

2007 Cadillac Escalade

2007 DRIVELINE/AXLE Propeller Shaft - Avalanche, Escalade, Suburban, Tahoe & Yukon

2007 DRIVELINE/AXLE

Propeller Shaft - Avalanche, Escalade, Suburban, Tahoe & Yukon

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
• Yoke Retainer Bolts	25 N.m	18 lb ft

SEALERS, ADHESIVES, AND LUBRICANTS

Sealers, Adhesives, and Lubricants

Application	Type of Material	GM Part Number
Propeller Shaft Splines (Front Propeller Shaft and One-Piece RWD Propeller Shaft w/4 speed Automatic Transmission)	Lubricant	12345879 or equivalent meeting GM Specification 9985830

COMPONENT LOCATOR

DRIVELINE DISASSEMBLED VIEWS

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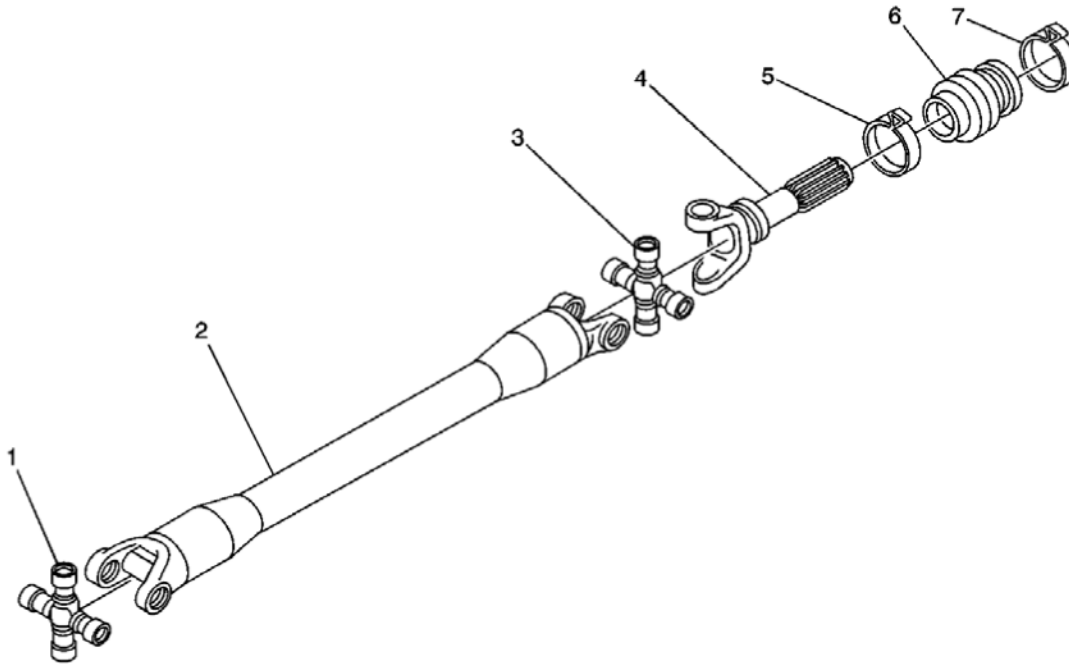


Fig. 1: Front Propeller Shaft Disassembled View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 1

Callout	Component Name
1	Propeller Shaft Universal Joint
2	Propeller Shaft Tube
3	Propeller Shaft Universal Joint
4	Propeller Shaft Slip Yoke
5	Propeller Shaft Rear Slip Yoke Boot Clamp - Front
6	Propeller Shaft Rear Slip Yoke Boot
7	Propeller Shaft Rear Slip Yoke Boot Clamp - Rear

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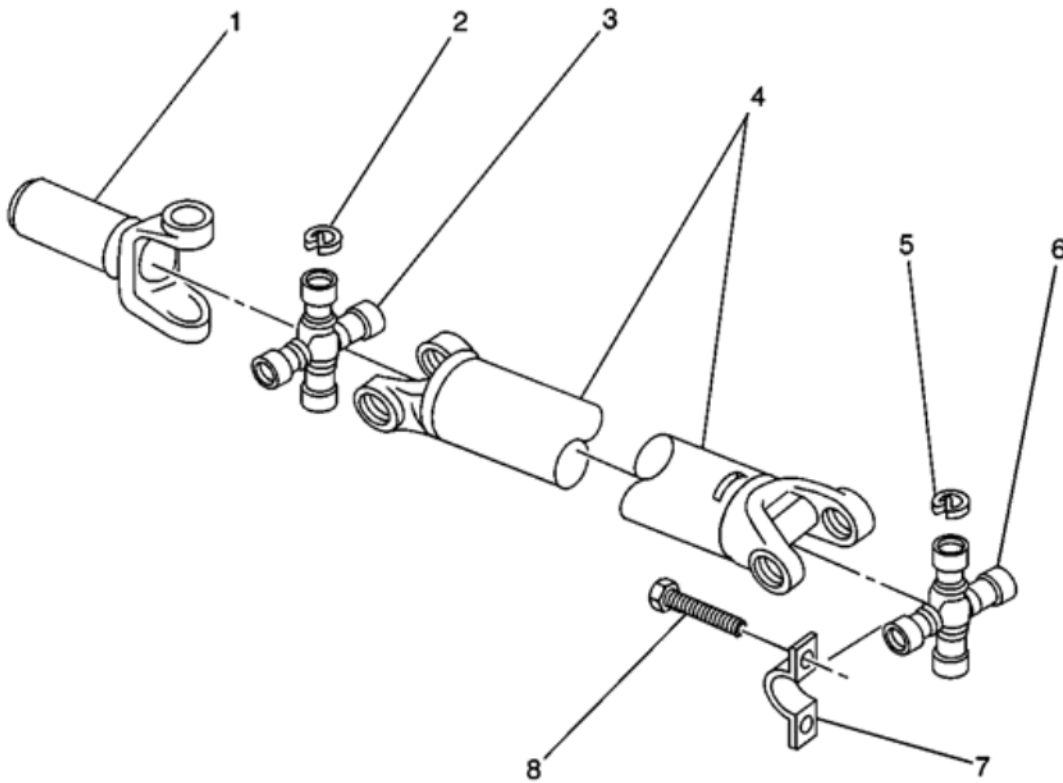


Fig. 2: One-Piece Propeller Shaft Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 2

Callout	Component Name
1	Propeller Shaft Slip Yoke
2	Propeller Shaft Universal Joint Spider Bearing Retainer Ring
3	Propeller Shaft Universal Joint
4	Propeller Shaft Tube
5	Propeller Shaft Universal Joint Spider Bearing Retainer Ring
6	Propeller Shaft Universal Joint
7	Propeller Shaft Bearing Retainer
8	Propeller Shaft Bearing Retainer Bolt

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - PROPELLER SHAFT

Begin the system diagnosis by reviewing the system Description and Operation. Reviewing the Description and Operation information will help you determine the correct symptom diagnostic procedure when a malfunction

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exists. Reviewing the Description and Operation information will also help you determine if the condition described by the customer is normal operation. Refer to **Symptoms - Propeller Shaft** in order to identify the correct procedure for diagnosing the system and where the procedure is located.

SYMPTOMS - PROPELLER SHAFT

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

Classifying the Symptom

Propeller Shaft symptoms can usually be classified into the following categories:

- Leaks
- Noises
- Vibrations

Leak and noise related symptoms are diagnosed within the Propeller Shaft section. For vibration related symptoms, refer to **Diagnostic Starting Point - Vibration Diagnosis and Correction** in Vibration Diagnosis and Correction for diagnosis.

Visual/Physical Inspection

- Inspect the system for aftermarket devices which could affect the operation of the Propeller Shaft.
- 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:

- **Leak at Front Slip Yoke**
- **Universal Joint Noise**
- **Ping, Snap, or Click Noise**
- **Knock or Clunk Noise**
- **Scraping Noise**
- **Squeak Noise**
- **Shudder on Acceleration at Low Speed**

LEAK AT FRONT SLIP YOKE

Leak at Front Slip Yoke

Checks	Action
DEFINITION: A few drops of lubricant that are leaking from the splined yoke are normal. This condition	

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does not require attention.

The slip yoke barrel is burred, nicked, corroded, or worn.

1. Inspect the slip yoke for burrs.

Careful use of crocus cloth or fine stone honing can remove minor burrs.
2. If the yoke is badly burred, corroded, or worn, replace the yoke. Refer to **Rear Propeller Shaft Replacement**.
3. Replace the oil seal. Refer to one of the following procedures:
 - **Transfer Case Output Shaft Seal Replacement - Rear** for the BW 4485-NR3 transfer case
 - **Transfer Case Output Shaft Seal Replacement - Rear** for the NVG 246-NP8 transfer case
 - **Transmission Extension Housing Rear Oil Seal Replacement** for the 4L60-E automatic transmission

There is a faulty oil seal in the transmission or in the transfer case output shaft.

- Replace the oil seal. Refer to one of the following procedures:
- **Transfer Case Output Shaft Seal Replacement - Rear** for the BW 4485-NR3 transfer case
 - **Transfer Case Output Shaft Seal Replacement - Rear** for the NVG 246-NP8 transfer case
 - **Transmission Extension Housing Rear Oil Seal Replacement** for the 4L60-E automatic transmission

UNIVERSAL JOINT NOISE

Universal Joint Noise

Problem	Action
One or more of the universal joints are worn or damaged.	Replace the universal joint. Refer to the following: • <u>Universal Joint Replacement - Nylon Injected Ring</u> • <u>Universal Joint Replacement - External Snap Ring</u>
One or more of the universal joints have lost lubricant	Replace the universal joint. Refer to the following: • <u>Universal Joint Replacement - Nylon Injected Ring</u> • <u>Universal Joint Replacement - External Snap Ring</u>
The yoke retainer strap bolts are loose	Tighten the yoke retainer strap bolts to specifications. Refer to <u>Fastener Tightening Specifications</u> .

PING, SNAP, OR CLICK NOISE

Ping, Snap, or Click Noise

Checks	Action
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DEFINITION: A ping, snap or click is usually heard on initial load after the transmission is in gear, either in forward or reverse.

The fixed yoke or the pinion yoke is loose.	Tighten the bolts and the pinion nut to specified torque. Refer to <u>Fastener Tightening Specifications</u> .
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One or more of the universal joints are worn or damaged.	Replace the universal joint. Refer to the following: • <u>Universal Joint Replacement - Nylon Injected Ring</u> • <u>Universal Joint Replacement - External Snap Ring</u>
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KNOCK OR CLUNK NOISE

Knock or Clunk Noise

Checks	Action
DEFINITION: Knocking or clunking noise occurs when operating the vehicle in high gear or coasting in neutral at 16 km/h (10 mph).	
One or more of the universal joints are worn or damaged.	Replace the universal joint. Refer to the following: • <u>Universal Joint Replacement - Nylon Injected Ring</u> • <u>Universal Joint Replacement - External Snap Ring</u>
The side gear hub counterbore in the differential is worn oversize.	Replace the differential case and/or the side gears. Refer to <u>Differential Replacement</u> or Differential Replacement (11.0 inch Axle) in Rear Drive Axle.

SCRAPING NOISE

Scraping Noise

Checks	Action
DEFINITION: A scraping noise occurs when driving the vehicle at various speeds.	
The pinion flange deflector or the center bearing is rubbing.	Correct the interference as necessary.

