

2002-05 DRIVE AXLES

Axle Shafts - Front - Sedona

DESCRIPTION & OPERATION

NOTE: For exploded view of axle shaft components, see **Fig. 39** .

The axle shafts are the mechanical link that transfers the engine torque from the transaxle and differential to the front wheels. At the transaxle end, the axle shafts are splined to the differential side gears. Disengagement of the axle shaft from the gear is prevented by an expanding spring steel circlip. During the installation, the circlip compresses around the axle shaft as it enters the gear. Once through the differential gear, the circlip expands into a counterbore machined into the back side of the gear. The wheel end of the axle shafts are splined to the wheel hubs which are supported by tapered wheel bearings. Disengagement of the axle shaft from the wheel hub is prevented by a washer and an attaching nut. Backlash between the wheel hub and axle shaft is eliminated by the splines. The wheel hub splines are machined straight while the axle shaft splines are machined with a slight helical cut. To reduce torque steer, the right axle includes a center bearing and inner shaft mounted between axle shaft and the transaxle. Installed on the right axle shaft is a dynamic damper to reduce vibration. Constant Velocity (CV) joints are installed at both ends of the axle shafts. Two different types of CV joints are used. The inboard CV joints are repairable tripod joints. The outboard CV joints are non-repairable birfield joints. Tripod joints are used to prevent the transfer of engine vibration through the axle shafts to the vehicle body. CV joints are necessary because the axle shaft is required to transmit torque while compensating for front suspension movement. As the suspension moves, the CV joints allow the axle shaft to change length and operate smoothly through varying angles. For flexibility, birfield joints use ball bearings positioned by a cage. The tripod CV joint uses 3 balls mounted on needle bearings and a spider. In both types of joints, the outer race is machined into the CV joint housing. The tripod joints can be disassembled and serviced. Other than the CV joint boot, the outboard birfield joint is serviced only as an assembly attached to the axle shaft.

TROUBLE SHOOTING

NOTE: For additional information, see **BASIC TROUBLE SHOOTING** article in **GENERAL INFORMATION**.

AXLE SHAFT TROUBLE SHOOTING DIAGNOSIS

Symptom	Probable Cause	Remedy
Vehicle Pulls To One Side While Driving On Straight, Level Road	Scoring Of Axle Shaft Ball Joint	Replace
.....	Wear, Rattle Or Scoring Wheel Bearing	Replace
.....	Defective Front Suspension & Steering	Adjust Or Replace
.....	Incorrect Front Wheel Bearing Preload Adjustment	Adjust Or Replace
.....	Brake Dragging	Adjust Or Replace

Vibration	Wear, Damage Or Bending Of Axle Shaft	Replace
.....	Axle Shaft Rattle & Hub Serration	Replace
.....	Wear, Rattle Or Sintering Of Wheel Bearing	Replace
Shimmy	Defective Wheel Balance	Adjust Or Replace
.....	Defective Front Suspension & Steering	Adjust Or Replace
Excessive Noise	Wear, Damage Or Bending Of Axle Shaft	Replace
.....	Rattle Of Axle Shaft & Hub Serration	Replace
.....	Incorrect Front Wheel Bearing Preload Adjustment	Adjust Or Replace
.....	Insufficient Grease In Ball Joint	Replenish Or Replace
.....	Rattle Of Axle Shaft & Side Gear Serration	Replace
.....	Insufficient Grease In Wheel Bearing	Replenish Or Replace
.....	Excessive Backlash On Spline	Replace
.....	Wear, Rattle Or Scoring Of Wheel Bearing	Replace
.....	Loose Hub Nut	Adjust Or Replace
.....	Defective Front Suspension & Steering	Adjust Or Replace

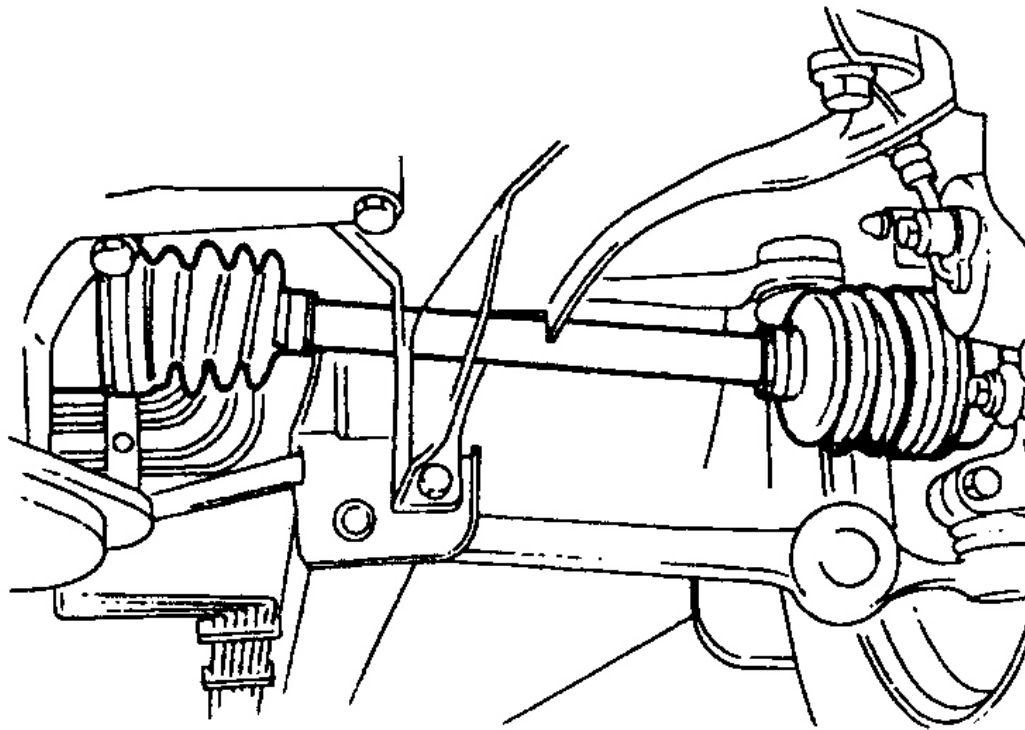
REMOVAL, DISASSEMBLY, INSPECTION, REASSEMBLY & INSTALLATION

NOTE: For exploded view of axle shaft assemblies, see **Fig. 21** .

AXLE SHAFTS

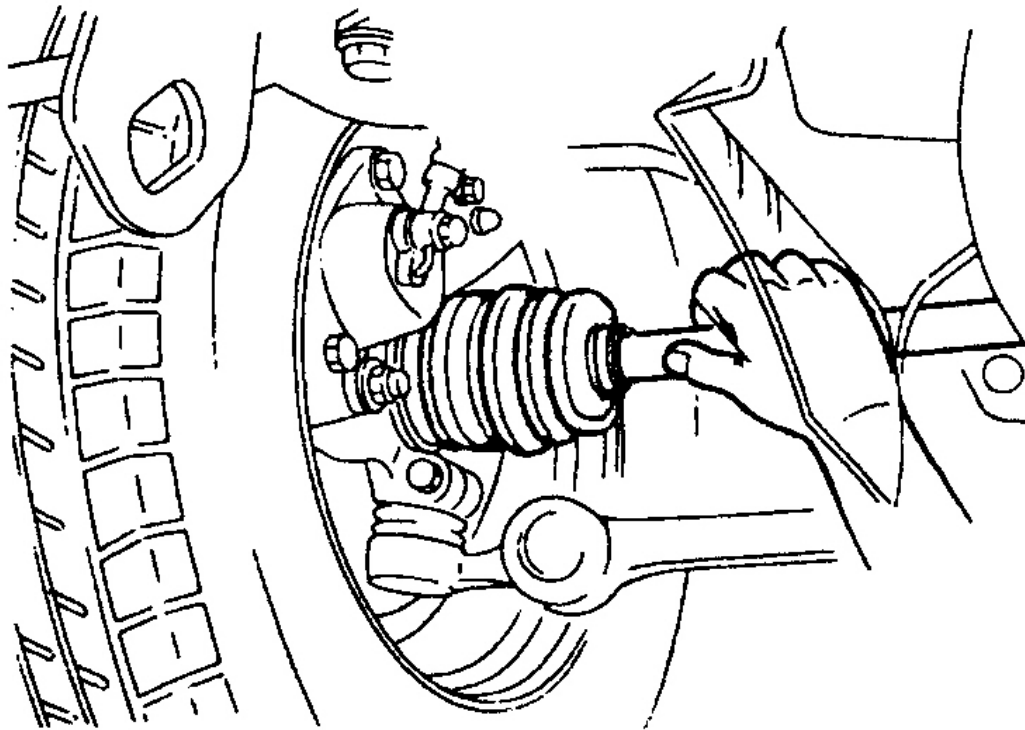
Preliminary Inspection

1. Check the boots on the axle shaft for cracks, damage, grease leakage or loose boot bands. If any damage is found, replace the boot. See **Fig. 1** .
2. Check for spline looseness. Turn the axle shaft by hand and check that the spline and joint are not excessively loose. If damage is found or joint is loose, replace or repair. See **Fig. 2** .
3. Check that the axle shaft is not twisted or cracked. Replace if necessary.



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Fig. 1: Inspecting Axle Shaft Boots
Courtesy of KIA MOTORS AMERICA, INC.



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Fig. 2: Inspecting Axle Shaft Splines & Joints
Courtesy of KIA MOTORS AMERICA, INC.

Removal (Left Side)

For exploded view of left front assembly, see **Fig. 9** .

1. Jack up the front of the chassis and support it with safety stands.
2. Drain the transaxle oil.
3. Remove the front wheel and tire assembly.
4. Remove the tie rod nut and disconnect the tie rod end from the knuckle.
5. Remove the control link nut and disconnect the control link from the stabilizer bar.
6. Raise the axle shaft lock nut tab and loosen the lock nut, but do not remove it. See **Fig. 3** .
7. Remove the ball joint clamp bolt and nut from the lower arm. See **Fig. 4** .

NOTE: **Be careful not to damage the ball joint dust boot.**

8. Pry down the lower control arm and disconnect the ball joint from the knuckle. See **Fig. 5** .

NOTE: **Be careful not to damage the transaxle oil seal.**

9. Pry the axle shaft from the transaxle. See **Fig. 6** .

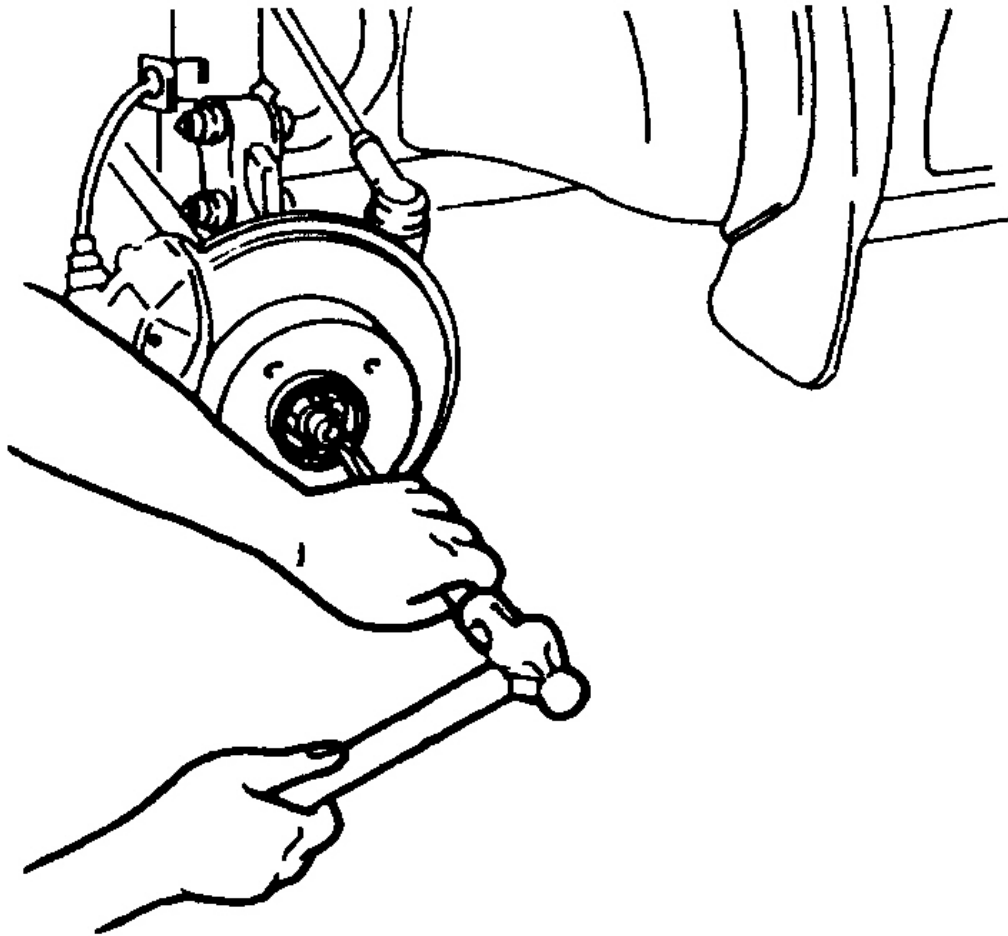
NOTE: **To help separate the axle shaft from the transaxle, pull the wheel hub outward. Do not use too much force at once, increase the force gradually. If the shaft is pulled out too quickly, the oil seal may be damaged.**

10. Remove the axle shaft lock nut and discard.

NOTE: **If axle shaft is frozen in front wheel hub, spray a penetrating solvent into splined area and reinstall the lock nut so that it is flush with the end of the shaft. Tap the nut with a brass hammer to remove the axle shaft from the wheel hub. See **Fig. 7** . Be careful not to damage the wheel hub grease seal.**

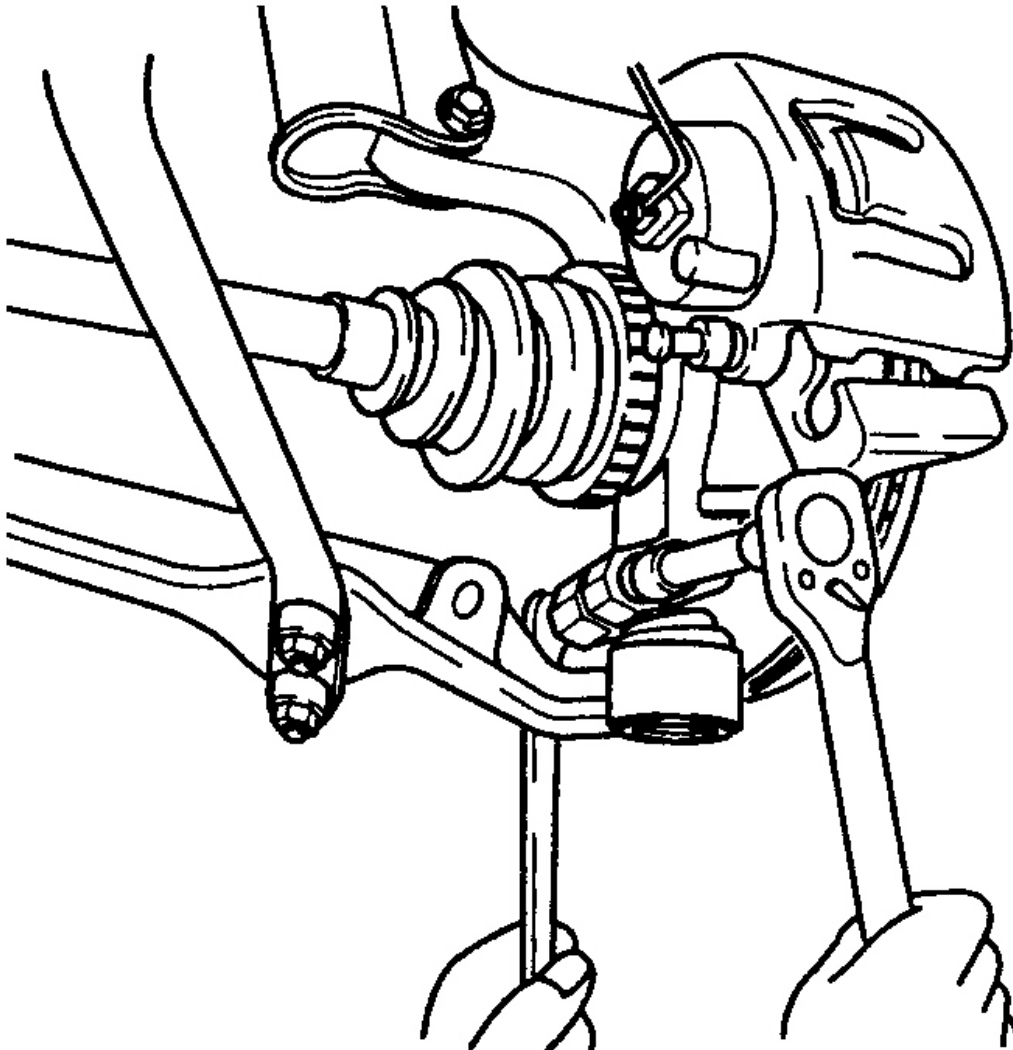
11. Remove the axle shaft from the wheel hub. See **Fig. 8** .

