

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

2008 DRIVELINE/AXLE

Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Center Bearing Mounting Bolt	40 N.m	30 lb ft
Yoke Retainer Bolts	25 N.m	18 lb ft

SEALERS, ADHESIVES, AND LUBRICANTS

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

COMPONENT LOCATOR

DRIVELINE DISASSEMBLED VIEWS

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

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

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

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

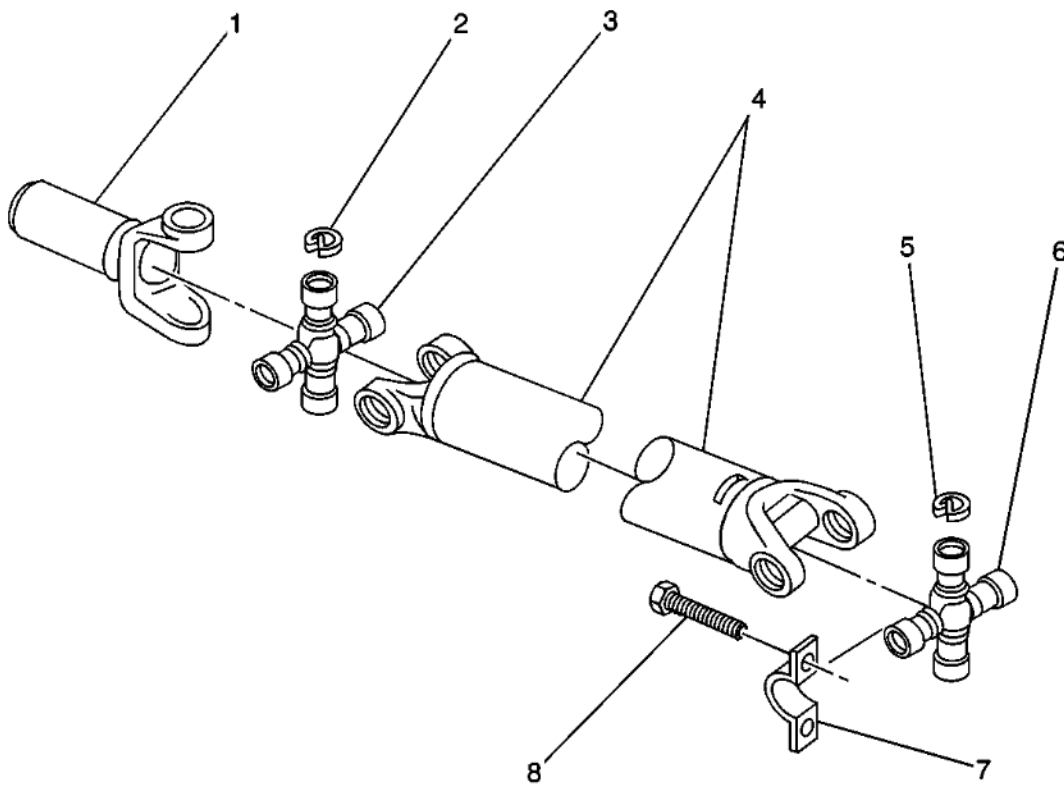


Fig. 2: One-Piece Propeller Shaft Component View
Courtesy of GENERAL MOTORS CORP.

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

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

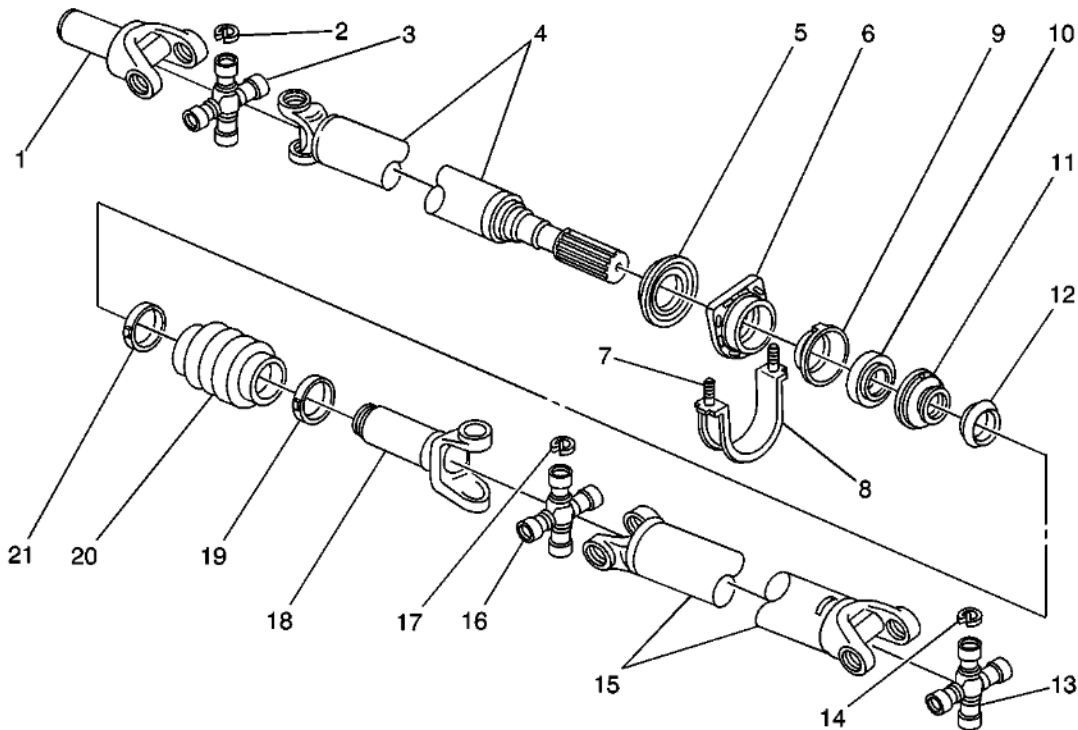


Fig. 3: Two-Piece Propeller Shaft Component View
Courtesy of GENERAL MOTORS CORP.

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 Bearing Shield
6	Propeller Shaft Bearing Insulator
7	Propeller Shaft Bearing Support Bolt
8	Propeller Shaft Bearing Support
9	Propeller Shaft Retainer
10	Propeller Shaft Center Support Bearing
11	Propeller Shaft Retainer
12	Propeller Shaft Bearing Slinger
13	Propeller Shaft Universal Joint
14	Propeller Shaft Universal Joint Spider Bearing Retainer Ring

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

15	Propeller Shaft Tube
16	Propeller Shaft Universal Joint
17	Propeller Shaft Universal Joint Spider Bearing Retainer Ring
18	Propeller Shaft Slip Yoke
19	Propeller Shaft Slip Yoke Boot Clamp
20	Propeller Shaft Slip Yoke Boot
21	Propeller Shaft Slip Yoke Boot Clamp

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 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**.

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

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

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

Checks	Action
DEFINITION: A few drops of lubricant that are leaking from the splined yoke are normal. This condition does not require attention.	
The slip yoke barrel is burred, nicked, corroded, or worn or the welch plug is leaking.	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. 3. If the welch plug is leaking replace the yoke. Refer to <u>Universal Joint Replacement - Nylon Injected Ring</u> or <u>Universal Joint Replacement - External Snap Ring</u>. 4. Replace the oil seal. Refer to one of the following procedures: • For vehicles equipped with the MP 1222/1225/1226-NQG transfer case, refer to <u>Rear Output Shaft Seal Replacement</u> . • For vehicles equipped with the MP 1625/1626-NQG transfer case, refer to <u>Rear Output Shaft</u>

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

	<u>Seal Replacement</u> . • For vehicles equipped with the MP 3023/3024-NQH transfer case, refer to <u>Rear Output Shaft Seal Replacement</u> . • For vehicles equipped with the 4L60-E automatic transmission, refer to <u>Propeller Shaft Front Slip Yoke Oil Seal Replacement</u> . • For vehicles equipped with the 6L50/6L80/6L90 transmission, refer to <u>Transmission Output Shaft Seal Replacement</u> . • For vehicles equipped with the Allison transmission, refer to <u>Rear Propshaft Shaft Seal Replacement</u> .
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: • For vehicles equipped with the MP 1222/1225/1226-NQG transfer case, refer to <u>Rear Output Shaft Seal Replacement</u> . • For vehicles equipped with the MP 1625/1626-NQF transfer case, refer to <u>Rear Output Shaft Seal Replacement</u> . • For vehicles equipped with the MP 3023/3024-NQH transfer case, refer to <u>Rear Output Shaft Seal Replacement</u> . • For vehicles equipped with the 4L60-E automatic transmission, refer to <u>Propeller Shaft Front Slip Yoke Oil Seal Replacement</u> . • For vehicles equipped with the 6L50/6L80/6L90 transmission, refer to <u>Case Extension and Gasket Replacement</u> . • For vehicles equipped with the Allison transmission, refer to <u>Rear Propshaft Shaft Seal Replacement</u> .

UNIVERSAL JOINT NOISE

Problem	Action
One or more of the universal	Replace the universal joint. Refer to <u>Universal Joint</u>

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

joints are worn or damaged.	<u>Replacement - External Snap Ring</u> or <u>Universal Joint Replacement - Nylon Injected Ring</u> .
One or more of the universal joints have lost lubricant.	Replace the universal joint. Refer to <u>Universal Joint Replacement - External Snap Ring</u> or <u>Universal Joint Replacement - Nylon Injected 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

Checks	Action
DEFINITION: A ping, snap or click is usually heard on initial load after the transmission is in gear, either in forward or reverse.	
A loose pinion yoke or companion flange.	Tighten the bolts and the pinion nut to specified torque. Refer to <u>Fastener Tightening Specifications</u> .
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>
Heat shield interference	Eliminate interference.

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 (8.6, 9.5/9.5LD Inch Axles)</u> or <u>Differential Replacement (10.5 Inch, 11.5 Inch Axle)</u> .

SCRAPING NOISE

Checks	Action
DEFINITION: A scraping noise occurs when driving the vehicle at various speeds.	

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

The pinion flange deflector or the center bearing is rubbing.	Correct the interference as necessary.
Center bearing heat shield, if equipped.	Correct the interference as necessary.
Exhaust pipe contact.	Correct the interference as necessary.
Balance weight detached from the propeller shaft.	A detached balance weight may create a sliding, scraping, or tickling type noise during acceleration or deceleration. 1. Inspect the propeller shaft and tube for a detached balance weight. 2. Replace components as required. Do not attempt to reattach the balance weight to the propeller shaft.

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>
C/V boot worn or torn.	Replace components as necessary.
Center bearing is dry or worn.	Lube or replace the center bearing.

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> .
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>

• **Universal Joint Replacement - External Snap Ring**

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 .

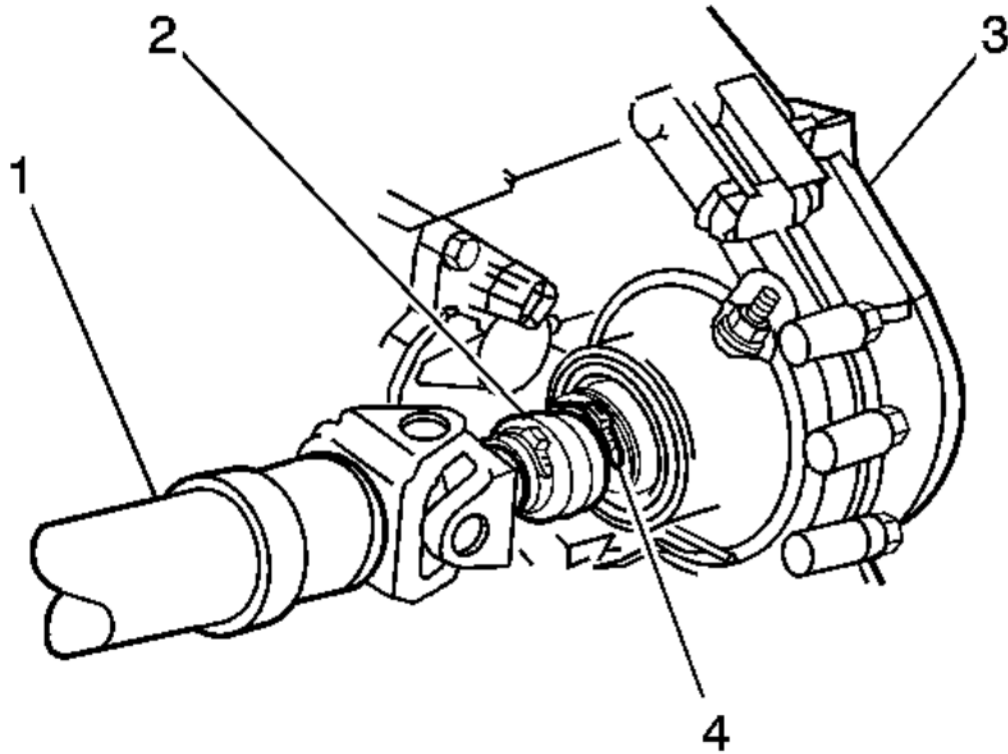


Fig. 4: Rear Propeller Shaft Boot Clamp
Courtesy of GENERAL MOTORS CORP.

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

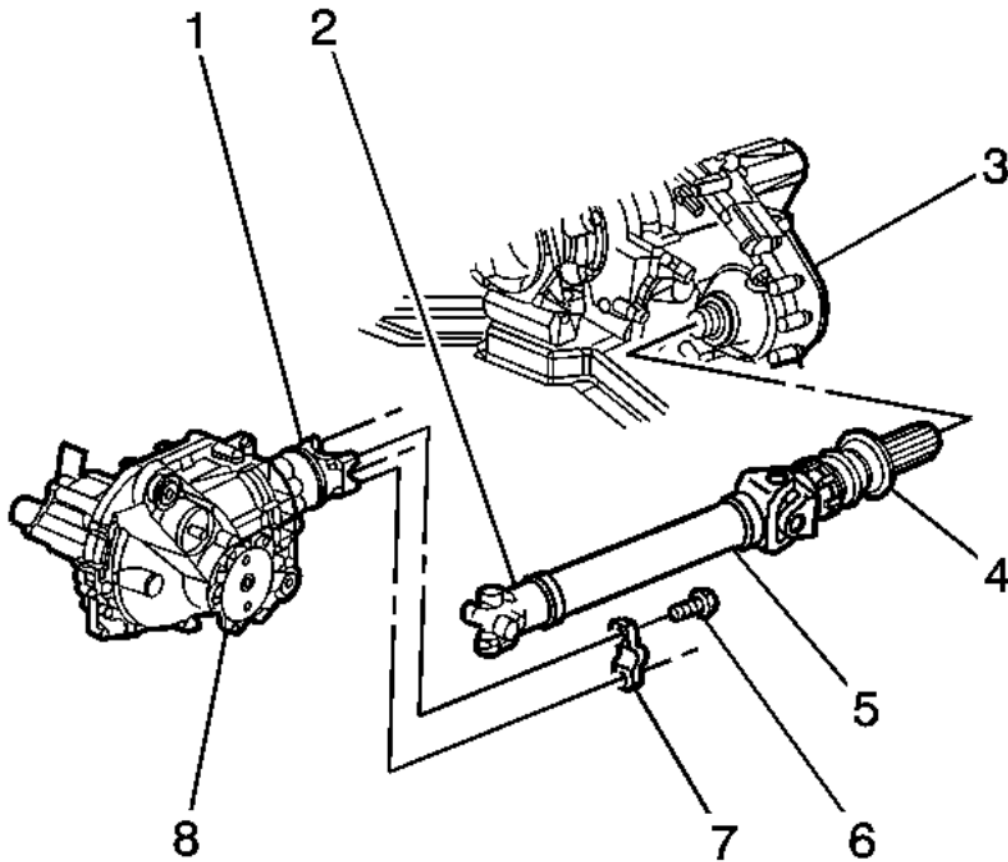


Fig. 5: Front Propeller Shaft & Front Axle Pinion Yoke
Courtesy of GENERAL MOTORS CORP.

