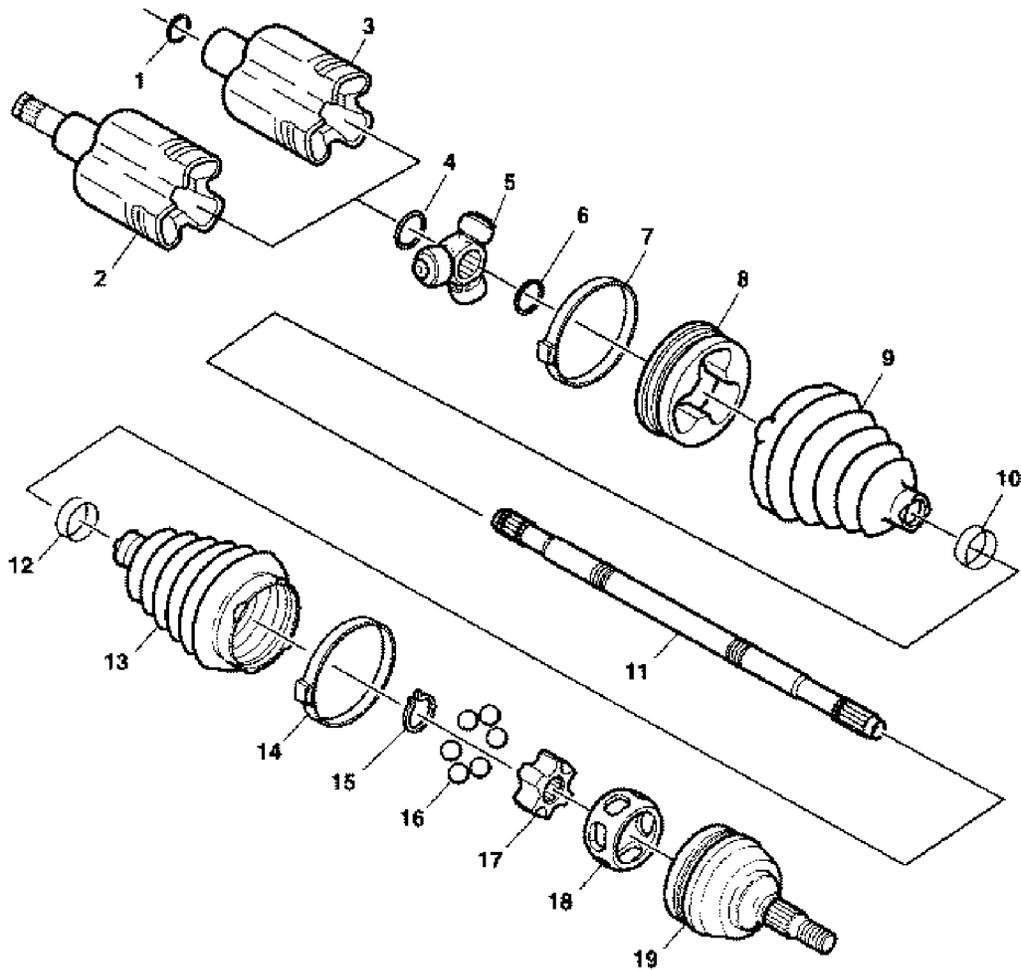


Fastener Tightening Specifications

Application	Specification	
	Metric	English
Front Wheel Drive Shaft Nut	235 N·m	173 lb ft
Large Seal Clamp	136 N·m	100 lb ft
Park Brake Cable Routing Bracket Nut	10 N·m	89 lb in
Rear Suspension Knuckle Bolt and Nut	85 N·m	63 lb ft
Rear Tie Rod Bolt	85 N·m	63 lb ft
Rear Wheel Drive Shaft Nut	205 N·m	151 lb ft
Small Seal Clamp (Front and Rear Wheel Drive Shaft)	136 N·m	100 lb ft
Support Bracket Bolt	58 N·m	43 lb ft

Front Wheel Drive Shaft Disassembled Views

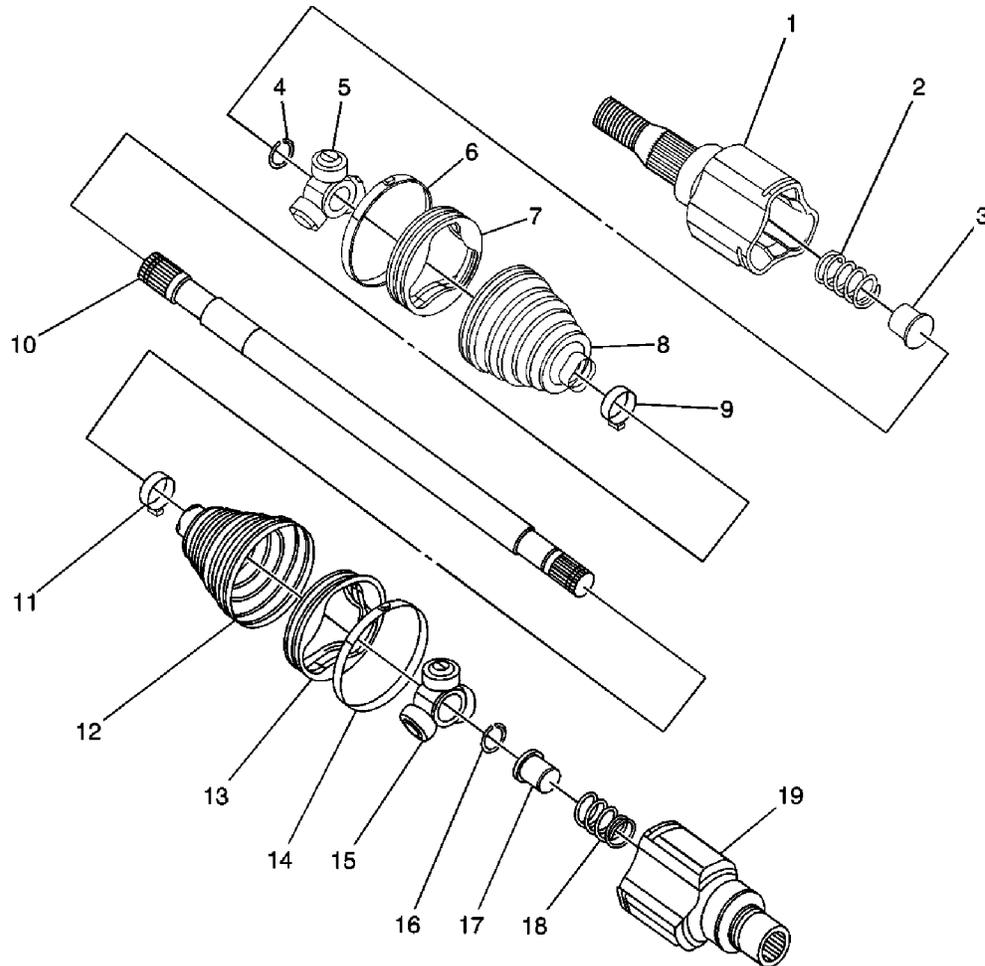


- (1) Retaining Ring
- (2) Housing Assembly
- (3) Retainer and Housing Assembly
- (4) Spacer Ring
- (5) Tripot Joint Spider Assembly
- (6) Spacer Ring (If Equipped)
- (7) Boot Retaining Clamp
- (8) Trilobal Tripot Bushing
- (9) Tripot Joint Boot
- (10) Swage Ring
- (11) Halfshaft Bar
- (12) Swage Ring

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- (13) CV Joint Boot
- (14) Boot Retaining Clamp
- (15) Race Retaining Ring
- (16) Chrome Alloy Ball
- (17) CV Joint Inner Race
- (18) CV Joint Cage
- (19) CV Joint Outer Race

Rear Wheel Drive Shaft Disassembled Views



- (1) Tripot Joint Race - Outboard
- (2) Spring
- (3) Guide
- (4) Retaining Ring, Outboard Tripot Joint Spider
- (5) Tripot Joint Spider - Outboard Tripot Joint
- (6) Clamp, Outboard Tripot Joint Seal - Outer
- (7) Bushing, Tripot Joint Race - Outboard
- (8) Tripot Joint Seal, Outboard
- (9) Clamp, Outboard Tripot Joint Seal - Inner
- (10) Bar, Wheel Drive Shaft
- (11) Clamp, Inboard Tripot Joint Seal - Inner
- (12) Tripot Joint Seal, Inboard

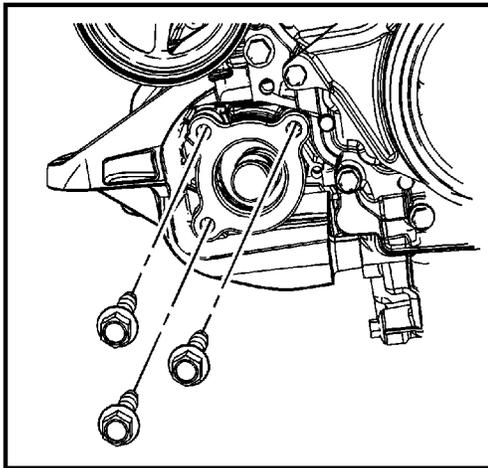
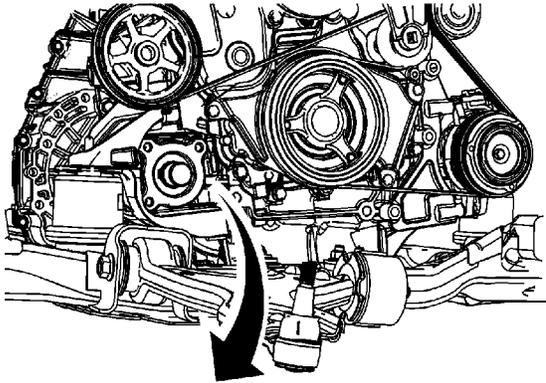
© 2010 General Motors Corporation. All rights reserved.

- (13) Bushing, Tripot Joint Race - Inboard
- (14) Clamp, Inboard Tripot Joint Seal - Outer
- (15) Tripot Joint Spider - Inboard Tripot Joint
- (16) Retaining Ring, Inboard Tripot Joint Spider
- (17) Guide
- (18) Spring
- (19) Tripot Joint Race - Inboard

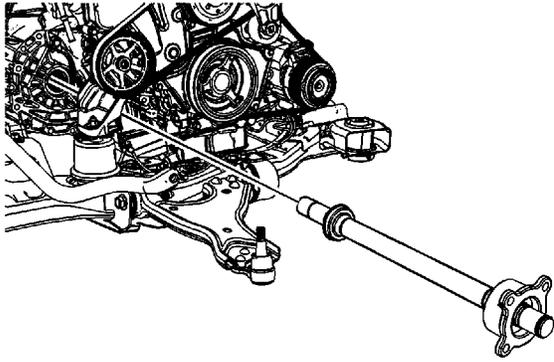
Front Wheel Drive Intermediate Shaft Replacement

Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the right front wheel drive shaft. Refer to [Front Wheel Drive Shaft Replacement](#).

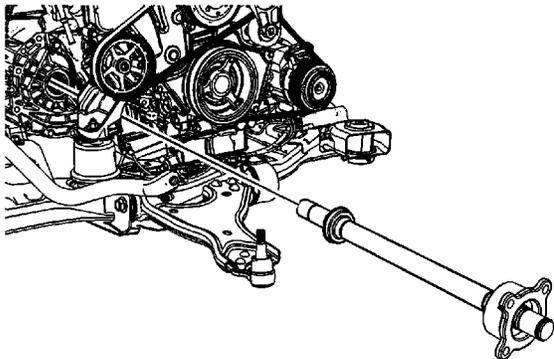


3. Remove the intermediate drive shaft mounting bolts from the engine bracket.



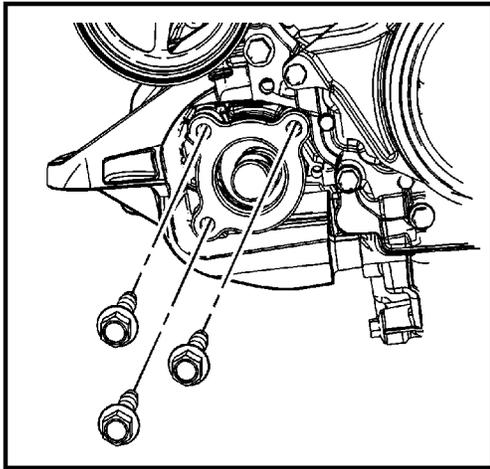
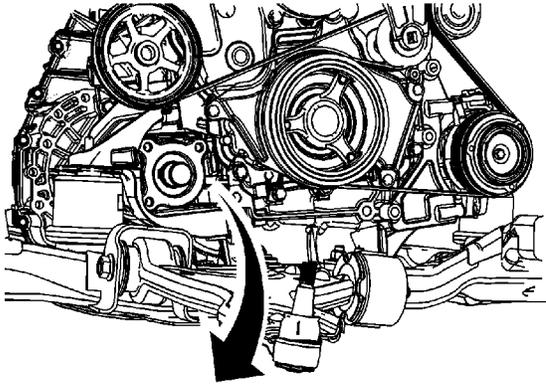
4. Remove the intermediate drive shaft from the vehicle.

