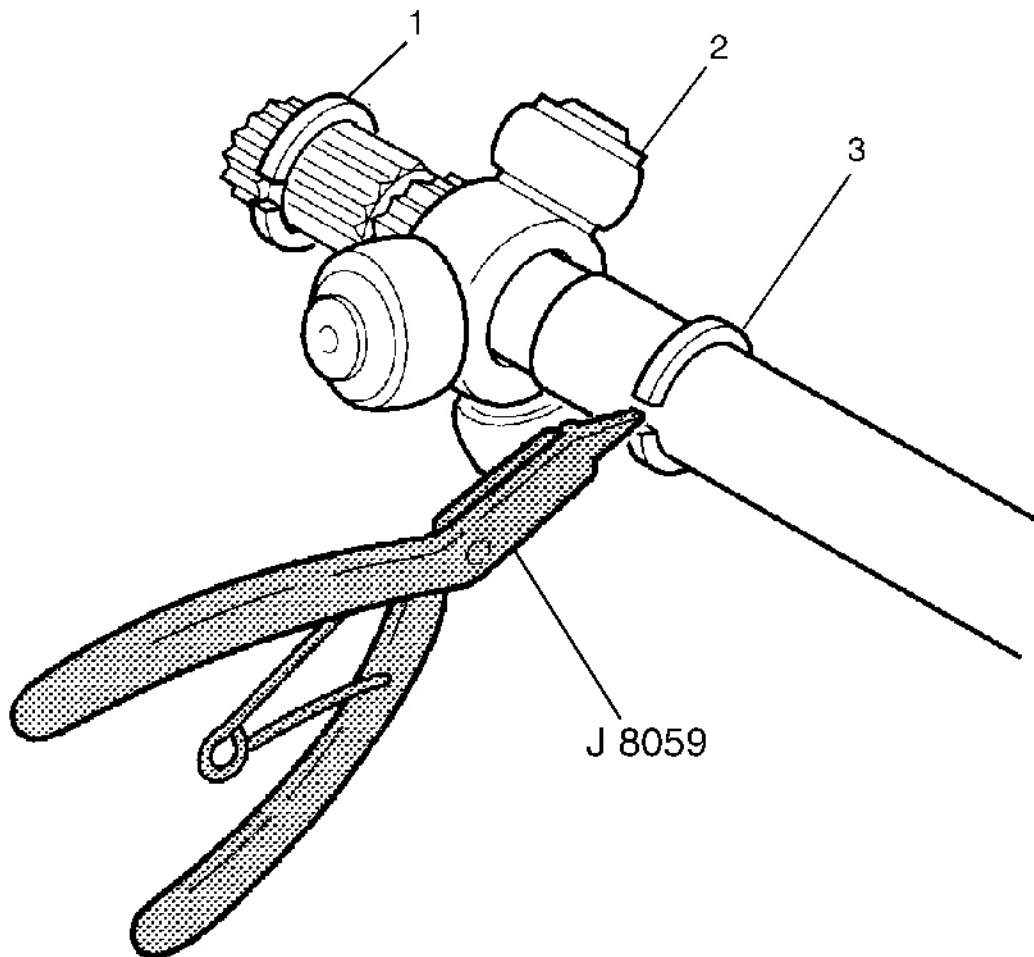
**Fig. 26: Identifying Tripot Spider Assembly, Halfshaft Bar & Tripot Boot**  
Courtesy of GENERAL MOTORS CORP.

**IMPORTANT:** Handle the tripot spider assembly (1) with care. Tripot balls and needle rollers may separate from the spider trunnion if the tripot balls and needle rollers are not handled carefully.

8. Compress the tripot boot (4) onto the halfshaft bar (3), away from the spider assembly (1).

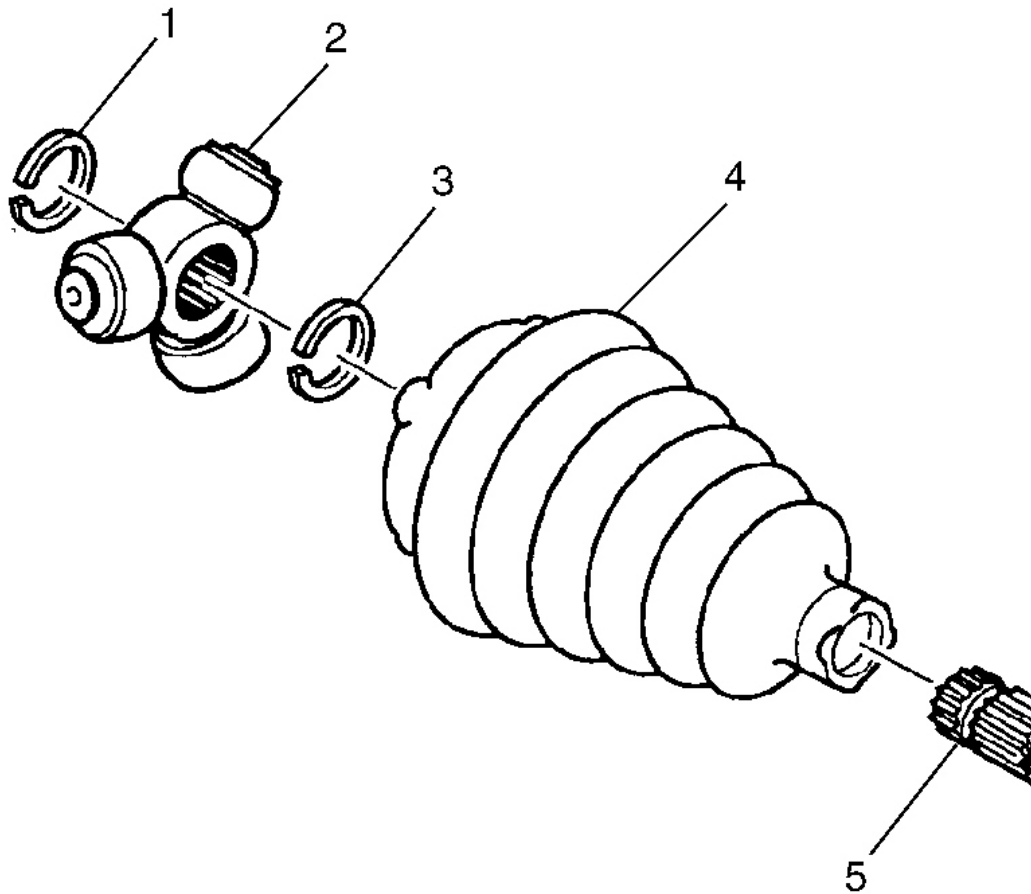
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**Fig. 27: Identifying Spacer Rings & Snap Ring Pliers**  
Courtesy of GENERAL MOTORS CORP.

9. Spread the spacer rings (1, 3) using **J 8059** , or equivalent, to remove the spider assembly (2). See **Special Tools**.

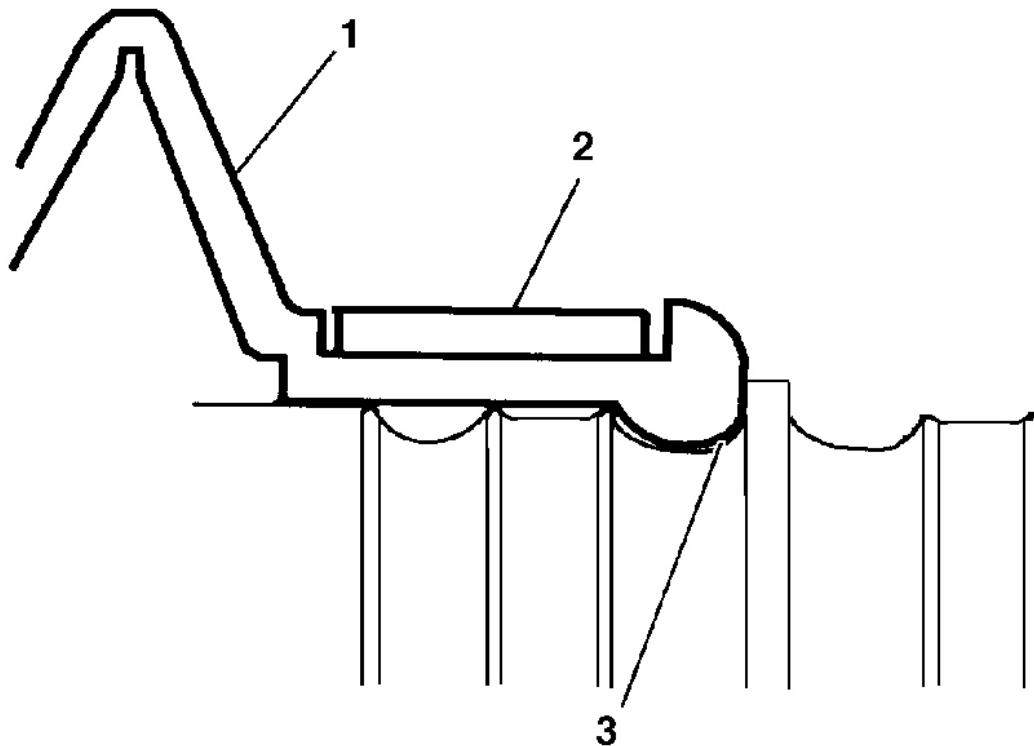


**Fig. 28: View Of Spider Assembly, Rings & Tripot Boot**  
**Courtesy of GENERAL MOTORS CORP.**

10. Remove the following items:
  - The spacer ring (1)
  - The spider assembly (2)
  - The second spacer ring (3)
  - The tripot boot (4)
11. Discard the tripot boot and spacer rings.
12. Clean the halfshaft bar. Use a wire brush to remove any rust in the boot mounting area grooves.
13. Inspect the following items:
  - The needle rollers
  - The needle bearings
  - The trunnion

14. Inspect the tripot housing for unusual wear, cracks, or other damage.
15. Use the appropriate kit to replace any damaged parts.

