

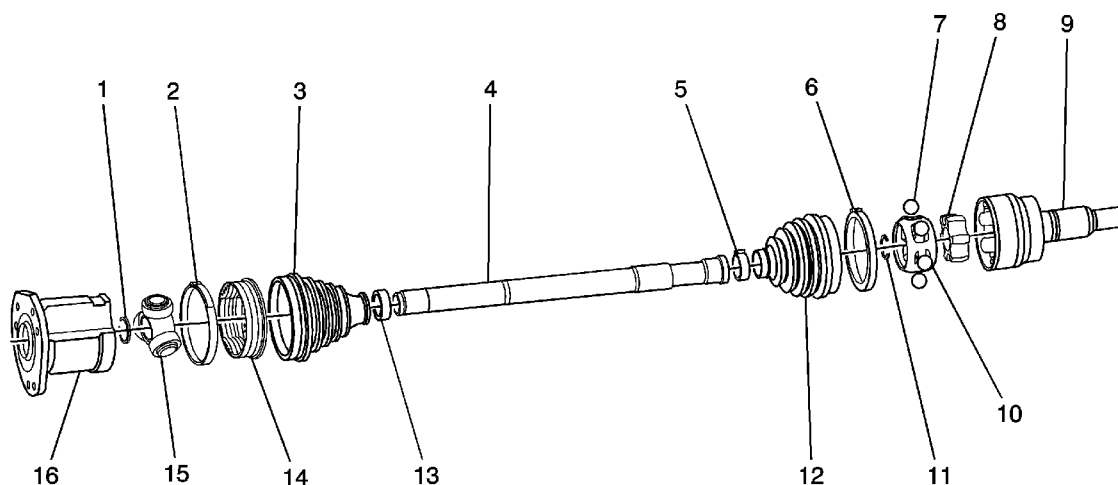
[2009 Chevrolet Express - AWD](#) | [Express, Savana \(VIN G/H\) Service Manual](#) | [Driveline/Axle](#) | [Wheel Drive Shafts](#) | [Specifications](#) | Document ID: 1225934

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Wheel Drive Shaft Nut	210 N·m	155 lb ft
Wheel Drive Shaft Retaining Bolts	79 N·m	58 lb ft

Wheel Drive Shafts Disassembled Views

Halfshaft Disassembled View



- (1) Retaining Ring
- (2) Large Seal Retaining Clamp
- (3) CV Joint Seal
- (4) Wheel Drive Shaft Bar
- (5) Small Seal Retaining Clamp
- (6) Large Seal Retaining Clamp
- (7) Ball
- (8) CV Joint Inner Race
- (9) CV Joint Outer Race
- (10) CV Joint Cage
- (11) Retaining Ring
- (12) CV Joint Seal
- (13) Small Seal Retaining Clamp
- (14) Tripot Bushing
- (15) Tripot Joint Spider Assembly
- (16) Tripot Housing Assembly

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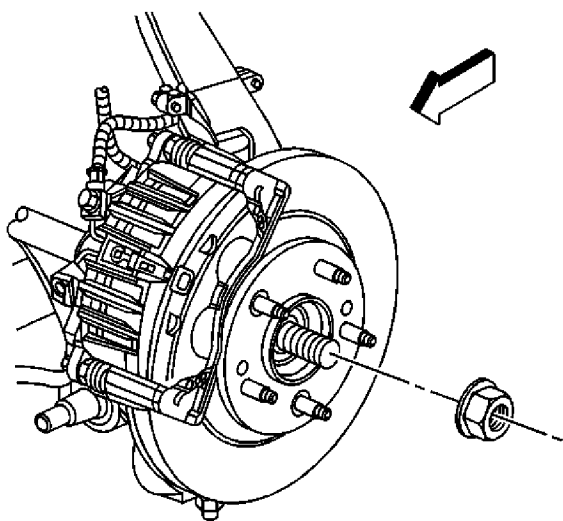
Wheel Drive Shaft Replacement