Installation Procedure



1. Install the intermediate drive shaft to the transaxle.
2. Position the intermediate shaft support bracket to the engine.

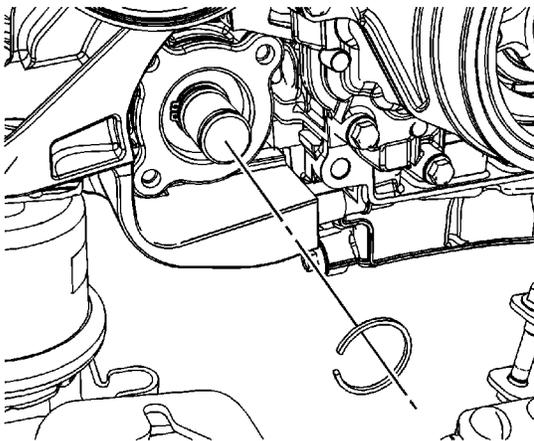
Caution: Refer to [Fastener Caution](#) in the Preface section.



3. Install the support bracket bolts.

Tighten

Tighten the bolts to 58 N·m (43 lb ft).





4. Install a new wheel drive shaft retaining ring.
5. Install the right wheel drive shaft. Refer to [Front Wheel Drive Shaft Replacement](#).
6. Remove the support and lower the vehicle.

Front Wheel Drive Shaft Replacement

Special Tools

- *J-2619-01* Slide Hammer
- *J-29794* Axle Shaft Remover Extension
- *J-33008-A* Axle Shaft Puller
- *J-44394* Seal Protector

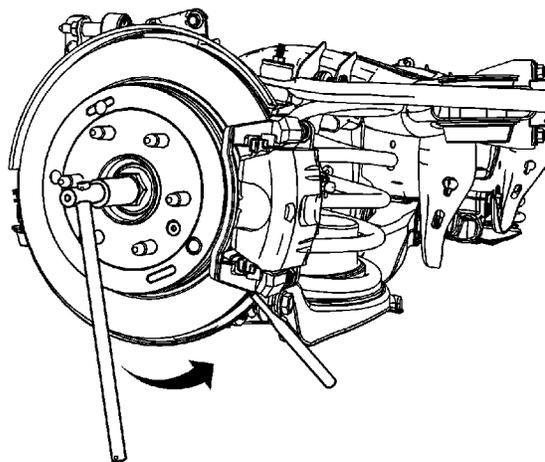
Removal Procedure

Warning: To prevent personal injury and/or component damage, do not allow the weight of the vehicle to load the front wheels, or attempt to operate the vehicle, when the wheel drive shaft(s) or wheel drive shaft nut(s) are removed. To do so may cause the inner bearing race to separate, resulting in damage to brake and suspension components and loss of vehicle control.

Caution: Wheel drive shaft boots, seals and clamps should be protected from sharp objects any time service is performed on or near the wheel drive shaft(s). Damage to the boot(s), the seal(s) or the clamp(s) may cause lubricant to leak from the joint and lead to increased noise and possible failure of the wheel drive shaft.

Note: The following service procedure can be used for both left and right front wheel drive shafts.

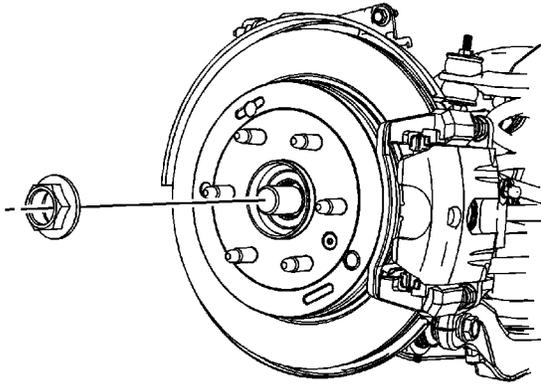
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the wheelhouse panel from the vehicle. Refer to [Front Wheelhouse Front Liner Replacement](#).



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Note: The following procedure is to ensure that the wheel drive shaft assembly does not rotate while the nut is being removed.

4. Insert a punch or brass drift in the brake rotor so that the brass drift or punch rest against the brake caliper mounting bracket.
5. Using a breaker bar and socket, loosen the wheel drive shaft nut.



Note: DO NOT re-use the wheel drive shaft nut, discard and use NEW.

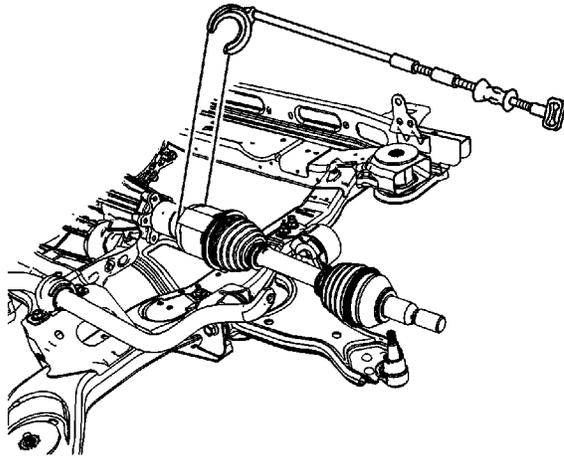
6. Remove the wheel drive shaft nut.
7. Using the appropriate tool, remove the wheel drive shaft from the steering knuckle.

Note: In the following service procedure, it is NOT necessary to completely remove the tie rod end. Only remove the tie rod end from the steering knuckle ONLY.

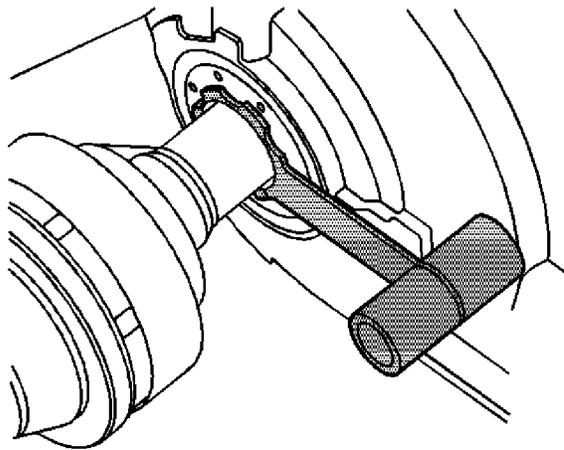
8. Remove the outer tie rod end from the steering knuckle. Refer to [Steering Linkage Outer Tie Rod Replacement](#).
9. Remove the stabilizer shaft link at the stabilizer bar and secure. Refer to [Stabilizer Shaft Link Replacement](#).
10. Remove the lower ball joint from the steering knuckle. Refer to [Lower Control Arm Ball Joint Replacement](#).
11. Remove and relocate the suspension module to the side and secure.

Note: The following service procedure can be used on vehicles that are Front Wheel Drive (FWD) left side only, as well as vehicles equipped with All Wheel Drive (AWD).

12. Assemble the *J-2619-01* hammer , the *J-29794* extension , and the *J-33008-A* puller .

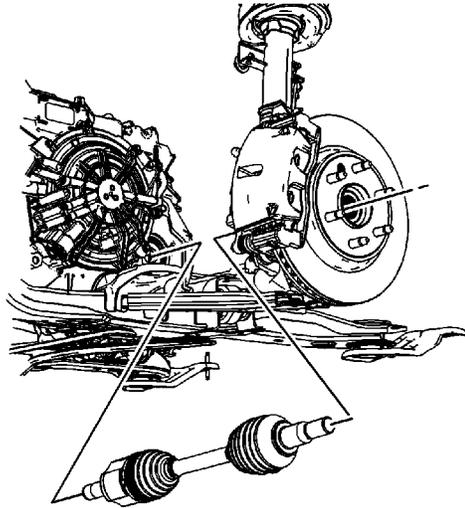


13. Using the *J-2619-01* hammer , the *J-29794* extension , and the *J-33008-A* puller , disengage the wheel drive shaft enough to install *J-44394* protector .



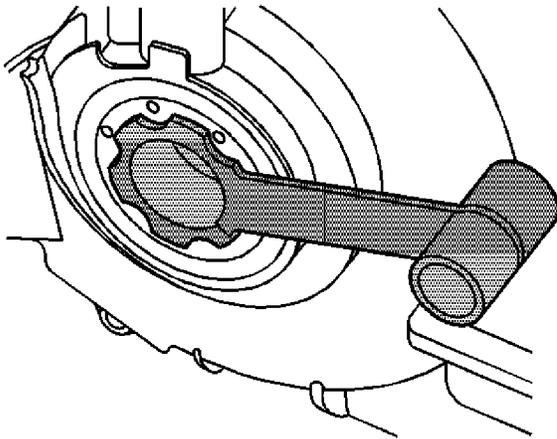
Caution: J-44394 must be installed into the differential output shaft seal prior to removing and installing the wheel drive shaft. Failure to install J-44394 as indicated may cause the splines of the wheel drive shaft to cut the differential output seal.

14. Carefully install the *J-44394* protector over the wheel drive shaft.
15. Carefully slide the *J-44394* protector into the differential output shaft seal.



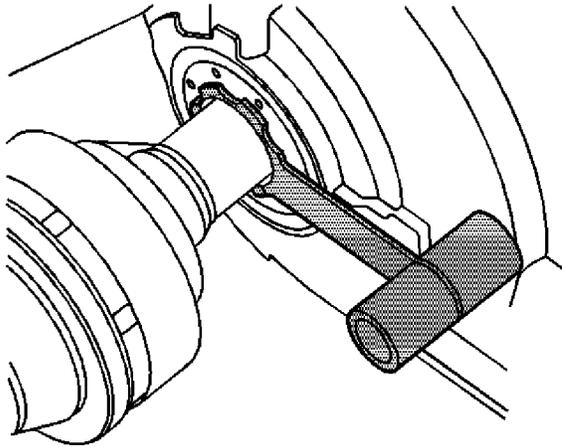
16. Remove the wheel drive shaft from the vehicle.

Installation Procedure



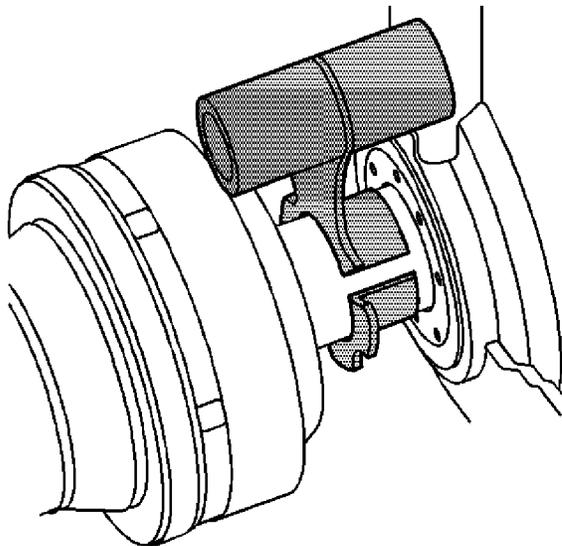
Caution: J-44394 must be installed into the differential output shaft seal prior to removing and installing the wheel drive shaft. Failure to install J-44394 as indicated may cause the splines of the wheel drive shaft to cut the differential output seal.