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.

4. 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.

5. 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.

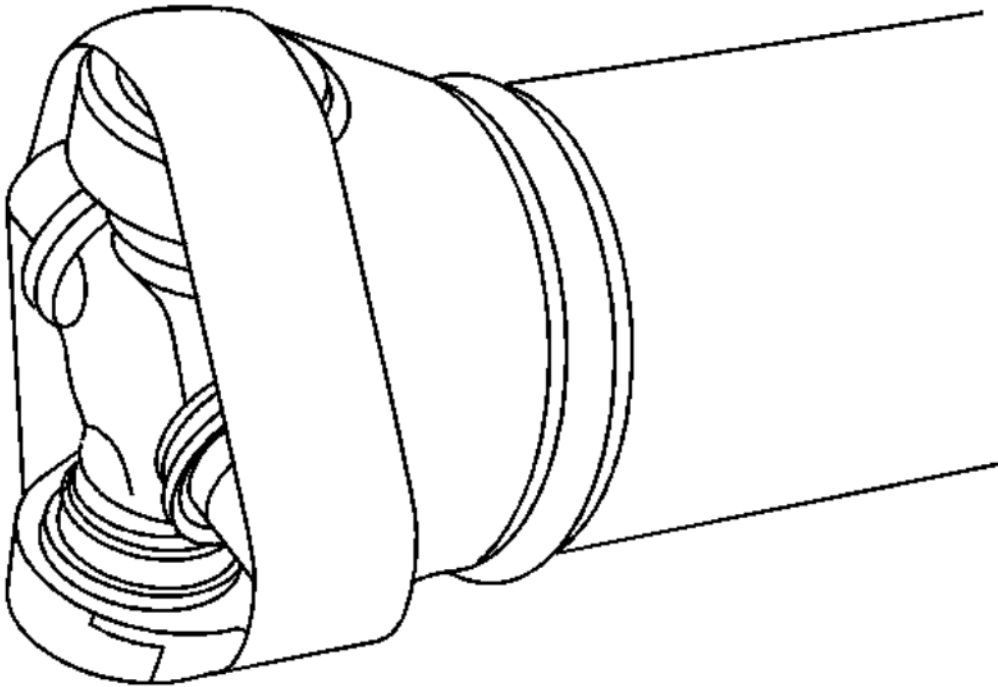


Fig. 6: U-Joint Bearing Caps
Courtesy of GENERAL MOTORS CORP.

6. Use tape to secure the bearing caps.

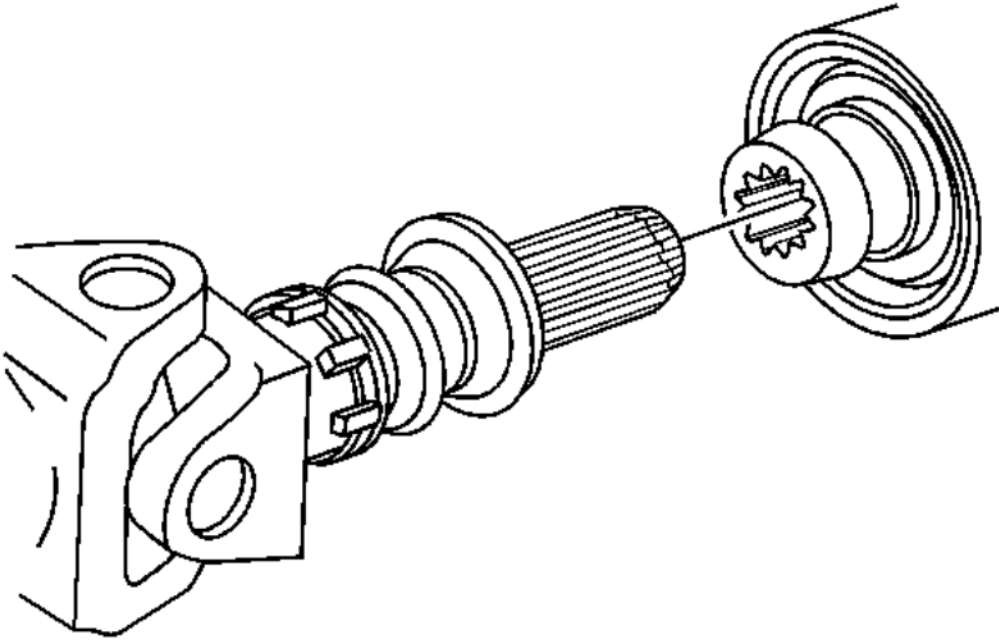


Fig. 7: View Of Boot & Groove On Transfer Case Output Shaft (Single Clamp Style Boot)

Courtesy of GENERAL MOTORS CORP.

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

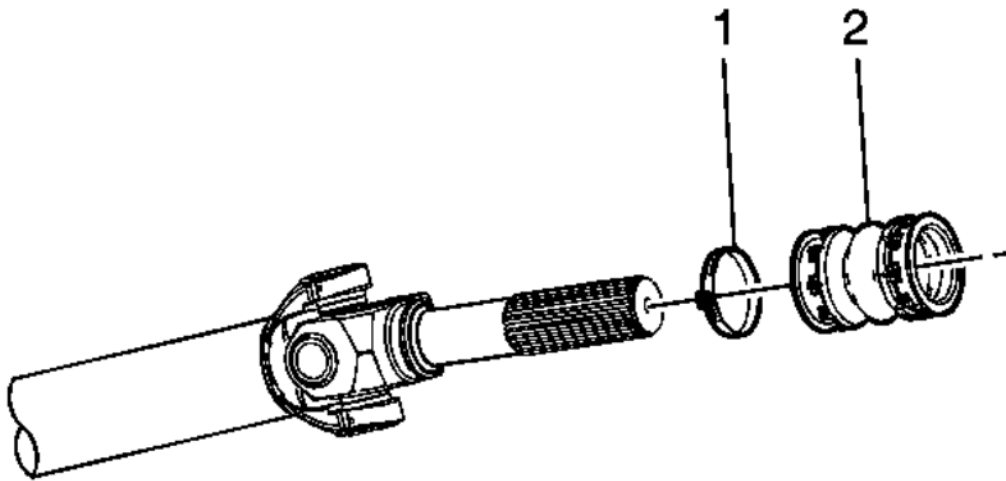


Fig. 8: View Propeller Shaft, Clamp & Shaft Boot
Courtesy of GENERAL MOTORS CORP.

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

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

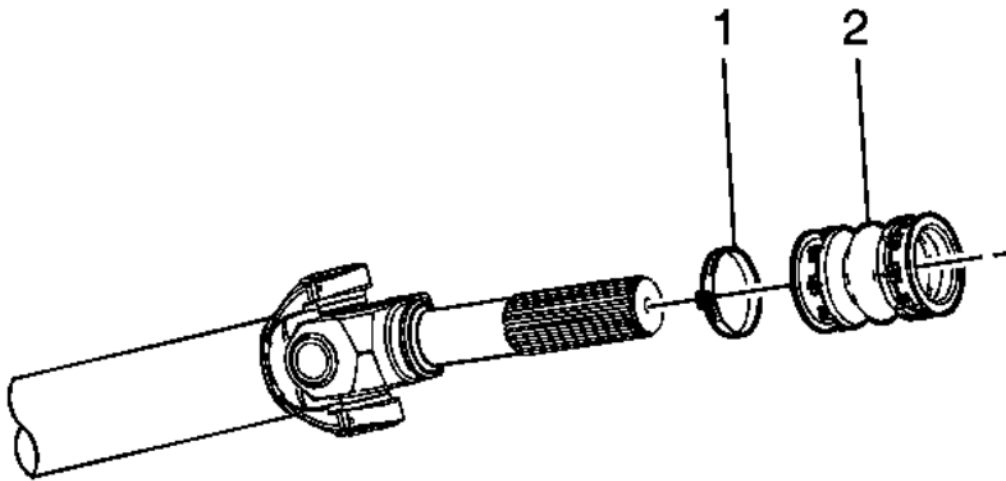


Fig. 9: View Propeller Shaft, Clamp & Shaft Boot
Courtesy of GENERAL MOTORS CORP.

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

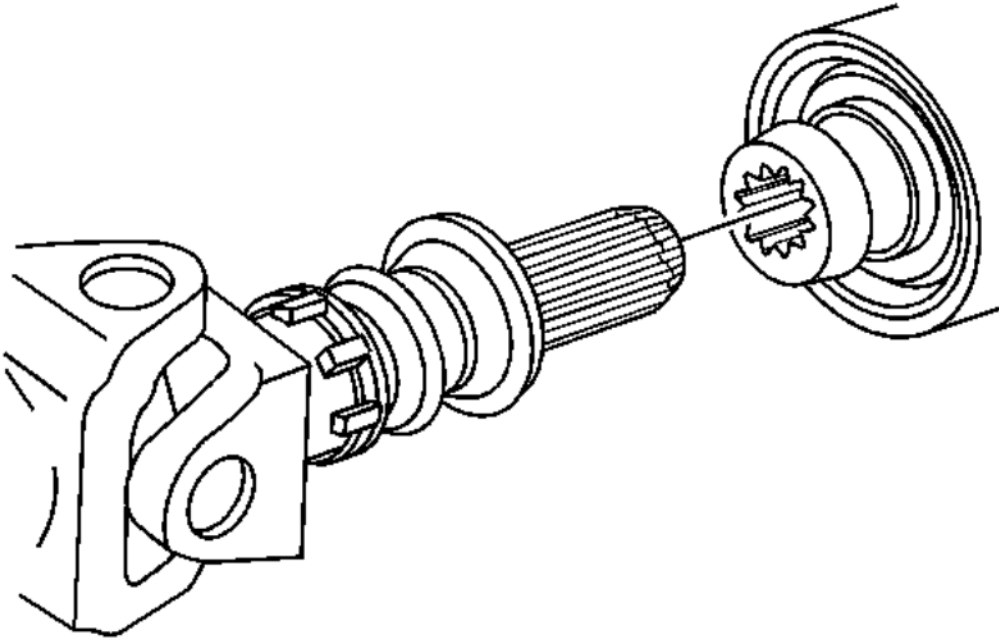


Fig. 10: View Of Boot & Groove On Transfer Case Output Shaft (Single Clamp Style Boot)

Courtesy of GENERAL MOTORS CORP.

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

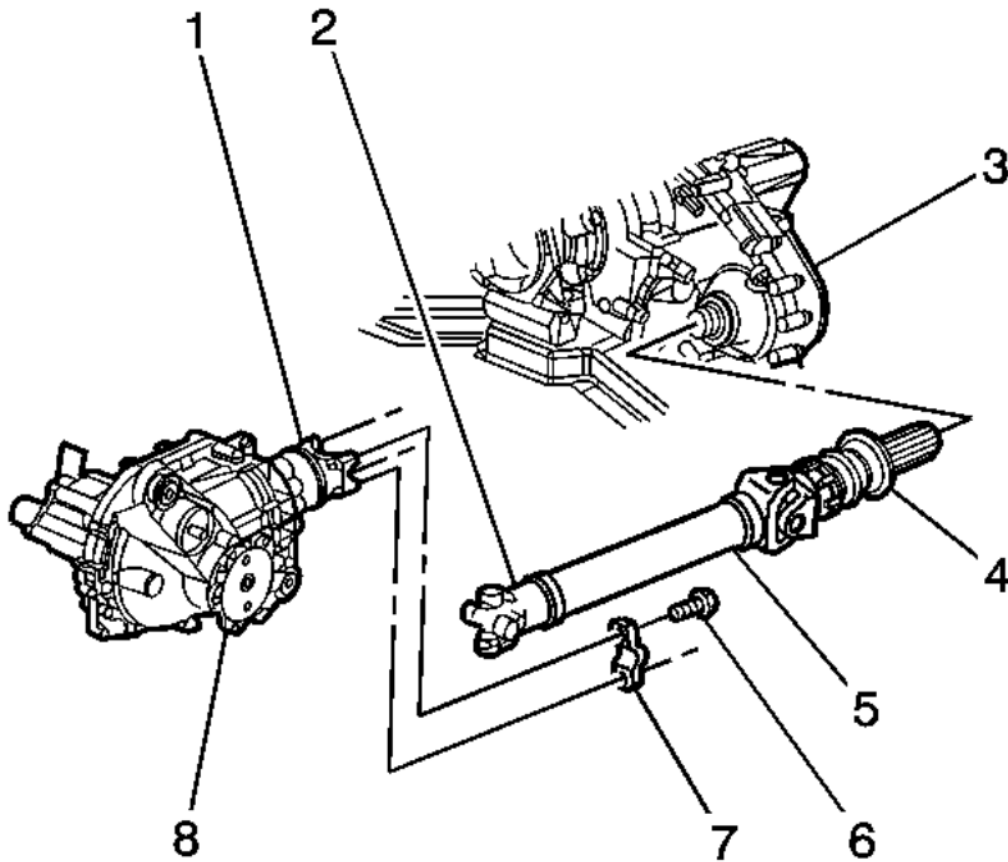


Fig. 11: Front Propeller Shaft & Front Axle Pinion Yoke
Courtesy of GENERAL MOTORS CORP.

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

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

output shaft.

8. Using the **J 43218** to crimp both clamps. See Special Tools.
9. Lower the vehicle.

ONE-PIECE 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 .

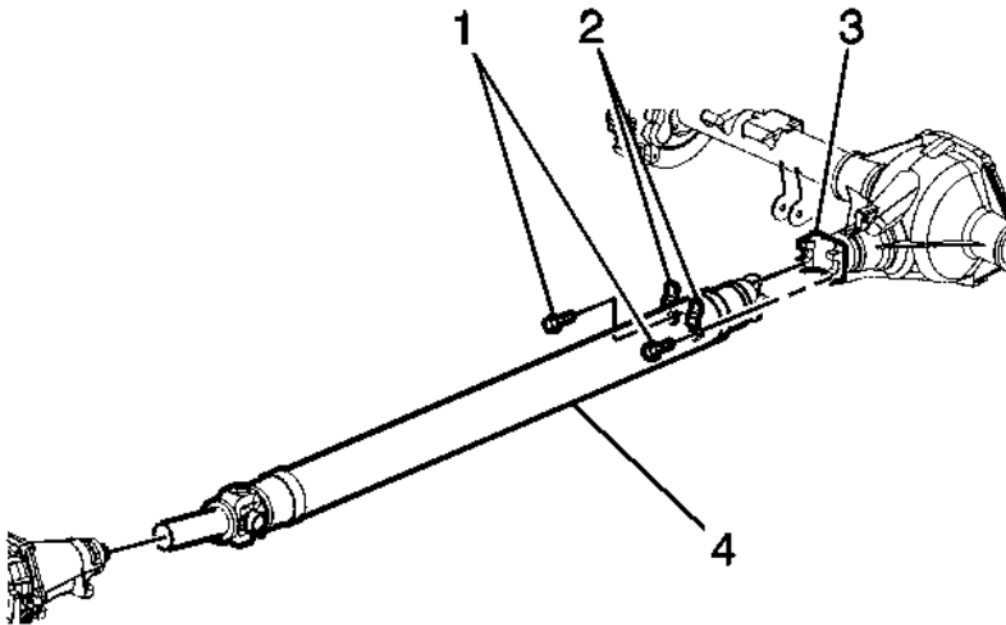


Fig. 12: Yoke Retainers, Rear Axle Pinion Yoke & Bolts
Courtesy of GENERAL MOTORS CORP.

