

DRIVELINE/AXLE**Wheel Drive Shafts - Escalade, Suburban, Tahoe, Yukon****SPECIFICATIONS****FASTENER SPECIFICATIONS**

Application	Specification	
	Metric	English
Hub Nut	255 N.m	188 lb ft
Inboard Flange Bolts	79 N.m	58 lb ft
Small Seal Retaining Clamp	136 N.m	100 lb ft

ADHESIVES, FLUIDS, LUBRICANTS, AND SEALERS

Application	Type of Material	GM Part Number	
		United States	Canada
Wheel Drive Shaft/Intermediate Shaft	Grease	1051344	993037
Output Shaft Splines	Grease	12345879	10953511

COMPONENT LOCATOR**WHEEL DRIVE SHAFTS DISASSEMBLED VIEWS****Halfshaft Components, Disassembled View**

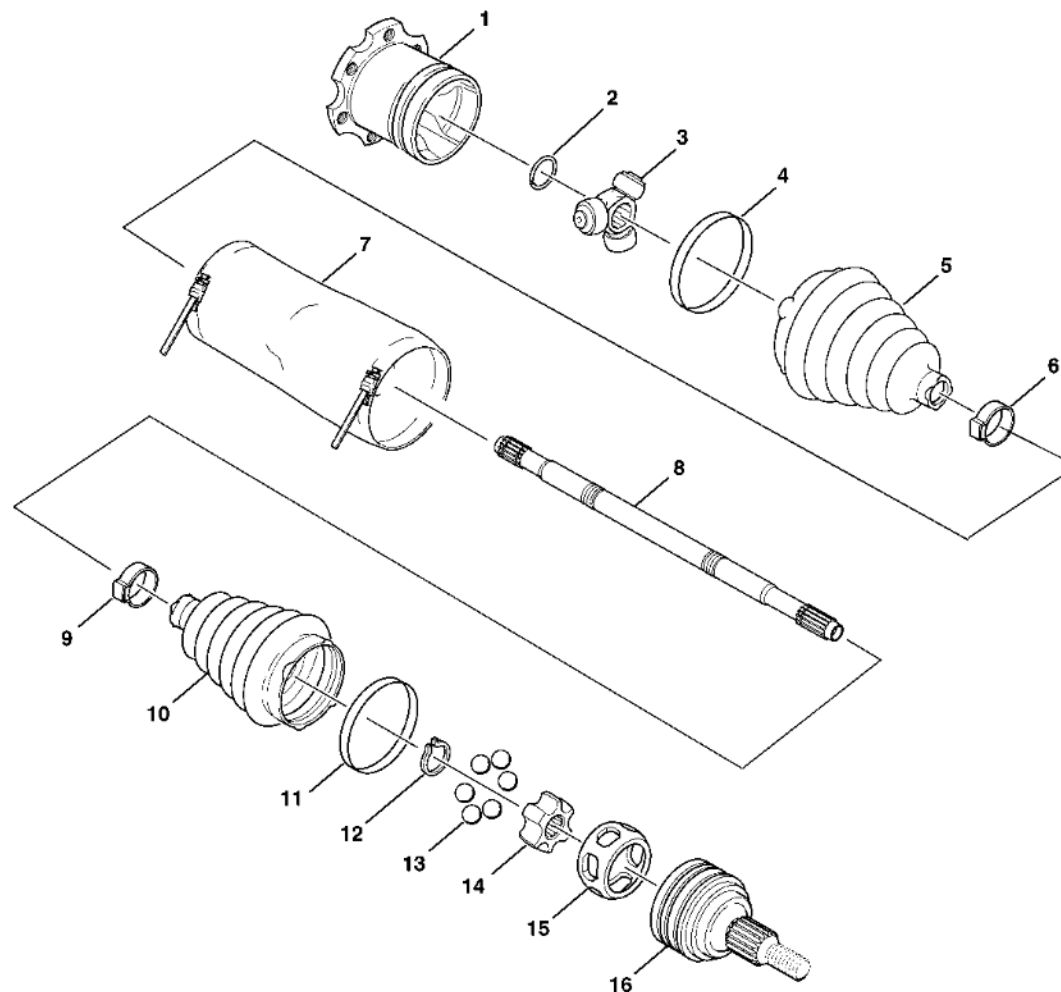


Fig. 1: Wheel Drive Shaft Components, Disassembled View

Courtesy of GENERAL MOTORS COMPANY

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

Callout	Component Name
4	Swage Ring
5	Tripot Joint Boot
6	Small Boot Retaining Clamp
7	Halfshaft Boot Cover (Optional)
8	Halfshaft Bar
9	Small Boot Retaining Clamp
10	CV Joint Boot
11	Swage Ring
12	Race Retaining Ring
13	Ball
14	CV Joint Inner Race
15	CV Joint Cage
16	CV Joint Outer Race

DIAGNOSTIC INFORMATION AND PROCEDURES

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 [Vibration Diagnosis, Starting Point, 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 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 Step 2	System OK
2	Replace the outer CV joints/seals. Refer to Front Wheel Drive Shaft Outer Joint and Boot Replacement . Is the repair complete?	System OK	-

CLUNK WHEN ACCELERATING FROM COAST

Step	Action	Value(s)	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 Step 2	Go to Step 3
2	Tighten the wheel drive shaft to hub assembly nut to specification. Is the repair complete?	240 N.m (177 lb ft)	System OK	-
3	Check for a damaged inner CV joint. Is the inner CV joint damaged?	-	Go to Step 4	System OK
4	Replace the inner CV joint. Refer to Front Wheel Drive Shaft Inner Joint and Boot Replacement . 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 boots. Are the outer wheel drive shaft joints worn?	Go to Step 2	System OK
2	Check for proper clearance between the wheel drive shaft and other components. Correct as necessary. Is the repair complete?	System OK	Go to Step 3
3	Replace the outer CV joints and or boots. Refer to Front Wheel Drive Shaft Outer Joint and Boot Replacement . Is the repair complete?	System OK	-

REPAIR INSTRUCTIONS

FRONT WHEEL DRIVE SHAFT REPLACEMENT - LEFT SIDE (1500)

Special Tools

J-45859 Axle Remover

Removal Procedure

WARNING: Do not attempt to move vehicle with drive axle(s) removed from wheel bearing. Wheel(s) could fall off, dropping vehicle to the ground and causing personal injury or damage to the vehicle.

1. Remove the tire and wheel. [Tire and Wheel Removal and Installation \(6-Lug Wheel\)](#) [Tire and Wheel Removal and Installation \(8-Lug Wheel\)](#)
2. Remove the front axle hub cap from the wheel bearing, if equipped.

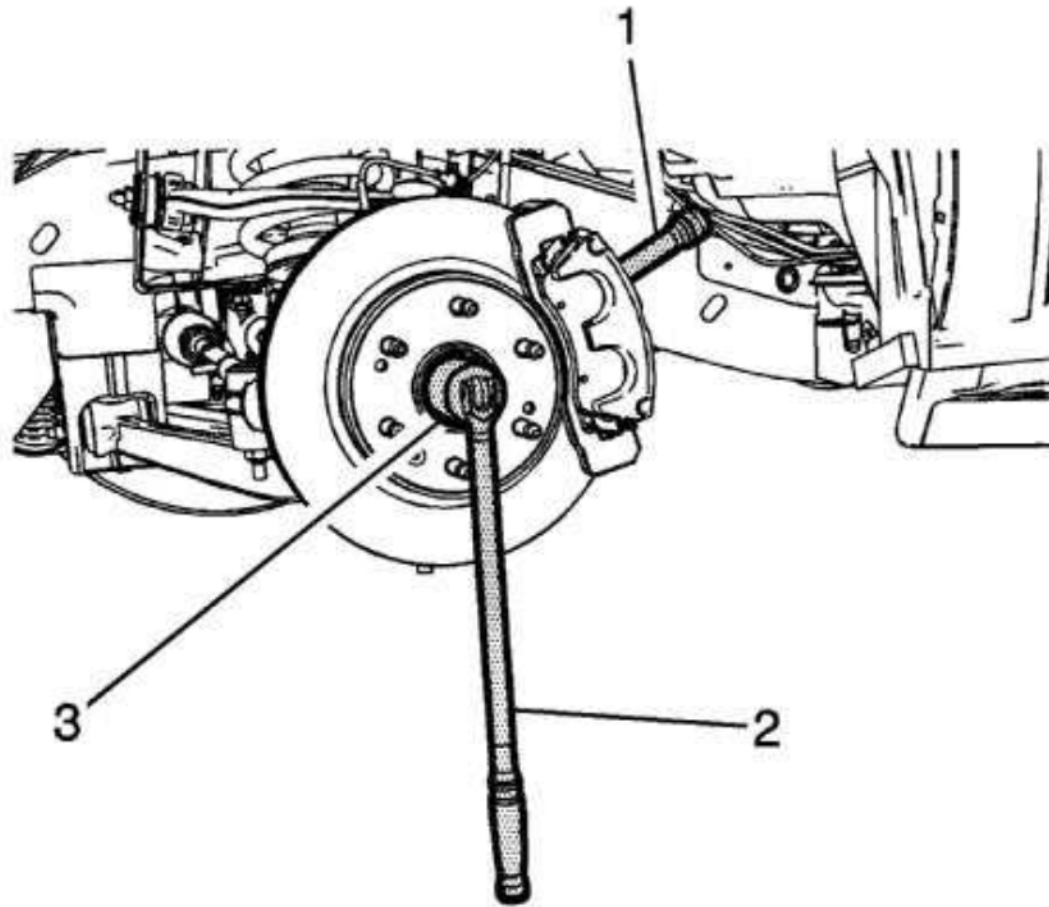


Fig. 2: Loosening Axle Retaining Nut With A Breaker Bar And Correct Sized Socket

Courtesy of GENERAL MOTORS COMPANY

3. Insert a drift (1) through the brake caliper into one of the brake rotor vanes in order to prevent the wheel drive shaft from turning and loosen the axle retaining nut with a breaker bar (2) and correct sized socket (3).

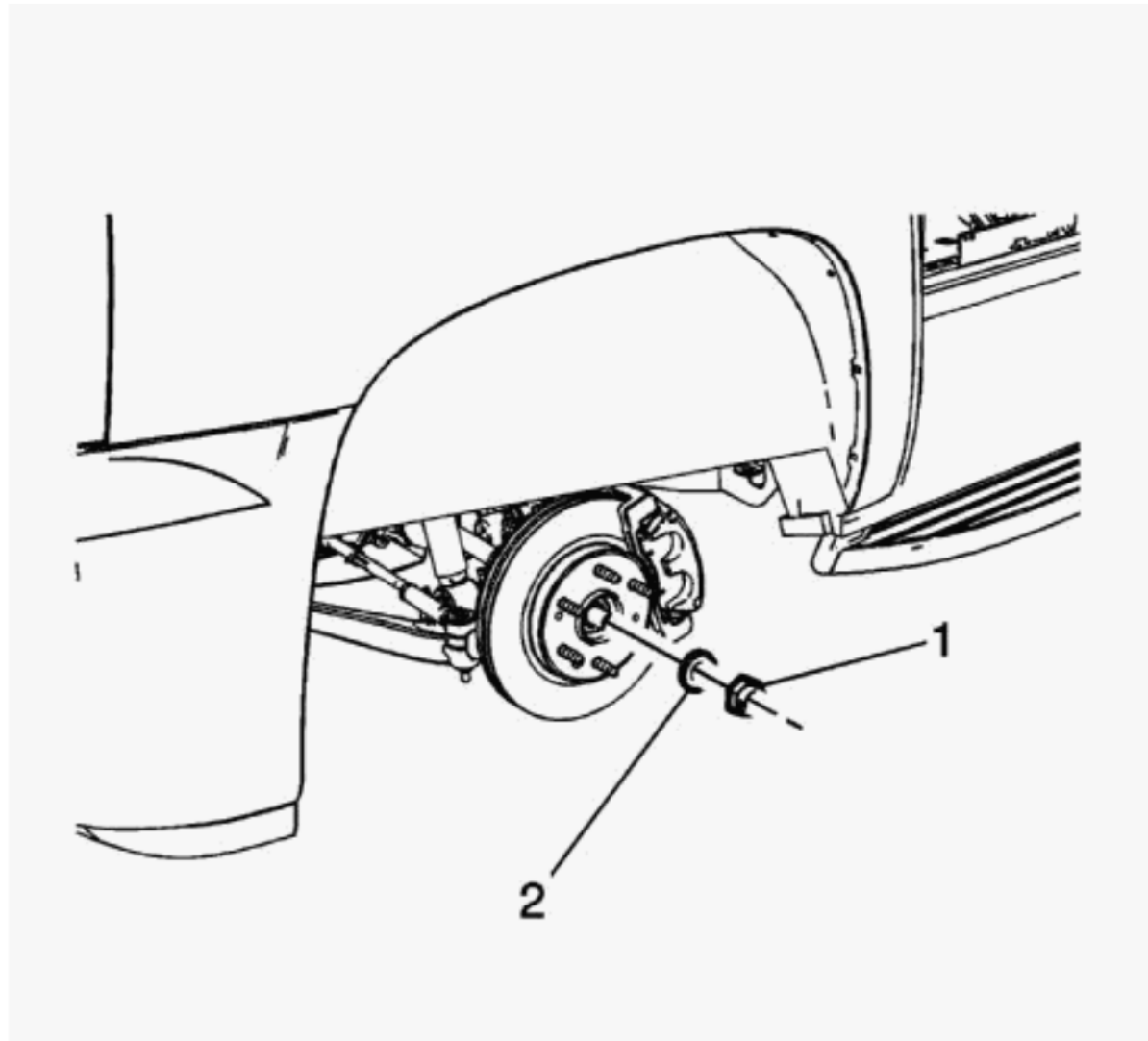


Fig. 3: View Of Nut And Hub

Courtesy of GENERAL MOTORS COMPANY

NOTE: Do NOT reuse the wheel drive shaft nut, use a NEW nut only.

4. Remove the nut (1) and washer (2) from the hub.

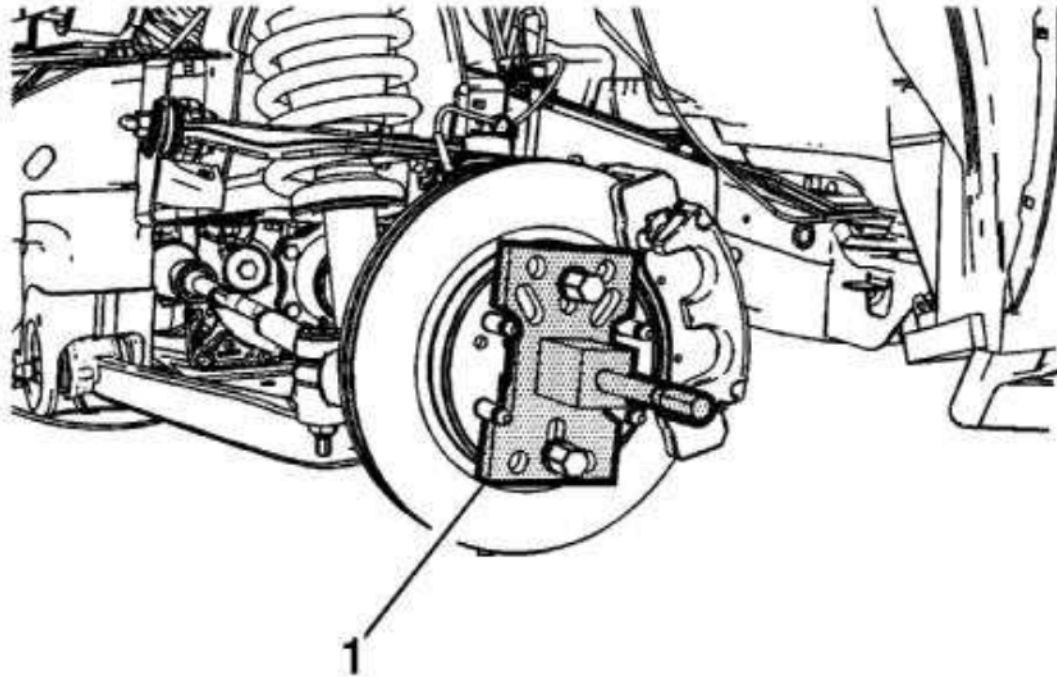


Fig. 4: J-45859 Axle Remover

Courtesy of GENERAL MOTORS COMPANY

5. Using the **J-45859** axle remover, remove the wheel drive shaft from the hub.
6. Remove the steering gear skid shield, if equipped. [Steering Gear Skid Shield Replacement](#)

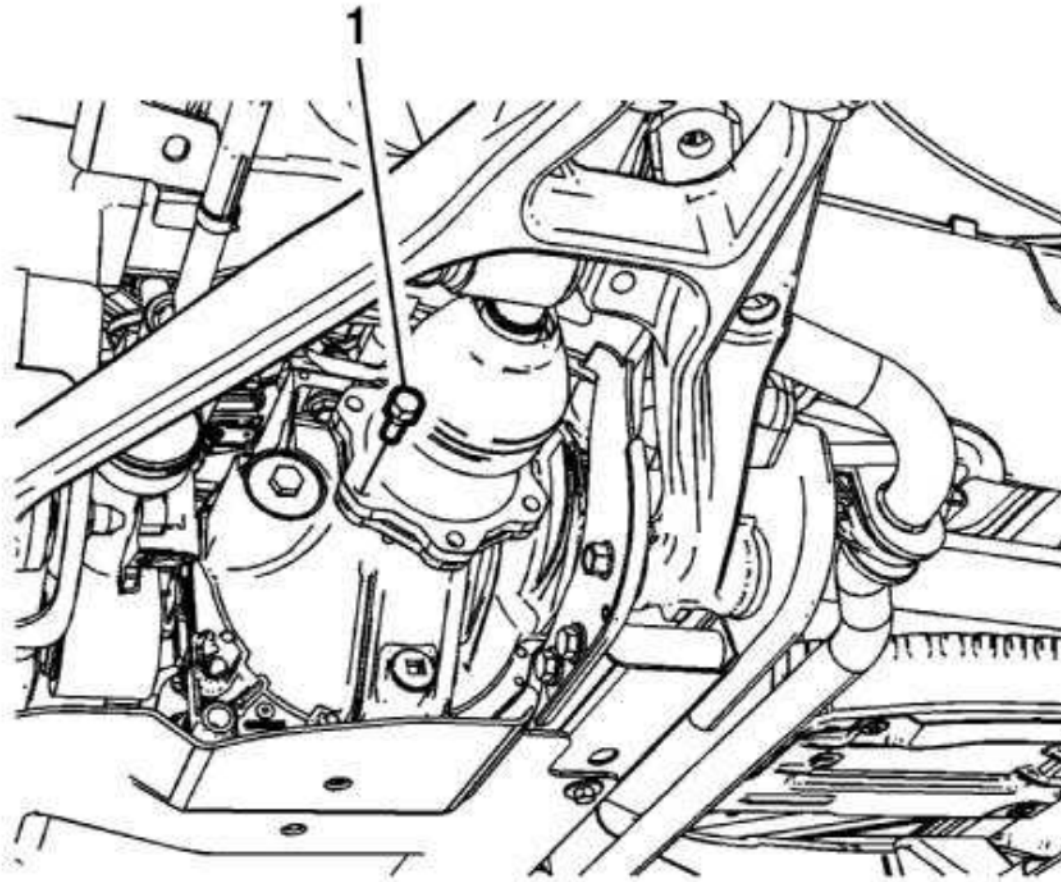


Fig. 5: Wheel Driver Shaft Retaining Bolts And Drive Flange

Courtesy of GENERAL MOTORS COMPANY

7. Remove the (QTY 6) wheel drive shaft retaining bolts (1) from the drive flange.
8. Remove both stabilizer shaft links from the lower control arm. [**Stabilizer Shaft Link Replacement \(Light Duty\)**](#)
9. Remove the left shock absorber. [**Shock Absorber and Spring Removal and Installation \(Light Duty, With Z85/Z95\)**](#) [**Shock Absorber and Spring Removal and Installation \(Light Duty, Without Z85/Z95\)**](#)

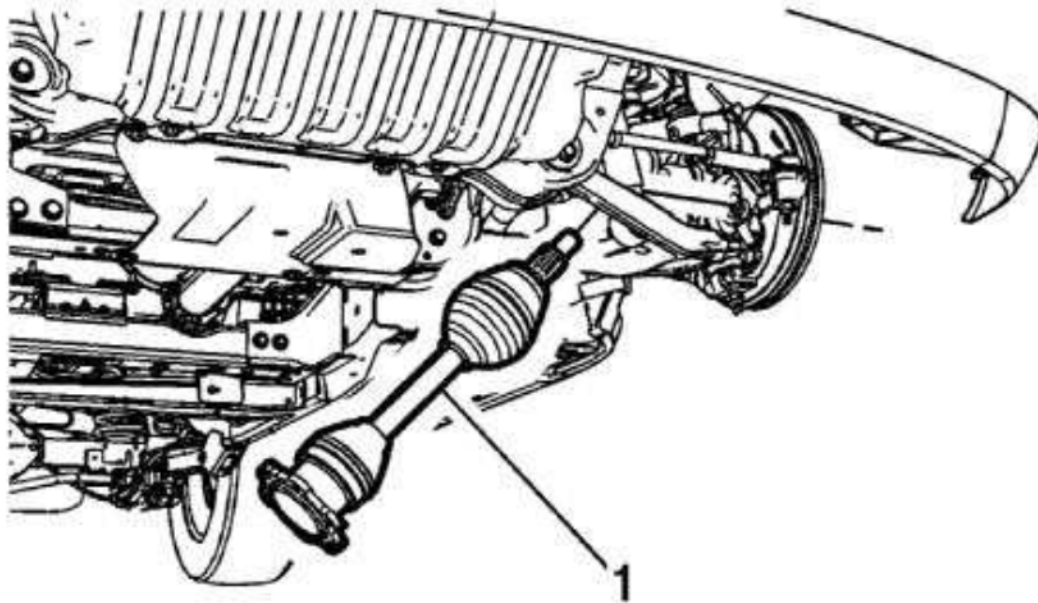


Fig. 6: Wheel Drive Shaft Through Lower Control Arm Opening

Courtesy of GENERAL MOTORS COMPANY

NOTE: Wrap a shop towel around the wheel drive shaft to protect the joint boots. Do not remove the shop towel until the shaft is reinstalled.

10. Remove the wheel drive shaft through the lower control arm opening.
11. Remove all dirt and debris from the splines on the wheel hub/bearing.