1. If previously removed, carefully install *J-44394* protector into the differential output shaft seal.

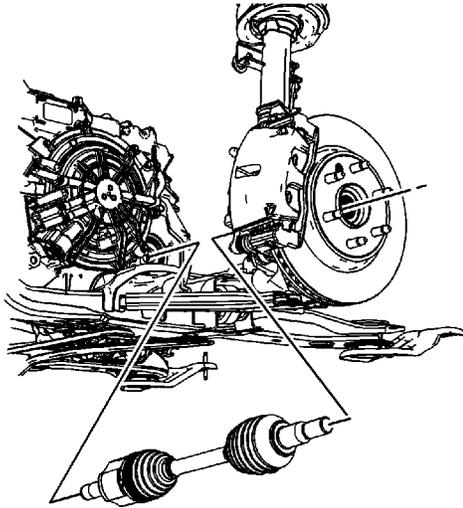


Note: In order to prevent lubricant leaks, use care when installing the wheel drive shaft to the differential. Do not damage the oil seal. Replace the oil seal if it becomes nicked, distorted, or otherwise damaged.

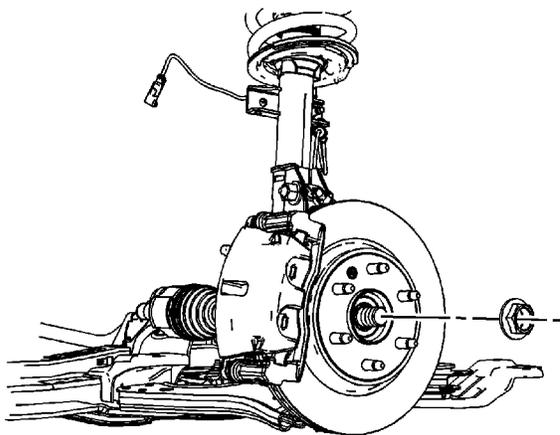
2. Carefully install the wheel drive shaft into the differential until the splines are past the *J-44394* protector .



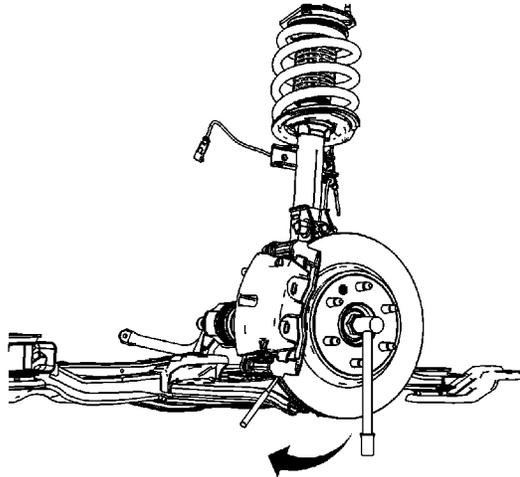
3. Carefully remove the *J-44394* protector from the differential output shaft seal.



4. Carefully continue installing the wheel drive shaft until the retaining ring is fully seated.
5. Verify the front wheel drive shaft retaining ring is properly seated:
 - Grasp the inner housing and pull the inner housing outward. Do not pull on the front wheel drive axle shaft.
 - The front wheel drive axle will remain in place when the front wheel drive shaft retaining ring is properly seated.
6. Install the wheel drive shaft into suspension module.
7. Install the lower ball joint in the steering knuckle. Refer to [Lower Control Arm Ball Joint Replacement](#).
8. Install the outer tie rod end to the steering knuckle. Refer to [Steering Linkage Outer Tie Rod Replacement](#).
9. Install the stabilizer link to the stabilizer bar. Refer to [Stabilizer Shaft Link Replacement](#).



10. Install the wheel drive shaft nut, tighten by hand.



11. Insert a brass drift or punch in the brake rotor so that it rest against the brake caliper mounting bracket.

Caution: Refer to [Fastener Caution](#) in the Preface section.

12. Using a torque wrench and socket, tighten the wheel drive shaft nut to **235 N·m (173 lb ft)**.
13. Install the wheel house panel on the vehicle. Refer to [Front Wheelhouse Front Liner Replacement](#).
14. Install the tire and wheel. Refer to [Lifting and Jacking the Vehicle](#).
15. Remove the support and lower the vehicle.
16. Check the fluid level of the transmission. Refer to [Transmission Fluid Check](#).

Rear Wheel Drive Shaft and Rear Axle Shaft Seal Replacement

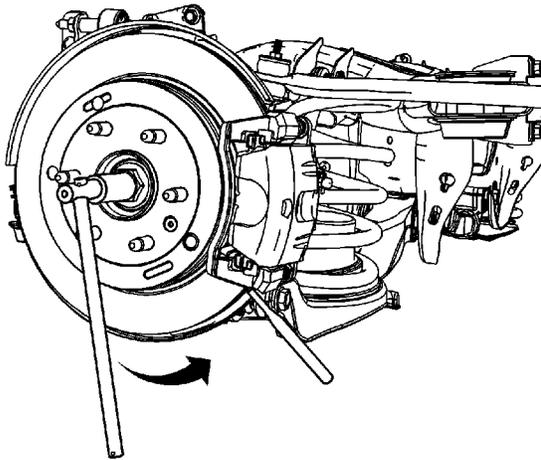
Tools Required

- [J 2619-01](#) Slide Hammer
- [J 8092](#) Handle
- [J 29794](#) Axle Shaft Remover Extension
- [J 33008-A](#) Axle Shaft Puller
- [J 33832](#) Installer

Removal Procedure

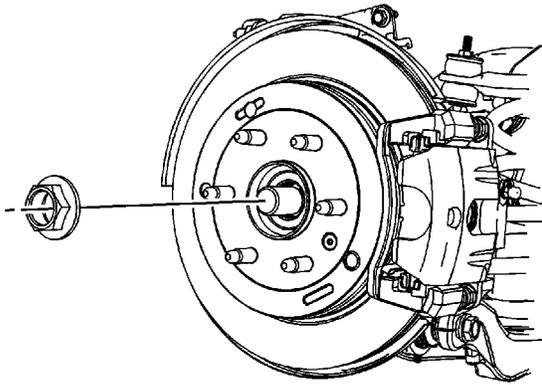
Note: Both the right and left wheel drive shafts are serviced the same.

1. Remove the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).



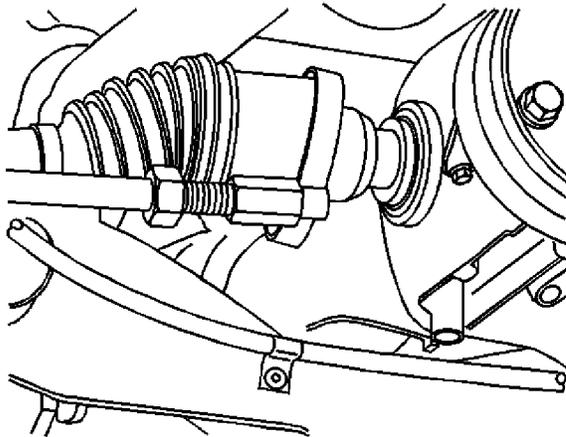
Note: The following procedure is to ensure that the wheel drive shaft assembly does not rotate while the nut is being removed or tighten.

2. Insert a brass drift or punch in the brake rotor so that the brass drift or punch rest against the brake caliper mounting bracket.
3. Using the breaker bar and socket, loosen the wheel drive shaft nut.

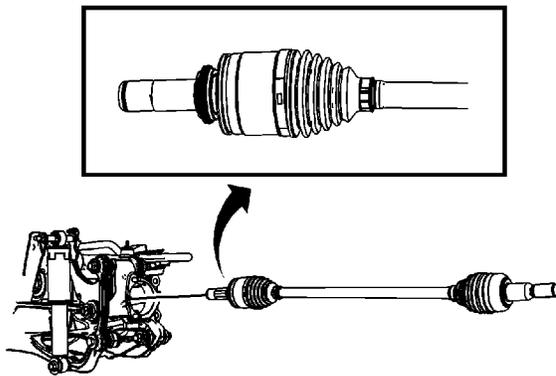


Note: DO NOT re-use the wheel drive shaft nut, discard and use NEW.

4. Remove the wheel drive shaft nut.
5. Remove the wheel bearing/hub assembly. Refer to [Rear Wheel Bearing and Hub Replacement](#).
6. Assemble the [J 33008-A](#) , [J 29794](#) , and [J 2619-01](#) .



7. Assemble the [J 33008-A](#) , [J 29794](#) , and [J 2619-01](#) and position on the wheel drive shaft.

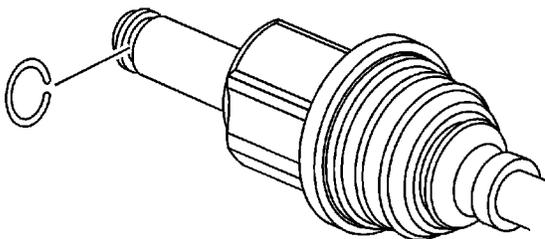


Note: Because of the design of the wheel drive shaft inner seal, the seal will be removed at the same time the wheel drive shaft is removed. Replace the seal, DO NOT re-use the seal. Replace with NEW.

- Using the [J 33008-A](#) , [J 29794](#) , and [J 2619-01](#) , remove the wheel drive shaft. Left side shown, right side similar.

Note: The rear knuckle does not have to be removed in order to service either the right or left rear the wheel drive shaft. The opening in the knuckle is large enough to allow the wheel drive shaft to pass through.

- Remove the wheel drive shaft through the knuckle.
- If servicing the right wheel drive shaft, remove the muffler assembly. Refer to [Exhaust Muffler Replacement](#).

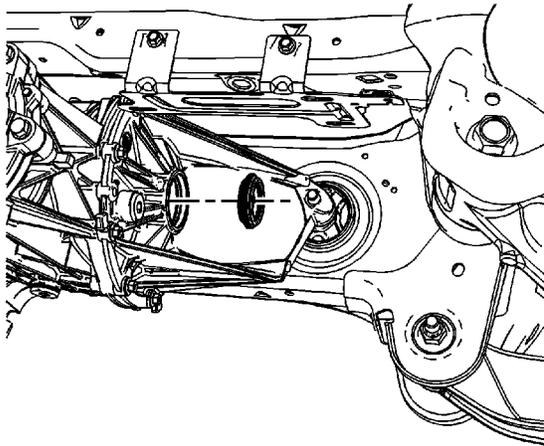




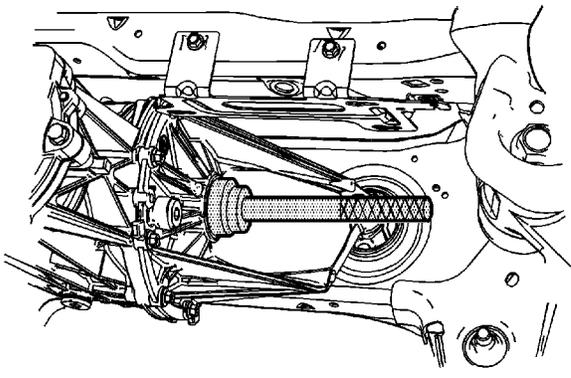
Note: DO NOT re-use the retaining clip, replace with NEW.

11. Remove the retaining ring from the tripod.

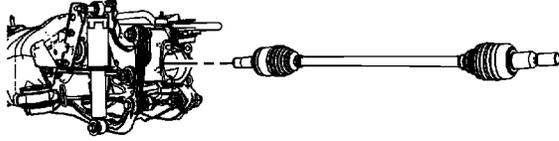
Installation Procedure



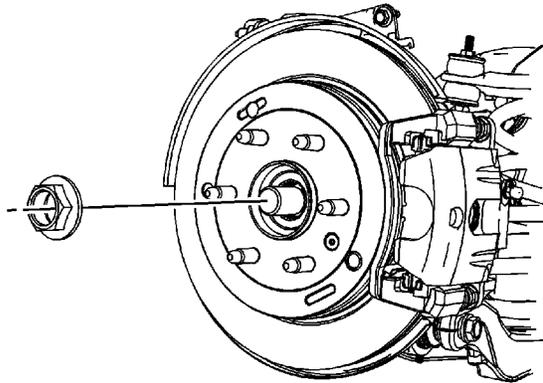
1. Position the new seal in the wheel drive shaft seal. Left side shown, right similar.
2. Assemble the [J 33832](#) and the [J 8092](#).