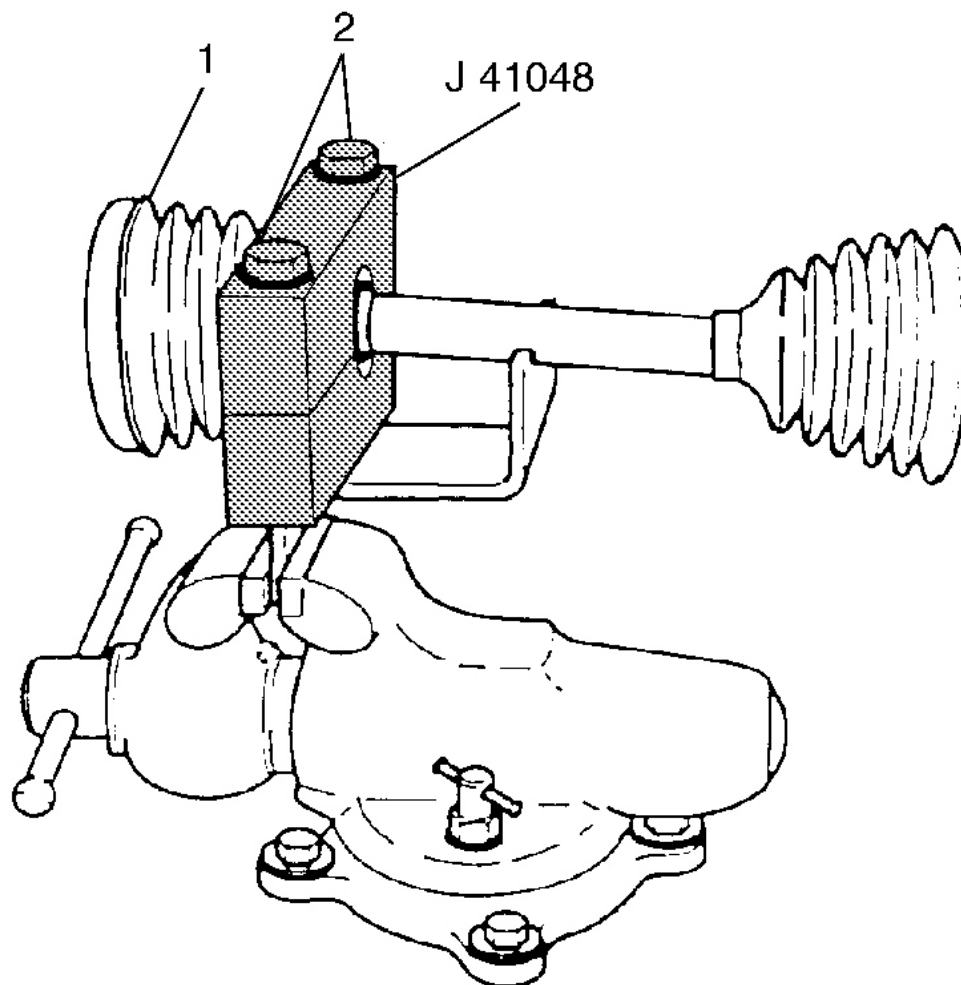
**Assembly Procedure**



**Fig. 29: Positioning Small End Of Joint Seal Into Joint Seal Groove**  
Courtesy of GENERAL MOTORS CORP.

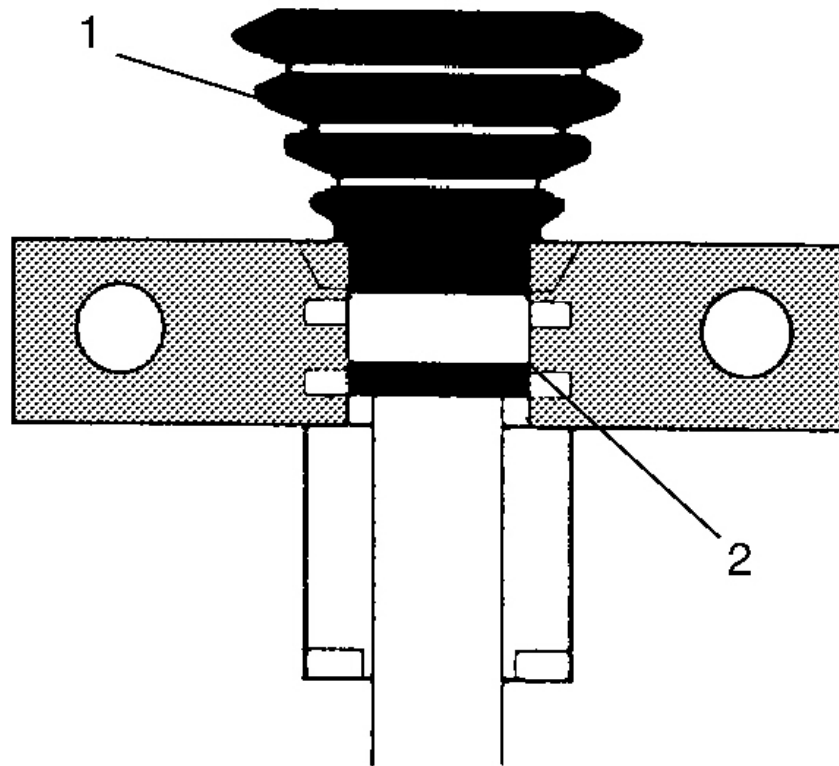
1. Position the new swage clamp onto the neck of the boot. Do not swage.
2. Slide the new small swage clamp (2) and the boot (1) to the proper position on the halfshaft bar (3).





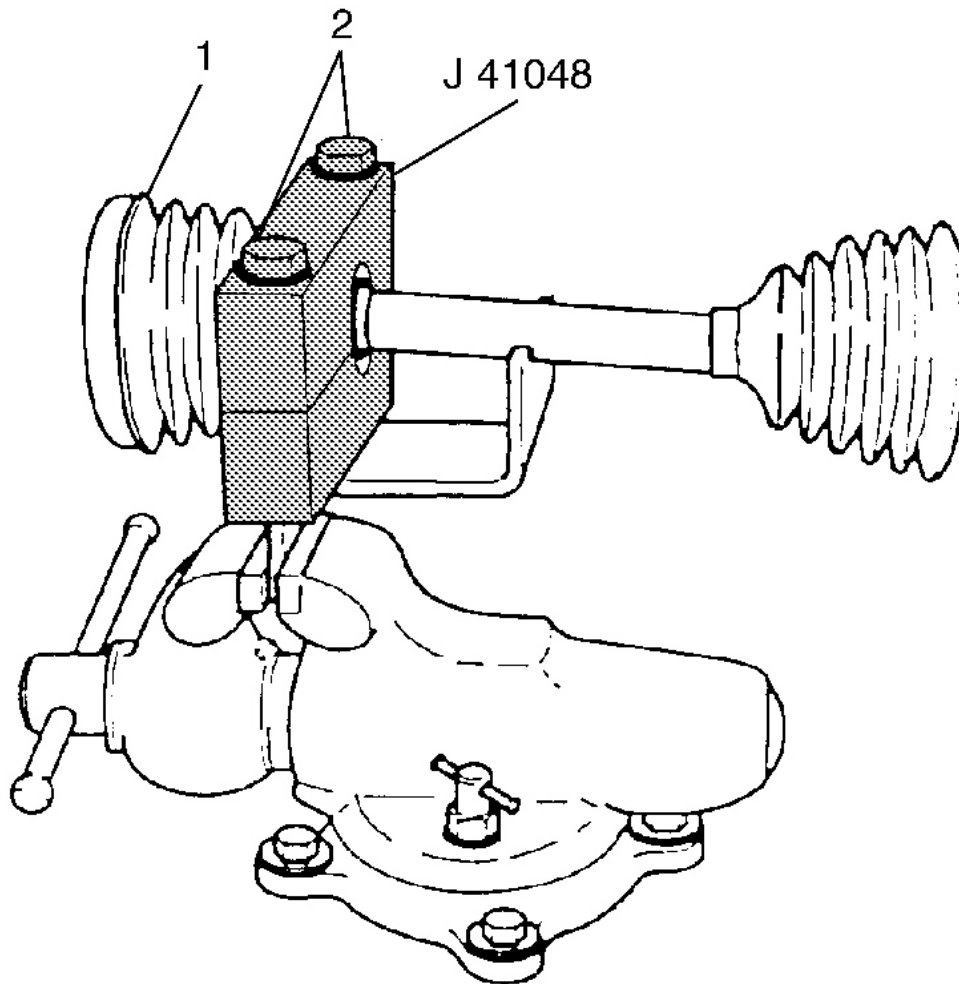
**Fig. 30: Swaging Retaining Clamp Ring**  
Courtesy of GENERAL MOTORS CORP.

3. Position the neck of the boot in the boot groove on the halfshaft bar.
4. In order to swage the swage clamp, position the inboard end (1) of the halfshaft assembly in **J 41048** . See **Special Tools**.



**Fig. 31: Identifying Halfshaft Inboard Seal & Swage Ring**  
Courtesy of GENERAL MOTORS CORP.

5. Align the swage clamp (2) within **J 41048** . See **Special Tools**.



**Fig. 32: Swaging Retaining Clamp Ring**  
Courtesy of GENERAL MOTORS CORP.

6. Place the top half of the **J 41048** on the bottom half. See **Special Tools**.
7. Inspect to make sure there are no pinch points on the boot before proceeding.
8. Insert the bolts (2).
9. Tighten the bolts (2) by hand until snug.

**NOTE:** Refer to **Fastener Notice** .

10. Align the following items:
  - The boot

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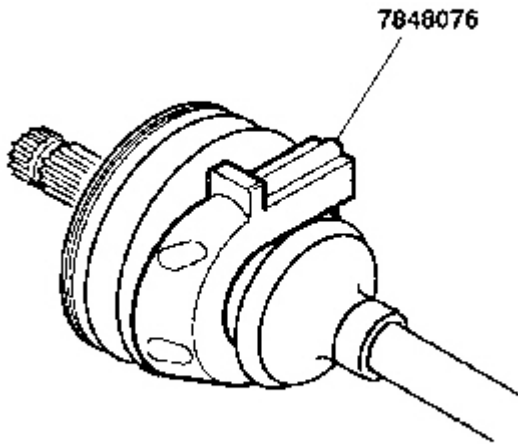
- The halfshaft bar
- The swage clamp

**Tighten:** Each bolt 180 degrees at a time, using a ratchet wrench. Alternate between each bolt until both sides are bottomed.