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.

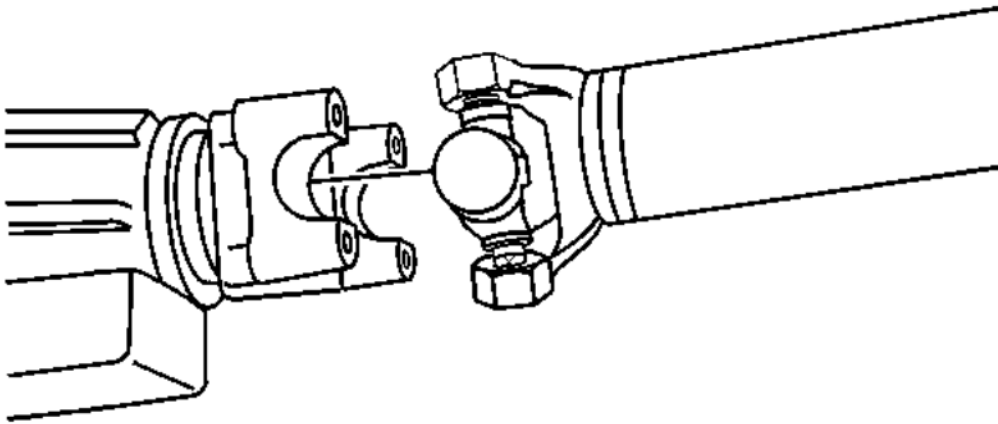


Fig. 13: Rear Propeller Shaft & Rear Axle Pinion Yoke
Courtesy of GENERAL MOTORS CORP.

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

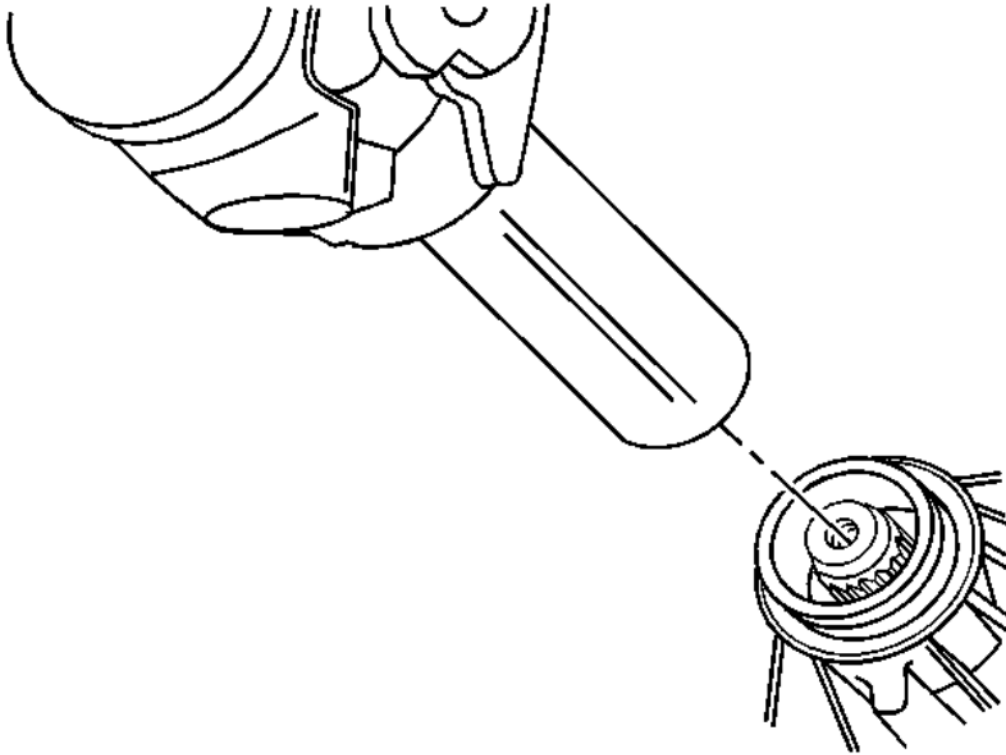


Fig. 14: View Of Propeller Shaft To Transmission Or Transfer Case
Courtesy of GENERAL MOTORS CORP.

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 grease. If the splines of the slip yoke does not have a sufficient coating of grease, lubricate the shaft with grease, GM P/N 12345879 or equivalent, RWD w/ Automatic Transmission Only.

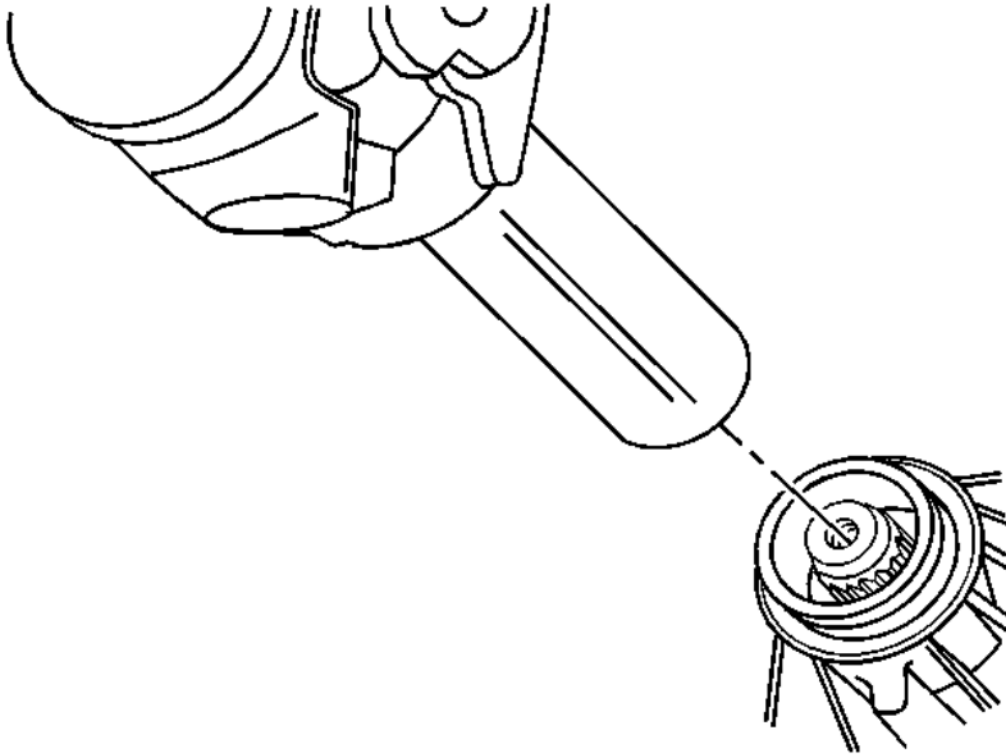


Fig. 15: View Of Propeller Shaft To Transmission Or Transfer Case
Courtesy of GENERAL MOTORS CORP.

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

Align the reference marks made during removal.

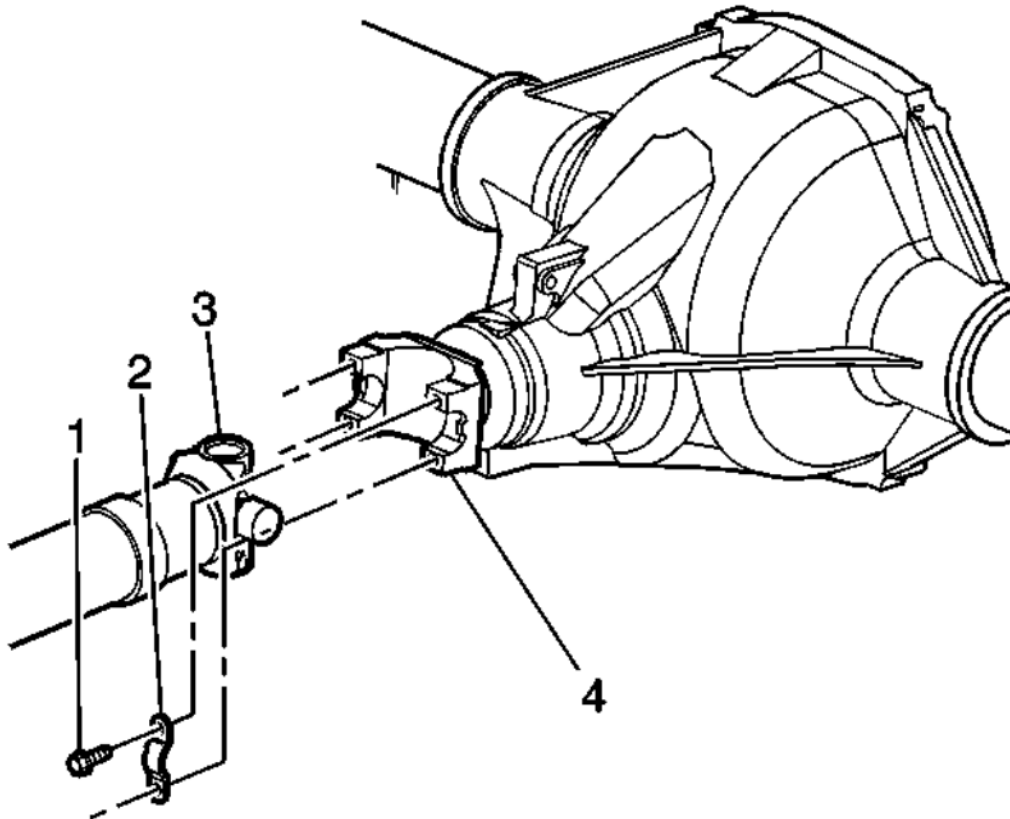


Fig. 16: Identifying Driveshaft Pinion, Yoke Retainers & Bolts
Courtesy of GENERAL MOTORS CORP.

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.

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

TWO-PIECE PROPELLER SHAFT REPLACEMENT

Tools Required

J 43218 Clamp Pliers - Narrow Jaw

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 .

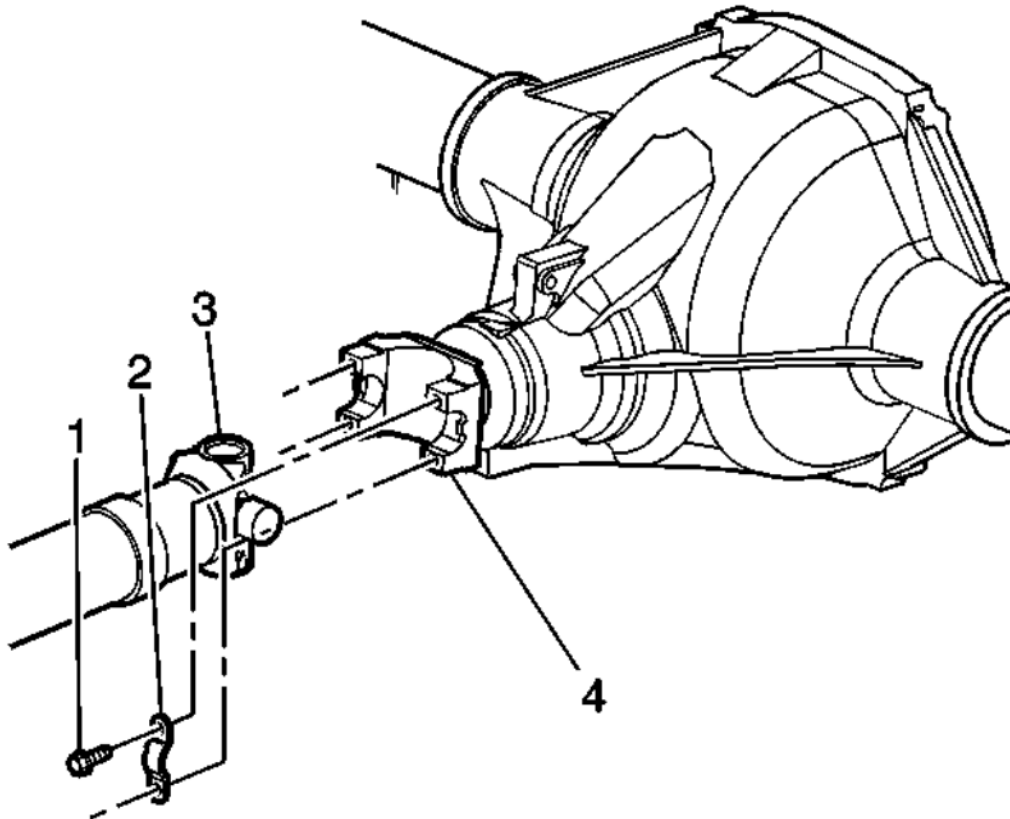


Fig. 17: Identifying Driveshaft Pinion, Yoke Retainers & Bolts
Courtesy of GENERAL MOTORS CORP.

2. Reference mark the rear propeller shaft (3) to the rear axle pinion yoke (4).
3. Reference mark the front propeller shaft to the transmission or transfer case (slip yoke type) or to the transmission pinion yoke (universal joint type).

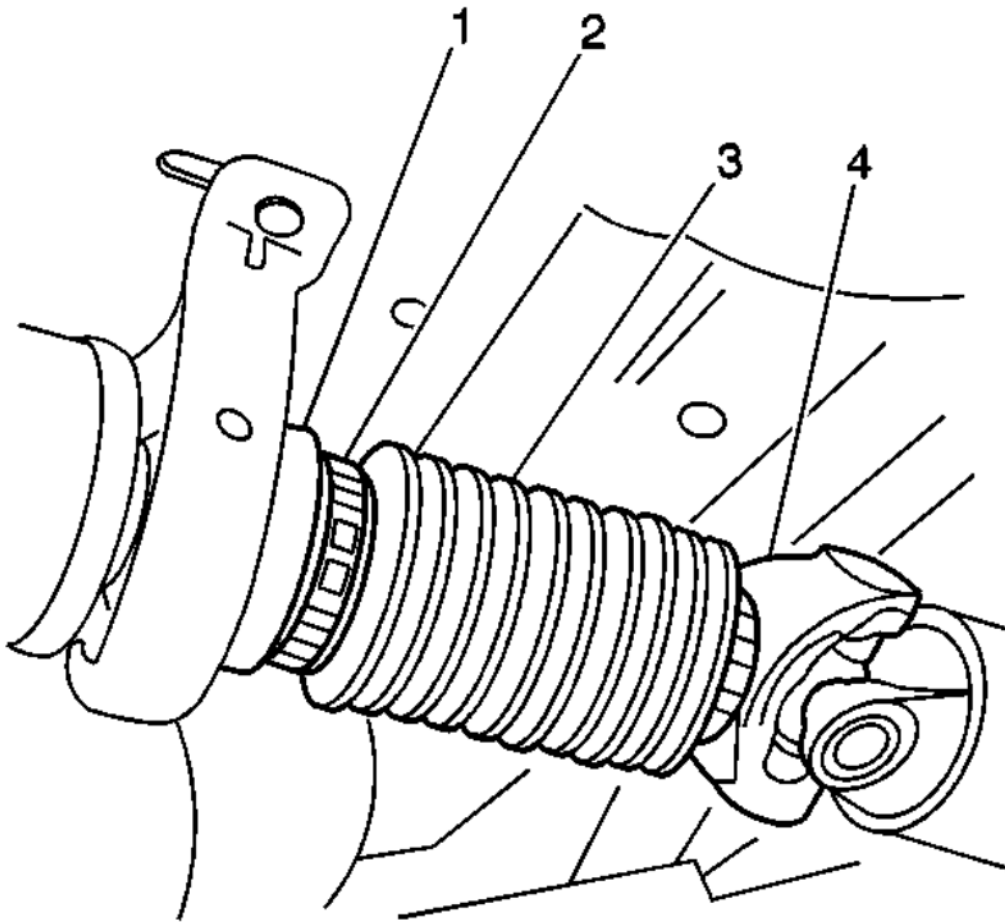


Fig. 18: Yoke, Clamp, Boot & Front Propeller Shaft Stub Shaft
Courtesy of GENERAL MOTORS CORP.