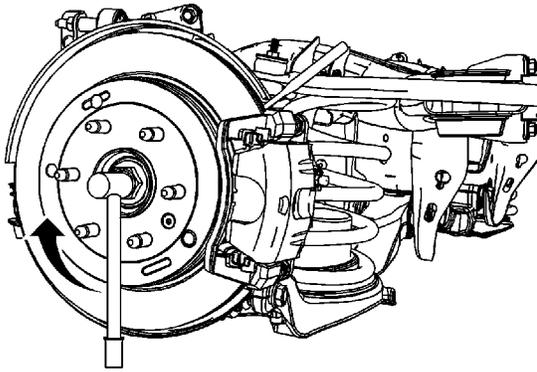
- Using the [J 33832](#) and the [J 8092](#) , install the wheel drive shaft seal.



- Install the wheel drive shaft through the knuckle.
- Install the wheel bearing/hub assembly. Refer to [Rear Wheel Bearing and Hub Replacement](#).



- Install the wheel drive shaft nut.
- Install the muffler assembly, if removed. Refer to [Exhaust Muffler Replacement](#).



8. Insert a brass drift or punch in the brake rotor so that the brass drift or punch rest against the brake caliper mounting bracket.

Caution: Refer to [Fastener Caution](#) in the Preface section.

9. Using a torque wrench and socket, tighten the new wheel drive shaft nut.

Tighten

Tighten the nut to 205 N·m (151 lb ft).

10. Check the fluid level in the rear differential for any fluid loss during the service procedure. Refer to [Rear Axle Lubricant Level Inspection](#).
11. Install the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).

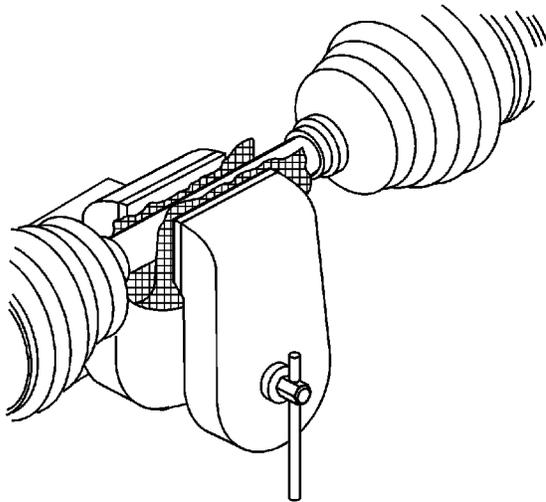
Front Wheel Drive Shaft Inner Joint and Boot Replacement

Special tools

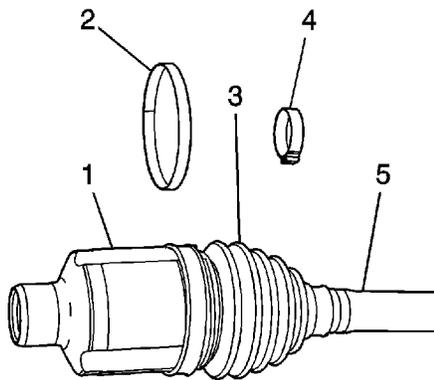
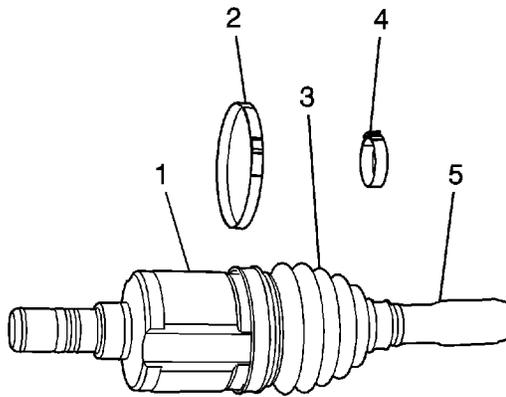
J 35910 Drive Axle Seal Clamp Pliers

Disassemble Procedure

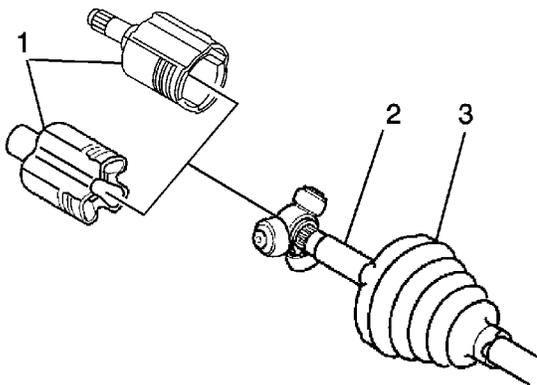
1. Remove the wheel drive shaft from the vehicle. Refer to [Front Wheel Drive Shaft Replacement](#).



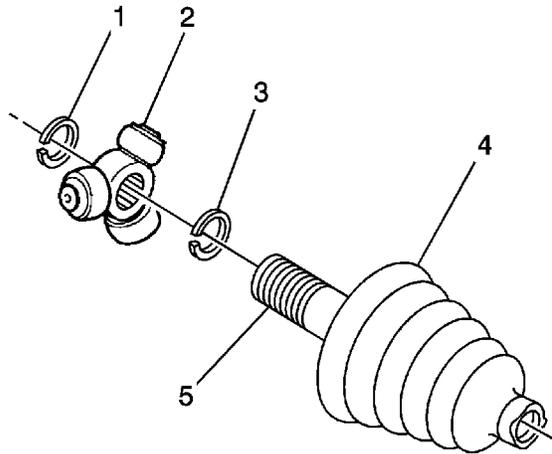
2. Install the wheel drive shaft in a soft jawed vise.



3. Using a pair of side cutters, remove and discard the small boot clamp (4) from the boot (3).
4. Using the appropriate tool, remove and discard the large boot clamp (2) from the boot (3).



5. Remove the boot (3) from the tripod housing (1).
6. Remove the inner tripod housing (1) from the wheel drive shaft (3).

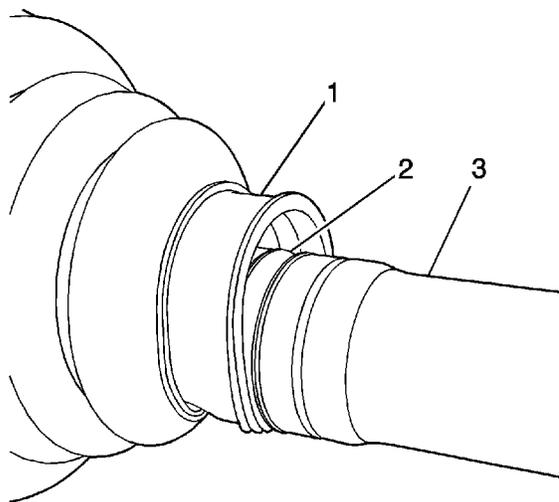


7. Using the appropriate tool, remove the outer tripot spider retaining ring (1) from the wheel drive shaft (5).
8. Remove the tripot spider (2) from the wheel drive shaft (5).

Note: Step 9 is for those vehicles that have an inner retaining ring for the tripot spider. If there isn't an inner retaining ring, skip step 9 and proceed to step 10.

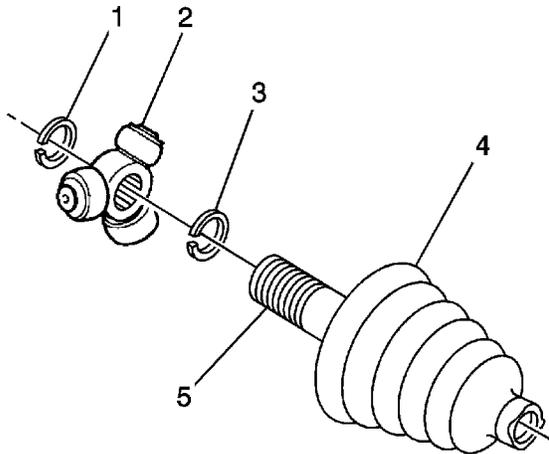
9. Using the appropriate tool, remove the inner tripot retaining ring (3), if equipped, from the wheel drive shaft (5).
10. Remove the wheel drive shaft boot (4) from the wheel drive shaft (5).
11. Inspect the wheel drive shaft inner joint. Refer to [Wheel Drive Shaft Inner Joint Inspection](#).

Assemble Procedure



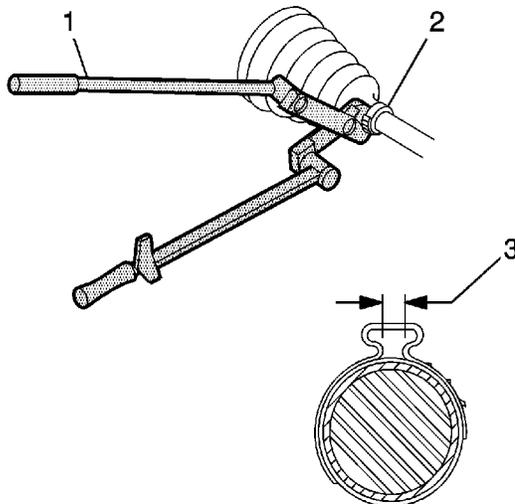


1. Install the boot (1) on the wheel drive shaft (3).
2. Ensure that the boot (1) is properly seated in the groove (2) in the wheel drive shaft.

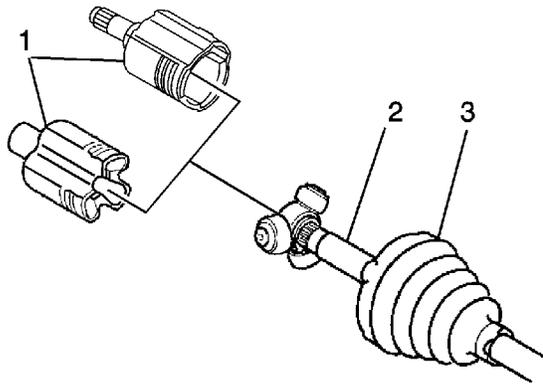


Note: Step 3 is for those vehicles that have an inner retaining ring for the tripot spider. If there isn't an inner retaining ring, skip step 3 and proceed to step 4.

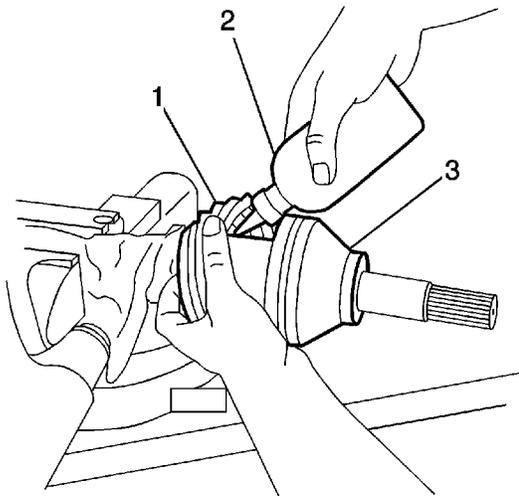
3. Using the appropriate tool, install the inner tripot retaining ring (3), if equipped.
4. Install the tripot spider (2) until just touches the shoulder on the wheel drive shaft (5).
5. Using the appropriate tool, install the outer tripot spider retaining ring (1).



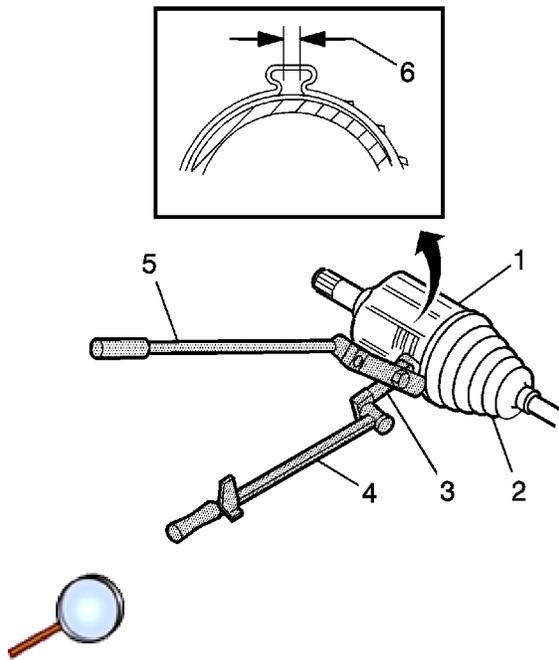
6. Using the *J 35910* Drive Axle Seal Clamp Pliers (1), close the boot clamp (2) until the gap (3) measures **1.8 mm (0.07 inch)**.