SQUEAK NOISE

Squeak Noise

Checks	Action
DEFINITION: When driving the vehicle at various speeds a squeaking sound occurs.	
One or more of the universal joints have lost lubricant.	Replace the universal joint. Refer to the following: • <u>Universal Joint Replacement - Nylon Injected Ring</u> • <u>Universal Joint Replacement - External Snap Ring</u>

SHUDDER ON ACCELERATION AT LOW SPEED

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Shudder on Acceleration at Low Speed

Checks	Action
DEFINITION: When the vehicle is accelerating at low speed a shudder occurs.	
The yoke retainer strap bolts are loose or missing.	Replace or tighten the yoke retainer strap bolts to specifications. Refer to <u>Fastener Tightening Specifications</u> .
The driveline joint angle is excessive or incorrectly set.	Determine if the driveline angle is incorrect and correct as necessary. Refer to <u>Diagnostic Starting Point - Vibration Diagnosis and Correction</u> in Vibration Diagnosis and Correction.
One or more of the universal joints are worn or damaged.	Replace the universal joint. Refer to the following: • <u>Universal Joint Replacement - Nylon Injected Ring</u> • <u>Universal Joint Replacement - External Snap Ring</u>

REPAIR INSTRUCTIONS

FRONT PROPELLER SHAFT REPLACEMENT

Tools Required

J 43218 Clamp Pliers - Narrow Jaw. See **Special Tools**.

Removal Procedure

IMPORTANT: Before disassembly, observe and accurately reference mark all driveline components relative to the propeller shaft and axles. These items include the following components:

- The propeller shafts
- The wheel drive shafts
- The pinion flanges
- The output shafts

Assemble all components in the exact relationship to each other as they were prior to removal. Observe all published specifications and torque values, and any measurements obtained prior to disassembly.

1. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle**.
2. Remove the transfer case shield, if equipped. Refer to the appropriate procedure:
 - **Transfer Case Shield Replacement** for the BW 4485-NR3 transfer case
 - **Transfer Case Shield Replacement** for the NVG 246-NP8 transfer case

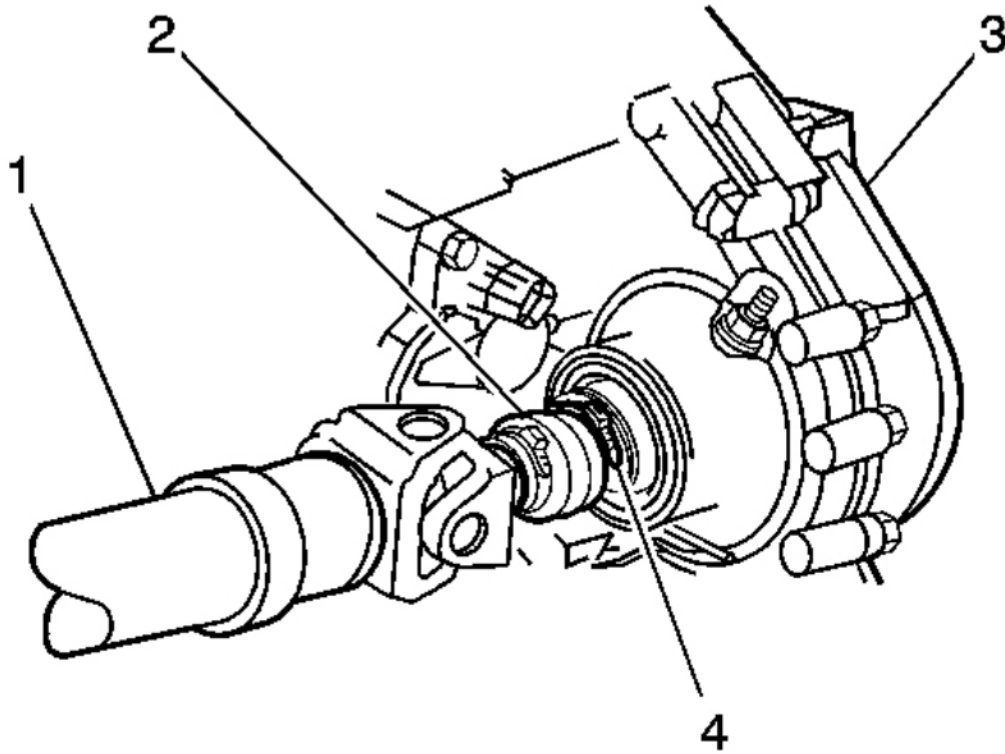


Fig. 3: Rear Propeller Shaft Boot Clamp
Courtesy of GENERAL MOTORS CORP.

3. Remove the clamp (4) at the transfer case by prying up the exposed end of the clamp with a flat-bladed tool.
4. Reference mark the relationship of the propeller shaft to the front axle pinon yoke.

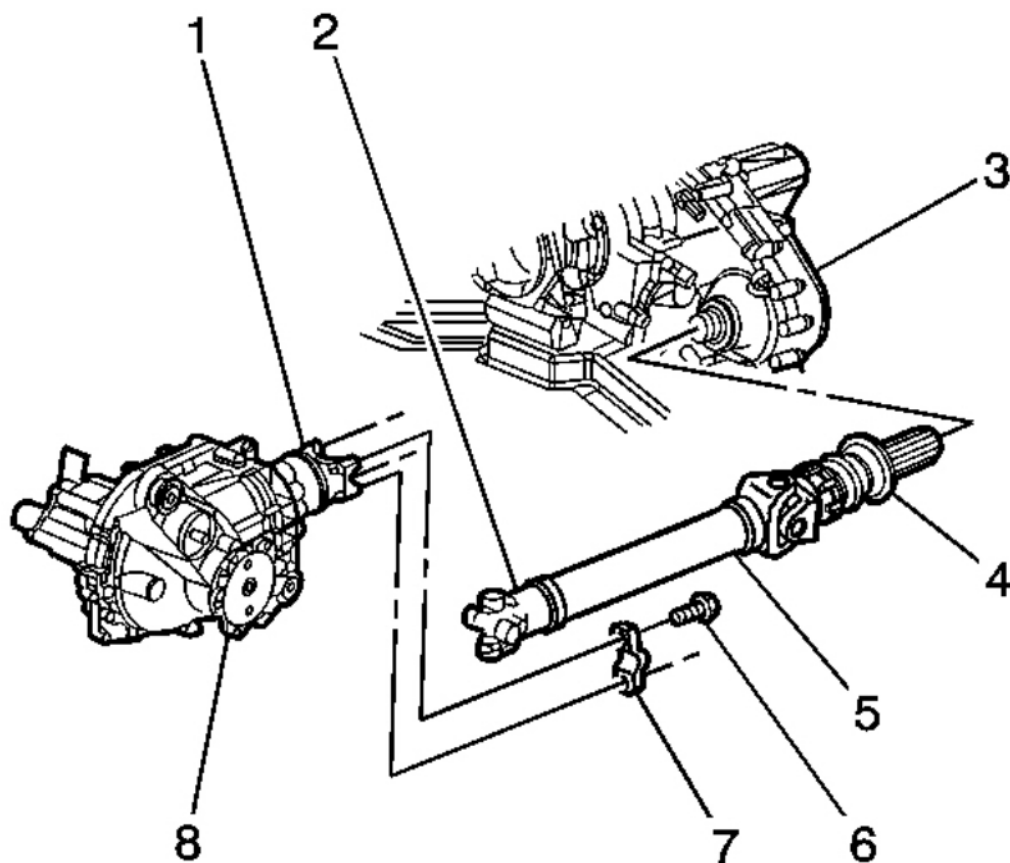


Fig. 4: Front Propeller Shaft & Front Axle Pinion Yoke

Courtesy of GENERAL MOTORS CORP.

NOTE: When removing the propeller shaft, do not attempt to remove the shaft by pounding on the yoke ears or using a tool between the yoke and the universal joint. If the propeller shaft is removed by using such means, the injection joints may fracture and lead to premature failure of the joint.

5. Remove the bolts (6) and the yoke retainers (7) from the front axle pinion yoke (1).

IMPORTANT: Do not drop the bearing cap assemblies of the yoke end.

6. Disconnect the propeller shaft (2) from the front axle pinion yoke (1).

Wrap the bearing caps with tape in order to prevent the loss of bearing rollers.

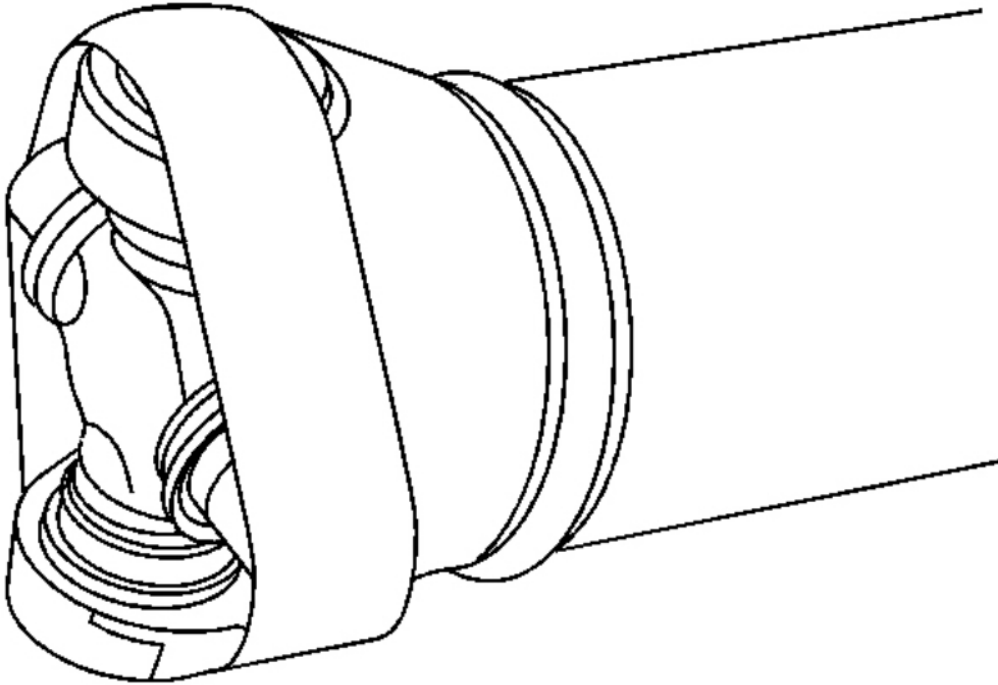


Fig. 5: U-Joint Bearing Caps

Courtesy of GENERAL MOTORS CORP.

7. Use tape to secure the bearing caps.

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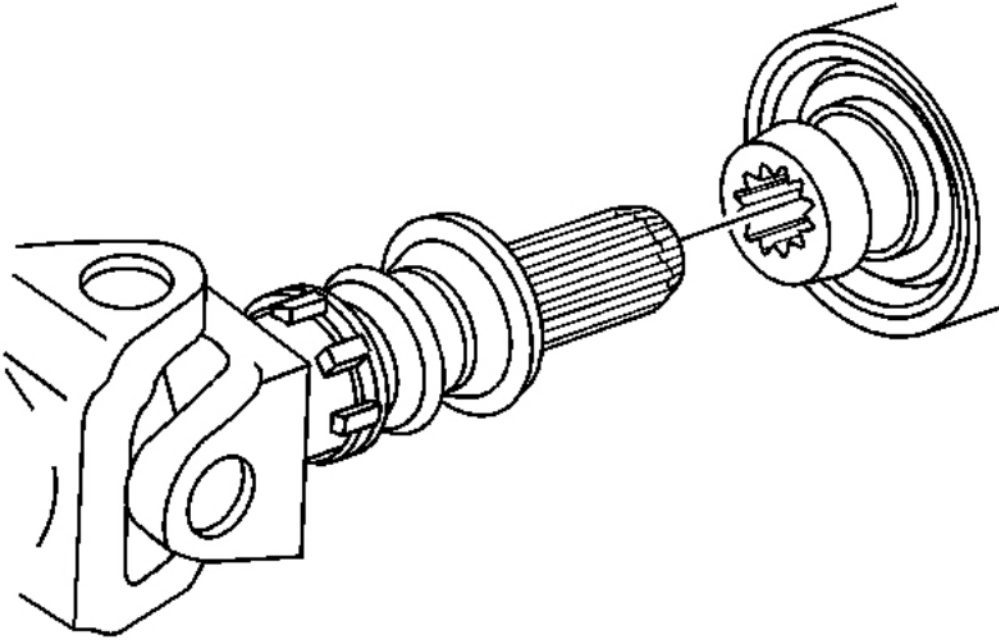


Fig. 6: View Of Boot & Groove On Transfer Case Output Shaft (Single Clamp Style Boot)
Courtesy of GENERAL MOTORS CORP.