4. Remove the clamp (2) securing the boot (3) to the front propeller shaft stub shaft (4) and the rear propeller shaft slip yoke (1) by prying up the exposed end of the clamp (2) using a flat-bladed tool, if applicable.

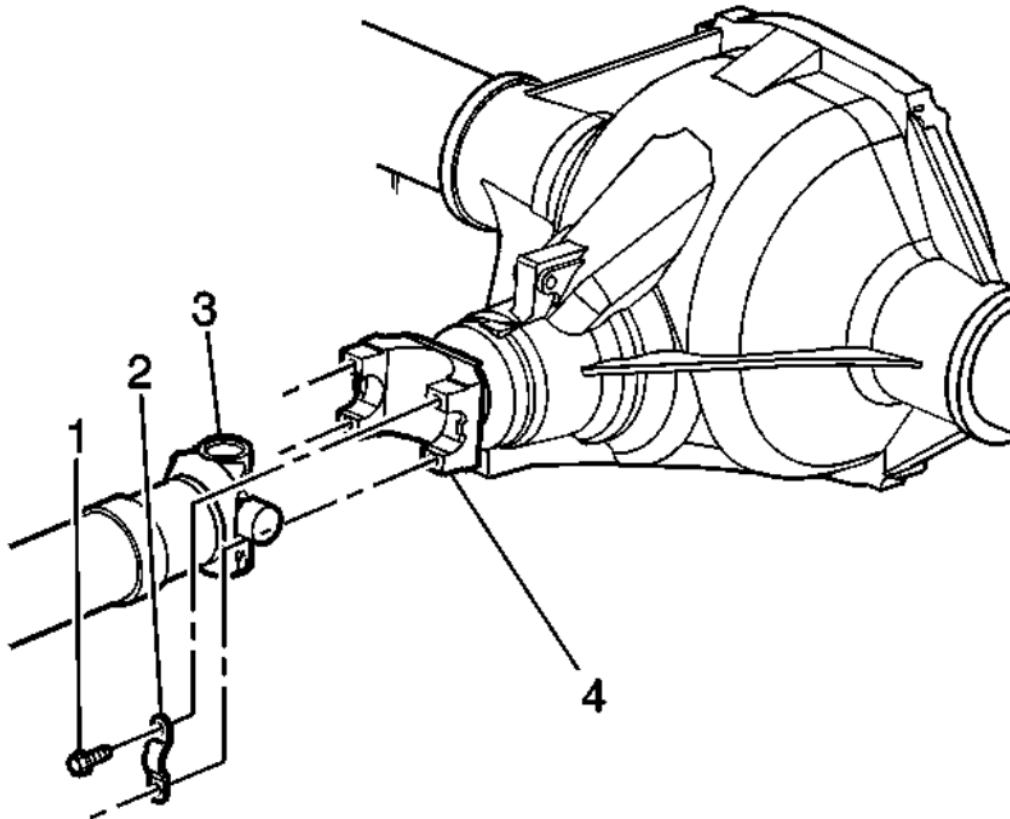


Fig. 19: Identifying Driveshaft Pinion, Yoke Retainers & Bolts
Courtesy of GENERAL MOTORS CORP.

5. Remove the bolts (1) and the yoke retainers (2) from the rear axle pinion yoke (4).

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.

6. Slide the rear propeller shaft forward in order to remove the propeller shaft from the rear axle pinion yoke.
7. Slide the rear propeller shaft rearward in order to disconnect the rear propeller shaft from

the front propeller shaft stub shaft.

8. Remove the rear propeller shaft from the vehicle.
9. Remove the boot from the front propeller shaft stub shaft, if applicable.

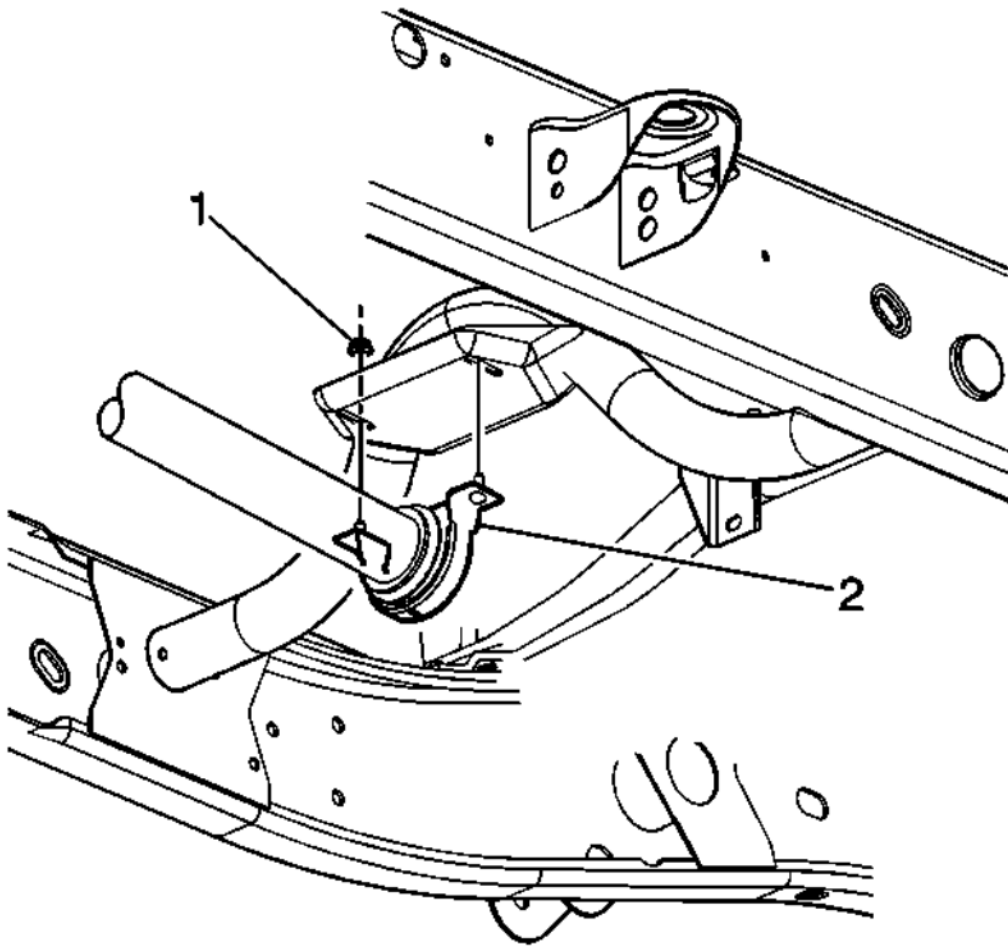


Fig. 20: Center Bearing Support & Nuts
Courtesy of GENERAL MOTORS CORP.

10. Remove the center bearing support nuts (1).
11. Remove the center bearing support (2).

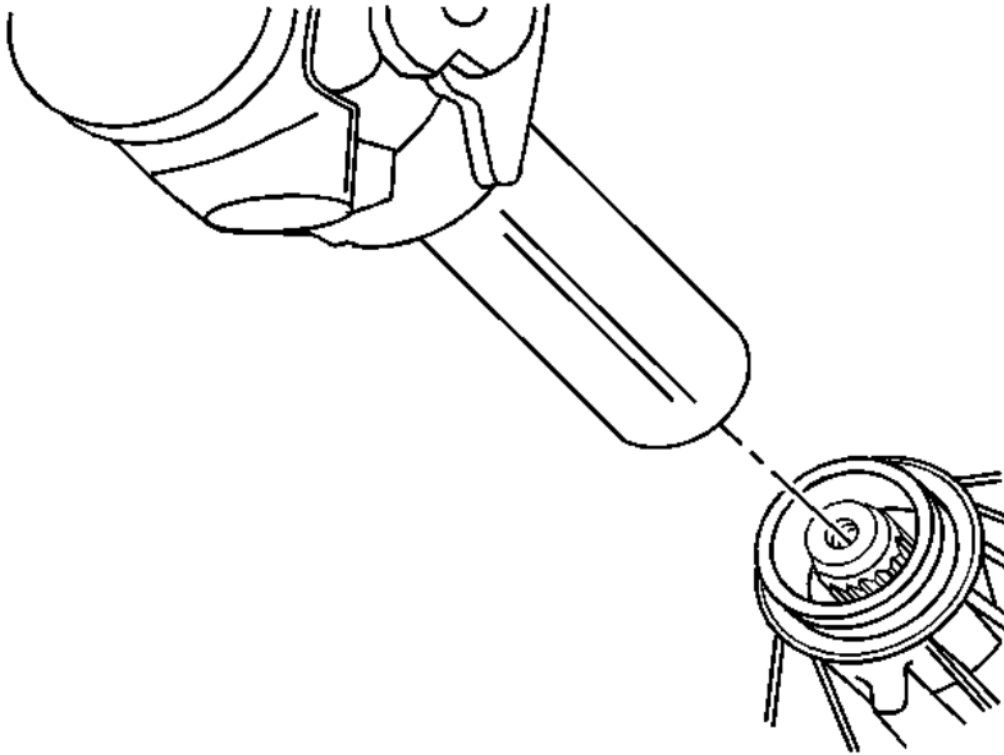


Fig. 21: View Of Propeller Shaft To Transmission Or Transfer Case
Courtesy of GENERAL MOTORS CORP.

12. Remove the front propeller shaft by sliding the front propeller shaft rearward from the transmission or the transfer case, w/o RPO MW3 or M74.

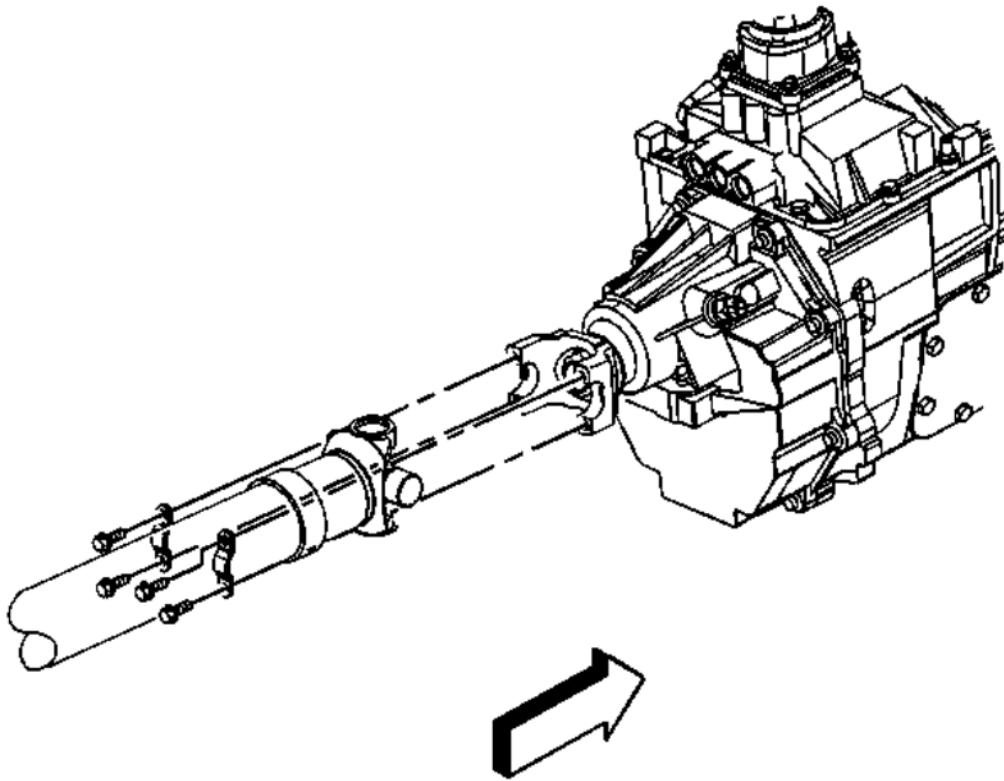


Fig. 22: Identifying Yoke Retainers & Bolts From Transmission Pinion Yoke
Courtesy of GENERAL MOTORS CORP.

13. Remove the bolts and the yoke retainers from the transmission pinion yoke, w/ RPO MW3 or M74.
14. Remove the front propeller shaft by disconnecting the front propeller shaft from the transmission pinion yoke, w/ RPO MW3 or M74.

Installation Procedure

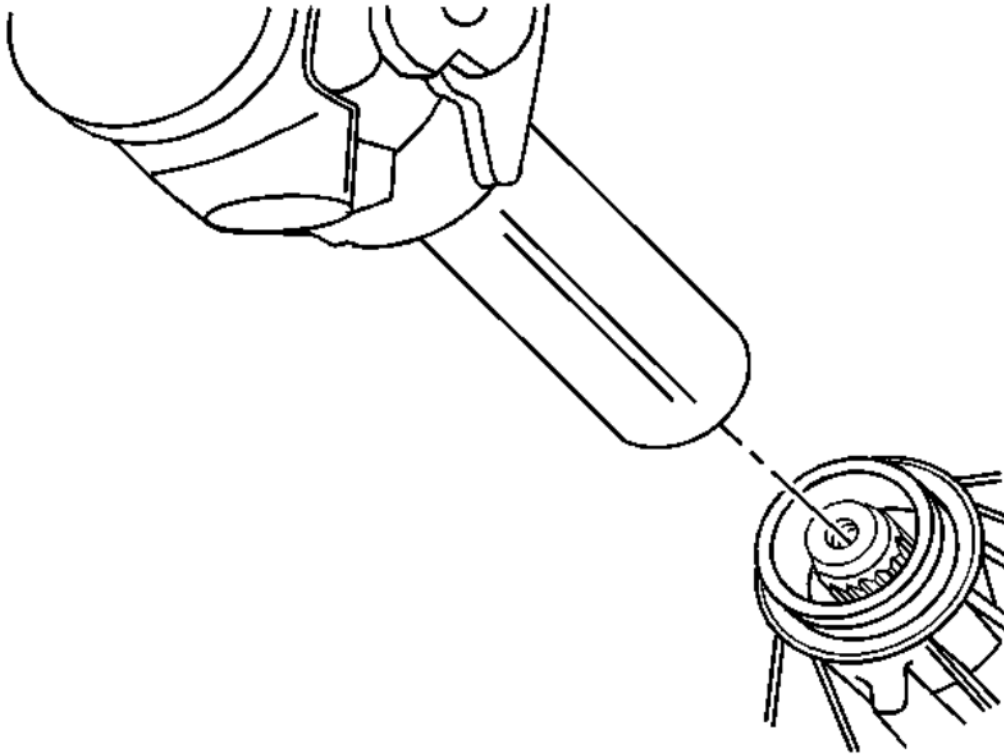


Fig. 23: View Of Propeller Shaft To Transmission Or Transfer Case
Courtesy of GENERAL MOTORS CORP.