7. Install the tripot housing (1) on the wheel drive shaft (3).
8. Install the wheel drive shaft boot (3) on the tripot housing (1).



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



10. Using the *J 35910* Drive Axle Seal Clamp Pliers (3), ratchet wrench (4) and a breaker bar (5), close the boot clamp (1) until the gap (6) measures **1.9 mm (0.07 inch)**.
11. Remove any of the excess lubricant from the tripot housing and wheel drive shaft.
12. Move the tripot joint housing in a circular motion to distribute the lubricant in the tripot housing.
13. Remove the wheel drive shaft from the vise.
14. Install the wheel drive shaft in the vehicle. Refer to [Front Wheel Drive Shaft Replacement](#).

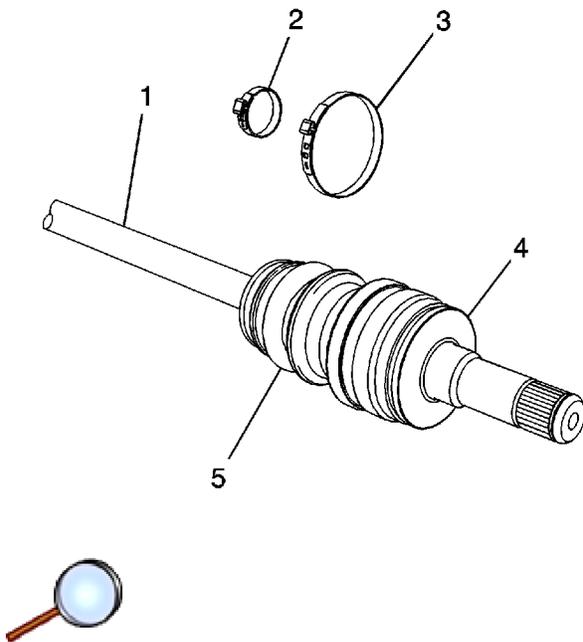
Rear Wheel Drive Shaft Inner Joint and Boot Replacement

Special Tools

- *CH 48894* Drive Axle Seal Clamp Pliers
- *J 35910* Drive Axle Boot Clamp Pliers

Disassemble Procedure

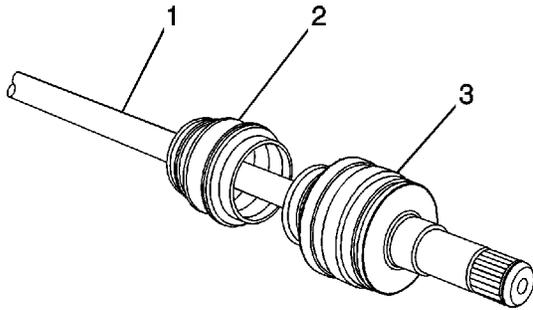
1. Remove the wheel drive shaft. Refer to [Rear Wheel Drive Shaft and Rear Axle Shaft Seal Replacement](#).
2. Remove the outer CV joint and boot. Refer to [Rear Wheel Drive Shaft Outer Joint and Boot Replacement](#).



Caution: Do not cut through the wheel drive shaft inboard or outboard boot during service. Cutting through the boot may damage the sealing surface of the housing and the tripod or the constant velocity joint bushing. Damage to the sealing surface may lead to water and dirt intrusion and premature wear of the constant velocity joint.

3. Using the appropriate tool, remove and discard the outer boot clamp (3) and the inner boot clamp (2) from the CV joint (4).

Note: If the boot is damaged and either water or other foreign material are found in the CV joint, replace the wheel drive shaft as an assembly. The inner CV joint is NOT SERVICED.

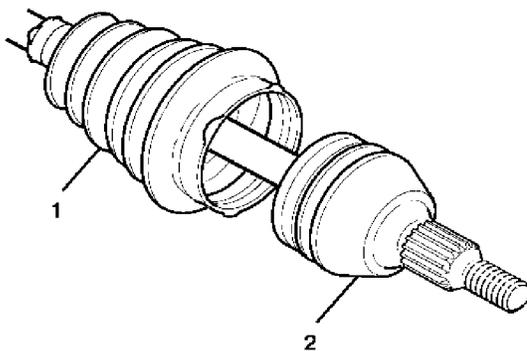


4. Remove the CV joint boot (2) from the CV joint (3) and the wheel drive shaft (1).

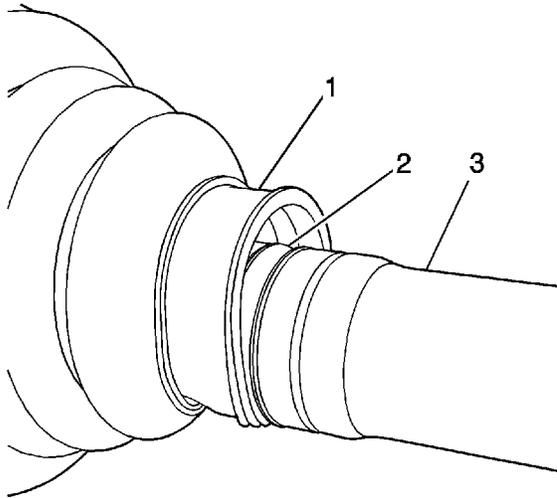
Note: If the ball bearings for the CV joint have a dull surface on them, replace the wheel drive shaft as an assembly. The inner CV joint is NOT SERVICED.

5. Using the appropriate cleaner, remove the lubricant from the CV joint and the wheel drive shaft.

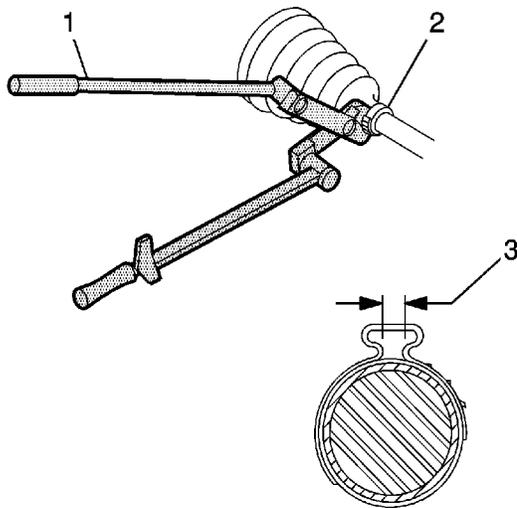
Assemble Procedure



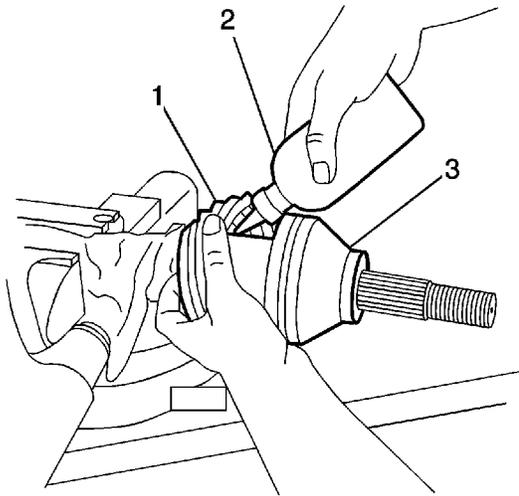
1. Install the CV joint boot and clamp (1) on the wheel drive shaft and CV joint housing (2).



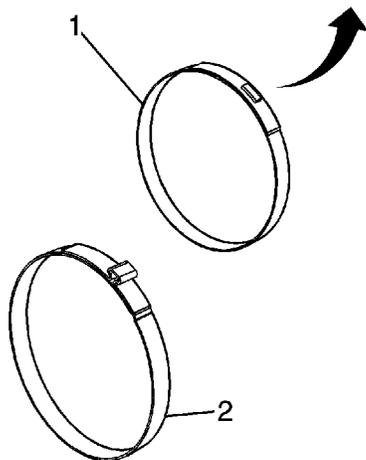
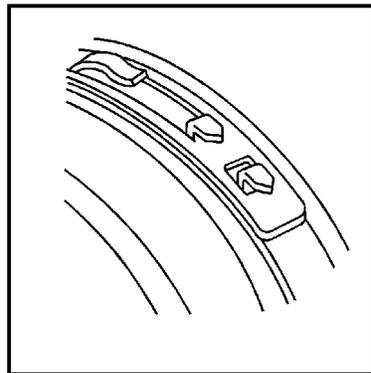
2. Ensure that the CV joint boot (1) is properly seated in the groove (2) in the wheel drive shaft (3).



3. Using the *J 35910* Drive Axle Boot Clamp Pliers, breaker bar, torque wrench and or ratchet (1), close the clamp (2) until the gap (3) measures **1.8 mm (0.07 in)**.

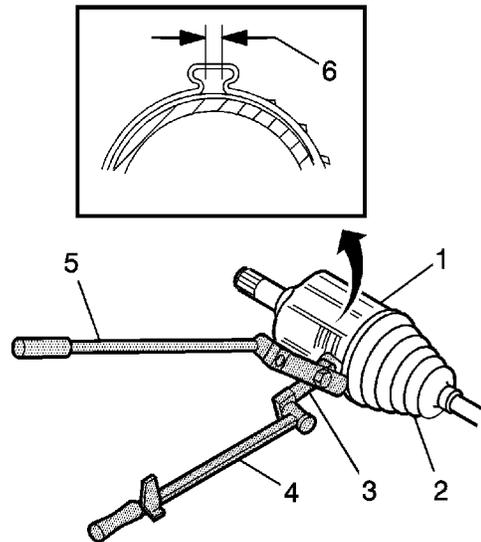


4. Place approximately half of the lubricant (1) in the CV joint boot (2) and the other half in the CV joint (3).
5. Install the CV joint boot and clamp (2) CV joint housing (1).

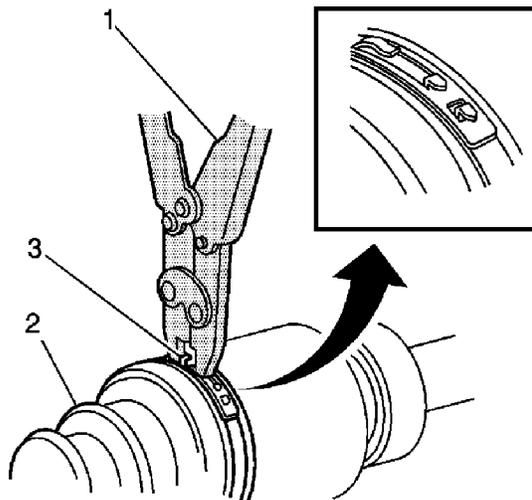


6. The following service procedure is for those vehicles equipped with the ear type boot

clamp (2). For those vehicles equipped with the earless type (low profile) (1), proceed to step 8



7. Using the *J 35910* Drive Axle Boot Clamp Pliers (3), breaker bar (5) and a torque or ratchet wrench (4), close the clamp until the gap measures **1.9 mm (0.07 in)**.



Note: Ensure that the boot clamp is securely closed and seated properly on the boot.