Installation Procedure

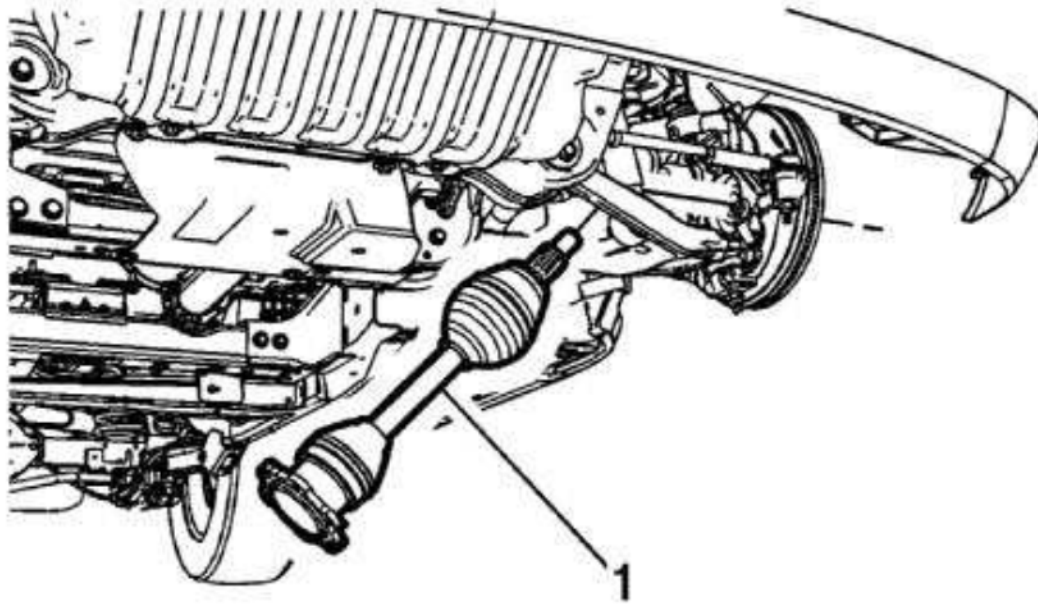


Fig. 7: Wheel Drive Shaft Through Lower Control Arm Opening

Courtesy of GENERAL MOTORS COMPANY

1. Install the wheel drive shaft (1) in the steering knuckle.

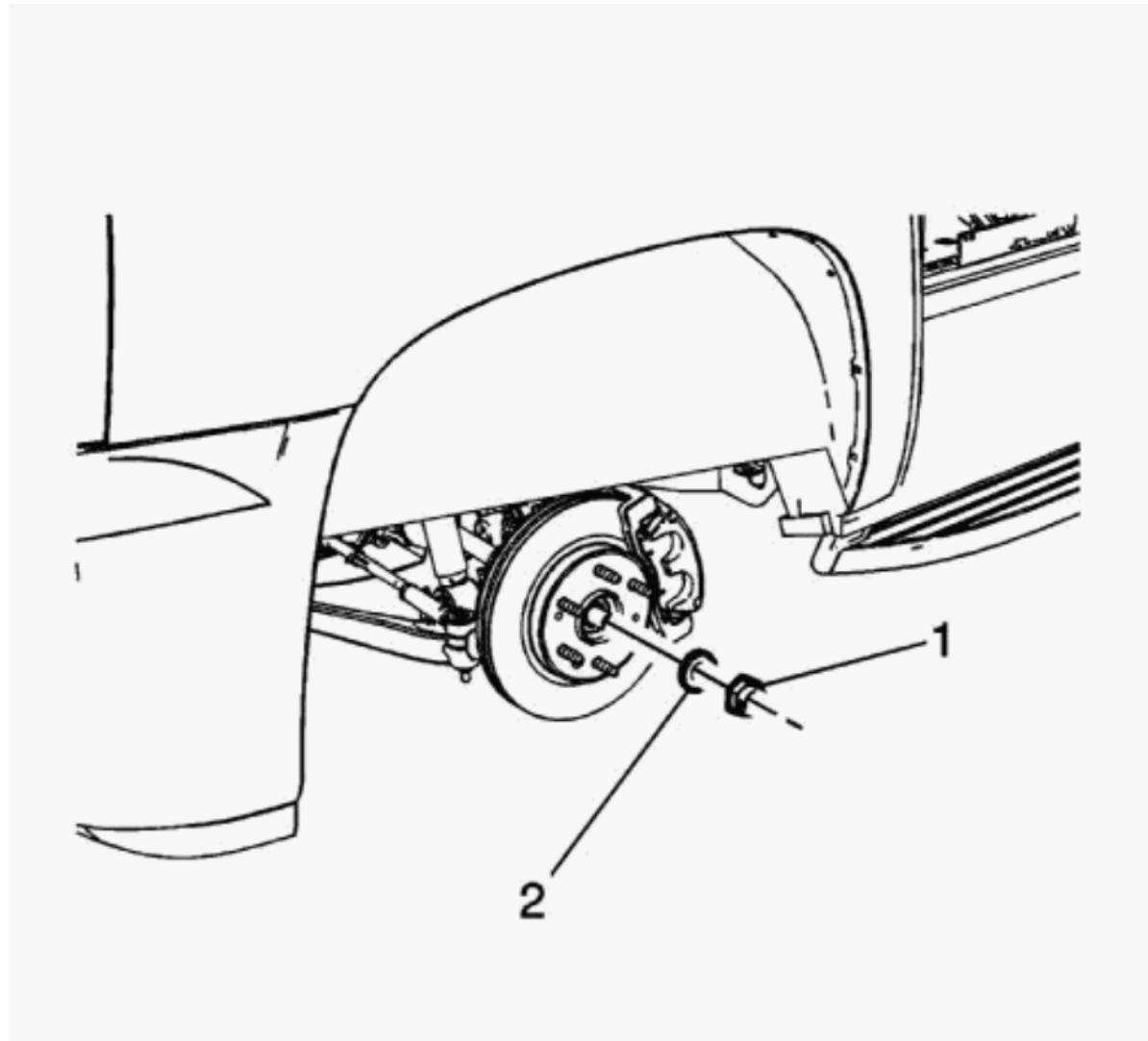


Fig. 8: View Of Nut And Hub

Courtesy of GENERAL MOTORS COMPANY

NOTE: Install the NEW nut and washer, but Do NOT tighten at this time.

2. Install the NEW nut (1) and washer (2) and finger tighten.

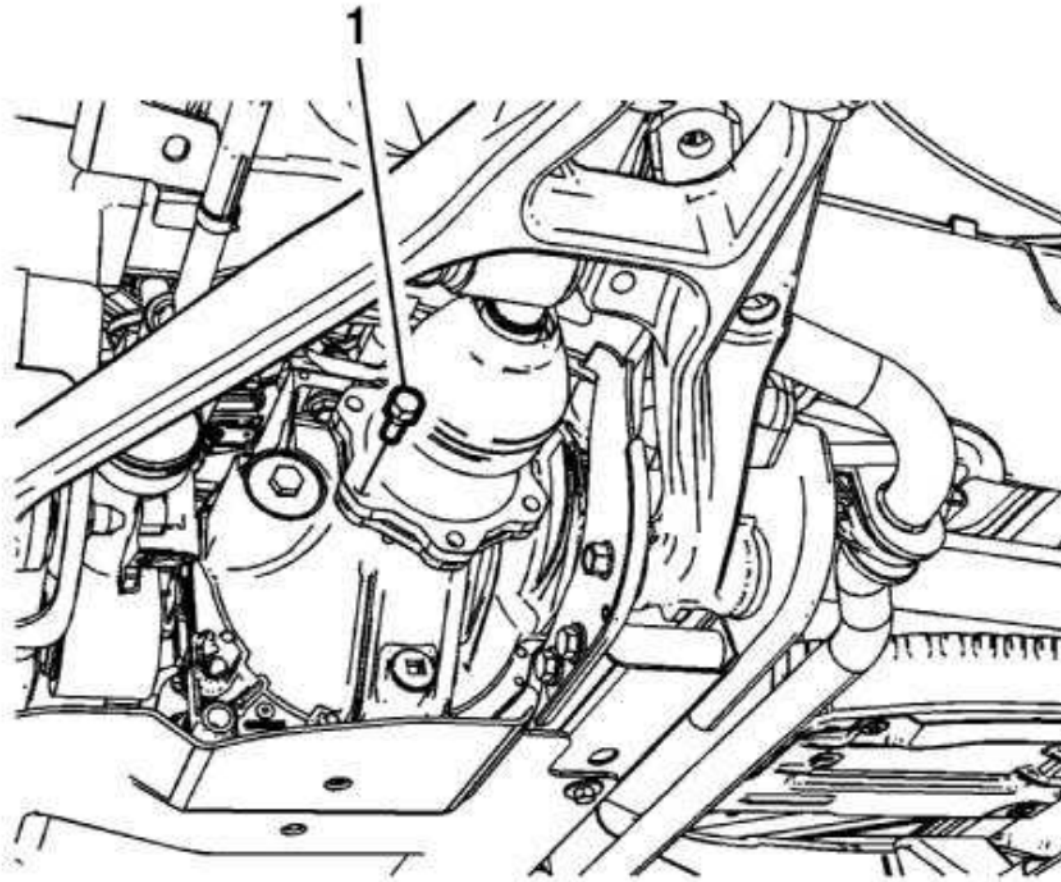


Fig. 9: Wheel Driver Shaft Retaining Bolts And Drive Flange

Courtesy of GENERAL MOTORS COMPANY

3. Install the (QTY 6) wheel drive shaft flange retaining bolts (1) and finger tighten.

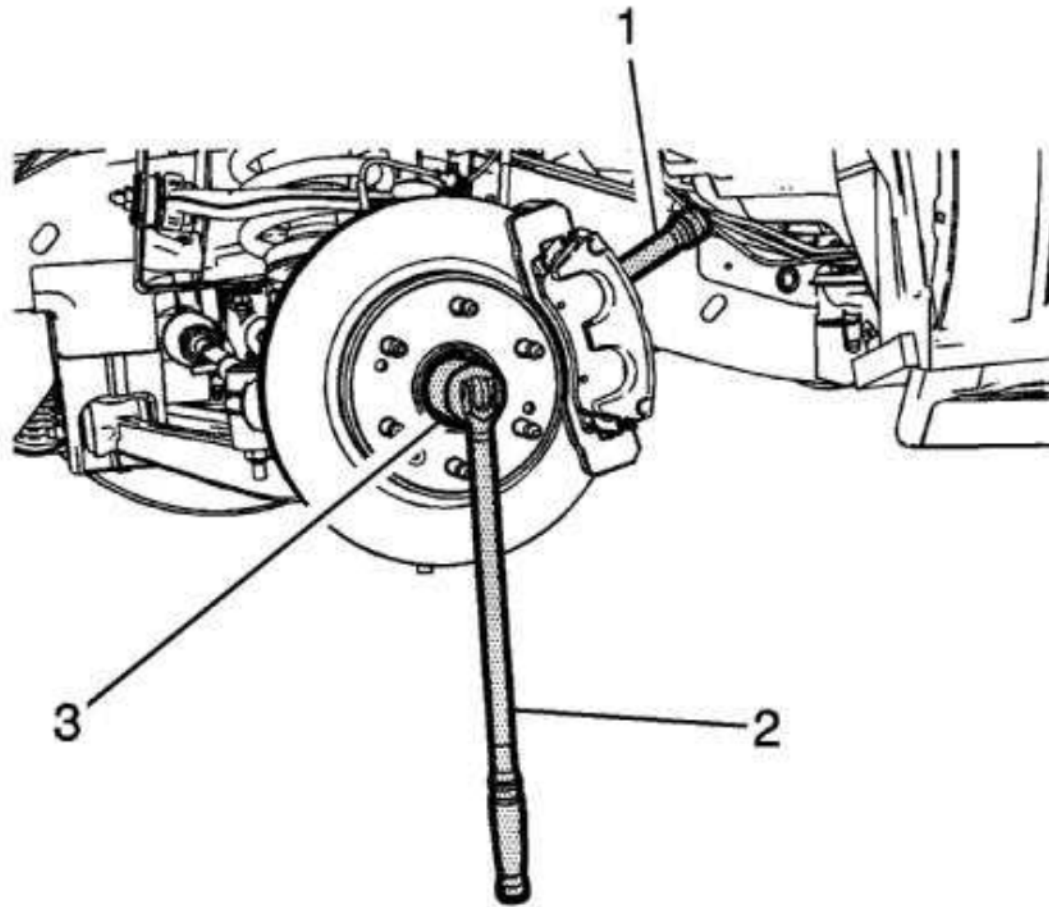


Fig. 10: Loosening Axle Retaining Nut With A Breaker Bar And Correct Sized Socket

Courtesy of GENERAL MOTORS COMPANY

4. Insert a drift (1) through the brake caliper into one of the brake rotor vanes in order to prevent the wheel drive shaft from turning.

CAUTION: Refer to [Fastener Caution](#) .

5. Tighten the wheel drive shaft flange retaining bolts to 79 N.m (58 lb ft).

6. Tighten the wheel drive shaft retaining nut to 255 N.m (188 lb ft).
7. Install the left shock absorber. [Shock Absorber and Spring Removal and Installation \(Light Duty, With Z85/Z95\)](#) [Shock Absorber and Spring Removal and Installation \(Light Duty, Without Z85/Z95\)](#)
8. Install the stabilizer shaft links to the lower control arms. [Stabilizer Shaft Link Replacement \(Light Duty\)](#)
9. Install the front axle hub cap to the wheel bearing, if equipped.
10. Install the tire and wheel. [Tire and Wheel Removal and Installation \(6-Lug Wheel\)](#) [Tire and Wheel Removal and Installation \(8-Lug Wheel\)](#)

FRONT WHEEL DRIVE SHAFT REPLACEMENT - LEFT SIDE (HEAVY DUTY)

Removal Procedure

WARNING: Do not attempt to move vehicle with drive axle(s) removed from wheel bearing. Wheel(s) could fall off, dropping vehicle to the ground and causing personal injury or damage to the vehicle.

1. Raise and support the vehicle. [Lifting and Jacking the Vehicle](#)
2. Remove the tire and wheel assembly. [Tire and Wheel Removal and Installation \(6-Lug Wheel\)](#) [Tire and Wheel Removal and Installation \(8-Lug Wheel\)](#)

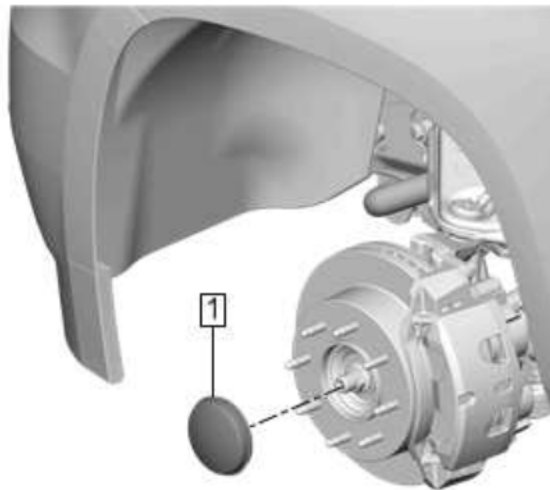


Fig. 11: Front Axle Hub Cap

Courtesy of GENERAL MOTORS COMPANY

3. Remove the front axle hub cap (1) from the wheel hub assembly.

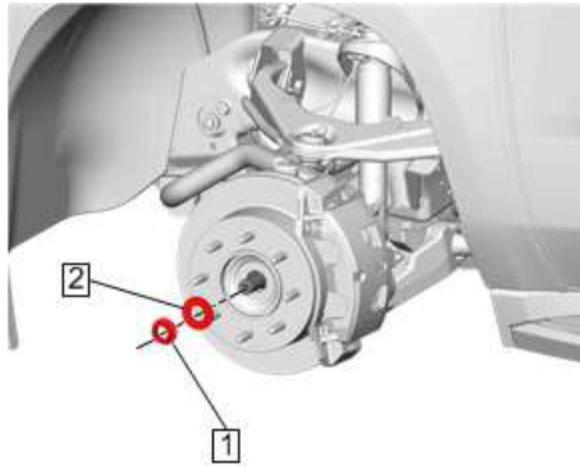


Fig. 12: Nut And Washer

Courtesy of GENERAL MOTORS COMPANY

NOTE: DO NOT reuse the wheel drive shaft nut, use a NEW nut only.

4. Remove the nut (1) and washer (2) from the hub.
5. Remove the steering gear skid shield. [Steering Gear Skid Shield Replacement](#)

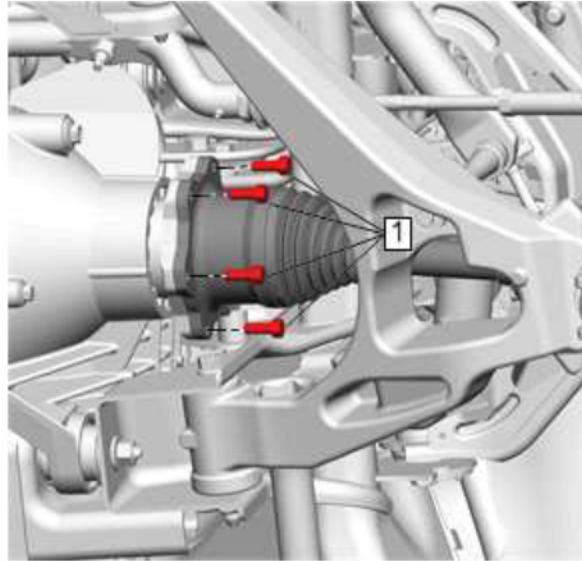


Fig. 13: Wheel Drive Shaft Retaining Bolts

Courtesy of GENERAL MOTORS COMPANY

6. Remove the [6x] wheel drive shaft retaining bolts (1) from the drive flange.
7. Remove the stabilizer link from the lower control arm. [Stabilizer Shaft Link Replacement \(Heavy Duty\)](#)
8. Remove the left shock absorber from the lower control arm. [Shock Absorber and Spring Removal and Installation \(Light Duty, With Z85/Z95\)](#) [Shock Absorber and Spring Removal and Installation \(Light Duty, Without Z85/Z95\)](#)
9. Remove the lower control arm from the steering knuckle. [Lower Control Arm Replacement \(Heavy Duty\)](#)

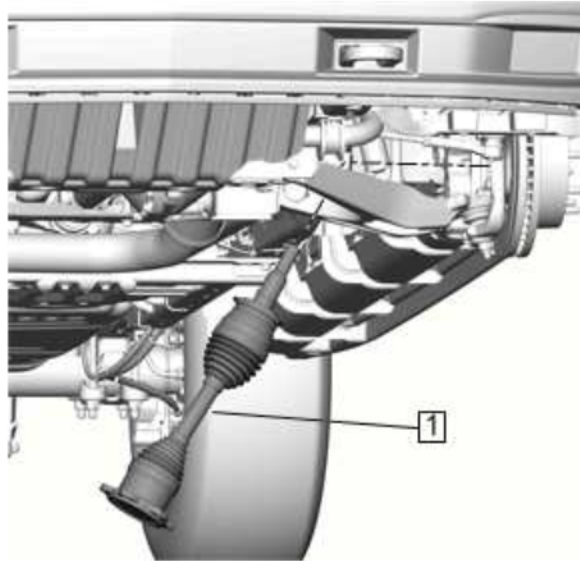


Fig. 14: Wheel Drive Shaft

Courtesy of GENERAL MOTORS COMPANY

NOTE: Wrap a shop towel around the wheel drive shaft to protect the joint boots. Do not remove the shop towel until the shaft is reinstalled.

10. Remove the wheel drive shaft (1) through the lower control arm opening.
11. Remove all dirt and debris from the splines on the wheel hub/bearing.

Installation Procedure

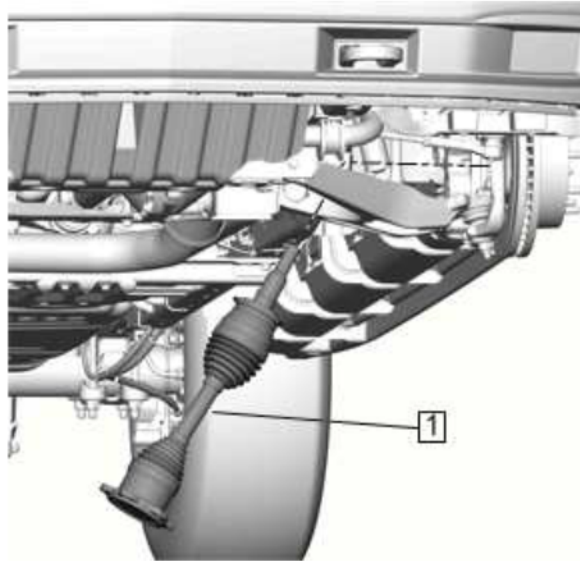


Fig. 15: Wheel Drive Shaft

Courtesy of GENERAL MOTORS COMPANY

1. Install the wheel drive shaft (1) through the lower control arm opening into the steering knuckle.

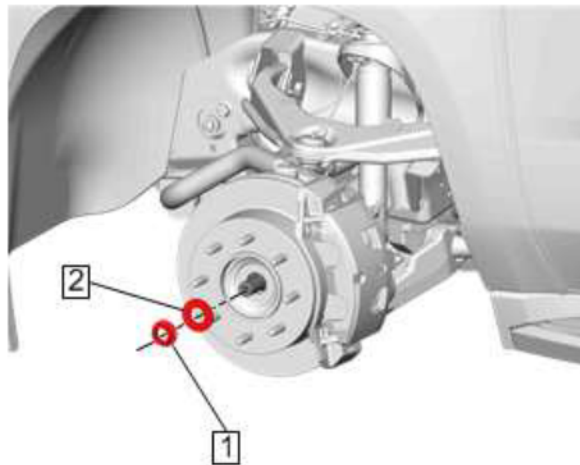


Fig. 16: Nut And Washer

Courtesy of GENERAL MOTORS COMPANY

NOTE: Install the NEW nut and washer, but DO NOT tighten at this time.

2. Install the NEW nut (1) and washer (2) and finger tighten.

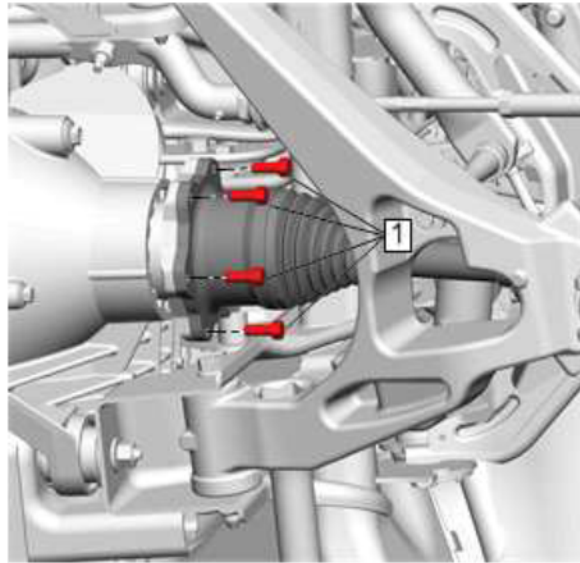


Fig. 17: Wheel Drive Shaft Retaining Bolts

Courtesy of GENERAL MOTORS COMPANY

3. Install the [6x] wheel drive shaft flange retaining bolts (1) and finger tighten.

CAUTION: Refer to [Fastener Caution](#)

4. Tighten the wheel drive shaft flange retaining bolts to 79 N.m (58 lb ft).
5. Tighten the wheel drive shaft retaining nut to 255 N.m (188 lb ft).
6. Install the left shock absorber to the lower control arm. [Shock Absorber and Spring Removal and Installation \(Light Duty, With Z85/Z95\)](#)
[Shock Absorber and Spring Removal and Installation \(Light Duty, Without Z85/Z95\)](#)
7. Install the stabilizer shaft link to the lower control arm. [Stabilizer Shaft Link Replacement \(Heavy Duty\)](#)
8. Install the lower control arm to the steering knuckle. [Lower Control Arm Replacement \(Heavy Duty\)](#)
9. Install the front axle hub cap to the wheel hub assembly.

10. Install the steering gear skid shield. [Steering Gear Skid Shield Replacement](#)
11. Install the tire and wheel assembly. [Tire and Wheel Removal and Installation \(6-Lug Wheel\)](#) [Tire and Wheel Removal and Installation \(8-Lug Wheel\)](#)
12. Lower the vehicle.

FRONT WHEEL DRIVE SHAFT REPLACEMENT - RIGHT SIDE (1500)

Special Tools

J-45859 Axle Remover

Removal Procedure

WARNING: Do not attempt to move vehicle with drive axle(s) removed from wheel bearing. Wheel(s) could fall off, dropping vehicle to the ground and causing personal injury or damage to the vehicle.

1. Raise the vehicle. [Lifting and Jacking the Vehicle](#) .
2. Remove the wheel and tire assembly. [Tire and Wheel Removal and Installation \(6-Lug Wheel\)](#) [Tire and Wheel Removal and Installation \(8-Lug Wheel\)](#) .
3. Remove the drive axle center cap, if equipped.