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

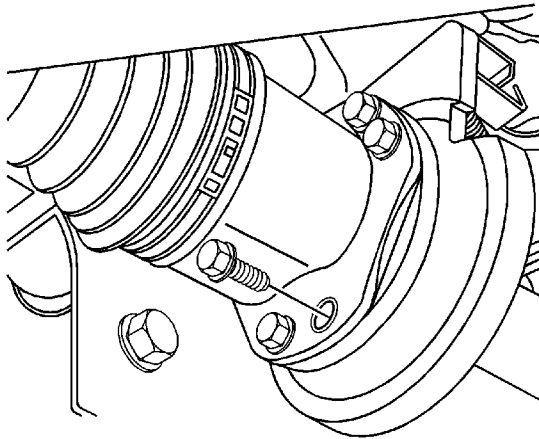
Special Tools

[J 45859](#) Axle Remover

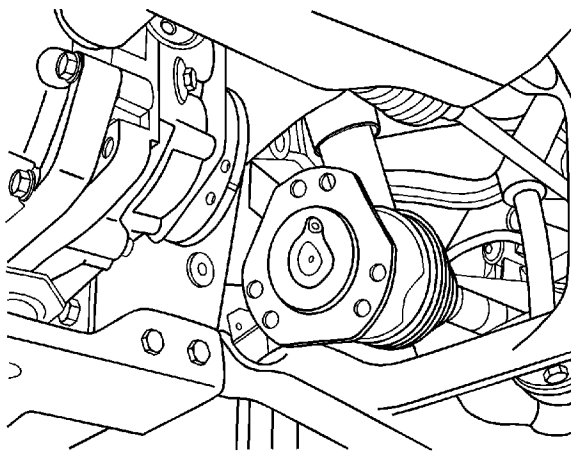
Removal Procedure



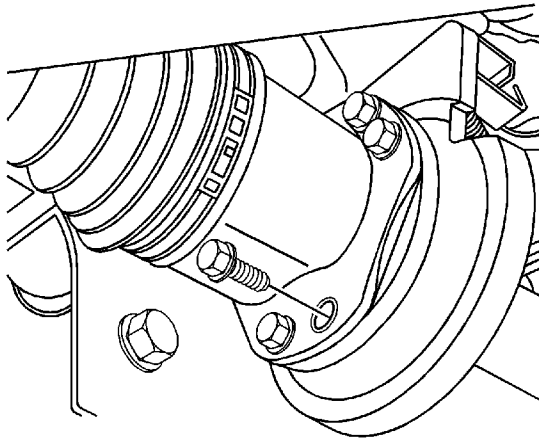
1. Remove the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
2. Remove the wheel drive shaft nut.



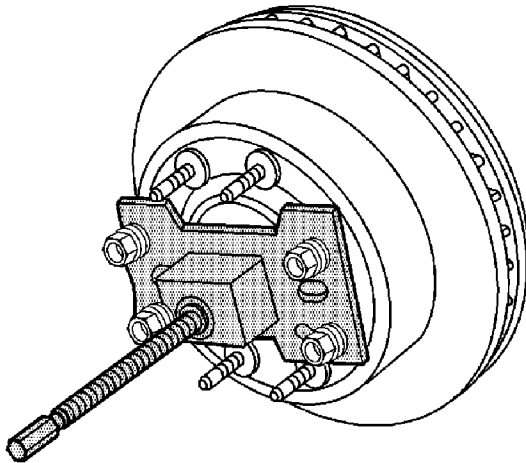
3. Remove the wheel drive shaft retaining bolts. Right side shown left side similar.



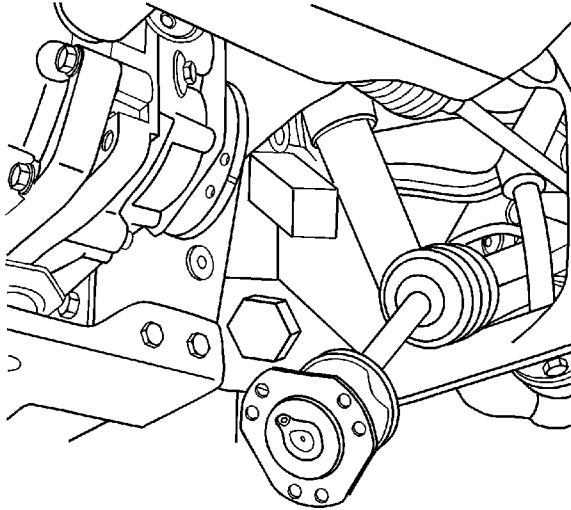
4. Remove the left wheel drive shaft from the front differential flange.



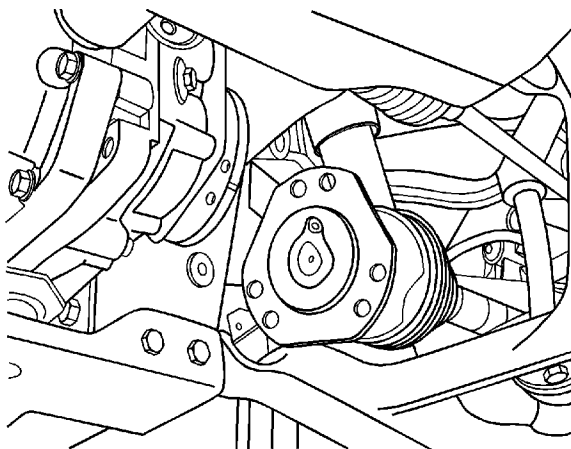
5. Remove the right wheel drive shaft from the differential flange.



6. Install the [J 45859](#) . Right side shown, left side similar.
7. Using the [J 45859](#) or equivalent, remove the front wheel drive shaft from the steering knuckle.