8. Using the *CH 48894* Drive Axle Seal Clamp Pliers (1), close the boot clamp (3).
9. Move the CV joint in a circular motion to distribute the lubricant inside the cv joint housing.
10. Clean any remaining lubricant from the outside of the CV joint.
11. Install the outer CV joint and boot. Refer to [Rear Wheel Drive Shaft Outer Joint and Boot Replacement](#).
12. Install the wheel drive shaft. Refer to [Rear Wheel Drive Shaft and Rear Axle Shaft Seal](#)

[Replacement.](#)

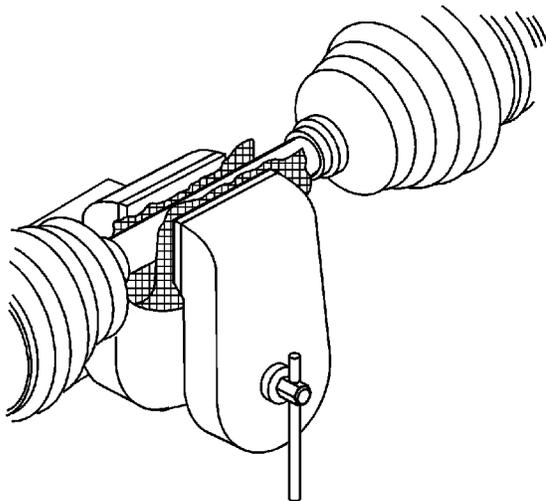
Front Wheel Drive Shaft Outer Joint and Boot Replacement

Special Tools

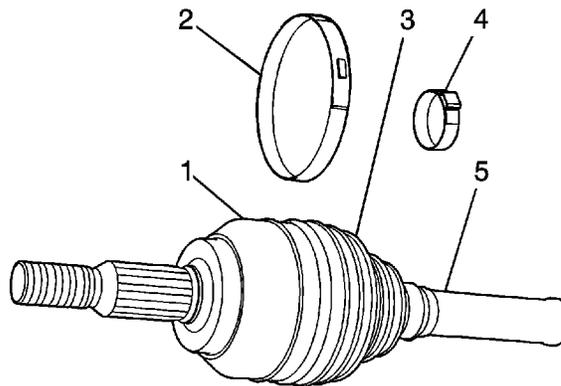
- *CH 48894* Wheel Drive Shaft Boot Clamp Pliers
- *J 35910* Drive Axle Seal Clamp Pliers

Disassemble Procedure

1. Remove the wheel drive shaft from the vehicle. Refer to [Front Wheel Drive Shaft Replacement](#).

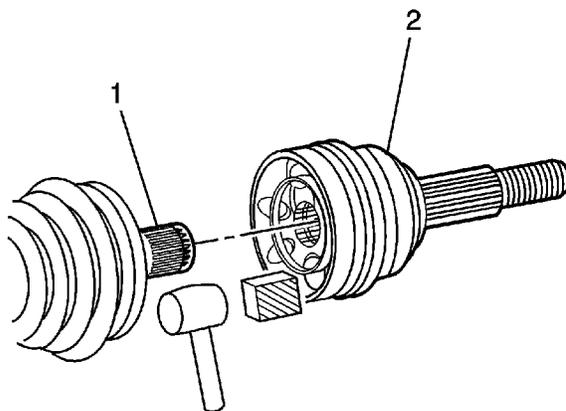


2. Install the drive axle shaft in a soft jawed vice.

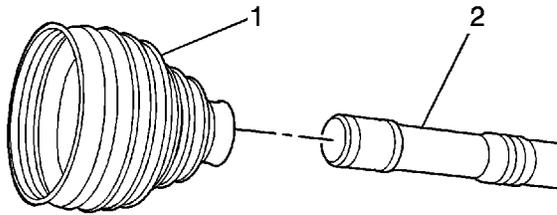


Caution: Do not cut through the wheel drive shaft inboard or outboard boot during service. Cutting through the boot may damage the sealing surface of the housing and the tripod or the constant velocity joint bushing. Damage to the sealing surface may lead to water and dirt intrusion and premature wear of the constant velocity joint.

3. Use a flat-bladed tool, remove the boot clamp (2) from the constant velocity (CV) joint (1) and the boot (3).
4. Using a pair of side cutters, remove the boot clamp (4) from the boot (3) and the wheel drive shaft (5).
5. Discard the boot clamps (2) and (4). Use NEW clamps only.

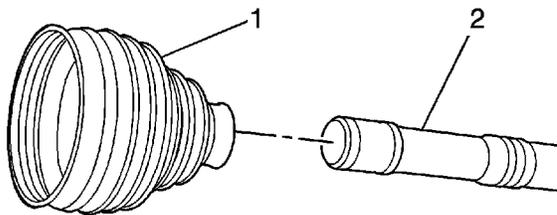


6. Using a block of wood and a hammer, remove the CV joint (2) from the wheel drive shaft (1).

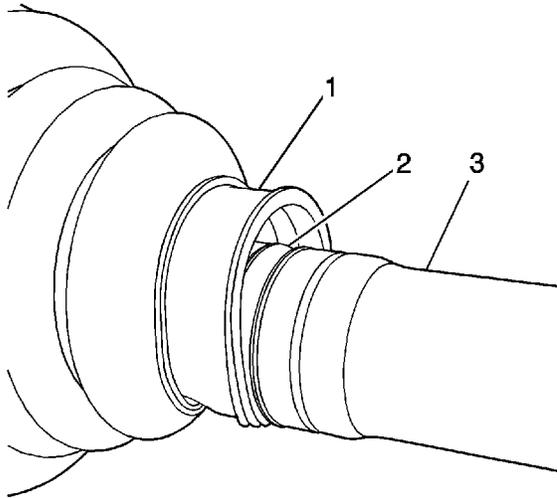


7. Remove the boot (1) from the wheel drive shaft (2).
8. Inspect the outer CV joint for damage and wear. Refer to [Wheel Drive Shaft Outer Joint Inspection](#).

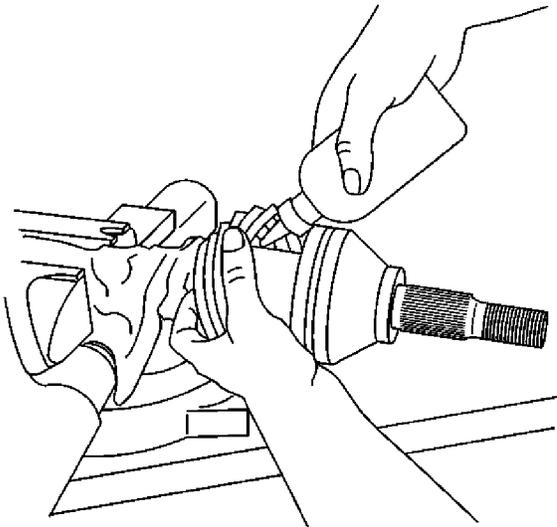
Assemble Procedure



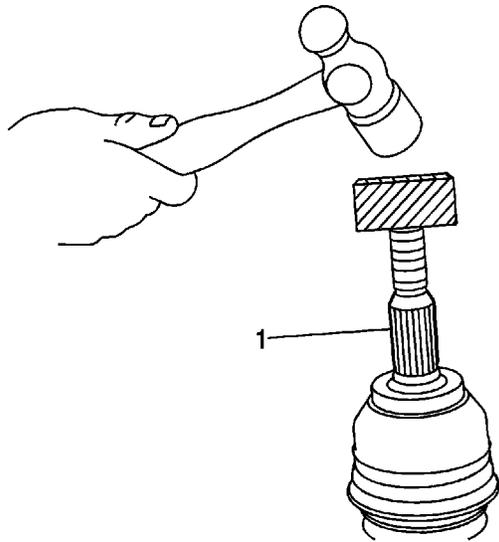
1. Position the boot (1) on the wheel drive shaft (2).



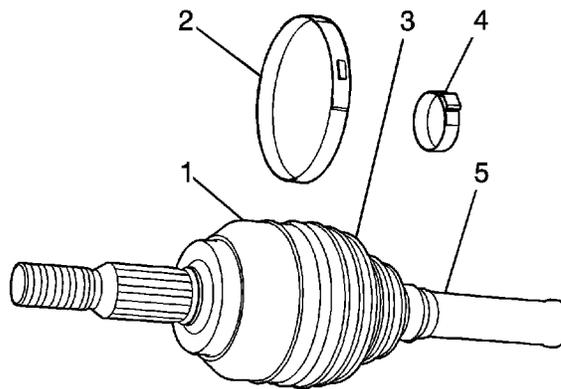
2. Ensure that the boot (1) is properly seated in the grooved (2) wheel drive shaft (3).



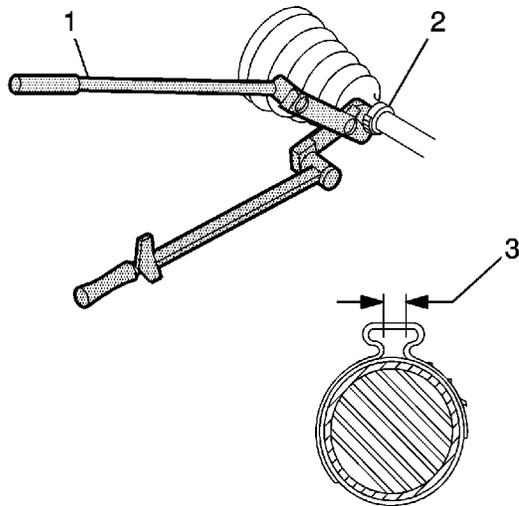
3. Place approximately half the lubricant from the service kit inside the outboard boot and pack the CV joint with the remaining lubricant.



4. Using a block of wood and a hammer, install the CV joint (1) on the wheel drive shaft.

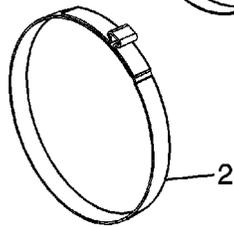
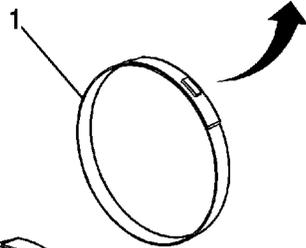
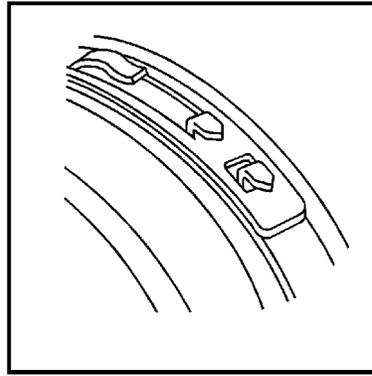


5. Install the boot clamp (4) on the boot (3) and the wheel drive shaft (5).
6. Install the boot clamp (2) on the boot (3) and the CV joint housing (1).

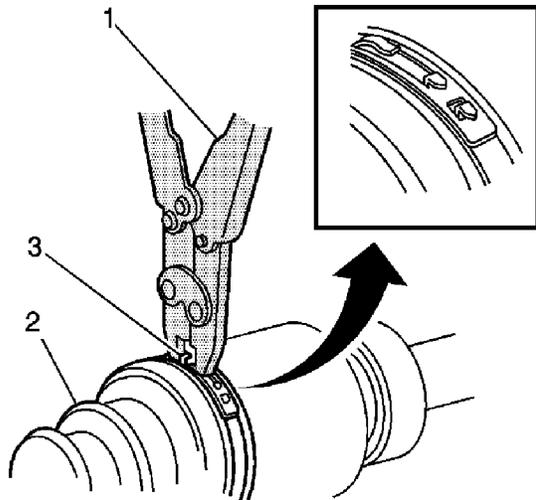
**Note:**

- Ensure that the boot clamp is properly positioned around the entire circumference of the boot.
- Ensure that the gap measurement does not exceed 1.9 mm (0.07 in).

7. Using the *J 35910* Drive Axle Seal Clamp Pliers , tighten the boot clamp (2) until the gap (3) in the boot clamp measure **1.9 mm (0.07 in)**.



8. The following service procedure is for those vehicles equipped with the earless type clamp (1). For those vehicles equipped with the ear type clamp (2), proceed to step 9.



Note: Ensure the boot clamp is securely closed and seated properly on the boot.

9. Using the *CH 48894* Wheel Drive Shaft Boot Clamp Pliers , close the boot clamp.
10. Distribute the lubricant within the outer CV joint by moving it in a circular motion at least four to five times.
11. Remove the wheel drive shaft from the bench vise.
12. Install the wheel drive shaft assembly. Refer to [Front Wheel Drive Shaft Replacement](#).

