

## MANUAL TRANSAXLE

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### Identification

Your Taurus or Sable uses a front wheel drive transmission called a transaxle.

A 5-speed fully synchronized manual transaxle is available on the 2.5L and 3.0L SHO Taurus/Sable models. An internally-gated shift mechanism and a single rail shift linkage eliminate the need for periodic shift linkage adjustments. The MTX transaxle is designed to use Type F or Dexron®II automatic transmission fluid as a lubricant. Never use gear oil (GL) in the place of Type F or Dexron®II.

### Adjustments

The manual shift mechanism and cables incorporate no adjustable features, therefore adjustments are neither possible or necessary.

### Shift Linkage

#### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable. Remove the console, shift knob and boot.
2. Fold the carpet back from the dash panel to expose the shift cables and cable sealing grommets.
3. Remove the rear seat heating duct. Loosen the two screws and remove the cable bracket.
4. Pull the cable sealing grommets loose from the floorpan and dash panel.
5. Raise and support the vehicle safely.
6. Remove the two retaining screws that retain the cables to the bracket assembly.
7. Pry the cable sockets off the clamp assembly pivot balls and slide the cable insulators out of the bracket slots.
8. Loosen the two bolts retaining the bracket assembly to the transaxle case. Remove the bracket assembly.
9. Lower the vehicle. From inside the vehicle pull the shift cables through the sheet metal holes and remove them from the vehicle.

To install:

10. From inside the vehicle push the shift cables through the sheet metal holes. The crossover cable goes through the dash panel hole and the selector cable goes through the tunnel hole.
11. Seat the cable grommets in the sheet metal holes. Install the cable bracket. Tighten the retaining screws to 17-22 inch lbs. (1.9-2.5 Nm).
12. Make sure the crossover cable is secured under the hook on the bracket. A white alignment mark on the cable will assist in where to clip the cable under the hook.

13. Install the rear seat heat duct. Fold back the carpet over the cables.
14. Install the shifter, shift knob, boot and console.
15. Raise and support the vehicle safely. Install the clamp assembly onto the transaxle input shift shaft. Tighten the retaining nut to 6-10 ft. lbs. (8-14 Nm).
16. Install the bracket assembly to the transaxle case. Tighten the M12 retaining bolt to 22-35 ft. lbs. (30-47 Nm) and the M10 bolt to 16-24 ft. lbs. (22-33 Nm).
17. Feed the shift cables into the slots of the bracket assembly. Retain the cables with two retainers and four bolts. Tighten the bolts 6-10 ft. lbs. (8-14 Nm).
18. Snap the crossover cable socket onto the clamp assembly pivot ball. Position the selector cable rod end with the yellow painted side down. Snap the rod end onto the clamp assembly post.

## Shift Handle

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the leather wrapped knob by rotating the knob counterclockwise.
3. Remove the console trim surrounding the shift boot by sliding the boot assembly off the shift lever, in order to expose the four screws which connect the boot to the top of the console.
4. Remove the console to expose the shifter assembly. Remove the four bolts retaining the shifter to the floorpan.
5. Pry the two clips holding the shift cables to control assembly and pry the cable sockets off the control assembly pivot balls.
6. Do not bend or kink the cable core rods.

To install:

7. Feed the loose ends of the cables into the control assembly slots. A green painted mark on the shifter and crossover cable will aid in proper alignment.
8. Attach the control assembly to the floorpan J-nuts with four bolts. Tighten the bolts to 49-70 inch lbs. (5.5-7.8 Nm).
9. Seat the cable insulators into the shifter slots. Install new U-clips. Snap the cable sockets onto the shifter pivot balls. Install the console.
10. Slide the boot assembly over the shift lever. Attach it to the console and tighten the retaining screws to 14-21 inch lbs. (1.6-2.3 Nm).
11. Attach the shift knob to the shift lever.
12. Connect the negative battery cable.

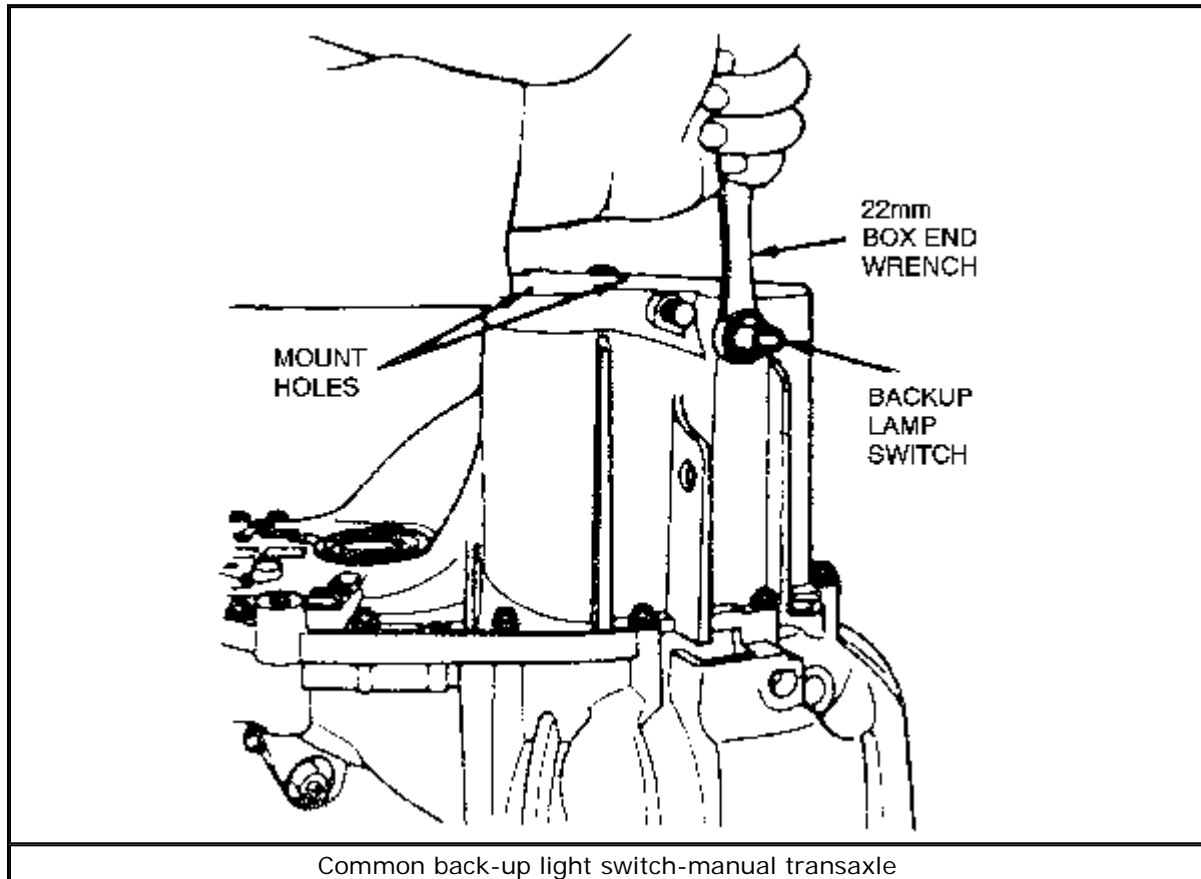
## Back-Up Light Switch

### REMOVAL & INSTALLATION

The back-up lamp switch is located on the top left side of the transaxle.

1. Disconnect the negative battery cable.
2. Disengage the switch electrical connector.

3. Using a 22mm box-end wrench, remove the switch.



[Click to enlarge](#)

To install:

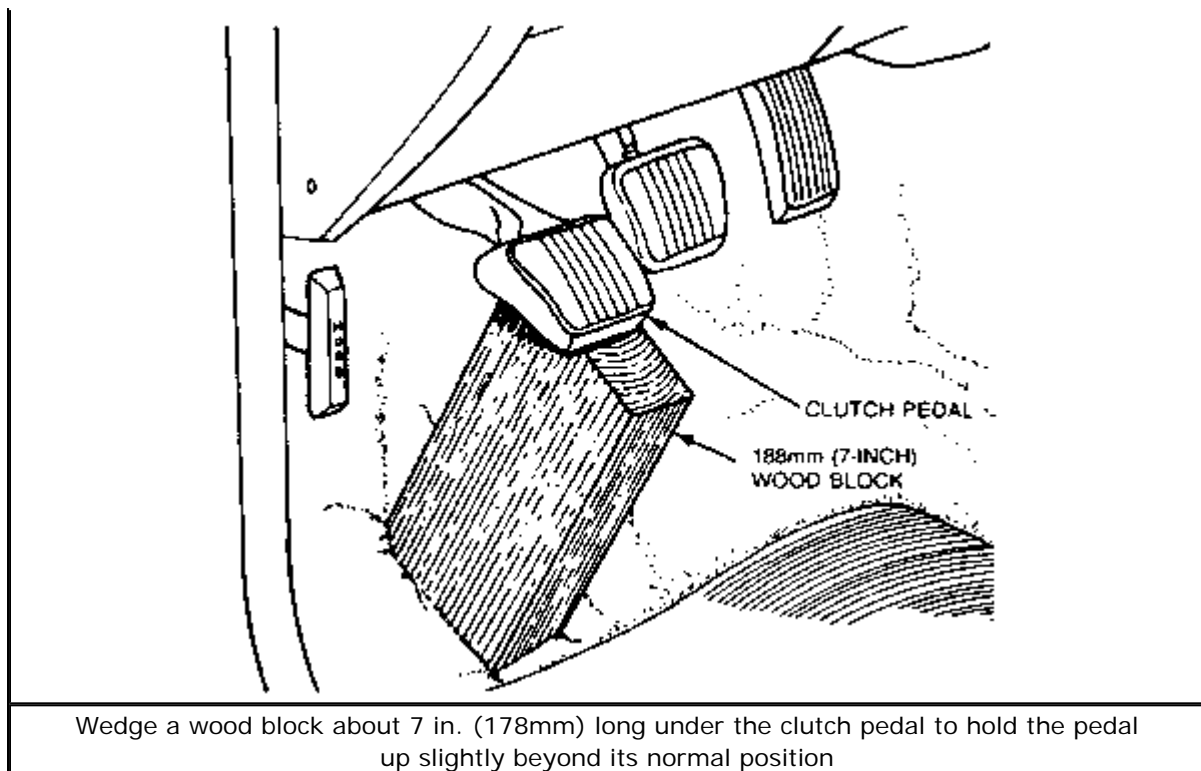
4. Apply Pipe Sealant with Teflon® part No. D8AZ-19554-A or equivalent to the threads of the switch. Turn the switch into the transaxle case clockwise and tighten to 12-15 ft. lbs. (16-20 Nm).
5. Engage the electrical connector.
6. Connect the negative battery cable.

## Transaxle

### REMOVAL & INSTALLATION

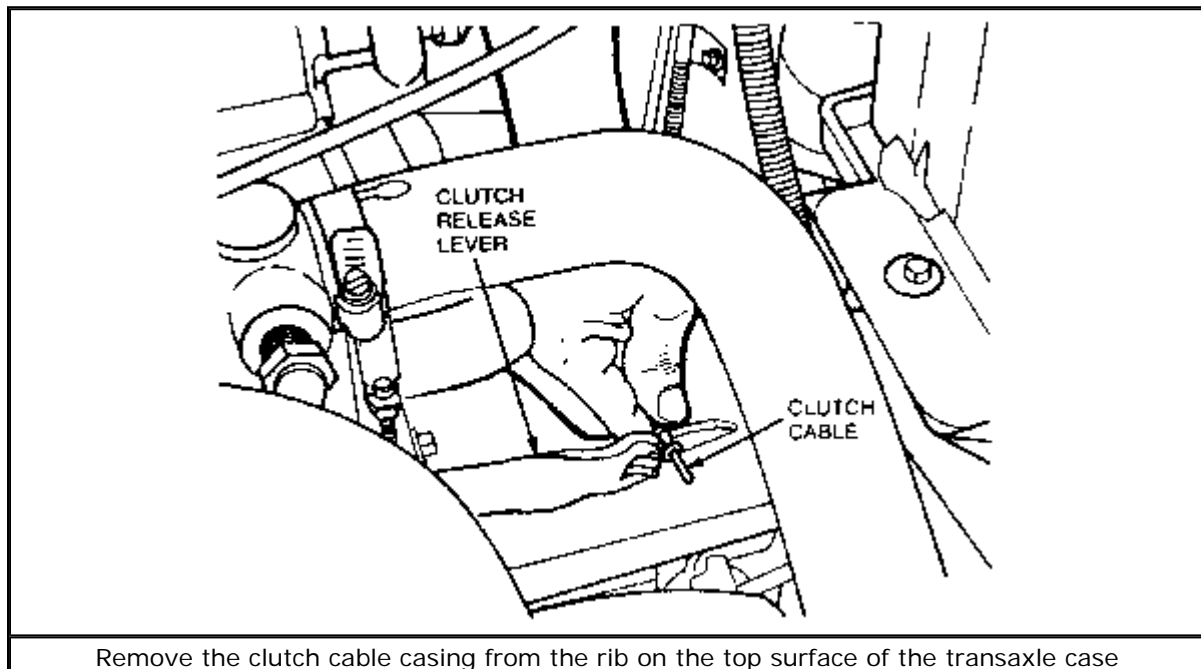
#### 1986-88 Vehicles

1. Disconnect the negative battery cable.
2. Wedge a wood block about 7 in. (178mm) long under the clutch pedal to hold the pedal up slightly beyond its normal position.



[Click to enlarge](#)

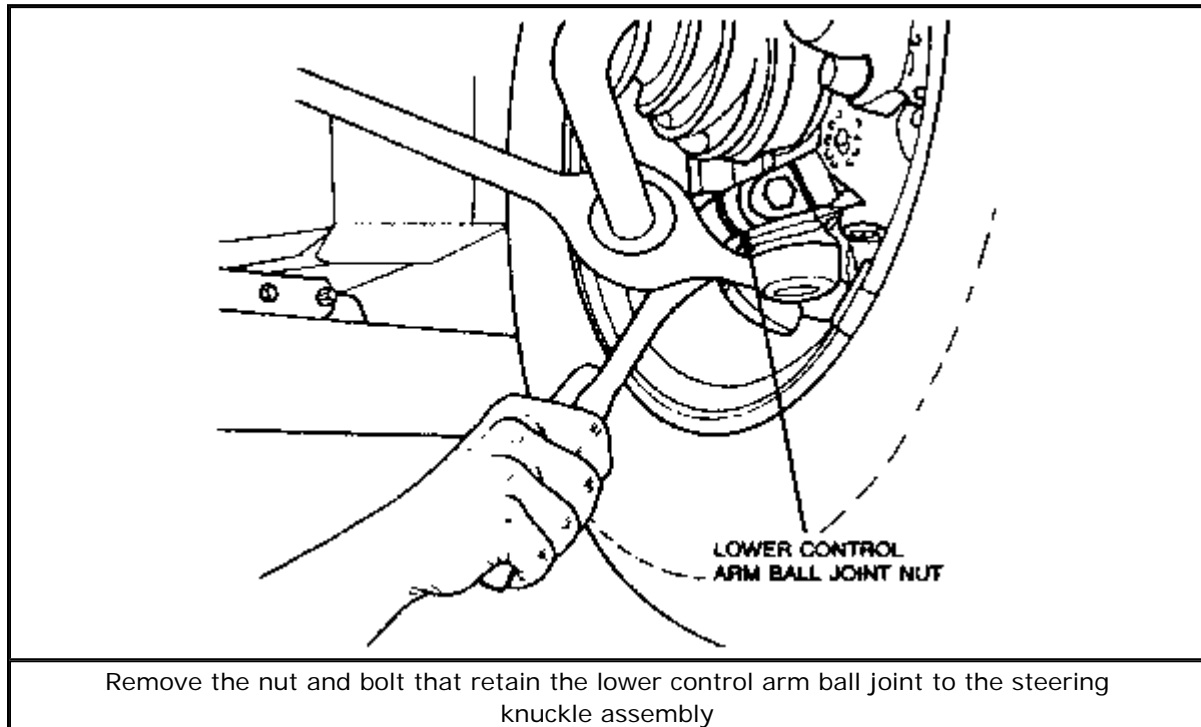
3. Grasp the clutch cable and pull it forward, disconnecting it from the clutch release shaft assembly. Remove the clutch cable casing from the rib on the top surface of the transaxle case.



[Click to enlarge](#)

4. Using a 13mm socket, remove the 2 top transaxle-to-engine mounting bolts.
5. Raise and safely support the vehicle.
6. Using a 15mm socket, remove the nut and bolt that secures the lower control arm ball joint to the steering knuckle assembly. Discard the nut and bolt. Repeat this

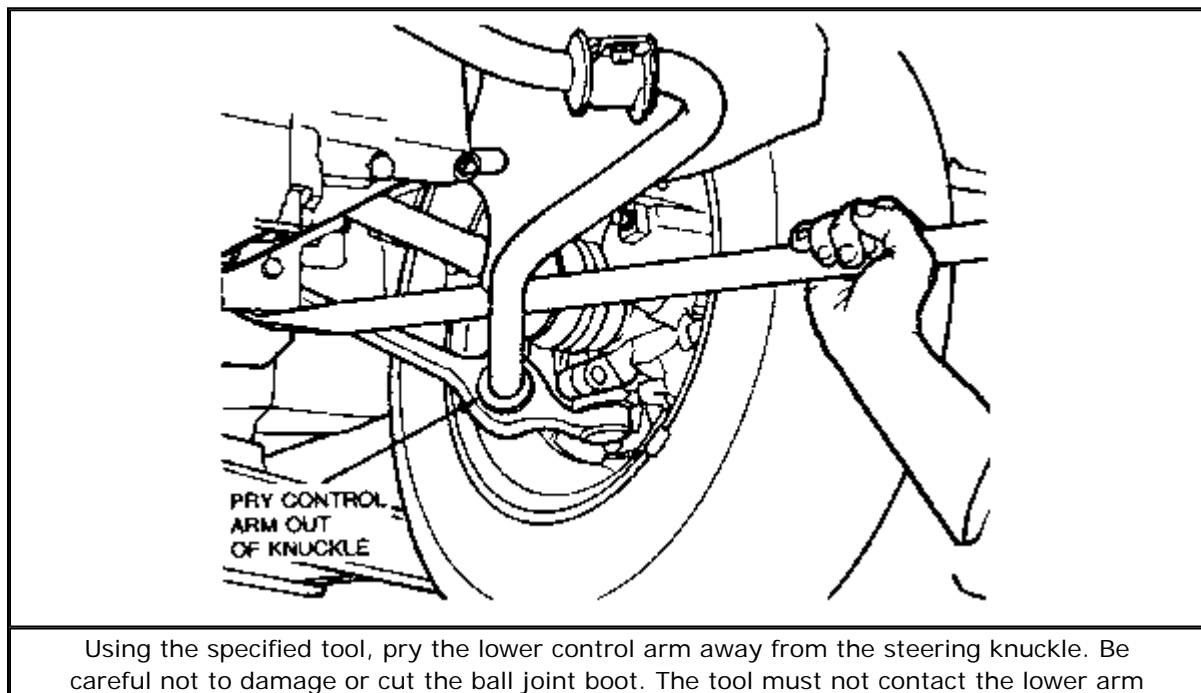
procedure on the opposite side.



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7. Using Tool D83P-4026-A, or equivalent, carefully pry the lower control arm away from the knuckle.

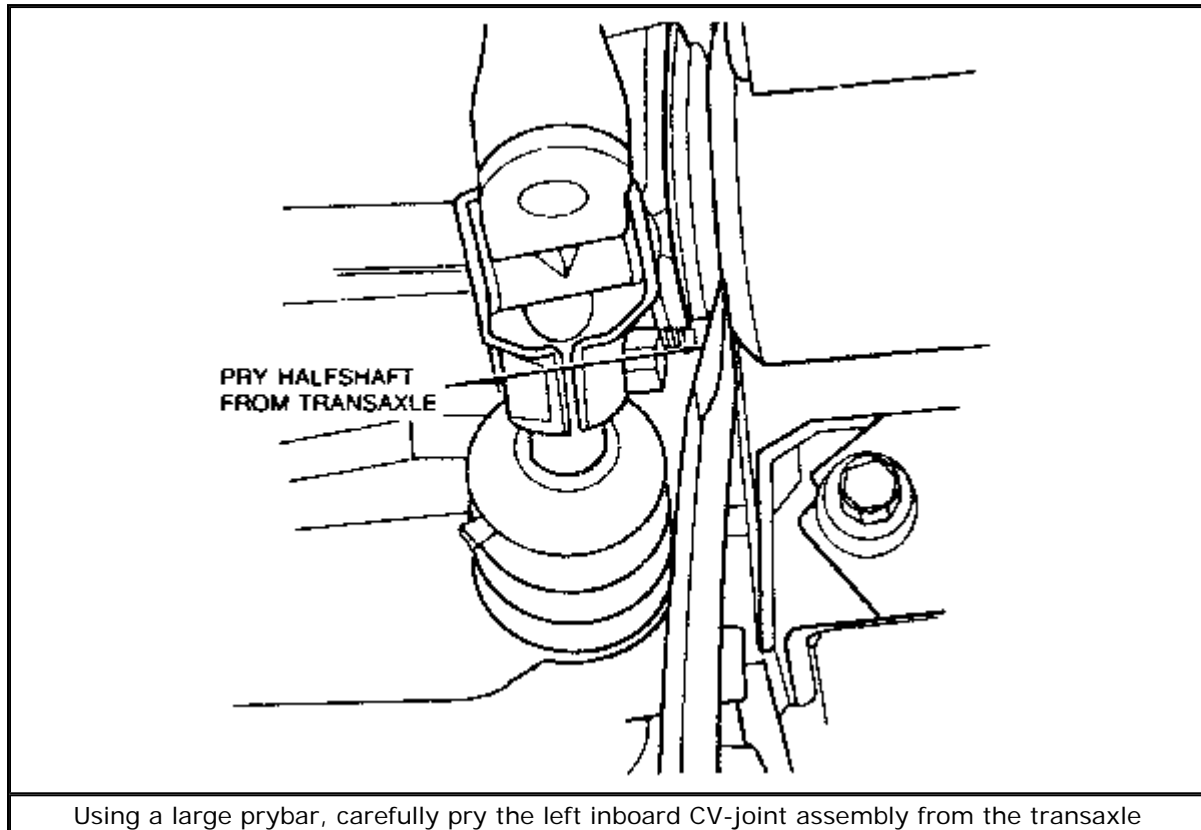
Be careful not to damage or cut the ball joint boot. The prybar must not contact the lower arm.



[Click to enlarge](#)

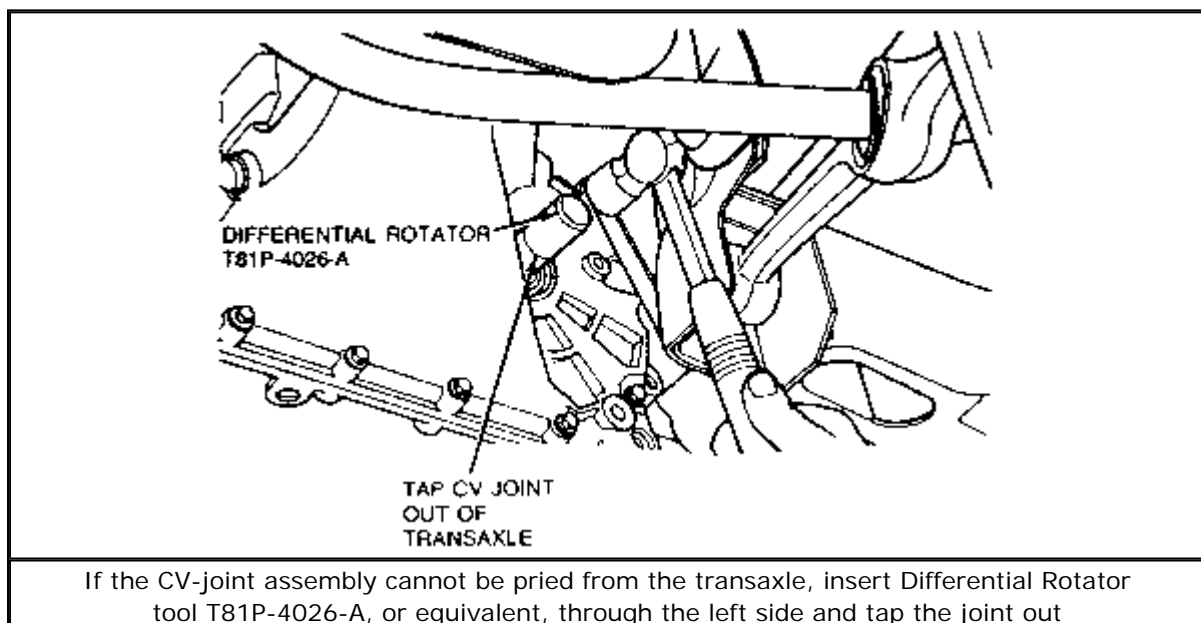
8. Using a large prybar, pry the left inboard CV-joint assembly from the transaxle.

Plug the seal opening to prevent lubricant leakage.