12. Remove the axle shaft assembly from the vehicle. Discard the tripod housing circlip.



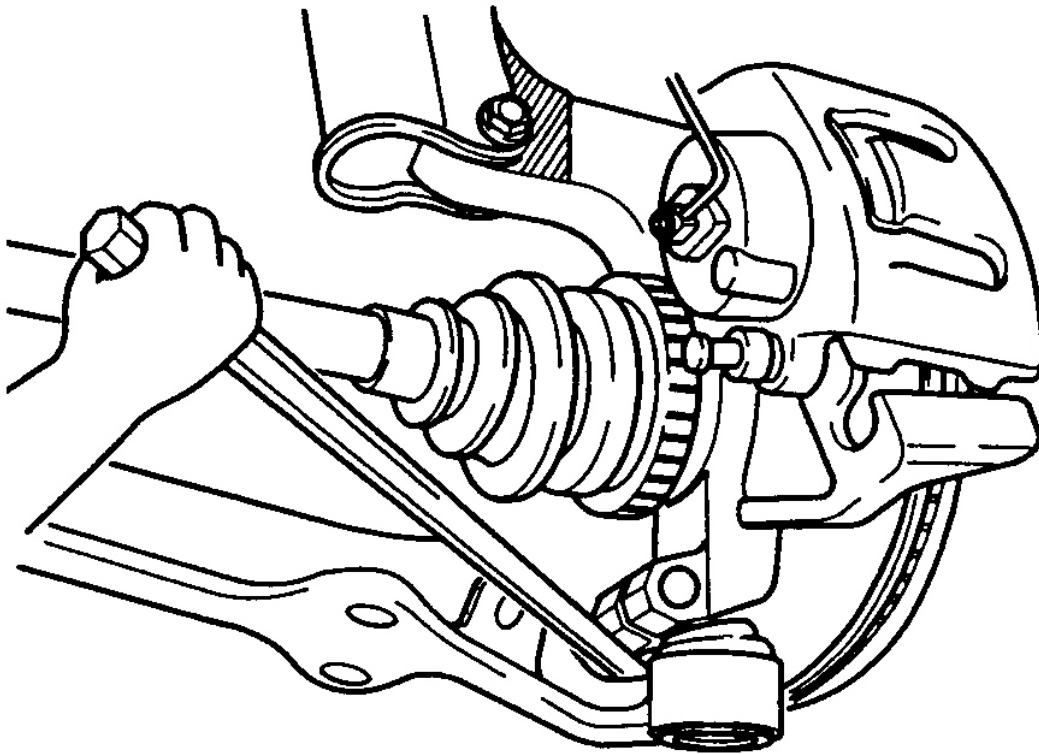
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Fig. 3: Loosening Axle Shaft Lock Nut
Courtesy of KIA MOTORS AMERICA, INC.



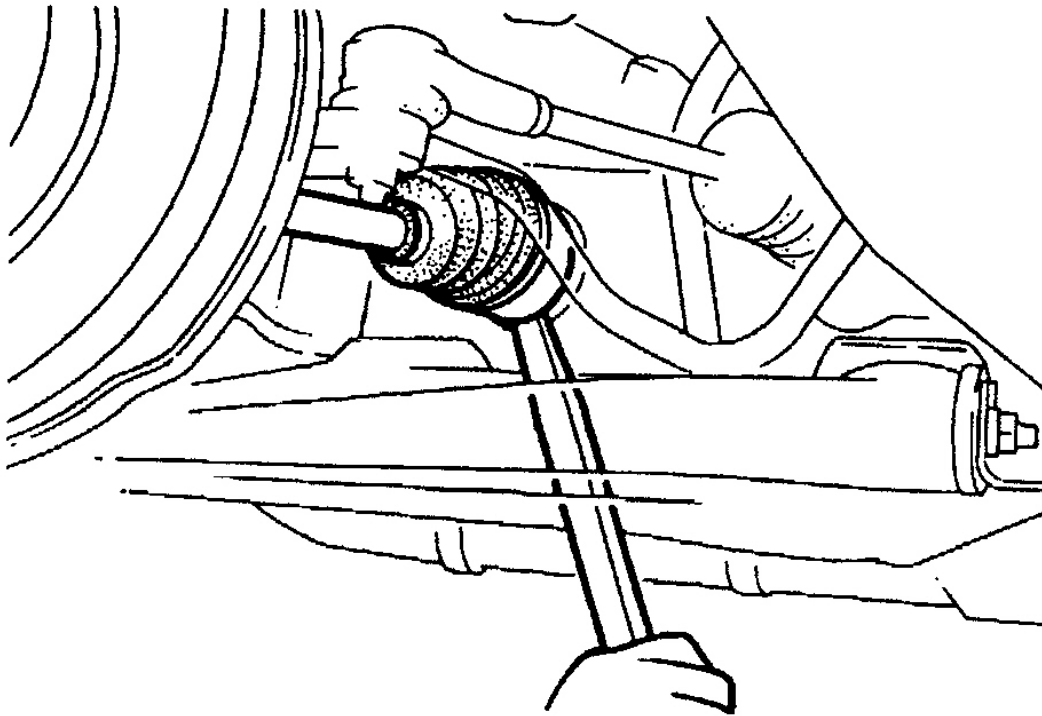
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Fig. 4: Removing & Installing Lower Support Arm Clamp Bolt & Nut
Courtesy of KIA MOTORS AMERICA, INC.



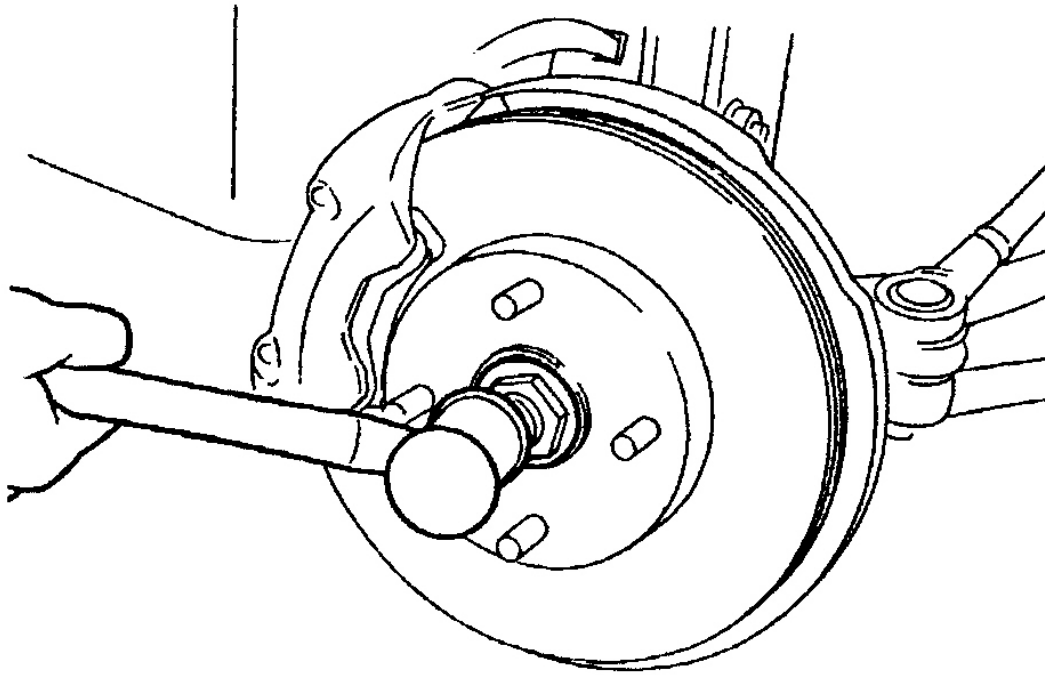
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Fig. 5: Removing Lower Control Arm From Knuckle
Courtesy of KIA MOTORS AMERICA, INC.



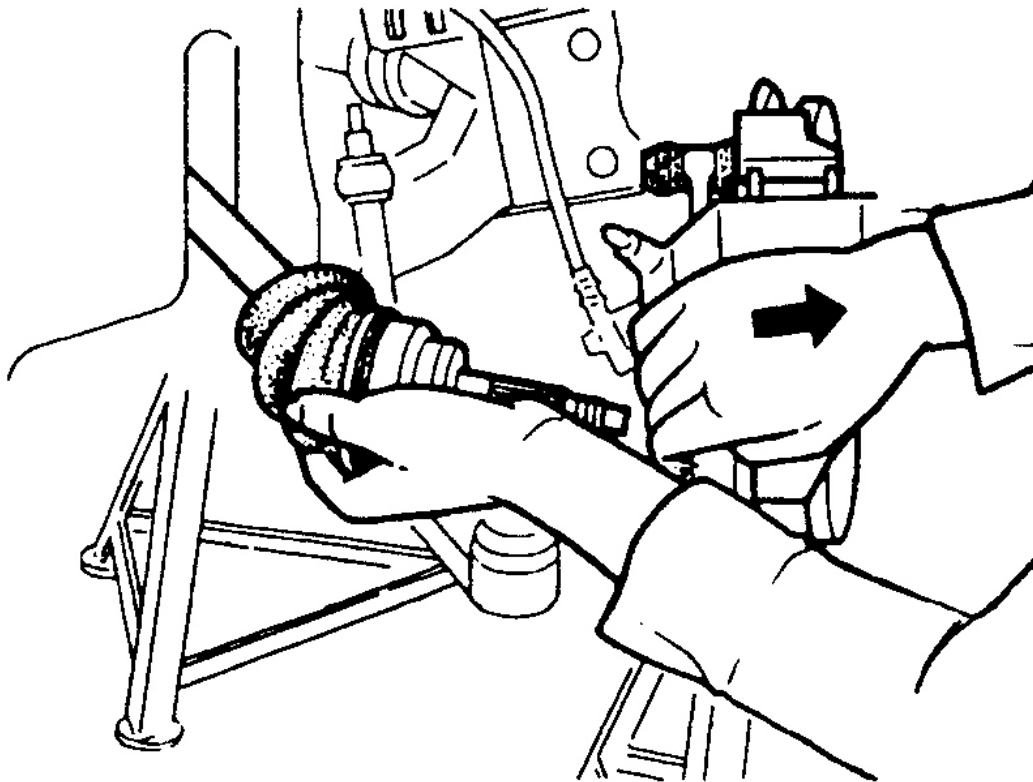
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Fig. 6: Removing Axle Shaft From Transaxle
Courtesy of KIA MOTORS AMERICA, INC.



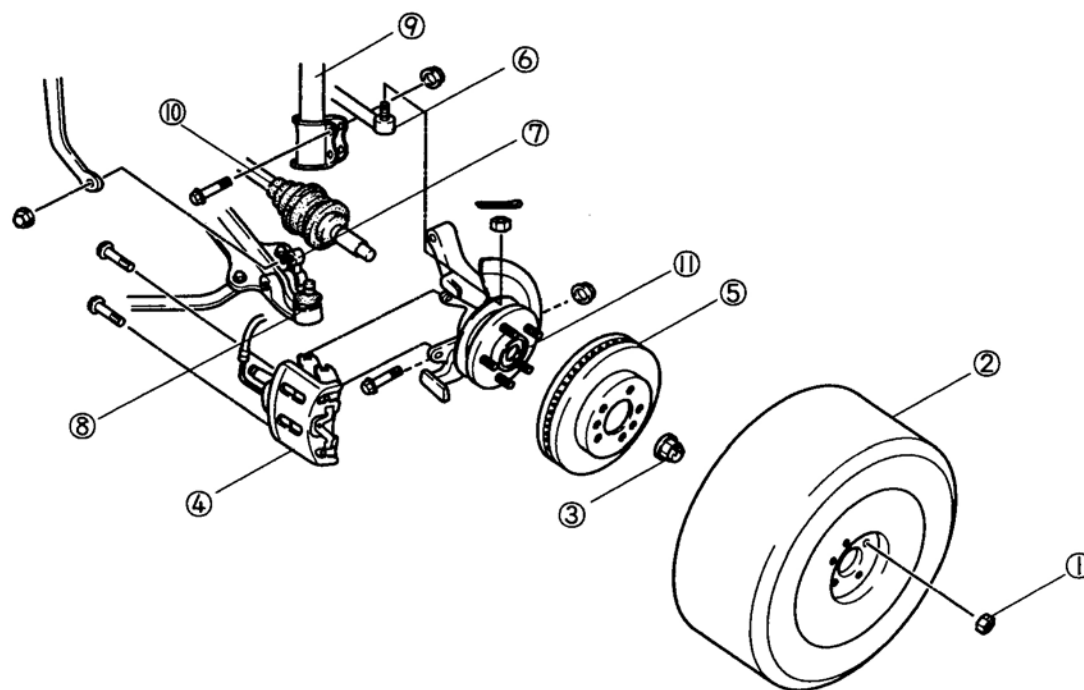
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Fig. 7: Driving Axle Shaft From Wheel Hub
Courtesy of KIA MOTORS AMERICA, INC.



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Fig. 8: Removing Axle Shaft From Wheel Hub
Courtesy of KIA MOTORS AMERICA, INC.



- | | |
|---------------------------|---------------------------------|
| 1. Wheel nuts | 7. Stabilizer control link |
| 2. Wheel and tire | 8. Lower control arm ball joint |
| 3. Lock nut | 9. Suspension assembly |
| 4. Brake caliper assembly | 10. Axle shaft |
| 5. Disc rotor | 11. Knuckle |
| 6. Tie rod end | |

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Fig. 9: Exploded View Of Left Front Assembly
 Courtesy of KIA MOTORS AMERICA, INC.

Removal (Right Side)

1. Jack up the front of the chassis and support it with safety stands.
2. Drain the transaxle oil.
3. Remove the front wheel and tire assembly.
4. Remove the tie rod nut and disconnect the tie rod end from the knuckle.
5. Remove the control link nut and disconnect the control link from the stabilizer bar.
6. Raise the axle shaft lock nut tab and loosen the lock nut, but do not remove it. See **Fig. 3**.
7. Remove the ball joint clamp bolt and nut from the lower arm. See **Fig. 4**.

NOTE: Be careful not to damage the ball joint dust boot.