8. Remove the boot from the groove on the transfer case output shaft.
9. Remove the propeller shaft from the transfer case output shaft by sliding the propeller shaft forward.

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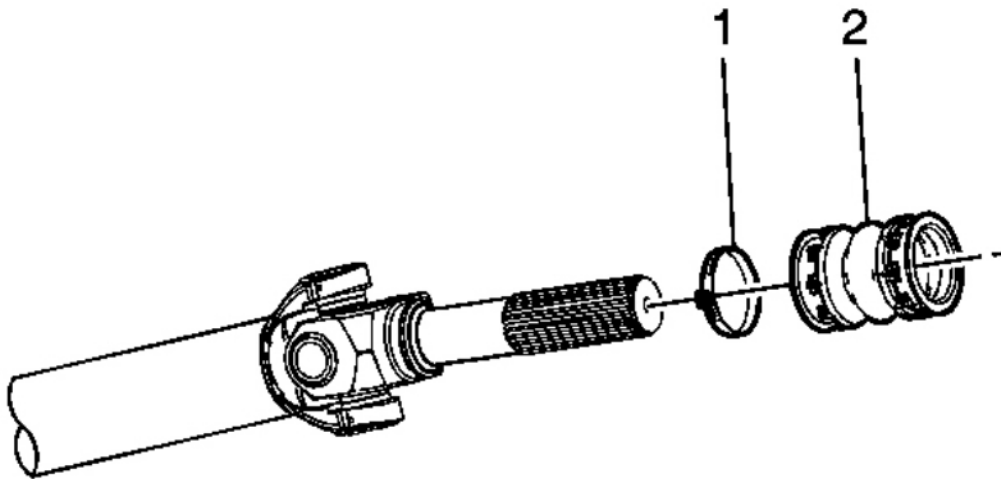


Fig. 7: View Propeller Shaft, Clamp & Shaft Boot
Courtesy of GENERAL MOTORS CORP.

10. Remove the clamp (1) from the propeller shaft boot (2), if needed.
11. Remove the propeller shaft boot (2) from the propeller shaft, if needed.

Installation Procedure

1. Inspect the splines of the transfer case output shaft for a sufficient coating of lubricant. If the output shaft does not have a sufficient coating of lubricant, lubricate the shaft with grease, GM P/N 12345879 (Canadian P/N 10953511), or equivalent lubricant meeting GM Specification 9985830.

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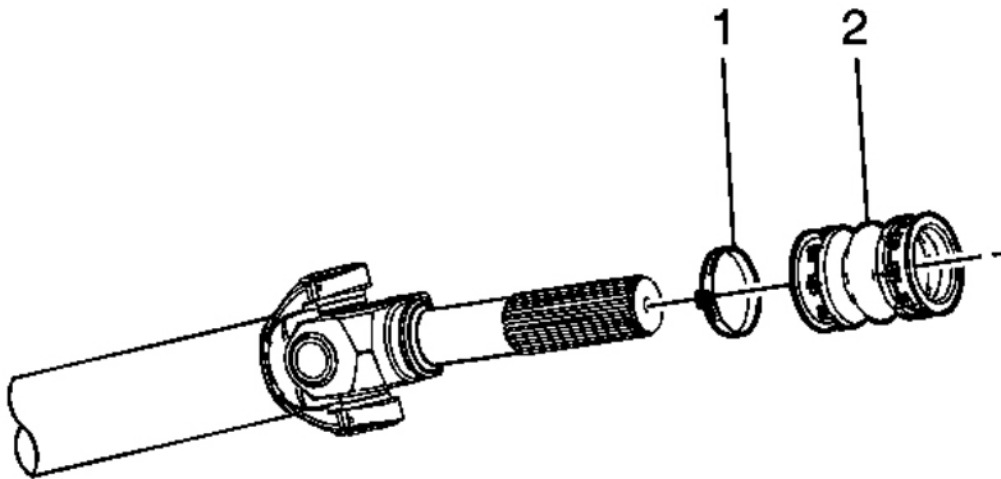


Fig. 8: View Propeller Shaft, Clamp & Shaft Boot
Courtesy of GENERAL MOTORS CORP.

2. Install the propeller shaft boot (2).
3. Install the propeller shaft boot clamp (1).

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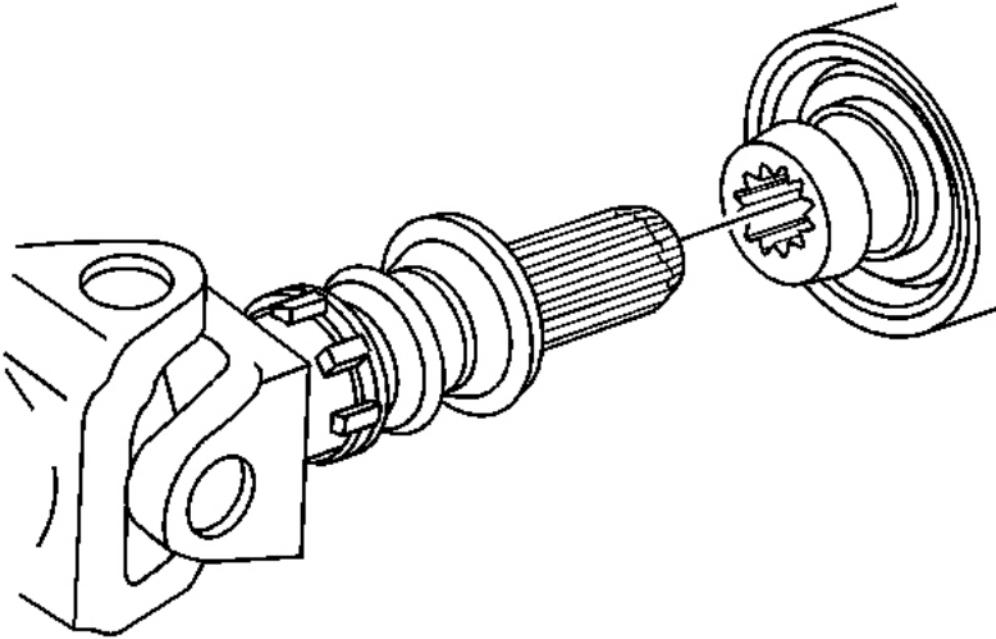


Fig. 9: View Of Boot & Groove On Transfer Case Output Shaft (Single Clamp Style Boot)
Courtesy of GENERAL MOTORS CORP.

4. Install the propeller shaft splines into the transfer case output shaft.

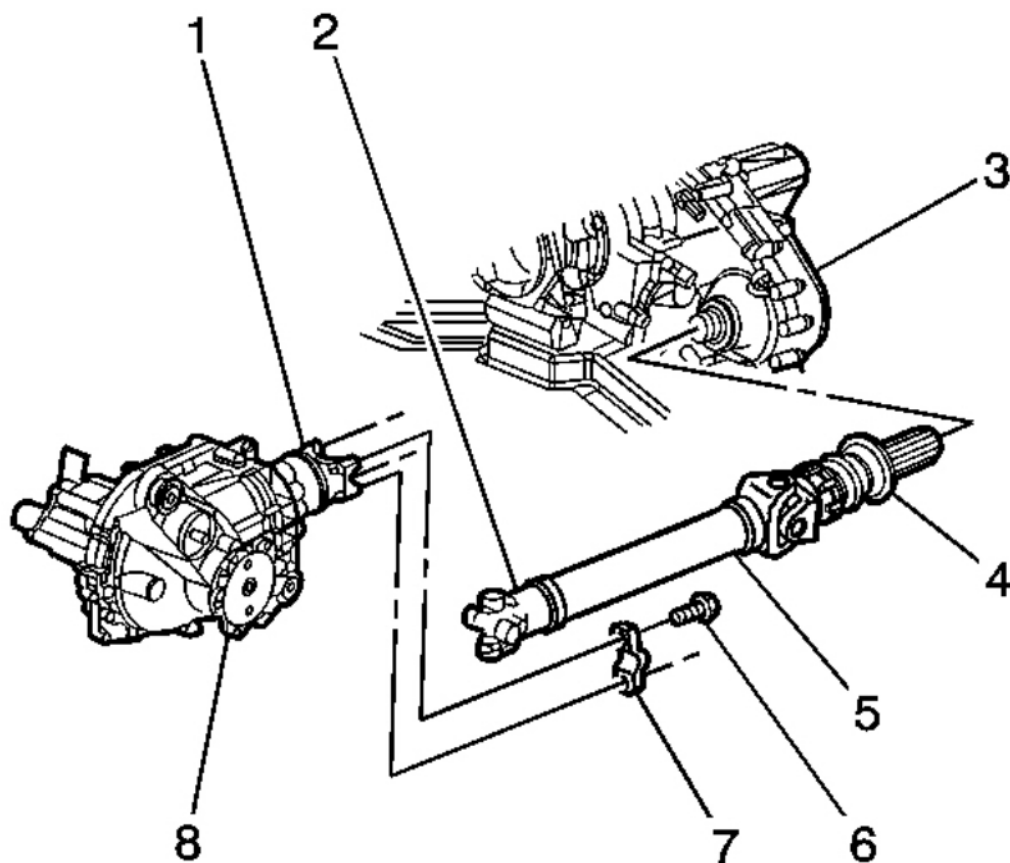


Fig. 10: Front Propeller Shaft & Front Axle Pinion Yoke
Courtesy of GENERAL MOTORS CORP.

5. Install the propeller shaft (5) to the front axle pinion yoke (1).

Align the reference marks made during removal.

NOTE: Refer to Fastener Notice .

6. Install the yoke retainers (7) and the bolts (6).

Tighten: Tighten the yoke retainer bolts to 25 N.m (18 lb ft).

7. Install the boot onto the transfer case output shaft until the boot snaps into the groove on the output shaft.
8. Using the **J 43218** to crimp both clamps. See Special Tools.

9. Install the transfer case shield, if equipped. Refer to the appropriate procedure:
 - **Transfer Case Shield Replacement** for the BW 4485-NR3 transfer case
 - **Transfer Case Shield Replacement** for the NVG 246-NP8 transfer case
10. Lower the vehicle.

REAR PROPELLER SHAFT REPLACEMENT

Removal Procedure

IMPORTANT: Observe and accurately reference mark all driveline components relative to the propeller shaft and axles before disassembly. These components include the propeller shafts, the drive axles, the pinion flanges, the output shafts, etc. All components must be reassembled in the exact relationship to each other as they were when removed. In addition, published specifications and torque values, as well as any measurements made prior to disassembly must be followed.

1. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle** .

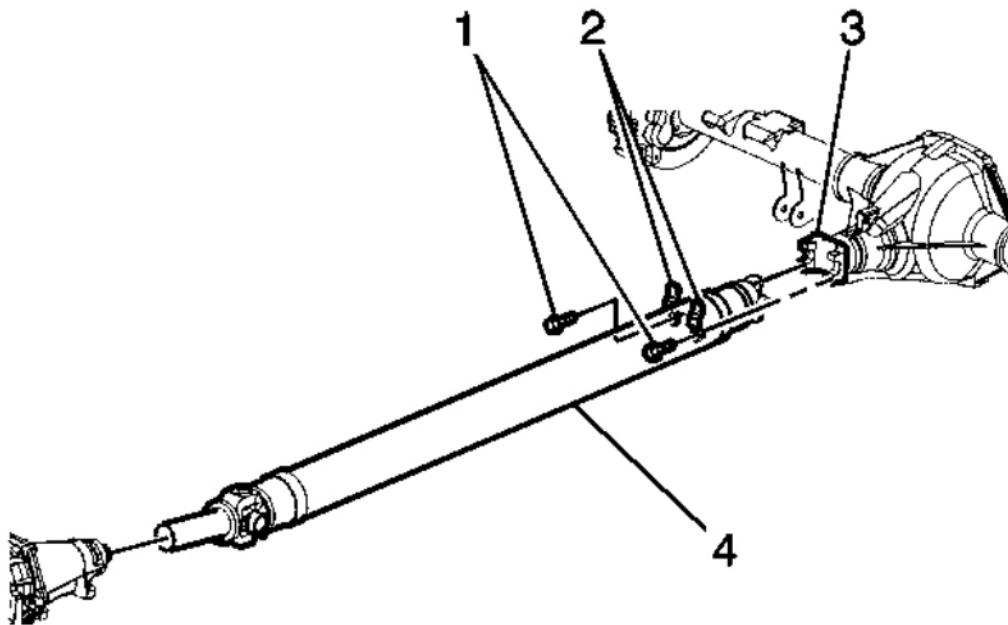


Fig. 11: Yoke Retainers, Rear Axle Pinion Yoke & Bolts
Courtesy of GENERAL MOTORS CORP.

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2. Reference mark the propeller shaft to the rear axle pinion yoke.
3. Reference mark the propeller shaft to the transmission or transfer case.
4. Remove the bolts (1) and the yoke retainers (2) from the rear axle pinion yoke (3).

NOTE: When removing the propeller shaft, do not attempt to remove the shaft by pounding on the yoke ears or using a tool between the yoke and the universal joint. If the propeller shaft is removed by using such means, the injection joints may fracture and lead to premature failure of the joint.

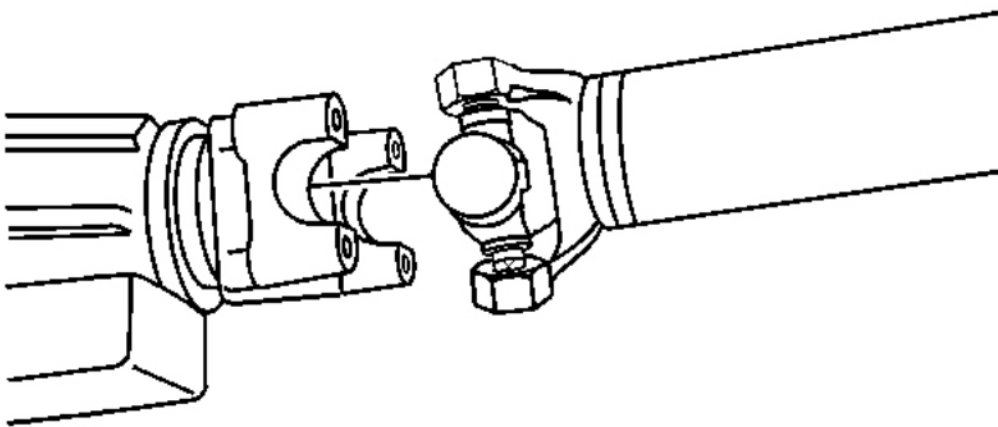


Fig. 12: Rear Propeller Shaft & Rear Axle Pinion Yoke
Courtesy of GENERAL MOTORS CORP.

5. Slide the propeller shaft forward in order to disconnect the propeller shaft from the rear axle pinion yoke.

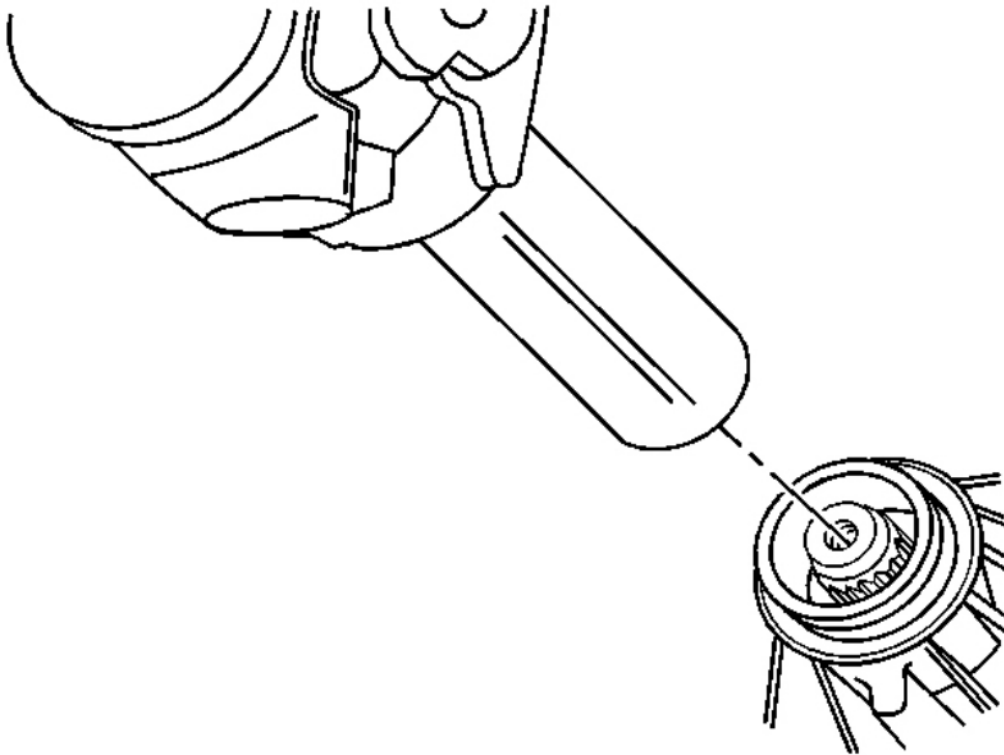


Fig. 13: View Of Propeller Shaft To Transmission Or Transfer Case
Courtesy of GENERAL MOTORS CORP.

6. Slide the propeller shaft rearward in order to disconnect the propeller shaft from the transmission or transfer case.
7. Remove the propeller shaft from the vehicle.

Installation Procedure

1. Inspect the splines of the slip yoke for a sufficient coating of lubricant. If the splines of the slip yoke do not have a sufficient coating of lubricant, lubricate the shaft with lubricant GM P/N 12345879 (Canadian P/N 10953511) or with an equivalent lubricant meeting GM specification 9985830 (RWD w/4 speed Automatic Transmission).

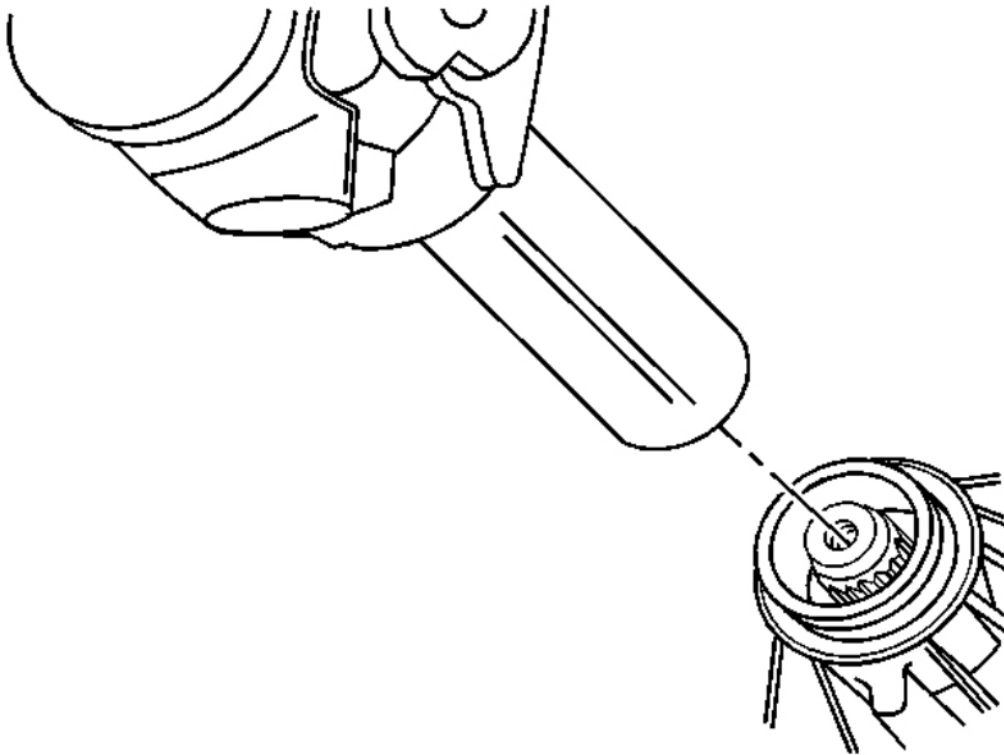


Fig. 14: View Of Propeller Shaft To Transmission Or Transfer Case
Courtesy of GENERAL MOTORS CORP.

2. Install the propeller shaft into the transmission or transfer case.

Align the reference marks made during removal.

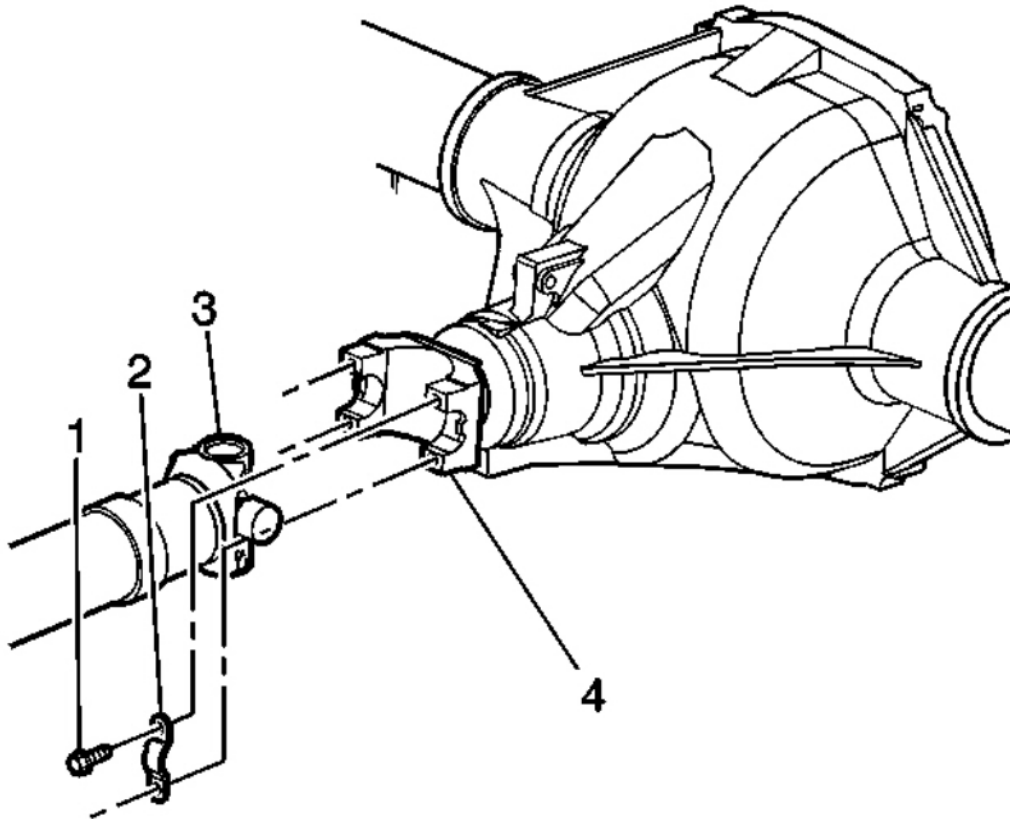


Fig. 15: Identifying Driveshaft Pinion, Yoke Retainers & Bolts
Courtesy of GENERAL MOTORS CORP.