1. Install the front propeller shaft by sliding the front propeller shaft into the transmission or the transfer case, w/o RPO MW3 or M74.

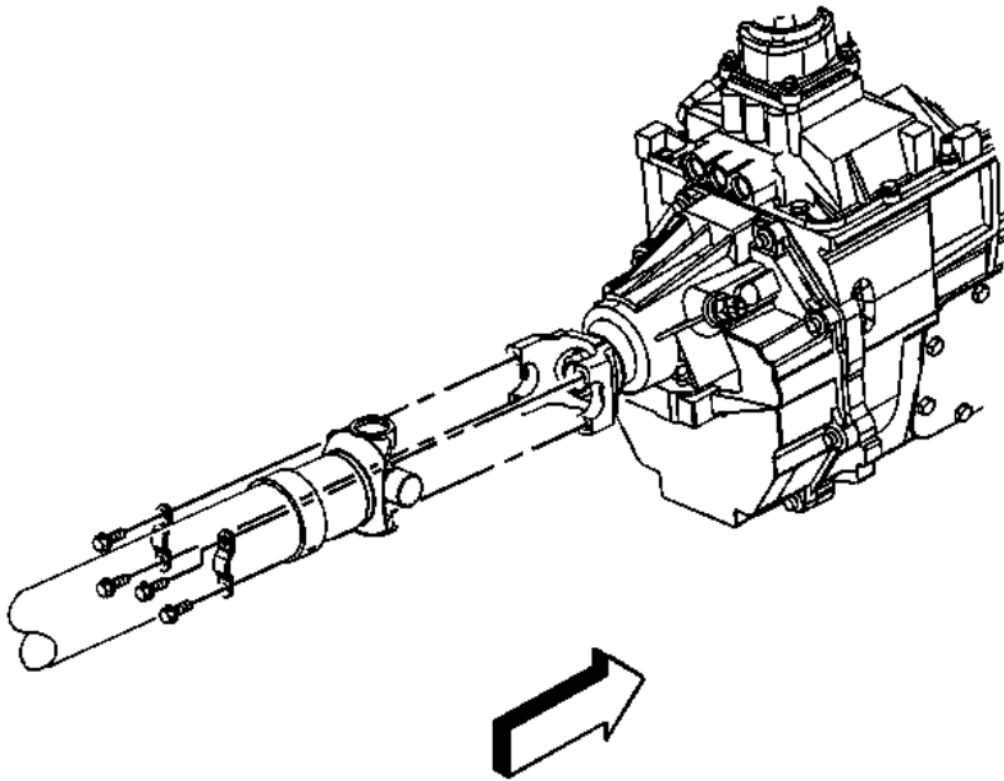


Fig. 24: Identifying Yoke Retainers & Bolts From Transmission Pinion Yoke
Courtesy of GENERAL MOTORS CORP.

2. Install the front propeller shaft to the transmission pinion yoke, w/ RPO MW3 or M74.

IMPORTANT:

- Align the reference marks made during removal.
- Tighten the bolts until snug. Do not torque the bolts at this time.

3. Install the yoke retainers and the bolts, w/ RPO MW3 or M74.

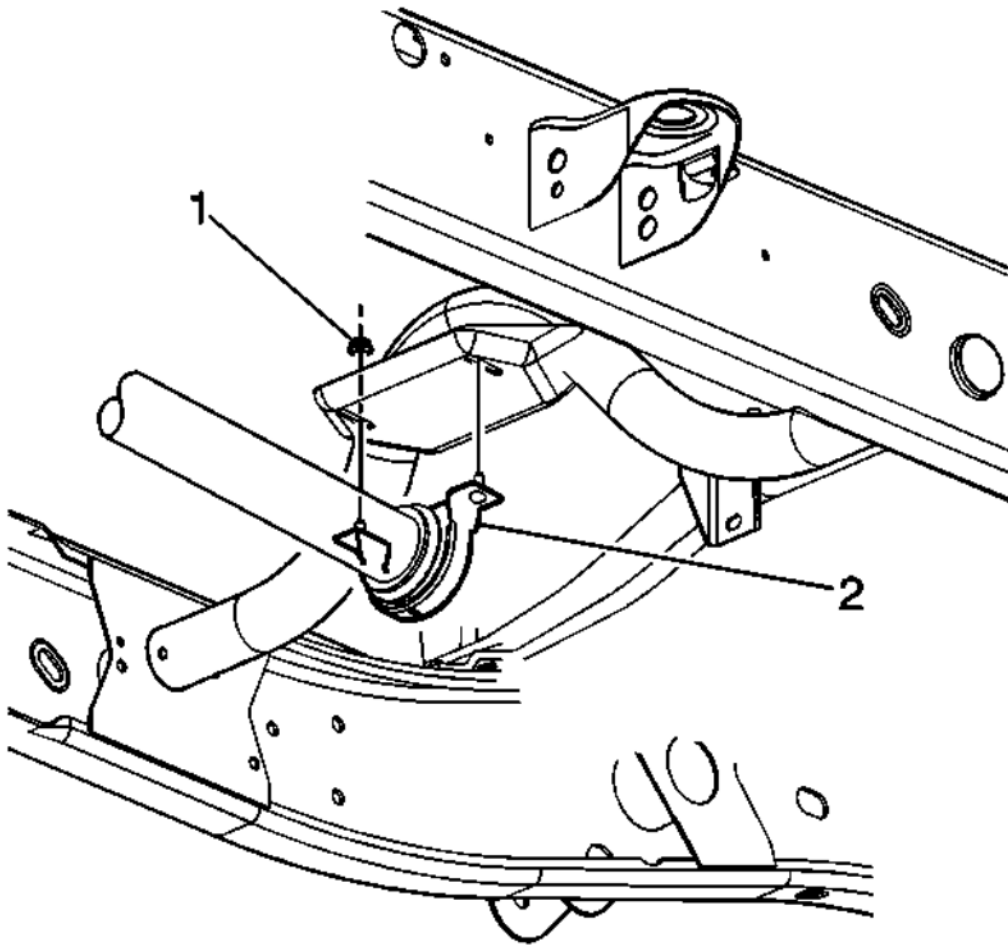


Fig. 25: Center Bearing Support & Nuts
Courtesy of GENERAL MOTORS CORP.

4. Install the center bearing support (2).

NOTE: Refer to Fastener Notice .

5. Install the center bearing support nuts.

Tighten: Tighten the bearing support nuts to 40 N.m (30 lb ft).

6. Tighten the yoke retainer bolts, w/ RPO MW3 or M74.

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

7. Inspect the splines of the front propeller shaft stub shaft for a sufficient coating of grease. If the splines of the stub shaft does not have a sufficient coating of grease, lubricate the shaft with chassis grease, GM P/N 12377985 or equivalent.

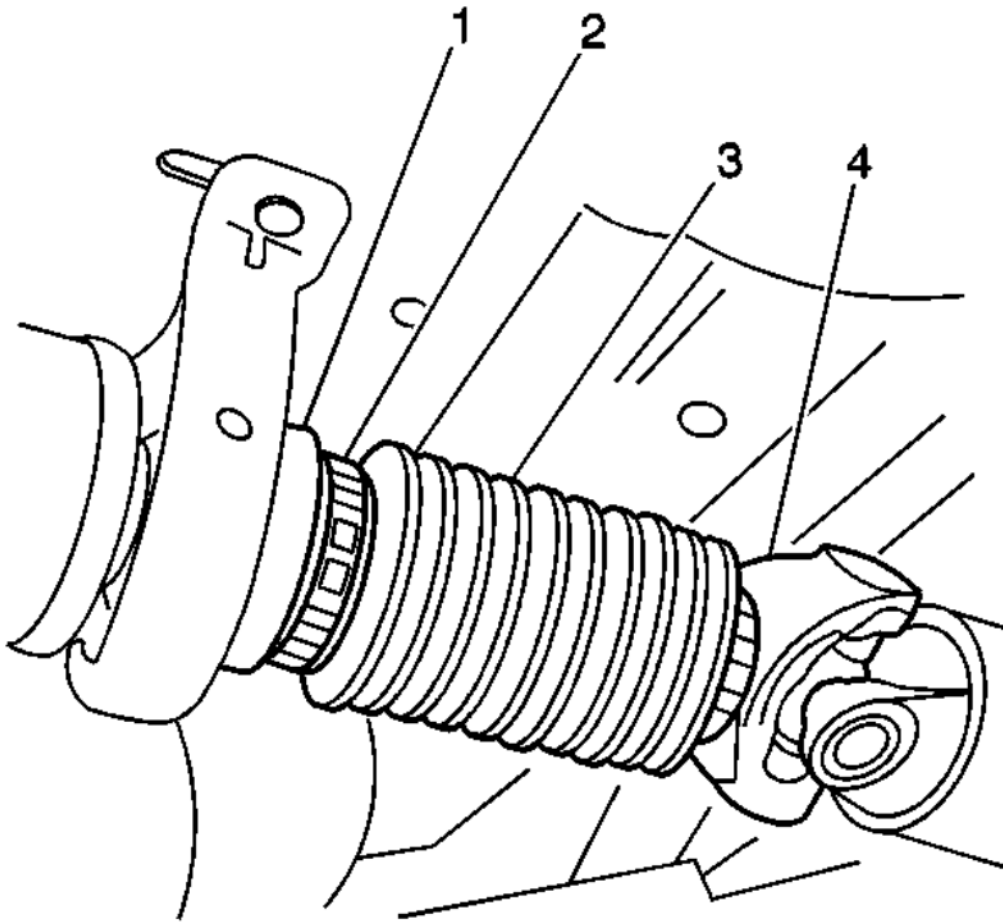


Fig. 26: Yoke, Clamp, Boot & Front Propeller Shaft Stub Shaft
Courtesy of GENERAL MOTORS CORP.

8. Install the boot (3) and 2 new clamps (2) onto the front propeller shaft stub shaft (4), if applicable.
9. Install the rear propeller shaft slip yoke onto the front propeller shaft stub shaft.

Mate the missing tooth in the yoke with the bridged tooth on the splined shaft.

10. Install the rear propeller shaft onto the rear axle pinion yoke.

Align the reference marks made during removal.

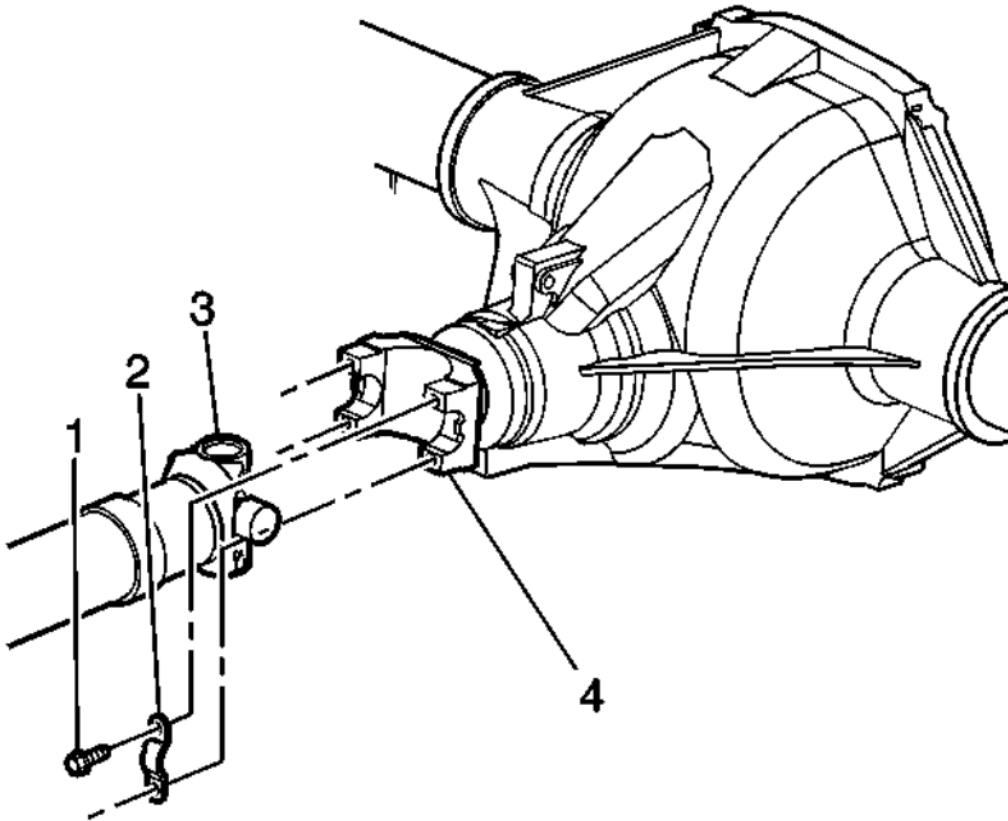


Fig. 27: Identifying Driveshaft Pinion, Yoke Retainers & Bolts
Courtesy of GENERAL MOTORS CORP.

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

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

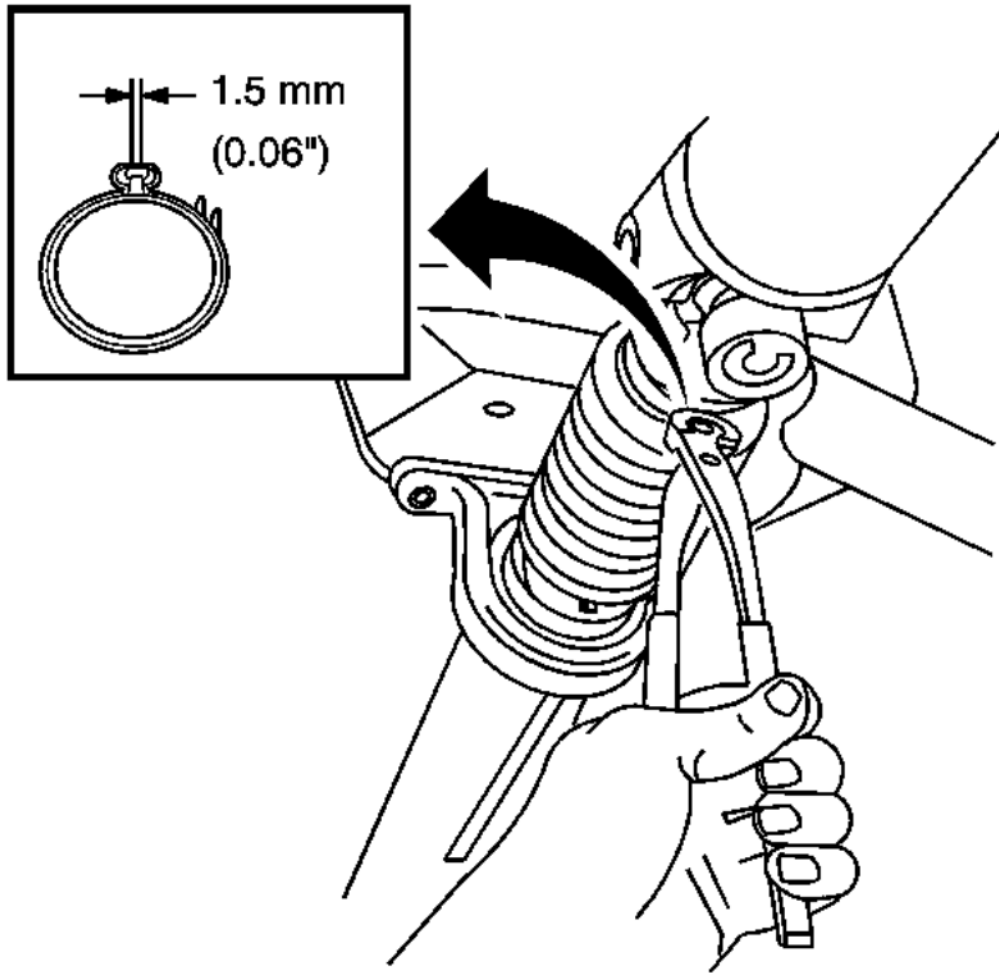


Fig. 28: Crimping Boot Clamps
Courtesy of GENERAL MOTORS CORP.