8. Pry down the lower control arm and disconnect the ball joint from the knuckle. See **Fig. 5**.

NOTE: Be careful not to damage the center shaft grease seal.

9. Drive the axle shaft from the center shaft. See **Fig. 10** .

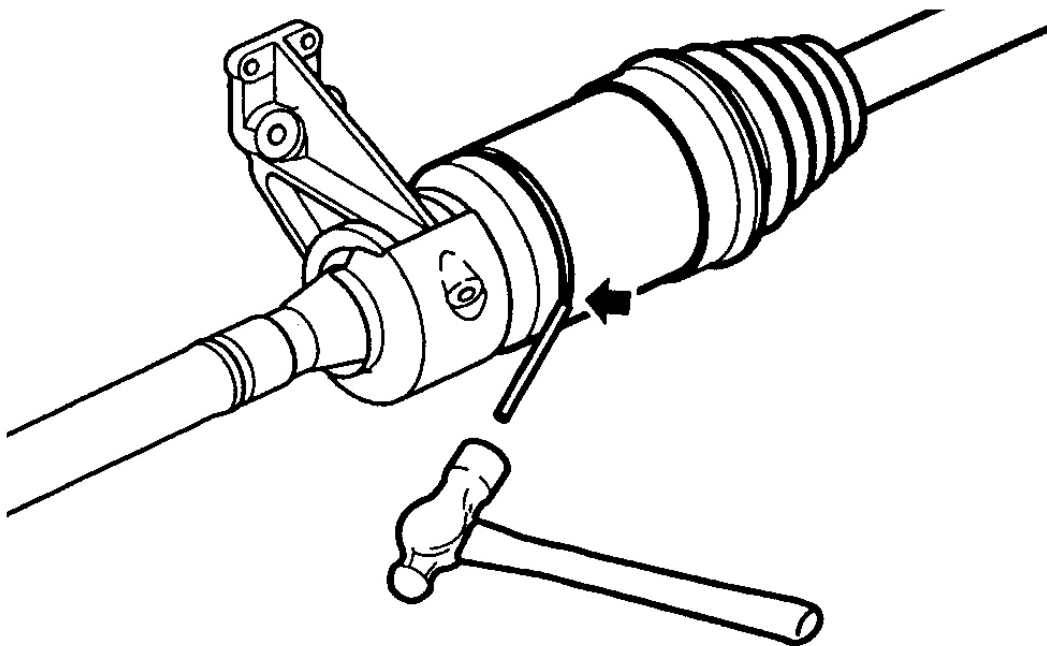
NOTE: To help separate the axle shaft from the center bearing, pull the wheel hub outward.

10. Remove the axle shaft lock nut and discard.

NOTE: If axle shaft is frozen in front wheel hub, spray a penetrating solvent into splined area and reinstall the lock nut so that it is flush with the end of the shaft. Tap the nut with a brass hammer to remove the axle shaft from the wheel hub. See **Fig. 7** . Be careful not to damage the wheel hub grease seal.

11. Remove the axle shaft from the wheel hub. See **Fig. 8** .

12. Remove the axle shaft assembly from the vehicle. Discard the tripod housing circlip.



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Fig. 10: Removing Axle Shaft From Center Bearing
Courtesy of KIA MOTORS AMERICA, INC.

Disassembly (Axle Shafts)

NOTE: For exploded view of axle shaft assemblies, see **Fig. 21** .

The tripod joint can be disassembled and serviced. Other than the CV joint boot, the outboard birfield joint is serviced only as an assembly attached to the axle shaft. If necessary, the birfield joint boot can be removed and replaced and an inspection may be performed if a problem is suspected. Do not allow dust or foreign material to enter the joint assembly during disassembly or inspection. Always replace the circlip on the tripod housing.

1. Clamp axle shaft in a soft-jawed vise.
2. Remove the large boot clamp. See **Fig. 11** .
3. Pry up the locking clip of the small boot retention band with a screwdriver. Remove the band with pliers. Slide the boot along the shaft to expose the joint. See **Fig. 12** .
4. Remove the wire ring bearing retainer. See **Fig. 13** .

NOTE: Mark the tripod joint and tripod housing locations with paint, do not use a punch.

5. Install alignment marks on the tripod joint and tripod housing. See **Fig. 14** .
6. Remove the tripod housing. See **Fig. 15** .
7. Install alignment marks on the axle shaft end and tripod joint.
8. Remove the tripod joint retaining ring. See **Fig. 16** .

CAUTION: Do not tap on the rollers.

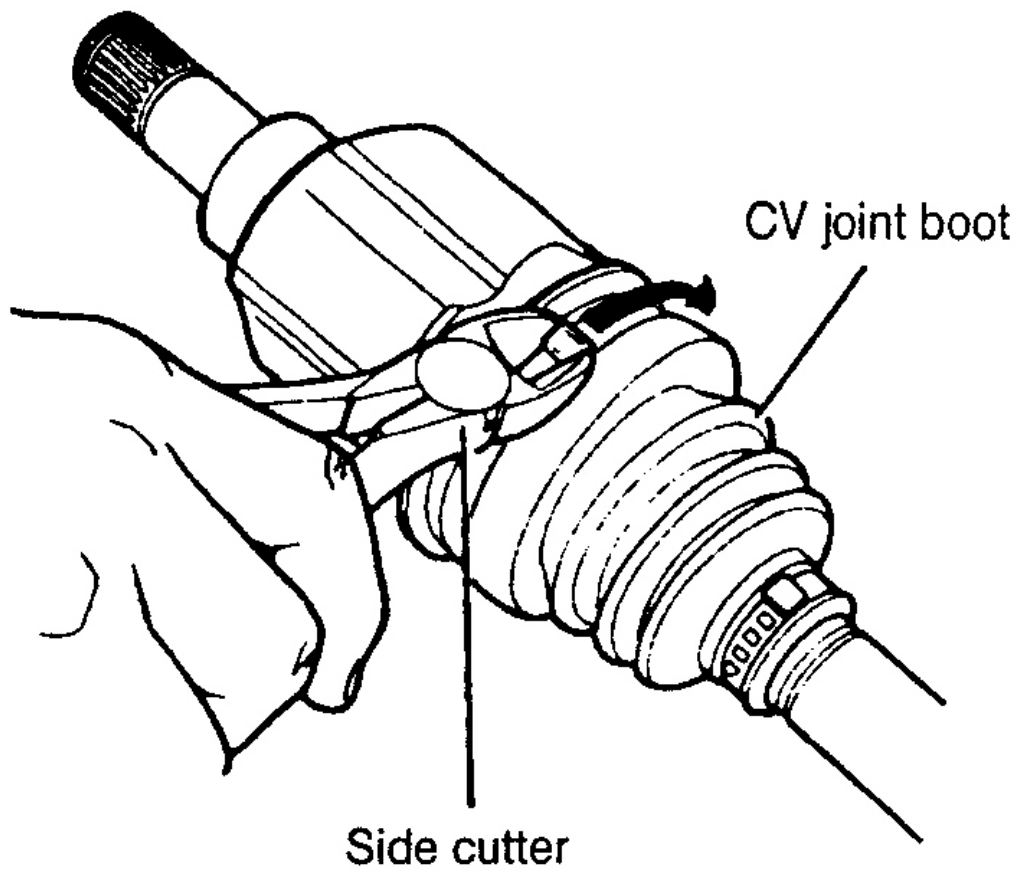
9. Using appropriate drive tool and hammer, remove the tripod joint assembly. See **Fig. 17** .

NOTE: If the CV joint boots are to be reused, clean and wrap the axle shaft splines with tape before removing boots from the shaft.

10. Remove the tripod joint boot from the axle shaft. See **Fig. 18** .

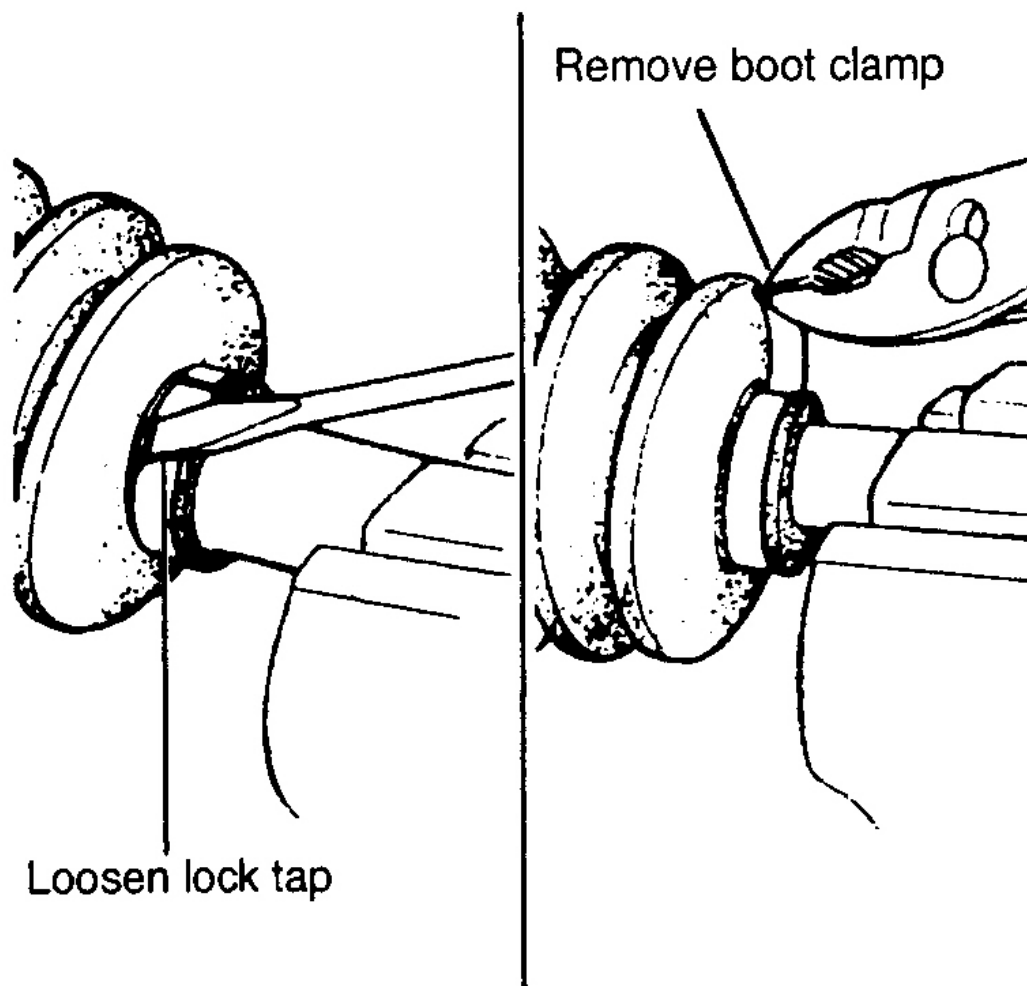
NOTE: Do not remove the dynamic damper unless necessary. If the right side outboard birfield joint boot is torn or another problem is suspected, removal of the dynamic damper (if equipped) and outer birfield joint boot may be performed. If removal of the dynamic damper is necessary, note the direction and position of the damper for reassembly reference.

11. Remove dynamic damper band and damper. See **Fig. 19** .
12. Remove the birfield joint boot bands. See **Fig. 20** .
13. Remove the birfield boot from the axle shaft.



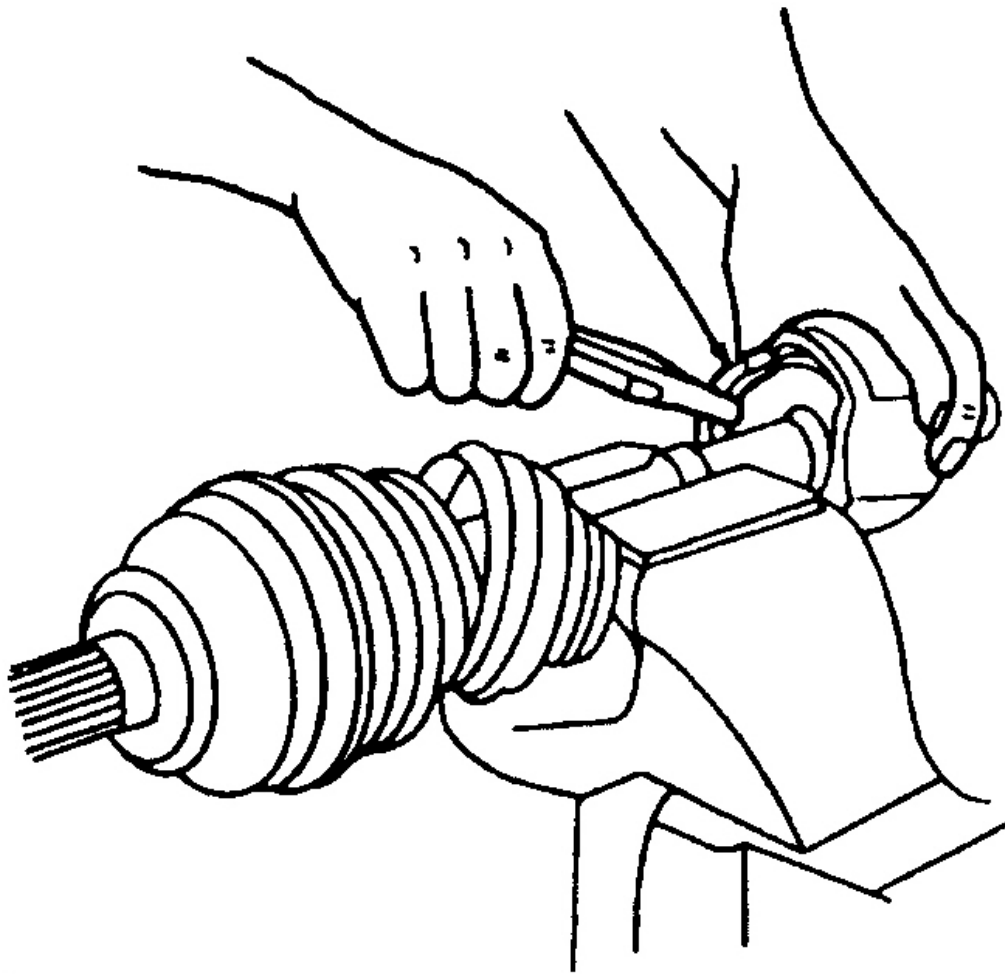
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Fig. 11: Removing Large Boot Clamp
Courtesy of KIA MOTORS AMERICA, INC.



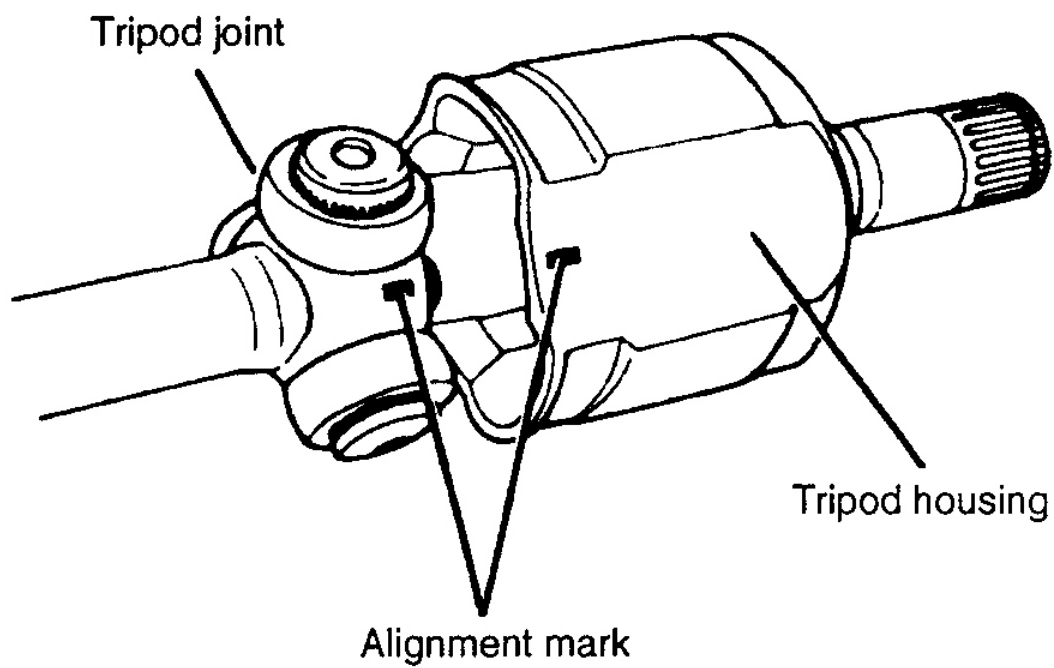
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Fig. 12: Removing Small Boot Clamp
Courtesy of KIA MOTORS AMERICA, INC.