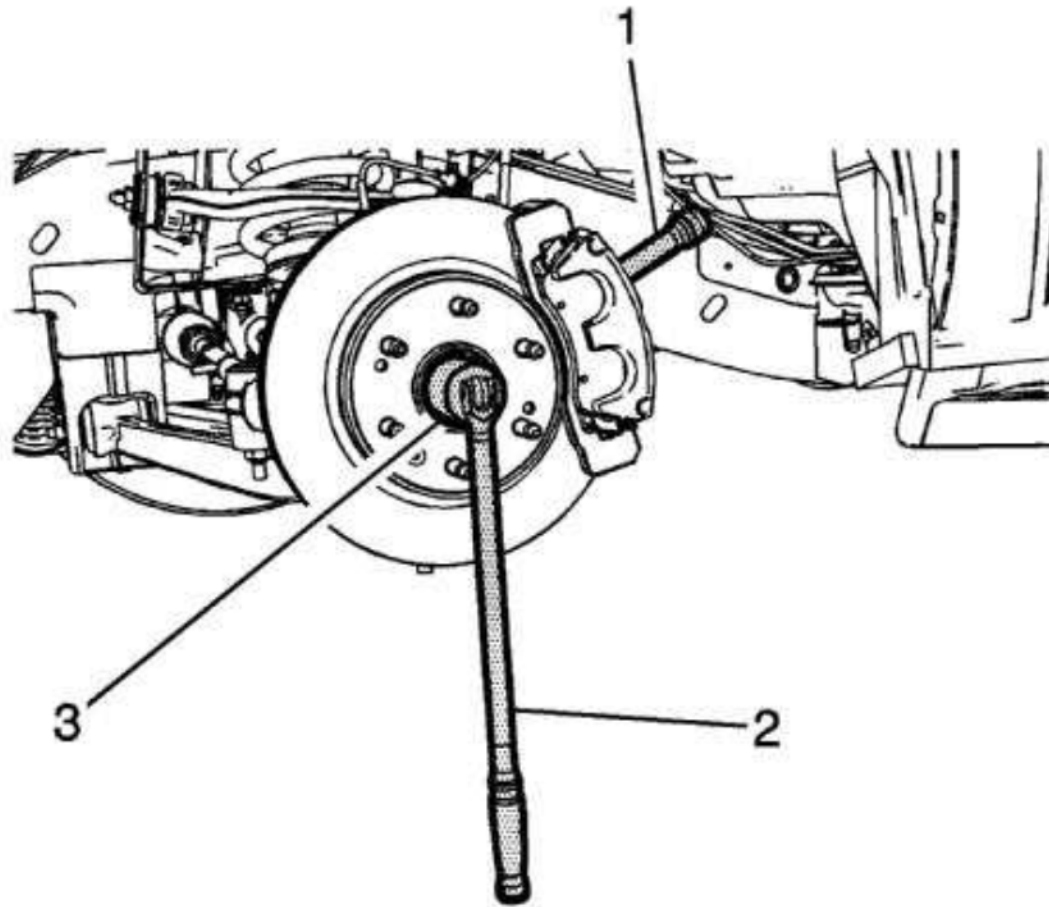


Fig. 18: Loosening Axle Retaining Nut With A Breaker Bar And Correct Sized Socket

Courtesy of GENERAL MOTORS COMPANY

4. Insert a drift or a large screwdriver (1) into the webbing of the brake rotor to prevent the axle from spinning.
5. Loosen the wheel driveshaft nut using a breaker bar (2) and proper size socket (3).

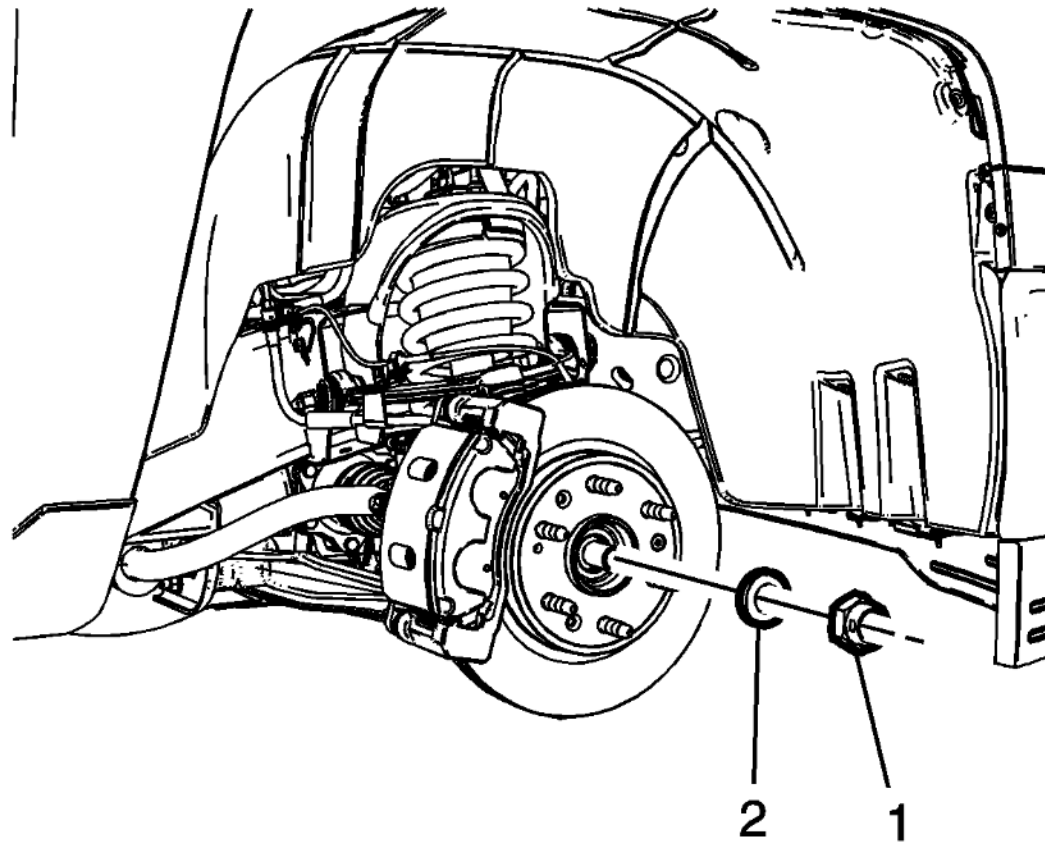


Fig. 19: Wheel Drive Shaft Nut And Washer

Courtesy of GENERAL MOTORS COMPANY

NOTE: DO NOT reuse the wheel drive shaft nut. Discard and replace with new.

6. Remove the nut (1) and the washer (2) from the wheel drive shaft.

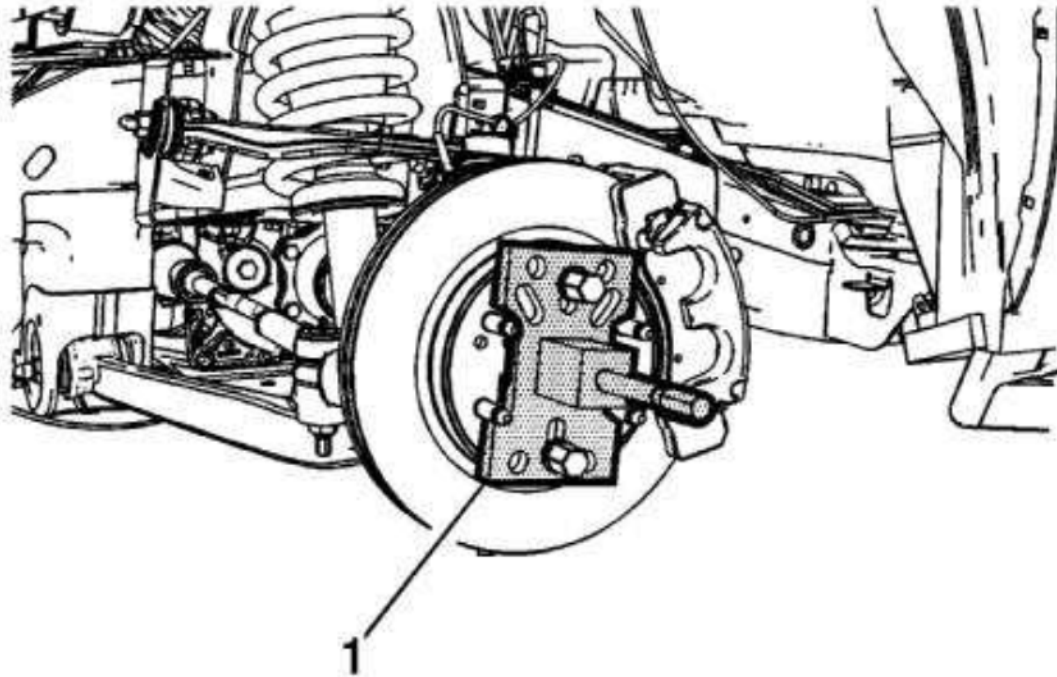


Fig. 20: J-45859 Axle Remover

Courtesy of GENERAL MOTORS COMPANY

7. Using **J-45859** Axle Remover (1), remove the wheel drive shaft from the hub.
8. Remove the steering gear skid shield. [Steering Gear Skid Shield Replacement](#) .

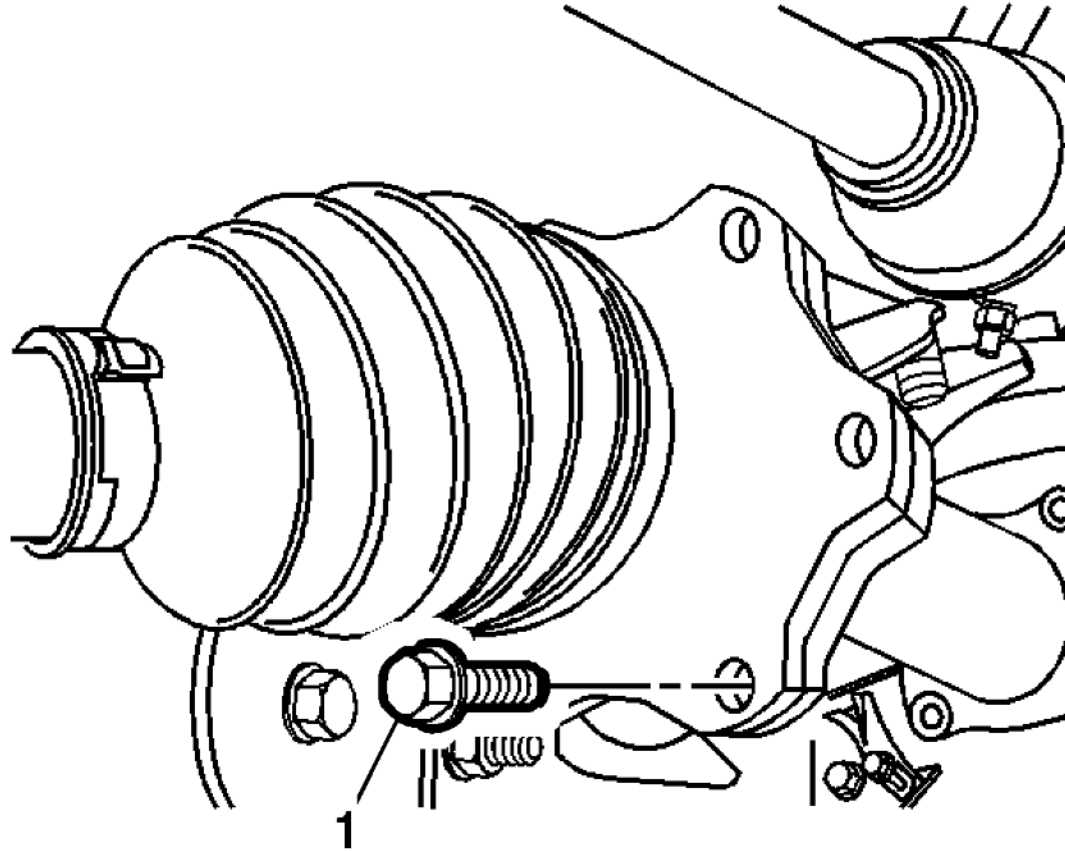


Fig. 21: View Of Wheel Drive Shaft Inboard Flange Bolt - Front Drive Axle

Courtesy of GENERAL MOTORS COMPANY

9. Remove the (Qty 6) flange bolts (1) securing the wheel drive shaft inboard flange to the output shaft flange.
10. Remove both of the stabilizer shaft links from the lower control arms. [**Stabilizer Shaft Link Replacement \(Light Duty\)**](#) .
11. Remove the right shock absorber. [**Shock Absorber and Spring Removal and Installation \(Light Duty, With Z85/Z95\)**](#) [**Shock Absorber and Spring Removal and Installation \(Light Duty, Without Z85/Z95\)**](#) .

NOTE: DO NOT remove the shop towel from the wheel drive shaft boots until the wheel drive shaft has been re-installed in the vehicle.

12. Wrap shop towels around both the inner and the outer wheel drive shaft boots in order to avoid damage to the boots during removal and installation.
13. Clean the steering knuckle and the wheel drive shaft splines and threads.

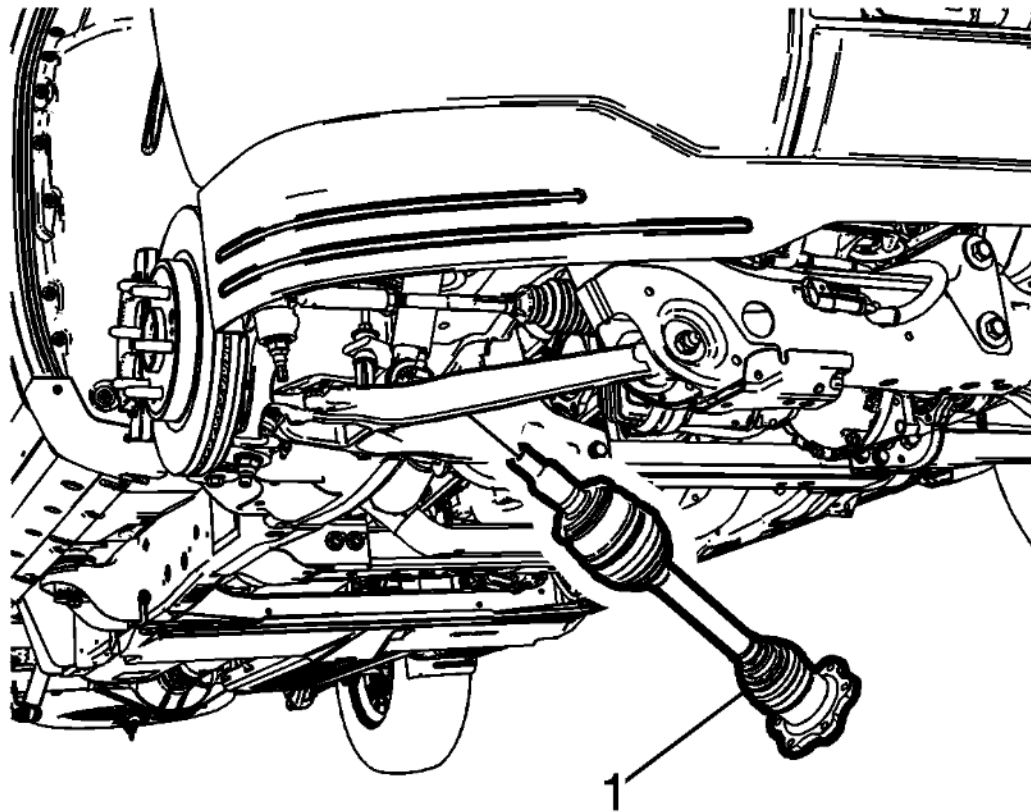


Fig. 22: Wheel Drive Shaft

Courtesy of GENERAL MOTORS COMPANY

14. Pull the wheel drive shaft (1) through the lower control arm opening.

Installation Procedure

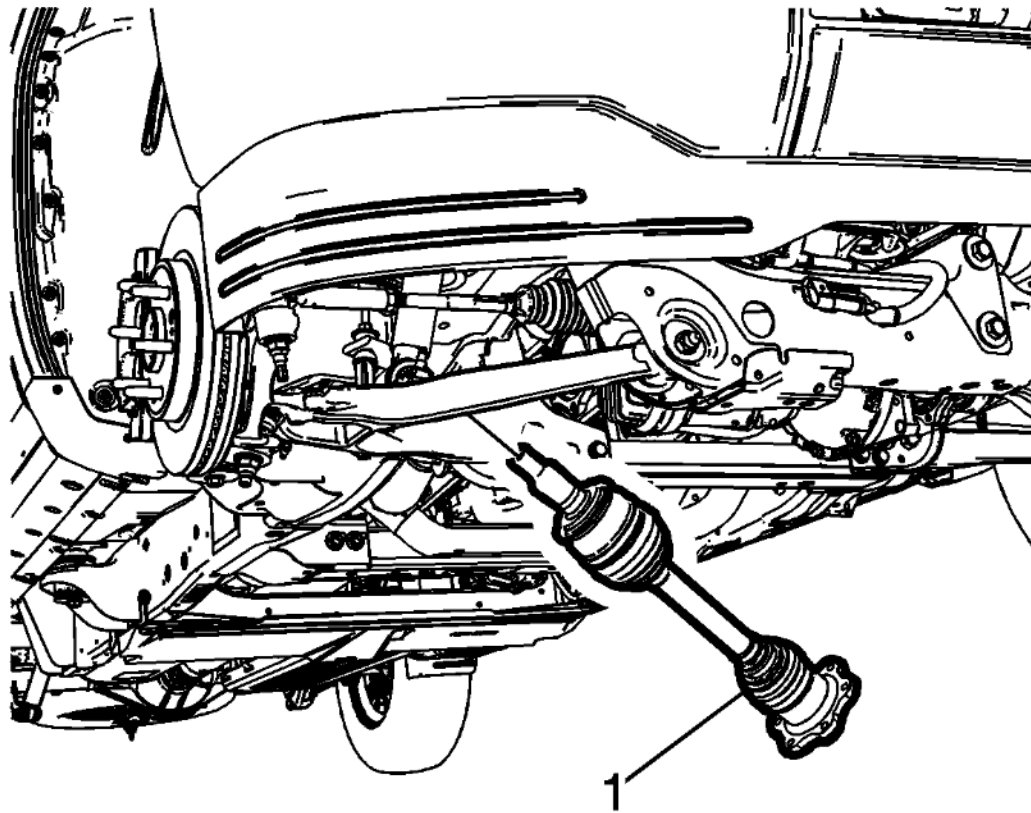


Fig. 23: Wheel Drive Shaft

Courtesy of GENERAL MOTORS COMPANY

1. Install the wheel drive shaft (1) in the steering knuckle.

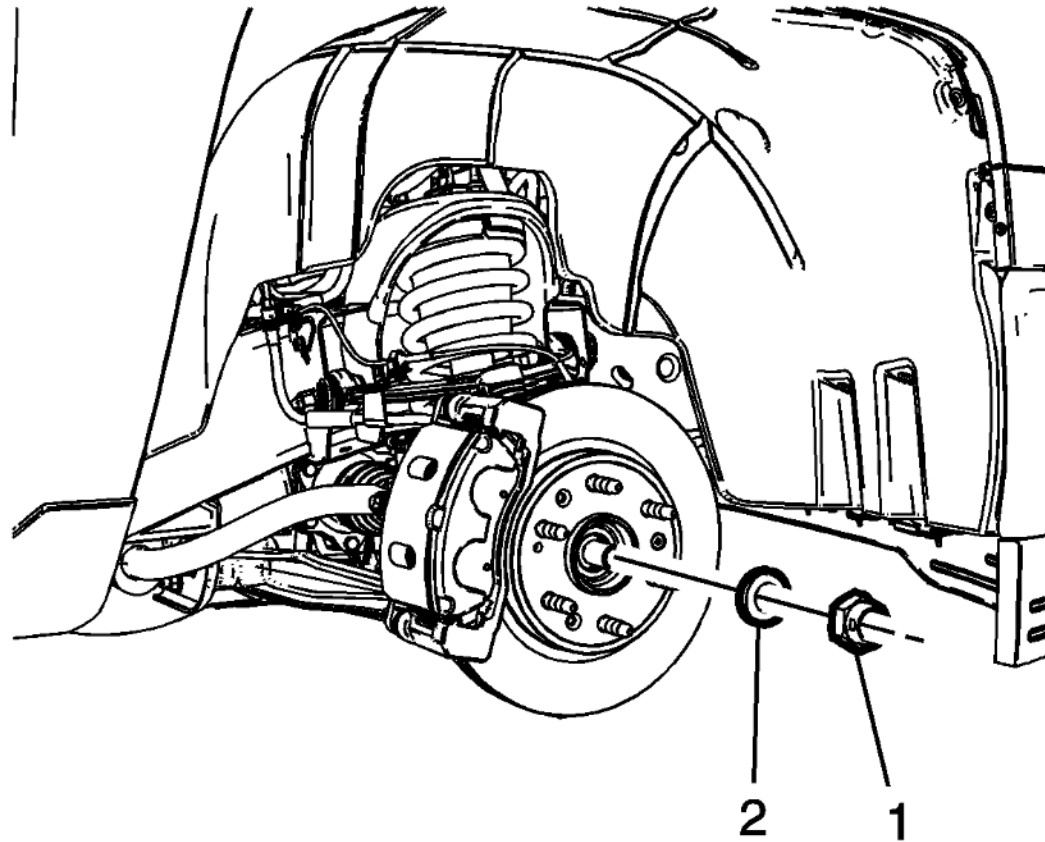


Fig. 24: Wheel Drive Shaft Nut And Washer

Courtesy of GENERAL MOTORS COMPANY

CAUTION: Use only a genuine GM front wheel drive shaft nut. Installation of anything but an OEM front wheel drive shaft nut could cause damage to the vehicle.

2. Install the washer (2) and the NEW wheel drive shaft nut (1) and hand tighten ONLY.

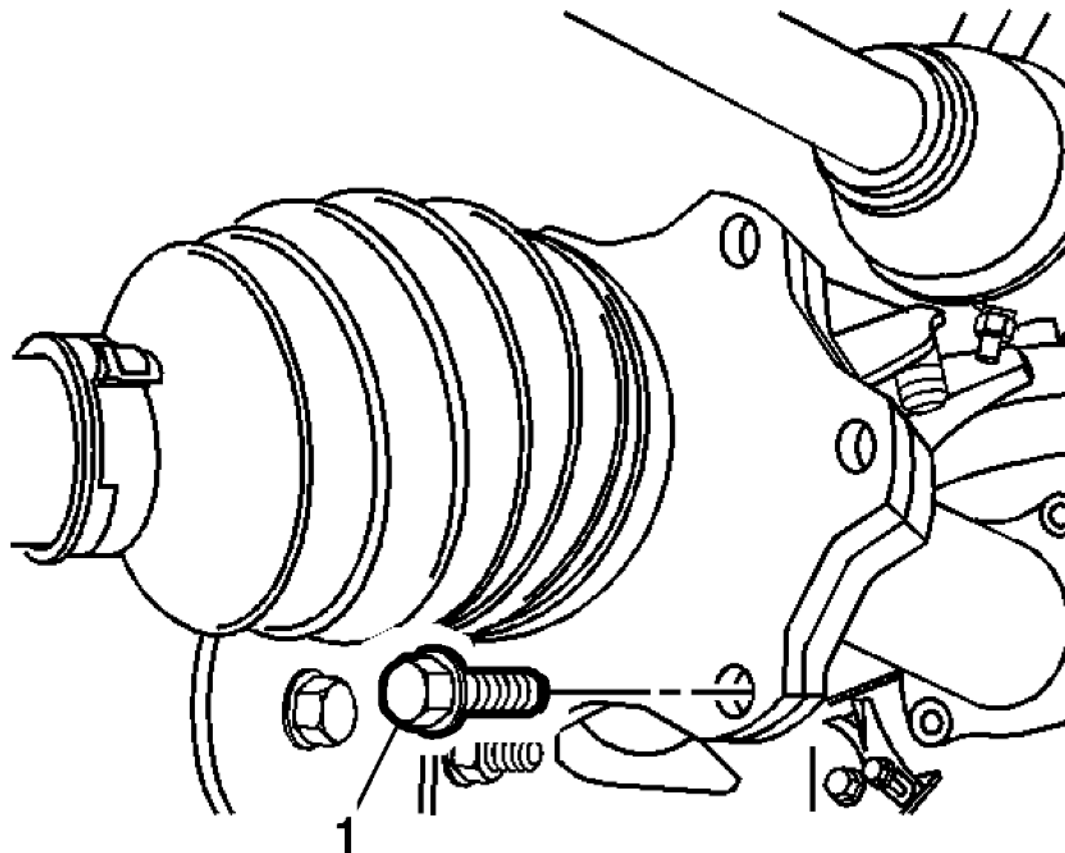


Fig. 25: View Of Wheel Drive Shaft Inboard Flange Bolt - Front Drive Axle
Courtesy of GENERAL MOTORS COMPANY

NOTE: Hand tighten the flange bolts ONLY at this time.