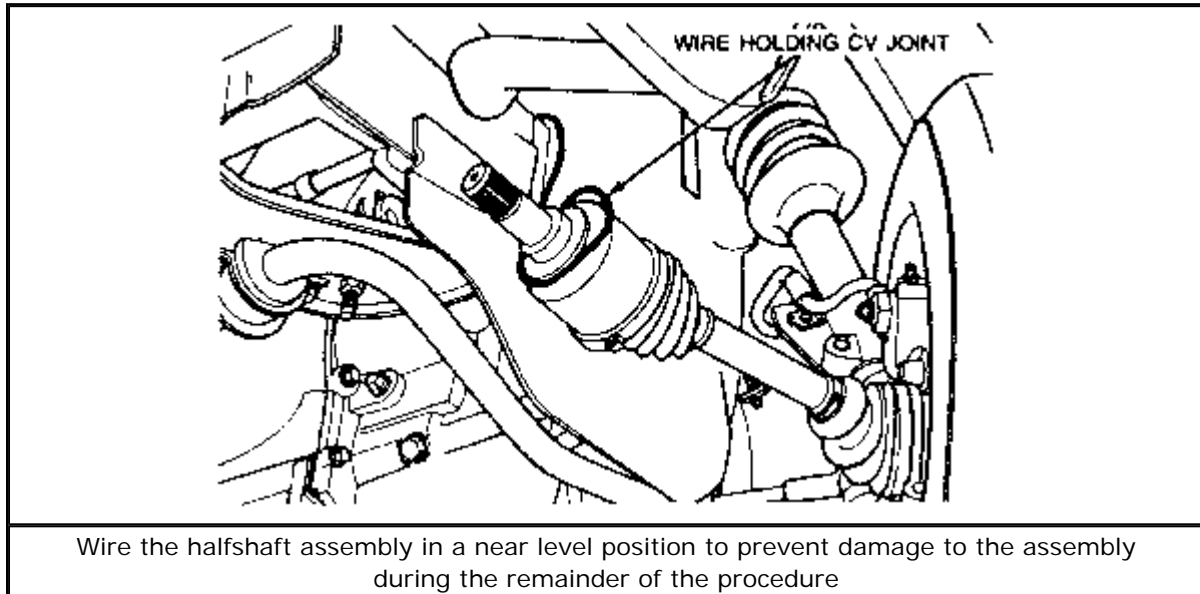
[Click to enlarge](#)

9. Remove the inboard CV-joint from the transaxle by grasping the left-hand steering knuckle and swinging the knuckle and halfshaft outward from the transaxle. If the CV-joint assembly cannot be pried from the transaxle, insert differential rotator tool T81P-4026-A or equivalent, through the left side and tap the joint out. The tool can be used from either side of transaxle.



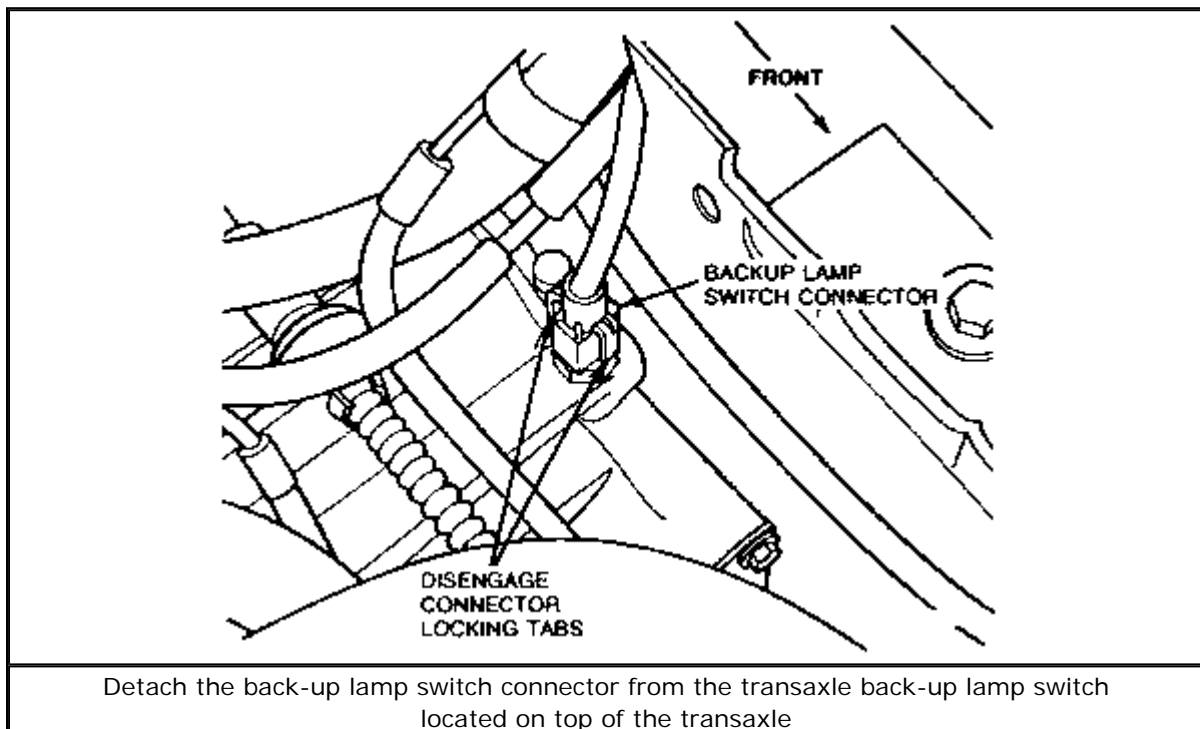
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10. Wire the halfshaft assembly in a near level position to prevent damage to the assembly during the remaining operations. Repeat this procedure on the opposite side.



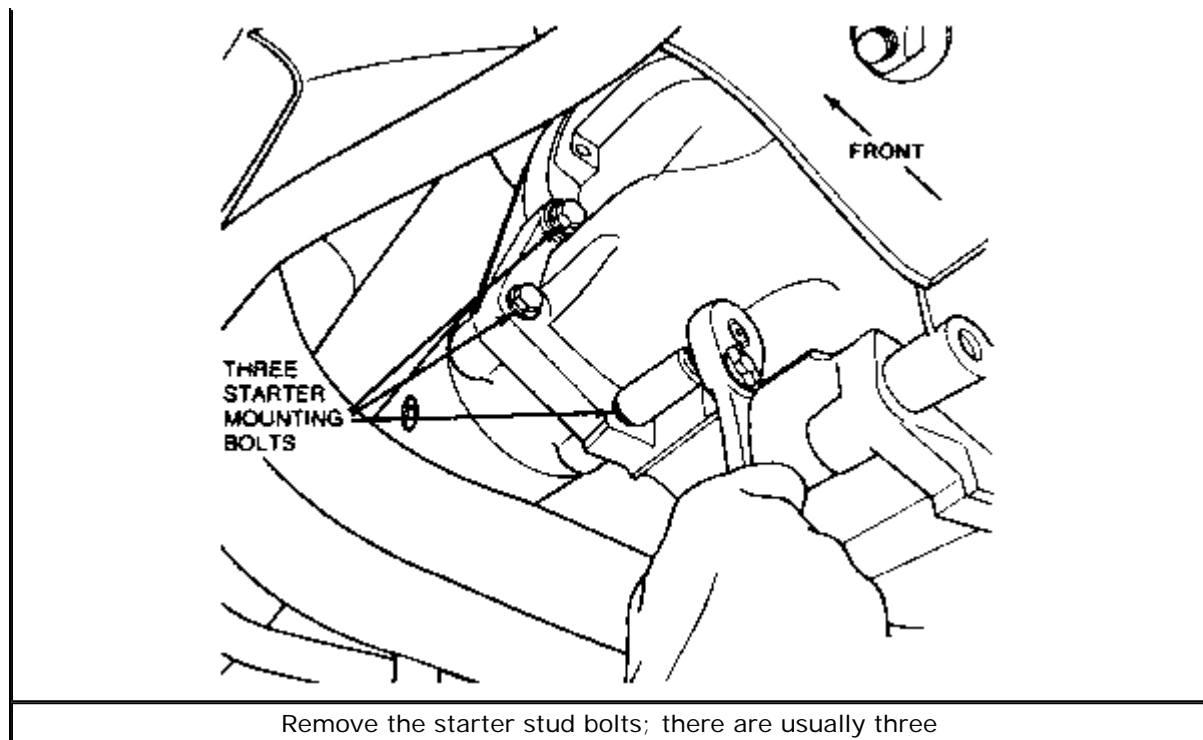
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11. Disengage the locking tabs using a small screwdriver, then remove the backup light switch connector from the transaxle backup light switch.



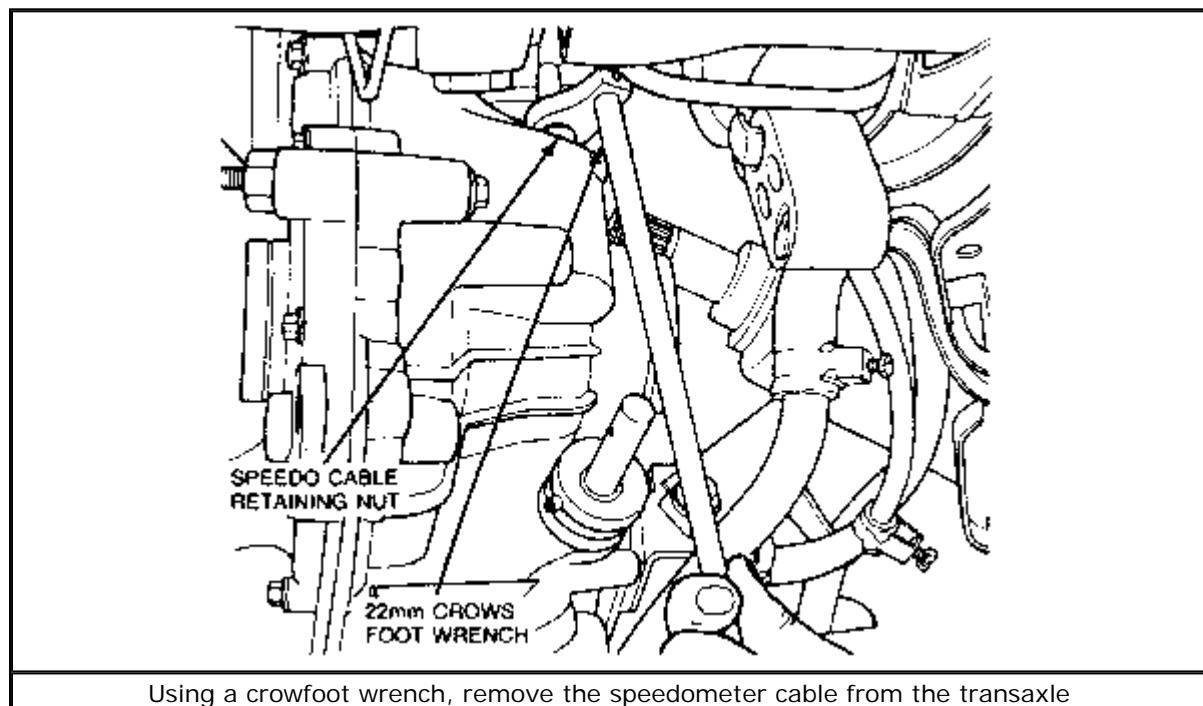
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12. Using a deep well socket, remove the starter stud bolts.



[Click to enlarge](#)

13. Remove the shift mechanism to shift shaft attaching nut and bolt and control selector indicator switch arm. Remove from the shift shaft.
14. Remove the bolts attaching the shift cable and bracket assembly to the transaxle.
15. Using a crowfoot wrench, remove the speedometer cable from the transaxle.

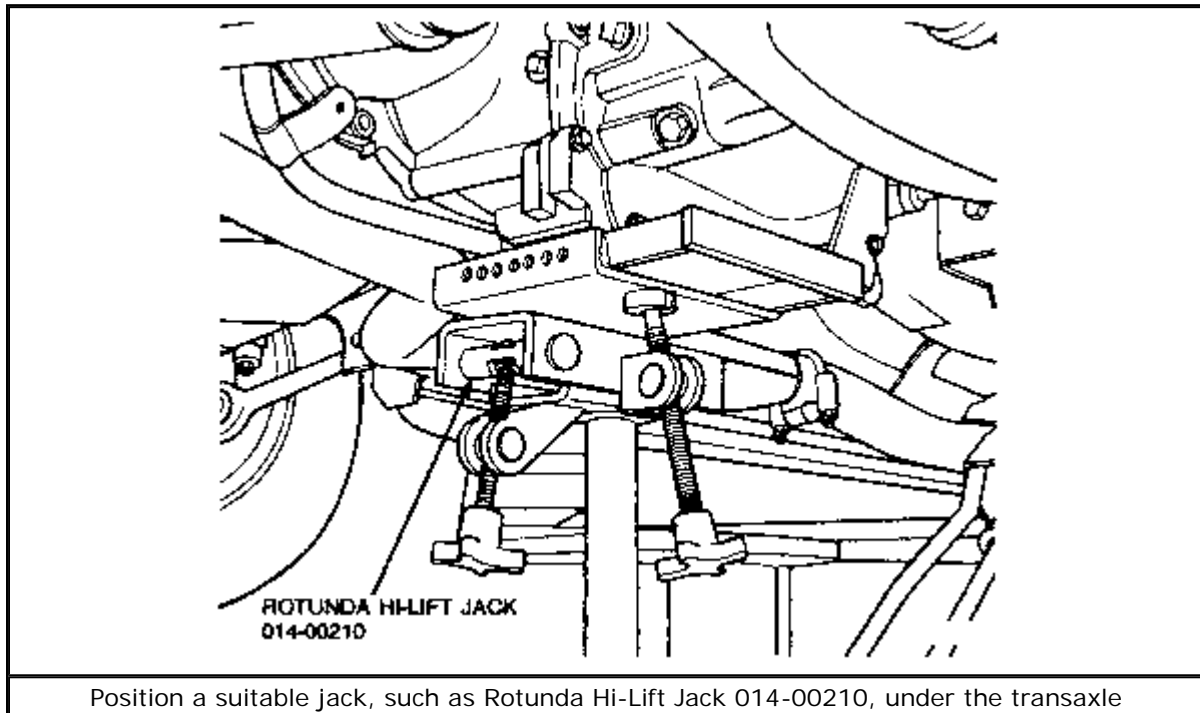


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16. Remove the stiffener brace attaching bolts from the lower position of the clutch housing.



17. Remove the subframe.
18. Position a suitable jack under the transaxle.

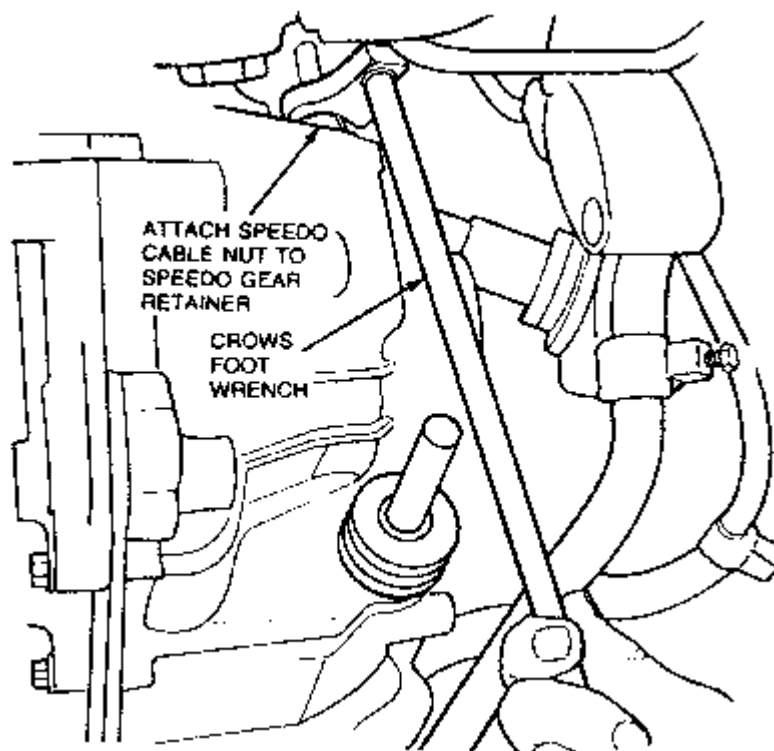


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19. Lower the transaxle support jack.
20. Remove the lower engine to transaxle attaching bolts.
21. Remove the transaxle from the rear face of the engine and lower it from the vehicle.

**To install:**

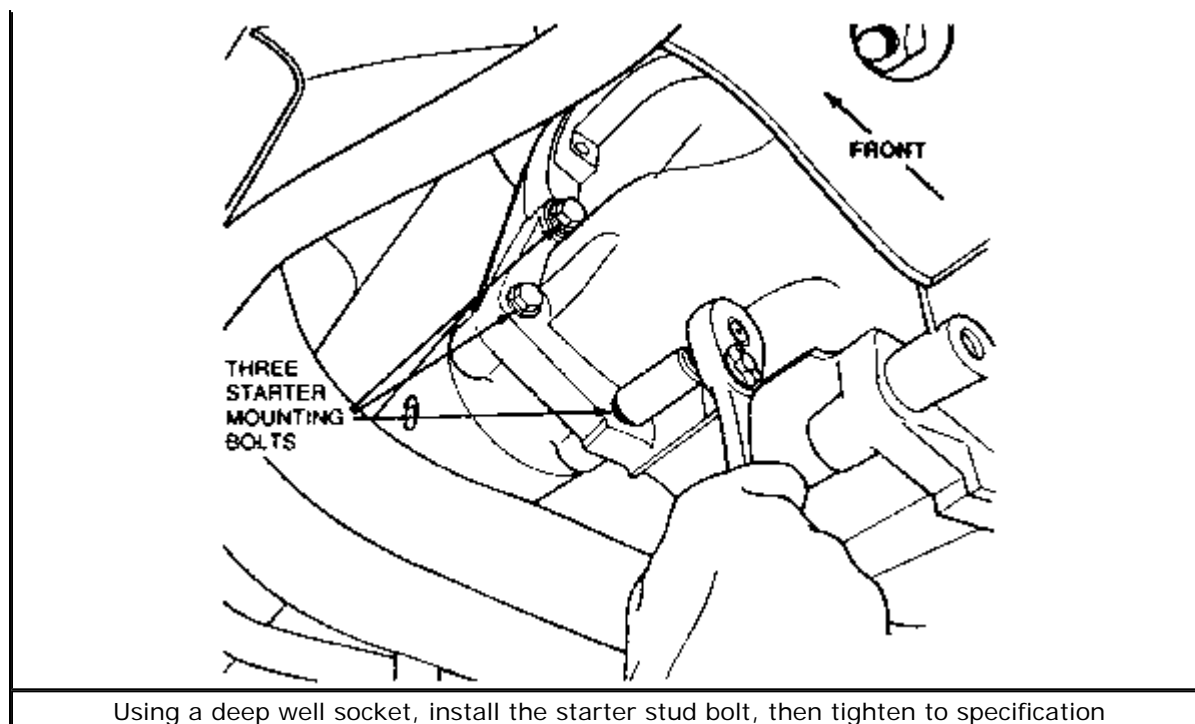
22. Raise the transaxle into position with the support jack. Engage the input shaft spline into the clutch disc and work the transaxle onto the dowel sleeves. Make sure the transaxle assembly is flush with the rear face of the engine prior to installation of the attaching bolts.
23. Install the lower engine to transaxle attaching bolts and tighten them to 28-31 ft. lbs. (38-42 Nm).
24. Install the speedometer cable. Be careful when threading the cable nut onto the retainer to avoid crossthreading.



When threading the speedometer cable nut onto the retainer, be careful to avoid crossthreading

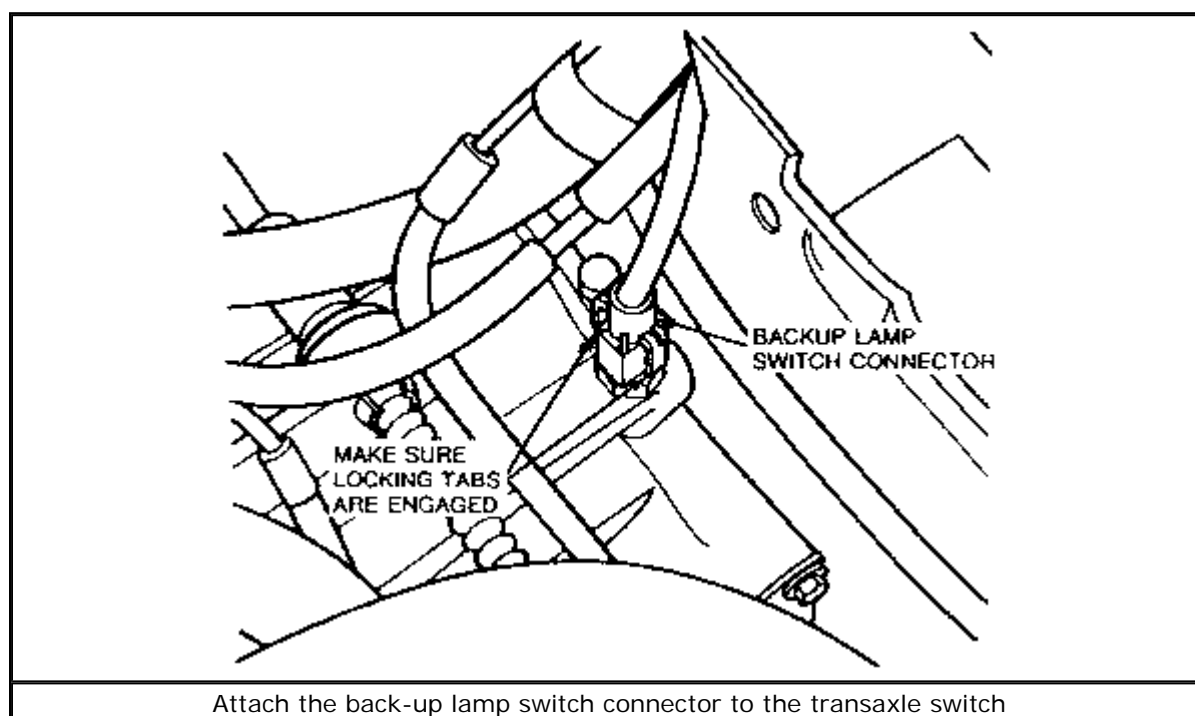
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25. Install the 10M and 12M bolts attaching the the shift cable and bracket to the transaxle. Tighten the 10M bolt to 16-22 ft. lbs. (22-30 Nm) and the 12M bolt to 22-35 ft. lbs. (30-47 Nm).
26. Install the bolt attaching the shift mechanism-to-shift shaft and tighten to 7-10 ft. lbs. (9-14 Nm).
27. Install the 2 bolts that attach the stiffener brace to the lower portion of the clutch housing and tighten to 15-21 ft. lbs. (21-28 Nm).
28. Install the starter stud bolts, then tighten to 30-40 ft. lbs. (41-54 Nm).



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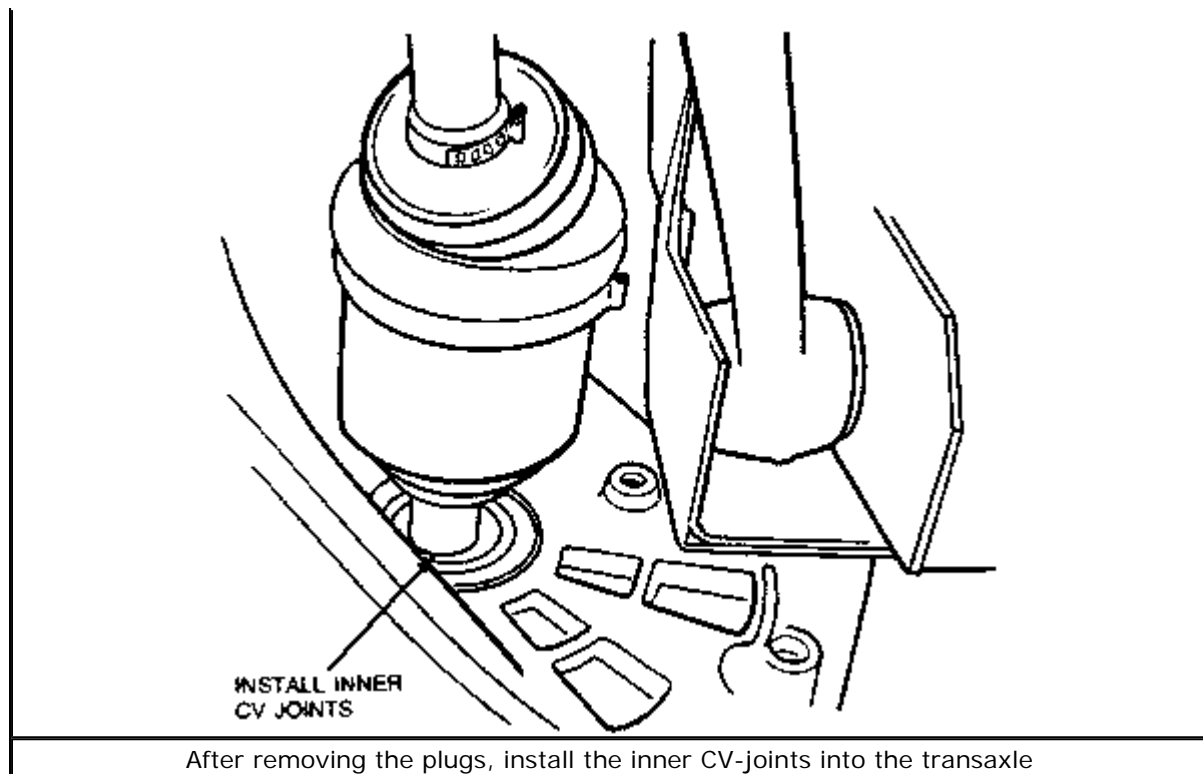
29. Install the backup light switch connector to the transaxle switch.