12. Using the **J 43218** , crimp the boot clamps until the dimensions shown are obtained.
13. Lower the vehicle.

PROPELLER SHAFT BOOT REPLACEMENT

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Fig. 29: View Of Propeller Shaft Boot
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure: Remove the rear propeller shaft. Refer to <u>Two-Piece Propeller Shaft Replacement</u> .	
1	Boot Clamp (Qty: 2) Tip: Use a flat-bladed screw driver or a pair of side cutters to remove the boot clamps. Special Tools: J 43218 Clamp Pliers. See <u>Special Tools</u> .
2	Propeller Shaft Boot
3	Alignment Mark Tip: These splines are larger than the rest of the splines on the propeller shaft and must be aligned properly to ensure the correct alignment of the propeller shaft. If they are damaged, replace the slip yoke for the rear propeller shaft and the front propeller shaft.

PROPELLER SHAFT CENTER SUPPORT BEARING REPLACEMENT

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

Special Tools

- **J 5590** Gear and Bearing Installer
- **J 25234** Gear and Bearing Installer
- **J 39477** Puller Kit

Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Remove the propeller shaft assembly. Refer to **Two-Piece Propeller Shaft Replacement**.

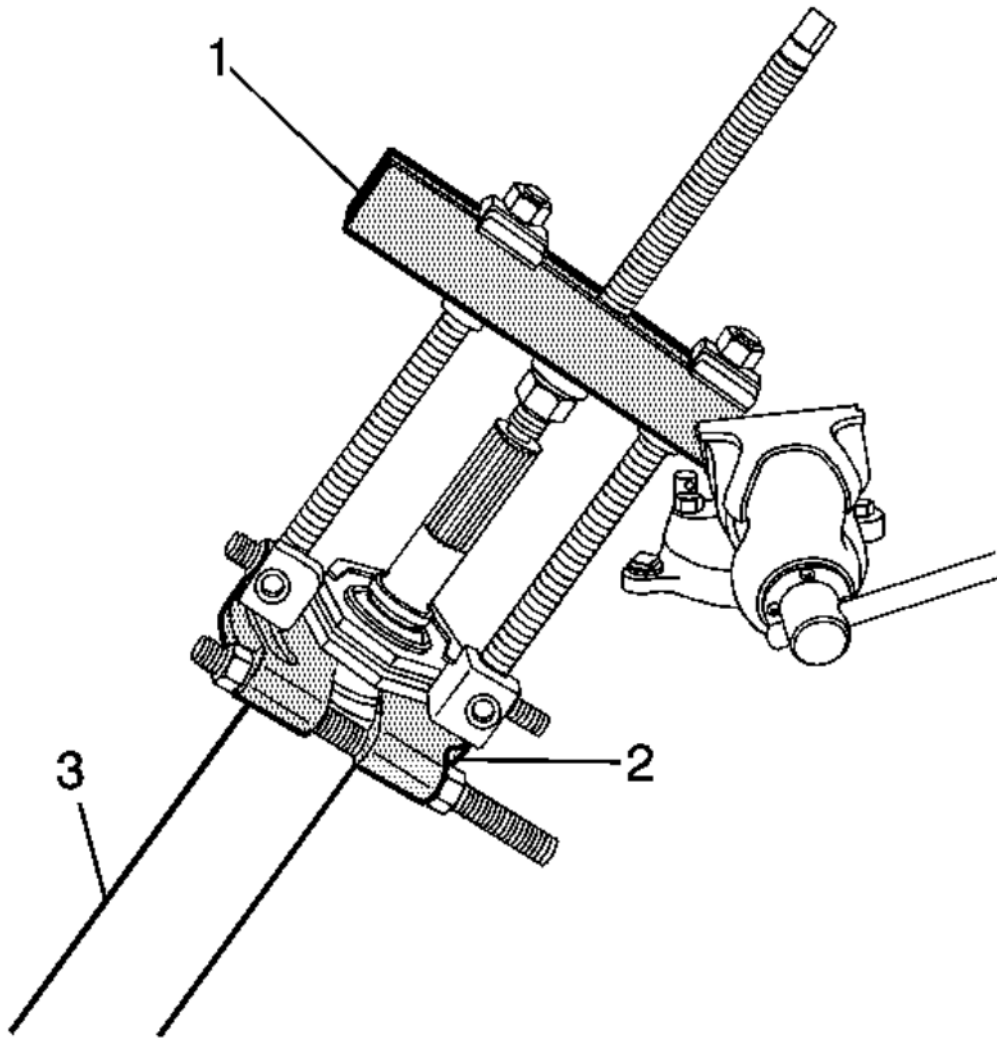


Fig. 30: Removing Center Bearing Assembly From Propeller Shaft
Courtesy of GENERAL MOTORS CORP.

3. Install the **J 39477** (1) on the center bearing assembly (2).
4. Position the **J 39477** (1) in a vise
5. Using the **J 39477** (1), remove the center bearing assembly (2) from the propeller shaft.

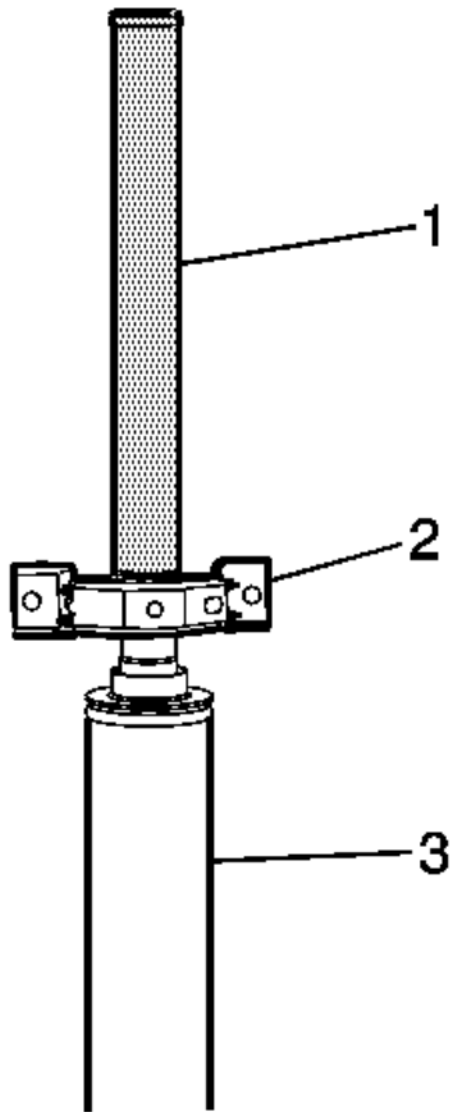


Fig. 31: Installing Center Bearing Assembly To Propeller Shaft
Courtesy of GENERAL MOTORS CORP.

1. Place the propeller shaft assembly (3) on a block of wood.
2. Position the center bearing assembly (2) on the propeller shaft (3).
3. Using the **J 5590** or **J 25234** (1), install the center bearing assembly (2) on the propeller

shaft (3).

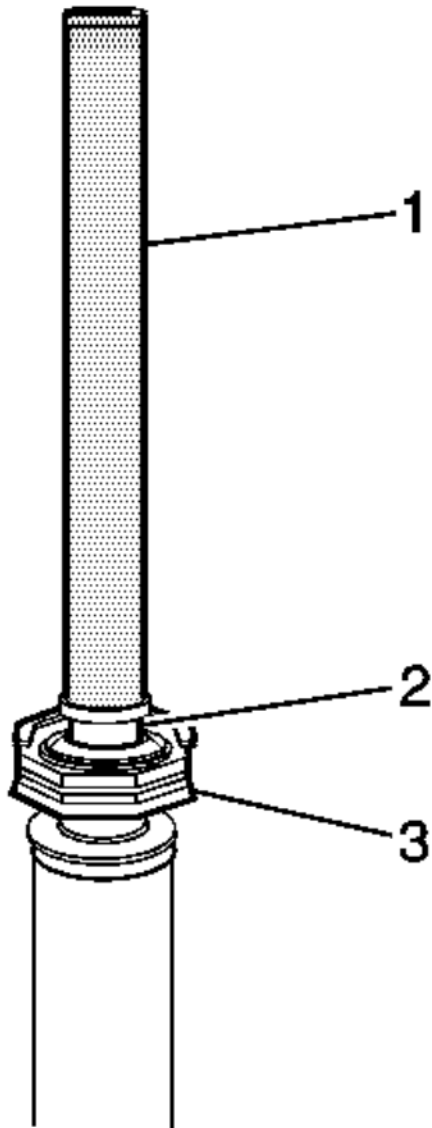


Fig. 32: Installing Propeller Shaft Boot Retainer On Center Bearing Assembly
Courtesy of GENERAL MOTORS CORP.

4. For HD vehicles, use the **J 25234** (1) to install the propeller shaft boot retainer (2) on the

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

center bearing assembly (3).

5. Install the propeller shaft assembly. Refer to **Two-Piece Propeller Shaft Replacement**
6. Lower the vehicle.

UNIVERSAL JOINT REPLACEMENT - NYLON INJECTED 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 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.

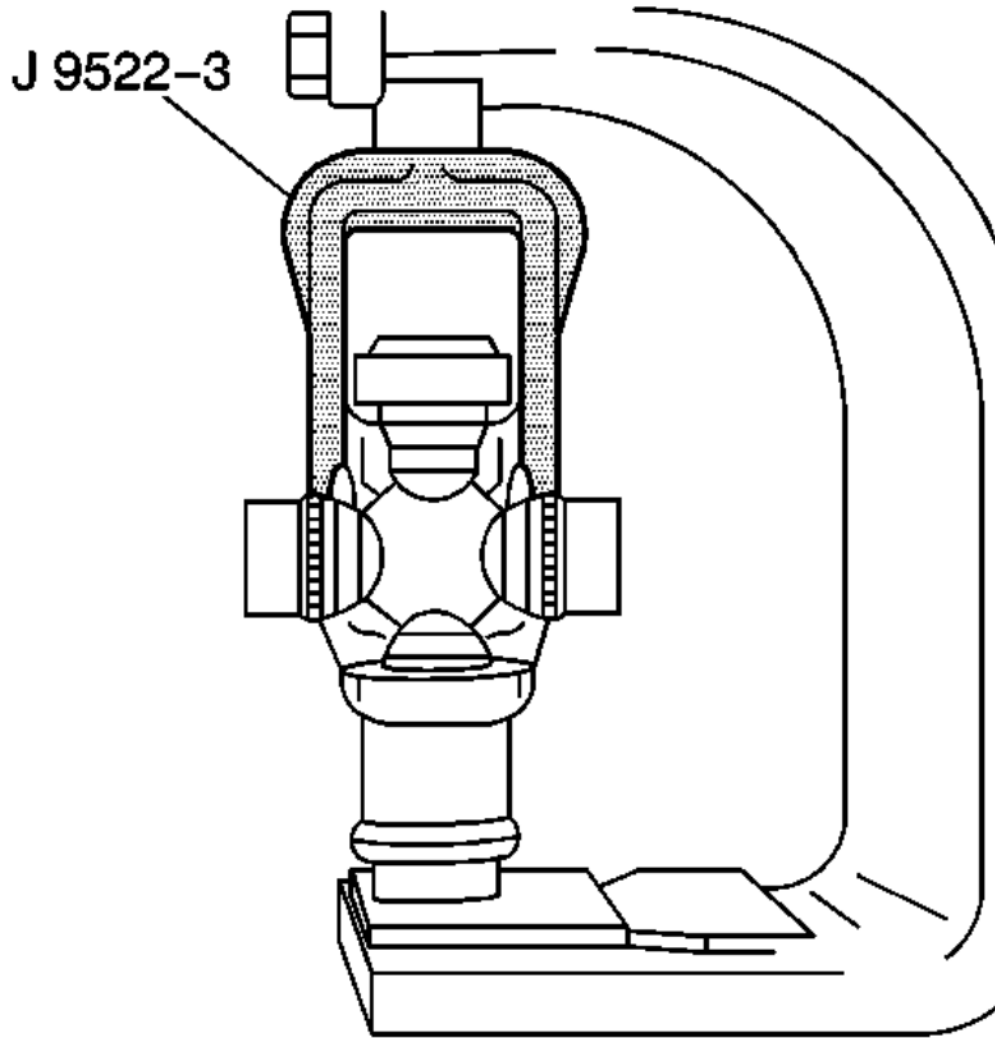


Fig. 33: Assembling Universal Joint
Courtesy of GENERAL MOTORS CORP.

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

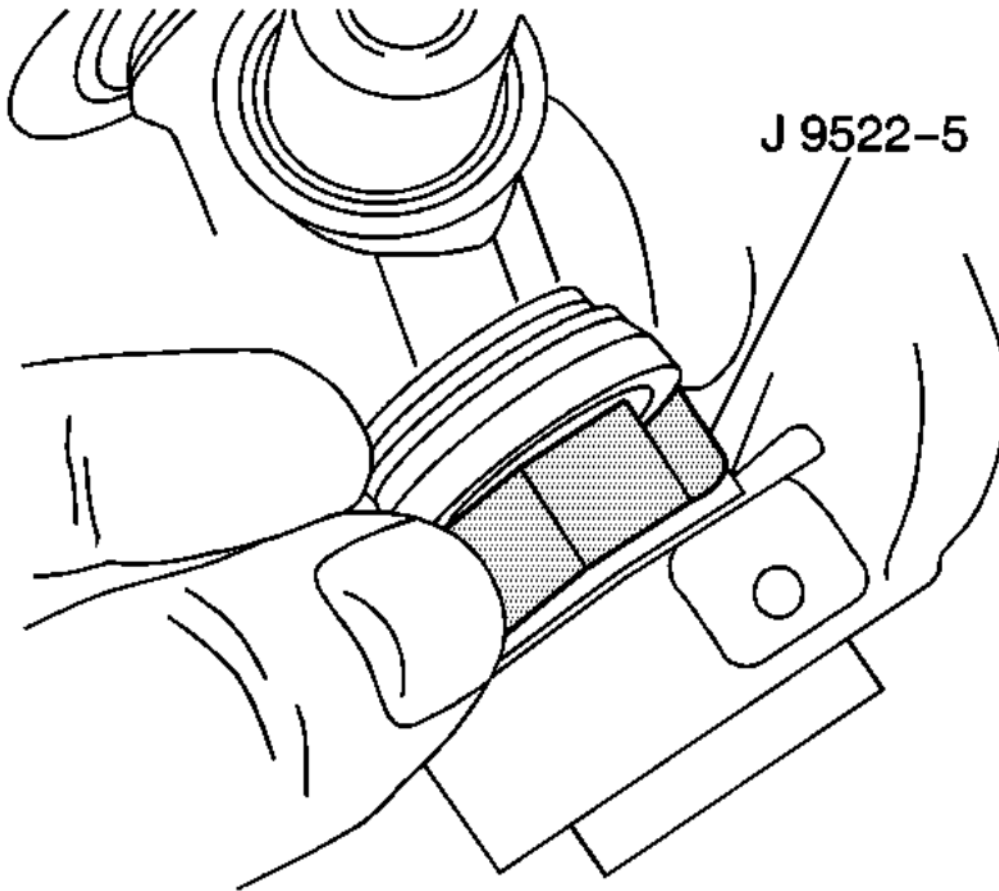


Fig. 34: Inserting J 9522-5 Between Seal And Bearing Cup
Courtesy of GENERAL MOTORS CORP.