11. Loosen the bolts.
12. Separate the dies.

**IMPORTANT:** If deformities exist in the swage clamp, place the swage clamp back into J 41048 . See Special Tools. Ensure the swage clamp covers the whole swaging area. Re-swage the swage clamp.

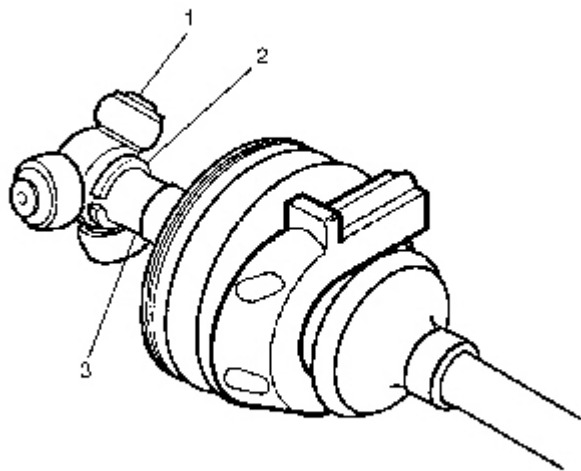
13. Inspect the swage clamp for any "lip" deformities.



**Fig. 33: Identifying Convolute Retainer Over Boot**  
Courtesy of GENERAL MOTORS CORP.

**IMPORTANT:** Assemble the joint with the convolute retainer in the correct position.  
Assemble the joint to meet the specified dimension to avoid boot damage.

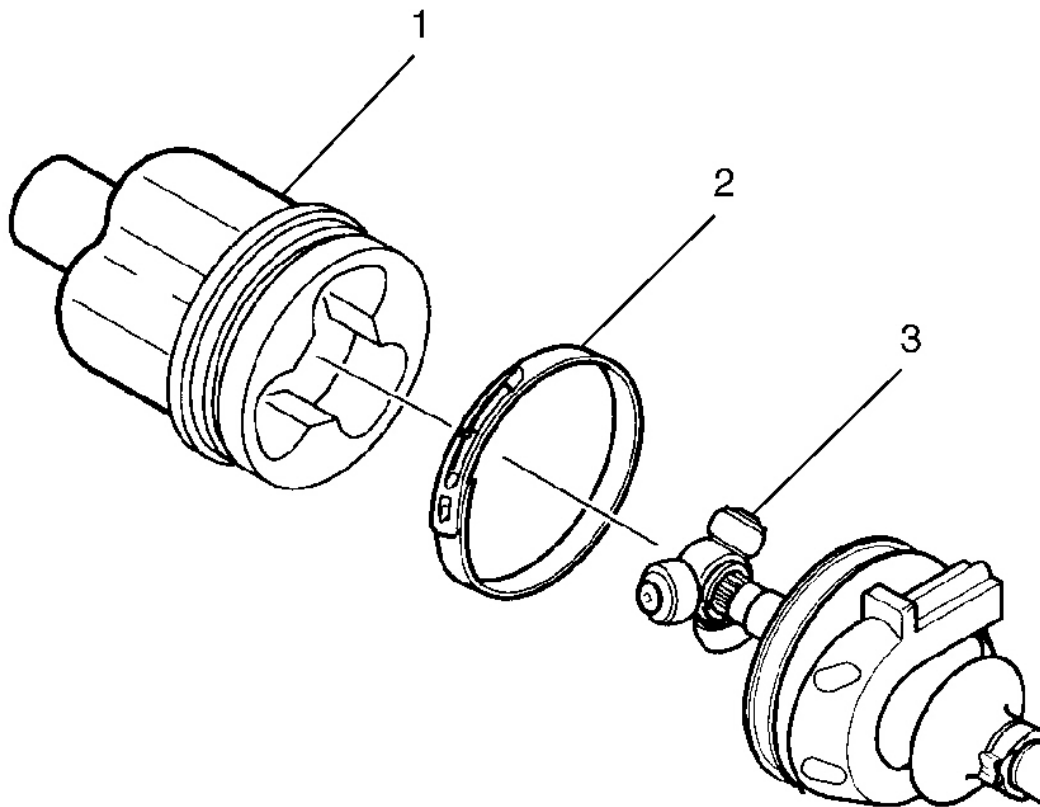
14. Install the convolute retainer over the boot capturing 4 convolutions.



**Fig. 34: Identifying Spider Assembly, Spacer Ring & Halfshaft Bar**  
Courtesy of GENERAL MOTORS CORP.

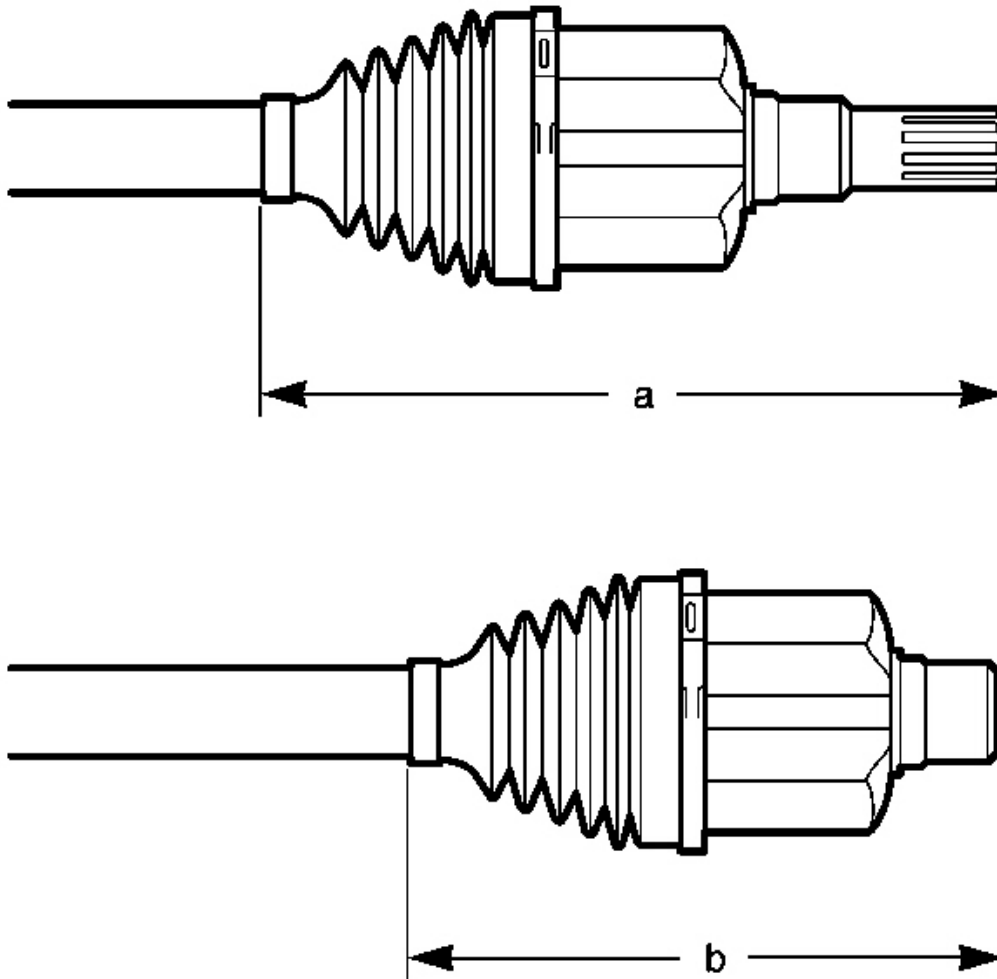
**IMPORTANT: Ensure that the rings are fully seated.**

15. Install the spacer ring (2) and spider assembly (1) onto the halfshaft bar (3).
16. Install the other spacer ring in the groove at the end of the halfshaft bar. Ensure that the rings are fully seated.



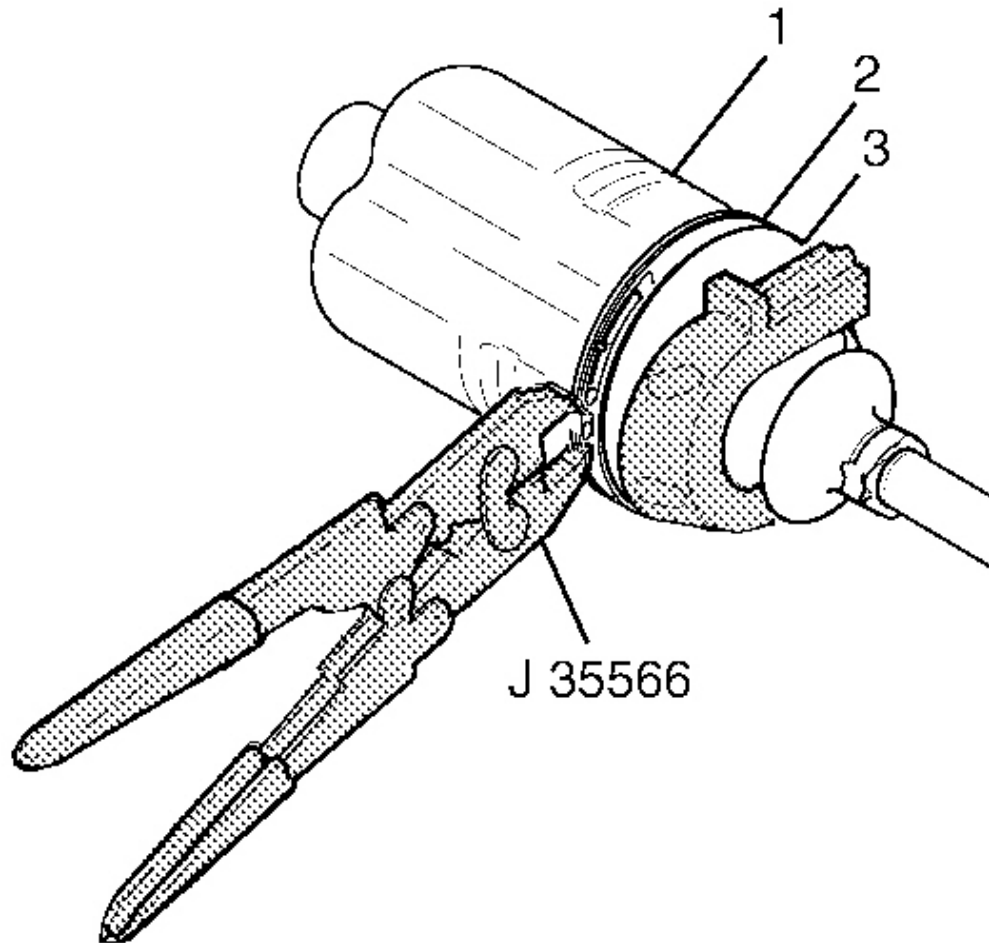
**Fig. 35: Expanded View Of Tripot Housing**  
**Courtesy of GENERAL MOTORS CORP.**

17. Pack the boot and housing with the grease supplied in the kit. The amount of grease supplied in this kit has been pre-measured for this application.
18. Place the large retaining clamp (2) on the boot.
19. Place the housing (1) and the new trilobal tripot bushing over the spider assembly (3).
20. Install the boot onto the trilobal tripot bushing.