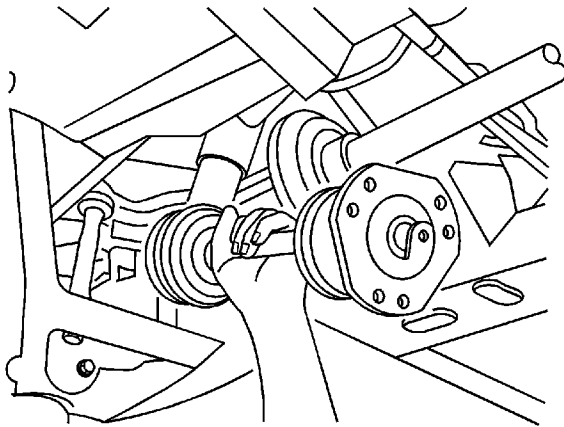
8. Remove the left wheel drive shaft from the vehicle.



9. Remove the right wheel drive shaft from the vehicle.

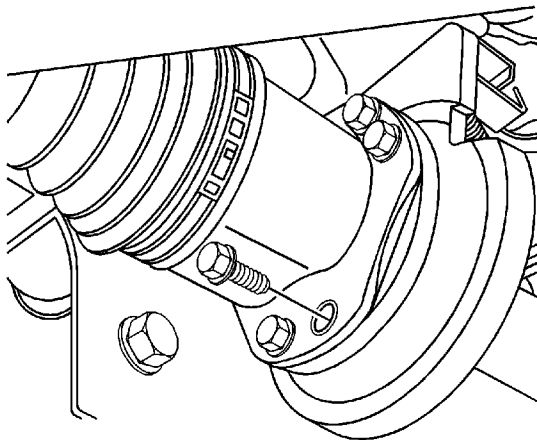
Installation Procedure

Note: Before installing the front wheel drive shaft in the steering knuckle, ensure that the splines on the drive shaft are free and clear of rust or dirt.



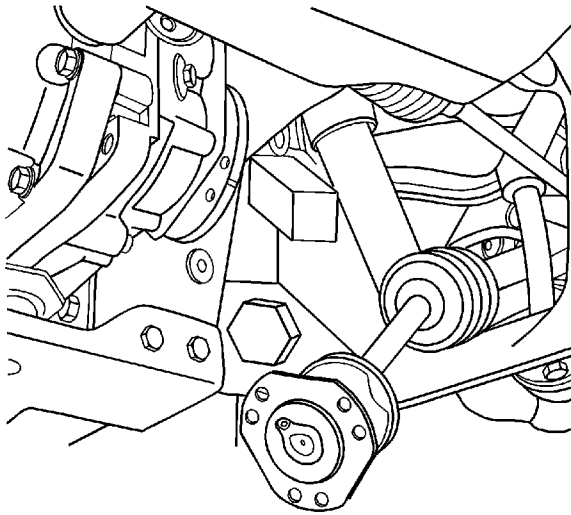
1. Install the right wheel drive shaft in the steering knuckle.
2. Install the right wheel drive shaft to the differential flange.
3. Perform the following procedure before installing the wheel drive shaft bolts.
 - 3.1. Remove all traces of the original adhesive patch.
 - 3.2. Clean the threads of the bolt with denatured alcohol or equivalent and allow to dry.
 - 3.3. Apply Threadlocker, GM P/N 12345382 (Canadian P/N 10953489) to the threads of the bolt.

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

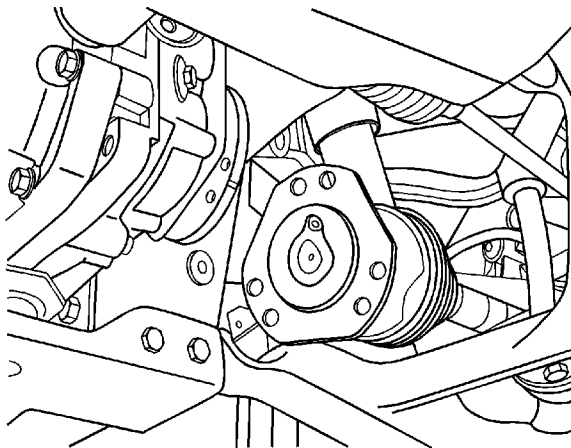


4. Install the retaining bolts for the right wheel drive shaft. Right side shown; left side similar

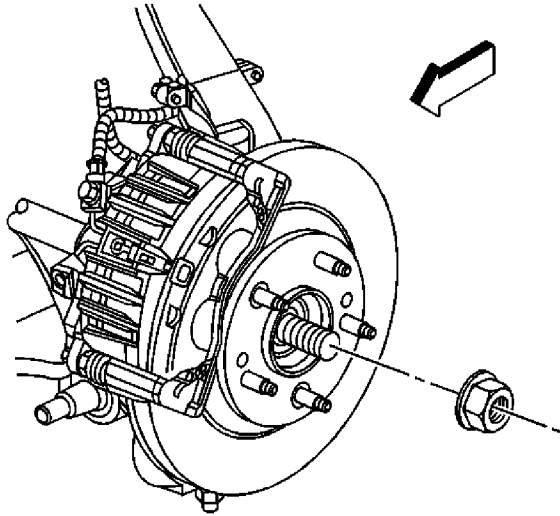
and tighten to **79 N·m (58 lb ft)**.