3. Install the propeller shaft (3) to the rear axle pinion yoke (4).

Align the reference marks made during removal.

NOTE: Refer to Fastener Notice .

4. Install the yoke retainers (2) and bolts (1).

Tighten: Tighten the yoke retainer bolts to 25 N.m (18 lb ft).

5. Lower the vehicle.

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Tools Required

- **J 9522-3** U Joint Bearing Separator. See Special Tools.
- **J 9522-5** U Joint Bearing Spacer Remover. See Special Tools.

Disassembly Procedure

NOTE: Never clamp propeller shaft tubing in a vise. Clamping could dent or deform the tube causing an imbalance or unsafe condition. Always clamp on one of the yokes and support the shaft horizontally. Avoid damaging the slip yoke sealing surface. Nicks may damage the bushing or cut the lip seal.

1. Support the propeller shaft in a line horizontal with the table of a press.
2. Mark the propeller shaft as to which end is the transmission end and which end goes to the rear axle.

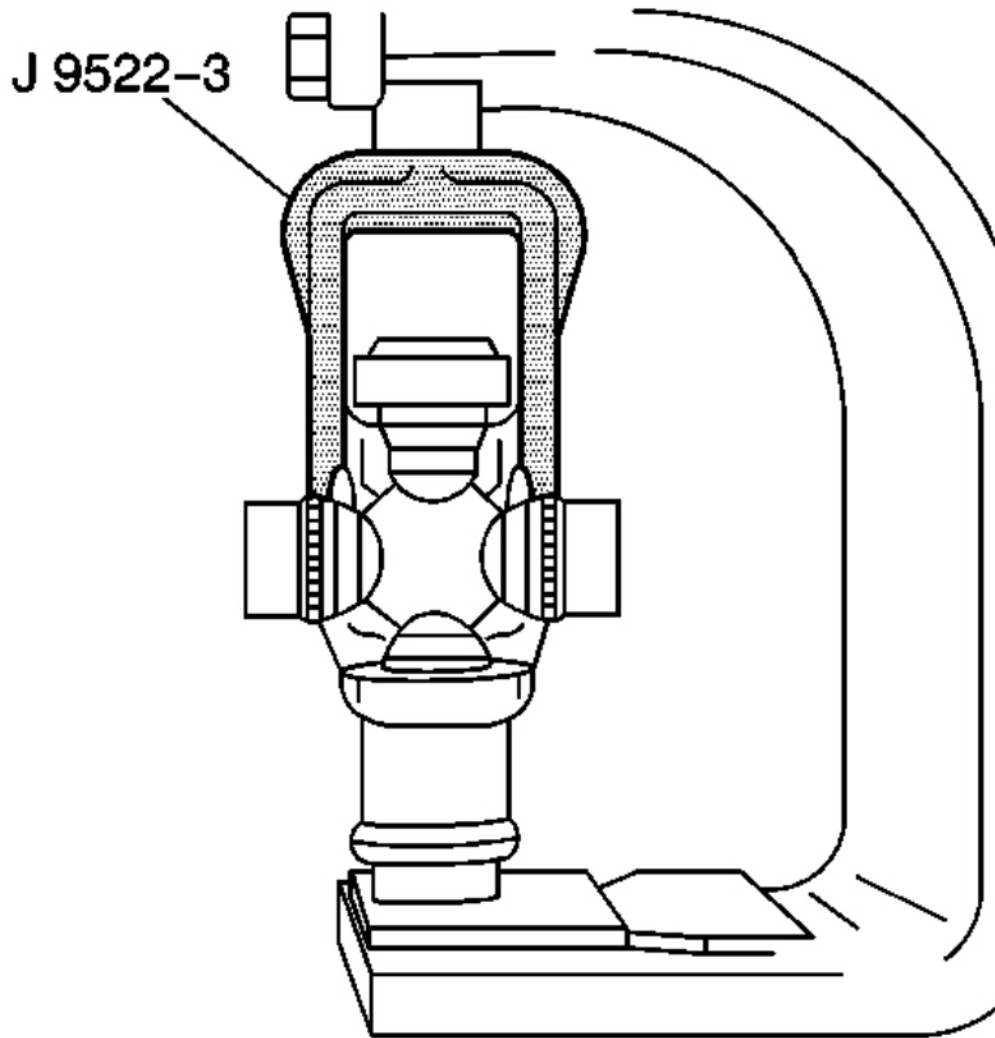


Fig. 16: Assembling Universal Joint
Courtesy of GENERAL MOTORS CORP.

3. Place the universal joint so that the lower ear of the yoke is supported on a 30 mm (1 1/8 in) socket.

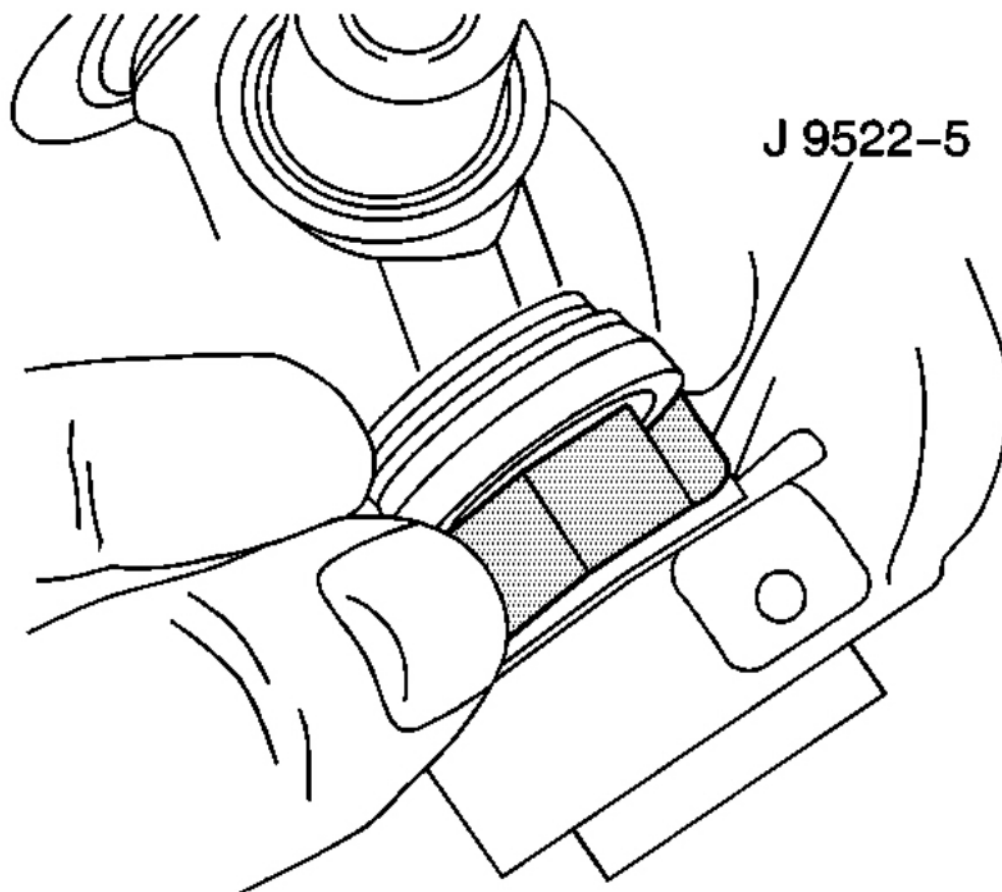


Fig. 17: Inserting J 9522-5 Between The Seal And The Bearing Cup
Courtesy of GENERAL MOTORS CORP.

4. In order to shear the plastic retaining ring on the bearing cup, place **J 9522-3** on the open horizontal bearing cups. See **Special Tools**. Press the lower bearing cup out of the yoke ear.
5. If you do not completely remove the bearing cup, lift the cross and insert **J 9522-5** between the seal and the bearing cup you are removing. See **Special Tools**. Continue to press the bearing cup out of the yoke.
6. Rotate the propeller shaft. Press the opposite bearing cup out of the yoke.
7. Mark the orientation of the slip yoke to the tube for proper reassembly.
8. Remove the cross from the yoke.
9. Remove the remaining universal joint parts from the yoke. If you are replacing the front universal joint, remove the bearing cups in the slip yoke in the same manner.
10. Inspect the retaining ring grooves for plastic.

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11. Inspect the bearing cup bores in the yoke ears for burrs or imperfections.
12. Clean the remains of the sheared plastic bearing retainers from the grooves in the yoke.
13. The sheared plastic may prevent the bearing cups from pressing into place and thus prevent the bearing retainers from properly seating.