[Click to enlarge](#)

30. Remove the seal plugs, then install the inner CV-joints into the transaxle.

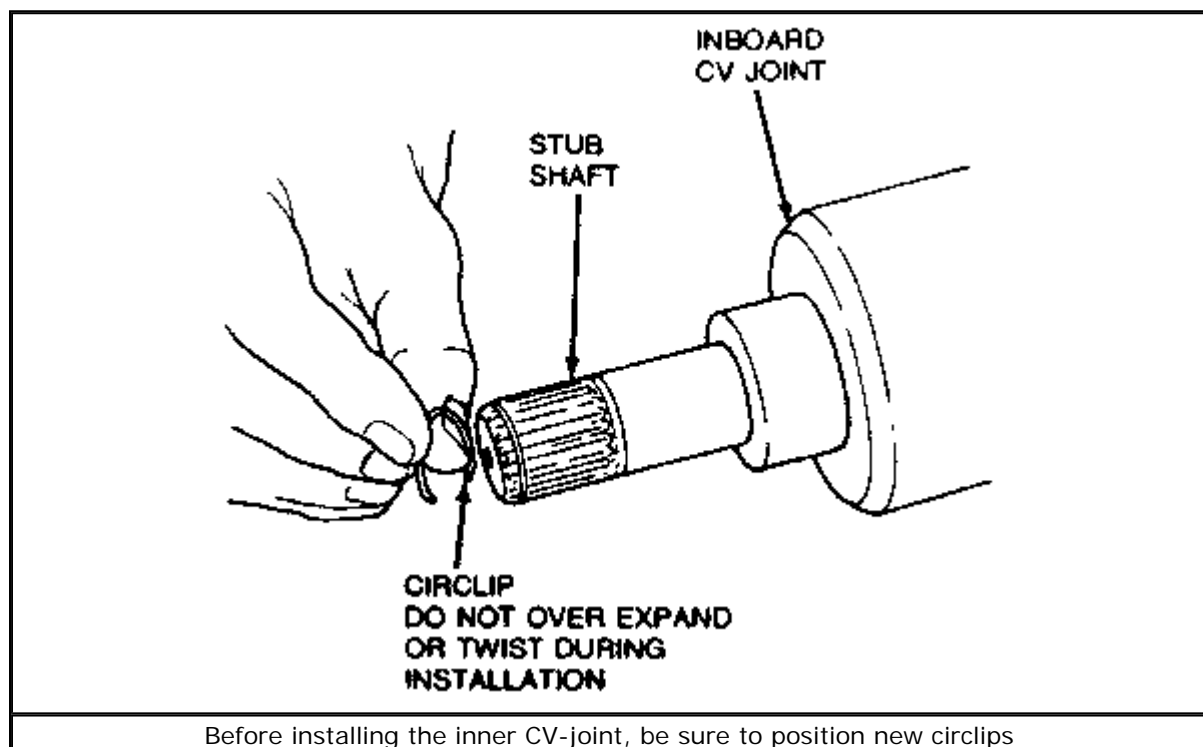




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31. Install the center bearing to the bracket on the right-side halfshaft.

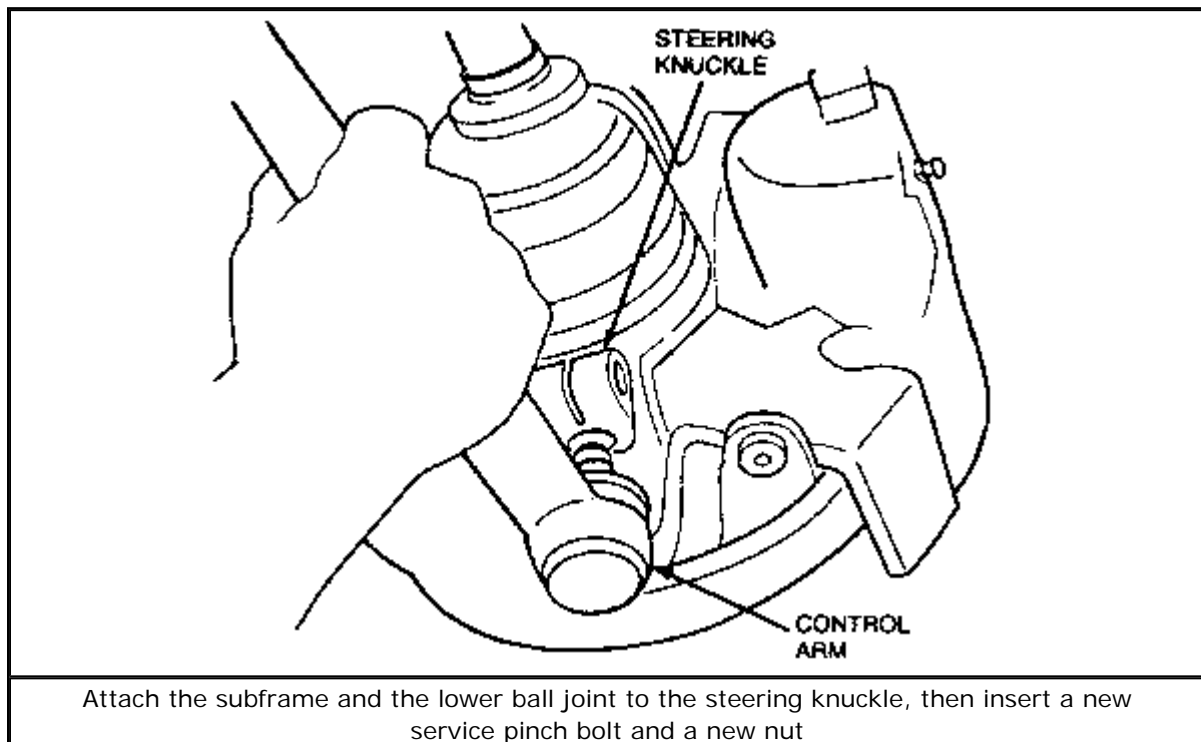
New circlips are required on both inner CV-joints prior to installation.  
Make sure both CV-joints are seated in the transaxle.



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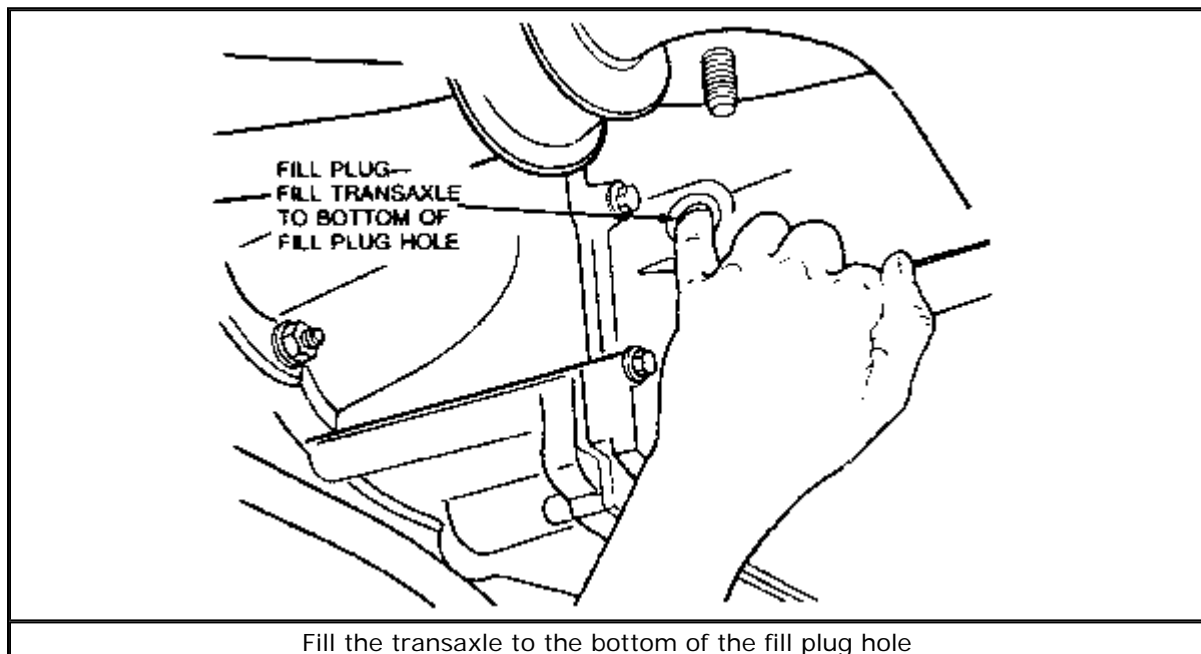
32. Attach the subframe and the lower ball joint to the steering knuckle. Insert a new

service pinch bolt and a new nut. Tighten the nut to 37-44 ft. lbs. (50-60 Nm) but do not tighten the bolt.



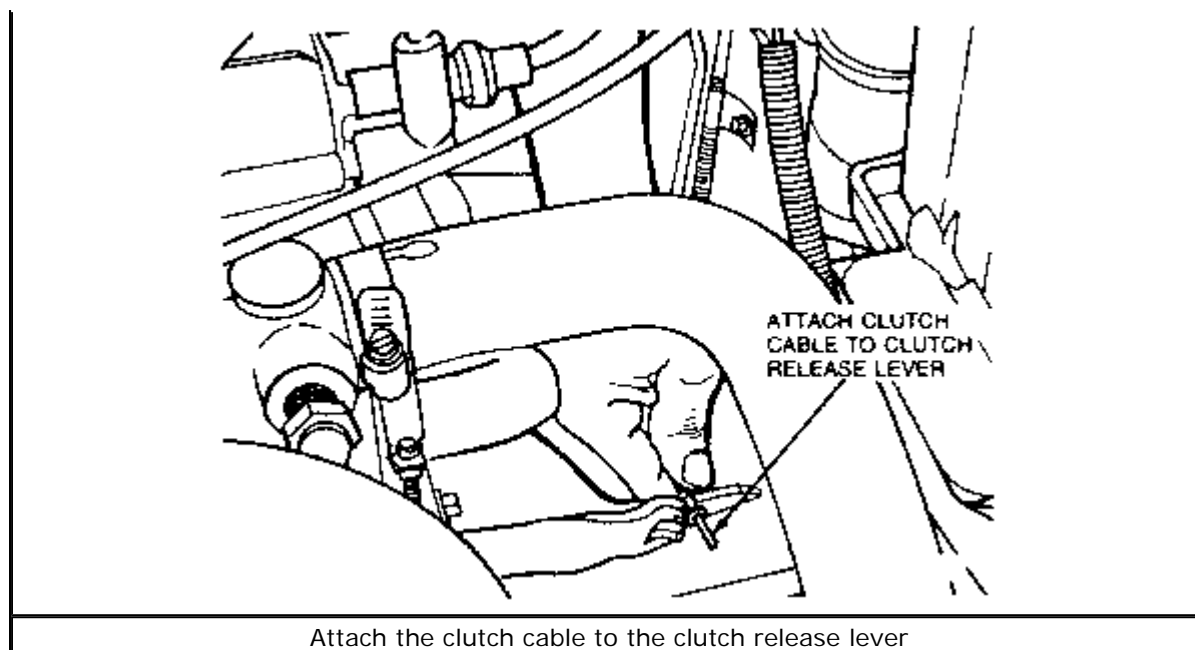
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33. Fill the transaxle with the proper type and quantity of transmission fluid.



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34. Install the top transaxle to engine mounting bolts and tighten to 28-31 ft. lbs. (38-42 Nm).
35. Connect the clutch cable to the clutch release shaft assembly.

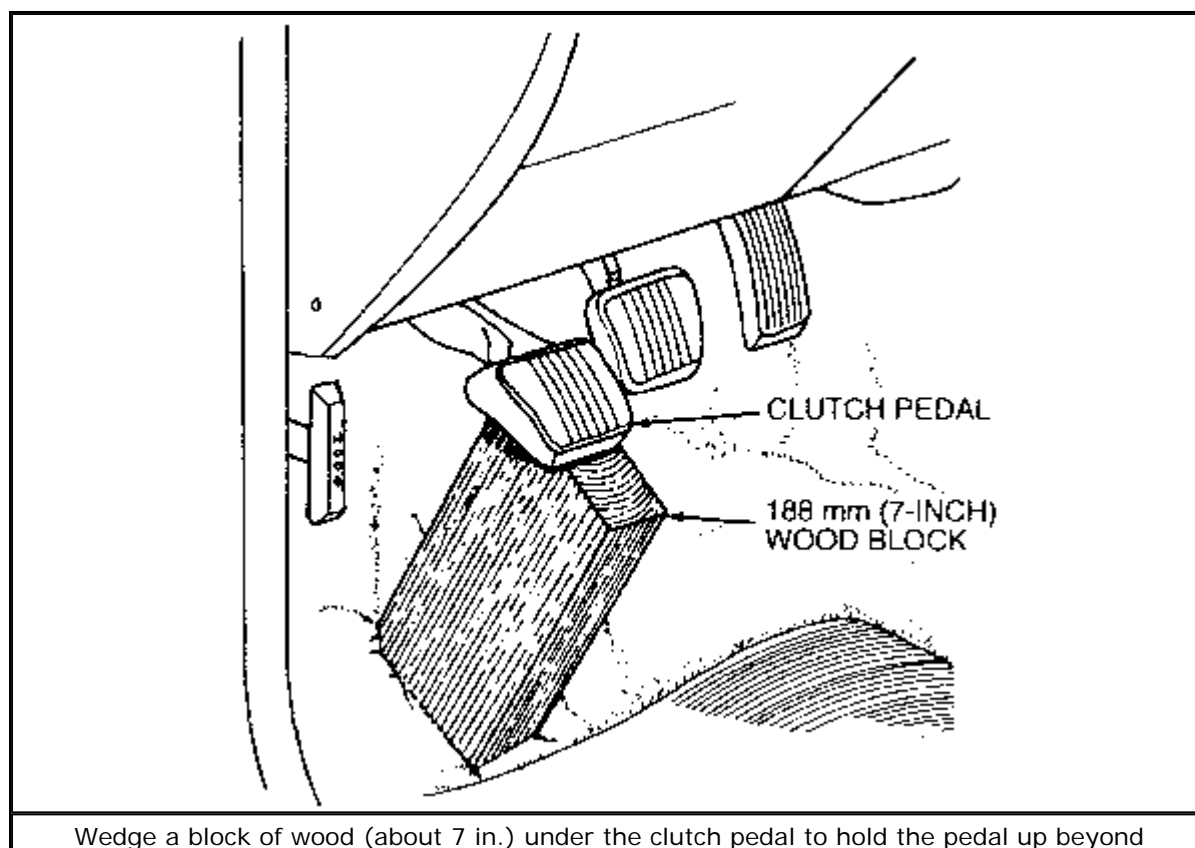


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36. Remove the wood block from under the clutch pedal. Before starting the engine, set the hand brake, then pump the clutch pedal at least 2 times to ensure proper clutch adjustment.

### 1989-95 Vehicles

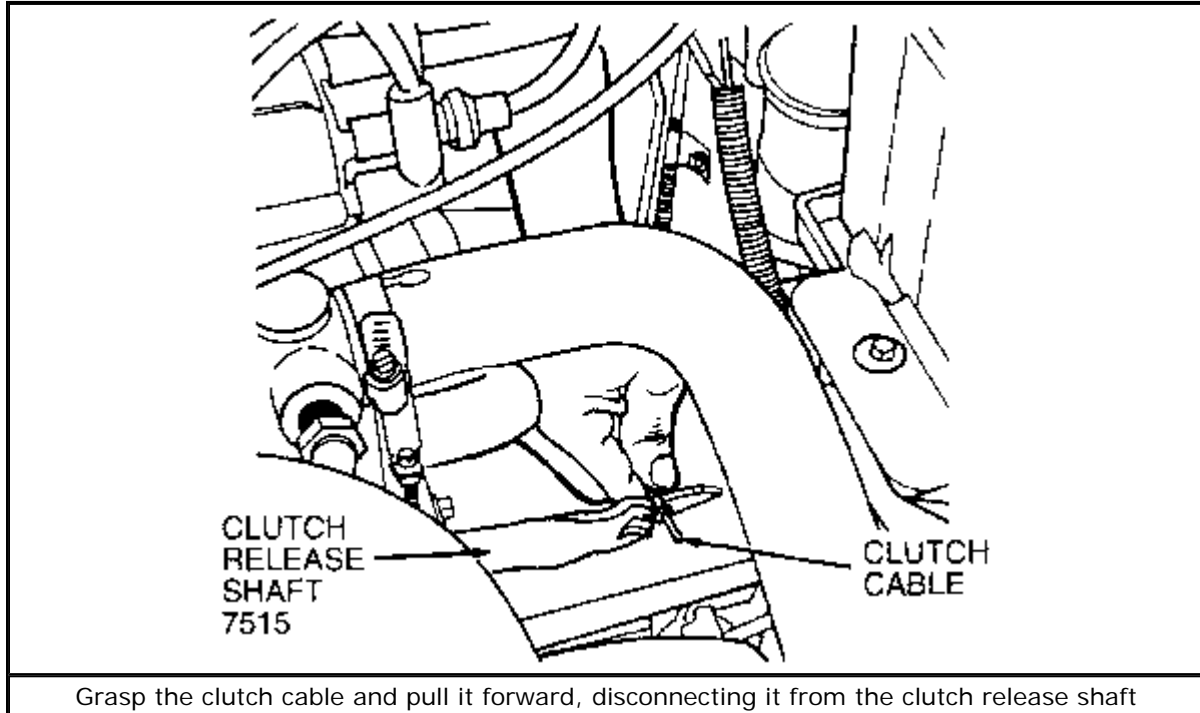
1. Disconnect the negative battery cable.
2. Wedge a 7 in. (178mm) block of wood under the clutch pedal to hold the pedal up beyond it's normal position.



its normal position

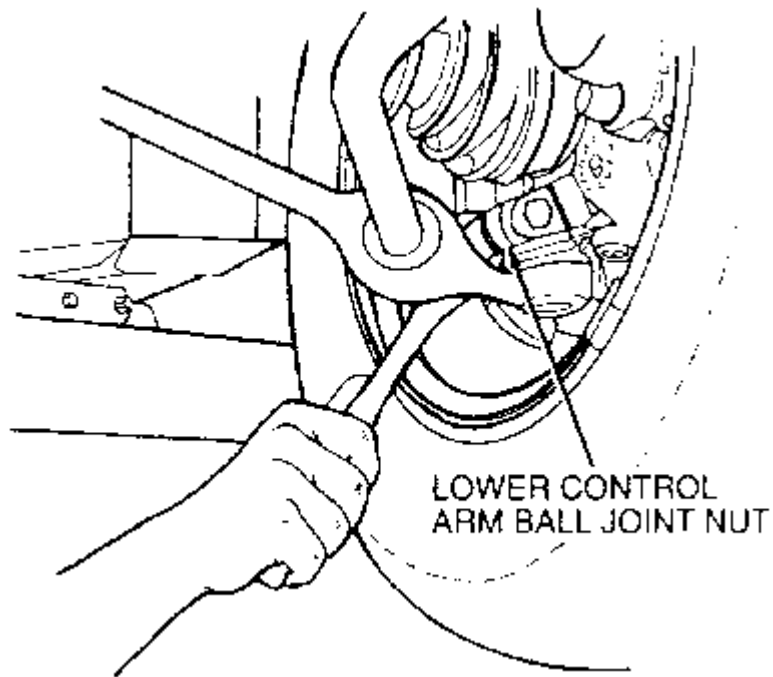
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3. Remove the air cleaner hose.
4. Grasp the clutch cable and pull it forward, disconnecting it from the clutch release shaft assembly.



[Click to enlarge](#)

5. Disconnect the clutch cable casing from the rib on top of the transaxle case.
6. Install engine lifting eyes.
7. Tie up the wiring harness and power steering cooler hoses.
8. Disconnect the speedometer cable and speed sensor wire.
9. Support the engine using a suitable engine support fixture.
10. Raise the vehicle and support it safely. Remove the wheel and tire assemblies.
11. Remove the nut and bolt retaining the lower control arm ball joint to the steering knuckle assembly. Discard the removed nut and bolt. Repeat the procedure on the opposite side.

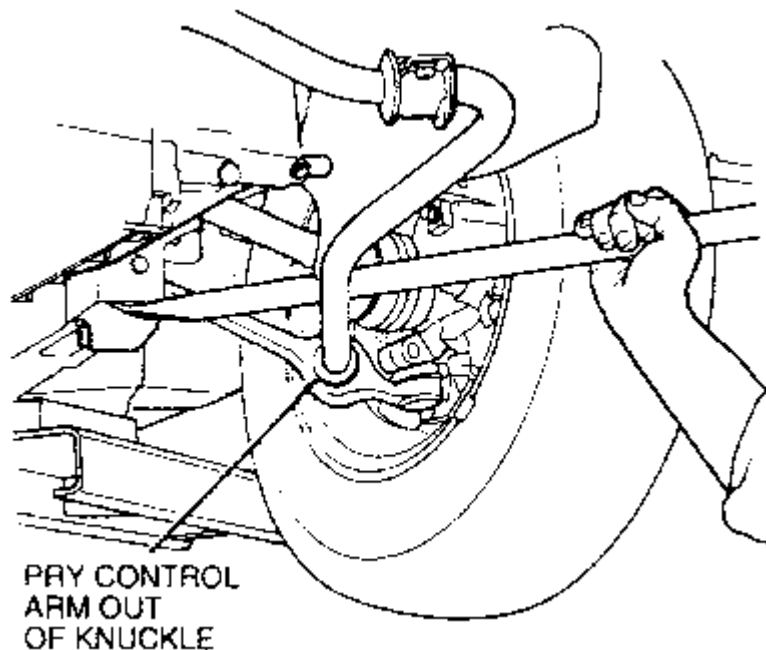


Remove the nut and bolt retaining the lower control arm ball joint to the steering knuckle assembly. Be sure to discard the nut and bolt, since new ones must be used for installation

[Click to enlarge](#)

12. Using a suitable halfshaft remover, pry the lower control arm away from the knuckle.

Be careful not to damage or cut the ball joint boot.