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

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

universal joint, remove the bearing cups in the slip yoke in the same manner.

10. Inspect the retaining ring grooves for plastic.
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.

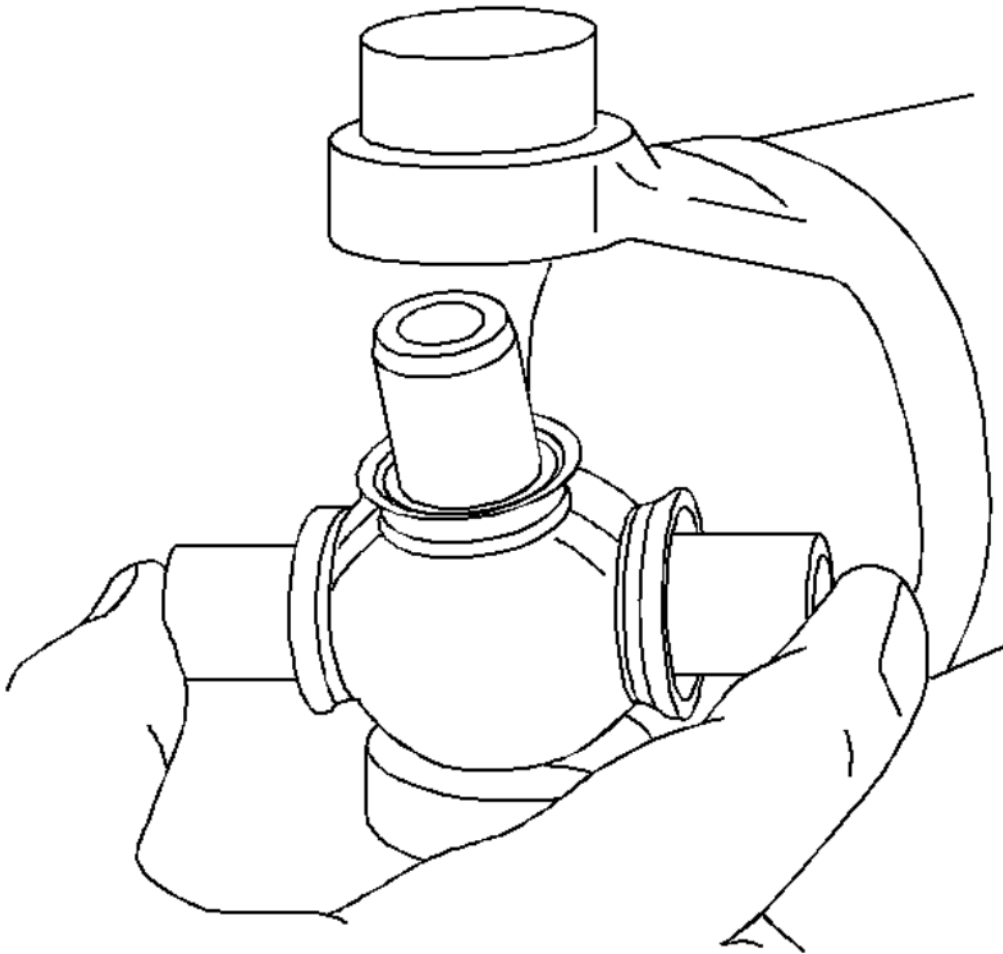


Fig. 35: View Of Bearing Cup & Trunnion Yoke
Courtesy of GENERAL MOTORS CORP.

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

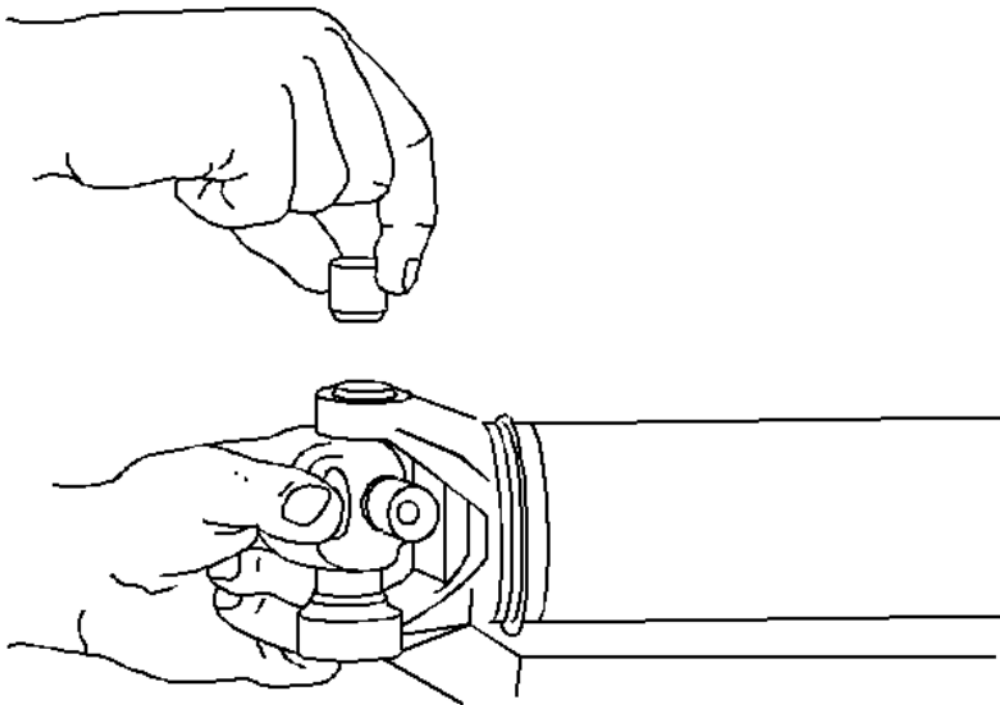


Fig. 36: Identifying Bearing Cup & Yoke Ear
Courtesy of GENERAL MOTORS CORP.

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.

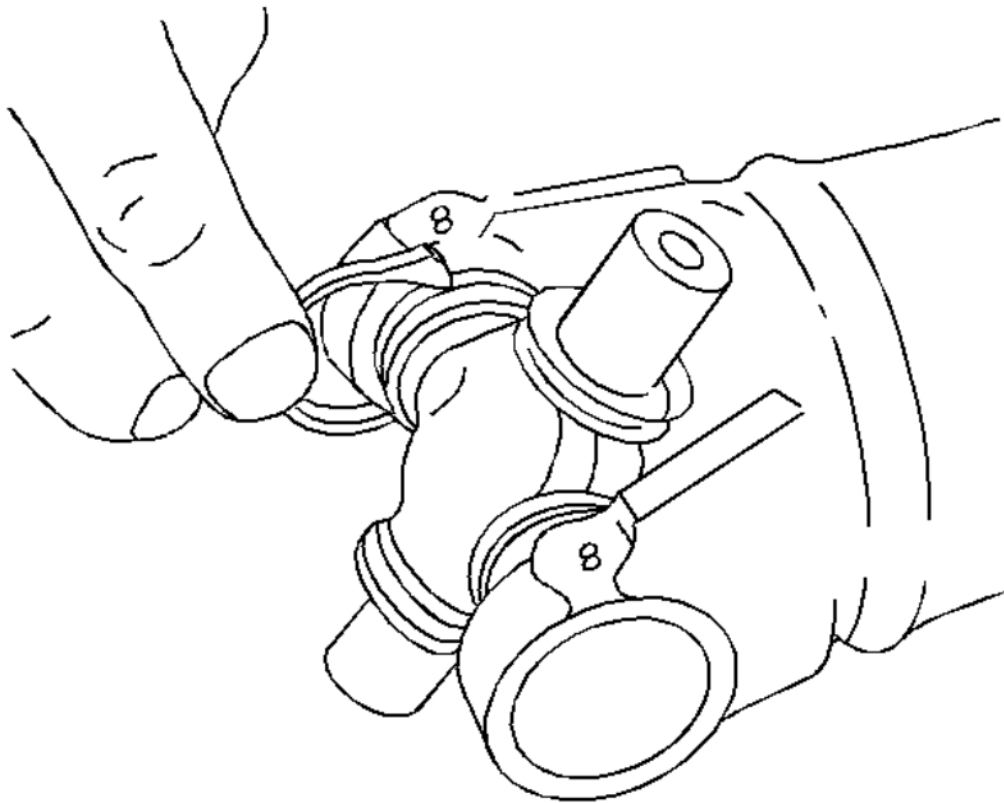


Fig. 37: View Of Bearing Retainer and Retainer Groove
Courtesy of GENERAL MOTORS CORP.

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

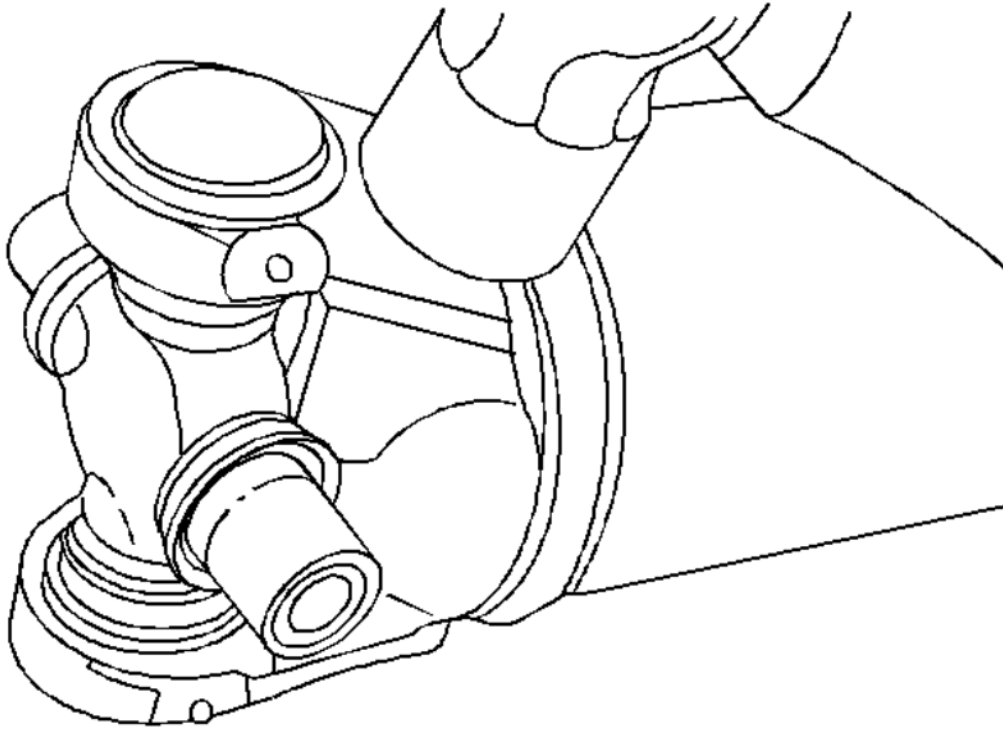


Fig. 38: Springing Yoke Using Hammer
Courtesy of GENERAL MOTORS CORP.

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

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

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 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.

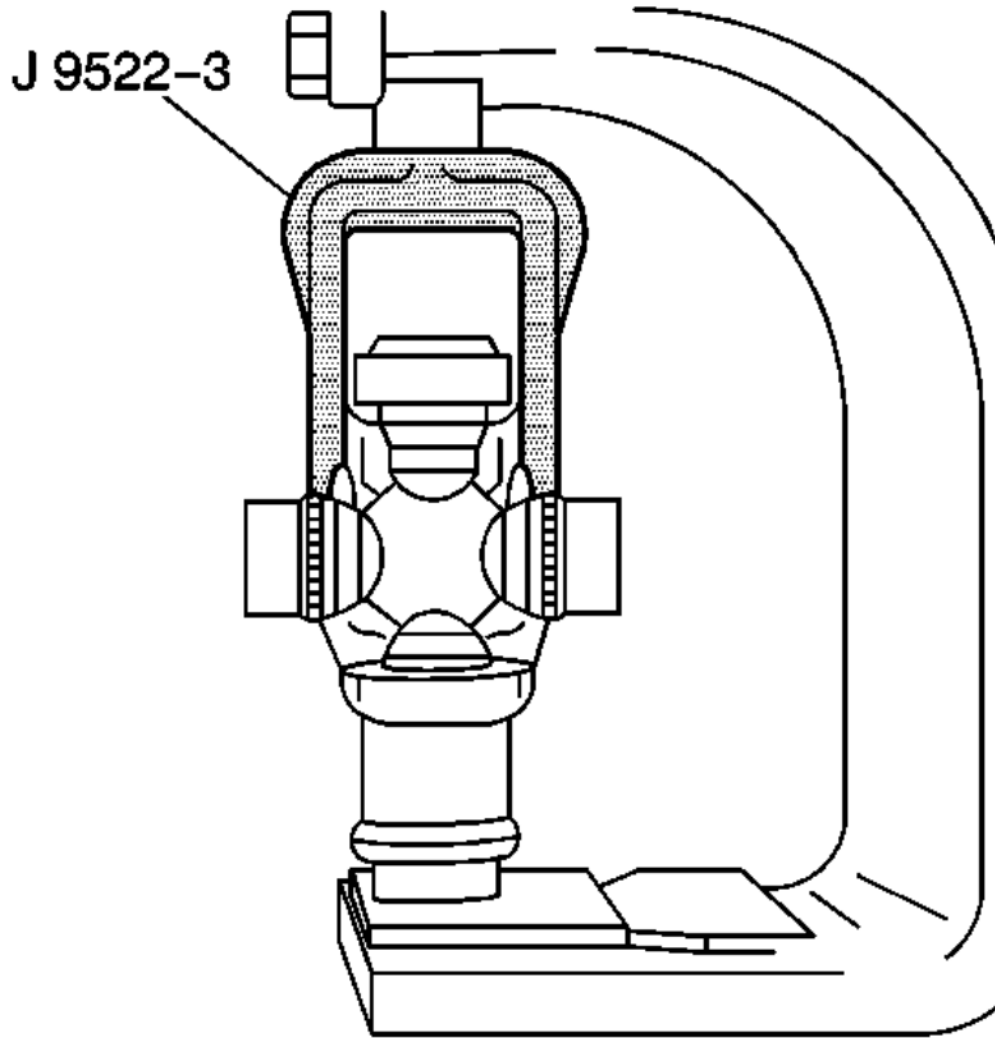


Fig. 39: Assembling Universal Joint
Courtesy of GENERAL MOTORS CORP.

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.