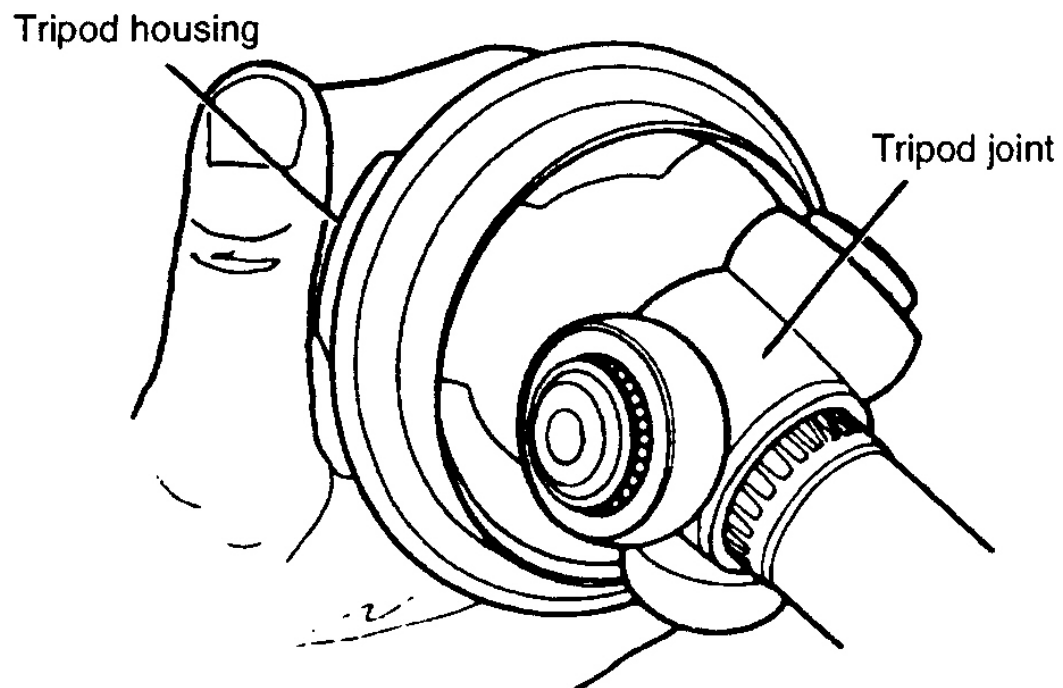
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Fig. 13: Removing & Installing Wire Ring Bearing Retainer
Courtesy of KIA MOTORS AMERICA, INC.



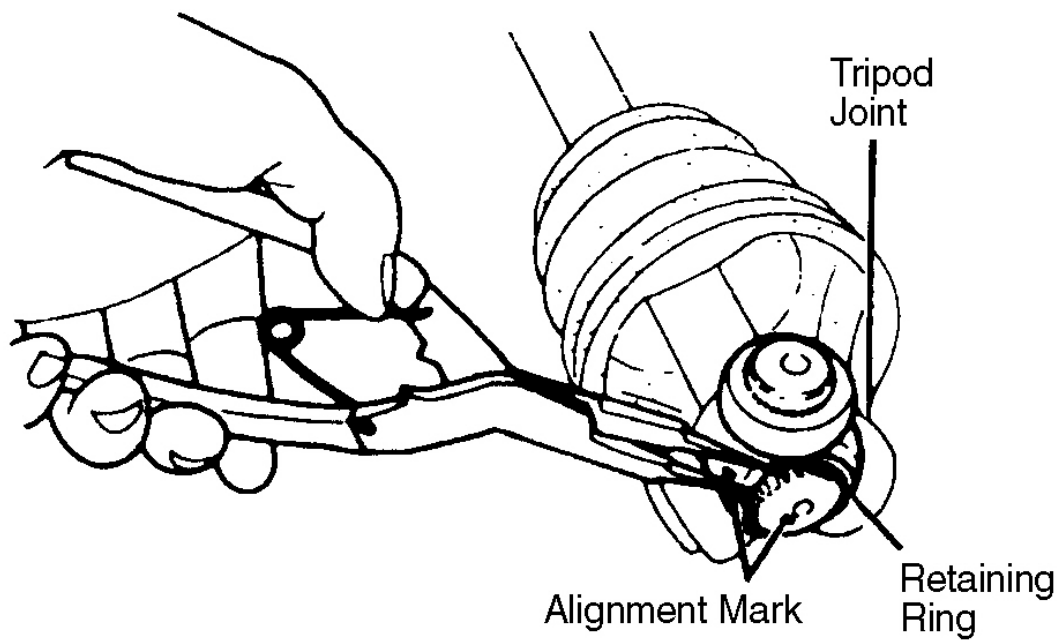
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Fig. 14: Marking Tripod Joint & Housing
Courtesy of KIA MOTORS AMERICA, INC.



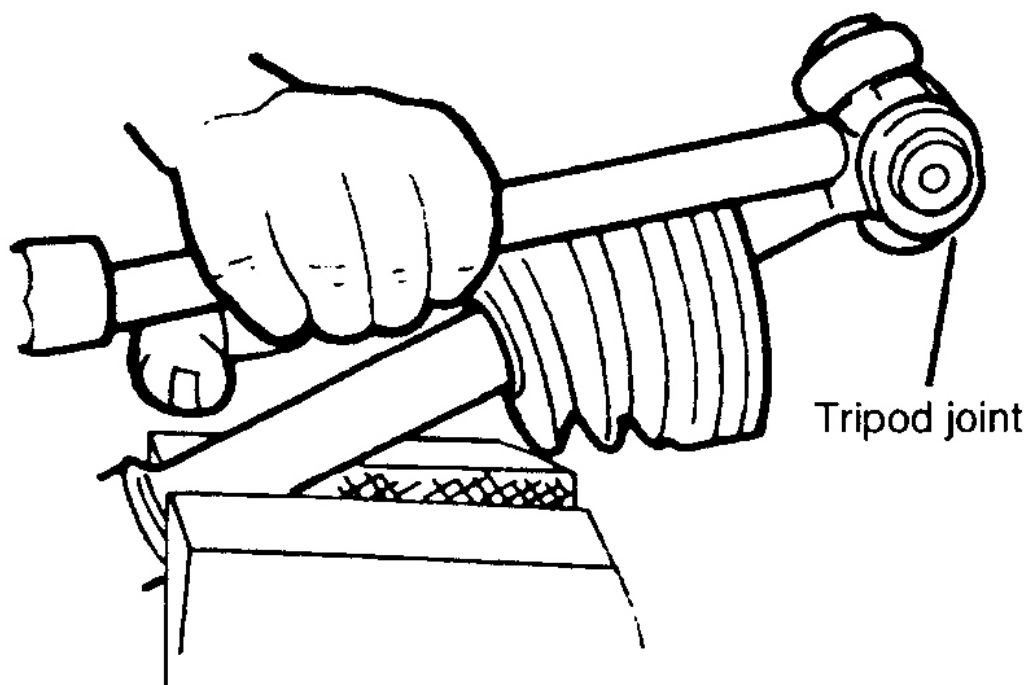
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Fig. 15: Removing Tripod Housing
Courtesy of KIA MOTORS AMERICA, INC.



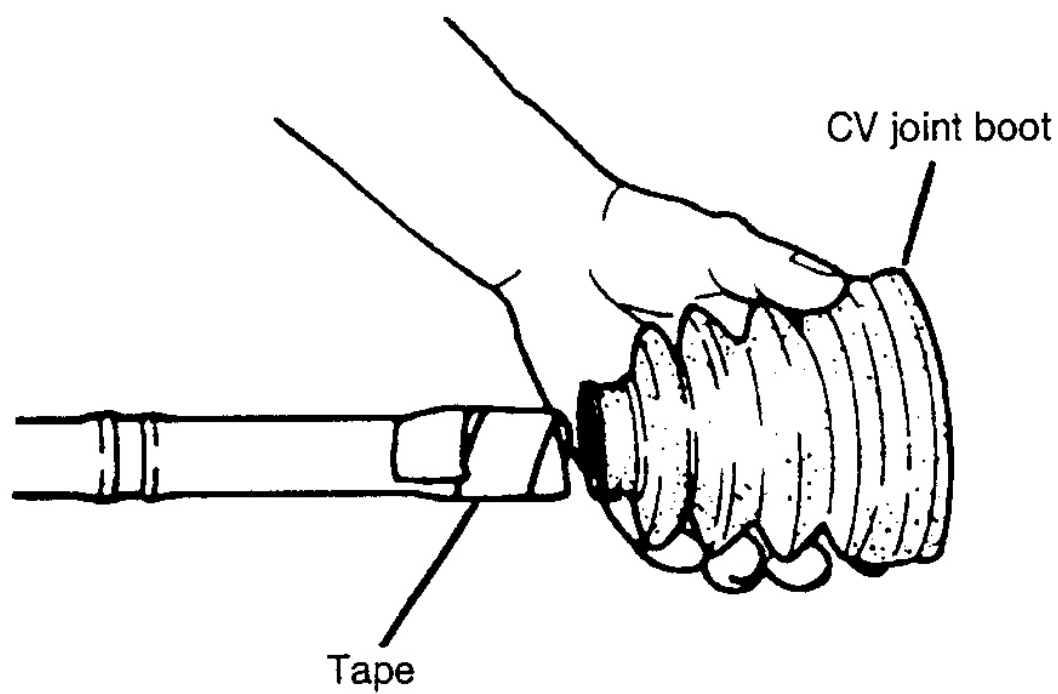
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Fig. 16: Removing Tripod Joint Retaining Ring
Courtesy of KIA MOTORS AMERICA, INC.



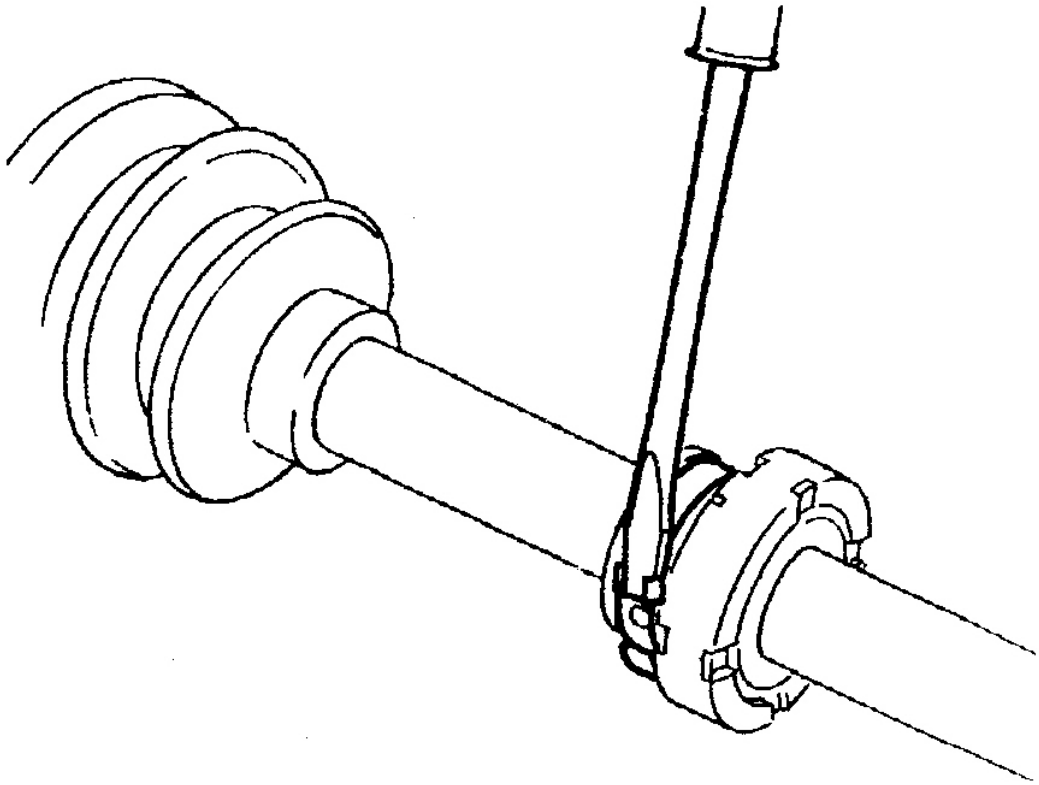
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Fig. 17: Removing Tripod Joint From Axle Shaft
Courtesy of KIA MOTORS AMERICA, INC.



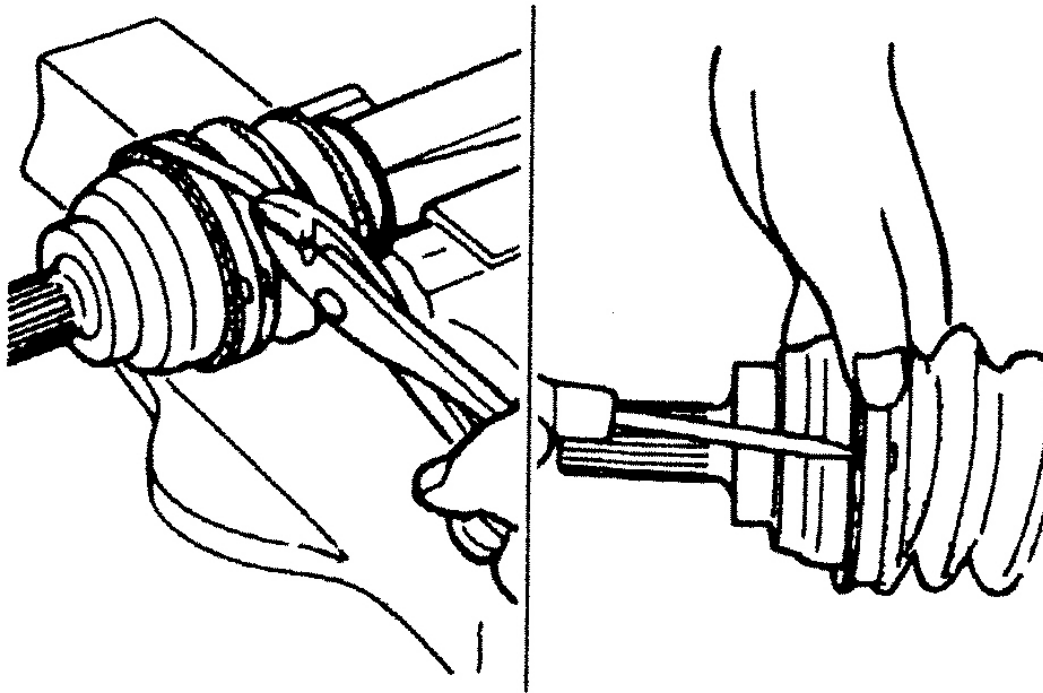
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Fig. 18: Removing Axle Shaft Boot
Courtesy of KIA MOTORS AMERICA, INC.