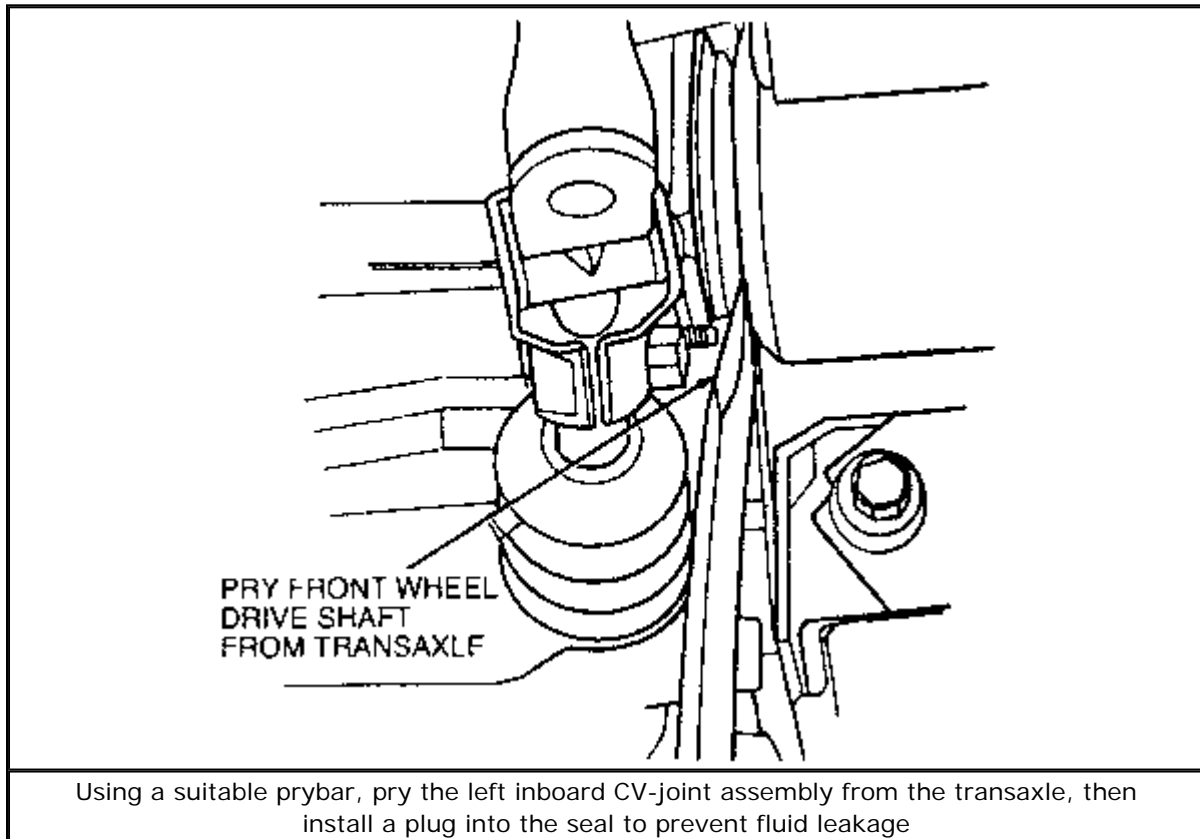
Using Halfshaft Remover D83P-4026-A or equivalent, pry the front suspension lower arm away from the knuckle

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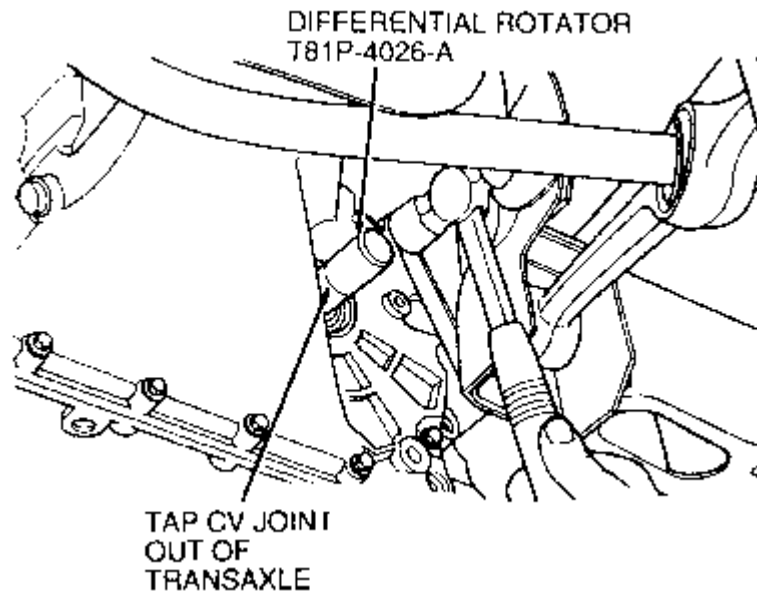


13. Remove the upper nut from the stabilizer bar and separate the stabilizer bar from the knuckle.
14. Remove the tie rod nut and separate the tie rod end from the knuckle.
15. Disconnect the heated oxygen sensor.
16. Remove the catalytic converter assembly.
17. Disconnect the power steering cooler from the subframe and place it aside.
18. Disconnect the battery cable bracket from the subframe.
19. Using a suitable prybar, pry the left inboard CV-joint assembly from the transaxle. Install a plug into the seal to prevent fluid leakage. Remove the CV-joint from the transaxle by grasping the left steering knuckle and swinging the knuckle and halfshaft outward from the transaxle. Repeat the procedure on the right side.

If the CV-joint assembly cannot be pried from the transaxle, insert a suitable tool through the left side and tap the joint out. The tool can be used from either side of the transaxle.



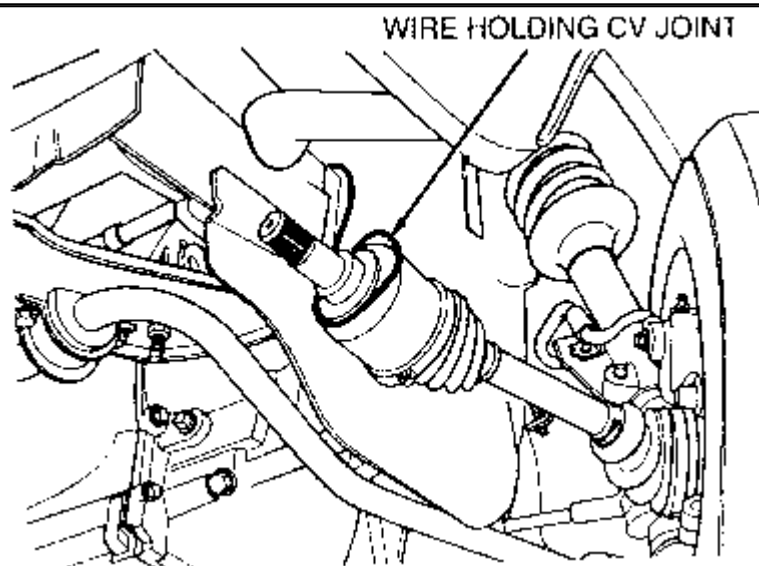
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If the CV-joint assembly cannot be pried from the transaxle, insert Differential Rotator T81P-4026-A or equivalent through the left side and tap the joint out

[Click to enlarge](#)

20. Support the halfshaft assembly with wire in a near level position to prevent damage to the assembly during the remaining operations. Repeat the procedure on the opposite side.

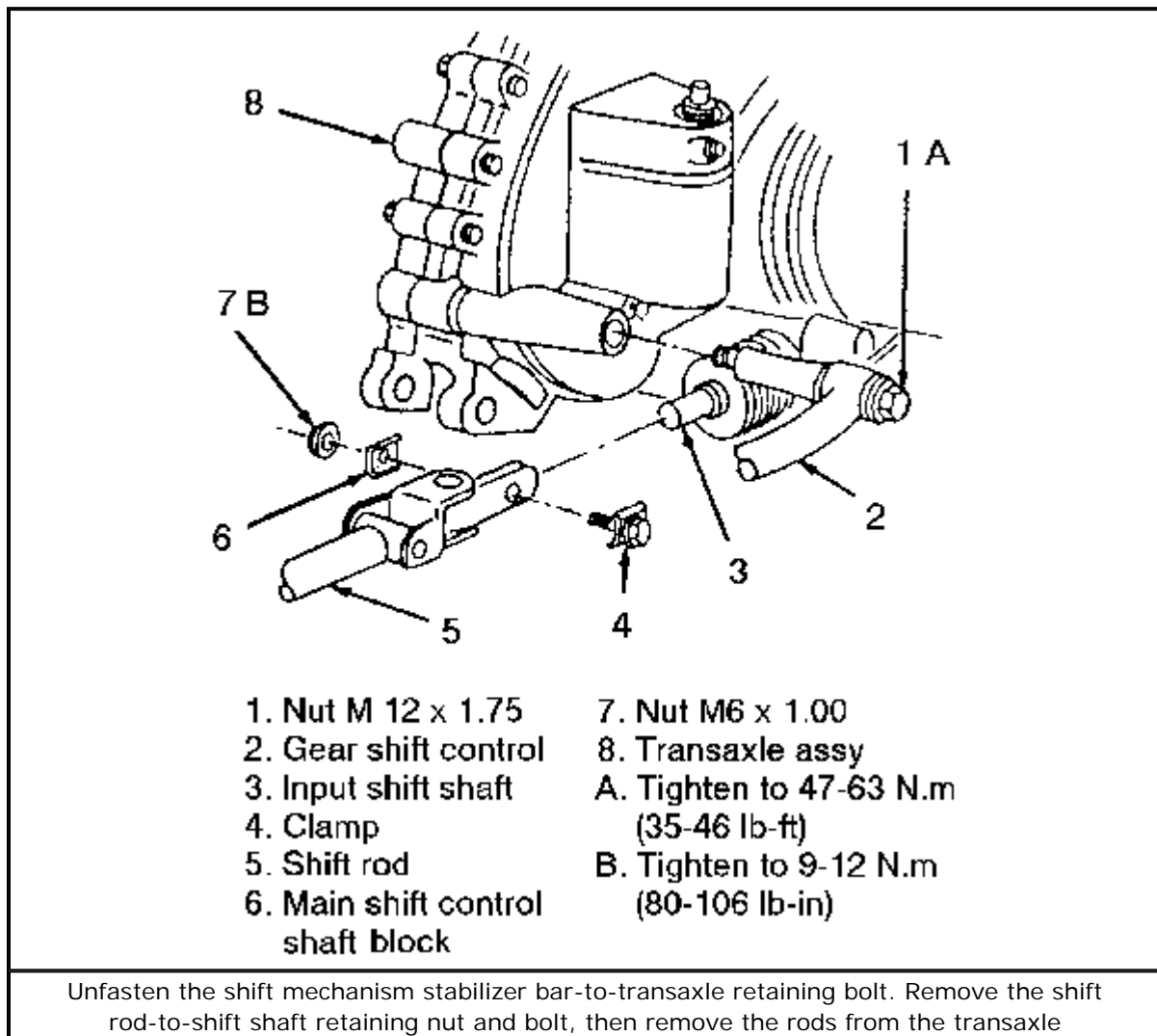


Support the halfshaft assembly with wire in a near level position to prevent damage to the assembly during the remaining operations

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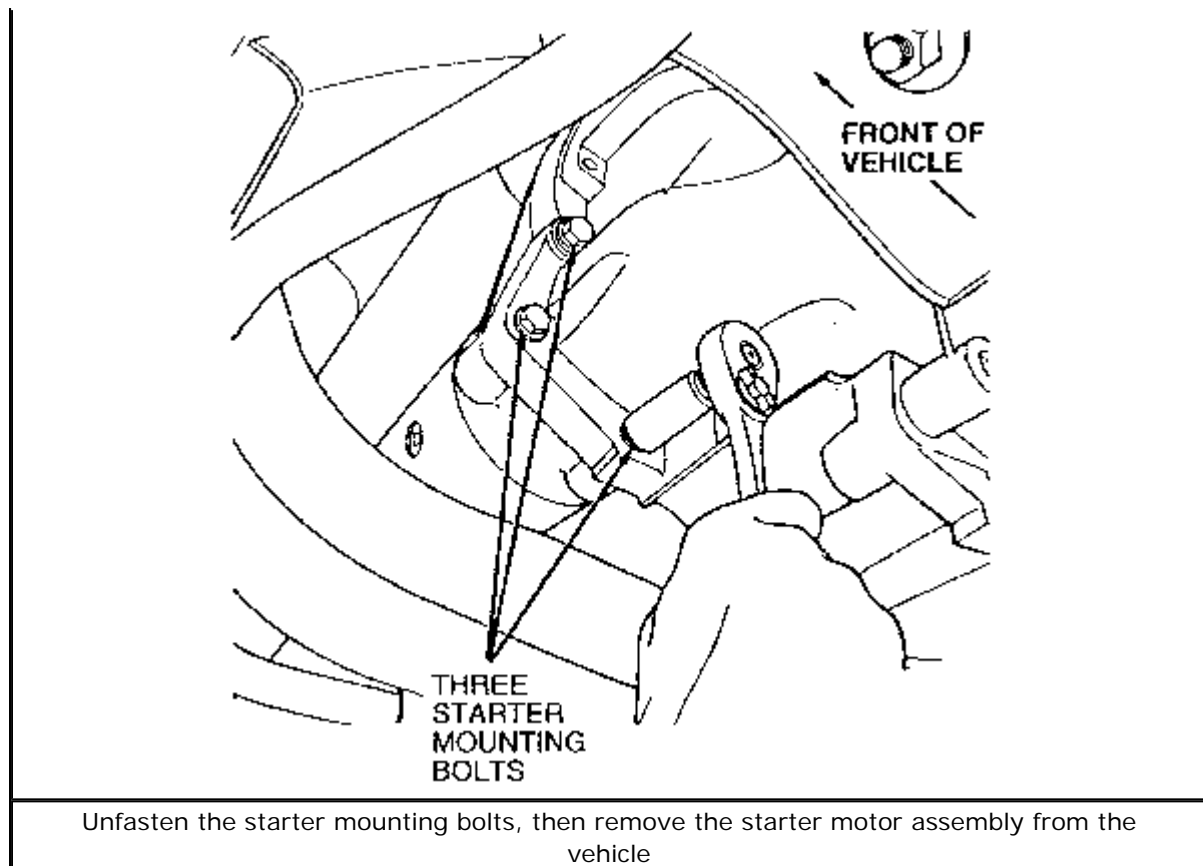
21. Remove the retaining bolts from the center support bearing and remove the right halfshaft from the transaxle.
22. Remove the 2 steering gear retaining nuts from the subframe. Support the steering gear by wiring up the tie rod ends to the coil springs.
23. Remove the transaxle-to-engine retaining bolts.
24. Unfasten the shift mechanism stabilizer bar-to-transaxle retaining bolt. Remove

the shift rod-to-shift shaft retaining nut and bolt, then remove the rods from the transaxle.



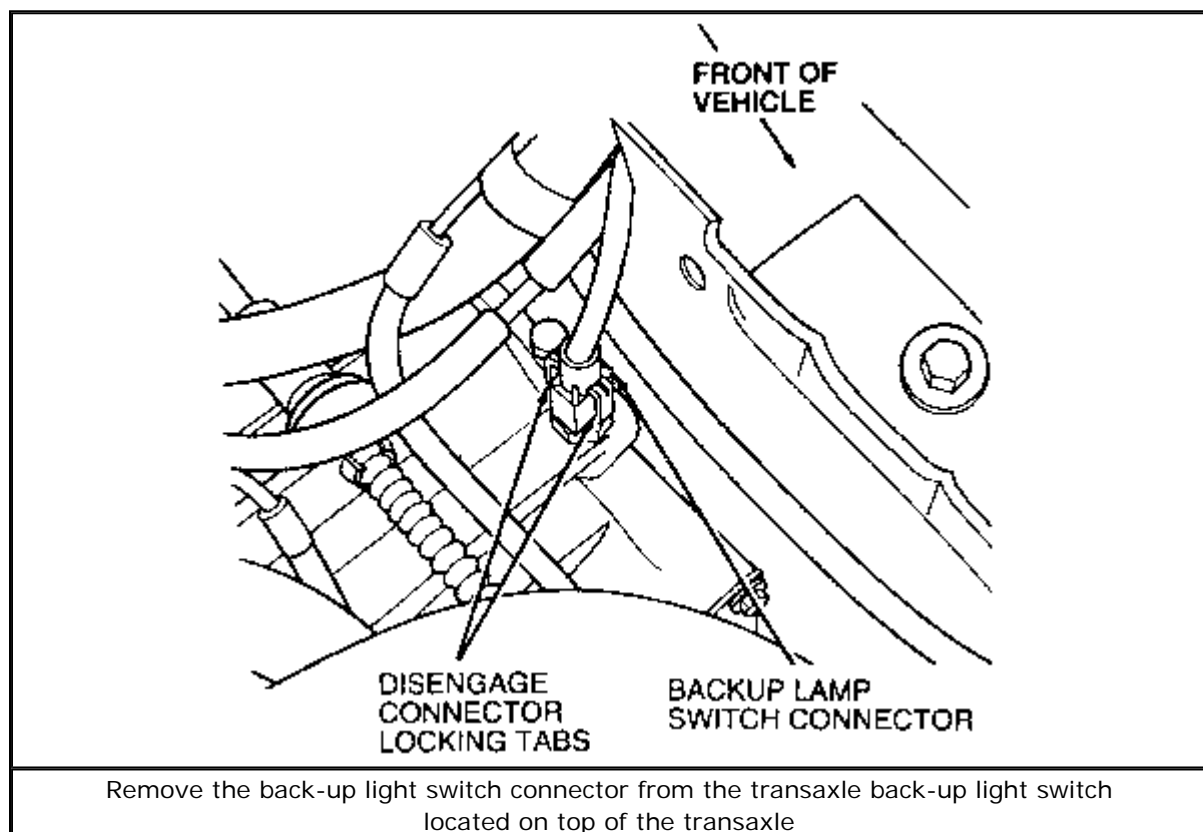
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25. Remove the engine mount bolts.
26. Position jacks under the body mount positions and remove the 4 bolts, lower the subframe and position it aside.
27. Remove the starter mounting bolts, then remove the starter motor assembly.



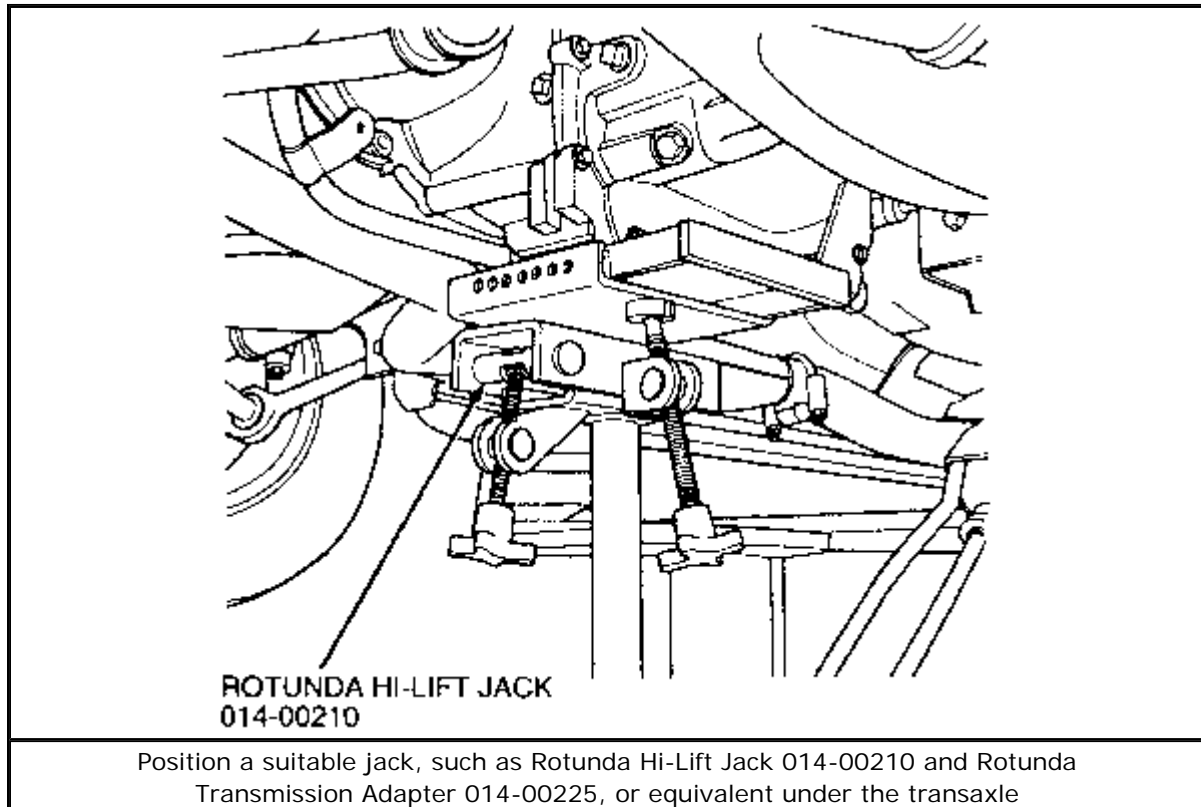
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28. Remove the left engine vibration dampener lower bracket.
29. Using a small screwdriver, remove the backup light switch connector from the transaxle backup light switch, located on top of the transaxle.



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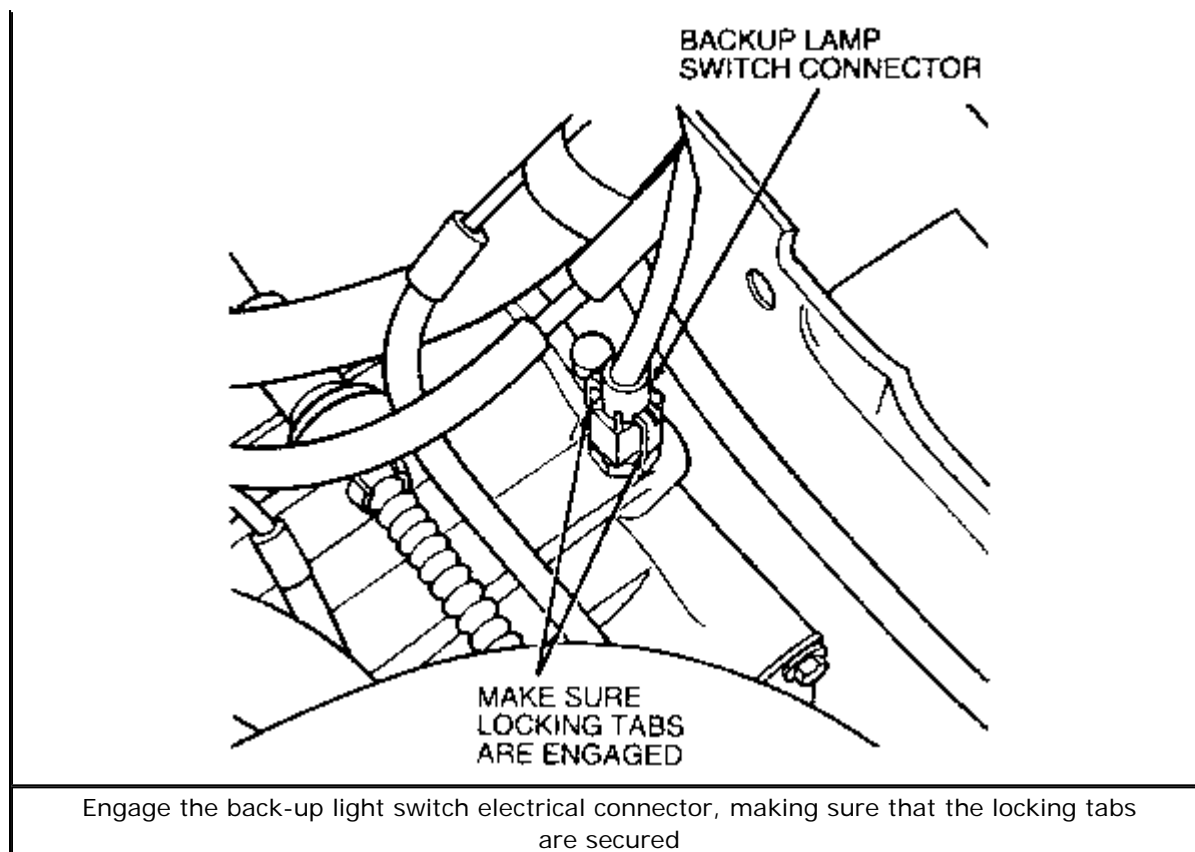
30. Position a suitable support jack and adapter under the transaxle.

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31. Lower the transaxle, remove it from the engine and lower it from the vehicle.

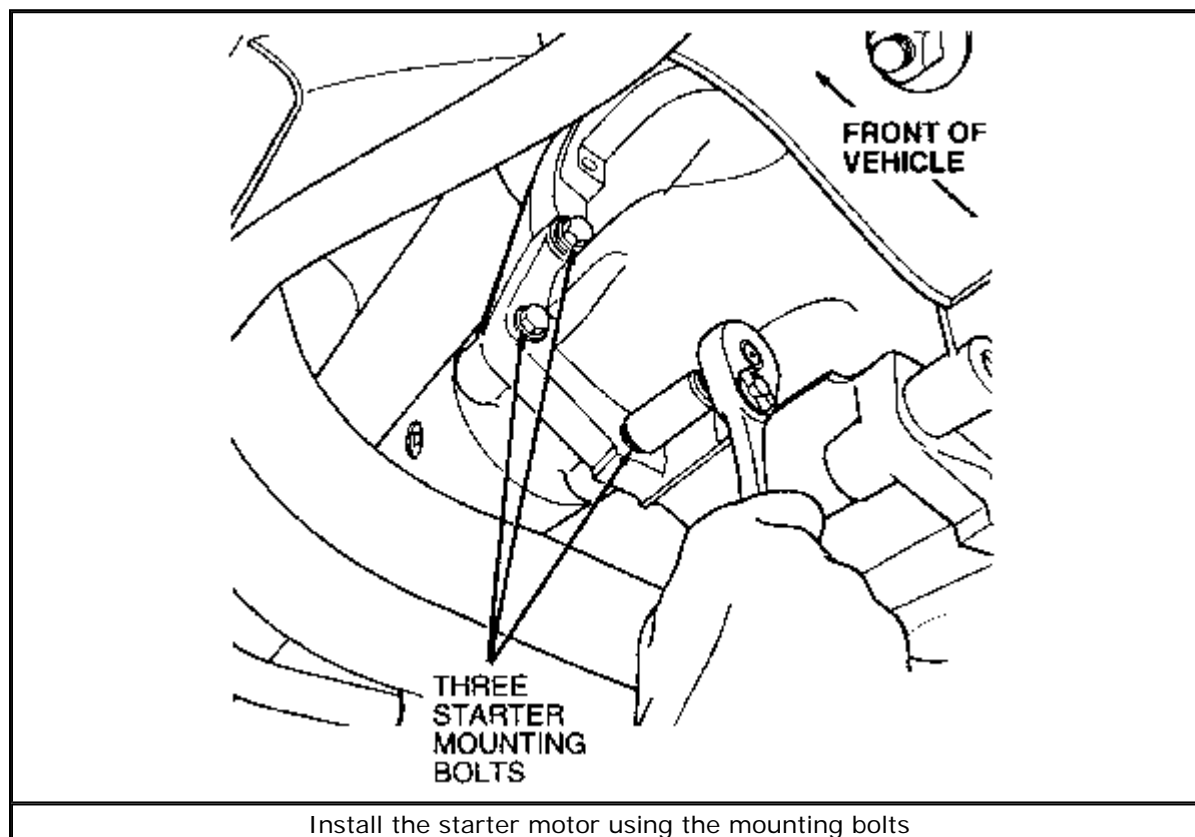
To install:

32. Raise the transaxle into position. Engage the input shaft spline into the clutch disc and work the transaxle onto the dowel sleeves. Make sure the transaxle assembly is flush with the rear face of the engine before installation of the retaining bolts.
33. Install the engine to transaxle retaining bolts. Tighten to 28-31 ft. lbs. (38-42 Nm).
34. Engage the backup light switch electrical connector.