3. Install the (Qty 6) flange bolts (1) into the flange and hand tighten.

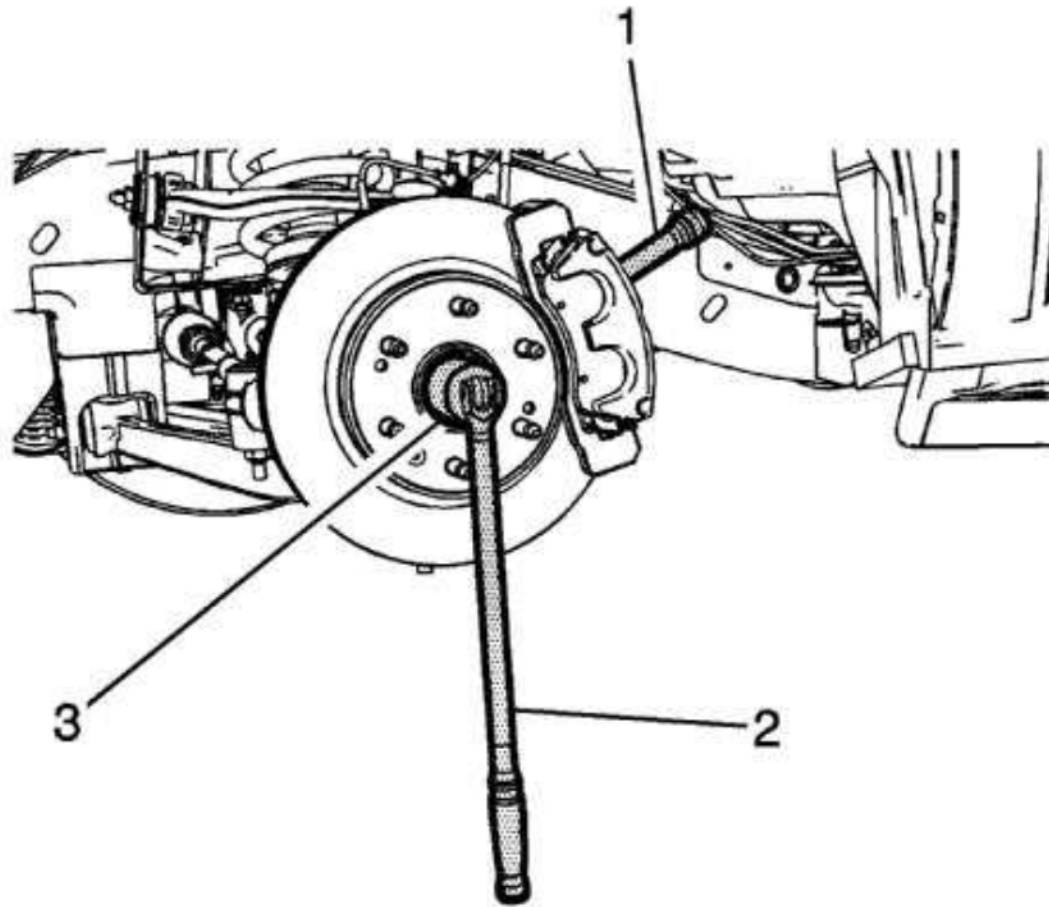


Fig. 26: Loosening Axle Retaining Nut With A Breaker Bar And Correct Sized Socket

Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to [Fastener Caution](#) .

4. Insert a drift (1) into the webbing of the brake rotor to prevent the axle from spinning.

Tighten:

- Tighten the inboard flange bolts to 79 N.m (58 lb ft).
 - Tighten the wheel drive shaft nut to 255 N.m (188 lb ft).
5. Install the drive axle center cap, if equipped.
 6. Install both of the stabilizer shaft links. [Stabilizer Shaft Link Replacement \(Light Duty\)](#) .
 7. Install the right shock absorber. [Shock Absorber and Spring Removal and Installation \(Light Duty, With Z85/Z95\)](#) [Shock Absorber and Spring Removal and Installation \(Light Duty, Without Z85/Z95\)](#) .
 8. Install the steering gear skid shield. [Steering Gear Skid Shield Replacement](#) .
 9. Install the wheel and tire assembly. [Tire and Wheel Removal and Installation \(6-Lug Wheel\)](#) [Tire and Wheel Removal and Installation \(8-Lug Wheel\)](#) .
 10. Lower the vehicle.

FRONT WHEEL DRIVE SHAFT REPLACEMENT - RIGHT SIDE (HEAVY DUTY)

Removal Procedure

WARNING: Do not attempt to move vehicle with drive axle(s) removed from wheel bearing. Wheel(s) could fall off, dropping vehicle to the ground and causing personal injury or damage to the vehicle.

1. Raise and support the vehicle. [Lifting and Jacking the Vehicle](#)
2. Remove the tire and wheel assembly. [Tire and Wheel Removal and Installation \(6-Lug Wheel\)](#) [Tire and Wheel Removal and Installation \(8-Lug Wheel\)](#)

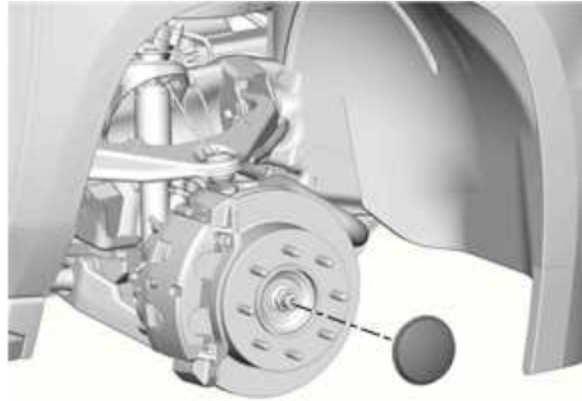


Fig. 27: Front Axle Hub Cap

Courtesy of GENERAL MOTORS COMPANY

3. Remove the front axle hub cap (1) from the wheel hub assembly.

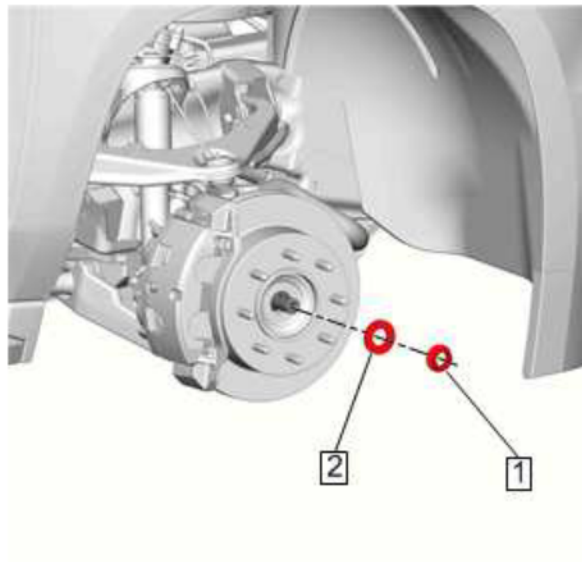


Fig. 28: Nut And Washer

Courtesy of GENERAL MOTORS COMPANY

NOTE: DO NOT reuse the wheel drive shaft nut. Discard and replace with new.

4. Remove the nut (1) and washer (2) from the hub.
5. Remove the steering gear skid shield. [Steering Gear Skid Shield Replacement](#)

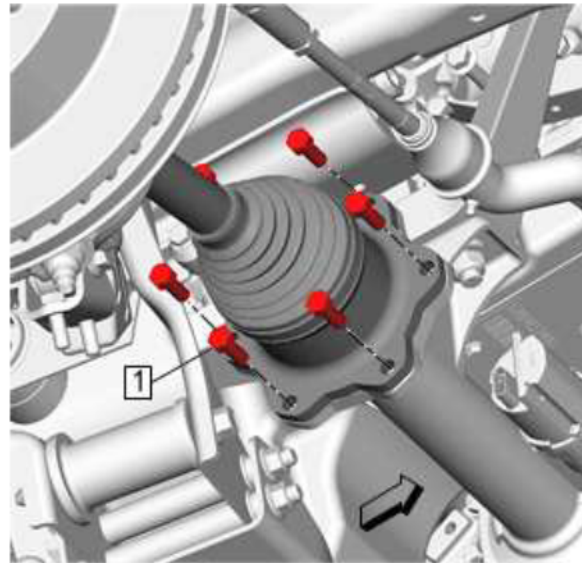


Fig. 29: Wheel Drive Shaft Flange Retaining Bolts

Courtesy of GENERAL MOTORS COMPANY

6. Remove the [6x] wheel drive shaft retaining bolts (1) from the drive flange.
7. Remove the stabilizer link from the lower control arm. [Stabilizer Shaft Link Replacement \(Heavy Duty\)](#)
8. Remove the right shock absorber from the lower control arm. [Shock Absorber and Spring Removal and Installation \(Light Duty, With Z85/Z95\)](#) [Shock Absorber and Spring Removal and Installation \(Light Duty, Without Z85/Z95\)](#)
9. Remove the lower control arm from the steering knuckle. [Lower Control Arm Replacement \(Heavy Duty\)](#)
10. Wrap shop towels around both the inner and the outer wheel drive shaft boots in order to avoid damage to the boots during removal and installation.

NOTE: DO NOT remove the shop towel from the wheel drive shaft boots until the wheel drive shaft has been re-installed in the vehicle.

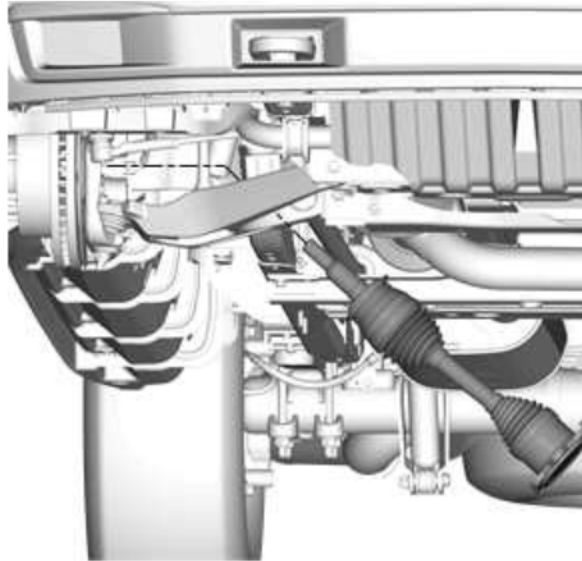


Fig. 30: Lower Control Arm Opening Into Steering Knuckle

Courtesy of GENERAL MOTORS COMPANY

11. Remove the wheel drive shaft through the lower control arm opening.
12. Clean the steering knuckle and the wheel drive shaft splines and threads.

Installation Procedure

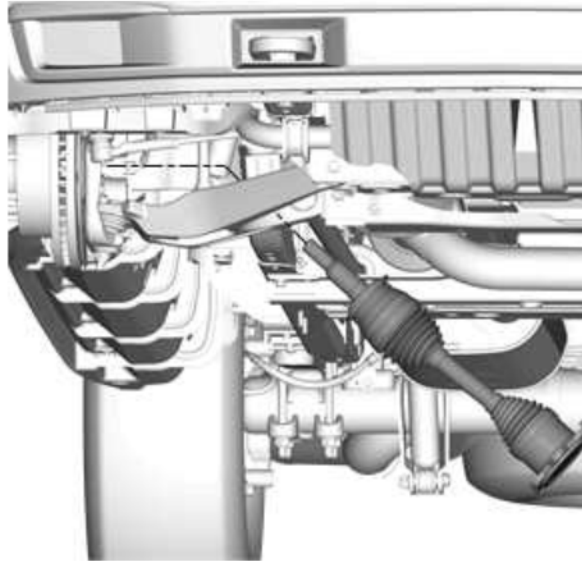


Fig. 31: Lower Control Arm Opening Into Steering Knuckle

Courtesy of GENERAL MOTORS COMPANY

1. Install the wheel drive shaft through the lower control arm opening into the steering knuckle.

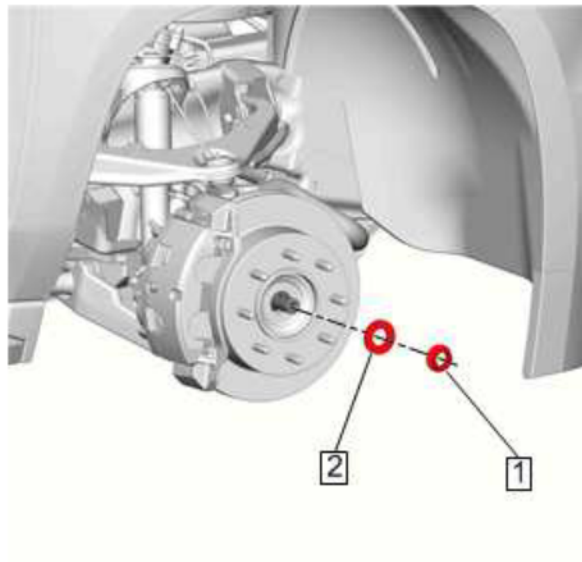


Fig. 32: Nut And Washer

Courtesy of GENERAL MOTORS COMPANY

CAUTION: Use only a genuine GM front wheel drive shaft nut. Installation of anything but an OEM front wheel drive shaft nut could cause damage to the vehicle.

2. Install the NEW nut (1) and washer (2) and finger tighten.

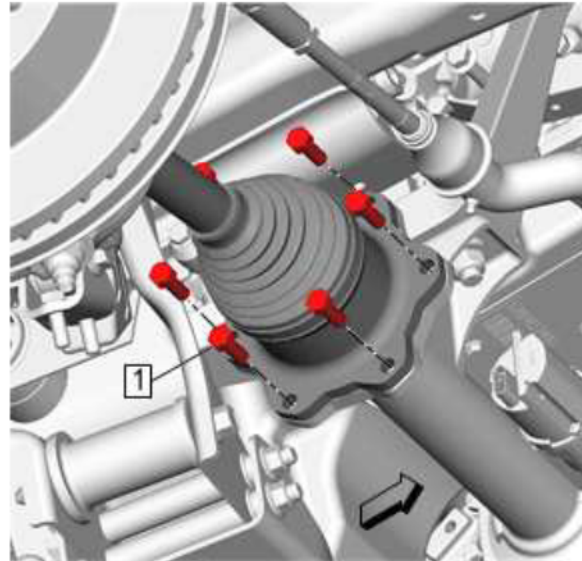


Fig. 33: Wheel Drive Shaft Flange Retaining Bolts

Courtesy of GENERAL MOTORS COMPANY

NOTE: Hand tighten the flange bolts **ONLY** at this time.

3. Install the [6x] wheel drive shaft flange retaining bolts (1) and finger tighten.

CAUTION: Refer to [Fastener Caution](#)

4. Tighten the wheel drive shaft flange retaining bolts to 79 N.m (58 lb ft).
5. Tighten the wheel drive shaft retaining nut to 255 N.m (188 lb ft).
6. Install the right shock absorber to the lower control arm. [Shock Absorber and Spring Removal and Installation \(Light Duty, With Z85/Z95\)](#) [Shock Absorber and Spring Removal and Installation \(Light Duty, Without Z85/Z95\)](#)
7. Install the stabilizer shaft link to the lower control arm. [Stabilizer Shaft Link Replacement \(Heavy Duty\)](#)

8. Install the lower control arm to the steering knuckle. [Lower Control Arm Replacement \(Heavy Duty\)](#)
9. Install the front axle hub cap to the wheel hub assembly.
10. Install the steering gear skid shield. [Steering Gear Skid Shield Replacement](#)
11. Install the tire and wheel assembly. [Tire and Wheel Removal and Installation \(6-Lug Wheel\)](#) [Tire and Wheel Removal and Installation \(8-Lug Wheel\)](#)
12. Lower the vehicle.

FRONT WHEEL DRIVE SHAFT INNER JOINT AND BOOT REPLACEMENT

Special Tools

- **J-35910** Drive Axle Seal Clamp Pliers
- **J-36652-98** Drive Axle Clamp Swage Tool

Disassemble Procedure

1. Remove the wheel drive shaft. Refer to [Front Wheel Drive Shaft Replacement - Left Side \(1500\)](#)[Front Wheel Drive Shaft Replacement - Left Side \(Heavy Duty\)](#), or refer to [Front Wheel Drive Shaft Replacement - Right Side \(1500\)](#)[Front Wheel Drive Shaft Replacement - Right Side \(Heavy Duty\)](#).

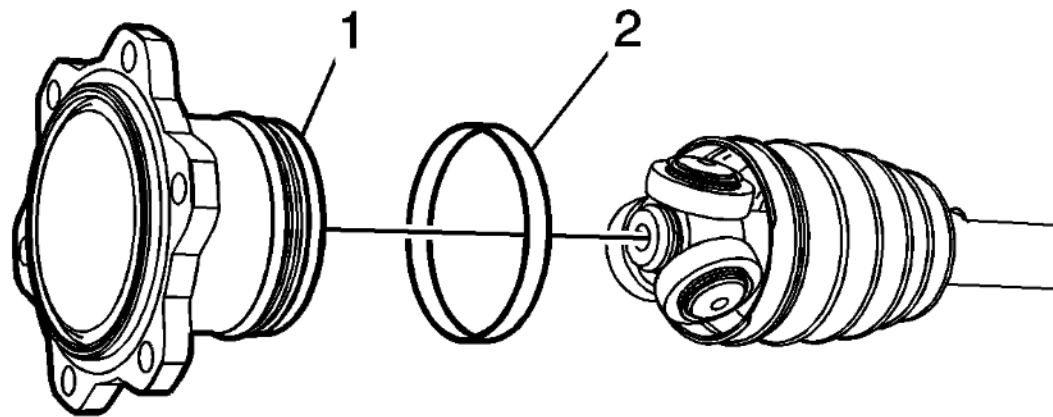


Fig. 34: View Of Tripot Housing, Boot & Clamp

Courtesy of GENERAL MOTORS COMPANY

NOTE: Use caution when removing the tripot housing (1).

2. Using the appropriate tool, remove the boot clamp (2).
3. Remove the tripot housing (1).

NOTE: If using denatured alcohol or any other recommend cleaning solvent, allow the tripot housing to air dry.

4. Remove any grease from of the housing (1).

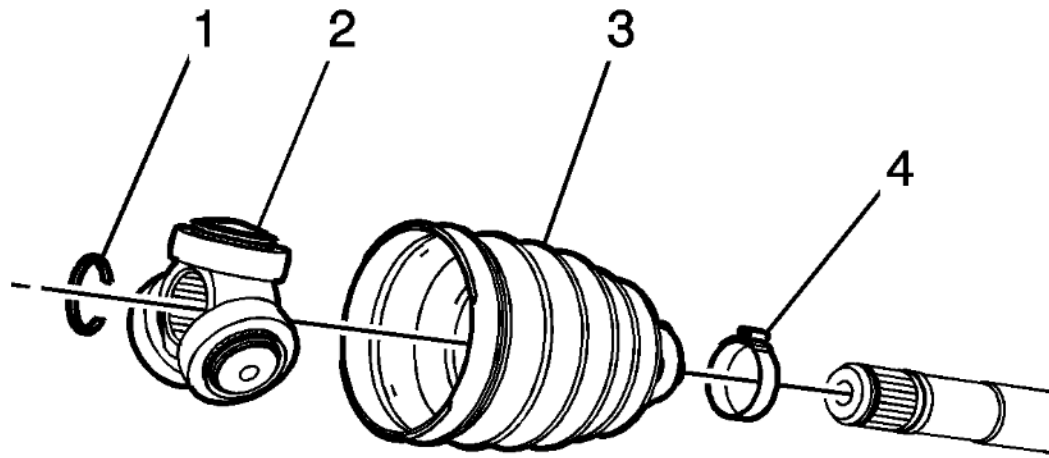


Fig. 35: View Of Spider Assembly, Boot & Retaining Ring
Courtesy of GENERAL MOTORS COMPANY

5. Using side cutters, remove the small boot retaining clamp (4).

6. Using the appropriate tool, remove the retaining ring (1), then the spider assembly (2), and the boot (3).

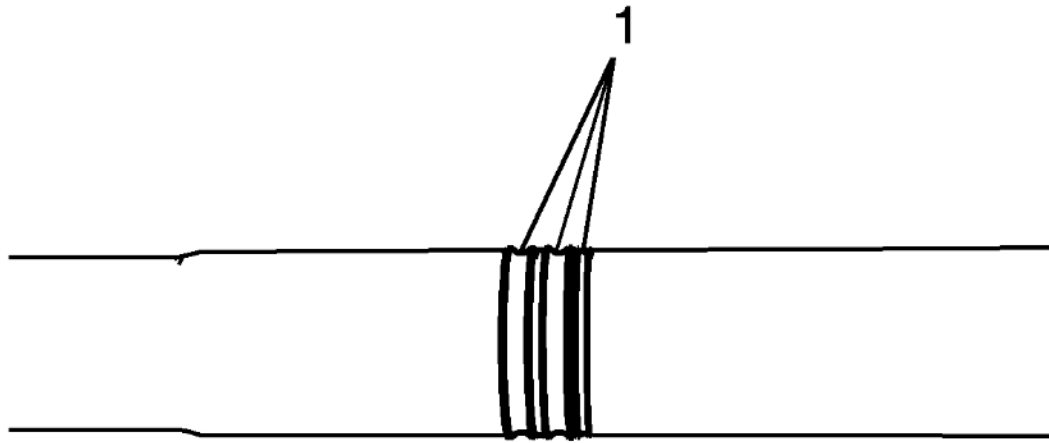


Fig. 36: Identifying Seal Area Mounting Grooves
Courtesy of GENERAL MOTORS COMPANY

7. Using the appropriate tool, remove the any rust in the seal mounting area (grooves) (1).
8. If any of the internal components of the tripot assembly are found to be damaged or have excessive wear, replace the tripot as an assembly.