Assembly Procedure

1. Remove the bearing cups from the universal joint.

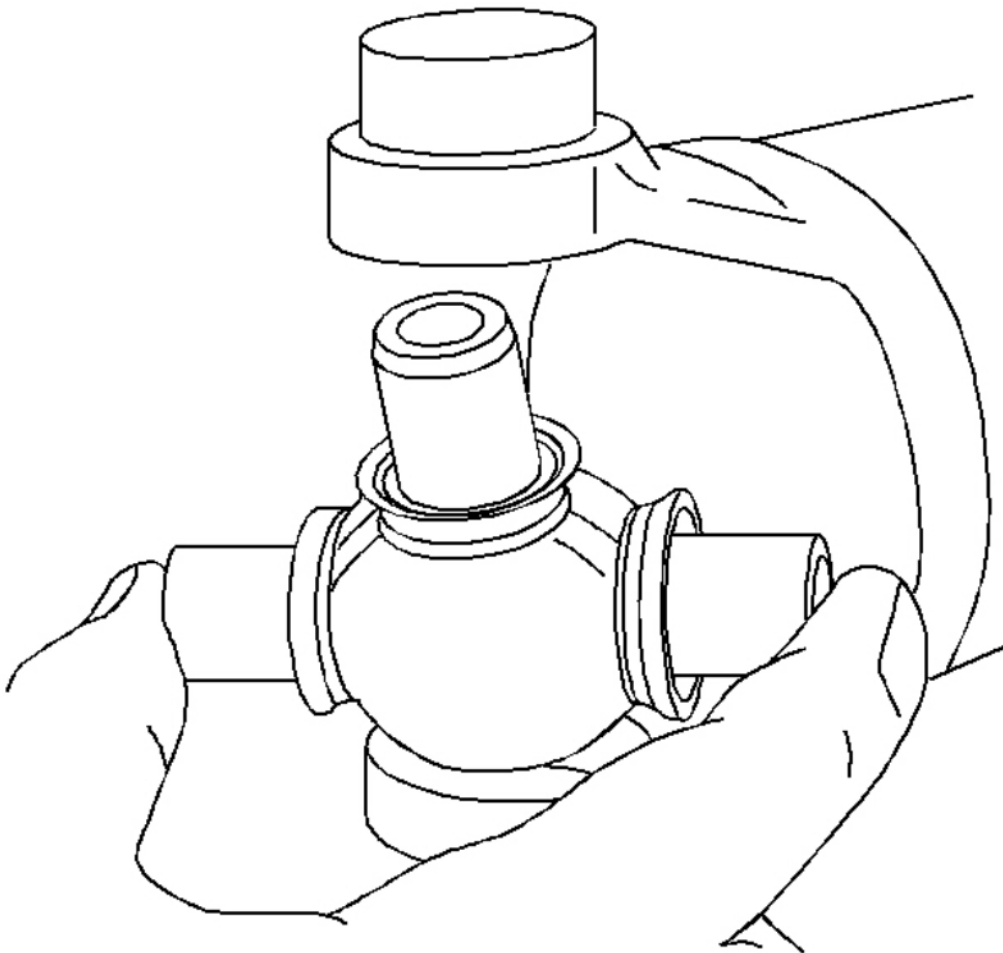


Fig. 18: Assembling Trunnion Into Yoke
Courtesy of GENERAL MOTORS CORP.

2. Assemble 1 bearing cup part way into 1 side of the yoke.

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3. Turn the yoke ear toward the bottom.
4. Assemble the cross into the yoke so the trunnion seats freely into the bearing cup.
5. With the trunnion seated in the bearing cup, press the bearing cup into the yoke until the bearing cup is flush with the yoke ear.

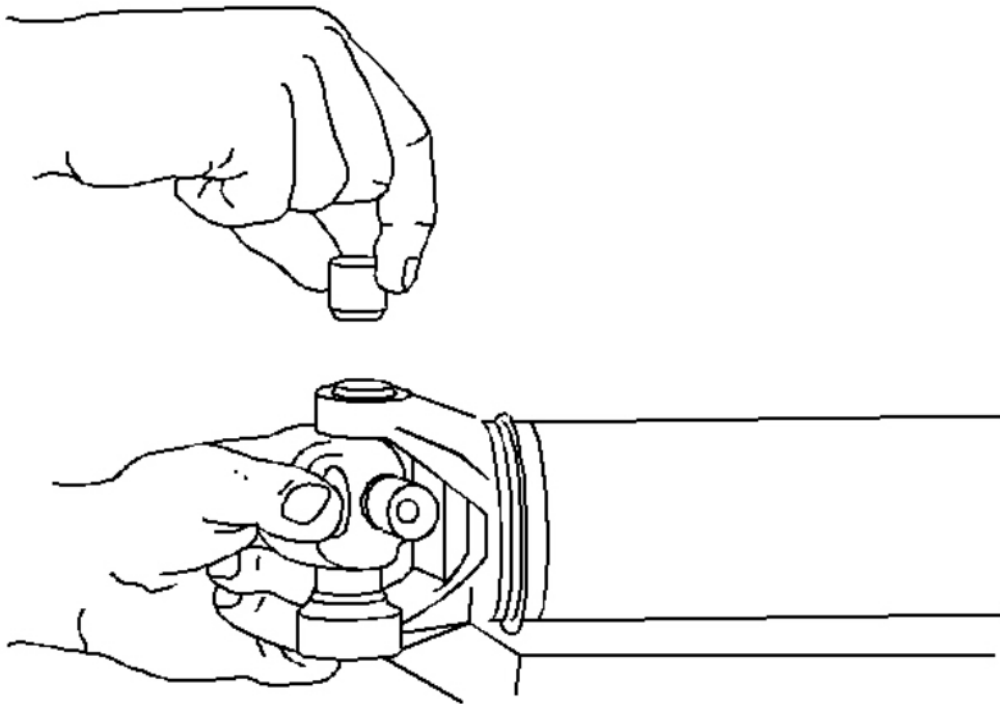


Fig. 19: Installing Bearing Cup Into Yoke Ear
Courtesy of GENERAL MOTORS CORP.

6. Assemble the opposite bearing cup part way into the yoke ear.
7. Ensure that the trunnions start straight and true into both bearing cups.
8. Press the opposite bearing cup into the yoke ear while working the cross all the time in order to inspect for a free unbinding movement of the trunnions in the bearing cups.

IMPORTANT: If there seems to be a hangup or binding, stop pressing, and inspect the needle bearings for misalignment in the bearing cup.

9. Press the bearing cup into the yoke until the bearing retainer groove clears the inside of the yoke.

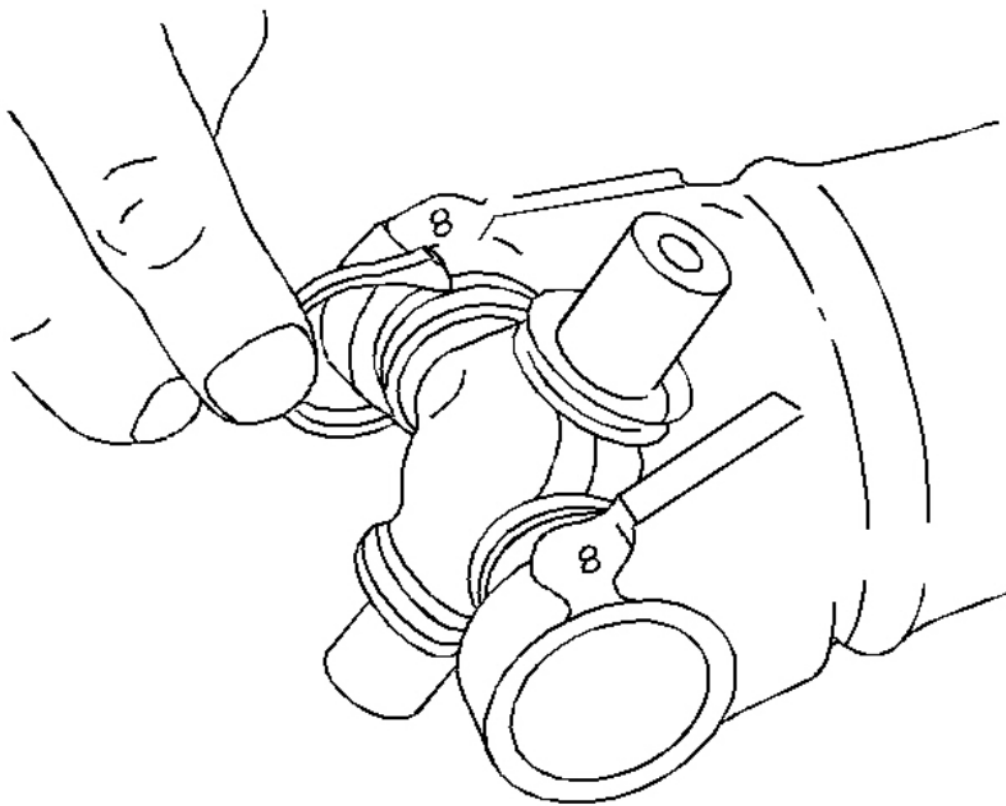


Fig. 20: Pressing Bearing Retainers Into Retainer Groove (Nylon Injected Ring)
Courtesy of GENERAL MOTORS CORP.

10. Assemble the bearing retainer in the retainer groove.
11. Continue pressing until you can snap both retainers into place.

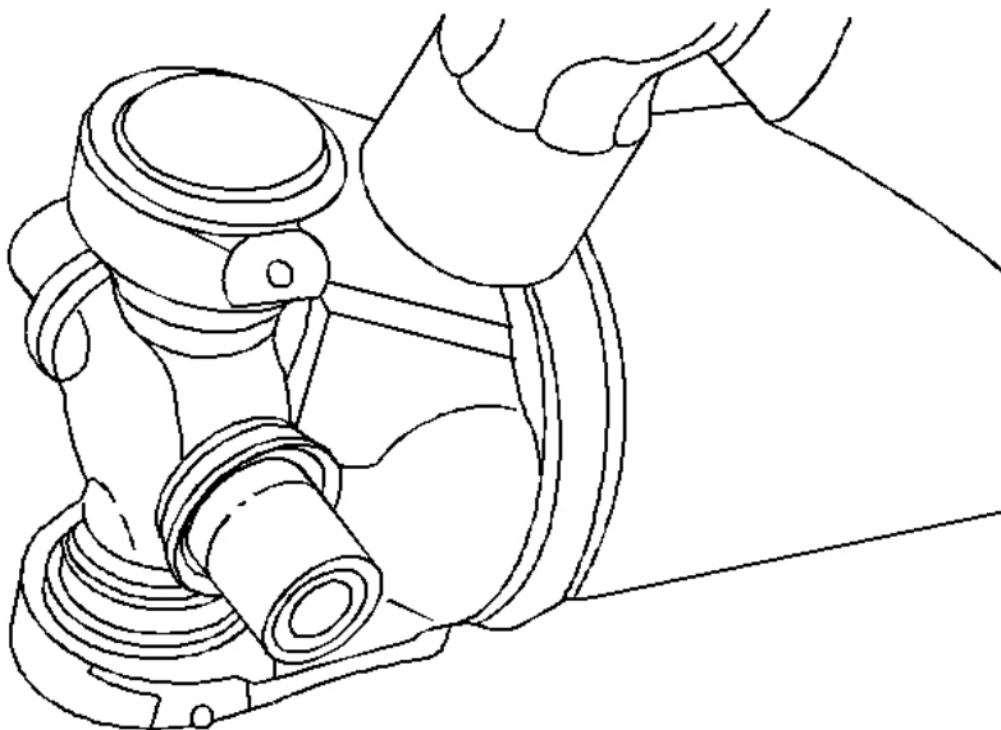


Fig. 21: Springing Yoke Using Hammer
Courtesy of GENERAL MOTORS CORP.

12. If seating the retainer is difficult, spring the yoke slightly with a firm blow from a dead blow hammer.
13. It may be necessary to lubricate the snap ring with a slight amount of chassis grease so the snap ring seats in the bearing cup groove.

UNIVERSAL JOINT REPLACEMENT - EXTERNAL SNAP RING

Tools Required

- J 9522-3 U-Joint Bearing Separator. See Special Tools.
- J 9522-5 U-Joint Bearing Spacer Remover. See Special Tools.

Disassembly Procedure

NOTE: Never clamp propeller shaft tubing in a vise. Clamping could dent or deform the tube causing an imbalance or unsafe condition. Always clamp on one of the yokes and support the shaft horizontally. Avoid damaging the slip yoke sealing

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surface. Nicks may damage the bushing or cut the lip seal.

1. Support the propeller shaft in a line horizontal with the table of a press.
2. Mark the propeller shaft in order to show which end connects to the transmission and which end goes to the rear axle.
3. Disassemble the snap rings by pinching the ends together with a pair of pliers.
4. If the ring does not readily snap out of the groove in the yoke, tap the end of the cup lightly in order to relieve the pressure from the ring.