**Fig. 36: Inspecting Inboard Stroke Position**  
Courtesy of GENERAL MOTORS CORP.

21. Inspect the inboard stroke position (see diagram).
- For male tripot housing assembly: dimension a = 280 mm (11 in).
  - For female tripot housing assembly: dimension b = 228 mm (9 in).

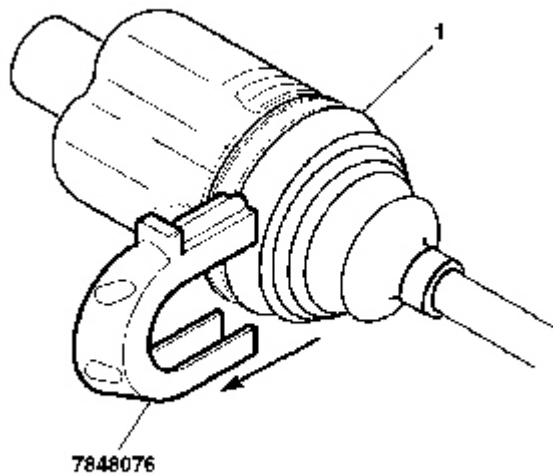


**Fig. 37: Identifying J 35566**

Courtesy of GENERAL MOTORS CORP.

22. Secure the large retaining clamp (2) and the boot (3) to the housing (1) using **J 35566** .





**Fig. 38: Identifying Boot & 7848076**  
**Courtesy of GENERAL MOTORS CORP.**

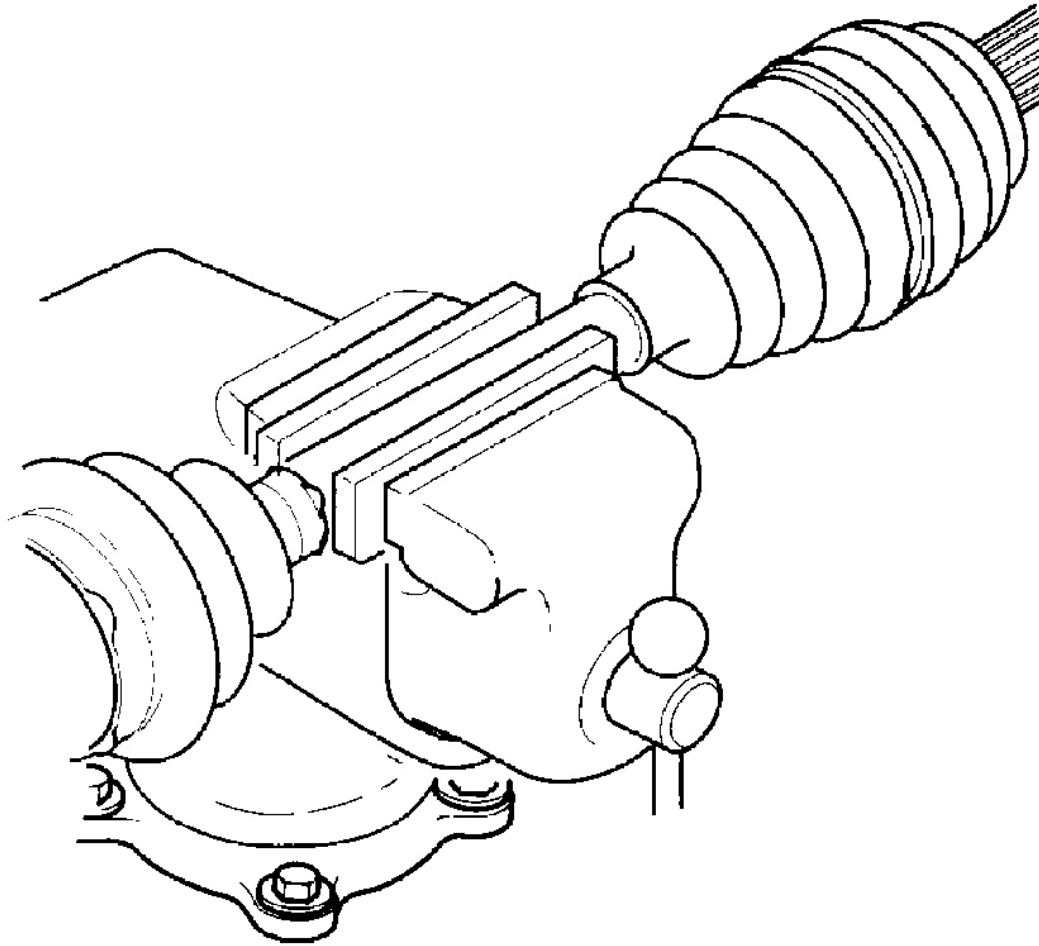
23. Remove the convolute retainer from the boot (1).

## **WHEEL DRIVE SHAFT OUTER JOINT & BOOT REPLACEMENT**

### **Tools Required**

- **J 8059** Snap Ring Pliers. See **Special Tools**.
- **J 35910** Drive Axle Seal Clamp Pliers
- **J 41048** Drive Axle Swage Ring Clamp Tool. See **Special Tools**.