Assemble Procedure

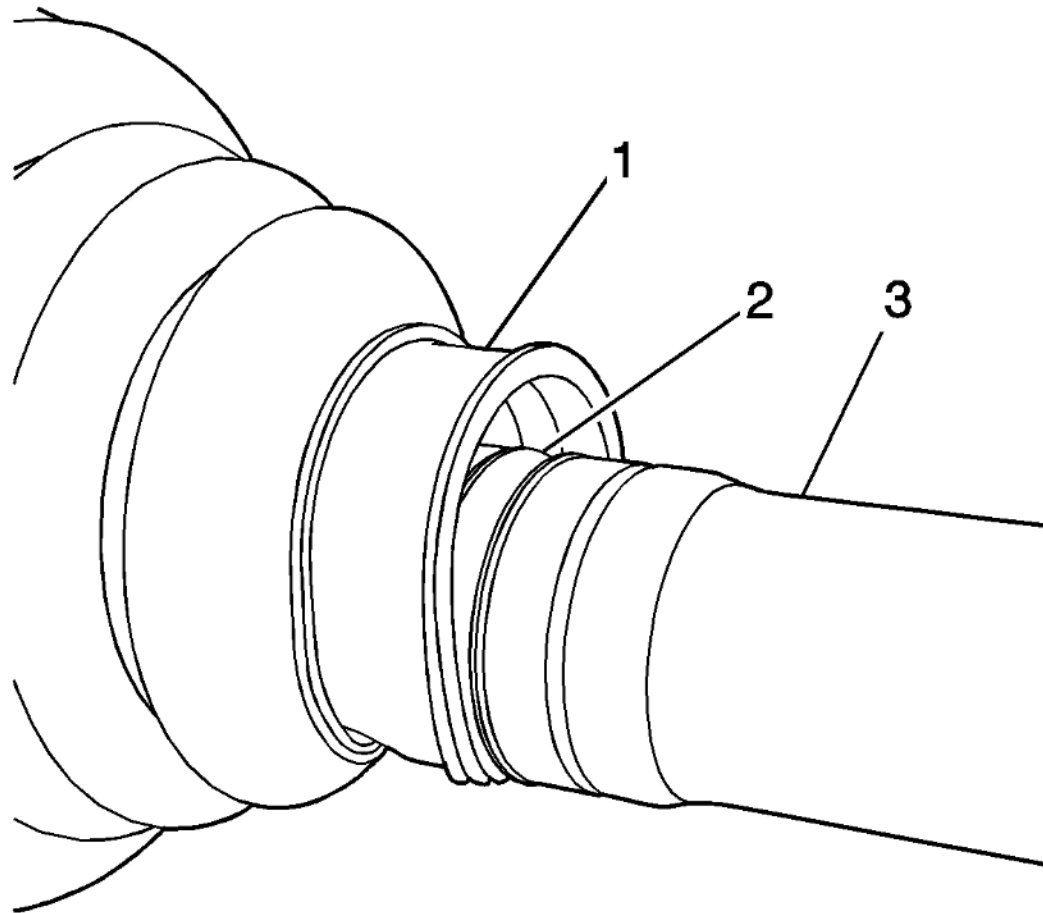


Fig. 37: Identifying Groove In Wheel Drive Shaft

Courtesy of GENERAL MOTORS COMPANY

1. Position the boot (1) so that it is seated properly in the groove (2) in the wheel drive shaft (3).

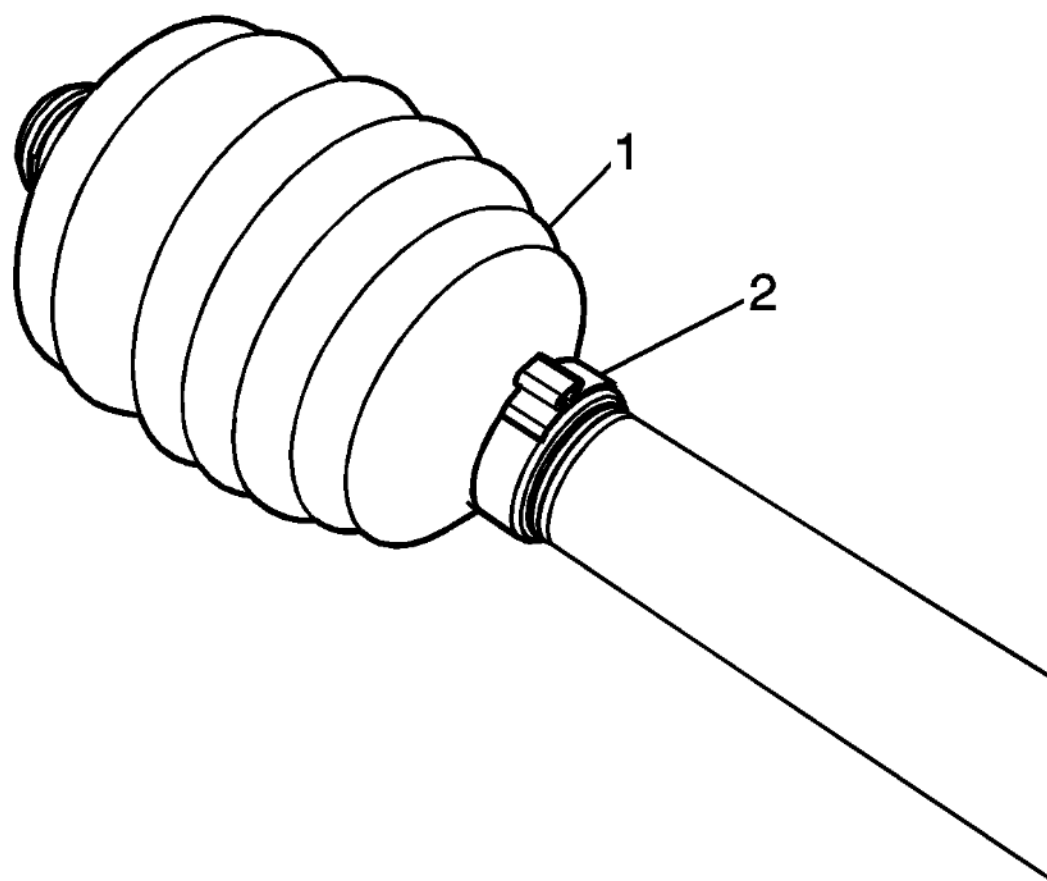


Fig. 38: Identifying Boot & Small Clamp

Courtesy of GENERAL MOTORS COMPANY

2. Install the small boot clamp (2) on the boot (1).

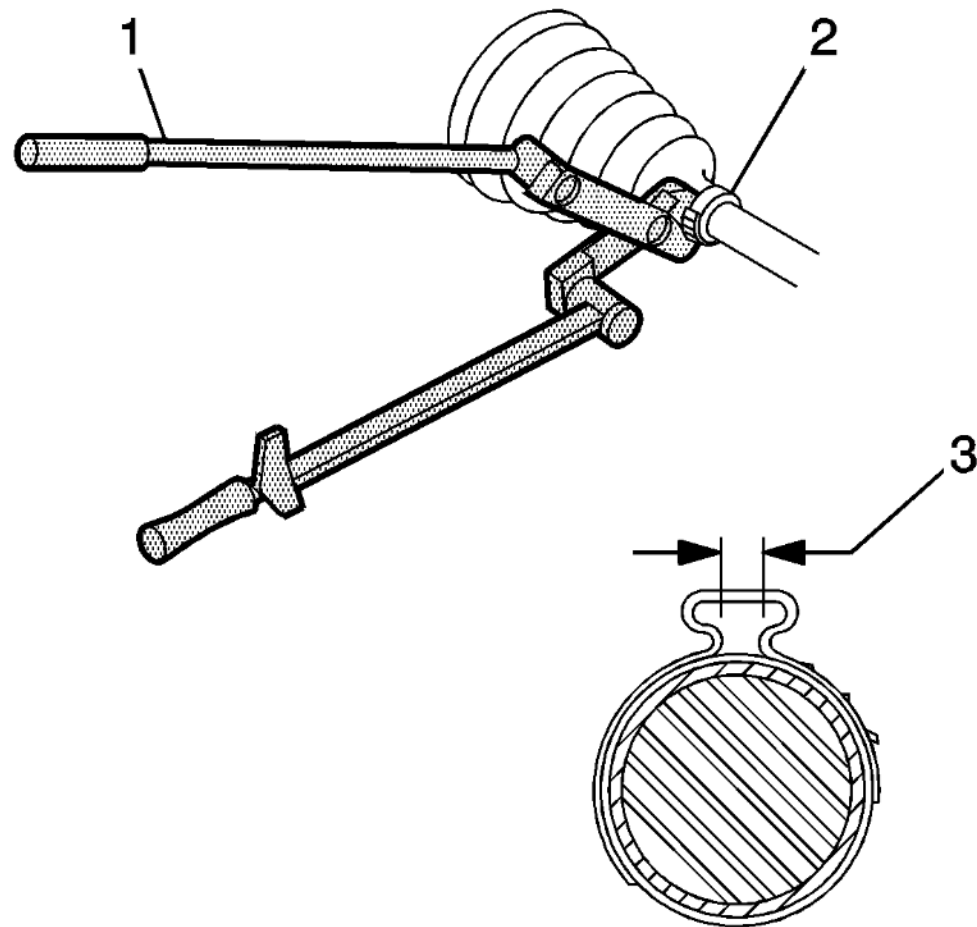


Fig. 39: Identifying Pliers Breaker Bar, Torque Wrench, Ratchet & Gap Measurement

Courtesy of GENERAL MOTORS COMPANY

3. Using the **J-35910** pliers, a breaker bar, and a torque wrench (1), close the boot clamp (2) until the gap (3) measures 2.15 mm (0.085 inch).

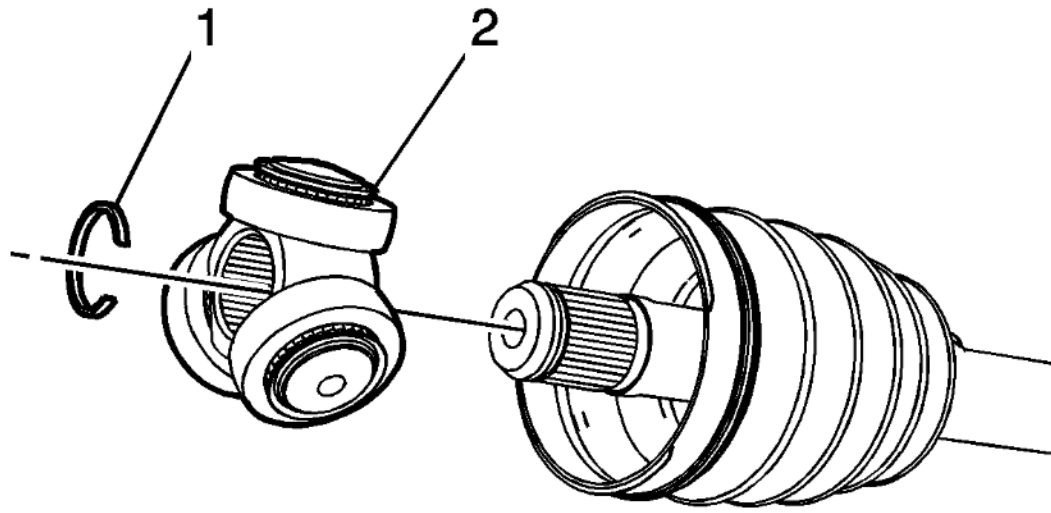


Fig. 40: View Of Spider Assembly & Retaining Ring

Courtesy of GENERAL MOTORS COMPANY

4. Install the spider assembly (2).
5. Using the appropriate tool, install the retaining ring (1).

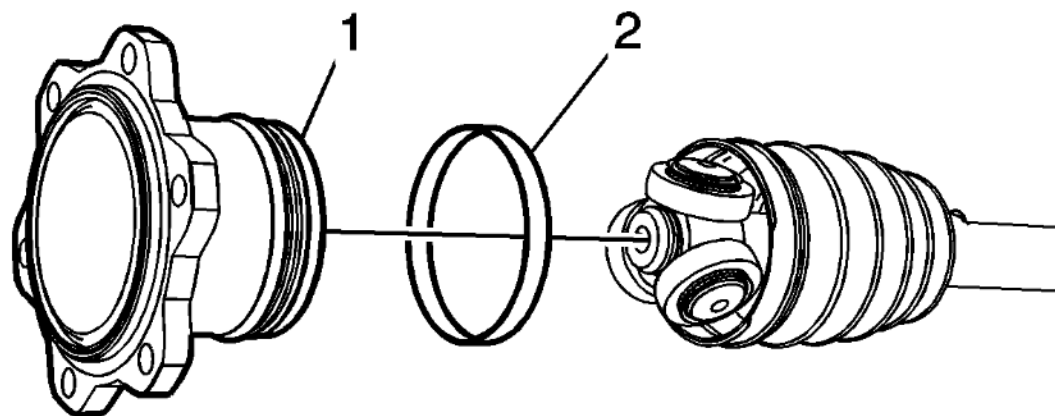


Fig. 41: View Of Tripot Housing, Boot & Clamp

Courtesy of GENERAL MOTORS COMPANY

NOTE: Position the boot clamp so that it is at the small end of the boot.

6. Install the tripot assembly (1) and the boot clamp (2)

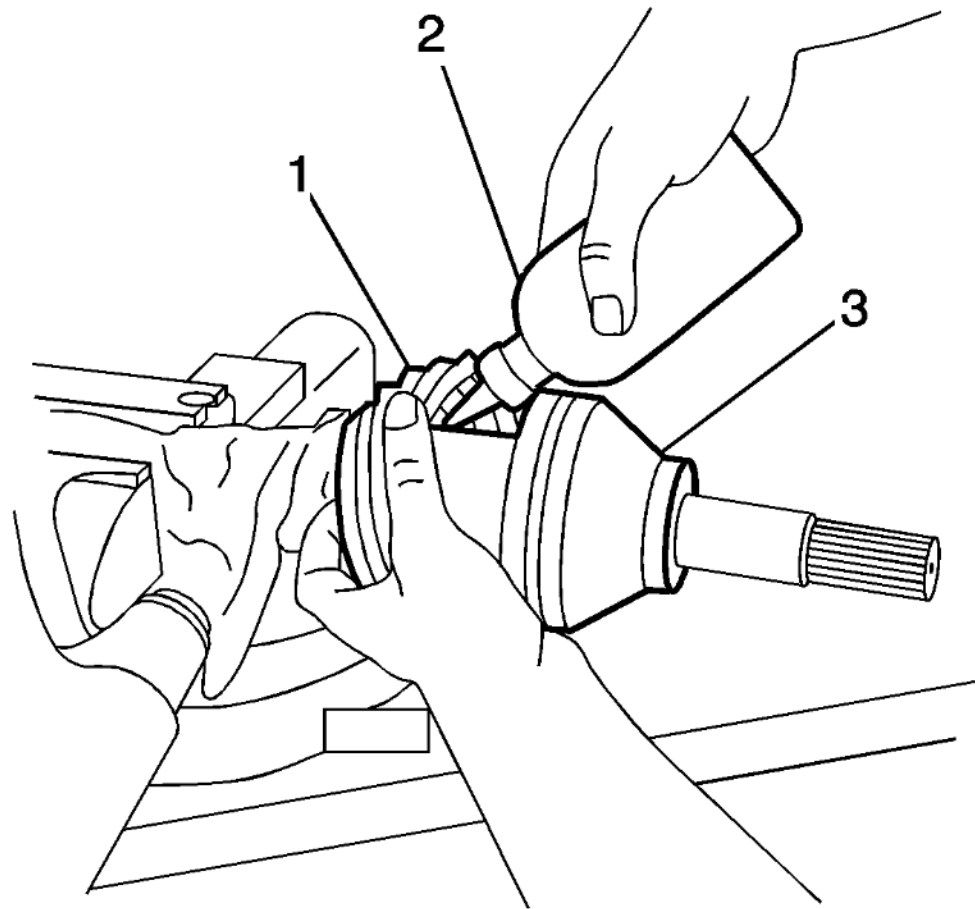


Fig. 42: Adding Lubricant Into Axle Boot

Courtesy of GENERAL MOTORS COMPANY

7. Place approximately half of the lubricant (2) in the boot (1) and the remaining half in the tripot housing (3).

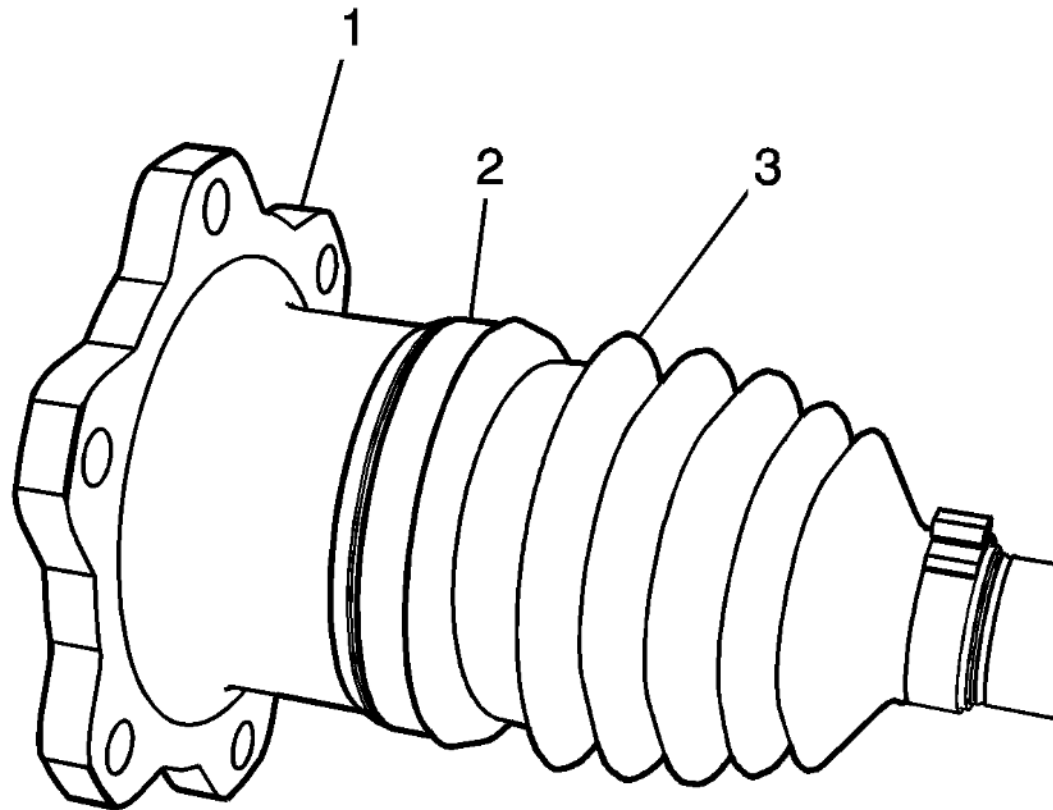


Fig. 43: View Of Tripot Housing, Boot & Clamp

Courtesy of GENERAL MOTORS COMPANY

NOTE: Pinch the slightly by hand in order to distort it into an oval shape.

8. Install the boot (1) and the boot clamp (2) on the tripot housing (3).

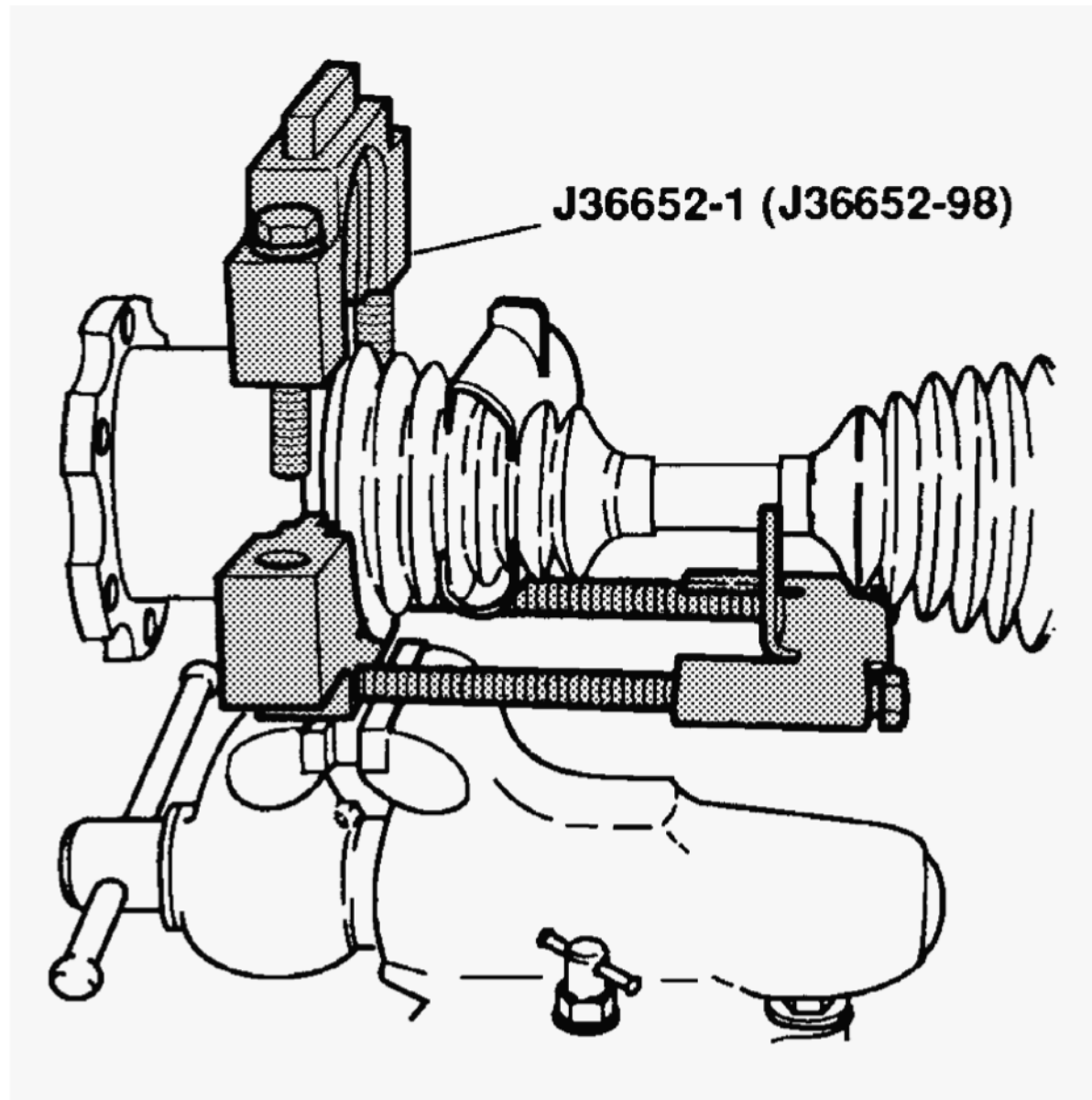


Fig. 44: Assembling Bolts And Support Plate To Base Of J 36652-98

Courtesy of GENERAL MOTORS COMPANY

9. Assemble the bolts and the support plate to the base of the **J-36652-98** tool and secure the base in a vise.

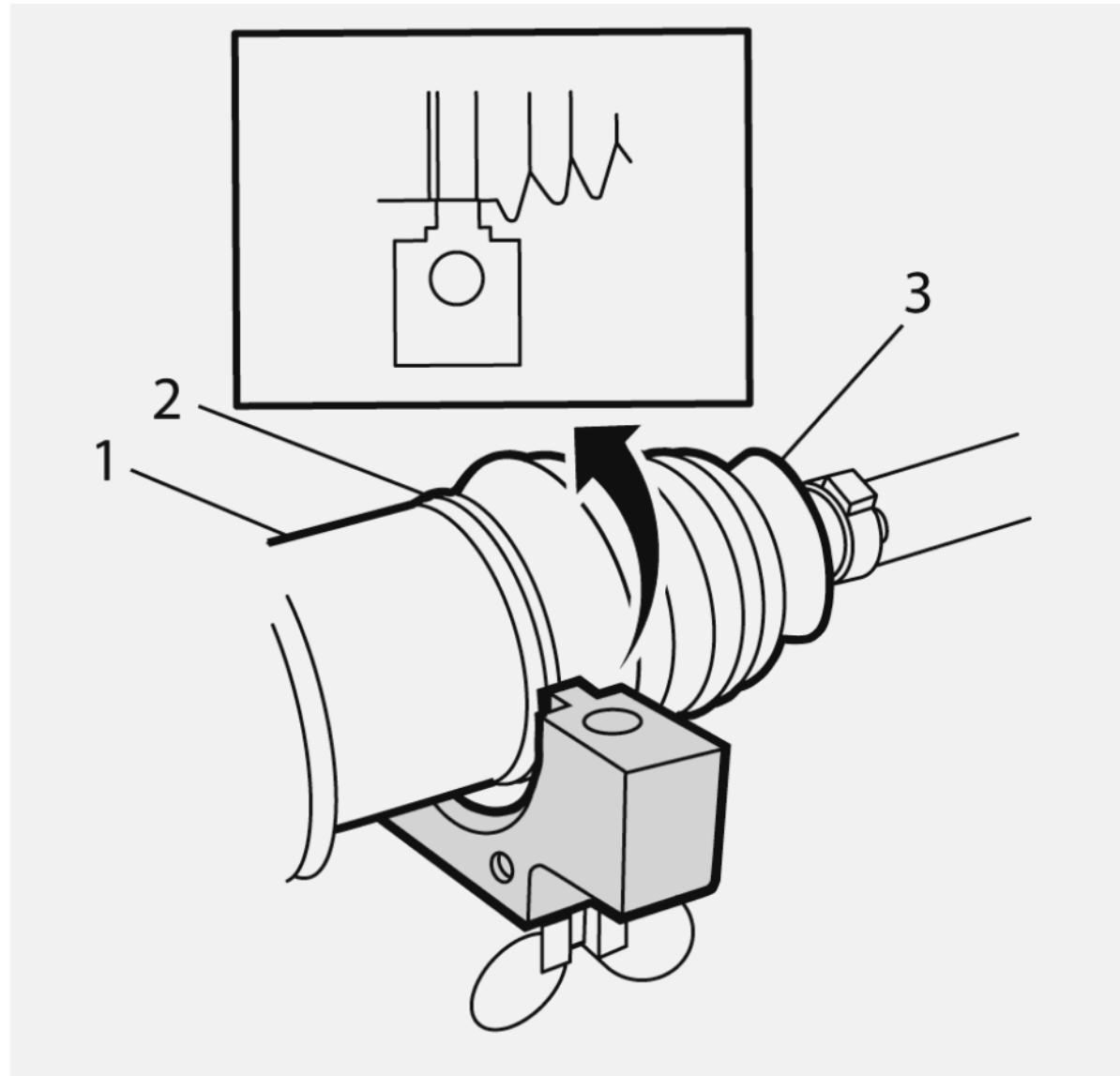


Fig. 45: Swage Ring

Courtesy of GENERAL MOTORS COMPANY

10. Position the tripot end of the wheel drive shaft assembly into the base of the **J-36652-98** tool.
11. Install the top half of the **J-36652-98** tool.
12. Align the boot clamp (2) and the clamp.

NOTE: Hand tighten the bolts until the bolts are snug.

13. Insert the bolts.

14. Align the tripot boot, tripot housing, and the boot clamp.

NOTE: Alternate between the bolts until both sides of the top half of the tool touch the bottom half.