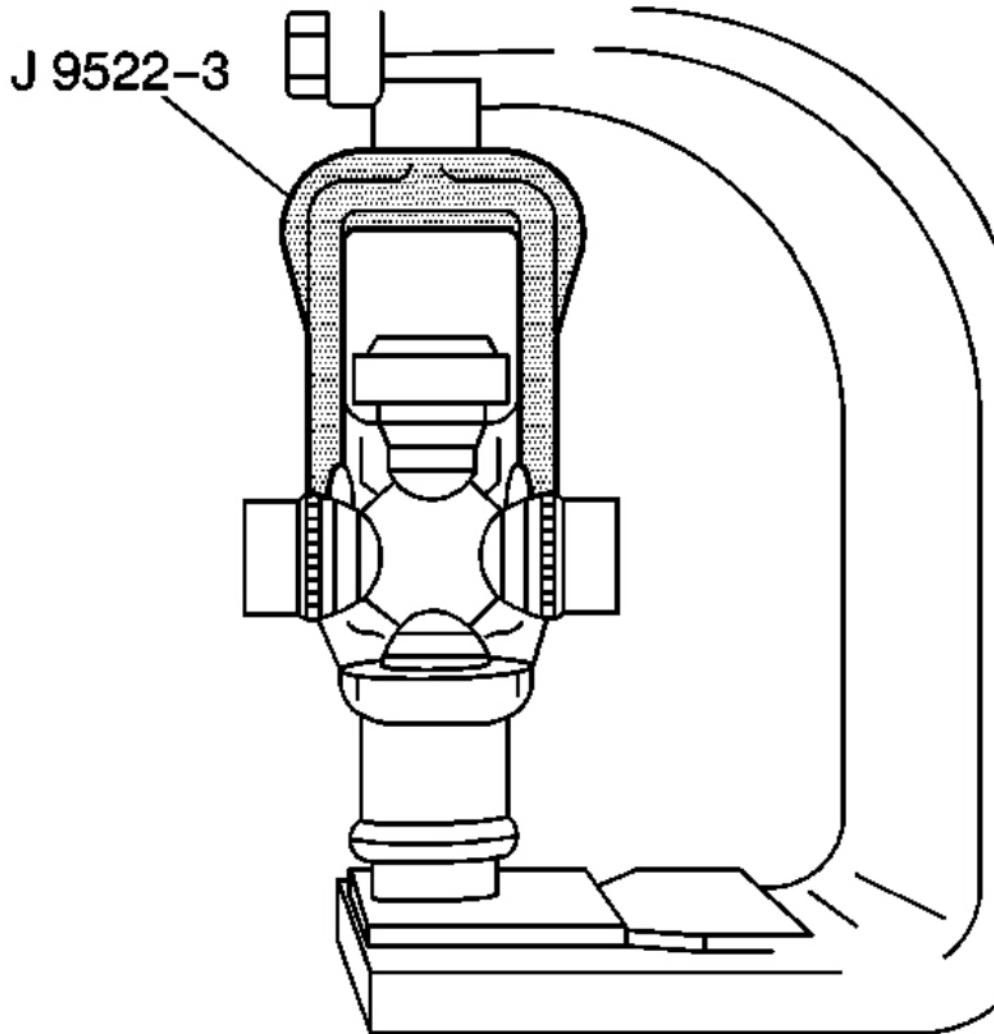


Fig. 22: Assembling Universal Joint
Courtesy of GENERAL MOTORS CORP.

5. Place the universal joint so that the lower ear of the yoke is supported on a 30 mm (1-1/8 in) hex head socket or a 27 mm (1-1/16 in) socket.

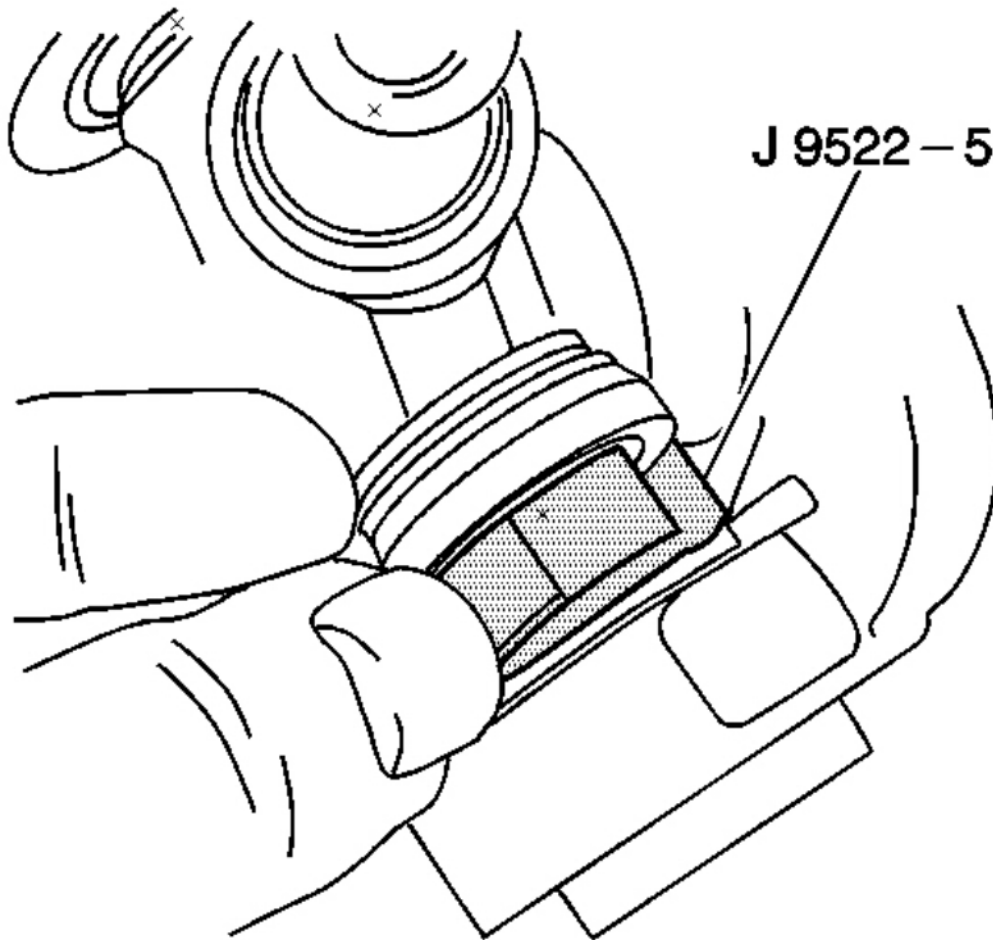


Fig. 23: Placing J 9522-5 Between The Seal And The Bearing Cup
Courtesy of GENERAL MOTORS CORP.

6. Place **J 9522-3** on the open horizontal bearing cups. See **Special Tools**. Press the lower bearing cup out of the yoke ear.
7. If you do not completely remove the bearing cup, lift the cross and insert **J 9522-5** between the seal and the bearing cup you are removing. See **Special Tools**. Continue pressing the bearing cup out of the yoke.

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8. Rotate the propeller shaft. Press the opposite bearing cup out of the yoke.
9. Mark the orientation of the slip yoke to the tube for proper reassembly.
10. Remove the cross from the yoke.
11. Remove the remaining universal joint parts from the yoke.
12. If you are replacing the front universal joint, remove the bearing cups in the slip yoke in the same manner.
13. Inspect the retaining ring grooves for dirt, corrosion, or pieces of the old ring.
14. Inspect the bearing cup bores for burrs or imperfections.
15. Clean the retaining ring grooves. Corrosion, dirt, rust, or pieces of the old retaining ring may prevent the bearing cups from pressing into place or prevent the bearing retainers from properly seating.

Assembly Procedure

1. Remove the bearing cups from the universal joint.

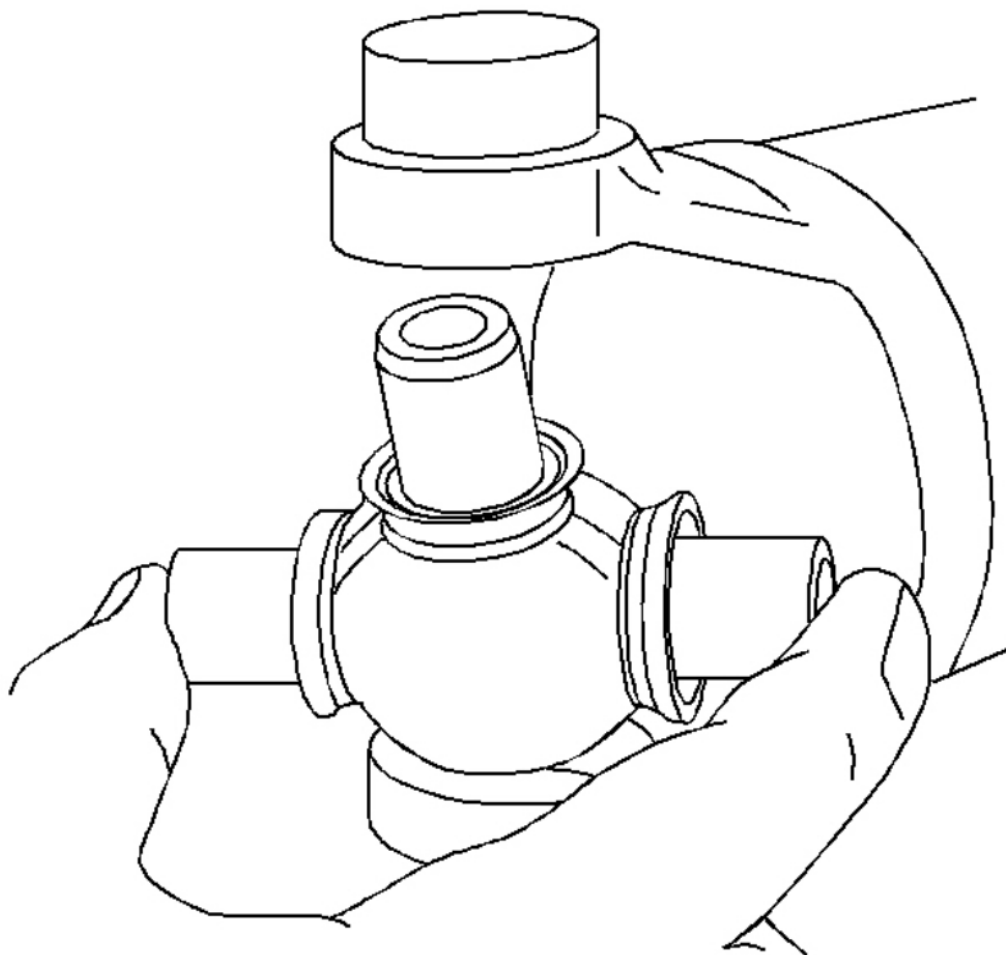


Fig. 24: Assembling Trunnion Into Yoke
Courtesy of GENERAL MOTORS CORP.

2. Assemble 1 bearing cup part way into 1 side of the yoke. Turn the yoke ear toward the bottom.
3. Assemble the cross into the yoke so that the trunnion seats freely into the bearing cup.