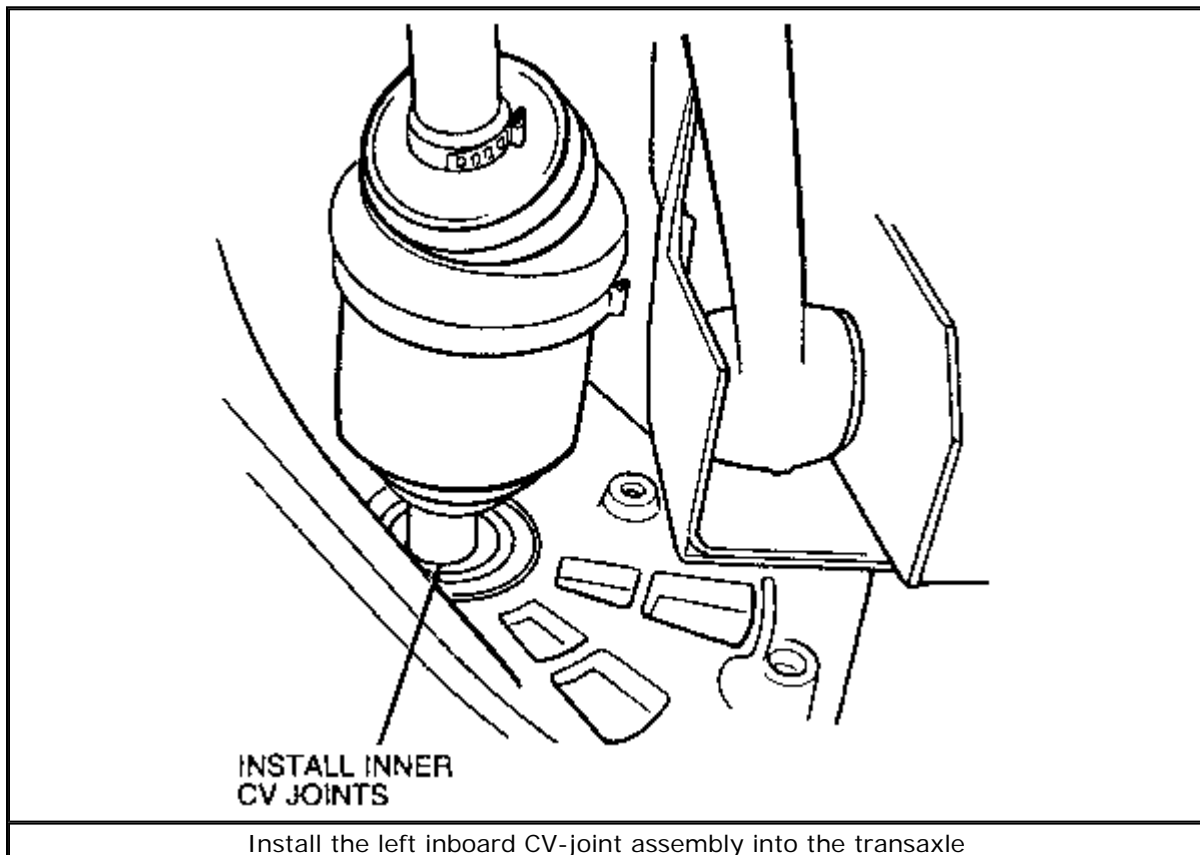
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35. Install the starter motor. Tighten the retaining bolts to 30-40 ft. lbs. (41-54 Nm).

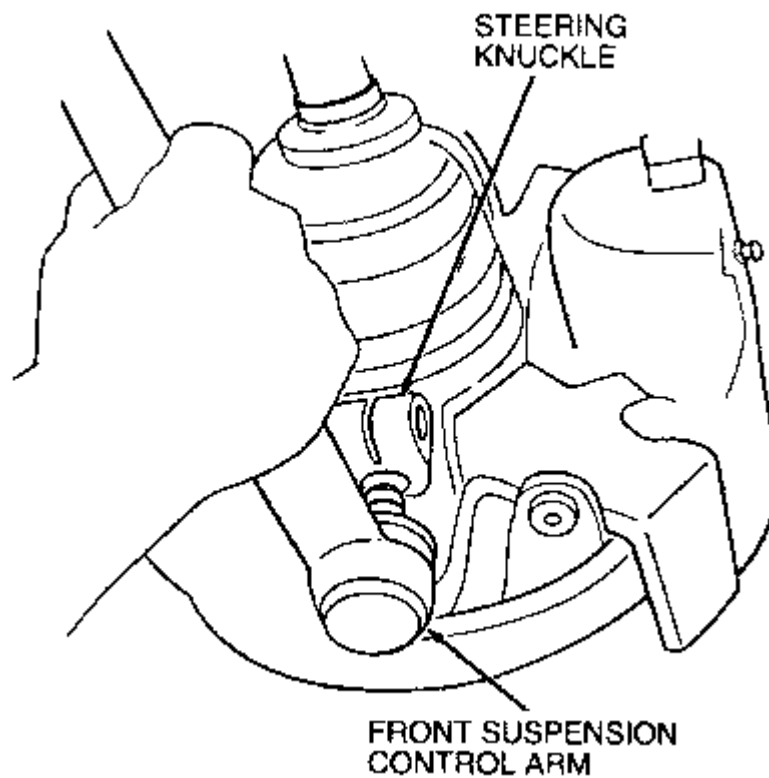


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36. Using jacks, position the subframe and raise it into position. Install the 4 bolts and tighten to 65-85 ft. lbs. (88-115 Nm).
37. Install the left vibration dampener lower bracket.
38. Install the engine mount bolts and tighten to 40-55 ft. lbs. (54-75 Nm).
39. Connect the shift cables to the transaxle.
40. Install the engine to transaxle bolts and tighten to 28-31 ft. lbs. (38-42 Nm).
41. Install the steering gear retaining nuts and tighten to 85-100 ft. lbs. (115-135 Nm).
42. Install the center support bearing retaining bolts and tighten to 85-100 ft. lbs. (115-135 Nm).
43. Install the right halfshaft into the transaxle.
44. Install the left inboard CV-joint assembly into the transaxle.



45. Connect the battery cable bracket to the subframe.
46. Connect the power steering cooler to the subframe.
47. Position the catalytic converter, then install retaining bolts and tighten to 25-34 ft. lbs. (34-47 Nm).
48. Connect the heated oxygen sensor.
49. Install the tie rod end in the knuckle and the tie rod retaining nut. Tighten to 35-47 ft. lbs. (47-64 Nm).
50. Position the stabilizer bar to the knuckle, then install the nut.
51. Install the lower control arm ball joint to steering knuckle assembly. Install a new retaining nut and bolt, then tighten to 37-44 ft. lbs. (50-60 Nm).

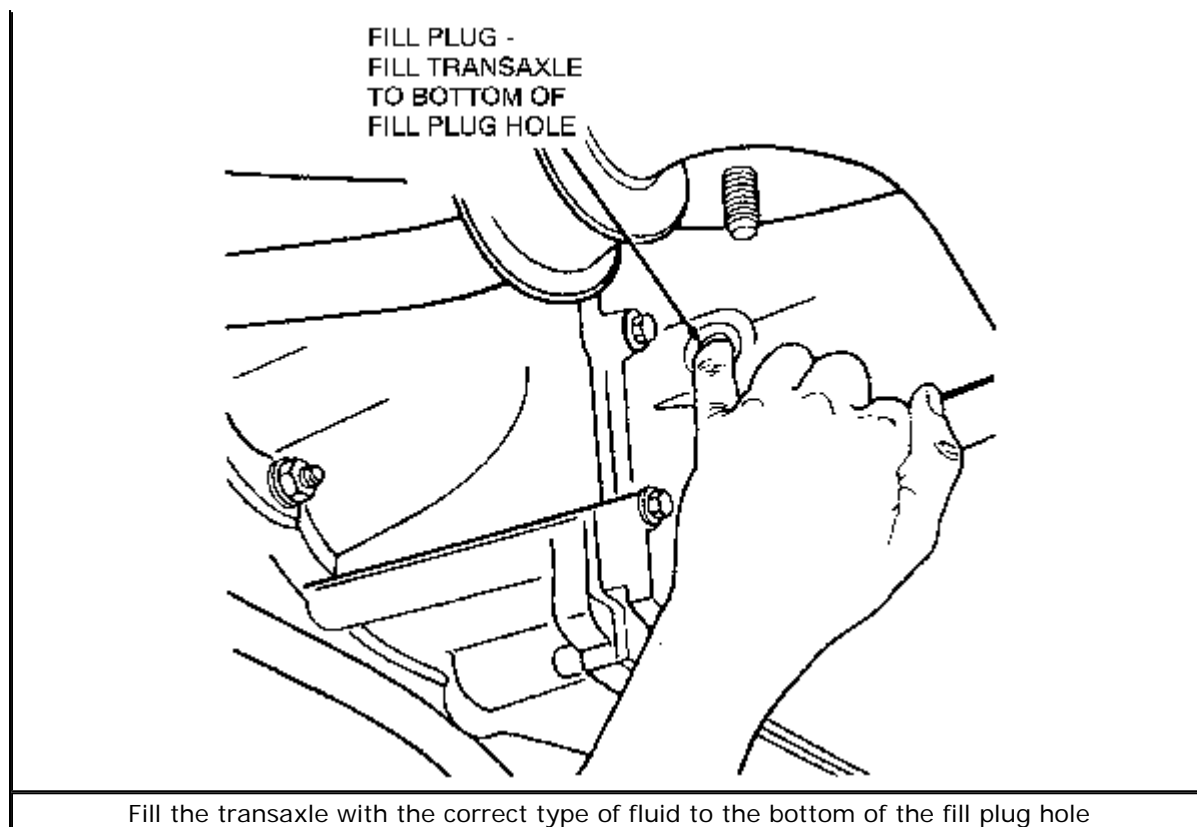


Install the lower control arm ball joint to the steering knuckle assembly, using a new retaining nut and bolt

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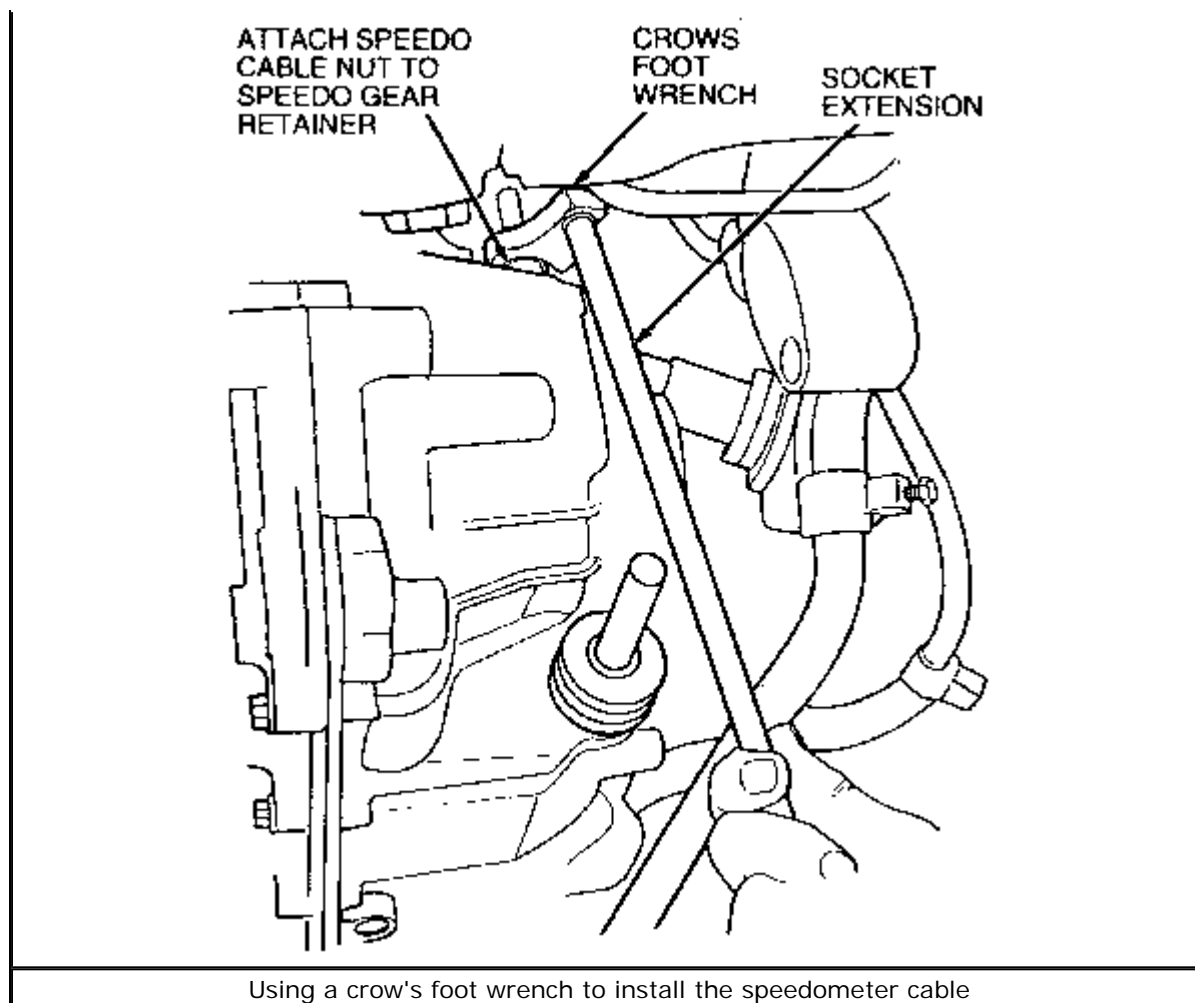
52. Install the wheel and tire assemblies.
53. Apply Pipe Sealant with Teflon® D8AZ-19554-A or equivalent, to the transaxle fill plug threads, in a clockwise direction, then check the transaxle fluid level. Add the correct type of fluid (Motorcraft MERCON® Multi-Purpose Automatic Transmission Fluid or equivalent) to the bottom of the fill plug hole, then install the fill plug.





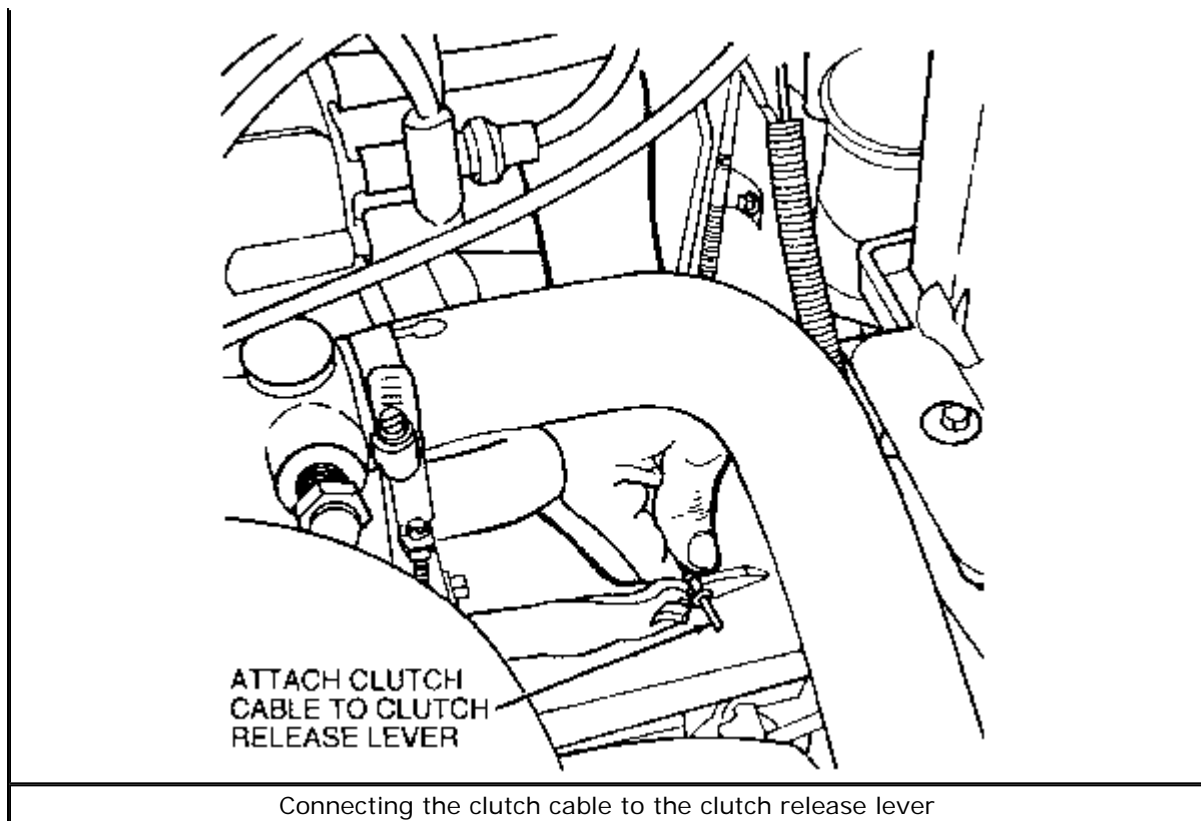
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54. Carefully lower the vehicle.
55. Remove the engine support tool.
56. Using a crows foot wrench, install the speedometer cable. Connect the speedometer cable and speed sensor wire.



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57. Remove the engine lifting eyes.
58. Connect the clutch cable to the clutch release lever.



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59. Install the air cleaner hose, then remove the wood block from the clutch pedal.
60. Connect the negative battery cable, then check the transaxle for fluid leaks.

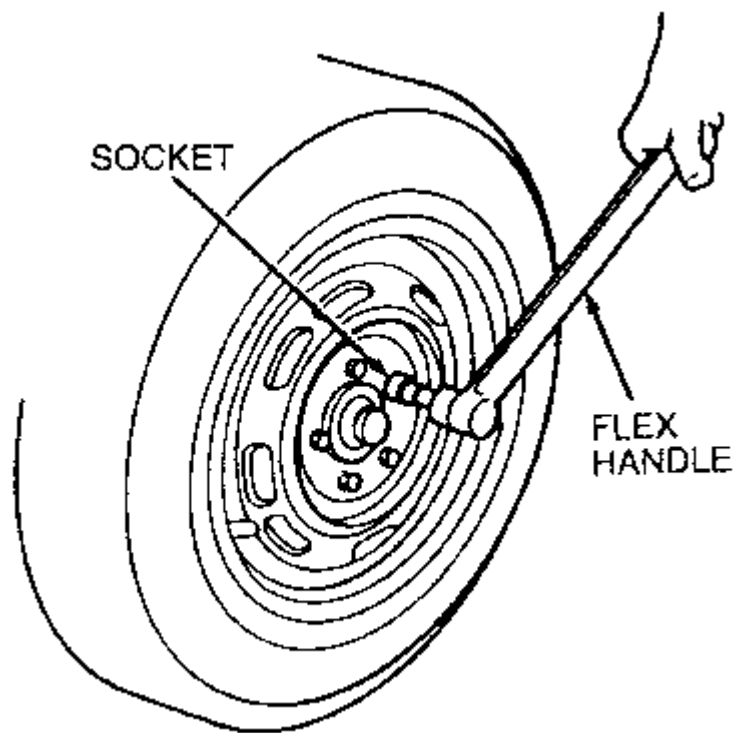
## Halfshafts

When removing both the left and right halfshafts, install suitable shipping plugs to prevent dislocation of the differential side gears. Should the gears become misaligned, the differential will have to be removed from the transaxle to re-align the side gears.

**Do NOT begin this procedure unless you have the following parts:** a new front axle wheel hub retainer, a new lower control arm-to-steering knuckle retaining retaining bolt and nut, a new driveshaft bearing retainer circlip and a new interconnecting shaft driveshaft bearing retainer circlip. Once these parts are removed, they CANNOT be reused. Their torque holding ability or retention capability is reduced during removal.

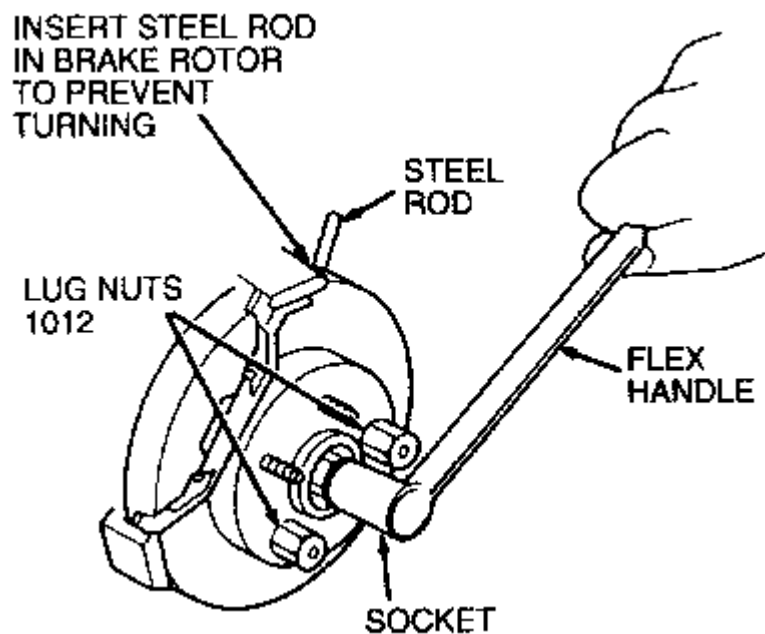
## REMOVAL & INSTALLATION

1. Disconnect the negative battery cable. Remove the wheel/hub cover from the wheel and tire assembly, then loosen the wheel lug nuts.



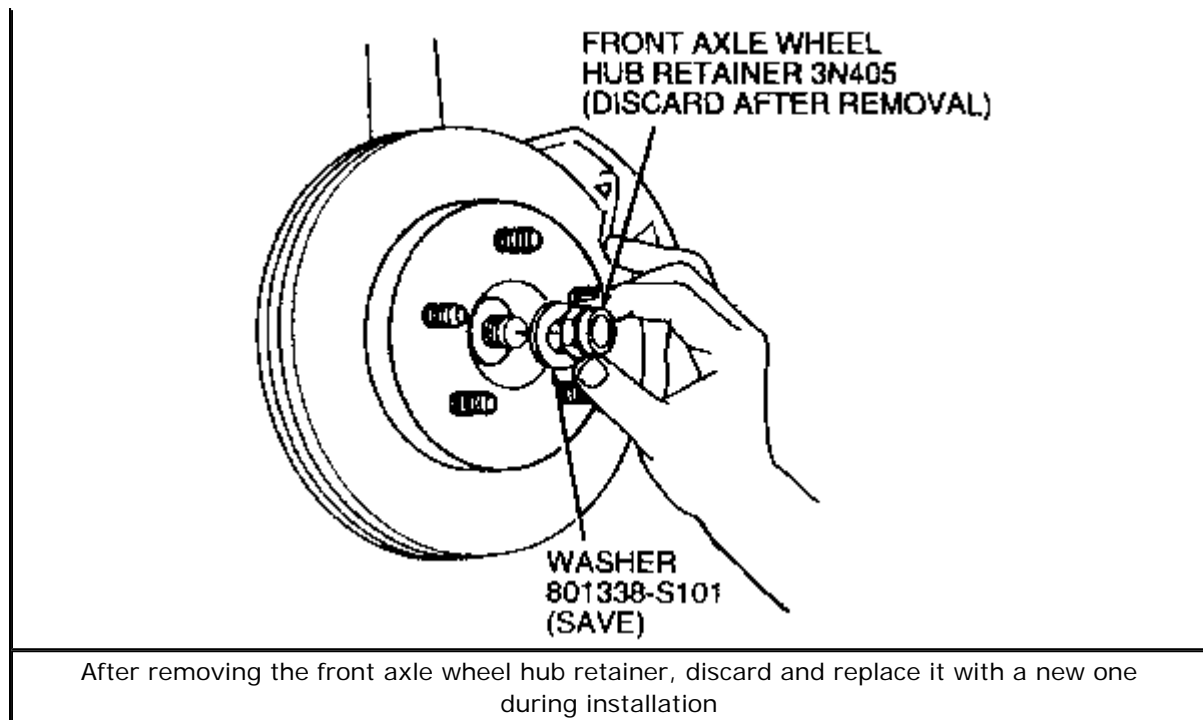
With the vehicle still on the ground, remove the wheel cover from the wheel and tire assembly, then loosen the lug nuts

2. Raise and safely support the vehicle. Remove the wheel and tire assembly, then remove the axle wheel hub nut and washer. Discard the old hub nut.