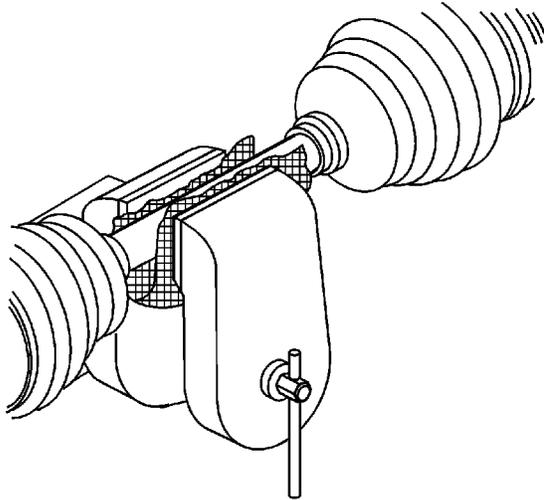
Rear Wheel Drive Shaft Outer Joint and Boot Replacement

Special Tools

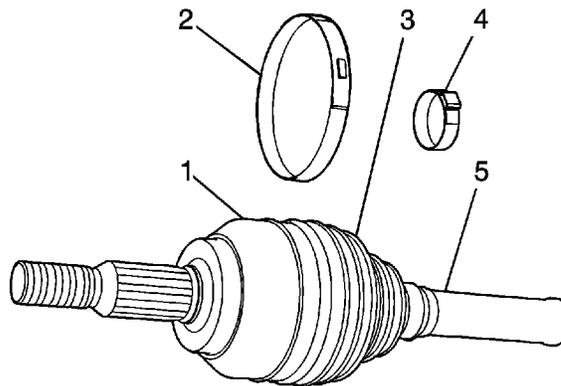
- *CH 48894* Drive Axle Boot Clamp Pliers
- *J 8059* Snap Ring Pliers
- *J 35910* Drive Axle Boot Clamp Pliers

Disassemble Procedure

1. Remove the wheel drive shaft from the vehicle. Refer to [Rear Wheel Drive Shaft and Rear Axle Shaft Seal Replacement](#).



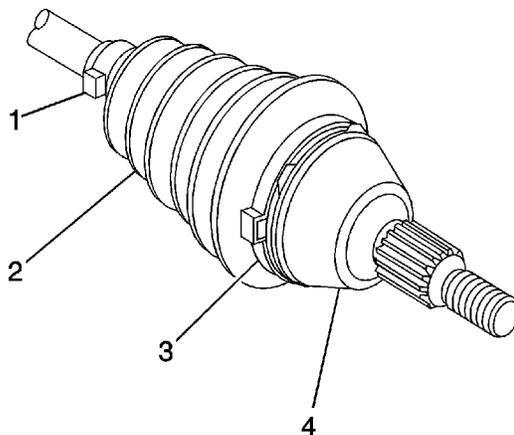
2. Install the wheel drive axle shaft in a soft jawed vice.



Caution: Do not cut through the wheel drive shaft inboard or outboard boot during service. Cutting through the boot may damage the sealing surface of the housing and the tripod or the constant velocity joint bushing. Damage to the sealing surface may lead to water and dirt intrusion and premature wear of the constant velocity joint.

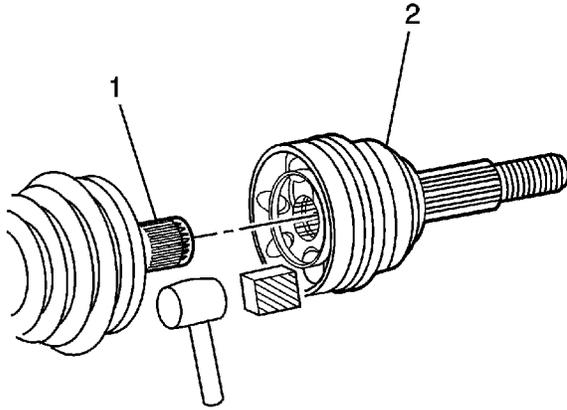
Note: The following proceed is for the wheel drive shaft that have the low profile boot clamp. If the wheel drive shaft is equipped with the ear type boot clamp, proceed to step 6.

3. Using the appropriate tool, remove and discard the outer boot clamp (2) from the CV joint boot (3).
4. Using a pair of side cutters, remove and discard the inner boot clamp (4) from the CV joint boot (3).
5. Remove the CV joint boot (3) from the CV joint housing (1).

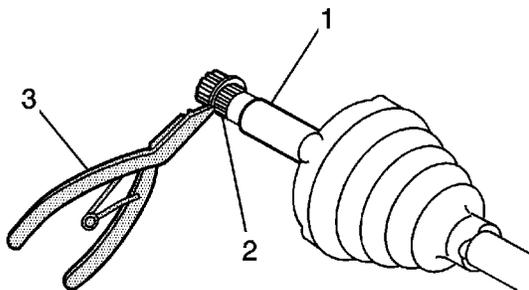




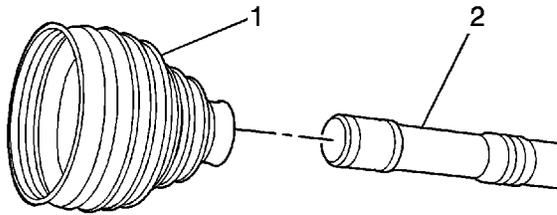
- Using a pair of side cutters, remove and discard the outer boot clamp (3) and the inner boot clamp (1).
- Remove the CV joint boot (2) from the CV joint housing (4).



- Using a hammer and a block of wood, remove the CV joint (2) from the wheel drive shaft (1).

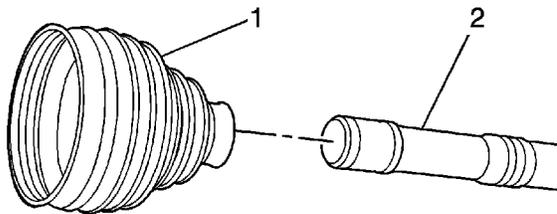


- Using the *J 8059* snap ring pliers, remove the retaining ring (2) from the wheel drive shaft.

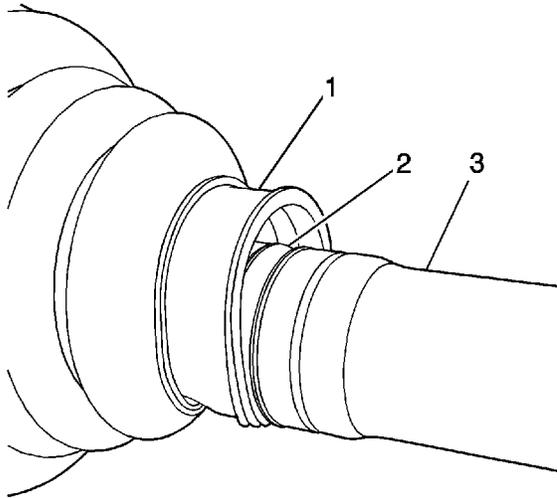


10. Remove the CV joint boot (1) from the wheel drive shaft (2).
11. Inspect the wheel drive shaft CV joint. Refer to [Wheel Drive Shaft Outer Joint Inspection](#).

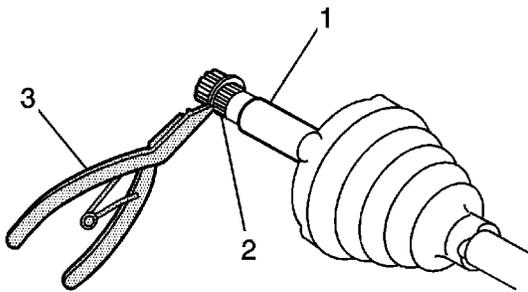
Assemble Procedure



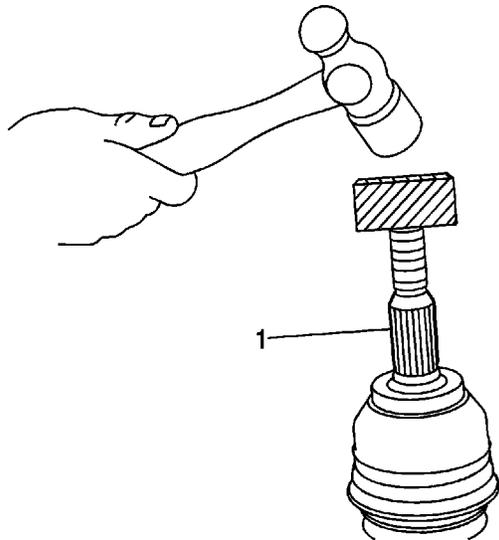
1. Position the boot and the clamp (1) on the wheel drive shaft (2), DO NOT crimp.



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

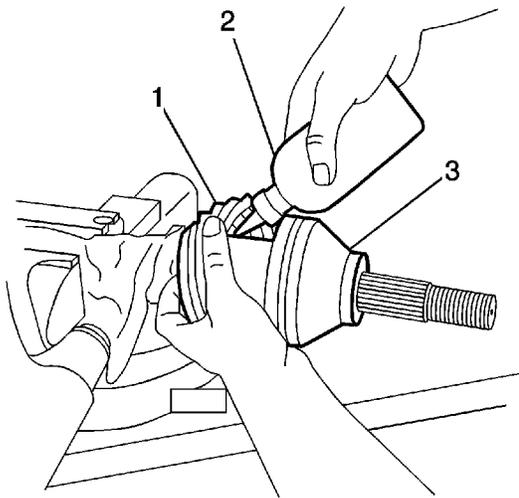


3. Using the *J 8059* snap ring pliers , install the retaining ring (2) on the wheel drive shaft (1).
4. Using the *J 35910* drive axle boot clamp pliers (1), close the boot clamp (2) until the gap (3) measures **2.15 mm (0.85 in)**.

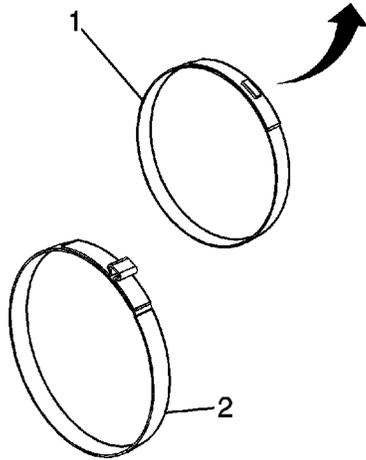
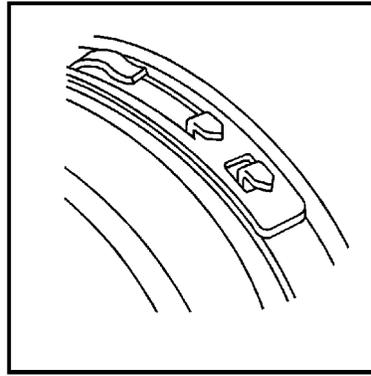


Note: The CV joint should just touch the inner retaining ring.

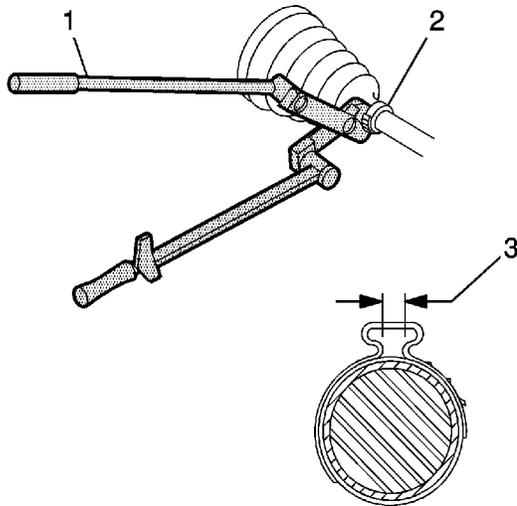
5. Using a block of wood and a hammer, install the CV joint (1) on the wheel drive shaft.



6. Place approximately half of the lubricant (2) inside the CV boot (1) and other half in the CV joint (3).
7. Remove any excess lubricant on the CV joint housing or the boot.

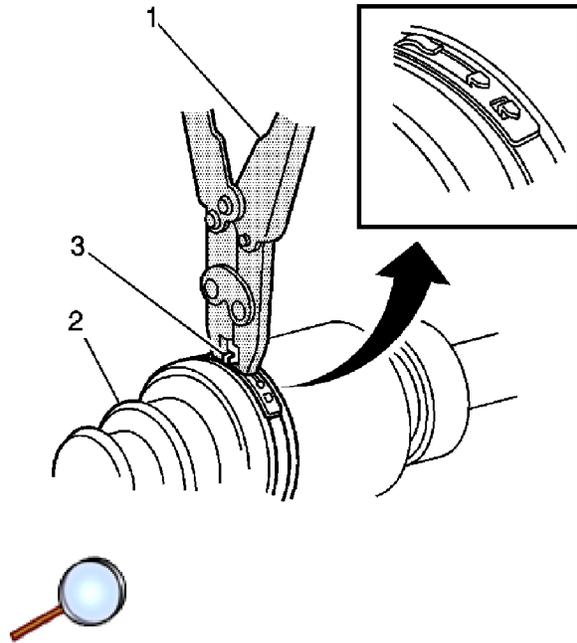


8. If working with a wheel drive that has the ear type clamp (2), proceed to step 9. If the wheel drive shaft has the low profile clamp (1), skip step 9 and proceed to step 10.