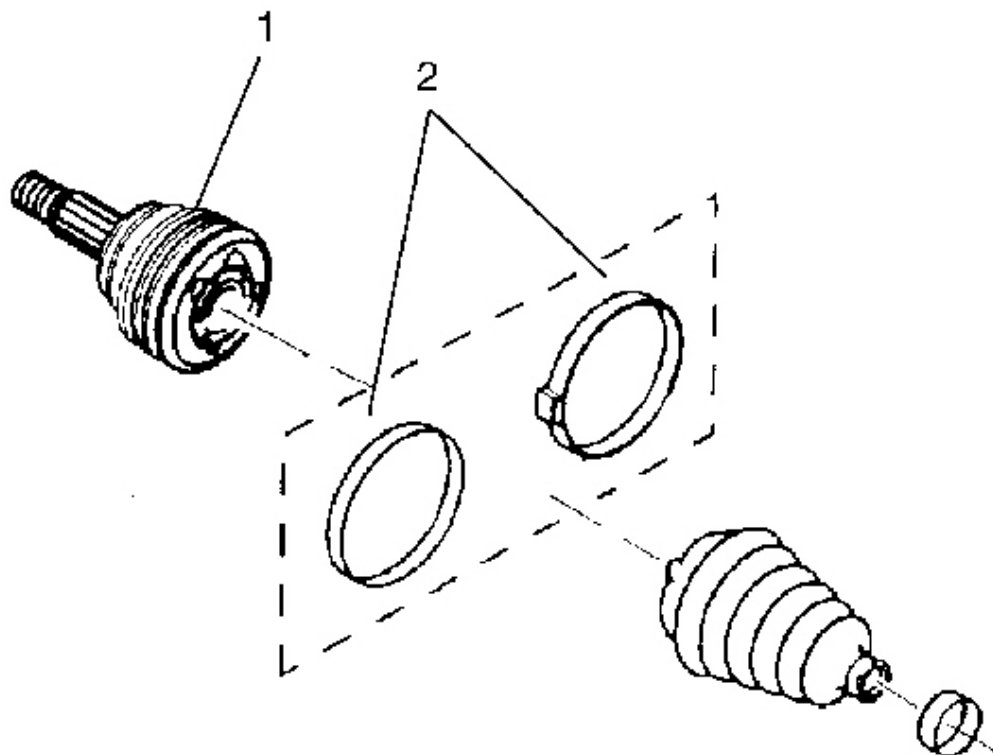
### **Disassembly Procedure**



**Fig. 39: Securing Halfshaft**

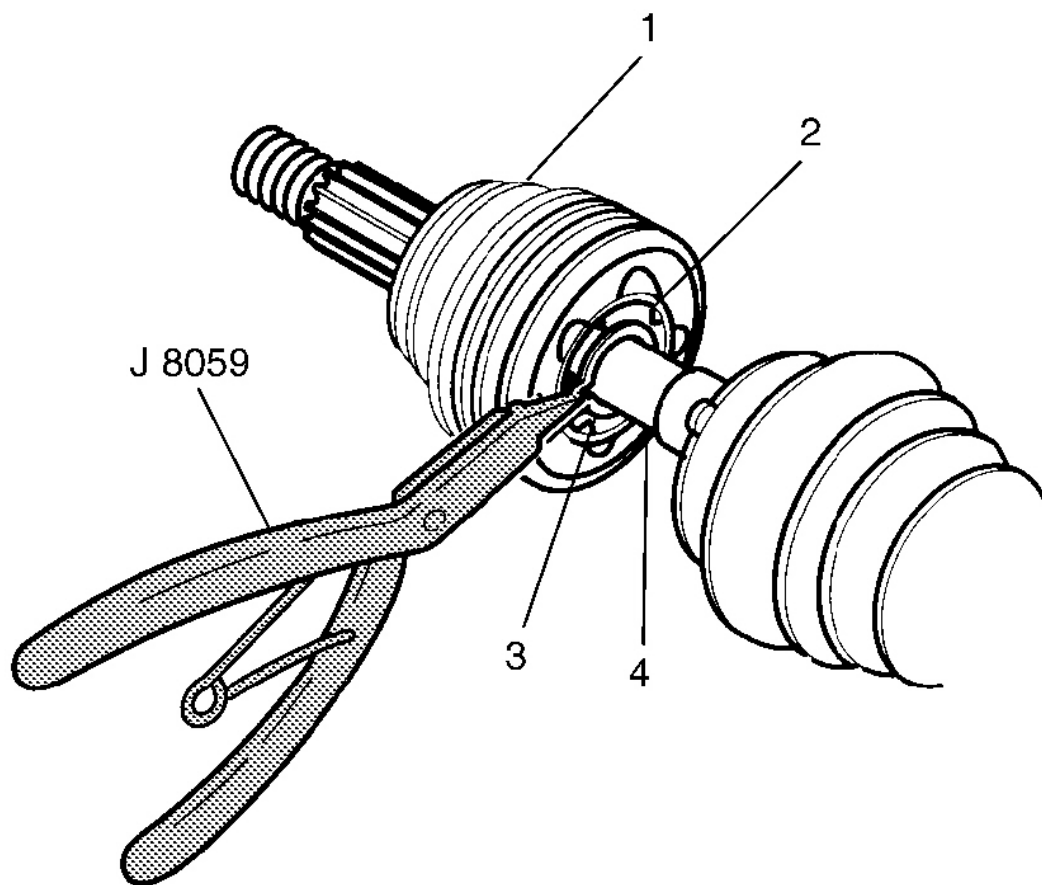
Courtesy of GENERAL MOTORS CORP.

1. Place the halfshaft in a vise.
2. Place protective covers over the vise jaws.



**Fig. 40: Identifying CV Joint Outer Race & Swage Rings**  
Courtesy of GENERAL MOTORS CORP.

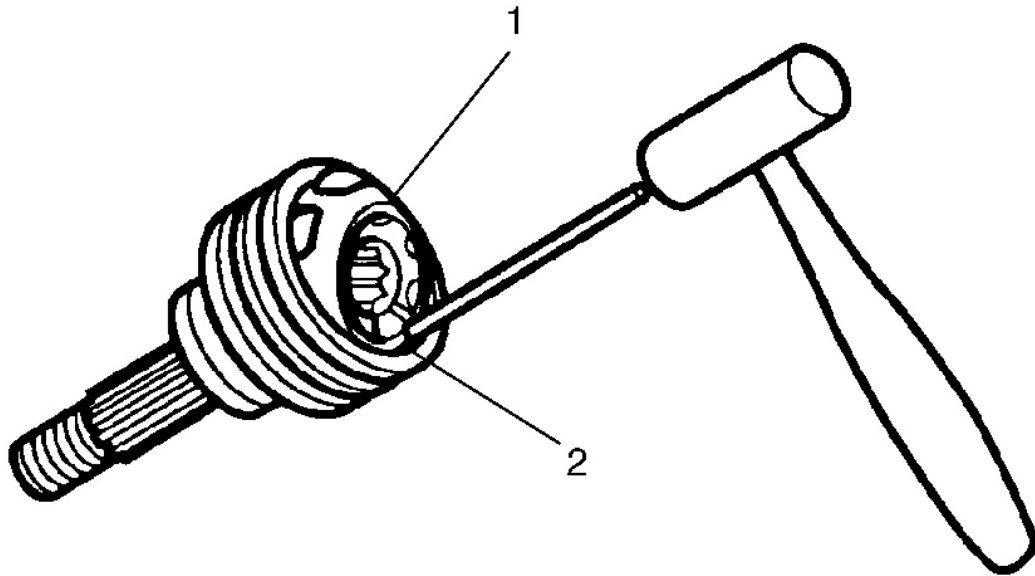
3. Use a hand grinder to cut through the swage rings (2). Do not damage the outer race.
4. Compress the seal on the halfshaft and away from the constant velocity (CV) joint outer race (1).
5. Wipe all grease away from the face of the CV joint.



**Fig. 41: Identifying J 8059**

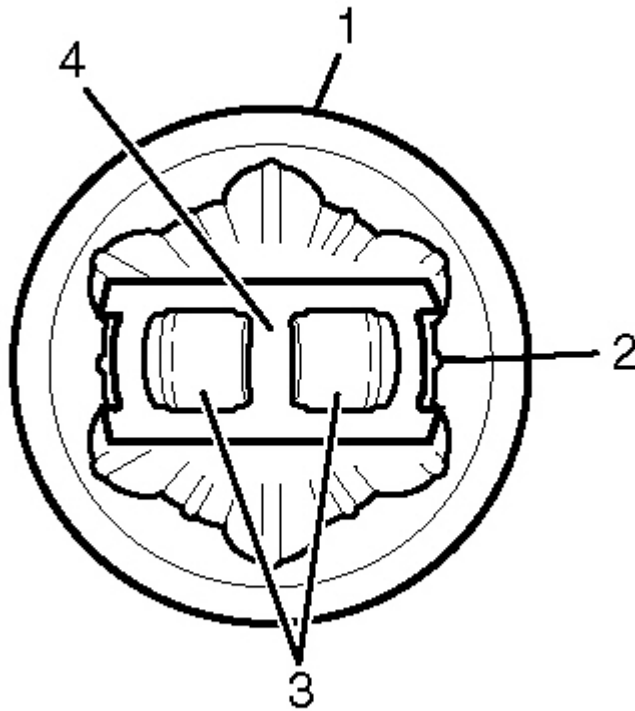
**Courtesy of GENERAL MOTORS CORP.**

6. Find the halfshaft retaining snap ring (3), which is located in the inner race (2).
7. Spread the snap ring ears apart using **J 8059** (or equivalent). See **Special Tools**.
8. Pull the CV joint from the halfshaft (4).
9. Discard the old seal.



**Fig. 42: Taping Gently On Brass Drift With A Hammer In Order To Tilt Cage**  
Courtesy of GENERAL MOTORS CORP.

10. Place a brass drift against the cage (1).
11. Tap gently on the brass drift in order to tilt the cage.
12. Remove the first ball (2) when the cage tilts.
13. Repeat the previous step to remove all of the balls.

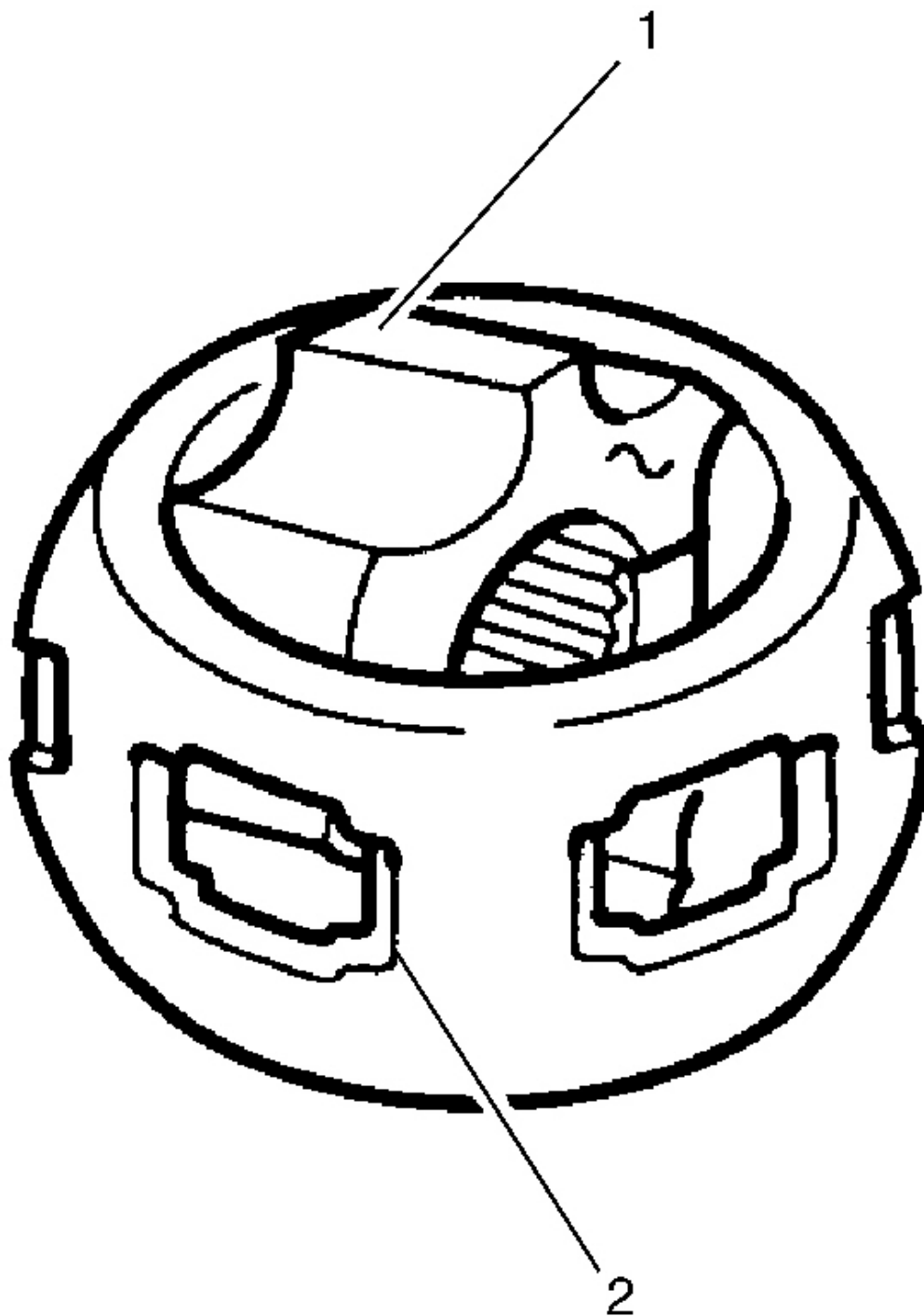


**Fig. 43: View Of Outer Race, Inner Race, Cage Window & CV Joint Cage**  
Courtesy of GENERAL MOTORS CORP.

14. Pivot the cage (4) and the inner race 90 degrees to the centerline of the outer race (1). At the same time, align the cage windows (3) with the lands of the outer race (2).
15. Lift out the cage (4) and the inner race.