15. Tighten each bolt 180 degrees at a time.

16. Loosen the bolts and remove the halfshaft assembly from the tool.

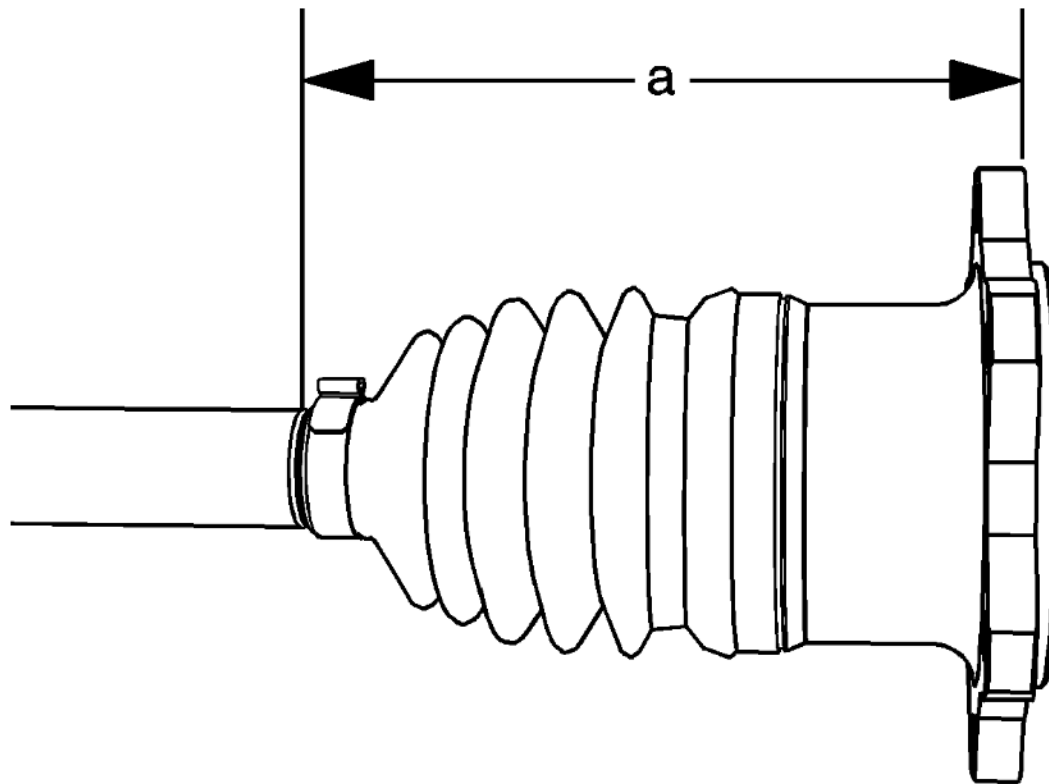


Fig. 46: Measuring Axle, Boot & Tripot Housing Length

Courtesy of GENERAL MOTORS COMPANY

17. Inspect the inboard stroke position. Measurement (a) should be 178 mm (7.01 in).
18. Install the wheel drive shaft. Refer to **Front Wheel Drive Shaft Replacement - Left Side (1500)****Front Wheel Drive Shaft Replacement - Left Side (Heavy Duty)**, or refer to **Front Wheel Drive Shaft Replacement - Right Side (1500)****Front Wheel Drive Shaft Replacement - Right Side (Heavy Duty)**.

FRONT WHEEL DRIVE SHAFT OUTER JOINT AND BOOT REPLACEMENT

Special Tools

- **J-8059** Snap Ring Pliers
- **J-35910** Drive Axle Seal Clamp Pliers
- **J-36652-1** Drive Axle Clamp Swage Tool
- **J-36652-2** Axle Swage Tool

Removal Procedure

1. Remove the wheel drive shaft. Refer to [Front Wheel Drive Shaft Replacement - Left Side \(1500\)](#)[Front Wheel Drive Shaft Replacement - Left Side \(Heavy Duty\)](#), refer to [Front Wheel Drive Shaft Replacement - Right Side \(1500\)](#)[Front Wheel Drive Shaft Replacement - Right Side \(Heavy Duty\)](#).

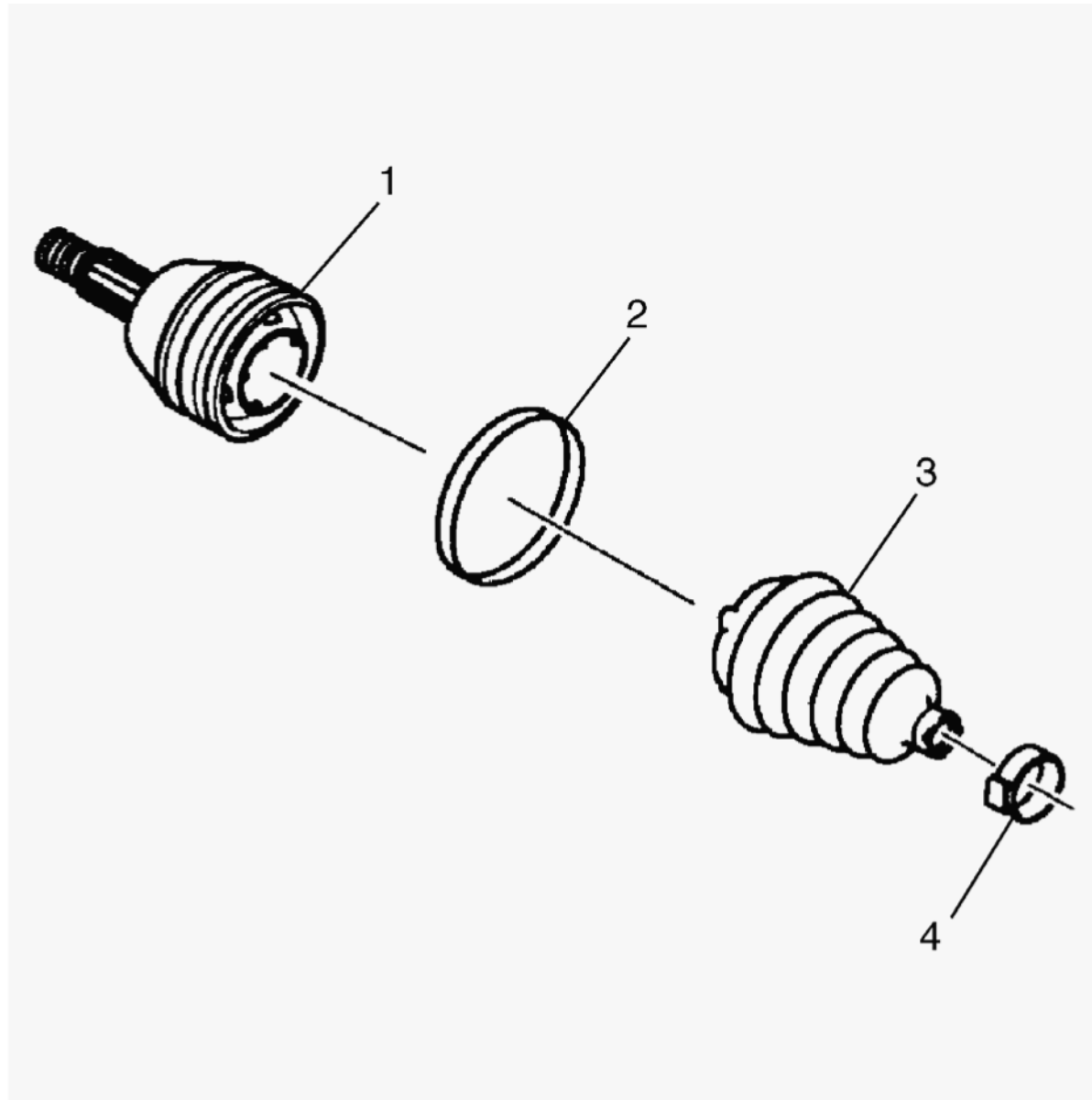


Fig. 47: CV Joint Outer Race, Swage Ring, Boot & Small Boot Clamp

Courtesy of GENERAL MOTORS COMPANY

NOTE: Use caution when using the hand grinder by the CV joint outer race (1).

2. Use a hand grinder to cut through the swage ring (2).
3. Use side cutters to cut off the small boot clamp (4).

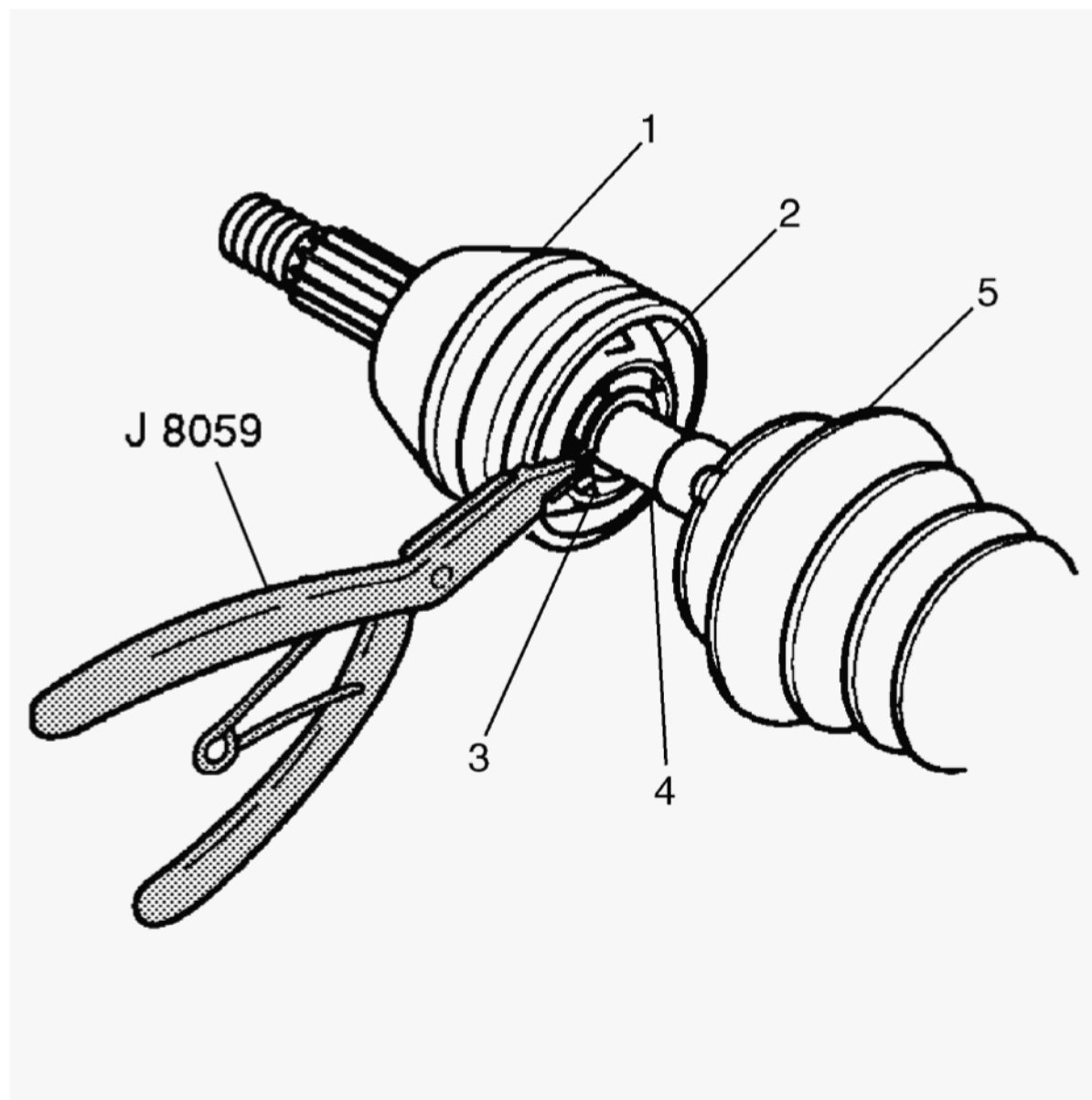


Fig. 48: Boot, Halfshaft Bar And CV Joint Outer Race

Courtesy of GENERAL MOTORS COMPANY

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4. Slide the boot (5) down the halfshaft bar (4) and away from the CV joint outer race (1).
5. Wipe all grease away from the face of the CV joint.
6. Find the halfshaft bar retaining snap ring (3), which is located in the inner race (2).
7. Spread the snap ring ears apart using **J-8059** snap ring pliers (or equivalent).
8. Pull the CV joint (1) and the CV joint boot (5) from the halfshaft bar (4).
9. Discard the old CV joint boot (5).

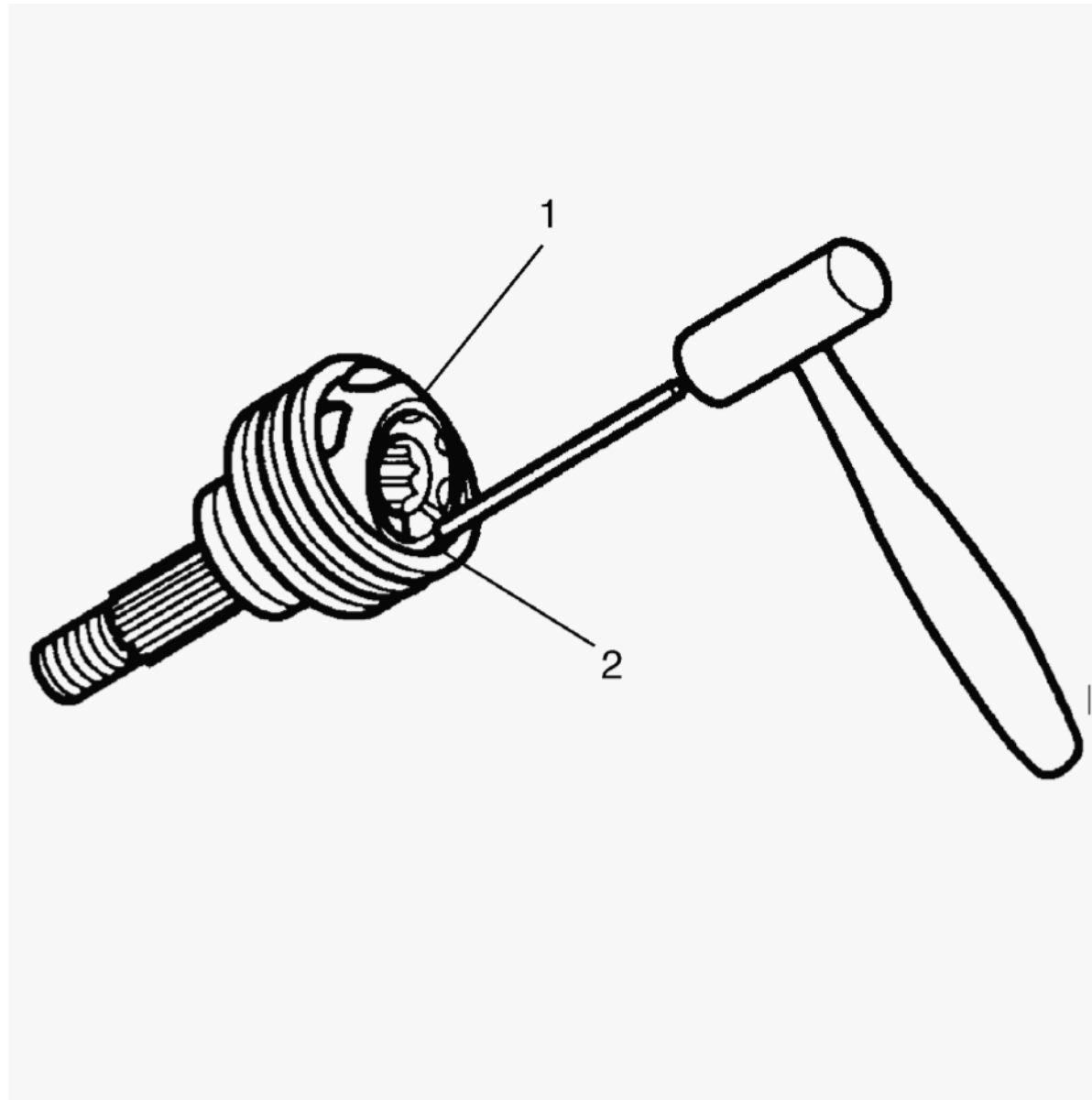


Fig. 49: Tapping Gently On Brass Drift With A Hammer In Order To Tilt Cage

Courtesy of GENERAL MOTORS COMPANY

10. Place a brass drift against the CV joint cage (1).
11. Tap gently on the brass drift with a hammer in order to tilt the cage (1).

12. Remove the first chrome alloy ball (2) when the CV joint cage (1) tilts.
13. Tilt the CV joint cage (1) in the opposite direction to remove the opposing chrome alloy ball (2).
14. Repeat this process to remove all six of the balls.

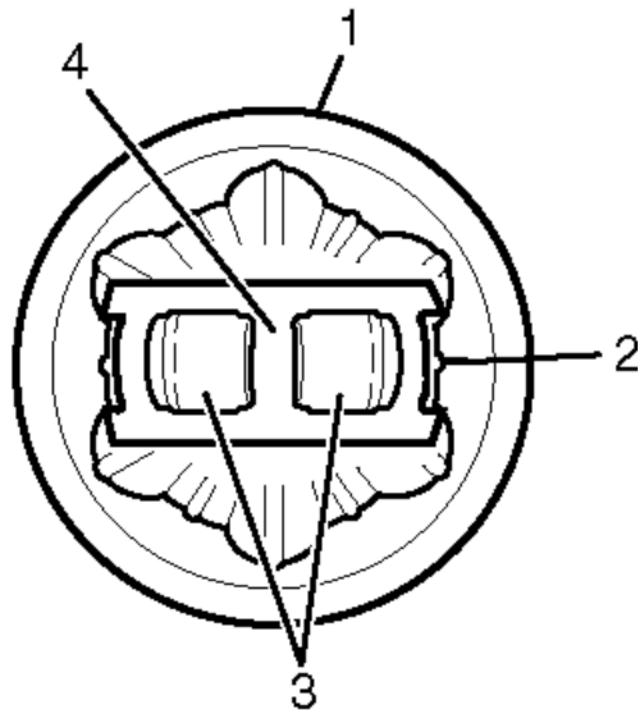


Fig. 50: View Of Outer Race, Inner Race, Cage Window & CV Joint Cage

Courtesy of GENERAL MOTORS COMPANY

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

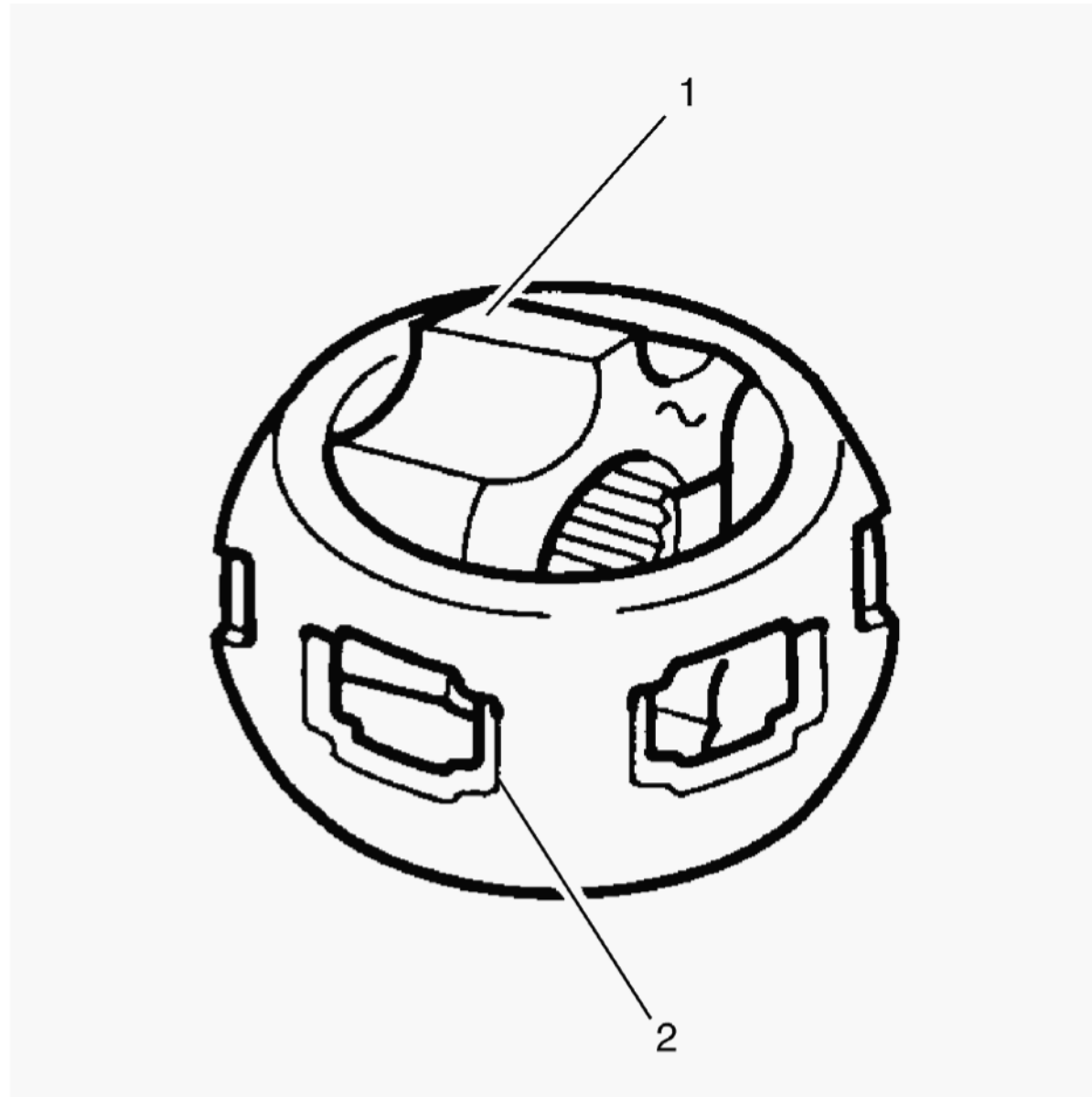


Fig. 51: View Of Inner Race & Cage

Courtesy of GENERAL MOTORS COMPANY

17. Remove the inner race (1) from the cage (2) by rotating the inner race (1) upward.
18. Clean the following items thoroughly with cleaning solvent. Remove all traces of old grease and any contaminates.

1. The inner and outer race assemblies
 2. The CV joint cage
 3. The chrome alloy balls
19. Dry all the parts.
 20. Check the CV joint assembly for unusual wear, cracks, or other damage.
 21. Replace any damaged parts.
 22. Clean the halfshaft bar. Use a wire brush to remove any rust in the seal mounting area (grooves).

Installation Procedure

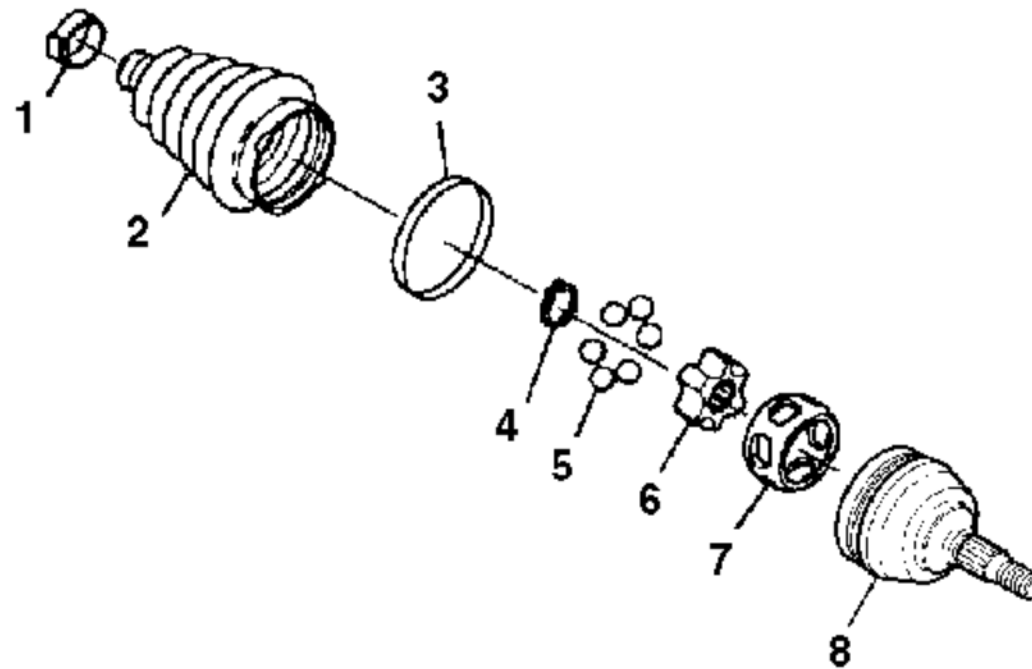


Fig. 52: Exploded View Of Wheel Drive Shaft Outer Joint

Courtesy of GENERAL MOTORS COMPANY

1. Inspect all of the parts for unusual wear, cracks, or other damage. Replace the CV joint assembly if necessary.
2. Put a light coat of the recommended grease on the inner (6) and the outer race (8) grooves.