5. Install the left wheel drive shaft in the steering knuckle.



6. Install the left wheel drive shaft to the differential flange.
7. Install the retaining bolts for the right wheel drive shaft and tighten to **79 N·m (58 lb ft)**.



8. Install the wheel drive shaft retaining nuts and tighten to **210 N·m (155 lb ft)**.
9. Inspect the fluid level of the front differential assembly. Refer to [Front Axle Lubricant Level Inspection](#).
10. Install the tires and wheels. Refer to [Tire and Wheel Removal and Installation](#).

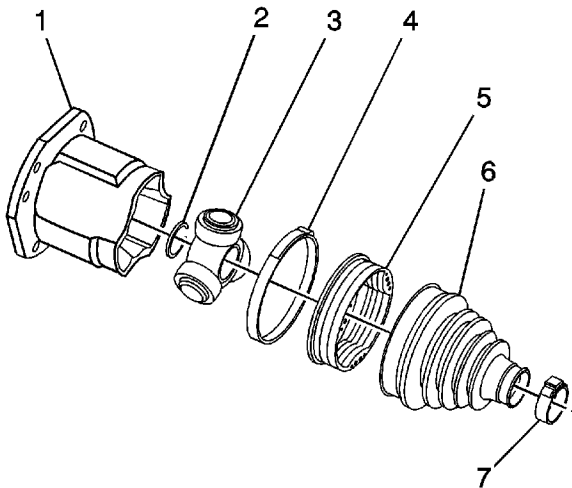
Wheel Drive Shaft Inner Joint and Boot Replacement

Tools Required

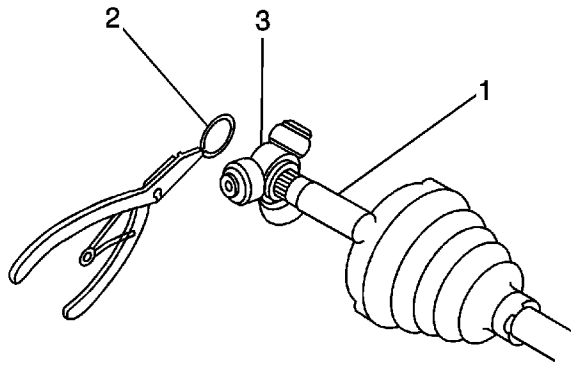
- [J 8059](#) Snap Ring Pliers
- [J 43218](#) Clamp Pliers - Narrow Jaw
- [J 46588](#) Axle Seal Crimp Tool

Removal Procedure

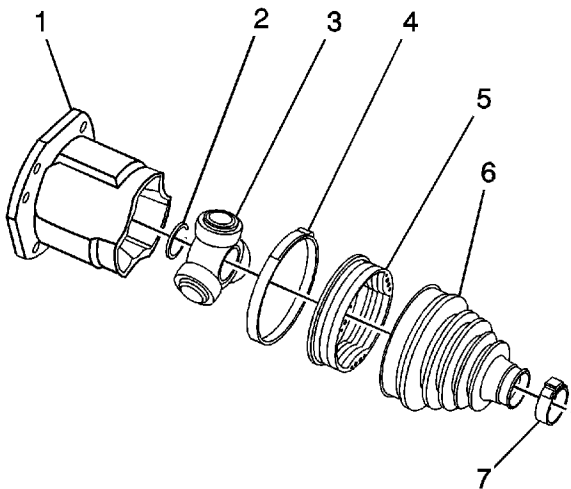
1. Remove the wheel drive shaft. Refer to [Wheel Drive Shaft Replacement](#) .



2. Remove the large clamp (4) and the small clamp (7). Use a side cutter or other suitable tool and discard the clamps.
3. Remove the tripot housing (1) from the wheel drive shaft.
4. Compress the tripot seal up the wheel drive shaft bar, away from the tripot spider assembly toward the outboard end of the wheel drive shaft assembly.

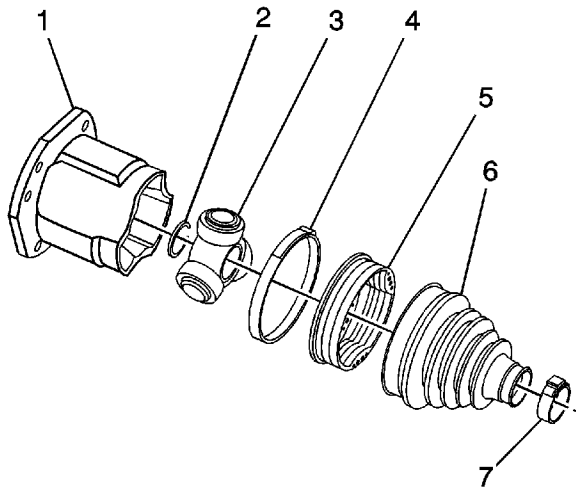


5. Spread the spider snap ring (2) with the [J 8059](#) or equivalent.
6. Remove the snap ring (2). Discard the snap ring.