Note: When measuring the clamp end gap dimension, the gap should not exceed 2.15 mm (0.85 in).

- Using the *J 35910* drive axle boot clamp pliers (3), torque or ratchet wrench (4) and breaker bar (5), close the boot clamp until the gap (6) measures **2.15 mm (0.85 in)**.



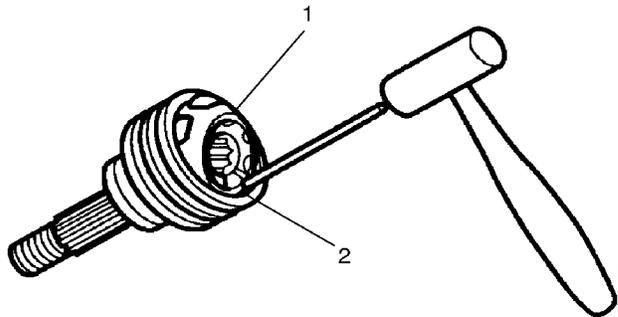
Note: Ensure that the locking tabs on the clamp are fully locked in place.

- Using the *CH 48894* drive axle boot clamp pliers (1), close the boot clamp (3).
- Move the CV joint in a circular motion 4 to 5 times to distribute the lubricant.
- Remove the wheel drive shaft from the vise.
- Install the wheel drive shaft. Refer to [Rear Wheel Drive Shaft and Rear Axle Shaft Seal Replacement](#).

Wheel Drive Shaft Outer Joint Inspection

Disassembly Procedure

1. Remove the outer constant velocity (CV) joint and boot from the wheel drive shaft. Refer to [Front Wheel Drive Shaft Outer Joint and Boot Replacement](#).
2. Remove any lubricant from the CV joint.

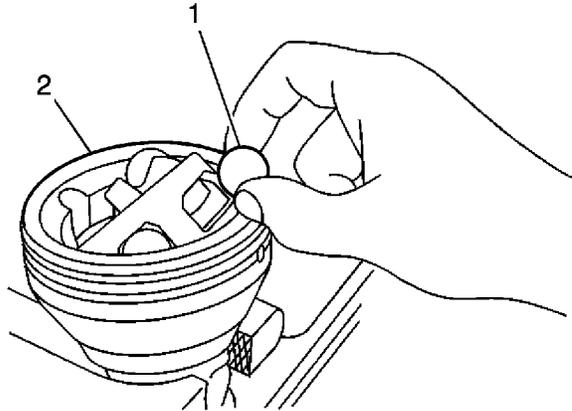


Note: Position the cage and the inner race so they are level.

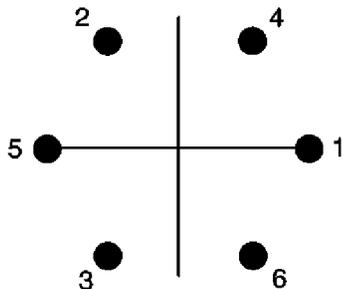
3. Install the outer CV joint assembly in a soft jawed vise.

Note: The following procedure will have to be repeated until all the ball bearing are removed from the cage.

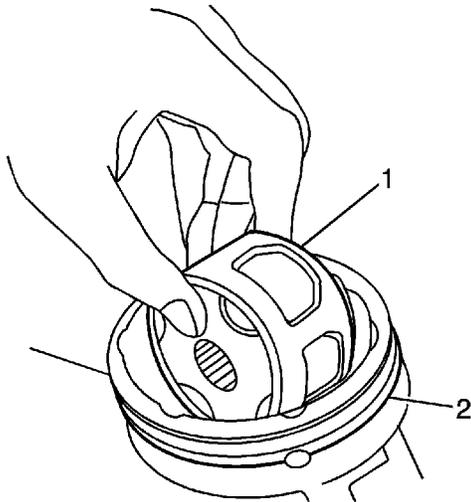
4. Using a brass drift (1), gentle tap the cage until the ball bearing can be removed from the cage.



5. Using a small screwdriver, remove the ball bearings (1) from the CV joint (2).

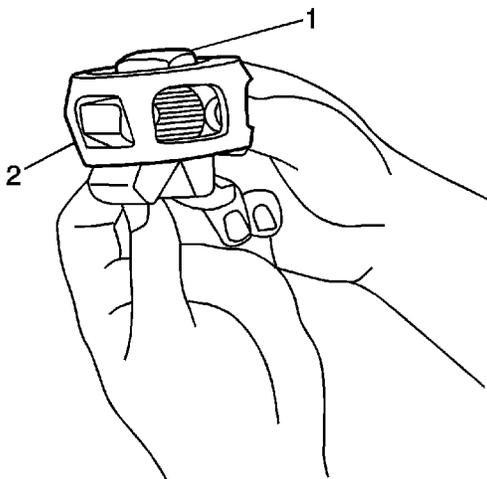


6. Remove the ball bearings from the CV joint in sequence.



Note: Position the cage so that the larger radius corners of the cage windows are facing up.

7. Position the cage (1) at a 90 degrees to the centerline of the outer race (2).
8. Align the cage windows with the lands of the outer race (2).
9. Lift and remove the cage (1) and the inner race from the outer race (2).



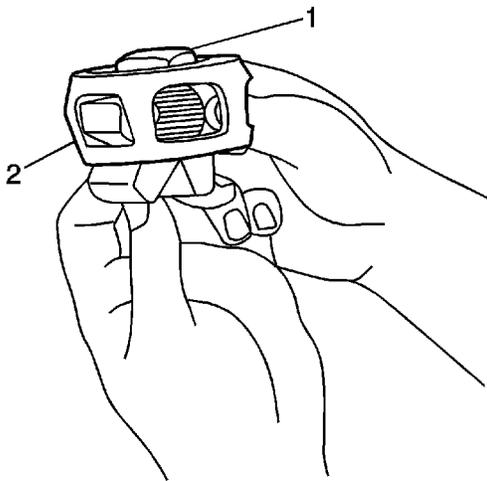
10. Position the cage (2) and the inner race (1) so that the larger radius corners of the cage windows are up.
11. Rotate the inner race (1) 90 degrees to the center line of the cage (2).
12. Align the lands of the inner race (1) with the windows of the cage (2).
13. Move the inner race (1) land into the cage window (2).
14. Rotate the inner race (1) down and remove it from the cage (2).
15. Clean the following items thoroughly with the proper cleaning solvent:

- The inner race
- The outer race
- The cage
- The ball bearings
- The exposed end of the wheel drive shaft

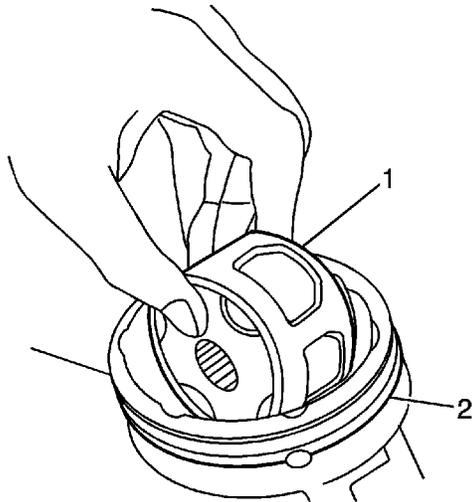
Note: The internal parts of the CV joint are NOT SERVICED separately. The outer CV joint is serviced as an assembly.

16. If any of the above items are found to have excessive wear or are damaged, replace the outer CV joint as an assembly.

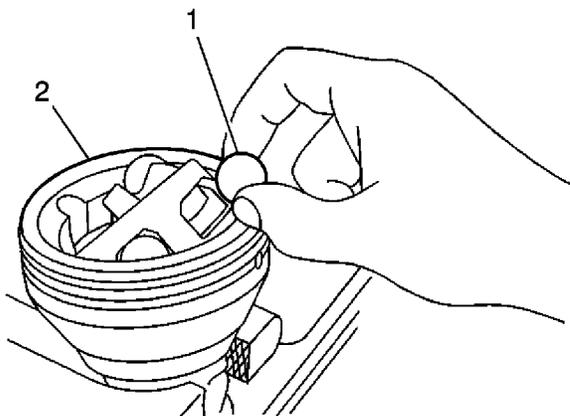
Assembly Procedure



1. Position the cage (2) so that the larger radius corners of the cage windows are up.
2. Position the inner race (1) 90 degrees to the centerline of the cage (2).
3. Insert the inner race (1) through the bottom of the cage (2).
4. Align the lands of the inner race (1) with the windows of the cage (2).
5. Move the inner race (1) land into the cage window (2).
6. Rotate the inner race (1) down and remove it from the cage (2).
7. Rotate the inner race (1) within the cage (2) so that the grooved surface of the inner race (1) is facing up.
8. Align the inner race (1) ball bearing tracks with the cage (2) windows.



9. Wrap a clean shop towel around the CV joint outer race splined shaft.
10. Place the outer race (2) vertically in a bench vise.
11. Position the cage (1) and the inner race at a 90 degrees to the centerline of the outer race (2).
12. With the inner race and the cage (1) assembly in a vertical position, insert the cage and the inner race into the outer race (2).



Note: The larger radius corners of the cage windows should be positioned up and the grooved surface of the inner race should be visible.

13. Position the cage (2) and the inner race so that they are level in the vise.
14. Rotate the appropriate component(s), and align the cage windows and the inner race ball bearing (1) tracks with the outer race ball bearing tracks.

15. Position a cage window and the inner race ball bearing track for the ball bearing installation.

Note: When performing the following procedure, the opposing cage (2) window and the inner ball bearing (1) track will be accessible for the ball bearing installation.

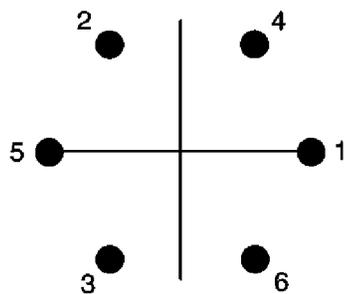
16. Press down on the cage following one of the outer race ball bearing (1) tracks.
17. Install the ball bearing through the cage window onto the inner race ball bearing (1) track.

Note: The following service procedure will have to be performed after each ball bearing (1) has been installed.

18. After the first ball bearing (1) has been installed, use a brass drift and a hammer and gently tap the cage in order to drive the cage and the inner race down completely in the outer race.

Note: After the ball bearing (1) has been installed, there should be NO GAP between the ball bearing and the inner race.

19. Position the cage and the inner race so that they are level.
20. Using a plastic hammer, lightly tap the ball bearing (1) into place.

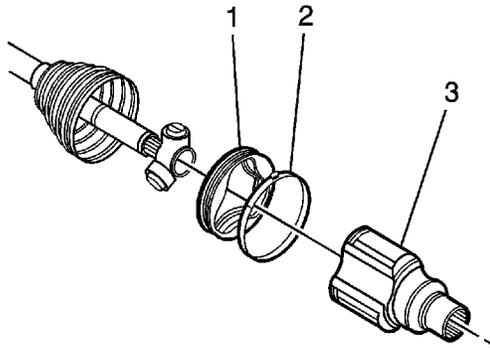


21. Install the ball bearings in sequence.
22. Repeat steps 18 thru 20 until all the ball bearings are installed.
23. Install the outer CV joint and boot on the wheel drive shaft. Refer to [Front Wheel Drive Shaft Outer Joint and Boot Replacement](#).

Wheel Drive Shaft Inner Joint Inspection

Inspection Procedure

1. Remove the front wheel drive shaft inner joint and boot. Refer to [Front Wheel Drive Shaft Inner Joint and Boot Replacement](#).



2. Remove the wheel drive shaft tripod bushing (1) from the tripod housing (5).
3. Remove the wheel drive shaft tripod housing (1) from the wheel drive shaft.
4. Remove the wheel drive shaft tripod joint boot bushing (1).
5. Using a suitable cleaner, remove the excess grease from the tripod assembly.
6. Inspect the following items for damage or excessive wear:
 - The wheel drive shaft tripod boot
 - The wheel drive shaft tripod assembly
 - The wheel drive shaft tripod joint housing
 - The wheel drive shaft tripod joint bushing
 - The wheel drive shaft
7. If any of the internal parts are found to be excessively worn or damaged, replace the wheel drive shaft inner joint and boot. Refer to [Front Wheel Drive Shaft Inner Joint and Boot Replacement](#).