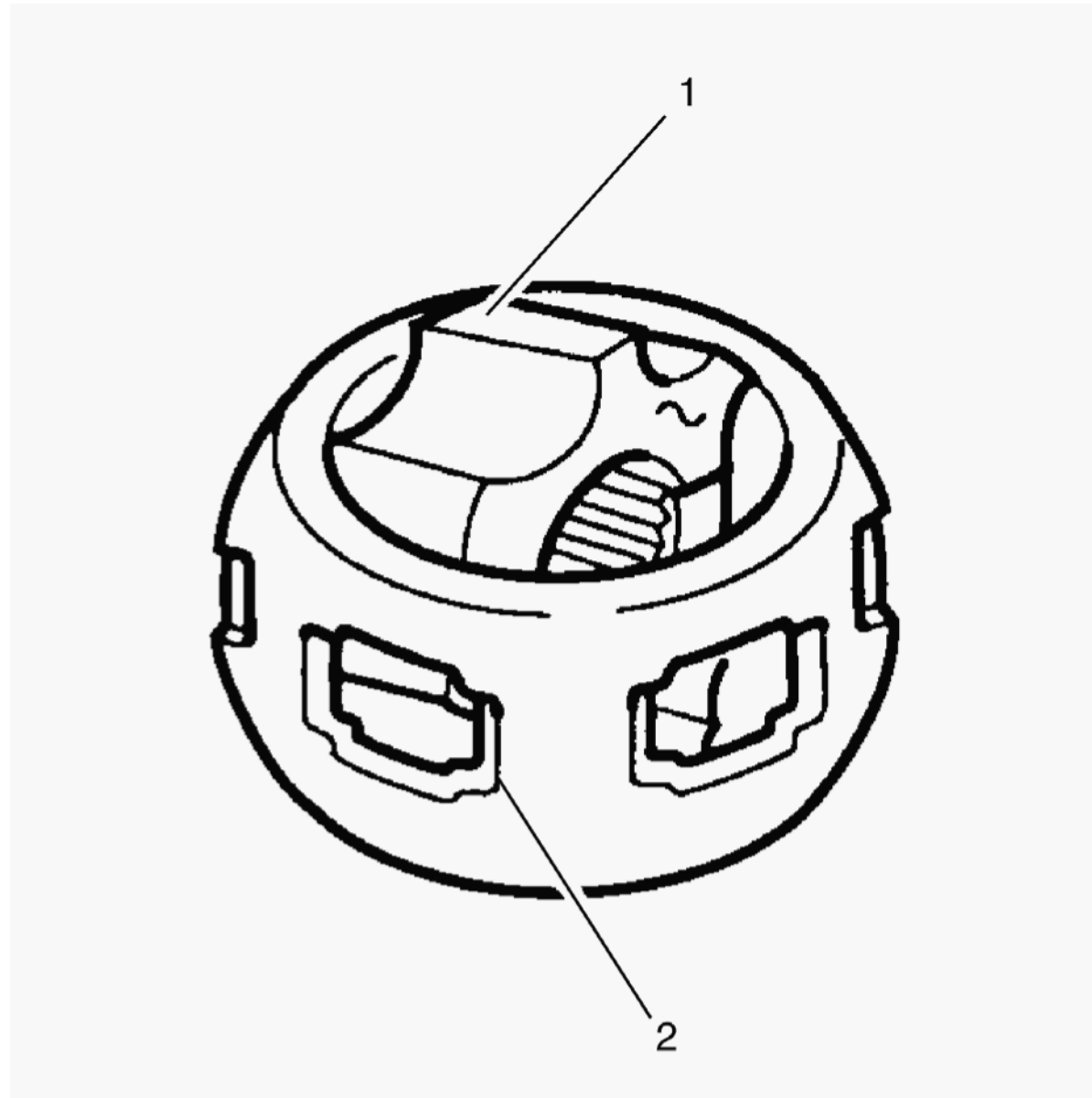


Fig. 53: View Of Inner Race & Cage

Courtesy of GENERAL MOTORS COMPANY

3. Hold the inner race (1) at 90 degrees to the centerline of the cage (2).
4. Align the lands of the inner race (1) with the windows of the cage (2).

5. Insert the inner race (1) into the cage (2), by rotating the inner race (1) downward.

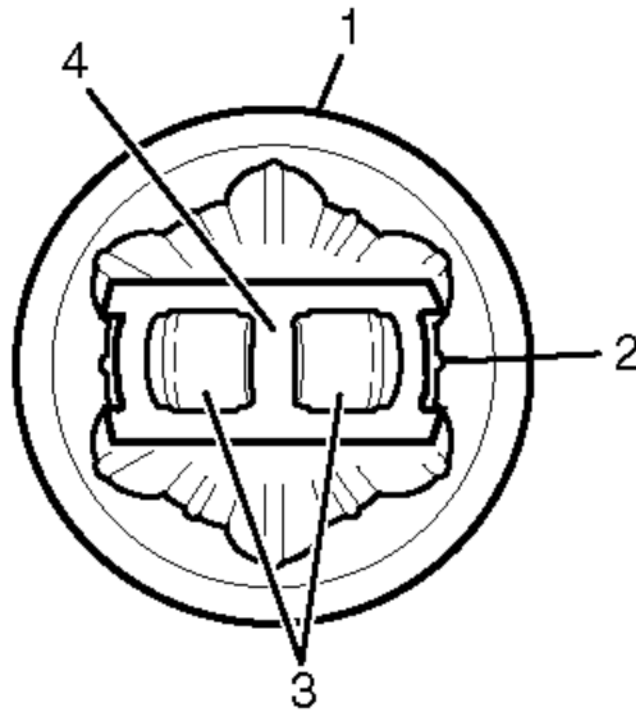


Fig. 54: View Of Outer Race, Inner Race, Cage Window & CV Joint Cage

Courtesy of GENERAL MOTORS COMPANY

6. Insert the cage (4) and inner race into the outer race (1).

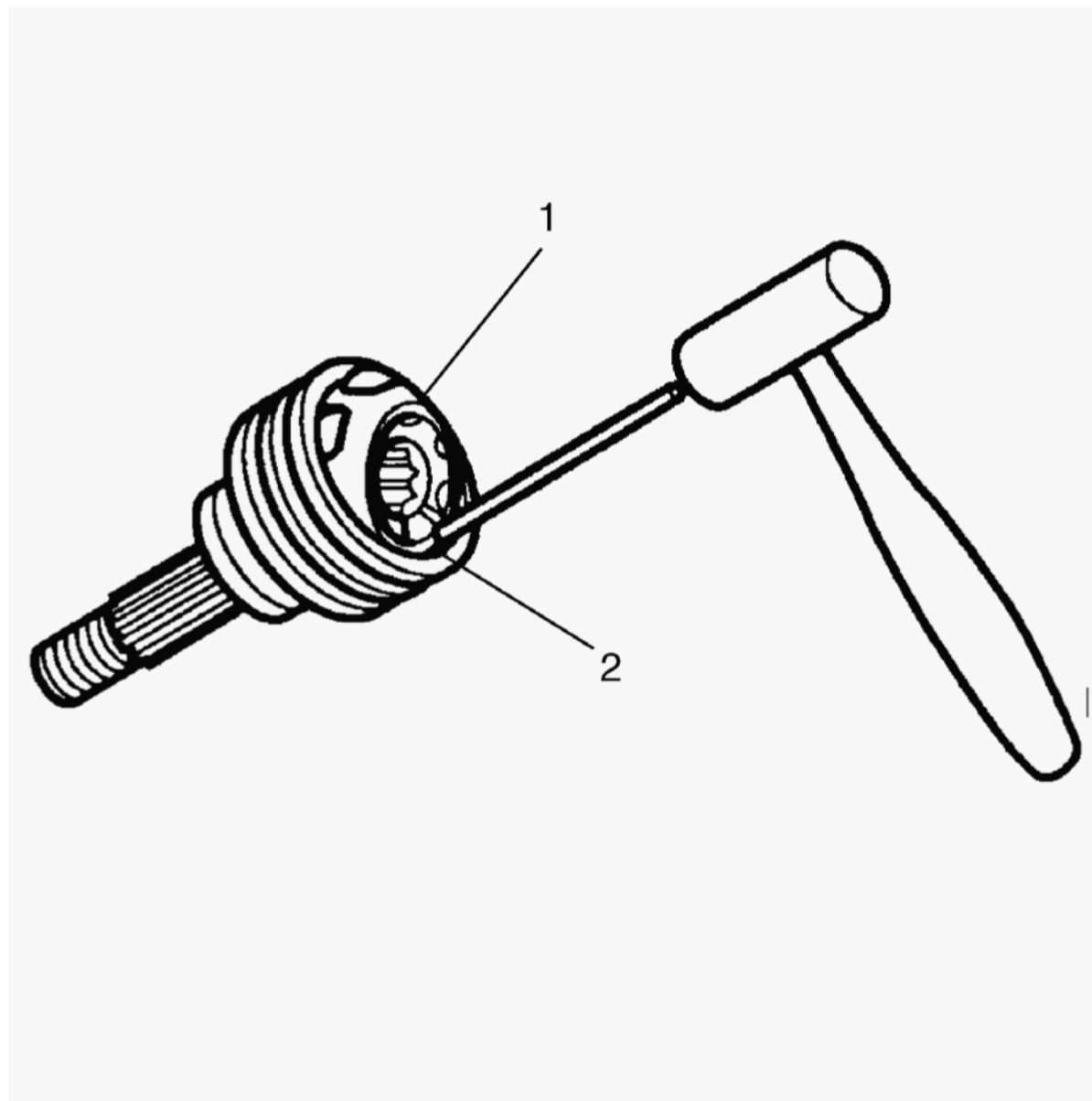


Fig. 55: Tapping Gently On Brass Drift With A Hammer In Order To Tilt Cage

Courtesy of GENERAL MOTORS COMPANY

7. Place a brass drift against the CV joint cage (1).
8. Tap gently on the brass drift with a hammer in order to tilt the cage (1).
9. Install the first chrome alloy ball (2) when the CV joint cage (1) tilts.
10. Tilt the CV joint cage (1) in the opposite direction to install the opposing chrome alloy ball (2).
11. Repeat this process in order to install all six of the balls.

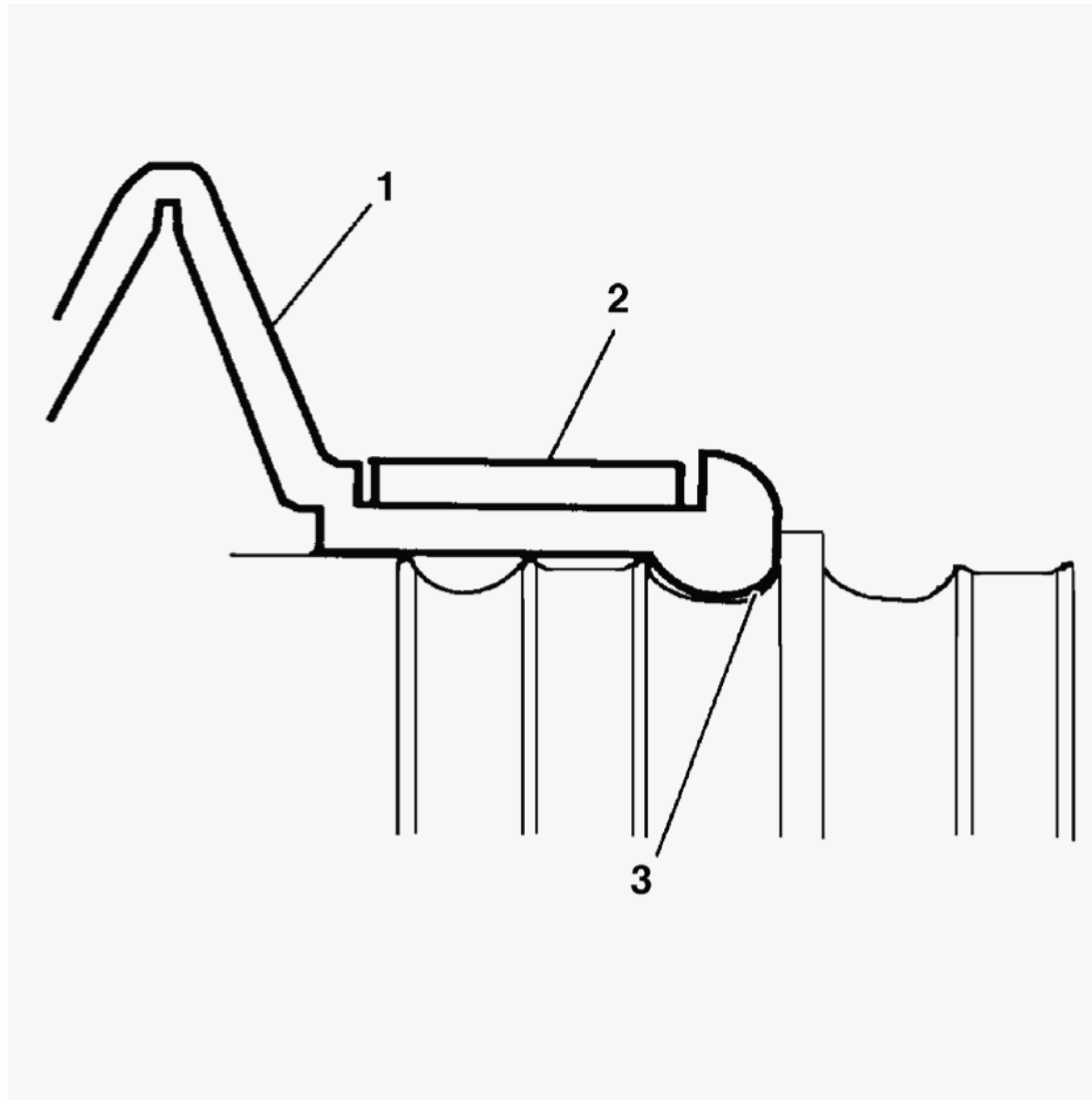


Fig. 56: Positioning Small End Of Joint Seal Into Joint Seal Groove

Courtesy of GENERAL MOTORS COMPANY

12. Pack the CV joint boot (1) 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 boot clamp (2) onto the CV joint seal (1).
14. Slide the CV joint boot (1) onto the halfshaft bar.
15. Position the small end of the CV joint boot (1) into the joint boot groove (3) on the halfshaft bar.

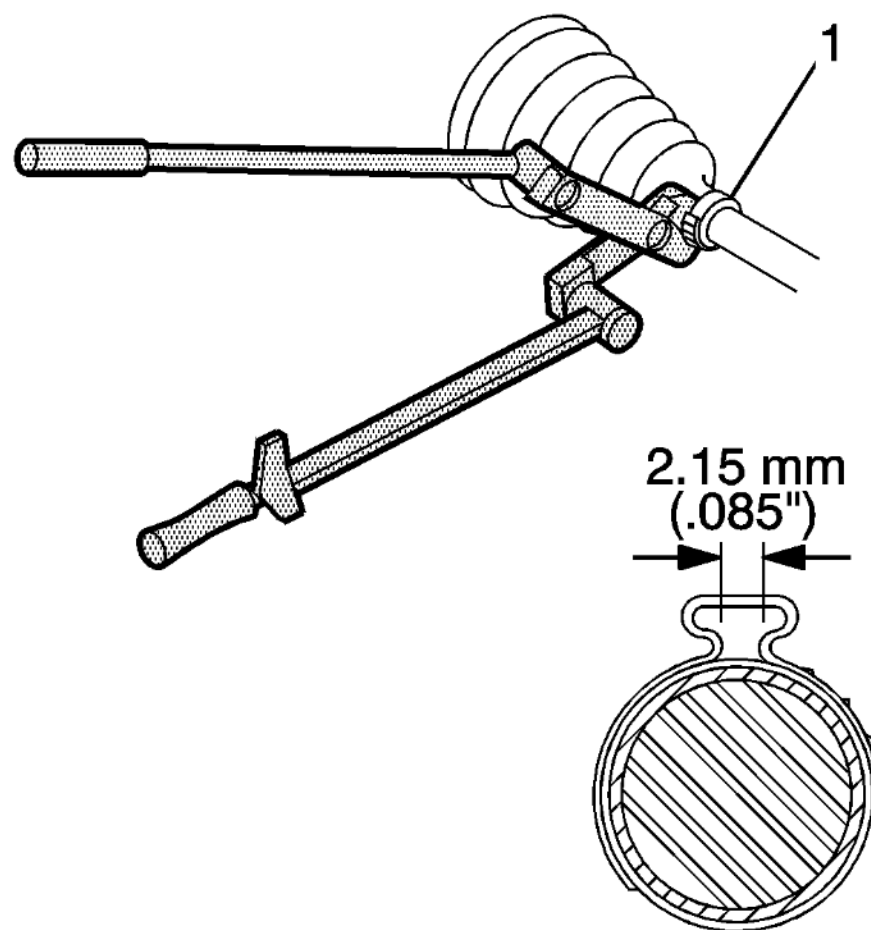


Fig. 57: View Of CV Joint Seal Retaining Clamp

Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to [Fastener Caution](#) .

16. Secure the small boot clamp (1) using **J-35910** drive axle seal clamp pliers (or equivalent), a breaker bar, and a torque wrench.
17. Crimp the boot clamp to the gap of 2.15 mm (.085 in).
18. Check the gap dimension on the clamp ear. Continue tightening until the gap dimension is reached.

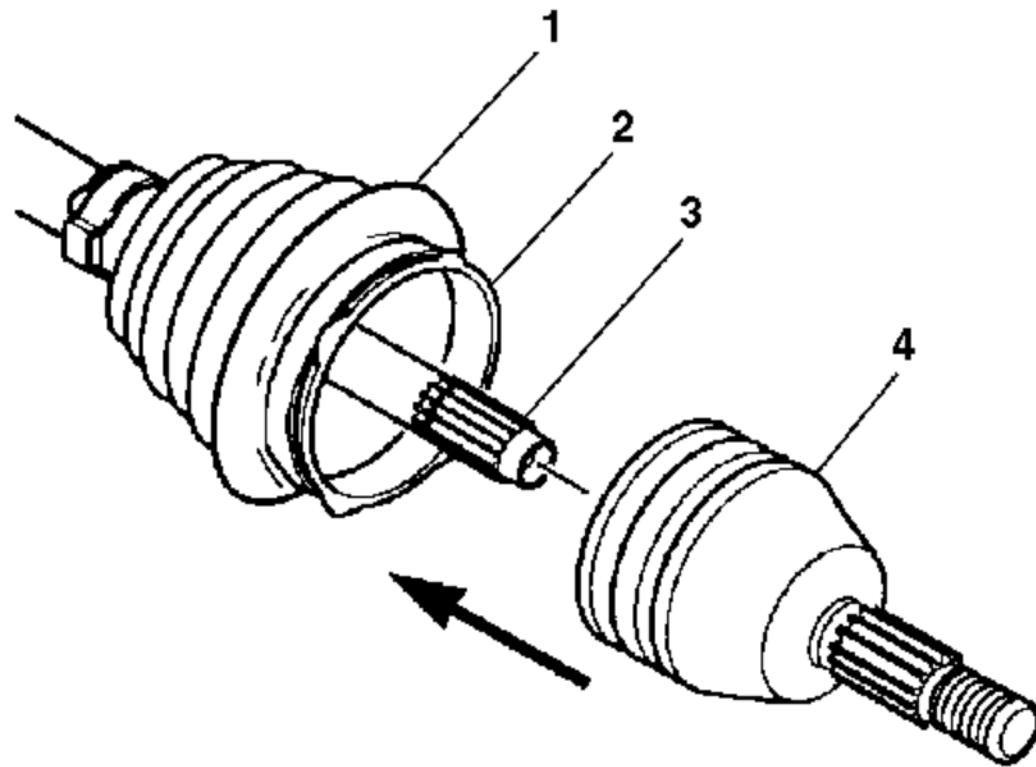


Fig. 58: CV Boot, Swage Ring, Halfshaft Bar & CV Joint

Courtesy of GENERAL MOTORS COMPANY

19. Pinch the new swage ring (2) slightly by hand to distort it into an oval shape.

20. Slide the distorted swage ring (2) over the large diameter of the boot (1).

NOTE: Be sure that the retaining ring side of the CV joint inner race faces the halfshaft bar (3) before installation.

21. Slide the CV joint (4) onto the halfshaft bar (3). The retaining snap ring inside of the inner race engages in the halfshaft bar groove with a click when the CV joint (4) is in the proper position.
22. Pull on the CV joint (4) to verify engagement.
23. Slide the large diameter of the CV joint boot (1), with the large swage ring (2) in place, over the outside edge of the CV joint outer race (4).

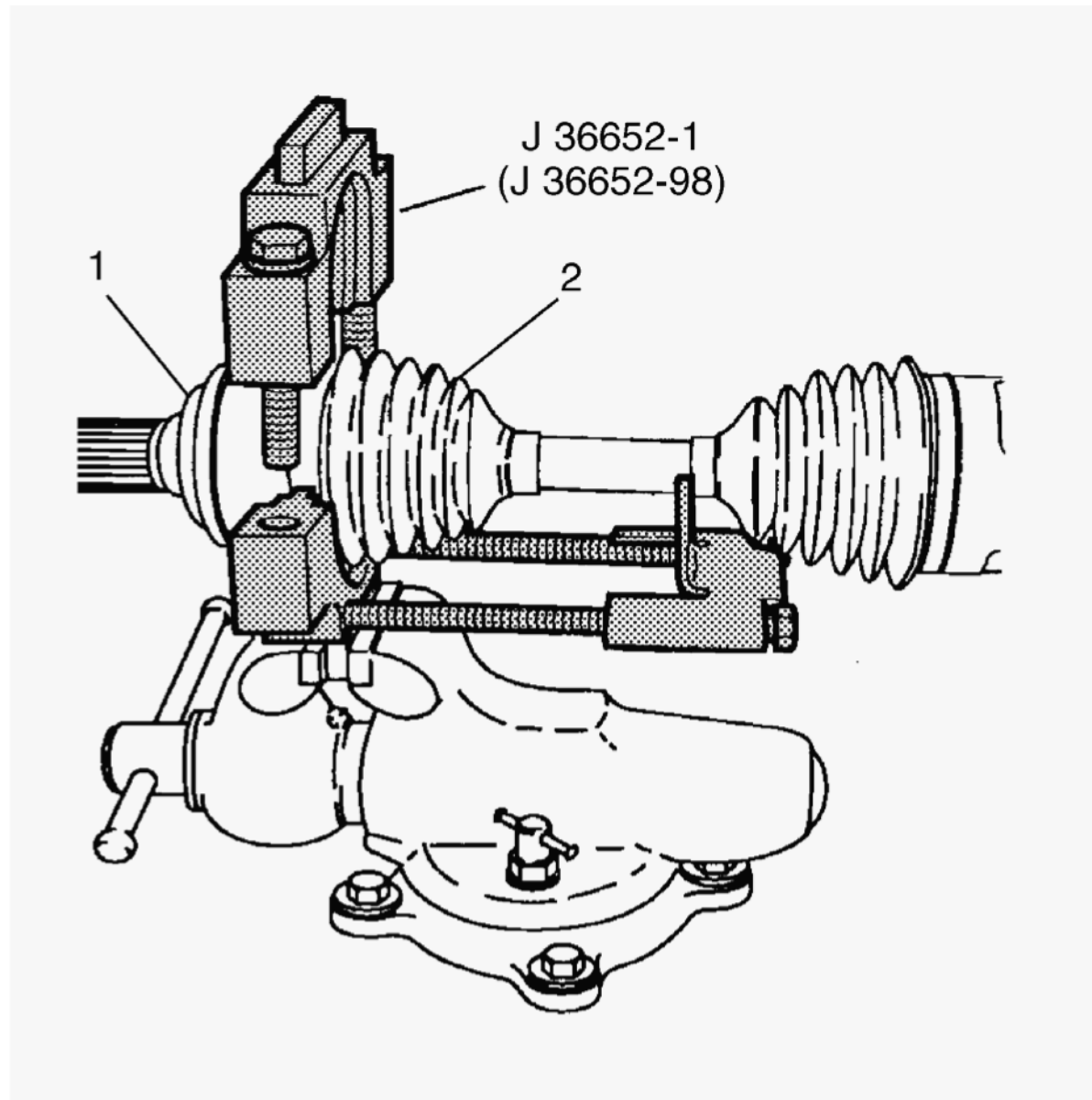


Fig. 59: Clamping CV Joint Boot

Courtesy of GENERAL MOTORS COMPANY

24. Clamp the CV joint boot (2) tightly to the CV joint outer race (1), using the following procedure:

25. For the 1500 models, assemble the bolts and the support plate to the base of the **J-36652-1** drive axle clamp swage tool and secure the base in a

vise. For the 2500 and 3500 models, use the **J-36652-2** axle swage tool.