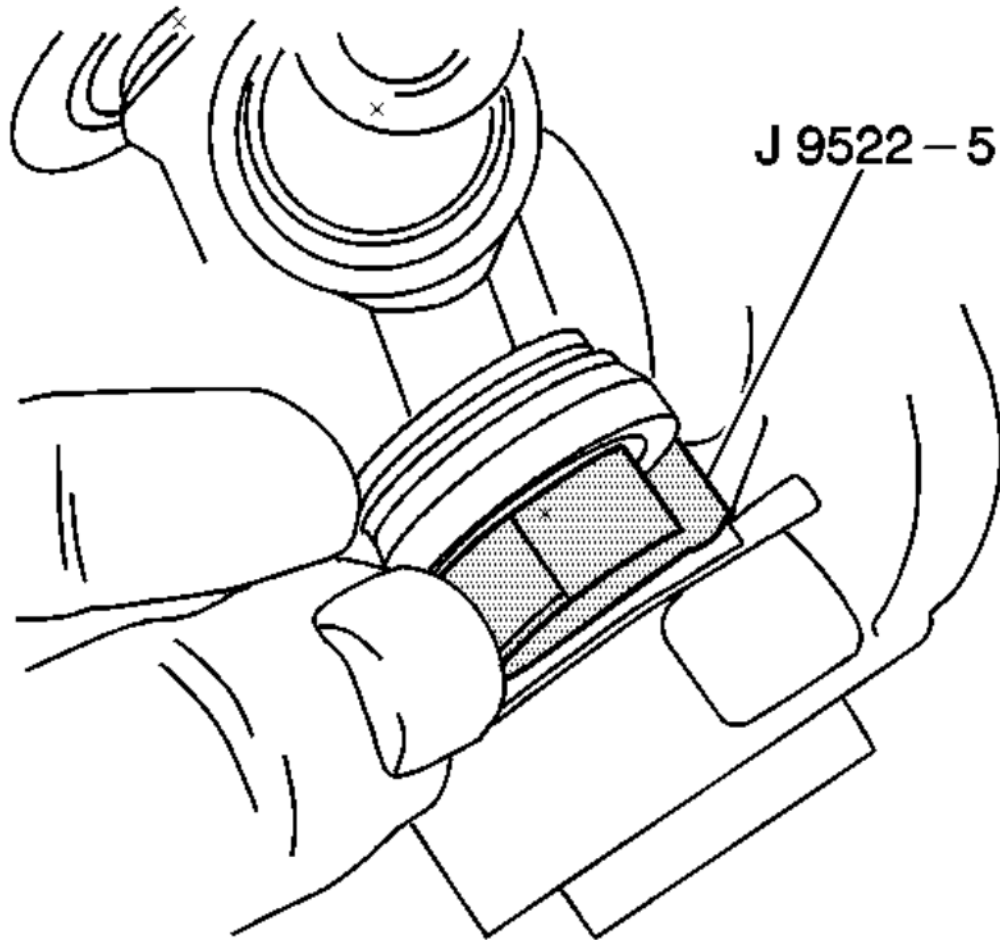


Fig. 40: Placing J 9522-5 Between Seal And Bearing Cup
Courtesy of GENERAL MOTORS CORP.

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.
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.

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

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.

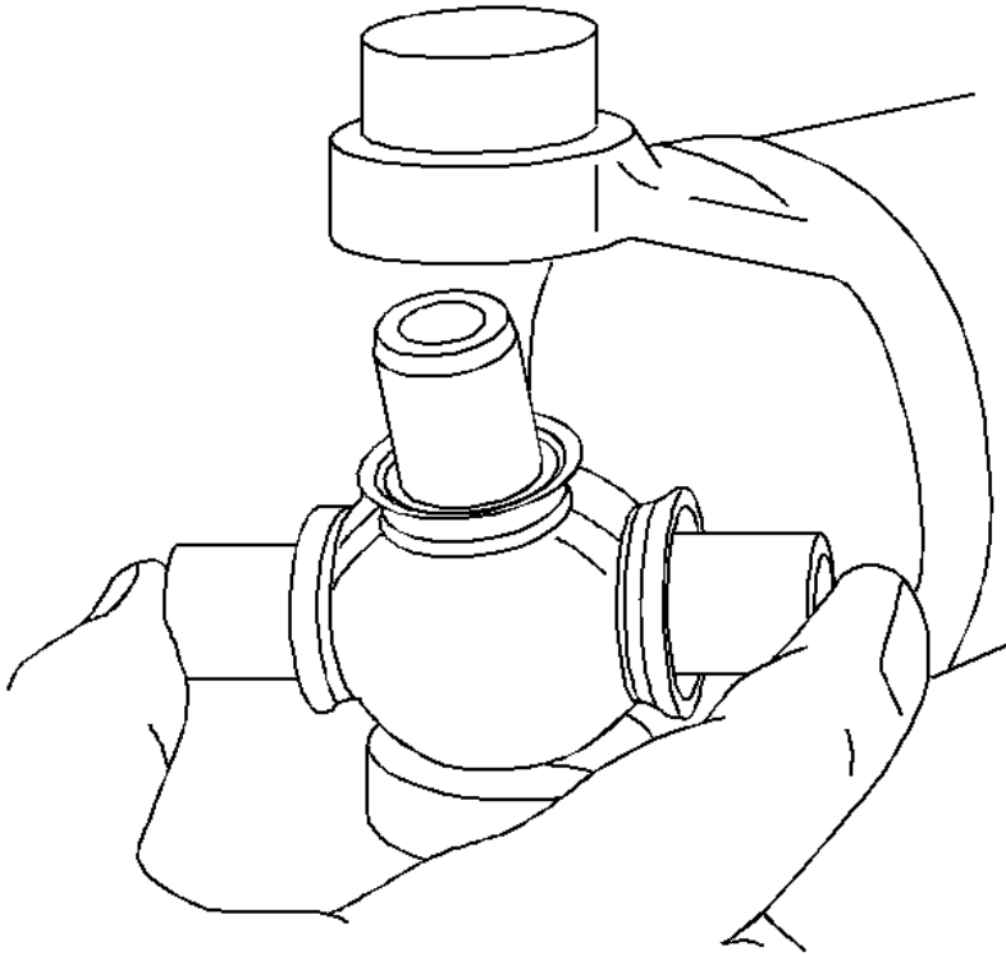


Fig. 41: View Of Bearing Cup & Trunnion Yoke
Courtesy of GENERAL MOTORS CORP.

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.

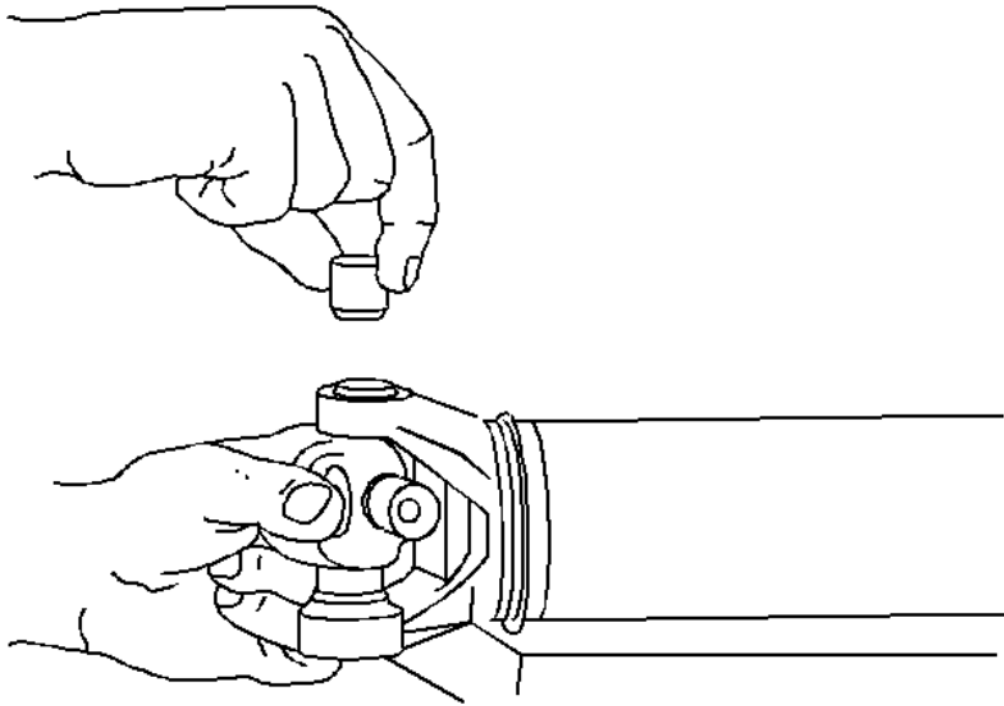


Fig. 42: Identifying Bearing Cup & Yoke Ear
Courtesy of GENERAL MOTORS CORP.

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.

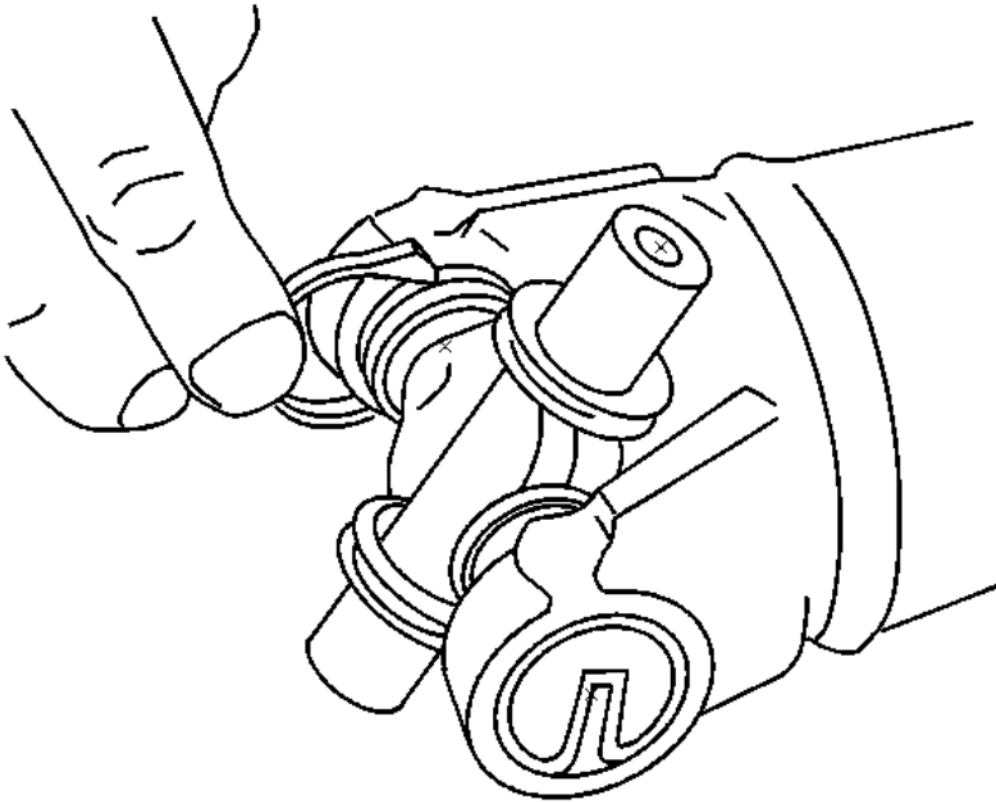


Fig. 43: Assembling Bearing Retainer In Retainer Groove
Courtesy of GENERAL MOTORS CORP.

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

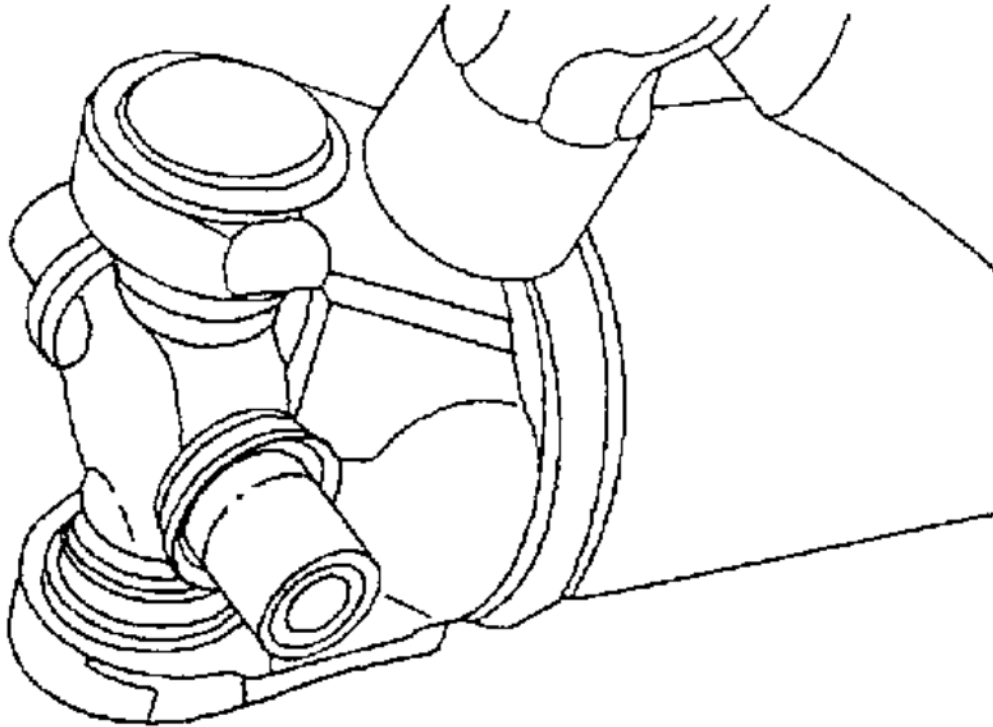


Fig. 44: Seating Retainer Using Hammer (External Snap Ring)
Courtesy of GENERAL MOTORS CORP.

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 which do not require periodic maintenance, that transmit power from the transfer case or transmission output shaft to the differential.

Front Propeller Shaft Description

2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

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.

One Piece Propeller Shaft Description

A 1 piece propeller shaft uses a splined slip joint to connect the driveline to the transmission or transfer case.

Two Piece Propeller Shaft Description

There are 3 universal joints used on the two piece propeller shaft, A center bearing assembly is used to support the propeller shaft connection point, and help isolate the vehicle from vibration.

Propeller Shaft Phasing Description

The propeller shaft is designed and built with the yoke lugs (ears) in line with each other. This produces the smoothest running shaft possible. A propeller shaft 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 slowing down each time the universal joint goes around. The vibration is the same as 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 out. A total cancellation of 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 consist of 4 caps with needle bearings and grease seals mounted on the trunnions of a cross or spider. These bearings and caps are greased at the factory and no periodic maintenance is required. There are 2 universal joints used in a one piece propeller shaft and 3 used in two piece propeller shaft. The bearings and caps are pressed into the yokes and held in place with snap rings, except for 2 bearings on some models witch are strapped onto the pinion flange of the differential. Universal joints are designed to handle the effects of various loads and rear axle windup conditions during acceleration and braking. The universal joint operates efficiently and safely within the designed angle variations. when the design angles are 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 mounted in a rubber cushion that attaches to a frame crossmember. The

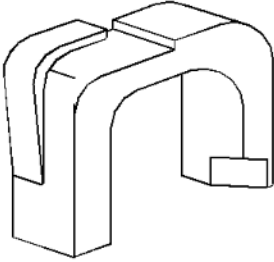
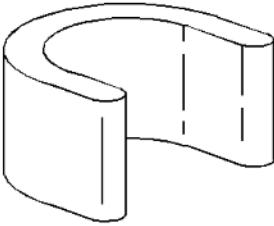
2008 Chevrolet Silverado 1500

2008 DRIVELINE/AXLE Propeller Shaft - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

manufacturer prelubricates 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

Illustration	Tool Number/ Description
	J 9522-3 U Joint Bearing Separator
	J 9522-5 U Joint Bearing Spacer Remover - Use with J 9522-3
	J 43218 Clamp Pliers - Narrow Jaw