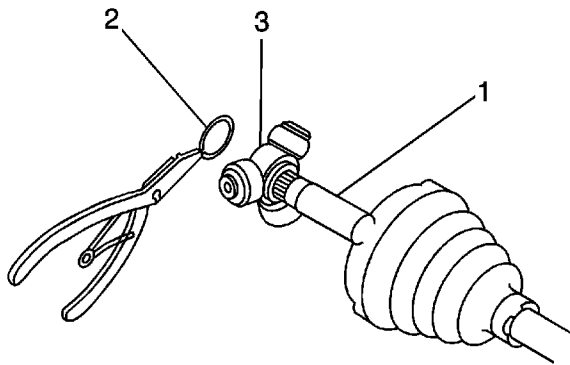


7. Remove the spider assembly (3).
8. Remove the tripot bushing (5).
9. Remove the tripot seal (6).
10. Clean the wheel drive shaft bar with a wire brush in order to remove any rust in the seal mounting areas.

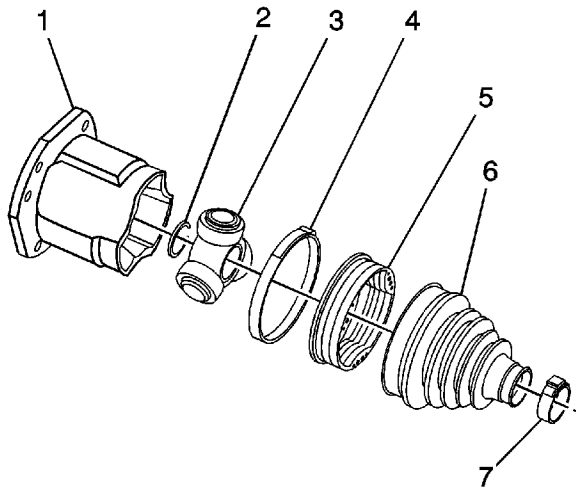
Installation Procedure



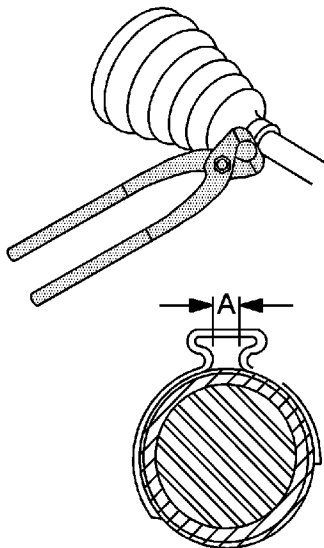
1. Slide the new clamps (4, 7) on the tripot seal (6).
2. Install the tripot seal (6) over the wheel drive shaft.
3. Install the tripot bushing (5) into the seal.
4. Slide the spider assembly onto the wheel drive shaft.



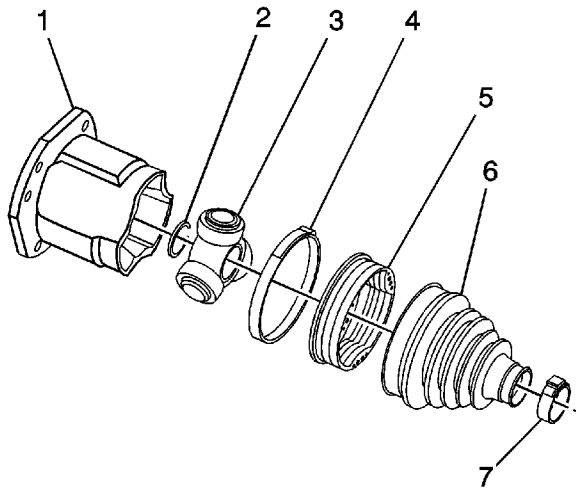
5. Install the new spider snap ring (2) with the [J 8059](#) or equivalent.



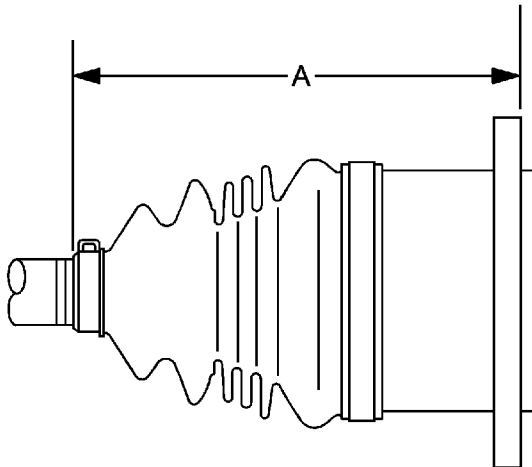
6. Install the tripod housing (1) over the spider assembly and seat it in the bushing.
7. Seat the small end of the tripod seal (6) into the groove on the wheel drive shaft.