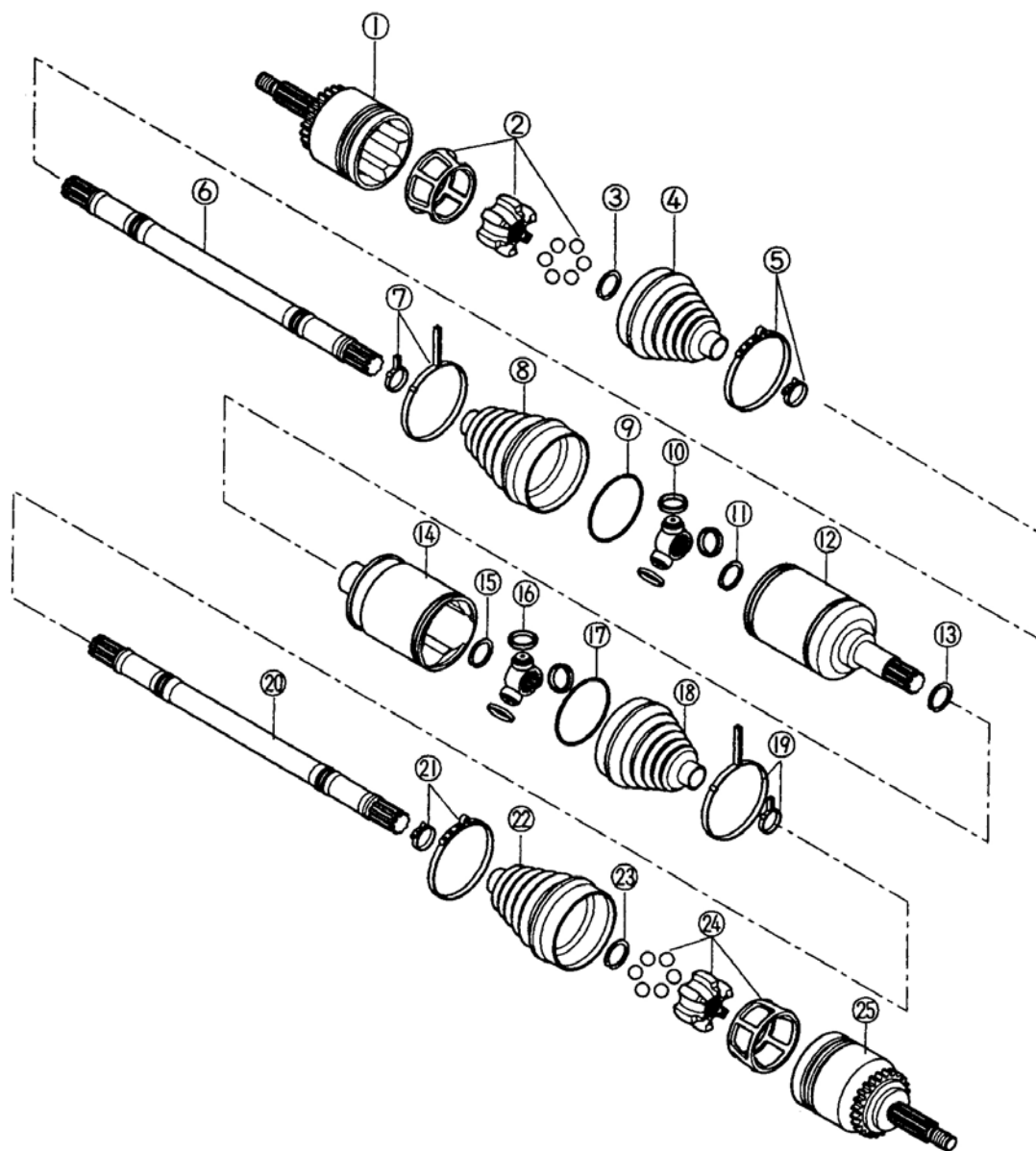
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Fig. 19: Removing Dynamic Damper Band Clamp
Courtesy of KIA MOTORS AMERICA, INC.



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Fig. 20: Removing & Installing Large Boot Band
Courtesy of KIA MOTORS AMERICA, INC.



AXLE SHAFT (LH)

1. BJ assembly
2. BJ inner race and ball
3. Retaining ring
4. BJ boot
5. BJ boot band
6. Axle shaft(LH)
7. TJ boot band
8. TJ boot
9. Wire ring bearing retainer
10. Tripod assembly
11. Retaining ring
12. TJ assembly
13. Circlip

AXLE SHAFT (RH)

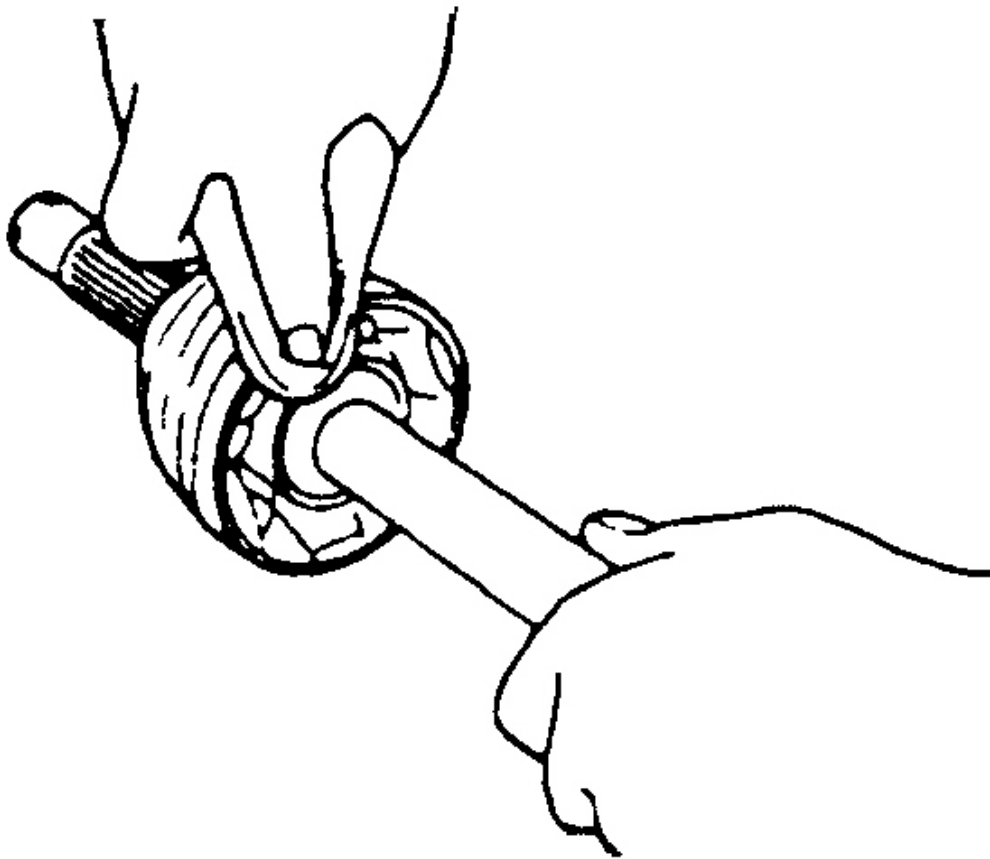
14. TJ assembly
15. Retaining ring
16. Tripod assembly
17. Wire ring bearing retainer
18. TJ boot
19. TJ boot band
20. Axle shaft(RH)
21. BJ boot band
22. BJ boot
23. Retaining ring
24. BJ inner race and ball
25. BJ assembly

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Fig. 21: Exploded View Of Axle Shaft Assemblies

Inspection (Axle Shafts)

1. Check the axle shaft splines for wear, damage, bending or corrosion. See **Fig. 22** .
2. Check for twisted or cracked axle shaft.
3. Check for entry of water and/or foreign material into birfield joint components.
4. Check the tripod joint assembly for roller rotation, wear or corrosion.
5. Check the groove inside tripod housing for wear or corrosion.
6. Check the dynamic damper for damage or cracking. Replace components as necessary.



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Fig. 22: Inspecting Axle Shaft

Reassembly (Axle Shafts)

NOTE: The birfield joint and tripod joint CV boots are different. To identify the boots correctly, measure the diameter of the large end of the CV boot. The birfield joint boot measures 3.89" (98.8 mm), the tripod joint boot measures 3.84" (97.5 mm).

1. Wrap tape around the tripod end axle shaft splines to prevent damage to boots.

NOTE: Always use new bands. Bands should be installed so that their pointed ends initially point forward in the direction of rotation.

2. Install new boot clamps. Wrap the clamps around the boots in a clockwise direction, pull tight with pliers, and bend the locking tabs to secure into position.
3. Apply grease to the axle shaft and install the birfield joint boot and bands onto the axle shaft. Do not tighten bands at this time.
4. Add recommended amount of specified grease to the inside of the birfield joint and boot. For recommended amounts, see **BOOT GREASE RECOMMENDATIONS** table.
5. Position the birfield joint boot. Make sure the boot is fully seated in the grooves in the axle shaft and birfield joint.
6. Fold bands back and pull on ends with pliers to tighten. Lock ends of bands by bending locking clips. See **Fig. 20** .

NOTE: If axle shaft is not equipped with a dynamic damper, go to step 9.

7. Install the dynamic damper. Keeping the birfield joint and axle shaft in a straight line, install the dynamic damper in the same direction and position that it was removed.
8. Tighten the dynamic damper band clamp.
9. Install tripod joint boot and bands onto the axle shaft. Do not tighten bands at this time.
10. Remove tape from the splines.
11. Using appropriate drive tool and hammer, install the tripod assembly onto the axle shaft. See **Fig. 23** .
12. Install the tripod assembly retaining ring. See **Fig. 24** .
13. Add recommended amount of specified grease to the inside of the tripod joint and boot. See **Fig. 25** . For recommended amounts, see **BOOT GREASE RECOMMENDATIONS** table.
14. Install the tripod housing over the tripod joint and install the wire ring bearing retainer. See **Fig. 13** .
15. Position the tripod joint boot. Make sure the boot is fully seated in the grooves in the axle shaft and the tripod housing.
16. Insert a dulled screwdriver blade between the boot and the tripod housing to allow trapped air to escape from the boot. See **Fig. 26** .
17. Measure and adjust the axle shaft to specified length. See **Fig. 27** . For specified length, see **AXLE**

SHAFT LENGTH table.

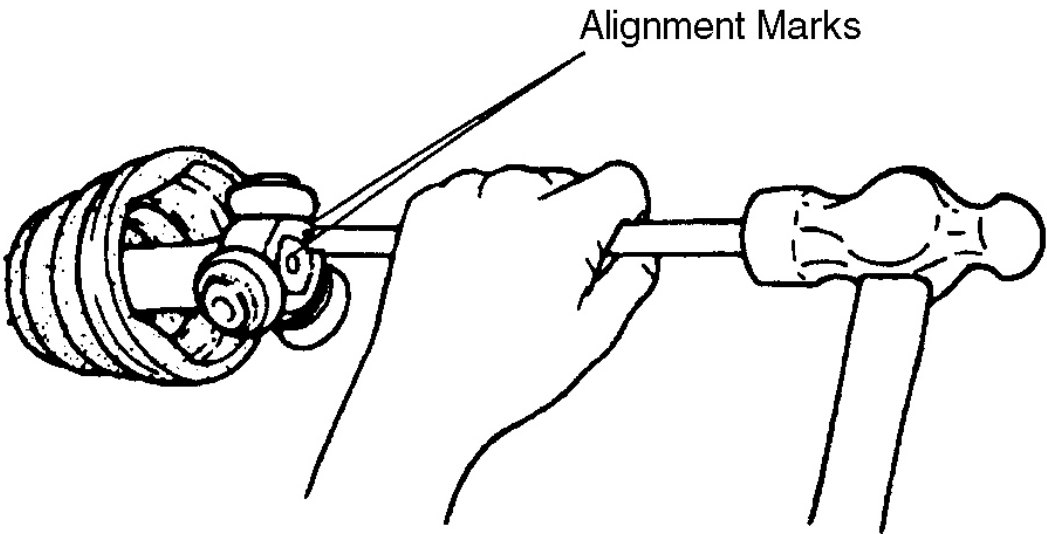
- 18. Fold bands back and pull on ends with pliers to tighten. Lock ends of bands by bending locking clips. See **Fig. 20** .
- 19. After reassembling the axle shaft, check that the joints and boots move freely and smoothly. See **Fig. 28** . Check the boots for any grease leaks or damage.

BOOT GREASE RECOMMENDATIONS

Application ⁽¹⁾	In Joint & Boot - oz. (gm)
Birfield Joint	7.75 (219.7)
Tripod Joint	7.50 (212.6)
(1) Use grease provided in boot replacement kit.	

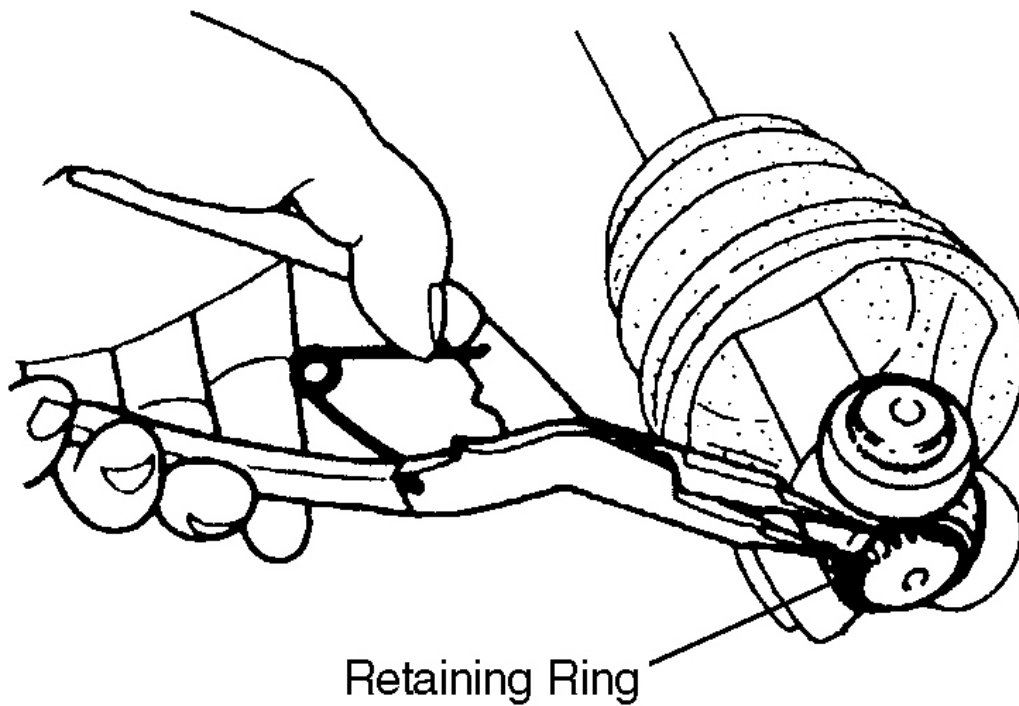
AXLE SHAFT LENGTH

Application	Left Shaft - In. (mm)	Right Shaft - In. (mm)
All Models	27.39 (695.7)	27.21 (691.1)



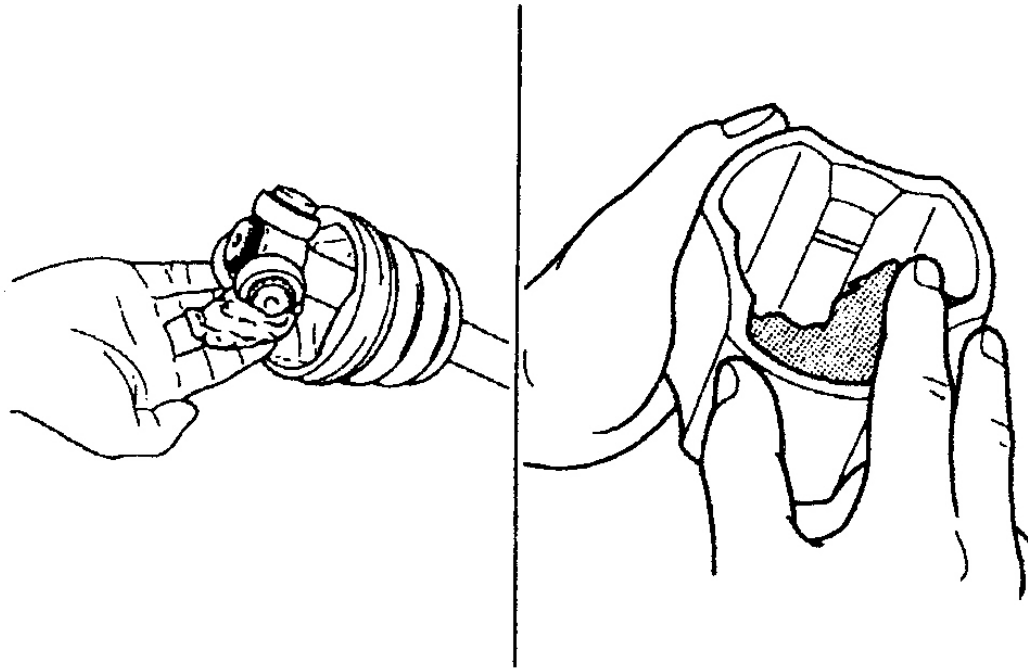
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Fig. 23: Aligning & Installing Tripod Assembly
Courtesy of KIA MOTORS AMERICA, INC.