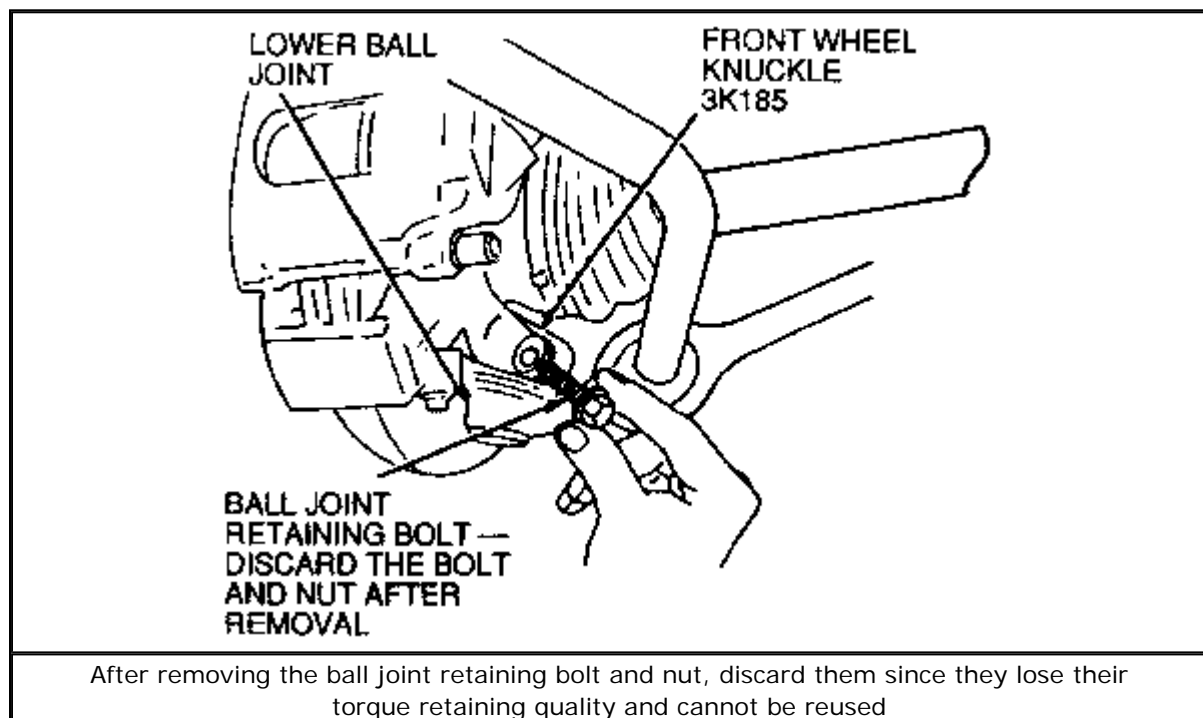
After the vehicle is safely raised, remove the wheel and tire assembly, then remove the axle wheel hub retainer, it is helpful to use a steel rod in the brake rotor to keep it from turning

[Click to enlarge](#)



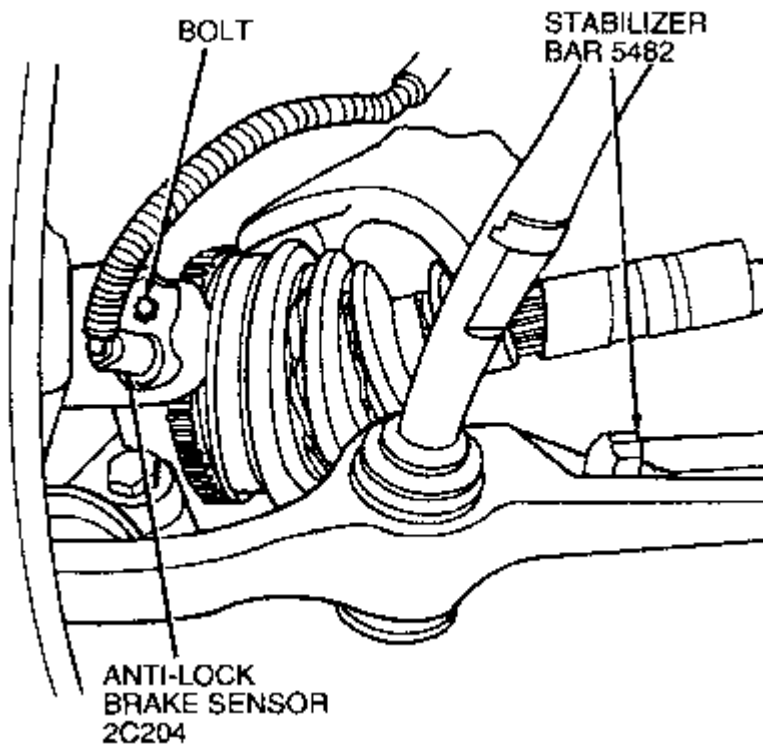
[Click to enlarge](#)

3. Remove the nut from the ball joint-to-steering knuckle attaching bolt(s).
4. Drive the bolt out of the steering knuckle using a punch and hammer. Discard this bolt and nut after removal.



[Click to enlarge](#)

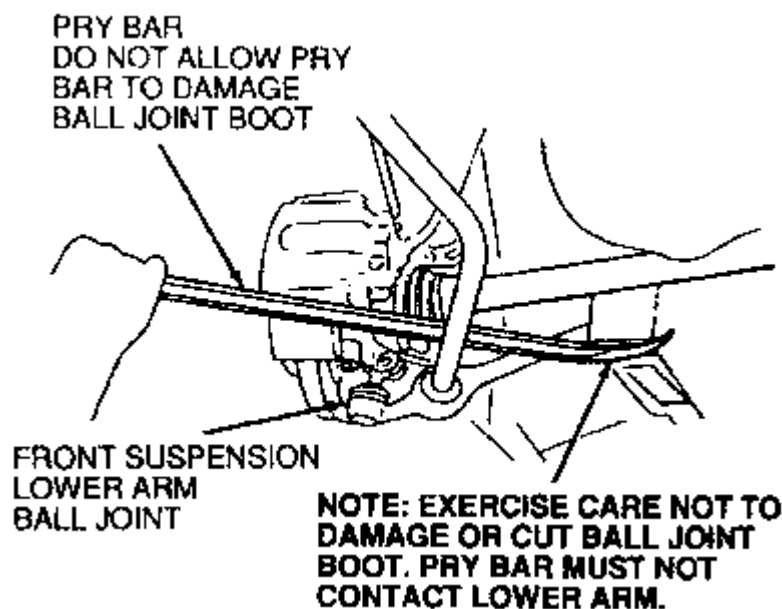
5. If equipped with anti-lock brakes, remove the anti-lock brake sensor and position aside. If equipped with air suspension, remove the height sensor bracket retaining bolt and wire sensor bracket to inner fender. Position the sensor link aside.



If your vehicle is equipped with anti-lock brakes, remove the anti-lock brake sensor, then position it aside

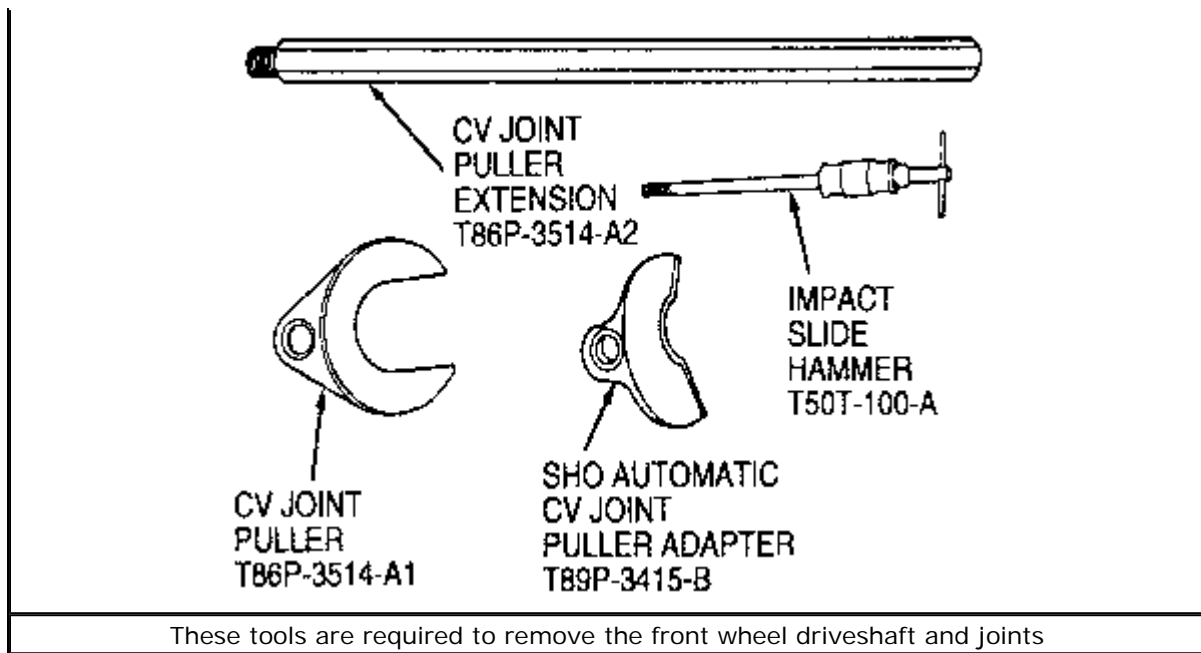
[Click to enlarge](#)

6. Separate the ball joint from the steering knuckle using a suitable prybar. Position the end of the prybar outside of the bushing pocket to avoid damage to the bushing. Use care to prevent damage to the ball joint boot. Remove the stabilizer bar link at the stabilizer bar.



Using a suitable prybar, separate the ball joint from the steering knuckle. Position the end of the prybar outside of the bushing pocket to avoid damage to the bushing, being careful not to damage the ball joint boot

[Click to enlarge](#)

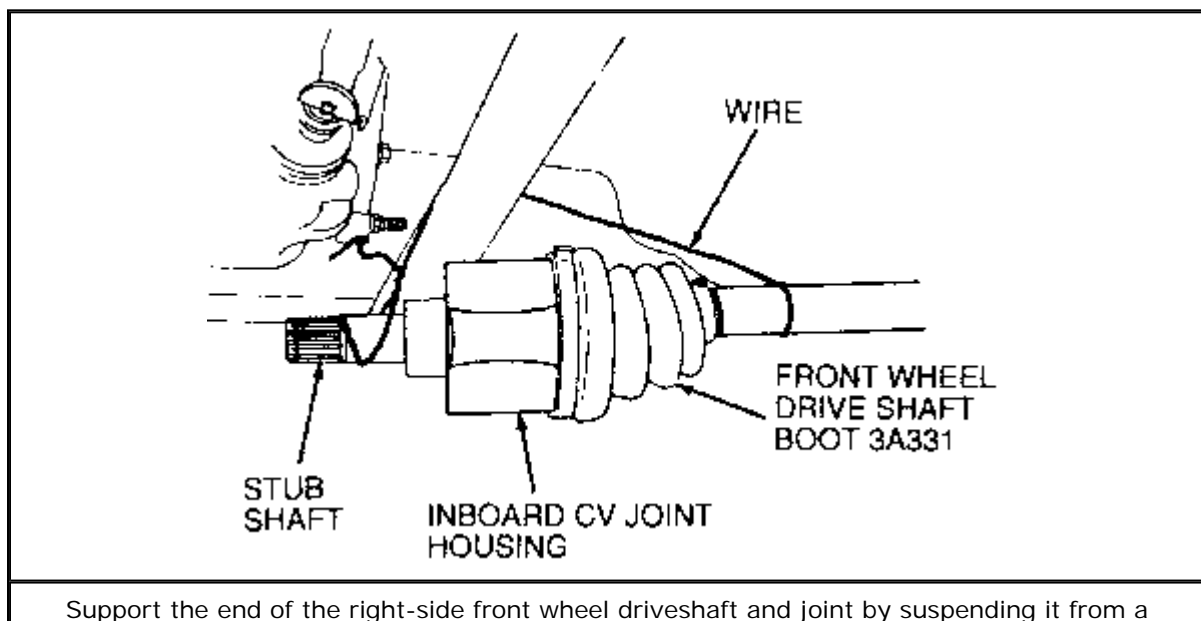


[Click to enlarge](#)

**7. To remove the right halfshaft perform the following:**

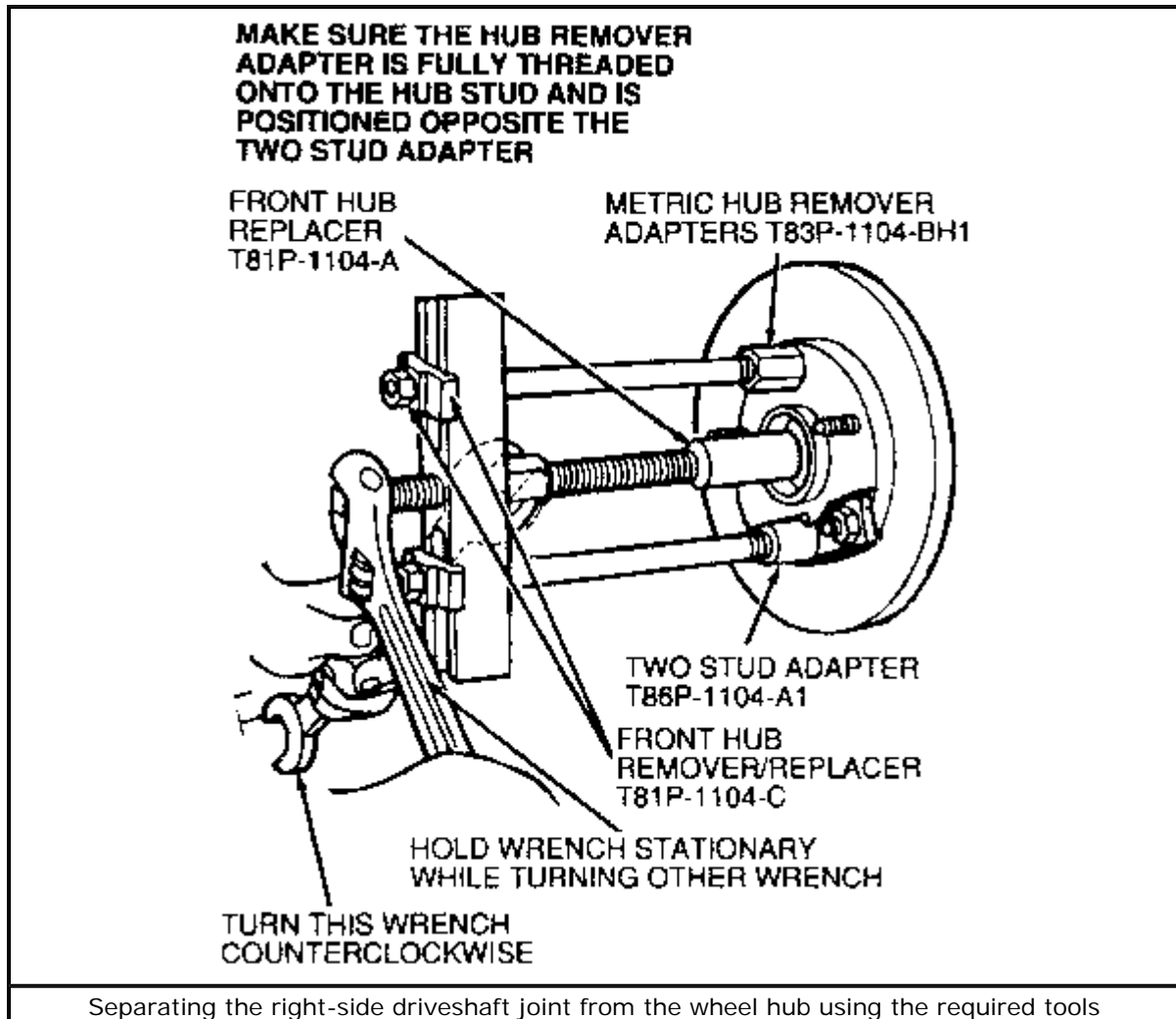
1. Remove the bolts attaching the bearing support to the bracket. Slide the halfshaft out of the transaxle. Support the end of the shaft by suspending it from a convenient underbody component with a piece of wire. Do not allow the shaft to hang unsupported, damage to the outboard CV-joint may occur.
2. Separate the outboard CV-joint from the hub using front hub remover tool T81P-1104-C or equivalent and metric adapter tools T83-P-1104 BH, T86P-1104-AI and T81P-104-A or equivalent.

**NEVER** use a hammer to separate the outboard CV-joint stubshaft from the hub. Damage to the CV-joint threads and internal components may result. The right-side link shaft and halfshaft assembly is removed as a complete unit.



convenient underbody component with a piece of wire. Do NOT allow it to hang unsupported, as damage to the joint may occur

[Click to enlarge](#)



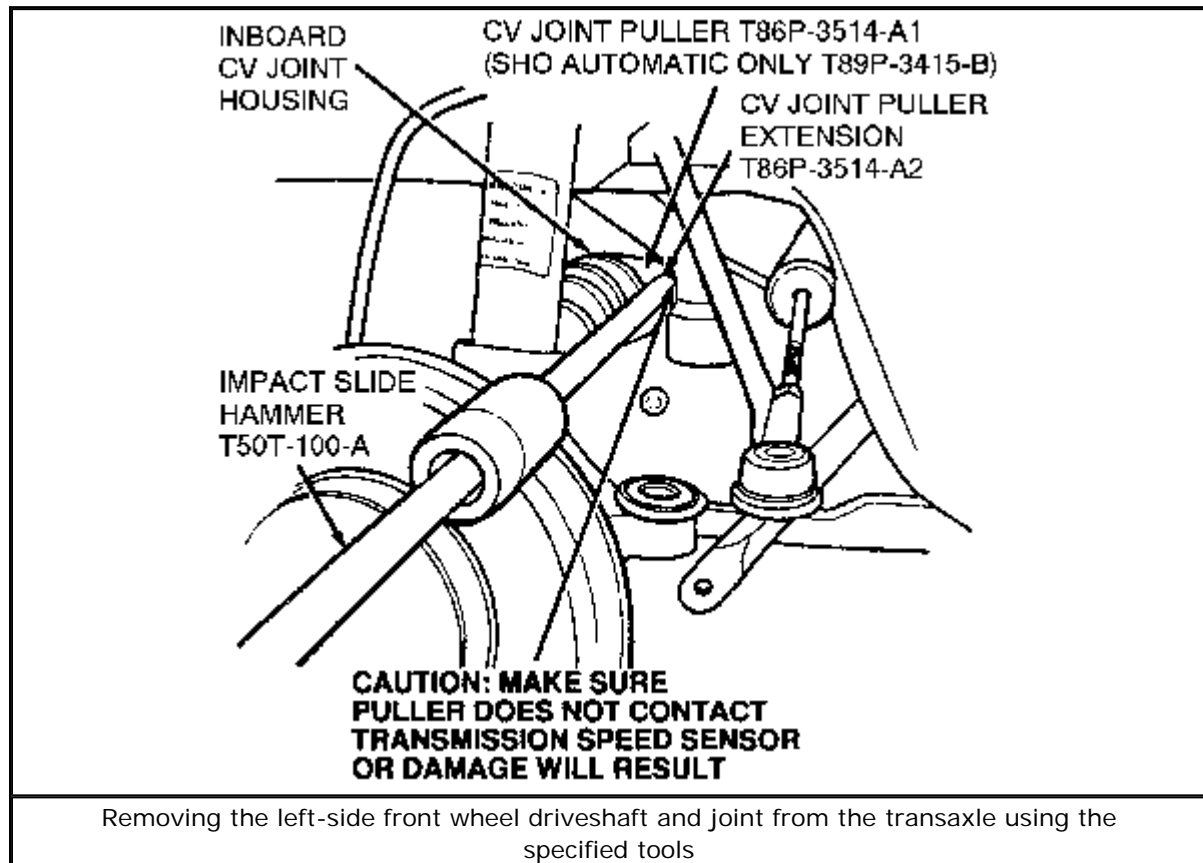
[Click to enlarge](#)

**8. To remove the left halfshaft perform the following:**

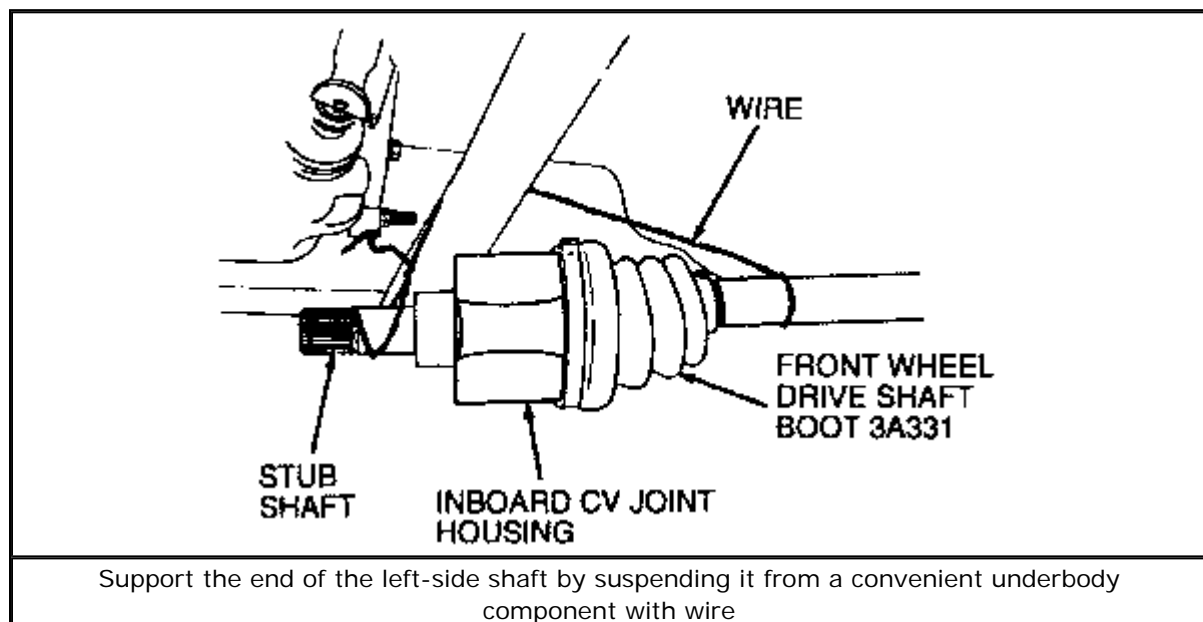
1. Install the CV-joint puller tool T86P-3514-A1 or equivalent, between CV-joint and transaxle case. Turn the steering hub and/or wire strut assembly aside.
2. Screw extension tool T86P-3514-A2 or equivalent, into the CV-joint puller and hand tighten. Screw an impact slide hammer onto the extension and remove the CV-joint.
3. Support the end of the shaft by suspending it from a convenient underbody component with a piece of wire. Do not allow the shaft to hang unsupported, damage to the outboard CV-joint may occur.
4. Separate the outboard CV-joint from the hub using front hub remover tool T81P-1104-C or equivalent and metric adapter tools T83P-1104-BH, T86P-1104-A1 and T81P-1104-A or equivalent.