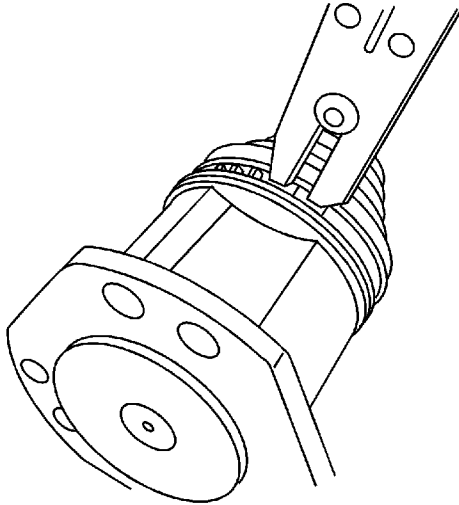
8. Compress the small clamp using the [J 43218](#) or equivalent, until dimension (A) is 0.5-1.6 mm (0.02-0.06 in).
9. Fill the joint and seal cavity with the grease supplied in the service kit.



10. Seat the large end of the tripot seal (6) into the groove on the tripot bushing.



11. Check the stroke position of the joint, and set it so the dimension (A) is 176 mm (6.92 in).
12. Vent the joint to relive excess trapped air.



13. Secure the large clamp using the [J 46588](#) or equivalent.
14. Install the wheel drive shaft. Refer to [Wheel Drive Shaft Replacement](#) .

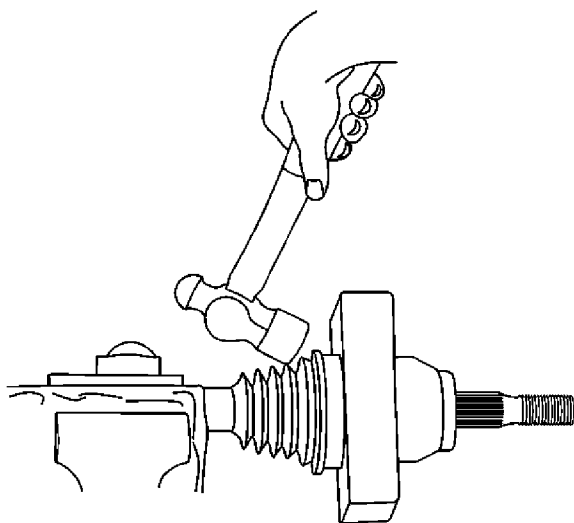
Wheel Drive Shaft Outer Joint and Boot Replacement

Tools Required

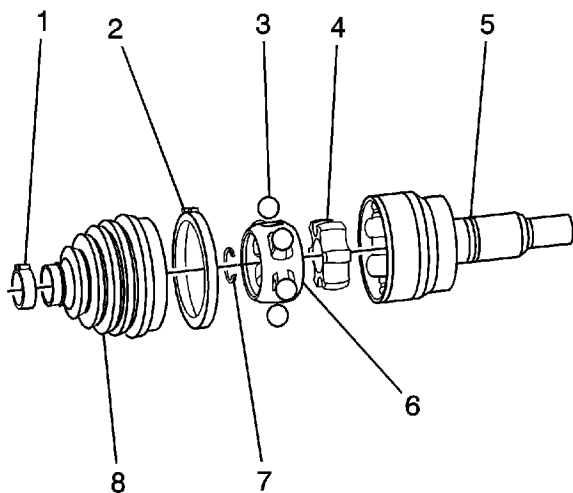
[J 43218](#) Clamp Pliers - Narrow Jaw

Removal Procedure

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

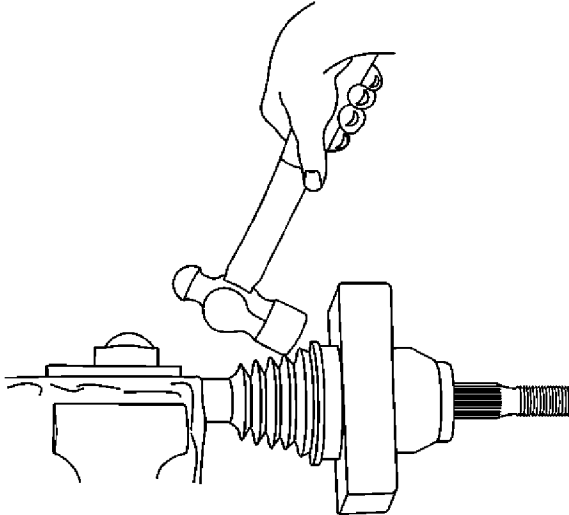


2. Wrap a shop towel around the axle shaft.
3. Place the wheel drive shaft horizontally in the bench vise.

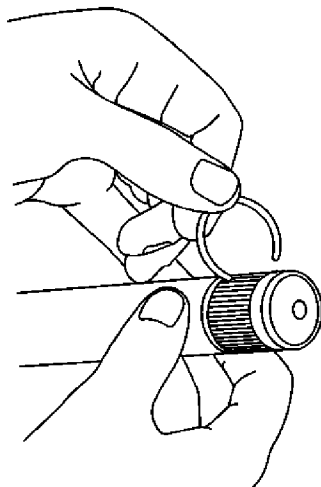




4. Remove the large seal clamp (2) and the small seal clamp (1). Use a side cutter or other suitable tool and discard the clamp.
5. Separate the seal (8) from the joint (5) outer race at the large end.