26. Position the CV joint end (outboard end) of the halfshaft assembly in the bottom half of **J-36652-1** drive axle clamp swage tool or **J-36652-2** axle swage tool.

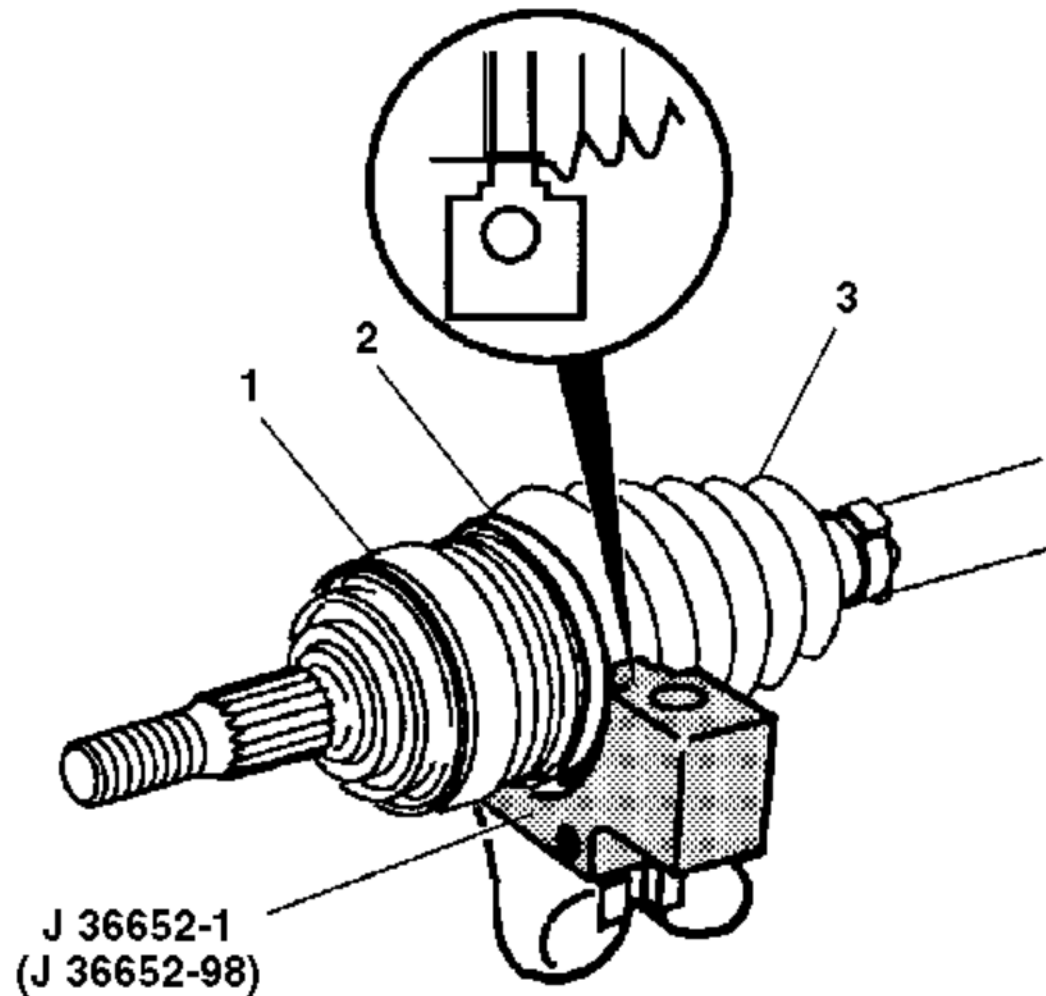


Fig. 60: Align Swage Ring And Swage Ring Clamp

Courtesy of GENERAL MOTORS COMPANY

27. Align the following during this procedure:

- The CV joint boot (3)
- The CV joint assembly (1)
- The swage ring (2)

28. Install the top half of **J-36652-1** drive axle clamp swage tool or **J-36652-2** axle swage tool onto the lower half of the tool, over the CV joint boot (3) and the CV joint assembly (1).

29. Align the swage ring (2) and the swage ring clamp.

30. Insert the bolts into **J-36652-1** drive axle clamp swage tool or **J-36652-2** axle swage tool. Hand tighten the bolts until the bolts are snug.

Tighten

Tighten each bolt 180 degrees at a time. Alternate between the bolts until both sides of the top half of the tool touch the bottom half of the tool.

31. Loosen the bolts and remove the halfshaft assembly from the tool.

32. Install the wheel drive shaft. Refer to [Front Wheel Drive Shaft Replacement - Left Side \(1500\)](#)[Front Wheel Drive Shaft Replacement - Left Side \(Heavy Duty\)](#), or refer to [Front Wheel Drive Shaft Replacement - Right Side \(1500\)](#)[Front Wheel Drive Shaft Replacement - Right Side \(Heavy Duty\)](#).

DESCRIPTION AND OPERATION

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.
- Wheel Drive Shaft Seal Cover 15 Series
- 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
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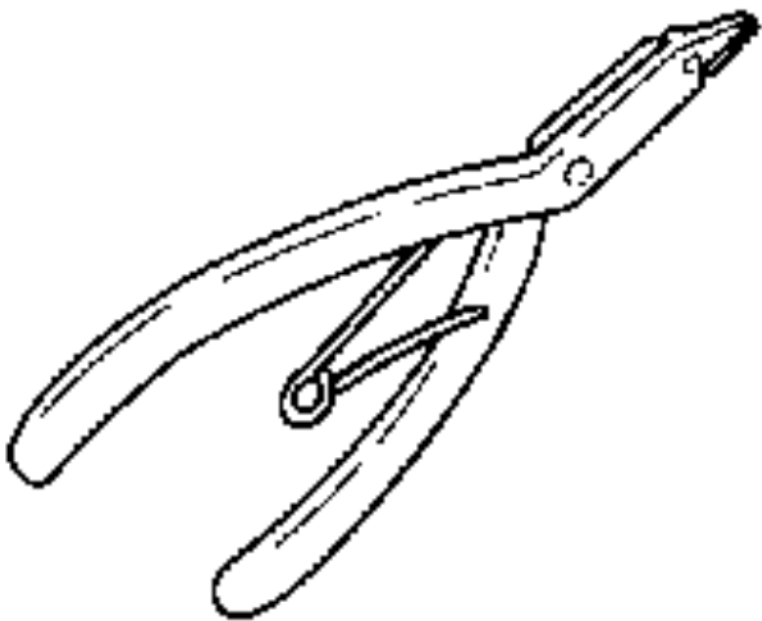
Illustration	Tool Number/ Description
	J 8059 Snap Ring Pliers

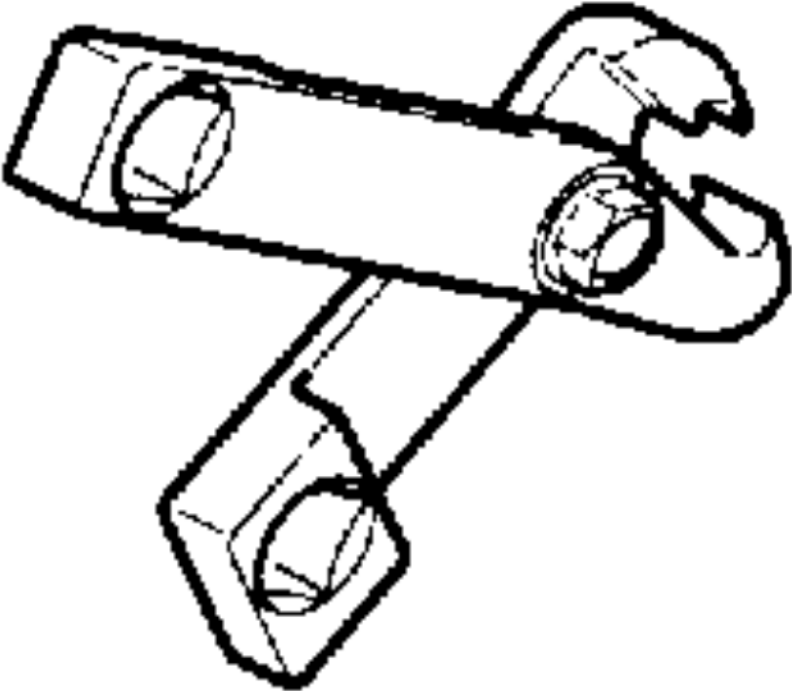
Illustration	Tool Number/ Description
	J 35910 Drive Axle Seal Clamp Pliers

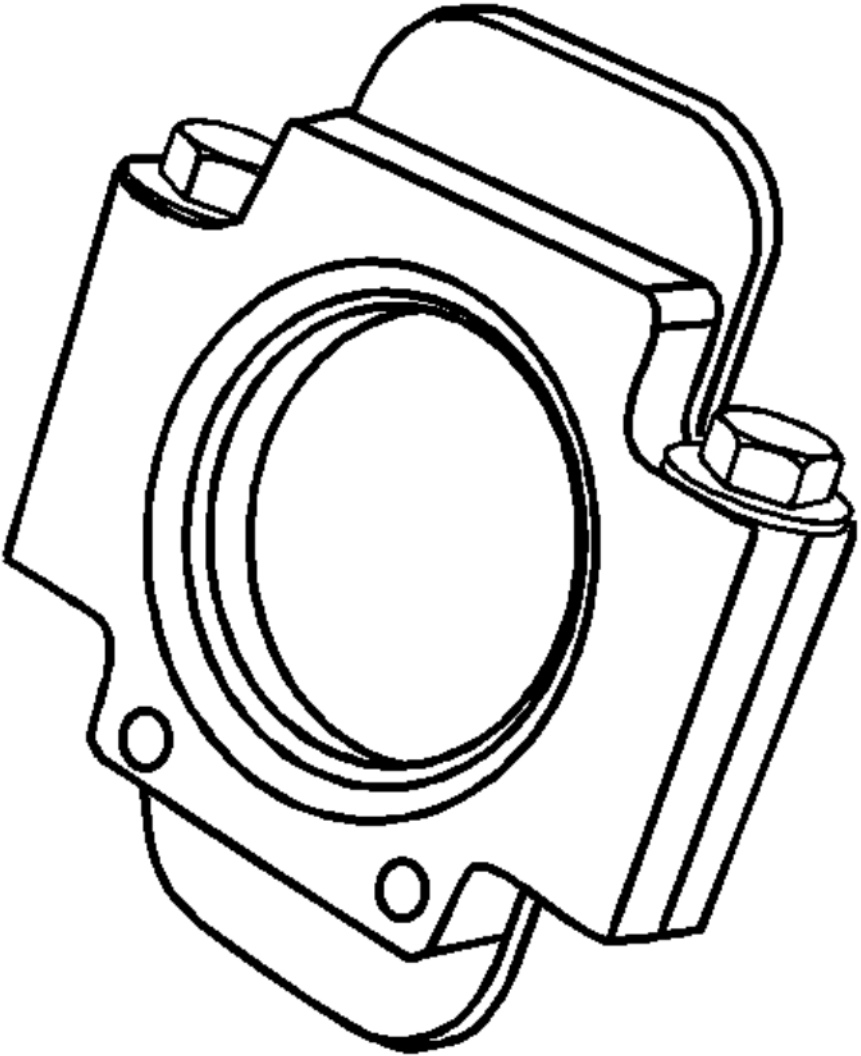
Illustration	Tool Number/ Description
	J 36652-1 Drive Axle Clamp Swage Tool

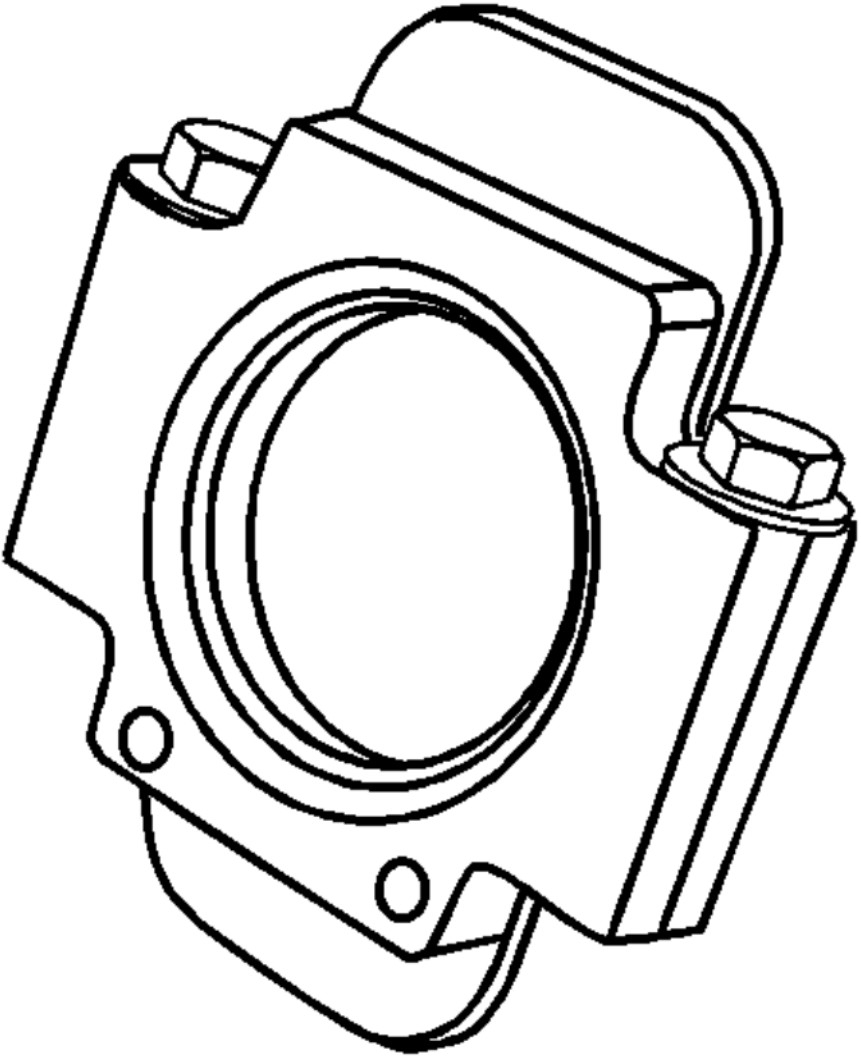
Illustration	Tool Number/ Description
	J 36652-2 Drive Axle Clamp Swage Tool

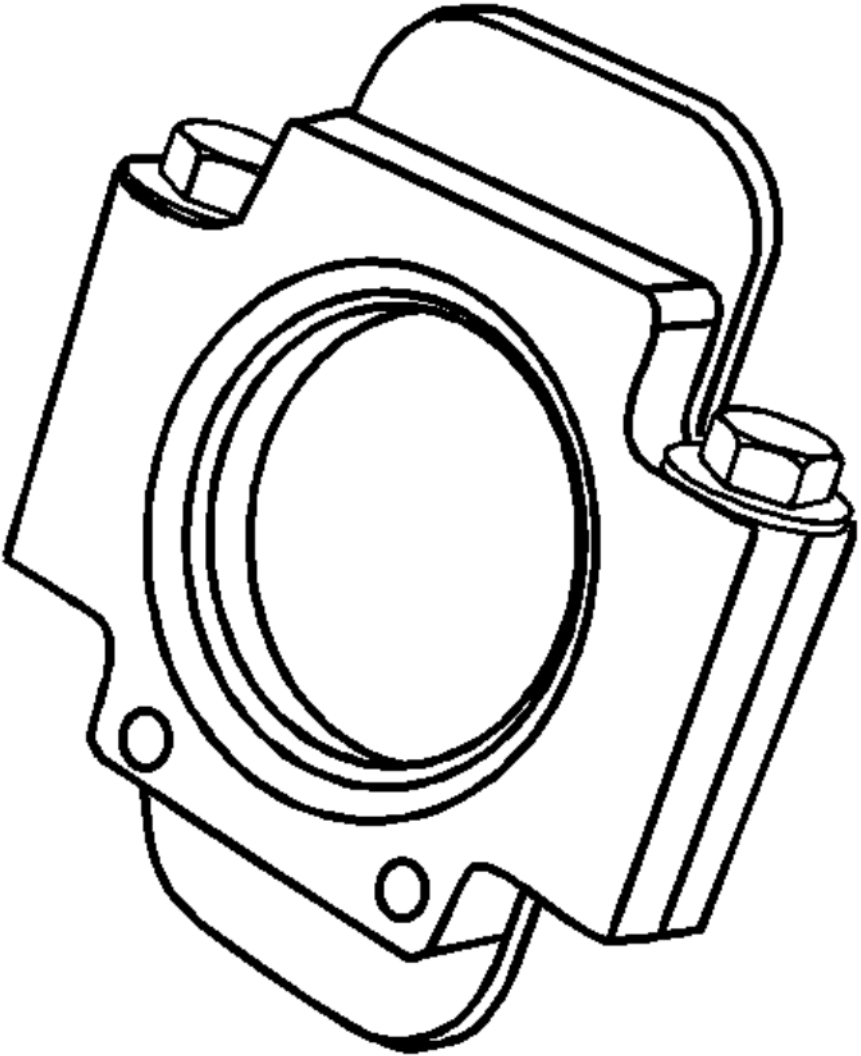
Illustration	Tool Number/ Description
	J 36652-98 Axle Swage Tool

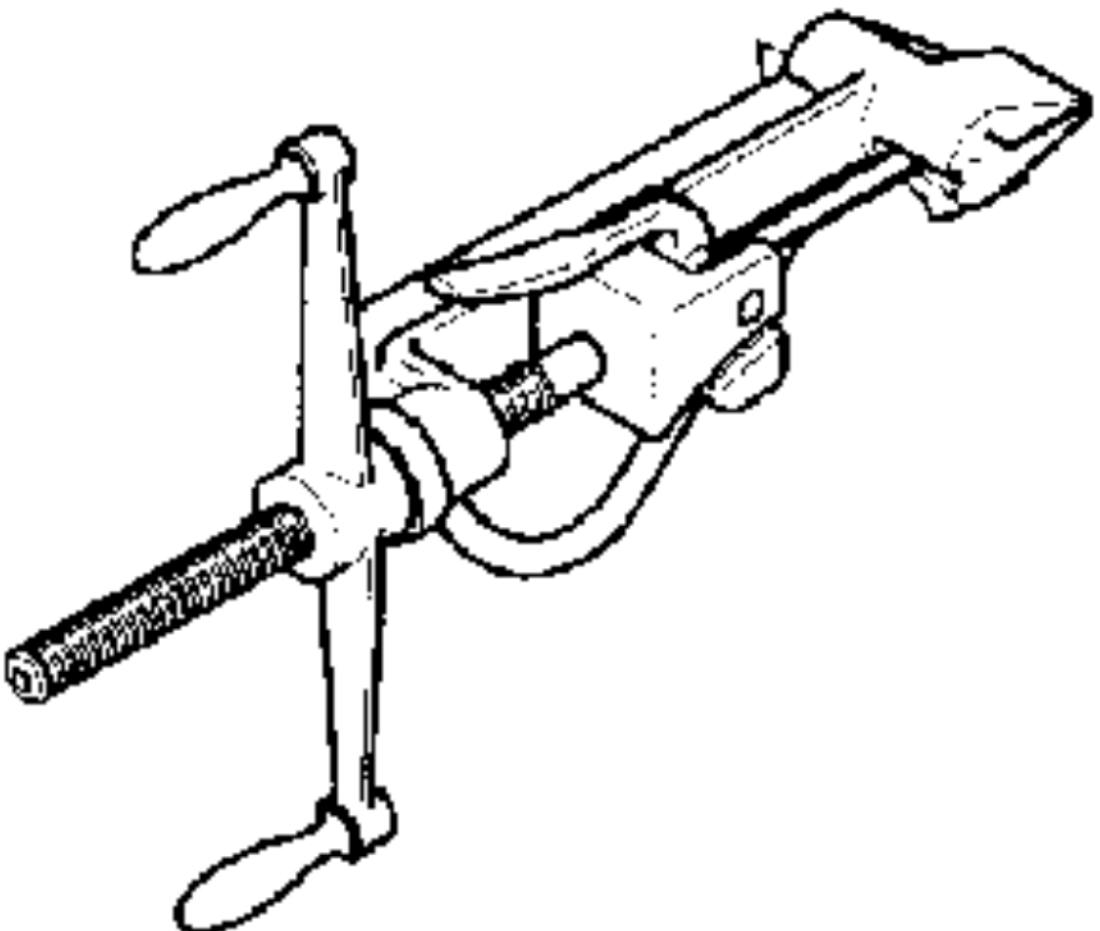
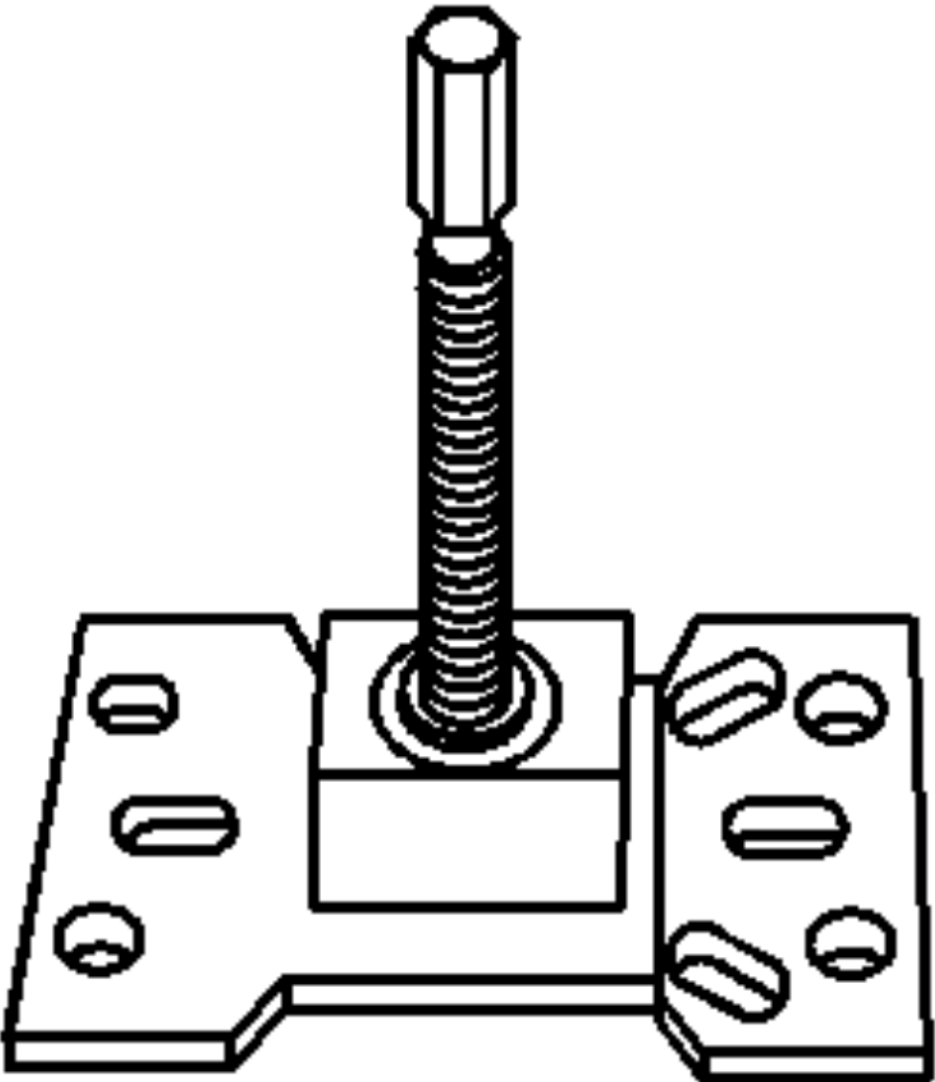
Illustration	Tool Number/ Description
	J 41187 Banding Tool

Illustration	Tool Number/ Description
	J 45859 Axle Remover