5. Remove the halfshaft assembly from the vehicle.



[Click to enlarge](#)

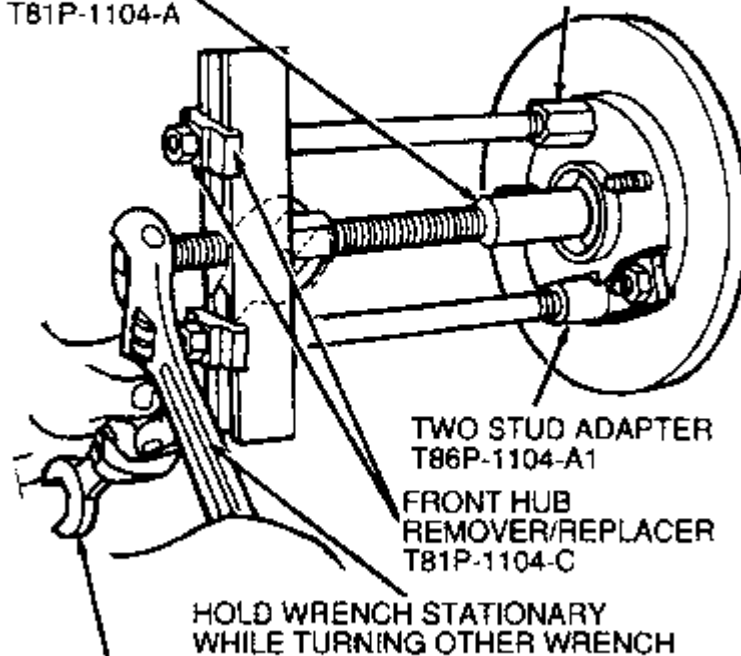


[Click to enlarge](#)

**MAKE SURE THE HUB REMOVER ADAPTER IS FULLY THREADED ONTO THE HUB STUD AND IS POSITIONED OPPOSITE THE TWO STUD ADAPTER**

FRONT HUB REPLACER  
T81P-1104-A

METRIC HUB REMOVER ADAPTERS T83P-1104-BH1

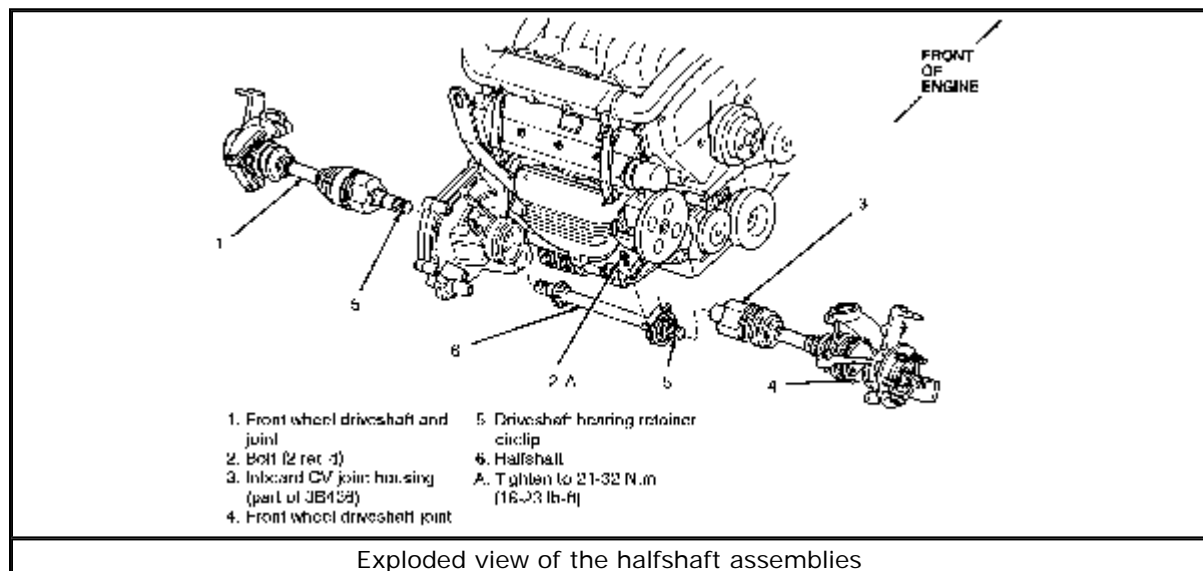


TURN THIS WRENCH COUNTERCLOCKWISE

HOLD WRENCH STATIONARY WHILE TURNING OTHER WRENCH

Separating the outboard CV-joint from the hub using the specified tools

[Click to enlarge](#)



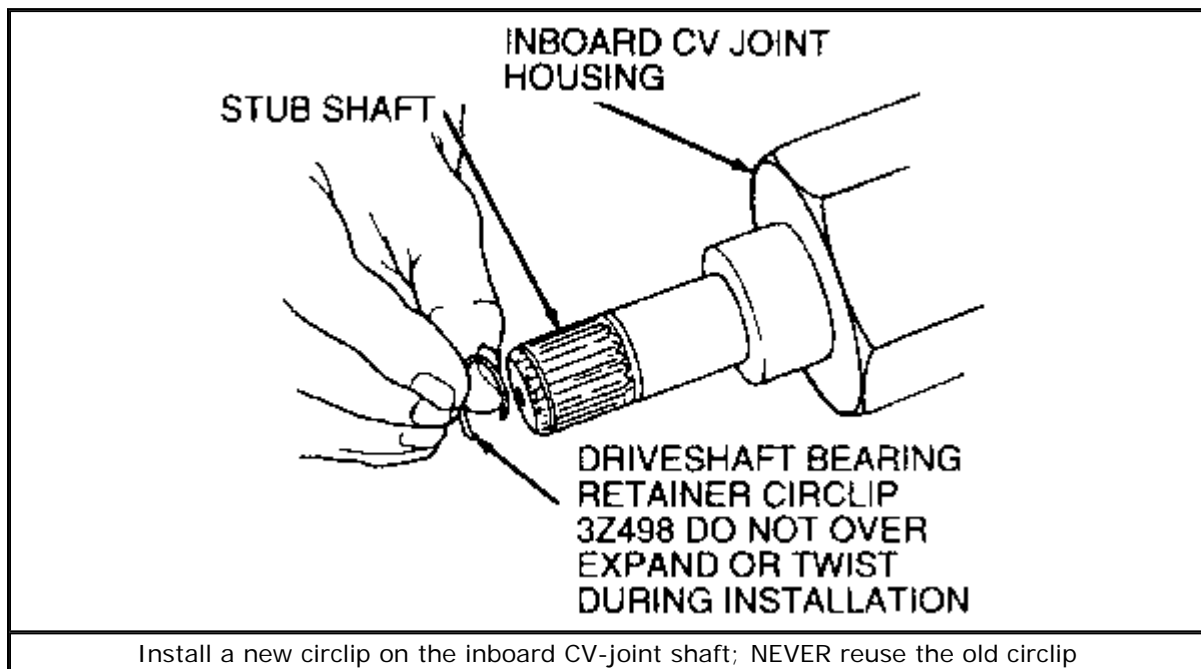
[Click to enlarge](#)

**To install:**

9. Install a new circlip on the inboard CV-joint stub shaft and/or link shaft. The outboard CV-joint does not have a circlip. When installing the circlip, start one end

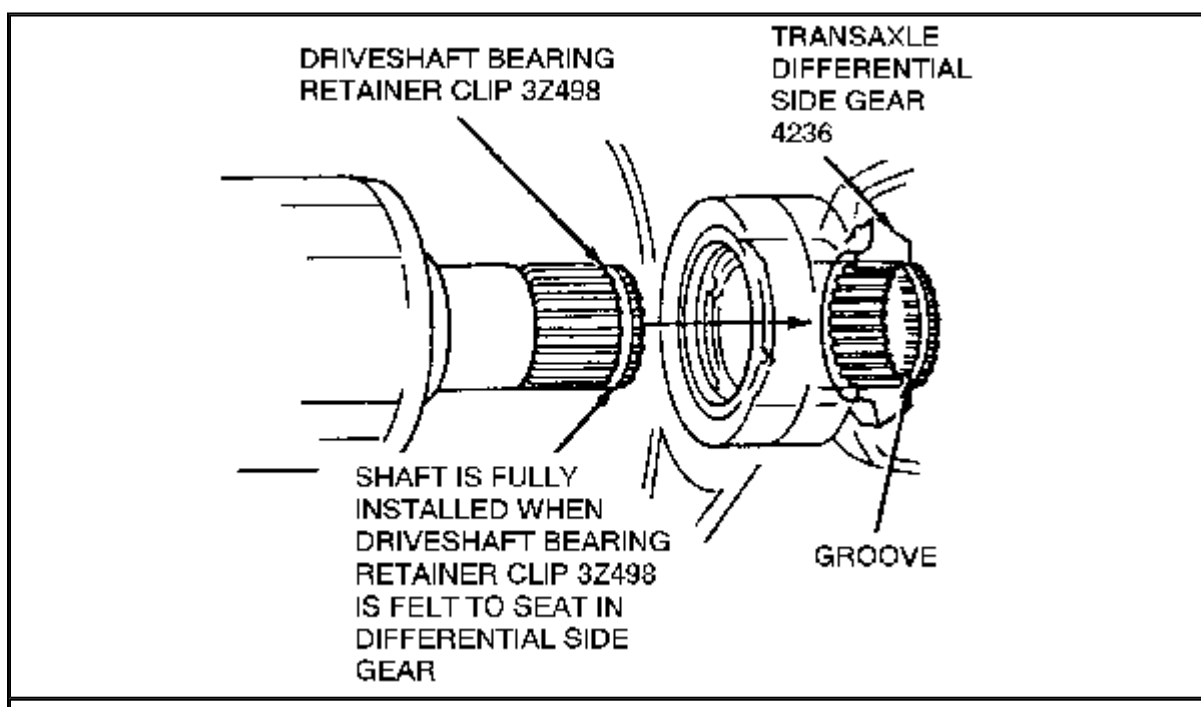
in the groove and work the circlip over the stub shaft end into the groove. This will avoid overexpanding the circlip.

The circlip must not be re-used. A new circlip must be installed each time the inboard CV-joint is installed into the transaxle differential.



10. Carefully align the splines of the inboard CV-joint stub shaft with the splines in the differential. Exerting some force, push the CV-joint into the differential until the circlip is felt to seat in the differential side gear. Use care to prevent damage to the differential oil seal. If equipped, tighten the link shaft bearing to 16-23 ft. lbs. (22-31 Nm).

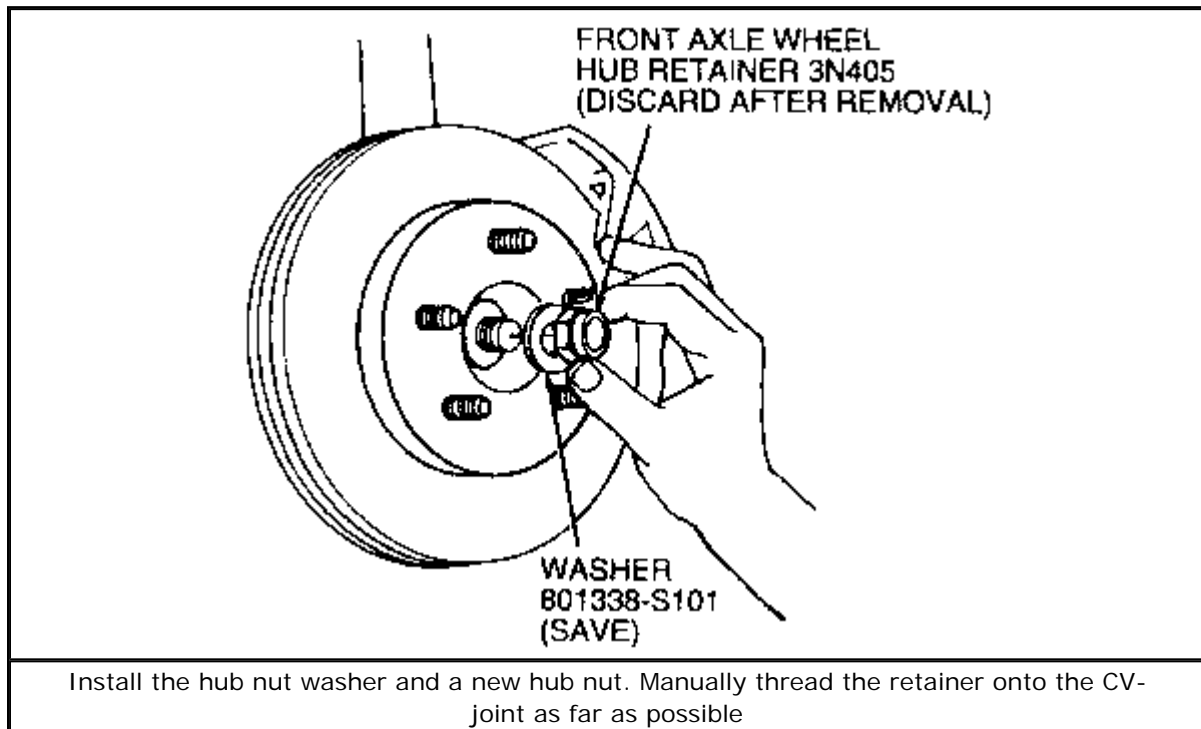
A non-metallic mallet may be used to aid in seating the circlip into the differential side gear groove. If a mallet is necessary, tap only on the outboard CV-joint stub shaft.



Carefully align the splines of the inboard CV-joint stub shaft with the splines in the differential

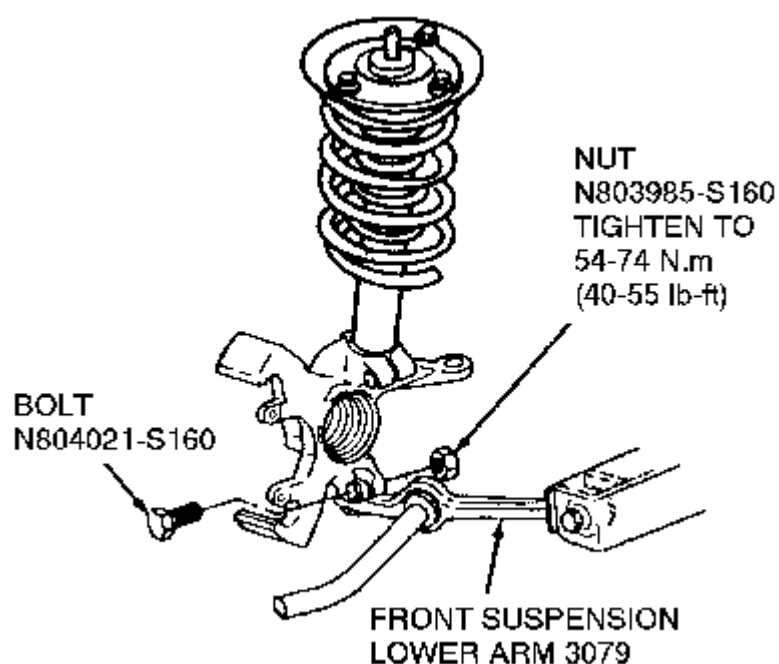
[Click to enlarge](#)

11. Carefully align the splines of the outboard CV-joint stub shaft with the splines in the hub and push the shaft into the hub as far as possible.
12. Temporarily fasten the rotor to the hub with washers and 2 wheel lug nuts. Insert a steel rod into the rotor and rotate clockwise to contact the knuckle to prevent the rotor from turning during the CV-joint installation.
13. Install the hub nut washer and a new hub nut. Manually thread the retainer onto the CV-joint as far as possible.



[Click to enlarge](#)

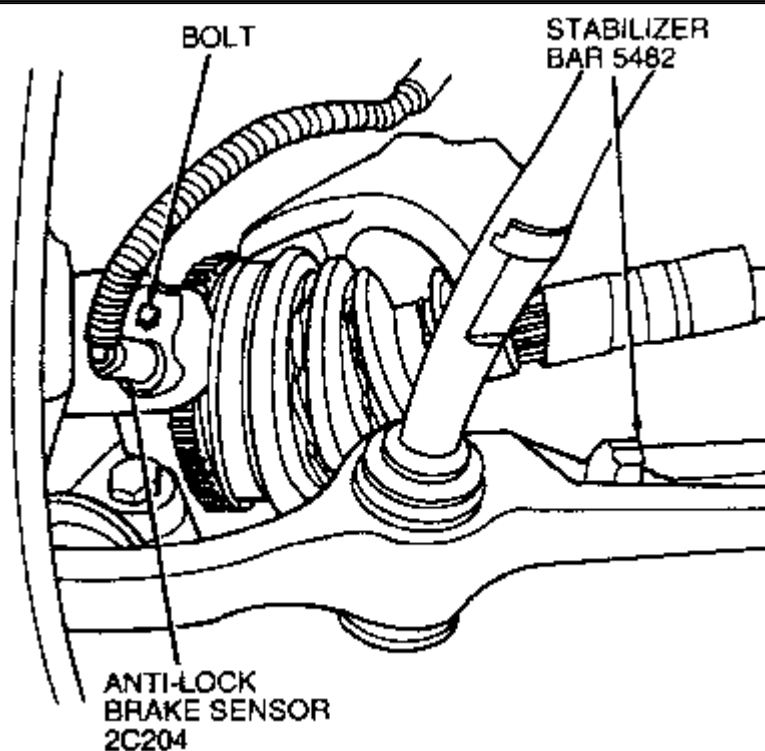
14. Connect the lower control arm to the steering knuckle using a new nut and bolt. Tighten the nut to 40-55 ft. lbs. (54-74 Nm).



Connect the lower control arm to the steering wheel knuckle using a new nut and bolt

[Click to enlarge](#)

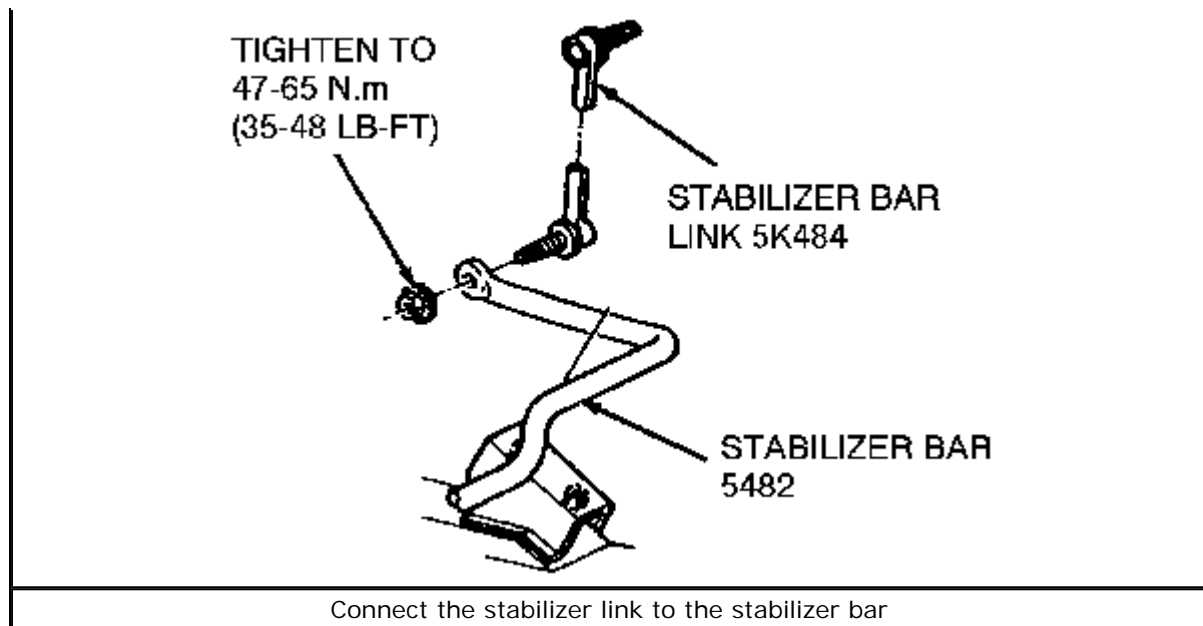
15. Install the anti-lock brake sensor and/or the ride height sensor bracket, if equipped.



If your vehicle is so equipped, install the anti-lock brake sensor

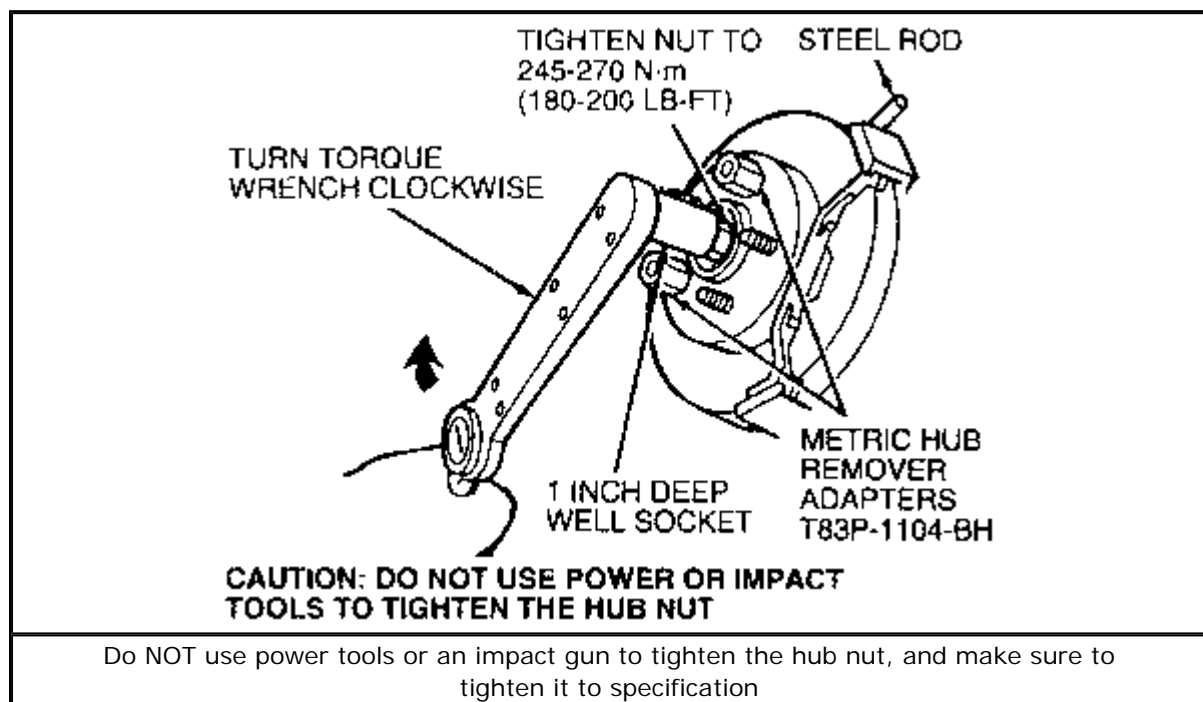
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16. Connect the stabilizer link to the stabilizer bar. Tighten to 35-48 ft. lbs. (47-65 Nm).



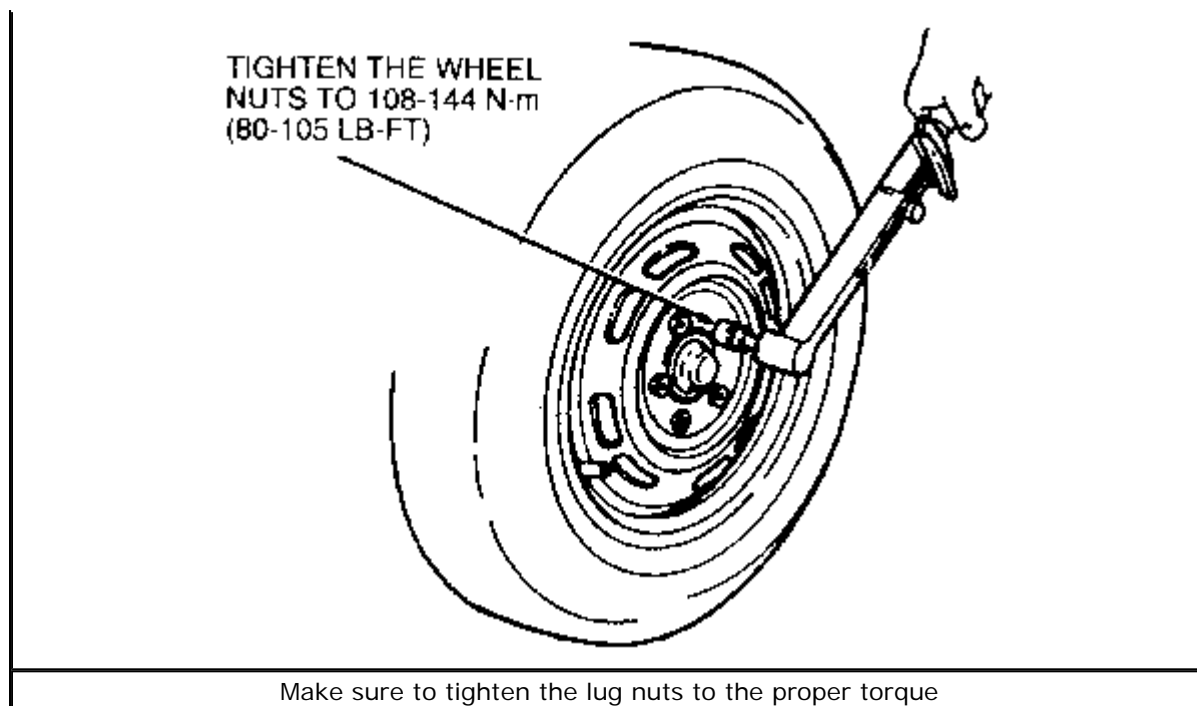
[Click to enlarge](#)

17. Tighten the hub retainer nut to 180-200 ft. lbs. (245-270 Nm). Remove the steel rod.



[Click to enlarge](#)

18. Install the wheel and tire assembly, then lower the vehicle. Tighten the wheel lug nuts to 80-105 ft. lbs. (108-144 Nm). Fill the transaxle to the proper level with the specified fluid.