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**Fig. 44: View Of Inner Race & Cage**

**Courtesy of GENERAL MOTORS CORP.**

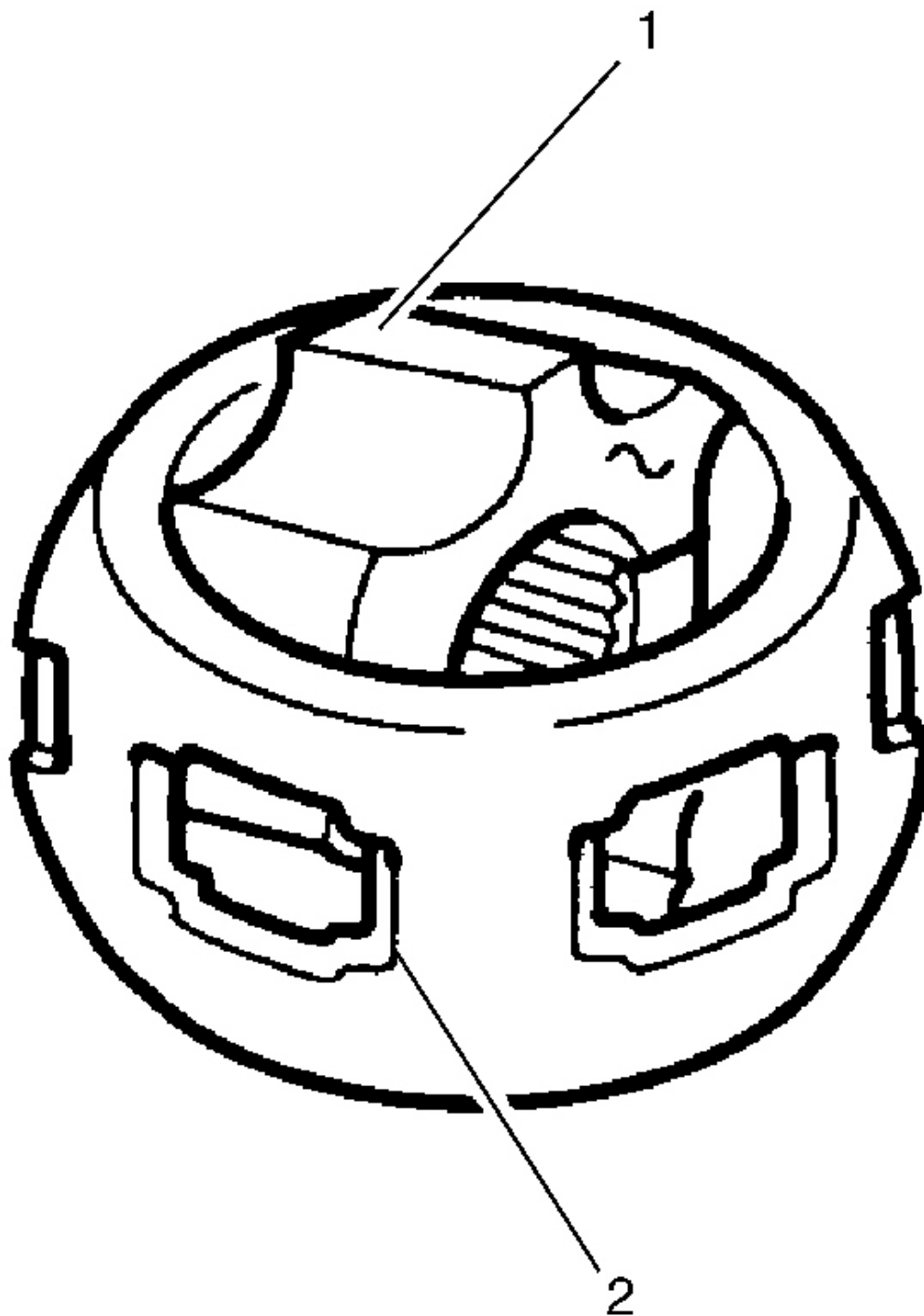
16. Remove the inner race (1) from the cage (2) by rotating the inner race (1) upward.
17. Thoroughly degrease all of the CV joint parts.
18. Check the outer CV joint assembly for unusual wear, cracks, or other damage. Replace any damaged parts.
19. Clean the halfshaft bar. Use a wire brush to remove any rust in the seal mounting area (grooves).

**Assembly Procedure**



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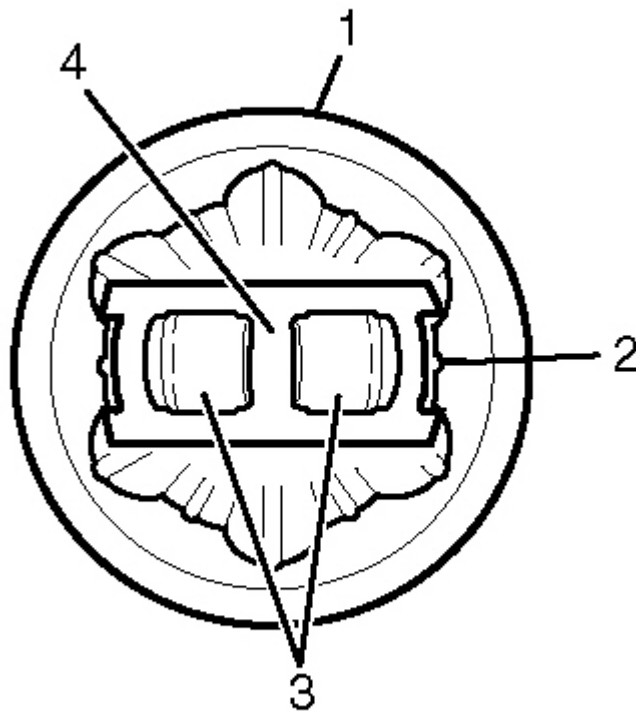
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**Fig. 45: View Of Inner Race & Cage**  
Courtesy of GENERAL MOTORS CORP.

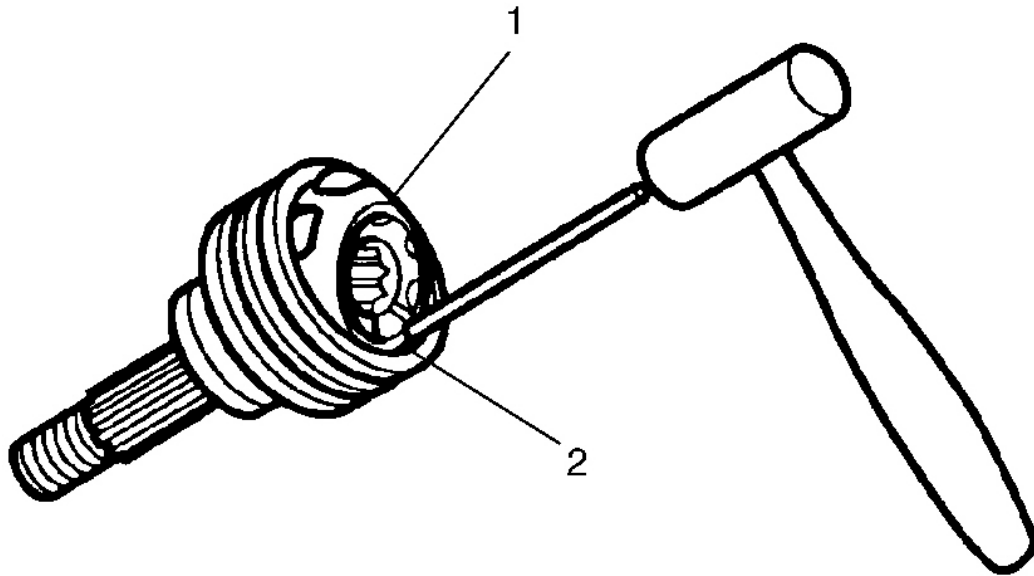
**IMPORTANT: Replace the joint assembly if necessary.**

1. Inspect all of the parts for unusual wear, cracks, or other damage.
2. Put a light coat of the recommended grease on the inner and the outer race grooves.
3. Insert the inner race (1) into the cage (2) by rotating the inner race downward.
4. Hold the inner race (1) at 90 degrees to the centerline of the cage.



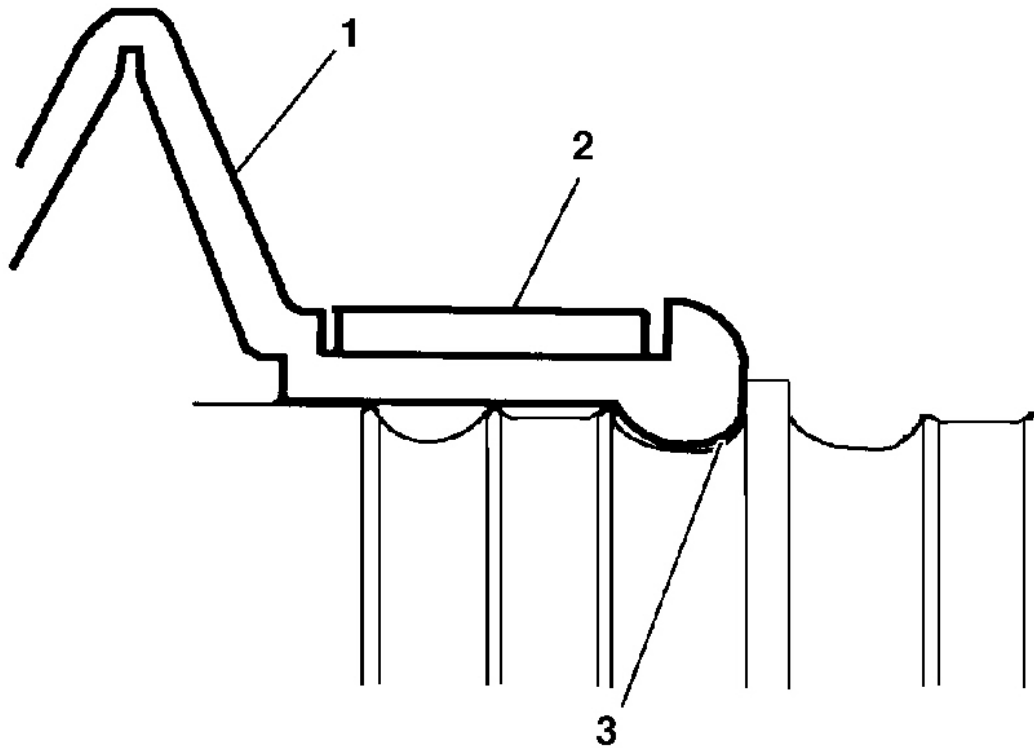
**Fig. 46: View Of Outer Race, Inner Race, Cage Window & CV Joint Cage**  
Courtesy of GENERAL MOTORS CORP.