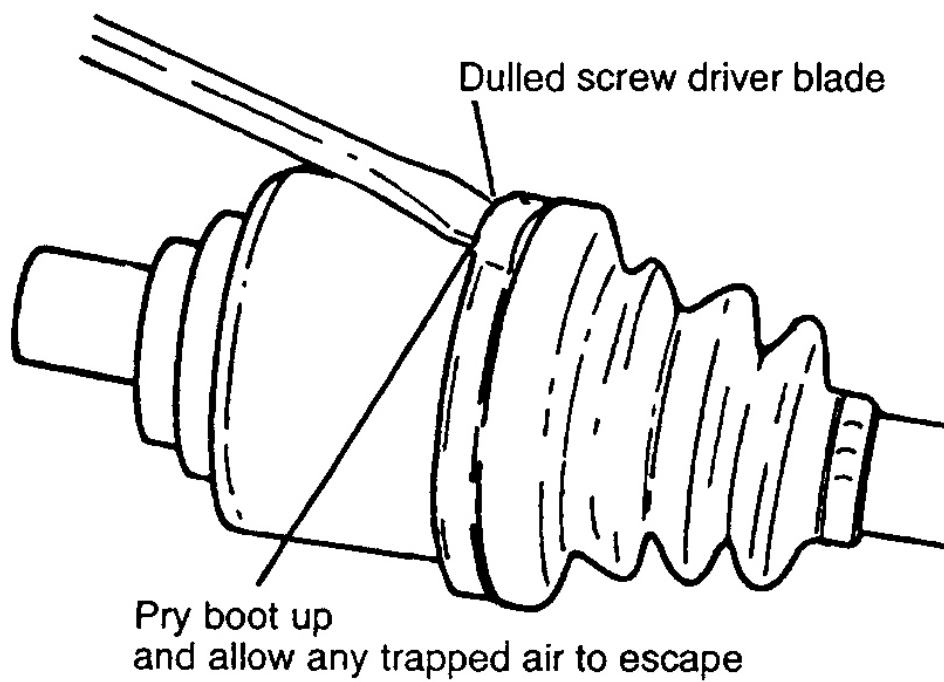
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Fig. 24: Installing Tripod Joint Retaining Ring
Courtesy of KIA MOTORS AMERICA, INC.



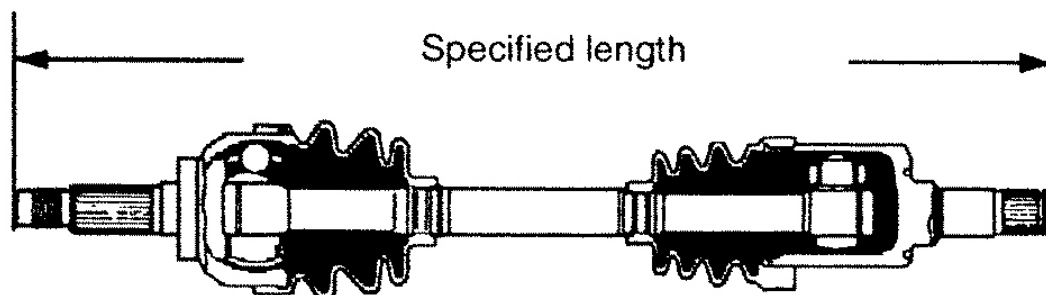
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Fig. 25: Applying Grease To Tripod Joint
Courtesy of KIA MOTORS AMERICA, INC.



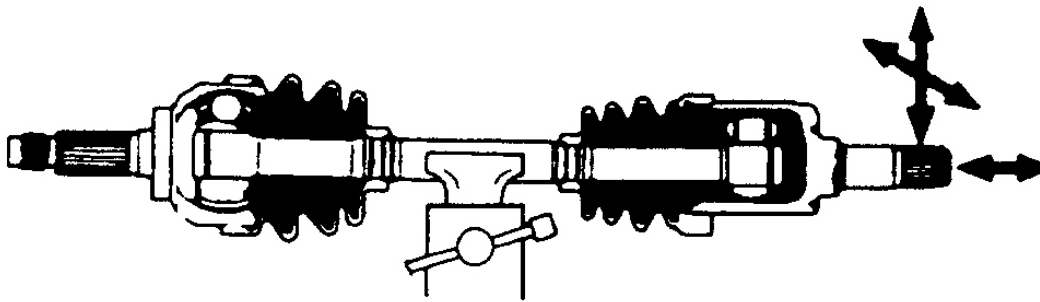
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Fig. 26: Bleeding Air From Boot
Courtesy of KIA MOTORS AMERICA, INC.



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Fig. 27: Measuring Axle Shaft Length
Courtesy of KIA MOTORS AMERICA, INC.



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Fig. 28: Inspecting Reassembled Axle Shaft
 Courtesy of KIA MOTORS AMERICA, INC.

Installation (Left Side)

1. Install a new circlip onto the tripod housing with the gap facing upward. Measure the outer diameter of the circlip after installation. If outer diameter exceeds 1.26" (32 mm), replace circlip. Lubricate the tripod housing with grease. See **Fig. 29** .

NOTE: **Insert the axle shaft carefully so as to not damage the transaxle oil seal.**

2. Install the tripod housing into the transaxle. After installation, pull slightly on the axle shaft to confirm that the tripod housing circlip is properly seated into the transaxle.
3. Lubricate the birfield joint end of the axle shaft with grease.

NOTE: **Insert the axle shaft carefully so as to not damage the wheel hub grease seal.**

4. Insert the birfield joint into the wheel hub.
5. Install a new axle shaft attaching nut onto the axle shaft . Do not tighten at this time.

NOTE: **Use caution to avoid damaging the ball joint dust boot.**

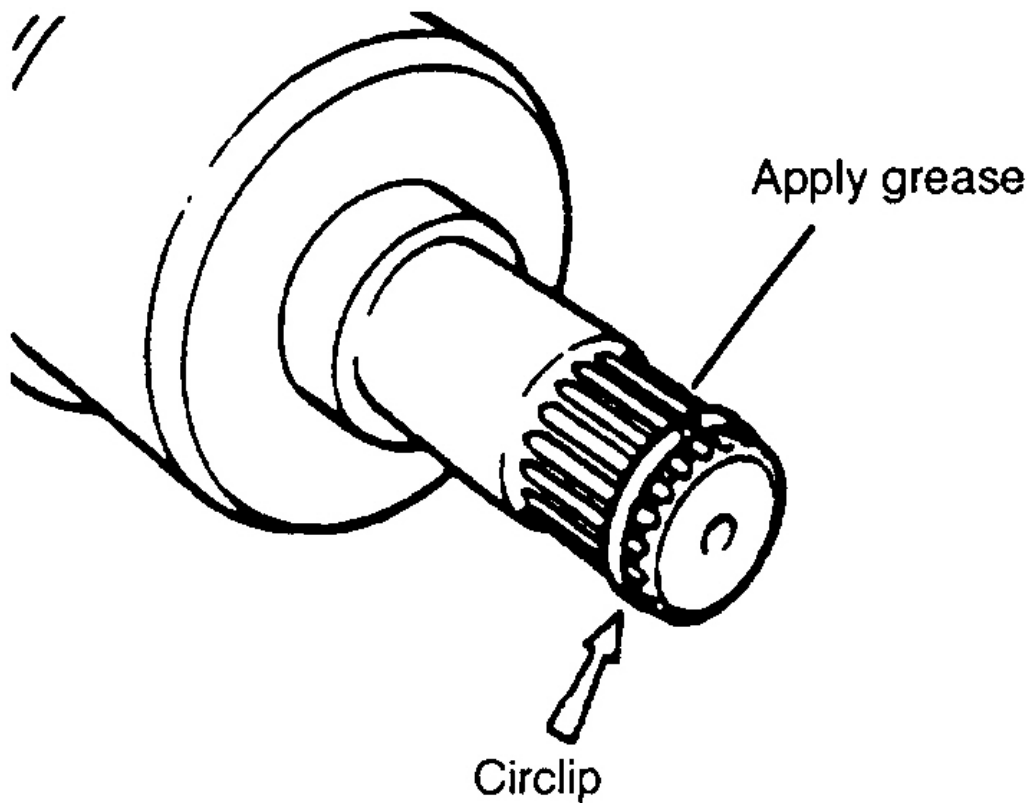
6. Push up the lower control arm and reconnect the ball joint.
7. Install the ball joint clamp nut and bolt into the lower arm and tighten to specification. See **Fig. 4** . See **TORQUE SPECIFICATIONS** .
8. Install tie rod end to knuckle. Install nut and tighten to specifications. See **TORQUE SPECIFICATIONS** .

NOTE: Do not stake the axle shaft lock nut with a pointed tool.

9. Tighten axle shaft lock nut to the specified torque and stake the lock nut, ensuring that it seats into the groove in the axle shaft. See **Fig. 30** . See **TORQUE SPECIFICATIONS** .

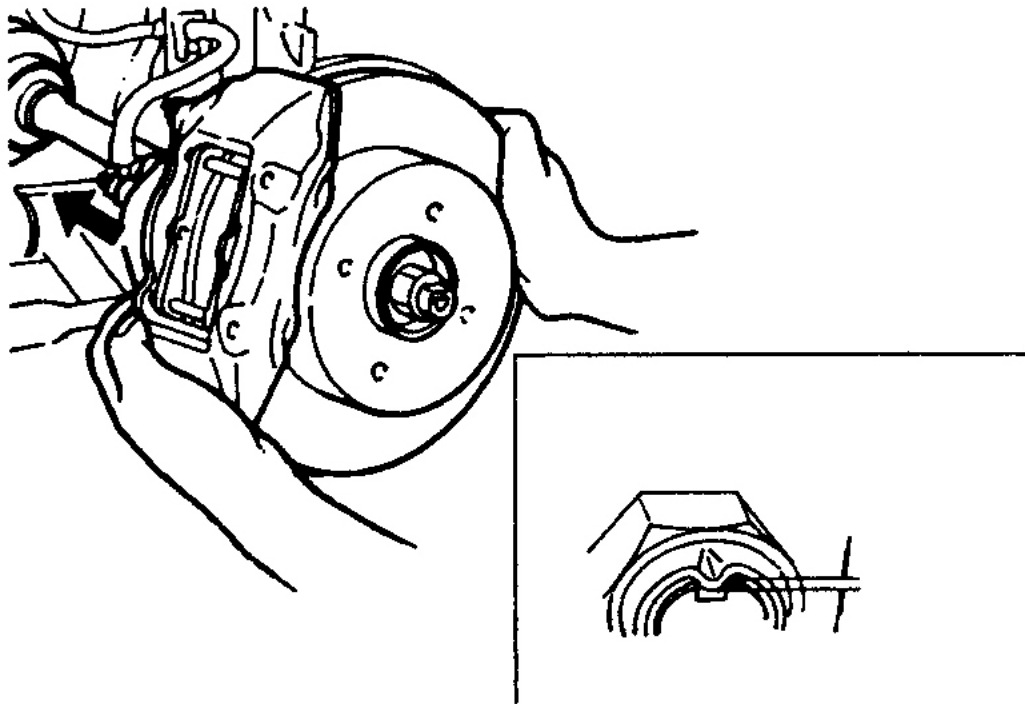
NOTE: After installation, check that the wheel hub can be turned smoothly by hand.

10. Install the front wheel and tighten lug nuts to specification. See **TORQUE SPECIFICATIONS** . Lower vehicle.
11. Install control link to stabilizer bar. Install nut and tighten to specification. See **TORQUE SPECIFICATIONS** .
12. Refill the transaxle with the specified grade (Diamond ATF SP-III) and quantity (8.5 Qts. 8.0L) of transaxle fluid.



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Fig. 29: Installing Circlip & Applying Grease



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Fig. 30: Installing Axle Shaft Lock Nut
Courtesy of KIA MOTORS AMERICA, INC.

Installation (Right Side)

1. Lubricate the tripod housing and inner shaft with grease. Install axle shaft with inner shaft circlip gap facing upward. See **Fig. 31** .

NOTE: Insert the axle shaft carefully so as to not damage the center shaft grease seal.

2. Install the tripod housing into the center shaft. After installation, pull slightly on the axle shaft to confirm that the center shaft circlip is properly seated into the tripod housing.
3. Lubricate the birfield joint end of the axle shaft with grease.

NOTE: Insert the axle shaft carefully so as to not damage the wheel hub grease seal.

4. Insert the birfield joint into the wheel hub.
5. Install a new axle shaft attaching nut onto the axle shaft. Do not tighten at this time.