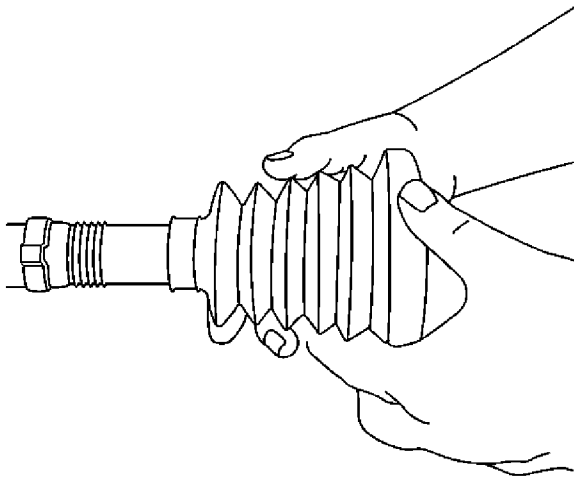


6. Position the seal behind the joint face.
7. Wipe the grease from the face of the joint inner race, cage, balls, etc.
8. Remove the outer joint from the wheel drive shaft bar.
 - 8.1. Have an assistant hold the joint housing.
 - 8.2. Position a wood block between the seal and the joint (along the joint face).
 - 8.3. Strike the wood block with a hammer to compress the axle shaft retaining ring.
 - 8.4. Continue to strike the wood block to remove the outer joint from the wheel drive shaft bar.



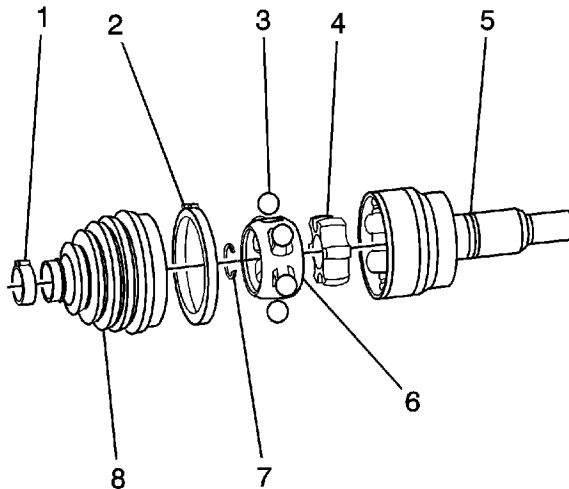


9. Remove the retaining ring from the wheel drive shaft bar.

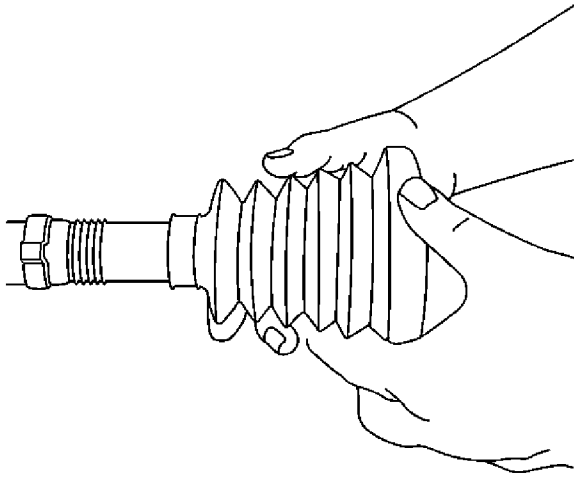


10. Remove the seal from the wheel drive shaft bar.

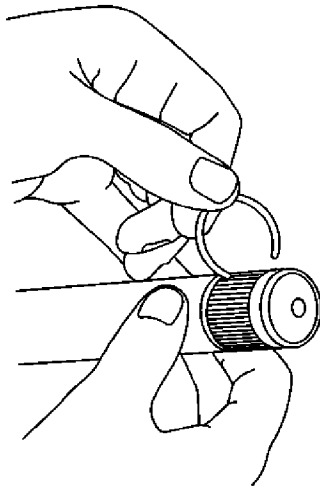
Installation Procedure



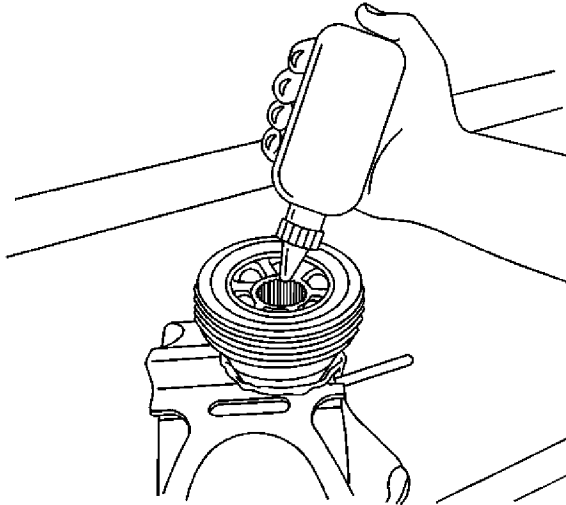
1. Install the large clamp (2) and the small clamp (1) onto the seal (8).