5. Align the lands of the inner race (2) with the windows of the cage (3).
6. Rotate the inner race downward to insert the inner race into the cage.
7. Insert the cage (4) and inner race into the outer race (1).



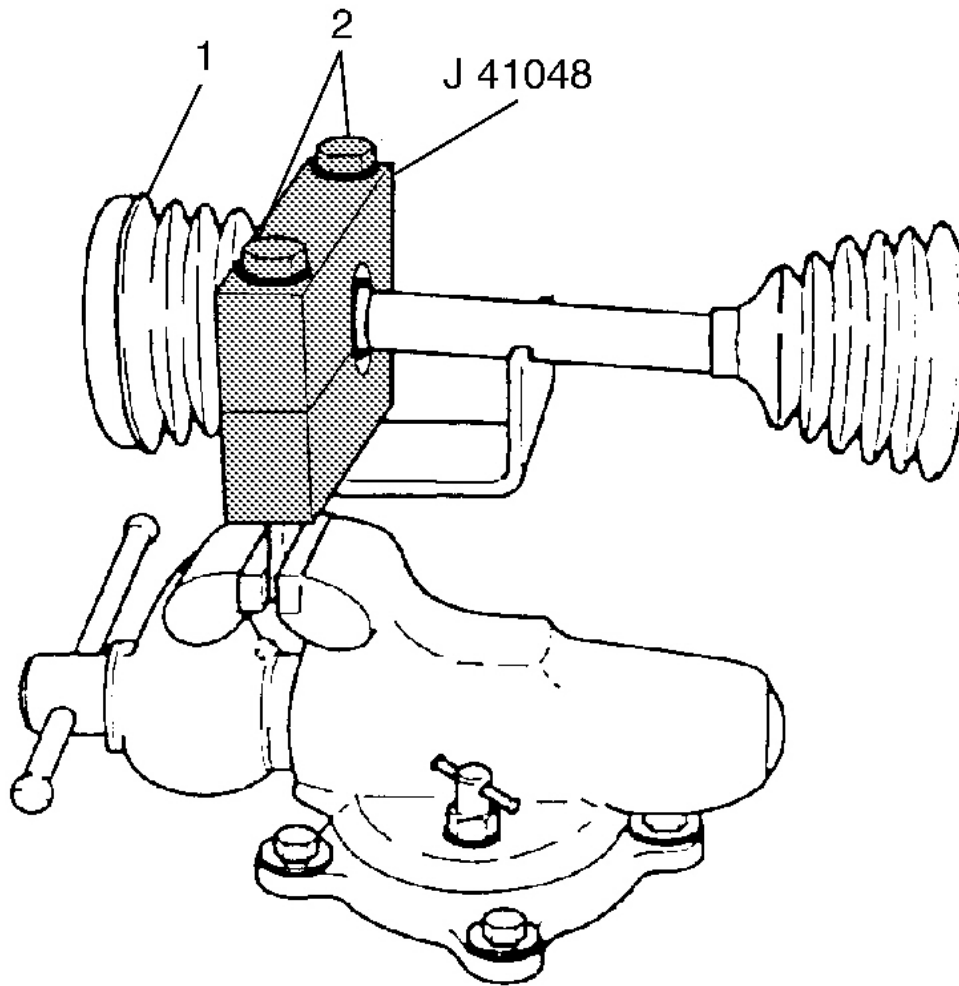
**Fig. 47: Taping Gently On Brass Drift With A Hammer In Order To Tilt Cage**  
Courtesy of GENERAL MOTORS CORP.

8. Place a brass drift against the cage (1).
9. Tap gently on the brass drift in order to tilt the cage (1).
10. Install the first ball (2) when the cage tilts.
11. Repeat previous step to reinstall all of the balls.



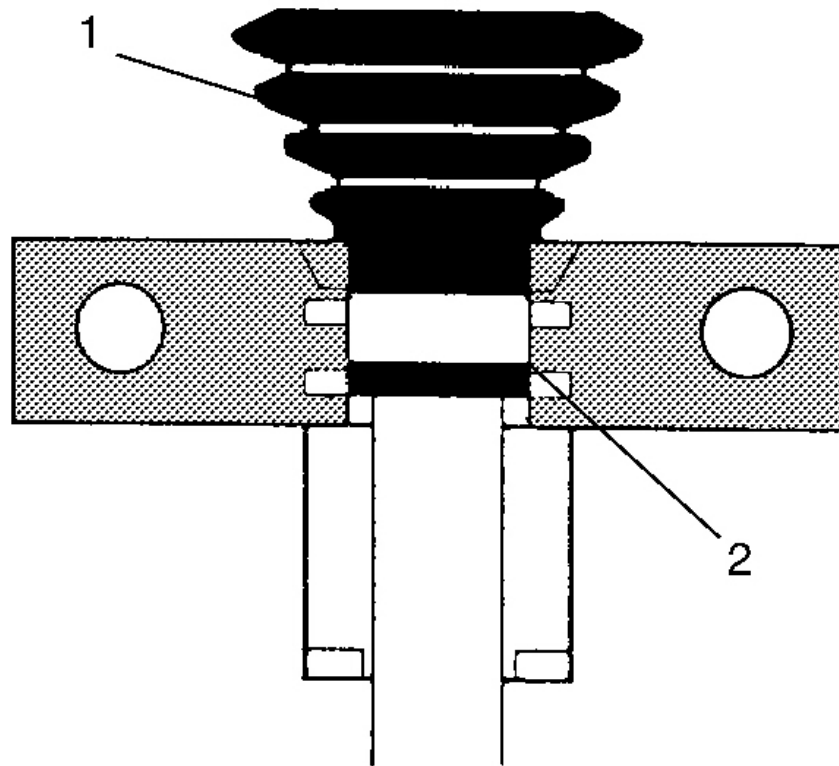
**Fig. 48: Positioning Small End Of Joint Seal Into Joint Seal Groove**  
Courtesy of GENERAL MOTORS CORP.

12. Pack the CV joint seal and the CV joint assembly with the grease supplied in the kit. The amount of grease supplied in this kit has been pre-measured for this application.
13. Place the new small swage clamp (2) onto the CV joint seal (1).
14. Place the large retaining clamp on the seal (1).
15. Position the small end of the CV joint seal (1) into the joint seal groove (3) on the halfshaft bar.



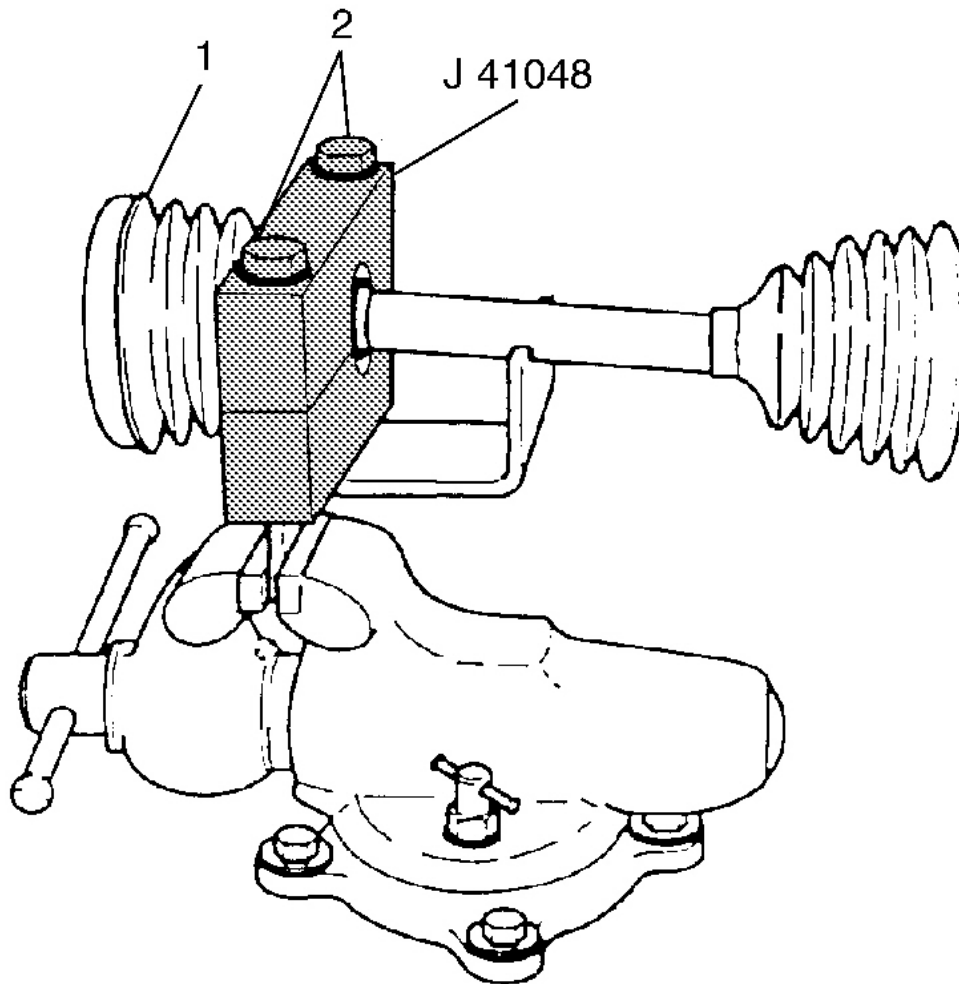
**Fig. 49: Swaging Retaining Clamp Ring**  
Courtesy of GENERAL MOTORS CORP.