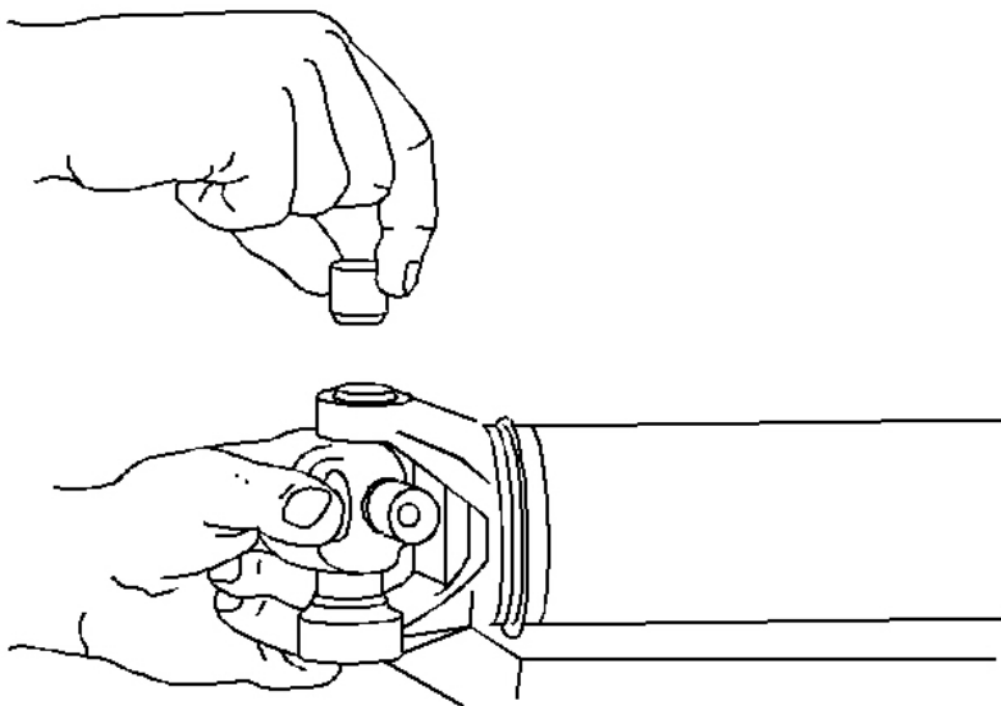


Fig. 25: Installing Bearing Cup Into Yoke Ear
Courtesy of GENERAL MOTORS CORP.

4. With the trunnion seated in the bearing cup, press the bearing cup into the yoke until the bearing cup is flush with the yoke ear.
5. Install the opposite bearing cup part way into the yoke ear.
6. Ensure that the trunnions start straight and true into both bearing cups.
7. Press the opposite bearing cup into the yoke ear while working the cross all the time in order to inspect for free unbinding movement of the trunnions in the bearing cups.

IMPORTANT: If there seems to be a hang up or binding, stop pressing. Inspect the needle bearings for misalignment in the bearing cup.

8. Press the bearing cup into the yoke until the bearing cup retainer groove is visible over the top of the bearing cup.

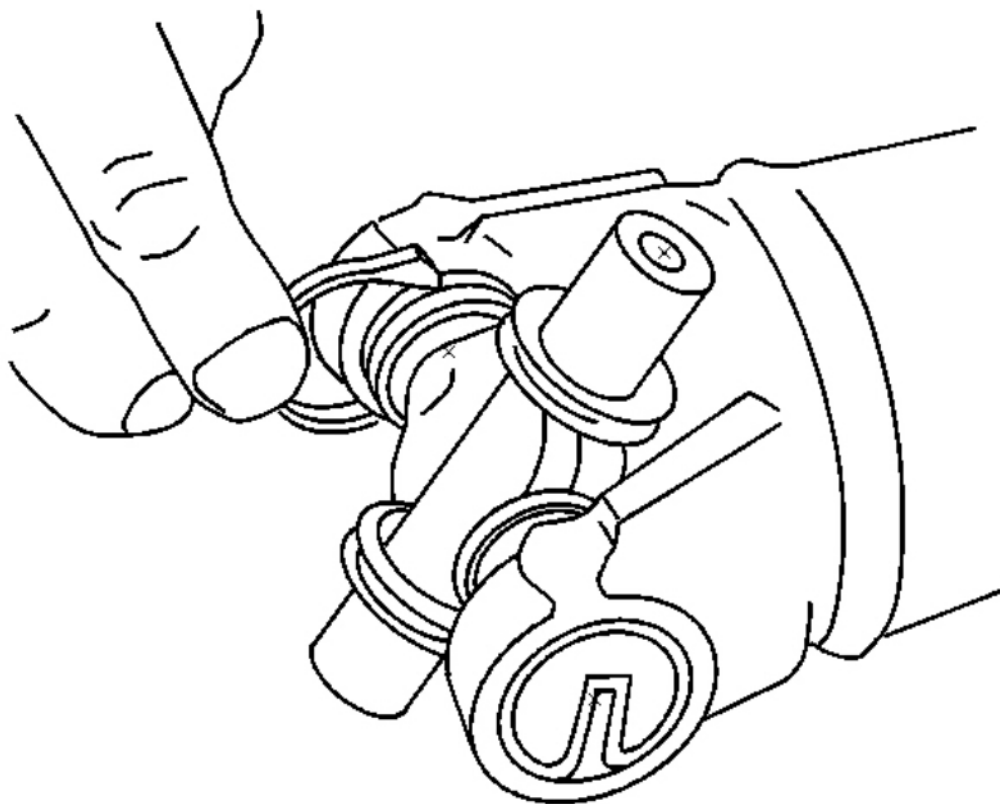


Fig. 26: Assembling Bearing Retainer In Retainer Groove
Courtesy of GENERAL MOTORS CORP.

9. Assemble the bearing retainer in the retainer groove.
10. Continue pressing until both retainers can be snapped into place.

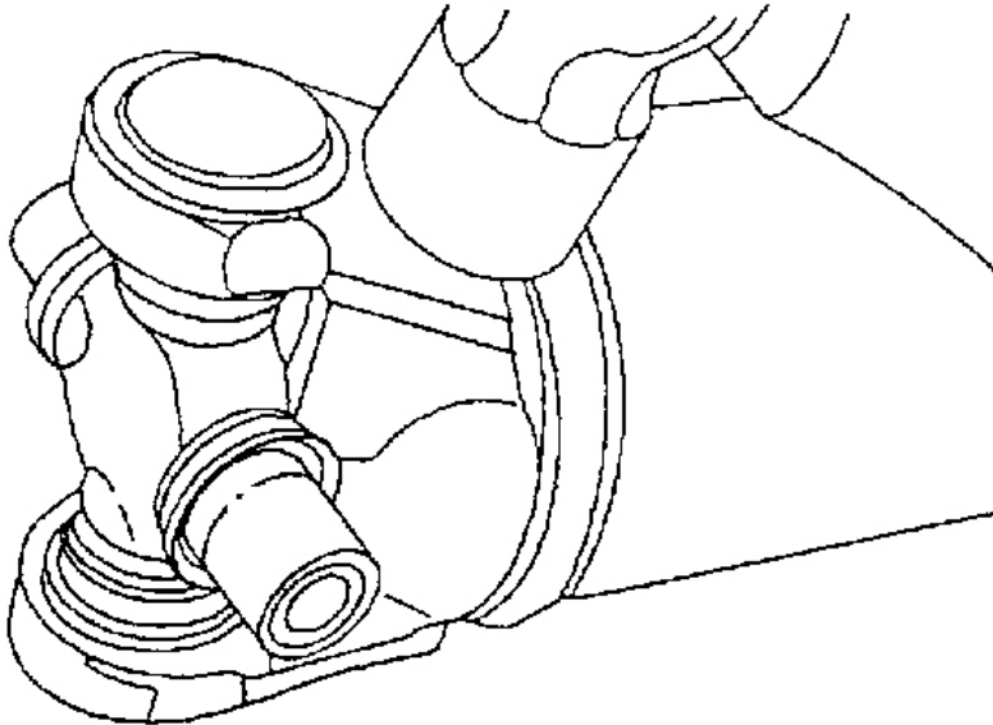


Fig. 27: Seating Retainer Using Hammer (External Snap Ring)
Courtesy of GENERAL MOTORS CORP.

11. If the retainer is difficult to seat, the yoke can be sprung slightly with a firm blow from a dead blow hammer.
12. It may be necessary to lubricate the snap ring with a slight amount of chassis grease so that the snap ring seats in the bearing cup groove.

DESCRIPTION AND OPERATION

PROPELLER SHAFT DESCRIPTION AND OPERATION

The propeller shaft is a tube with universal joints at both ends that do not require periodic maintenance. The universal joints transmit power from the transfer case, or from the transmission output shaft, to the differential.

Front Propeller Shaft Description

The front propeller shaft transmits rotating force from the transfer case to the front differential when the transfer case is engaged. The front propeller shaft connects to the transfer case using a splined slip joint.

2007 Cadillac Escalade

2007 DRIVELINE/AXLE Propeller Shaft - Avalanche, Escalade, Suburban, Tahoe & Yukon

One-Piece Propeller Shaft Description

A one-piece propeller shaft uses a splined slip joint in order to connect the driveline to the transmission, or to the transfer case.

Propeller Shaft Phasing Description

The propeller shaft is designed and built with the yoke lugs, or the ears, in-line with each other. This produces the smoothest running shaft possible. A propeller shaft that is designed with built-in yoke lugs in-line is known as in-phase. An out-of-phase propeller shaft often causes vibration. The propeller shaft generates vibration from speeding up and from slowing down each time that the universal joint spins around. The vibration is similar to a person snapping a rope and watching the wave reaction flow to the end. An in-phase propeller shaft is similar to 2 persons snapping a rope at the same time and watching the waves meet and cancel each other. Cancelling the vibration produces a smooth flow of power in the drive line. All splined shaft slip yokes are keyed in order to ensure proper phasing.

Universal Joint Description

The universal joint is connected to the propeller shaft. The universal joint consists of 4 caps with needle bearings and with grease seals. The caps and the seals are mounted on the trunnions of a cross or of a spider. The bearings and the caps are greased at the factory. No periodic maintenance is required. Two universal joints are used in a one-piece propeller shaft. Three universal joints are used in a two-piece propeller shaft. The bearings and the caps are pressed into the yokes. The bearings and the caps are held in place with snap rings, except for 2 bearings on some models. These bearings on some models are attached to the pinion flange of the differential. Universal joints handle the effects of various loads and of rear axle windup conditions during acceleration and braking. The universal joint operation is efficient and safe within the designed angle variations. When the design angle is exceeded, the operational life of the joint decreases.

Center Bearing Description

Center bearings support the driveline when using 2 or more propeller shafts. The center bearing is a ball bearing in a rubber cushion that attaches to a frame crossmember. The manufacturer lubricates the bearing and seals the bearing. The cushion allows vertical motion at the driveline and helps isolate the vehicle from vibration.

SPECIAL TOOLS AND EQUIPMENT

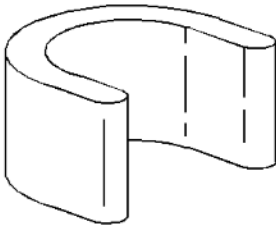
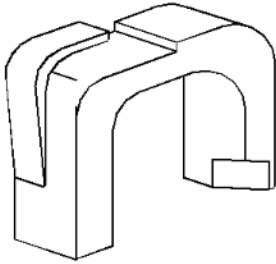
SPECIAL TOOLS

Special Tools

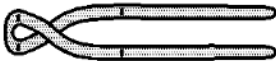
Illustration	Tool Number/ Description
	J 9522-3 U Joint Bearing Separator

2007 Cadillac Escalade

2007 DRIVELINE/AXLE Propeller Shaft - Avalanche, Escalade, Suburban, Tahoe & Yukon



J 9522-5
U Joint Bearing Spacer Remover - Use with J 9522-3



J 43218 Clamp Pliers - Narrow Jaw