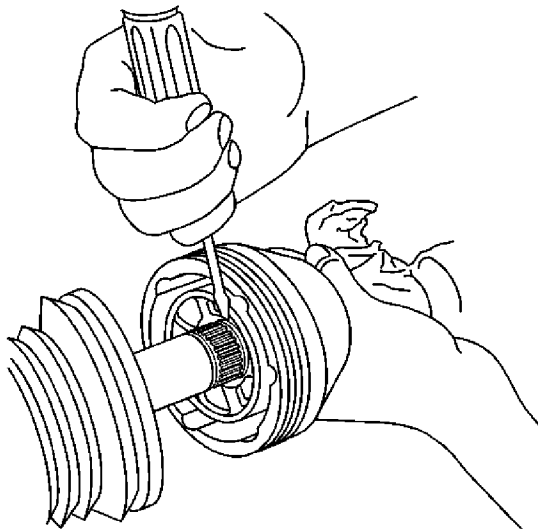
2. Install the seal onto the wheel drive shaft bar.



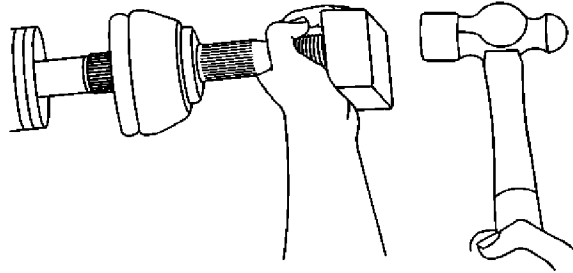
3. Install the retaining ring onto the wheel drive shaft bar.



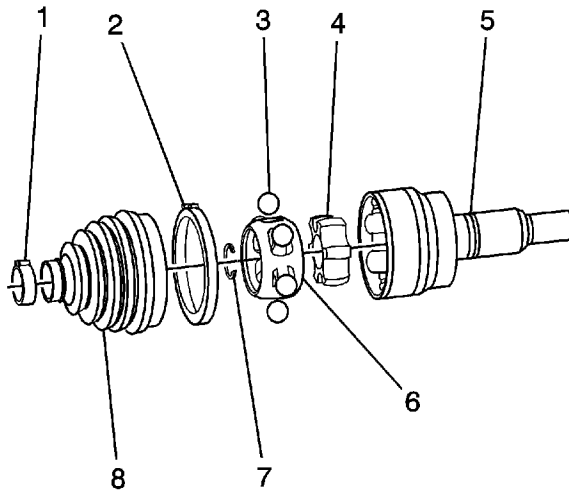
4. Insert the grease from the service kit into the outer joint.



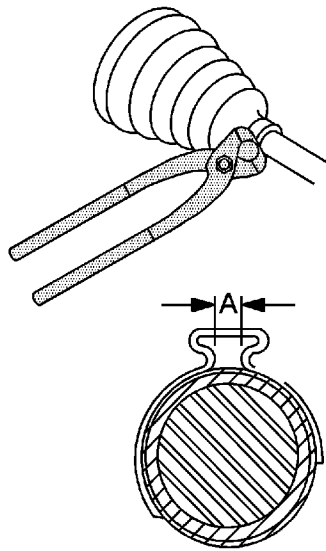
5. Position the outer joint horizontally.
6. Engage the inner race splines onto the axle shaft splines.
7. Compress the axle shaft retaining ring.
 - 7.1. Press one end of the retaining ring, using a flat-bladed screwdriver or equivalent tool, into the wheel drive shaft bar groove while firmly pressing the outer joint onto the axle shaft.
 - 7.2. Continue to work around the retaining ring until it is compressed.



8. Install the outer joint to the wheel drive shaft bar.
 - 8.1. Position a wood block squarely over the end of the outer joint threaded shaft.
 - 8.2. Use a hammer to drive the outer joint onto the bar.
 - 8.3. Continue to drive the outer joint until you feel the outer joint seat fully onto the wheel drive shaft bar.
 - 8.4. Inspect to be sure that the axle shaft and the inner race stepped surfaces are fully seated to each other.



9. Position the small end of the seal (8) over the mating groove in the wheel drive shaft bar.



10. Compress the small clamp using the [J 43218](#) or equivalent, until dimension (A) is 0.5-1.6 mm (0.02-0.06 in).
11. Vent the joint to relieve excess trapped air.
12. Compress the large clamp using the [J 43218](#) or equivalent, until dimension (A) is 0.5-1.6 mm (0.02-0.06 in).
13. Install the wheel drive shaft. Refer to [Wheel Drive Shaft Replacement](#) .