16. Position the outboard end of the halfshaft assembly (1) in **J 41048** . See **Special Tools**.



**Fig. 50: Identifying Halfshaft Inboard Seal & Swage Ring**  
Courtesy of GENERAL MOTORS CORP.

17. Align the swage clamp (2) within **J 41048** . See **Special Tools**.



**Fig. 51: Swaging Retaining Clamp Ring**  
Courtesy of GENERAL MOTORS CORP.

18. Place the top half of the **J 41048** on the bottom half. See **Special Tools**.
19. Check to make sure there are no pinch points on the seal before proceeding with procedures.
20. Insert the bolts (2). Tighten the bolts (2) by hand until snug.

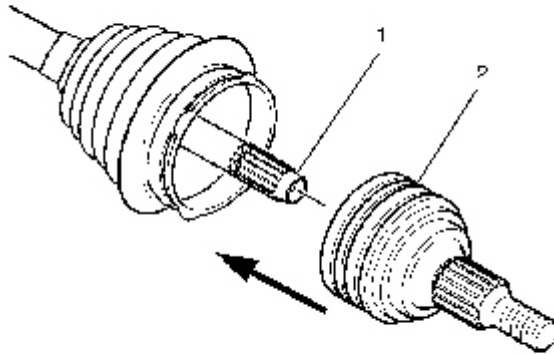
**NOTE:** Refer to **Fastener Notice** .

21. Align the following items:
  - The seal
  - The halfshaft bar

- The swage clamp

**Tighten:** Tighten each bolt 180 degrees at a time, using a ratchet wrench. Alternate between each bolt until both sides are bottomed.

22. Loosen the bolts.
23. Separate the dies.
24. Check the swage clamp for any "lip" deformities. If the deformities exist, place the swage clamp back into the **J 41048** . See **Special Tools**.



**Fig. 52: Identifying Halfshaft Bar & CV Joint**  
Courtesy of GENERAL MOTORS CORP.

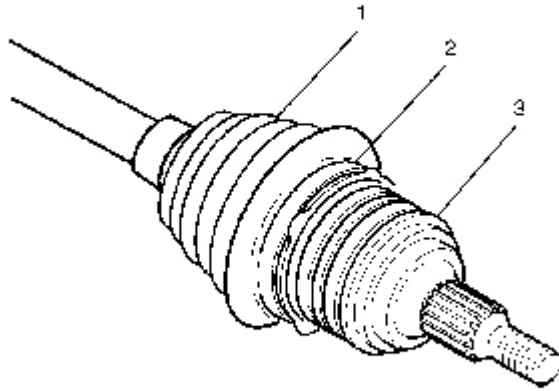
**IMPORTANT:** Ensure that the retaining ring side of the CV joint inner race faces the halfshaft bar (1) before installation.

25. Place the retaining snap ring into the CV joint inner race.

**IMPORTANT:** The retaining snap ring inside of the inner race engages in the halfshaft bar groove with a click when the CV joint is in the proper position.

26. Slide the CV joint (2) onto the halfshaft bar (1).
27. Pull on the CV joint (2) to verify engagement.



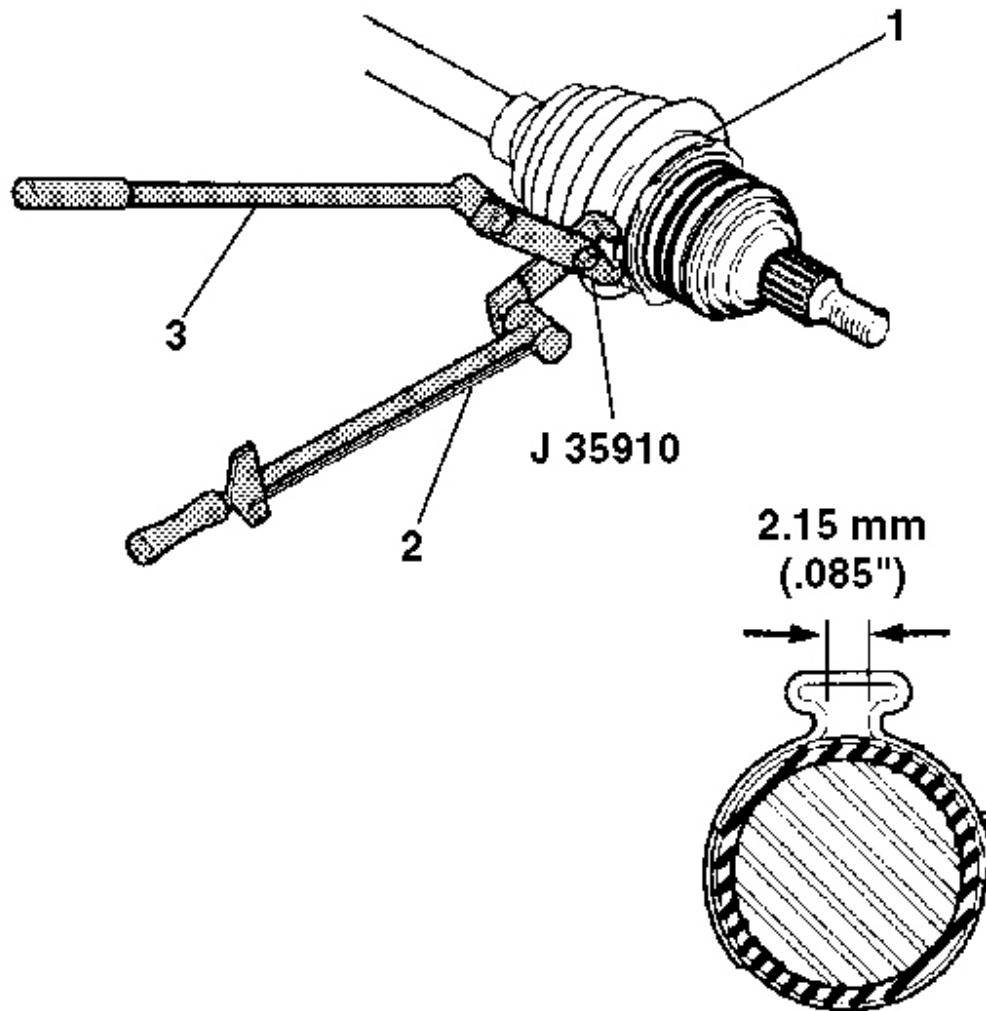


**Fig. 53: Identifying CV Joint Seal, Retaining Ring & CV Joint Outer Race**  
Courtesy of GENERAL MOTORS CORP.

28. Slide the large diameter of the CV joint seal (1), with the large retaining ring (2) in place, over the outside edge of the CV joint outer race (3).
29. Position the lip of the CV joint seal (1) into the groove on the CV joint outer race (3).
30. Manipulate the CV joint seal (1) to remove any excess air.

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**Fig. 54: Identifying Large Retaining Clamp, Breaker Bar, Torque Wrench & Seal Clamp Tool**  
Courtesy of GENERAL MOTORS CORP.

31. Secure the large retaining clamp (1) to the housing with **J 35910** (or equivalent), a breaker bar (3), and a torque wrench (2).

**Tighten:** Torque the large retaining clamp (1) to 176 N.m (130 lb ft).

32. Check the gap dimension on the clamp ear.

## DESCRIPTION AND OPERATION

## 2008 Isuzu Ascender LS

2008 Driveline/Axle Wheel Drive Shafts - Ascender, Envoy & Trailblazer

### WHEEL DRIVE SHAFTS DESCRIPTION AND OPERATION

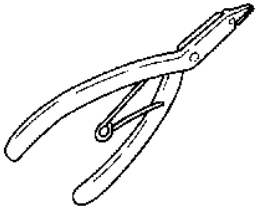
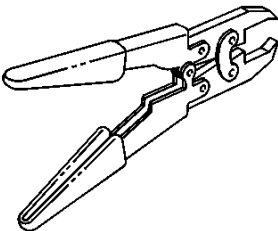
Front Wheel Drive Shafts are flexible assemblies which consist of the following components:

- Front wheel drive shaft constant velocity joint (outer joint).
- Front wheel drive shaft tri-pot joint (inner joint).
- The front wheel drive shaft connects the front wheel drive shaft tri-pot joint and the front wheel drive shaft constant velocity joint.
- The front wheel drive shaft tri-pot joint is completely flexible, and moves with an in and out motion.
- The front wheel drive shaft constant velocity joint is flexible but can not move in and out.

The Wheel Drive Shaft is a balanced shaft that transmits rotational force from the front differential to the front wheels when the transfer case is engaged. The wheel drive shaft is mounted to the front differential by bolting the flange of the wheel drive shaft to the flange on the inner output shaft of the front differential. The other end of the wheel drive shaft is splined to fit into and drive the hub assembly when the transfer case is engaged. The tri-pot joint and constant velocity joint on the wheel drive shaft allows the shaft to be flexible to move with the suspension travel of the vehicle.

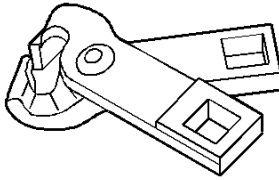
### SPECIAL TOOLS AND EQUIPMENT

#### SPECIAL TOOLS

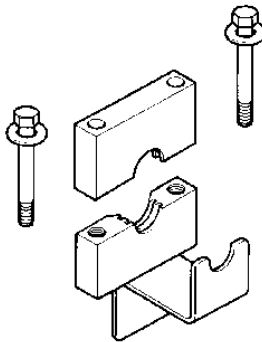
Illustration	Tool Number/ Description
	J 8059 Snap Ring Pliers
	J 35566 Drive Axle Seal Clamp Pliers

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J 35910  
Drive Axle Seal Clamp Pliers



J 41048  
Drive Axle Swage Ring Clamp