NOTE: **Use caution to avoid damaging the ball joint dust boot.**

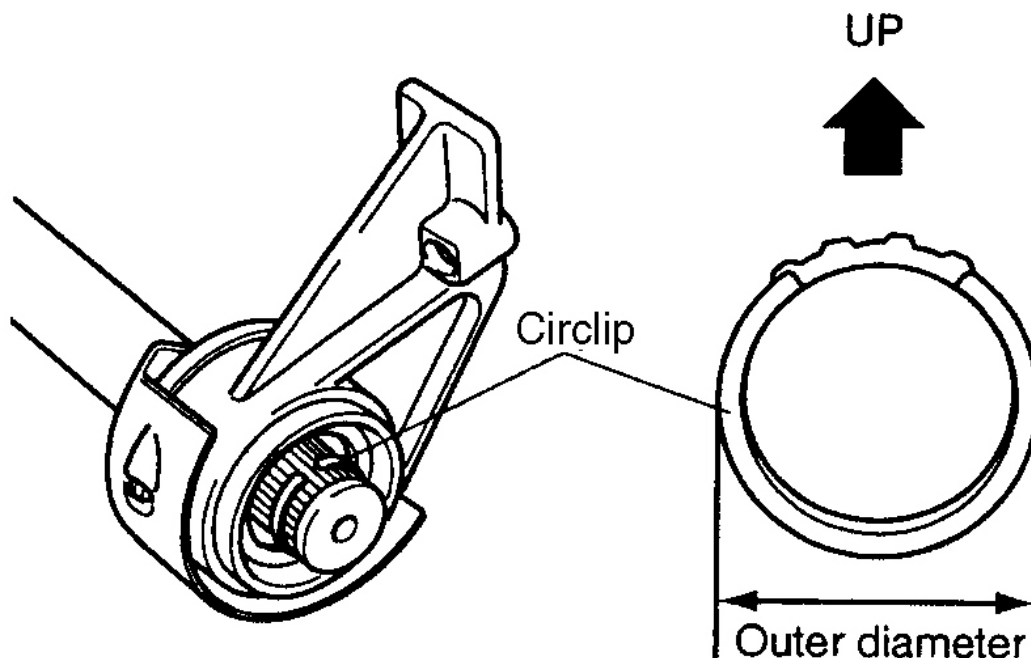
6. Push up the lower control arm and reconnect the ball joint.
7. Install the ball joint clamp nut and bolt into the lower arm and tighten to specification. See **Fig. 4** . See **TORQUE SPECIFICATIONS** .
8. Install tie rod end to knuckle. Install nut and tighten to specification. See **TORQUE SPECIFICATIONS** .

NOTE: **Do not stake the axle shaft lock nut with a pointed tool.**

9. Tighten axle shaft lock nut to the specified torque and stake the lock nut, ensuring that it seats into the groove in the axle shaft. See **Fig. 30** . See **TORQUE SPECIFICATIONS** .

NOTE: **After installation, check that the wheel hub can be turned smoothly by hand.**

10. Install the front wheel and tighten lug nuts to specification. See **TORQUE SPECIFICATIONS** . Lower vehicle.
11. Install control link to stabilizer bar. Install nut and tighten to specifications. See **TORQUE SPECIFICATIONS** .
12. Refill the transaxle with the specified grade (Diamond ATF SP-III) and quantity (8.5 Qts. 8.0L) of transaxle fluid.



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Fig. 31: Measuring & Positioning Circlip On Center Shaft
 Courtesy of KIA MOTORS AMERICA, INC.

CENTER BEARING & INNER SHAFT

NOTE: For exploded view of center bearing and inner shaft assembly, see Fig. 38 .

Removal

1. Jack up the front of the chassis and support it with safety stands.
2. Drain the transaxle oil.
3. Remove the front wheel and tire assembly.
4. Remove the tie rod nut and disconnect the tie rod end from the knuckle.
5. Remove the control link nut and disconnect the control link from the stabilizer bar.
6. Raise the axle shaft lock nut tab and loosen the lock nut, but do not remove it. See Fig. 3 .
7. Remove the ball joint clamp bolt and nut from the lower arm. See Fig. 4 .

NOTE: Be careful not to damage the ball joint dust boot.

8. Pry down the lower control arm and disconnect the ball joint from the knuckle. See Fig. 5 .

NOTE: **Be careful not to damage the center shaft grease seal.**

9. Drive the axle shaft from the center shaft. See **Fig. 10** .

NOTE: **To help separate the axle shaft from the center bearing, pull the wheel hub outward.**

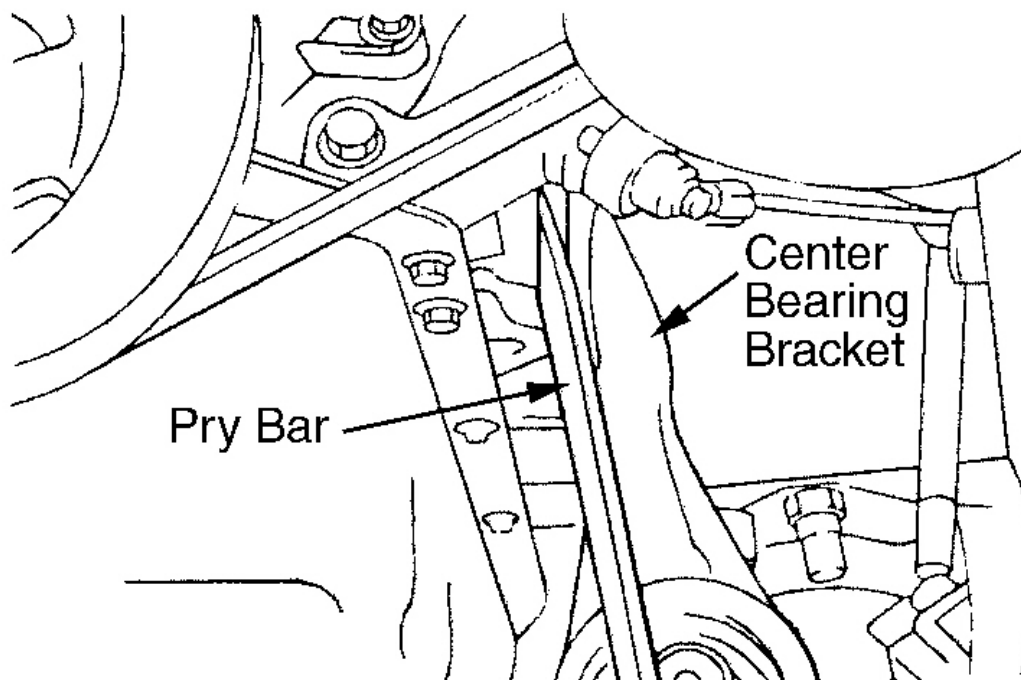
10. Remove the axle shaft lock nut and discard.

NOTE: **If axle shaft is frozen in front wheel hub, spray a penetrating solvent into splined area and reinstall the lock nut so that it is flush with the end of the shaft. Tap the nut with a brass hammer to remove the axle shaft from the wheel hub. See **Fig. 7** . Be careful not to damage the wheel hub grease seal.**

11. Remove the axle shaft from the wheel hub. See **Fig. 8** .
12. Remove the axle shaft assembly from the vehicle. Discard the tripod housing circlip.
13. Remove 2 center bearing bracket bolts. Insert pry bar between the center bearing bracket and the cylinder block to disconnect the bracket from the cylinder block. See **Fig. 32** .

NOTE: **Be careful not to damage the transaxle oil seal.**

14. Remove the inner shaft and center bearing from transaxle.



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Fig. 32: Removing Center Bearing Bracket
Courtesy of KIA MOTORS AMERICA, INC.

Disassembly

1. Using the appropriate puller, disassemble the center bearing bracket from the inner shaft. See **Fig. 33** .
2. Using the appropriate puller, remove the outer dust seal from the center bearing bracket.
3. Using the appropriate adapter and a press, press out the center bearing and inner dust seal from the bracket. Press from the outside to the inside direction of the center bearing bracket. See **Fig. 34** .

Inspection

1. Check the inner shaft for damage, bending or rust.
2. Check the inner shaft splines for wear or damage.
3. Check the center bearing for scoring, discoloration and roughness of the roller journal moving surfaces. Replace components as necessary.

Reassembly

1. Apply multipurpose grease to the center bearing and inside the center bearing bracket. **Fig. 35** .

- 2. Using the appropriate adapter and a press, press the center bearing into the center bearing bracket. See **Fig. 34** .
- 3. Apply multipurpose grease to the rear surface of all dust seals. See **Fig. 36** . For recommended amount of specified grease, see **GREASE RECOMMENDATIONS** table.

NOTE: **When applying grease, make sure that it does not adhere to anything outside the dust seal lip.**

GREASE RECOMMENDATIONS

Application ⁽¹⁾	oz. (gm)
Inner Dust Seal	0.25-0.35 (7-10)
Outer Dust Seal	0.14-0.21 (4-6)
(1) Use multi purpose grease.	

- 4. Using the appropriate adapter and a press, install the outer dust seal first, followed by the inner dust seal. Press both seals in until they are flush with the edge of the center bearing bracket.
- 5. Using the appropriate adapter and a press, support the center bearing, then press in the inner shaft.

Installation

- 1. Install a new circlip onto the axle shaft end of the inner shaft with the gap facing upward. Measure the outer diameter of the circlip after installation. If outer diameter exceeds 1.14" (28.9 mm), replace circlip. See **Fig. 31** .

NOTE: **Insert the axle shaft carefully so as to not damage the transaxle oil seal.**

- 2. Lubricate the inner shaft splines and transaxle oil seal area with transaxle oil. Install inner shaft into transaxle.
- 3. Install center bearing bracket bolts and tighten to specification. See **Fig. 37** . See **TORQUE SPECIFICATIONS** .
- 4. Lubricate the tripod housing and inner shaft with grease. Install axle shaft with inner shaft circlip gap facing upward. See **Fig. 31** .

NOTE: **Insert the axle shaft carefully so as to not damage the center shaft grease seal.**

- 5. Install the tripod housing onto the center shaft. After installation, pull slightly on the axle shaft to confirm that the center shaft circlip is properly seated into the tripod housing.
- 6. Lubricate the birfield joint end of the axle shaft with grease.

NOTE: **Insert the axle shaft carefully so as to not damage the wheel hub grease seal.**

7. Insert the birfield joint into the wheel hub.
8. Install a new axle shaft attaching nut onto the axle shaft . Do not tighten at this time.

NOTE: Use caution to avoid damaging the ball joint dust boot.

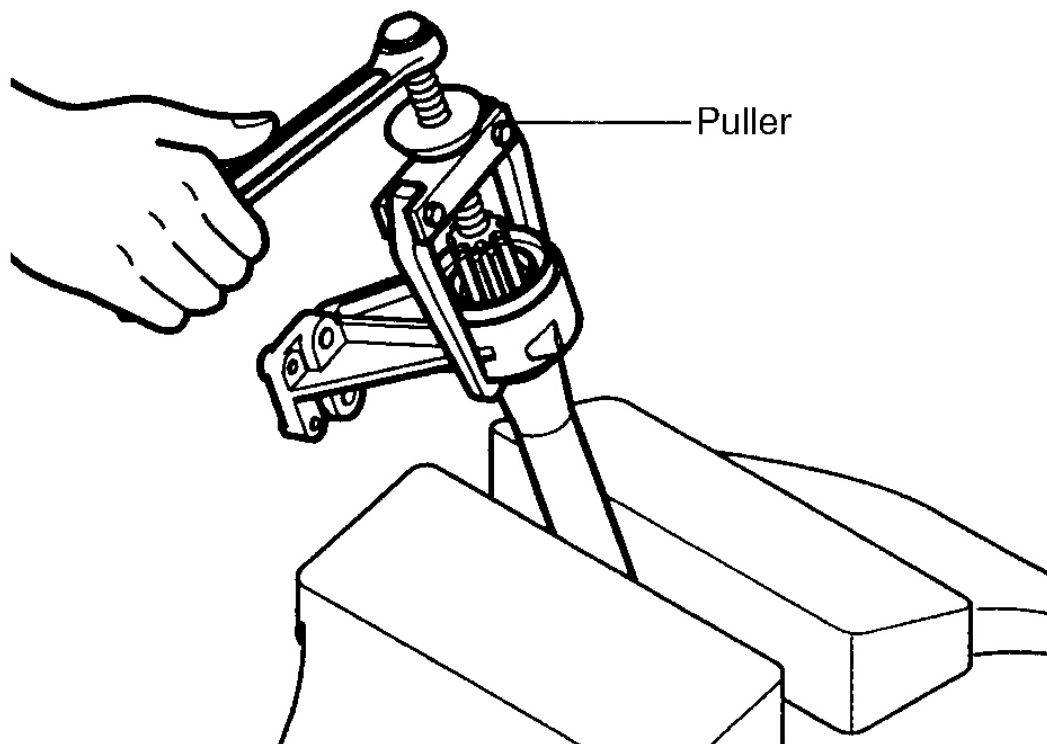
9. Push up the lower control arm and reconnect the ball joint.
10. Install the ball joint clamp nut and bolt into the lower arm and tighten to specification. See **Fig. 4** . See **TORQUE SPECIFICATIONS** .
11. Install tie rod end to knuckle. Install nut and tighten to specification. See **TORQUE SPECIFICATIONS** .

NOTE: Do not stake the axle shaft lock nut with a pointed tool.

12. Tighten axle shaft lock nut to the specified torque and stake the lock nut, ensuring that it seats into the groove in the axle shaft. See **Fig. 30** . See **TORQUE SPECIFICATIONS** .

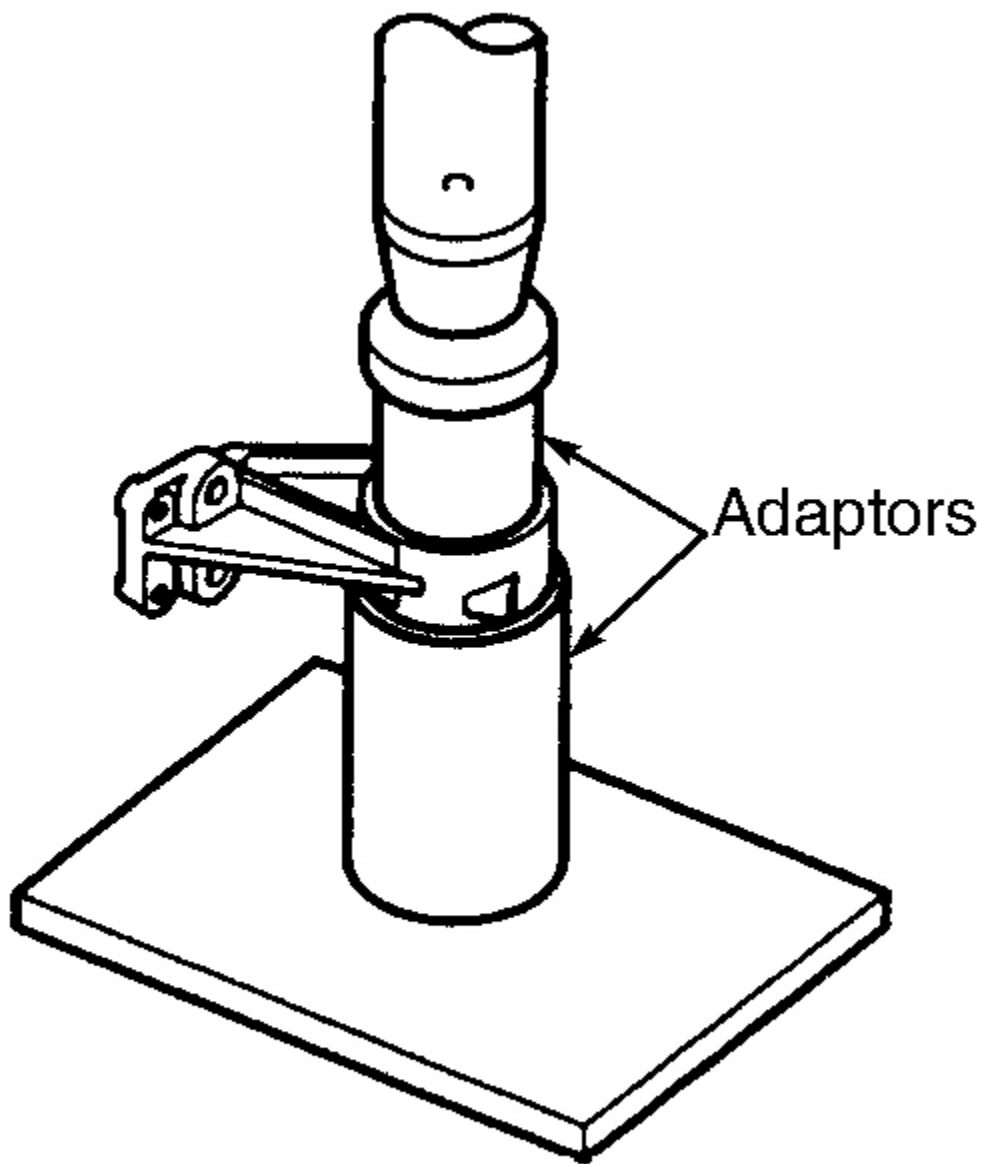
NOTE: After installation, check that the wheel hub can be turned smoothly by hand.

13. Install the front wheel and tighten lug nuts to specification. See **TORQUE SPECIFICATIONS** . Lower vehicle.
14. Install control link to stabilizer bar. Install nut and tighten to specifications. See **TORQUE SPECIFICATIONS** .
15. Refill the transaxle with the specified grade (Diamond ATF SP-III) and quantity (8.5 Qts. 8.0L) of transaxle fluid.



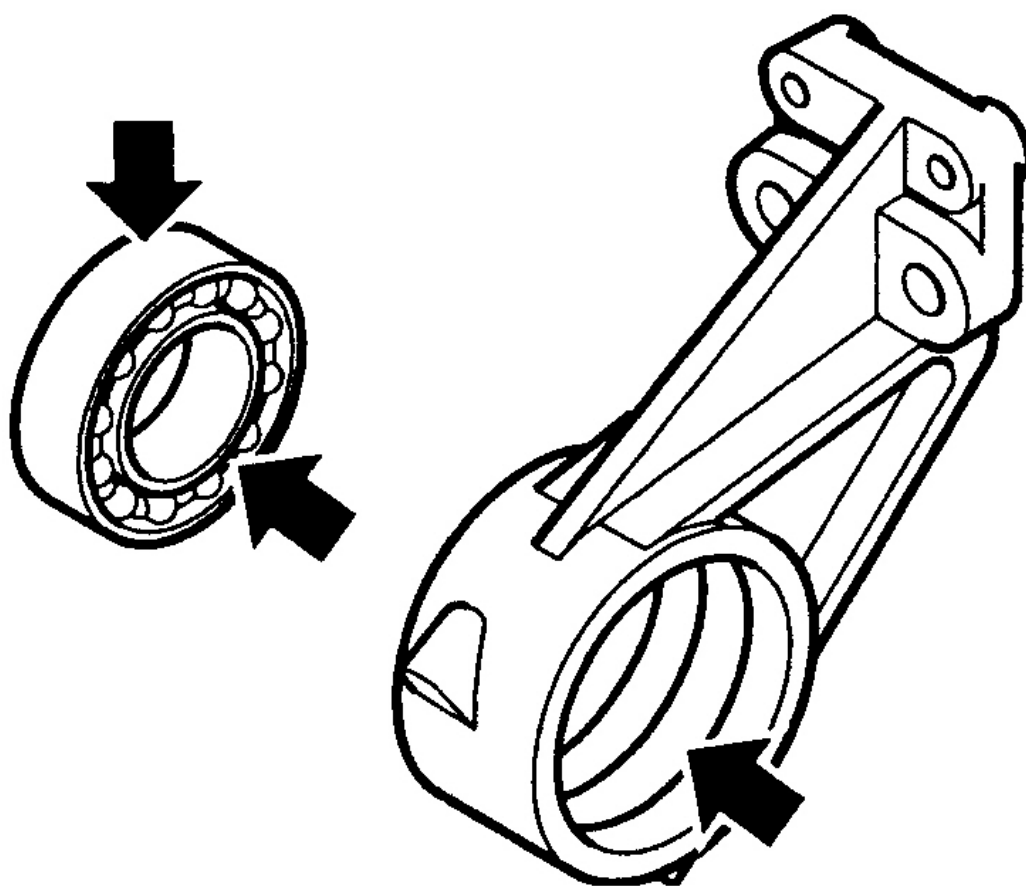
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Fig. 33: Removing & Installing Center Bearing
Courtesy of KIA MOTORS AMERICA, INC.



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Fig. 34: Removing & Installing Center Bearing From Bracket
Courtesy of KIA MOTORS AMERICA, INC.

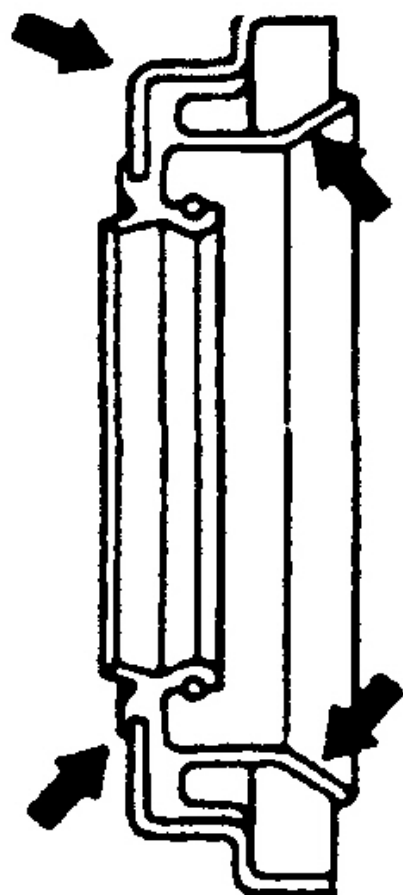


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Fig. 35: Applying Grease To Center Bearing & Bracket
Courtesy of KIA MOTORS AMERICA, INC.

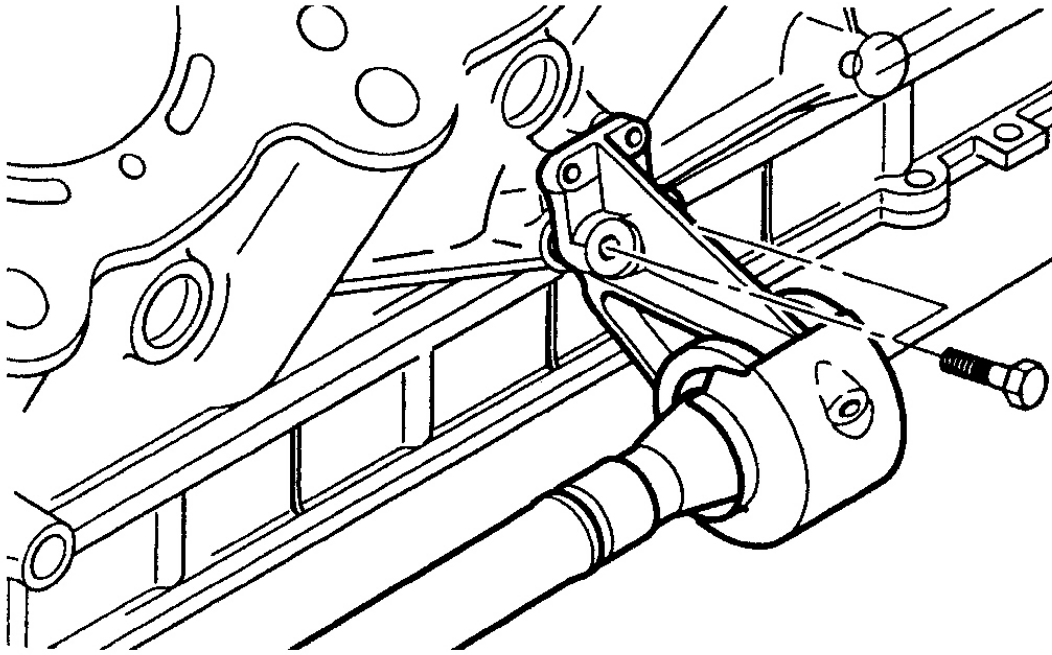
Dust seal, inner

Dust seal, outer



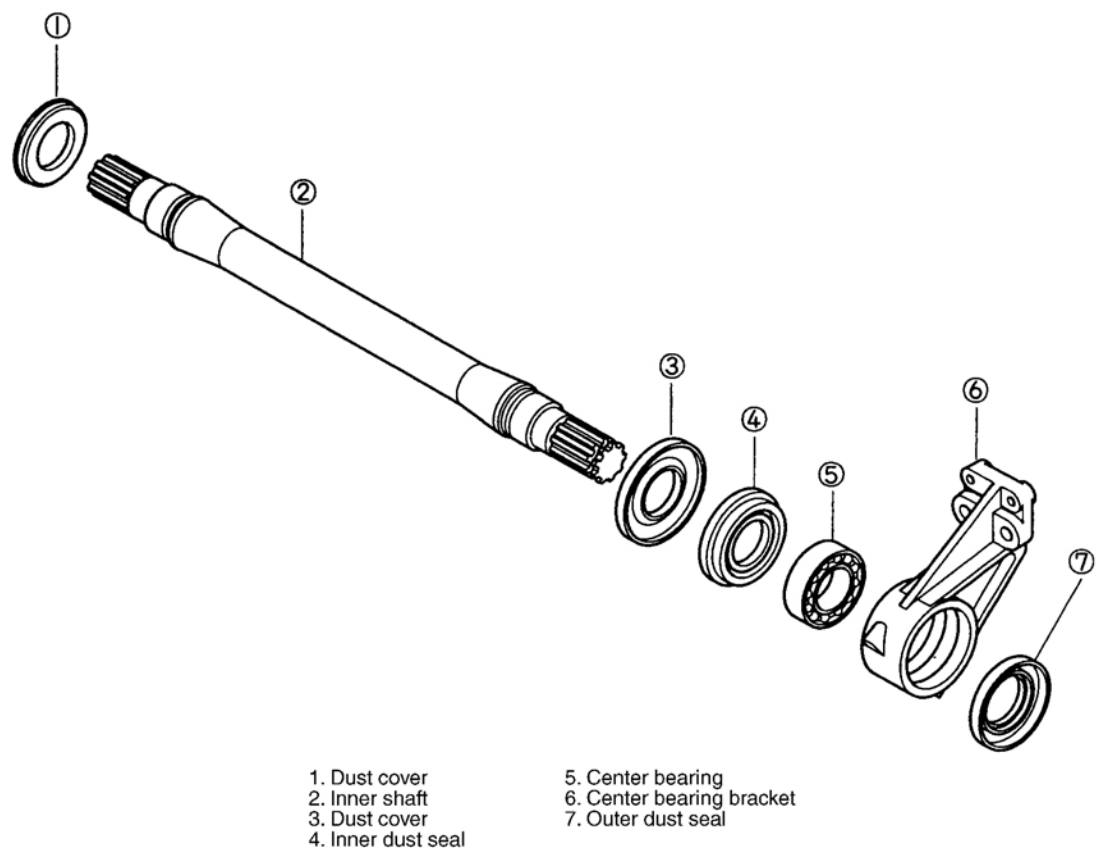
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Fig. 36: Applying Grease To Seals
Courtesy of KIA MOTORS AMERICA, INC.



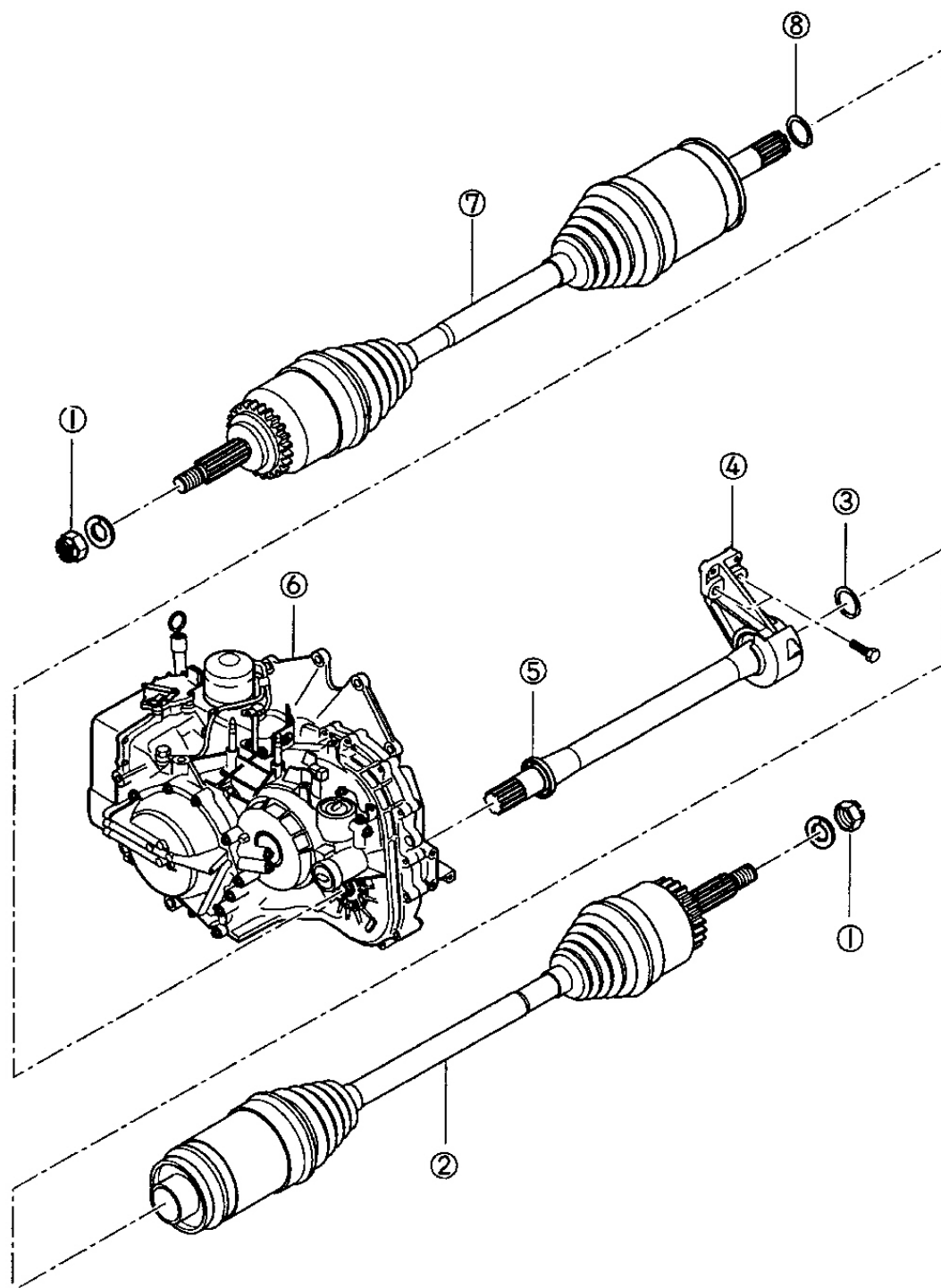
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Fig. 37: Installing Center Bearing Bracket
Courtesy of KIA MOTORS AMERICA, INC.



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Fig. 38: Exploded View Of Center Bearing & Inner Shaft Assembly
Courtesy of KIA MOTORS AMERICA, INC.



1. Wheel nut
2. Axle shaft(RH)
3. Circlip
4. Center bearing bracket

5. Center shaft
6. Automatic transaxle
7. Axle shaft(LH)
8. Circle pin

Fig. 39: Exploded View Of Axle Shaft Components
Courtesy of KIA MOTORS AMERICA, INC.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Axle Shaft Lock Nut	177-199 (240-270)
Center Bearing Bracket Bolts	31-46 (42-62)
Lower Ball Joint Clamp Nut & Bolt	69-85 (93-115)
Stabilizer Bar To Control Link Nut	69-85 (93-115)
Tie Rod End Nut	43-59 (58-80)
Wheel Lug Nuts	65-79 (88-107)