[Click to enlarge](#)

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# CLUTCH

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## Introduction

### CAUTION

The clutch driven disc may contain asbestos, which has been determined to be a cancer causing agent. Never clean clutch surfaces with compressed air! Avoid inhaling any dust from any clutch surface! When cleaning clutch surfaces, use a commercially available brake cleaning fluid

## Adjustments

### PEDAL HEIGHT/FREE-PLAY

The free-play in the clutch is adjusted by a built in mechanism that allows the clutch controls to be self-adjusted during normal operation. The self-adjusting feature should be checked every 5,000 miles (8,052 km). This is accomplished by insuring that the clutch pedal travels to the top of its upward position. Grasp the clutch pedal by hand or put a foot under the clutch pedal; pull up on the pedal until it stops. Very little effort is required (about 10 lbs.). During the application of upward pressure, a click may be heard which means an adjustment was necessary and has been accomplished.

## Clutch Pedal

### REMOVAL & INSTALLATION

#### 1986-92 Vehicles

1. Disconnect the negative battery cable.



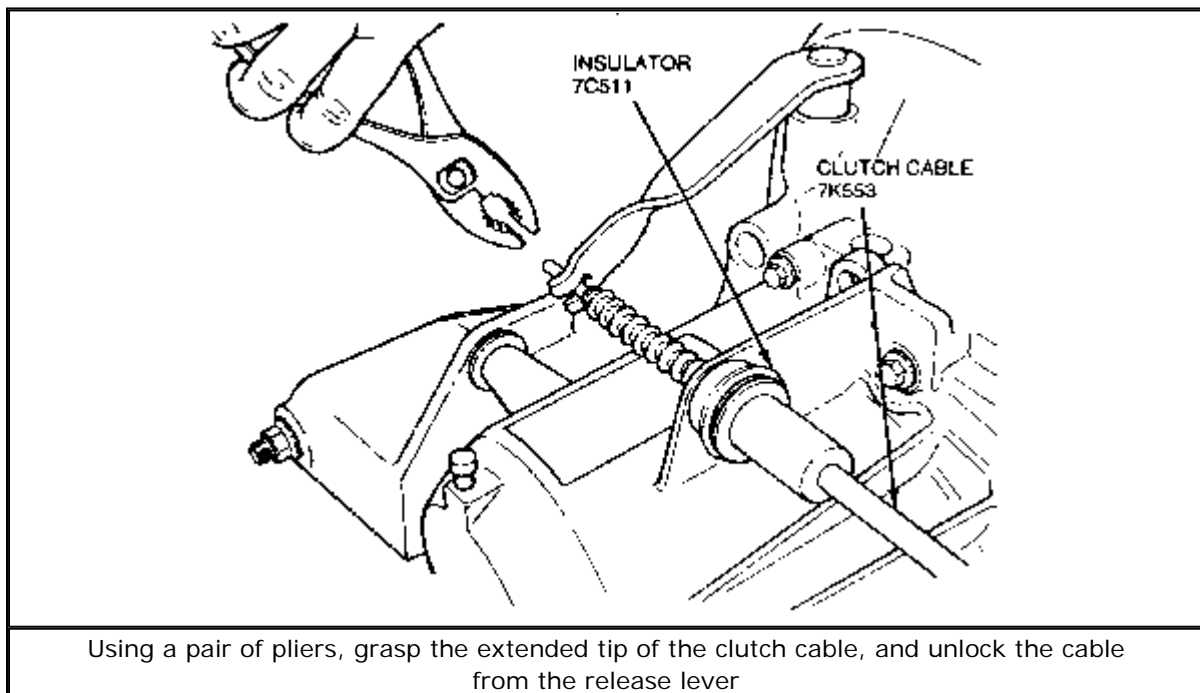




View of the clutch pedal and related components-1986 2.5L Taurus shown

2. Prop the clutch pedal up to disengage the automatic clutch adjuster using tape or a piece of wire.
3. Remove the air cleaner assembly to gain access to the clutch cable.
4. Grasp the extended tip of the clutch cable with a pair of pliers and unlock the cable from the release lever. Do not grasp the wire strand portion of the inner cable because the strands may be damaged, causing cable failure.

Do NOT grasp the wire strand portion of the inner cable because this may cut the wires, causing cable failure.



Using a pair of pliers, grasp the extended tip of the clutch cable, and unlock the cable from the release lever

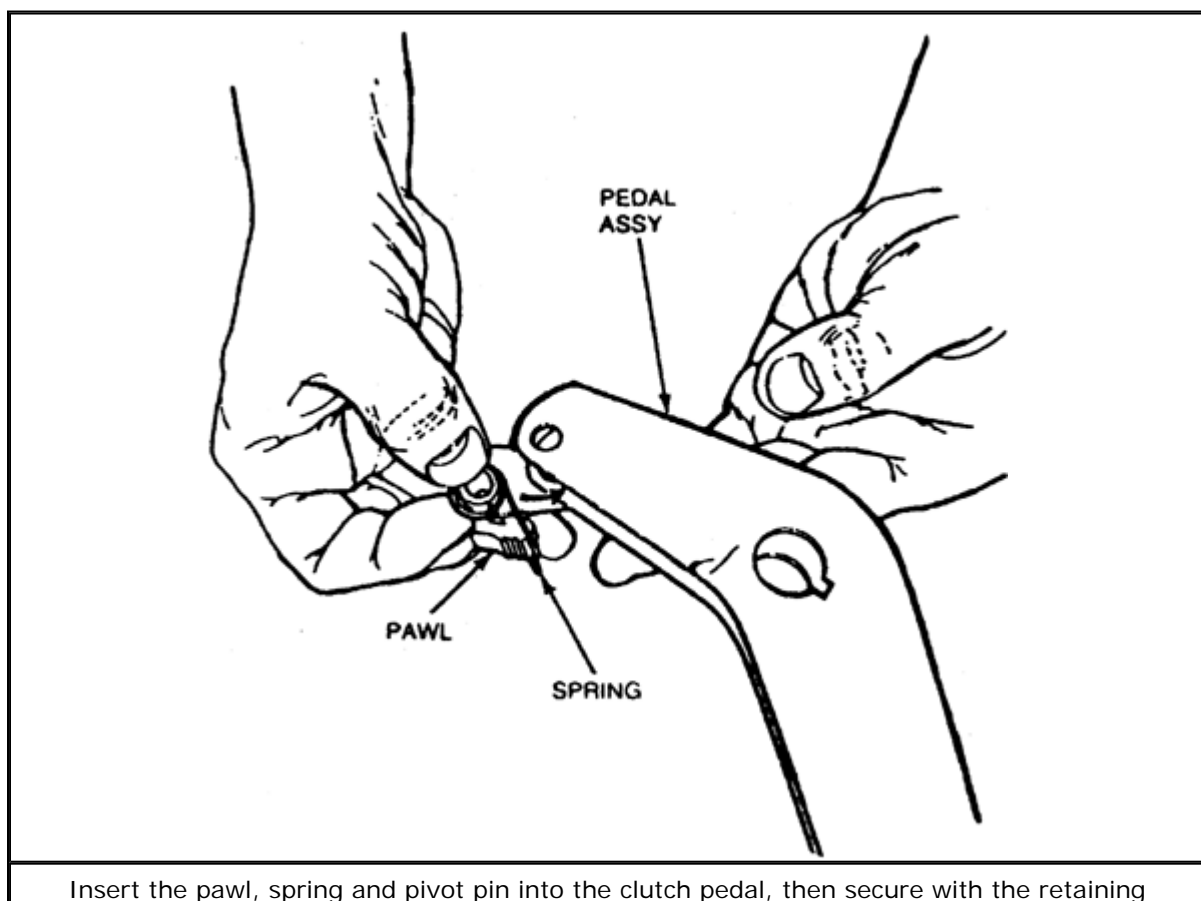
[Click to enlarge](#)

5. Unlatch the fuse panel.

6. Position the clutch shield away from the mounting plate bracket by removing the rear retaining screw. Loosen the front retaining screw located near the toe board, then rotate the shield out of the way. Secure by snugging up the front screw (the rear retaining screw is closest to the instrument panel).
7. Lift up on the clutch pedal to release the pawl and rotate the gear quadrant forward and unhook the cable from the quadrant. Allow the gear quadrant to swing rearward. Do NOT allow the quadrant to snap back.
8. Pull the cable out through the recess between the pedal and gear quadrant.
9. Unseat the cable from the insulator at the clutch pedal stop bracket. Disconnect the clutch switches.
10. Remove the clutch mounting plate and pedal assembly from the brake pedal support by removing the two nuts from the brake booster studs and two screws from the pedal support.
11. Disconnect the retaining nuts securing the clutch pedal stop bracket to the clutch pedal mounting plate, then remove the pedal.
12. If pawl removal is necessary, disconnect the quadrant tension spring from the pedal. Remove the spacer nut and pivot bolt from the clutch pedal and pivot sleeve. Remove the spring washer, two bushings, pivot sleeve and gear quadrant. Remove the pale pivot pin retaining clip, pawl pivot pin, pawl tension spring and the pawl.

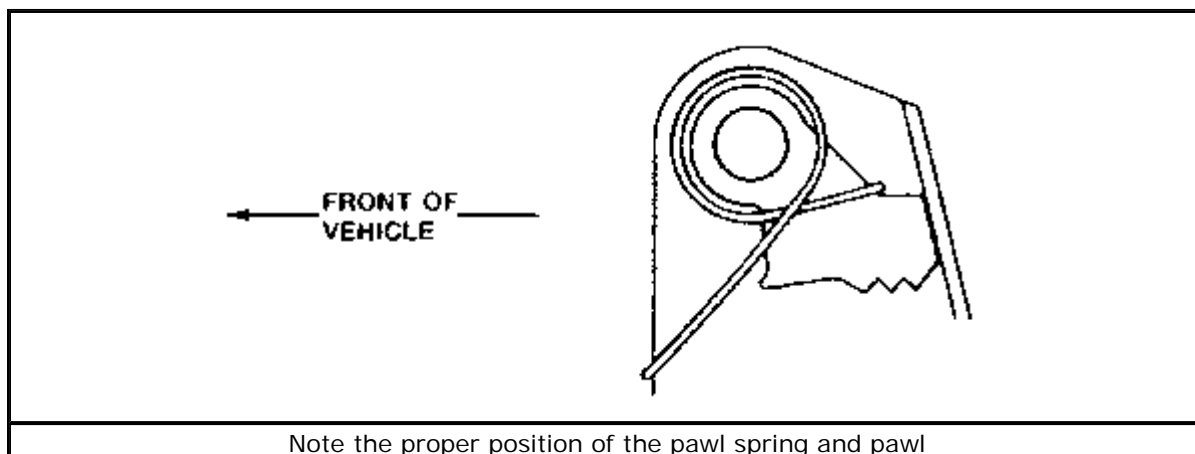
**To install:**

13. Lubricate the quadrant pivot bore, pawl pivot bore, quadrant pivot pin, and quadrant pivot sleeve with Premium Long Life Grease XG-1-C, or equivalent.
14. Insert the pawl, spring, and the pivot pin into the clutch pedal, then secure the retaining clip. Note the proper position of the pawl spring and pawl.



Insert the pawl, spring and pivot pin into the clutch pedal, then secure with the retaining

clip

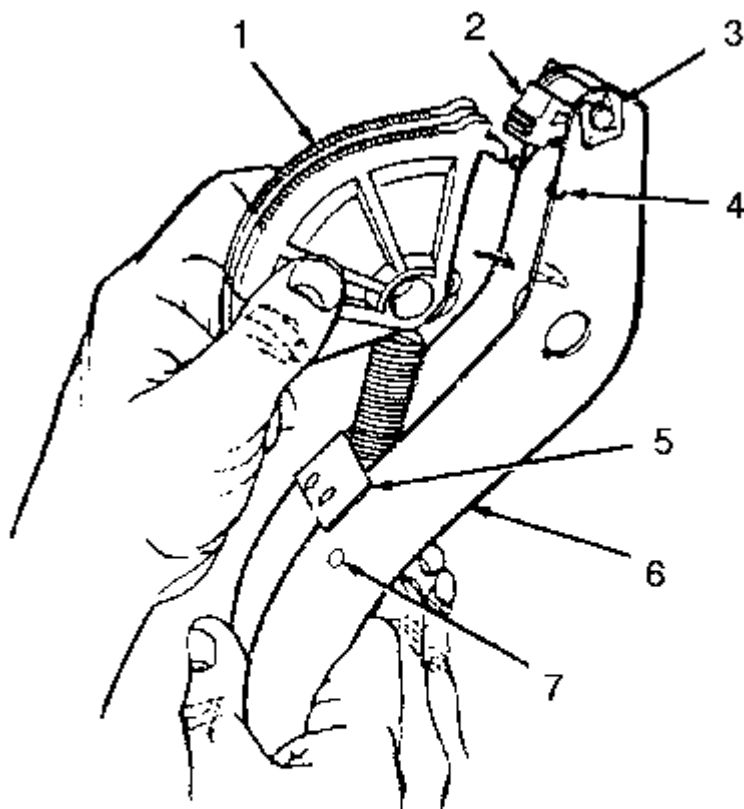
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Note the proper position of the pawl spring and pawl

[Click to enlarge](#)

15. Assemble the gear quadrant spring to the gear quadrant noting the direction of the hook on the free end of the spring.



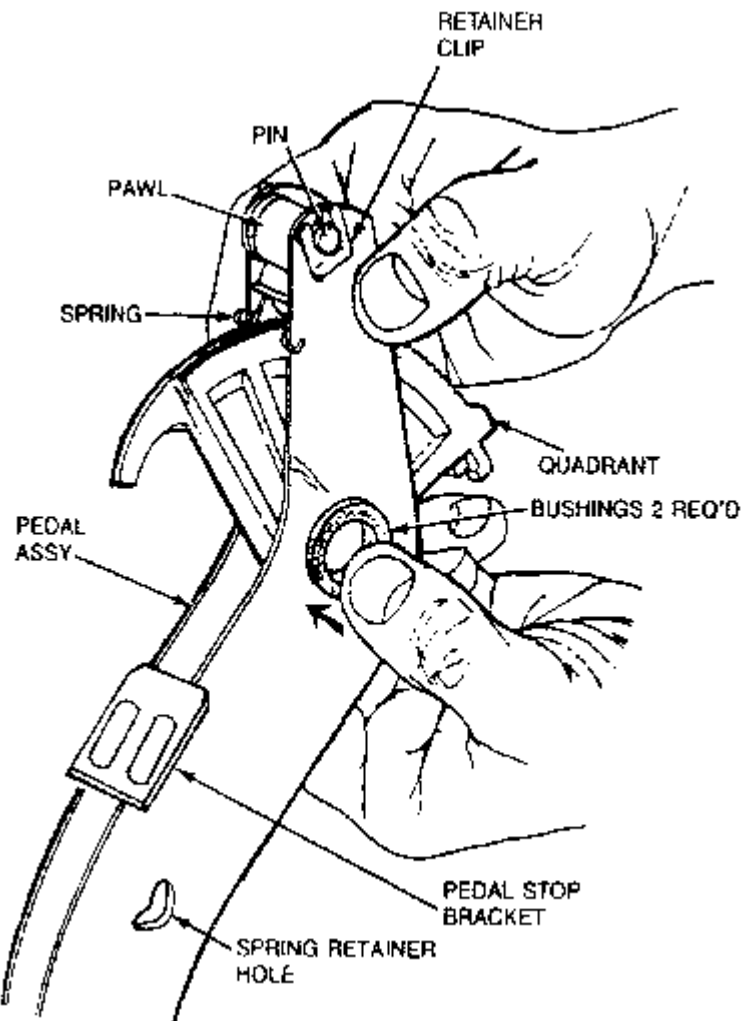


- 1. Gear quadrant
- 2. Pawl
- 3. Retainer
- 4. Spring
- 5. Pedal stop bracket
- 6. Pedal assy
- 7. Spring retainer hole

Assemble the gear quadrant spring to the gear quadrant, making sure to note the direction of the hook on the free end of the spring

[Click to enlarge](#)

- 16. Feed the gear quadrant tension spring into the pedal. Rotate the gear quadrant, then place the pawl on the gear quadrant face.
- 17. Install the two bushings and pivot sleeve into the clutch pedal.



Install the two bushings and pivot sleeve into the clutch pedal

[Click to enlarge](#)

18. Hook the tension spring to the hole in the clutch pedal.
19. Place the bolt through the pivot sleeve. Position the spring washer, stop mounting bracket and install the switch plate and pivot bolt nut. Tighten to 25-30 ft. lbs. (34-41 Nm).

Make sure the spring washer is functional and is not trapped under the pivot sleeve.

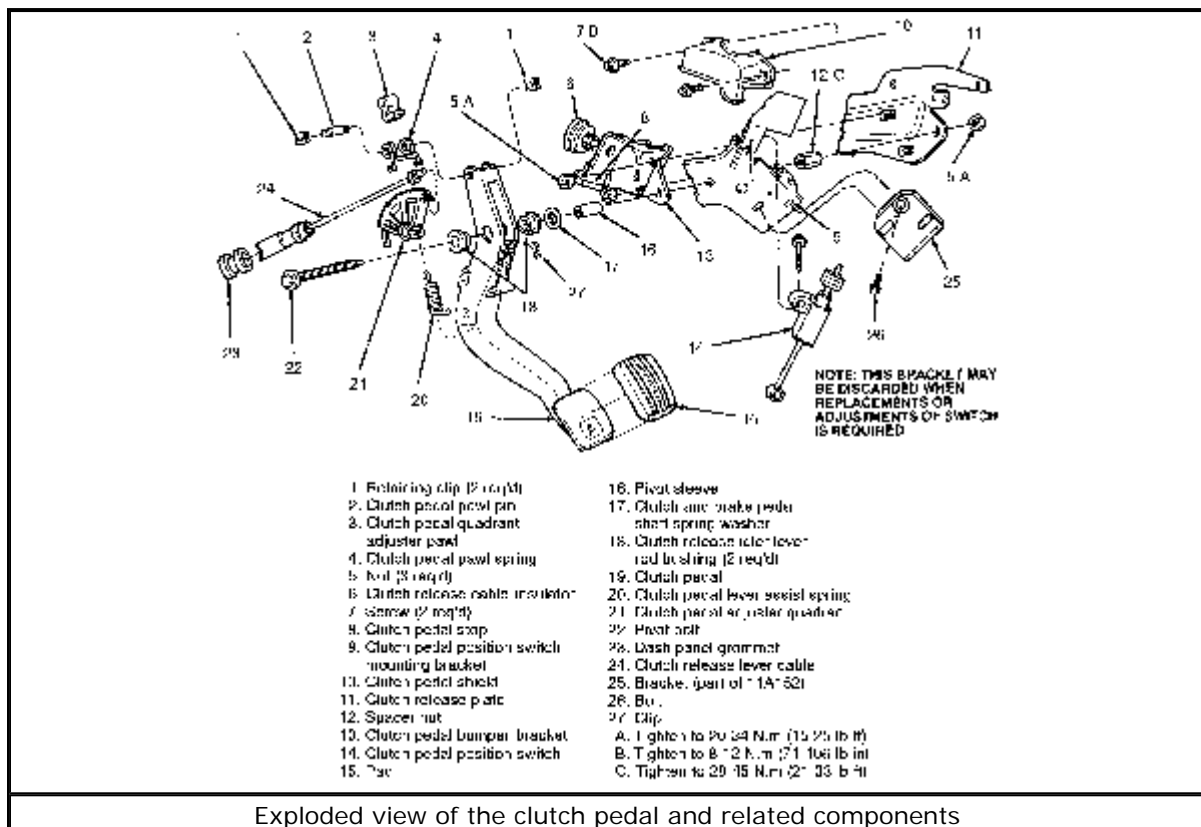
20. Position the pedal assembly on the clutch mounting plate, then install the three nuts and tighten to 15-25 ft. lbs. (20-34 Nm).
21. Secure the clutch pedal assembly and mounting plate to the brake booster studs and brake pedal support.
22. Pull the clutch cable through the insulator, clutch pedal stop bracket and the recess between the pedal and the gear quadrant. Rotate the gear quadrant forward by lifting up on the clutch pedal to release the pawl, then hook the cable into the gear quadrant.
23. Secure the clutch shield to the clutch mounting plate.
24. Install the clutch switches.
25. Using a piece of wire, cord or tape, secure the clutch pedal in its upright position

to be sure the pawl is disengaged from the quadrant.

26. Hook the clutch cable into the release lever in the engine compartment.
27. Remove the equipment used to secure the clutch pedal up against the stop in step 25.
28. Adjust the clutch by depressing the clutch pedal up against its stop several times.
29. Connect the negative battery, then install the air cleaner and start the engine to check clutch operation.

## 1993-95 Vehicles

1. Disconnect the negative battery cable.



[Click to enlarge](#)

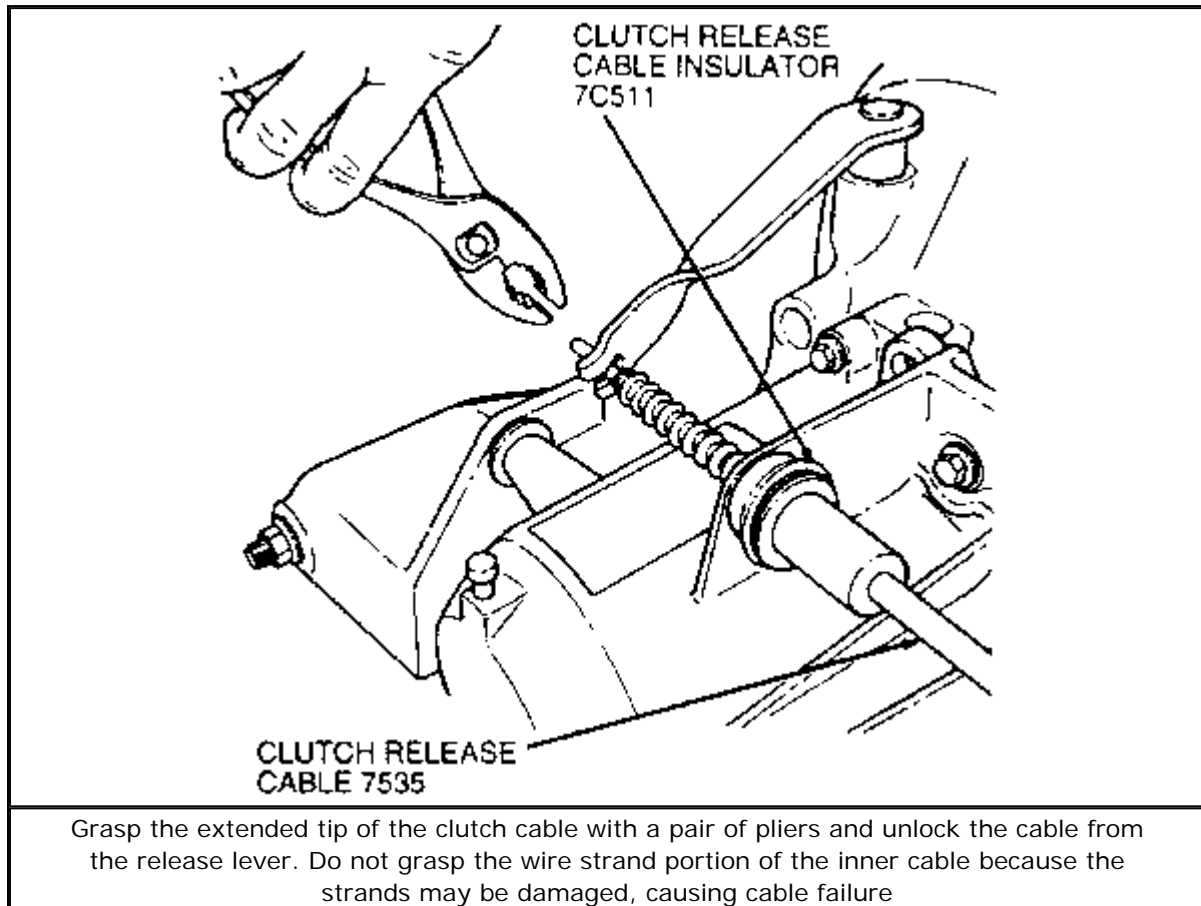
2. Unlatch the fuse panel.
3. Position the clutch shield away from the mounting plate bracket by removing the rear retaining screw. Loosen the front retaining screw located near the toe board, then rotate the shield out of the way. Secure by snugging up the front screw (the rear retaining screw is closest to the instrument panel).
4. Prop up the clutch pedal to lift the clutch pedal quadrant adjuster pawl free of the clutch pedal adjuster quadrant, which is part of the self-adjuster mechanism.

Do NOT allow the quadrant to snap back.

5. Lift up on the clutch pedal to release the pedal quadrant adjuster pawl and rotate the gear quadrant forward and unhook the cable from the quadrant. Allow the gear quadrant to swing rearward. Do NOT allow the quadrant to snap back.
6. Remove the air cleaner assembly to gain access to the clutch release lever cable.

7. Grasp the extended tip of the clutch cable with a pair of pliers and unlock the cable from the release lever. Do not grasp the wire strand portion of the inner cable because the strands may be damaged, causing cable failure.

Do NOT grasp the wire strand portion of the inner cable because this may cut the wires, causing cable failure.

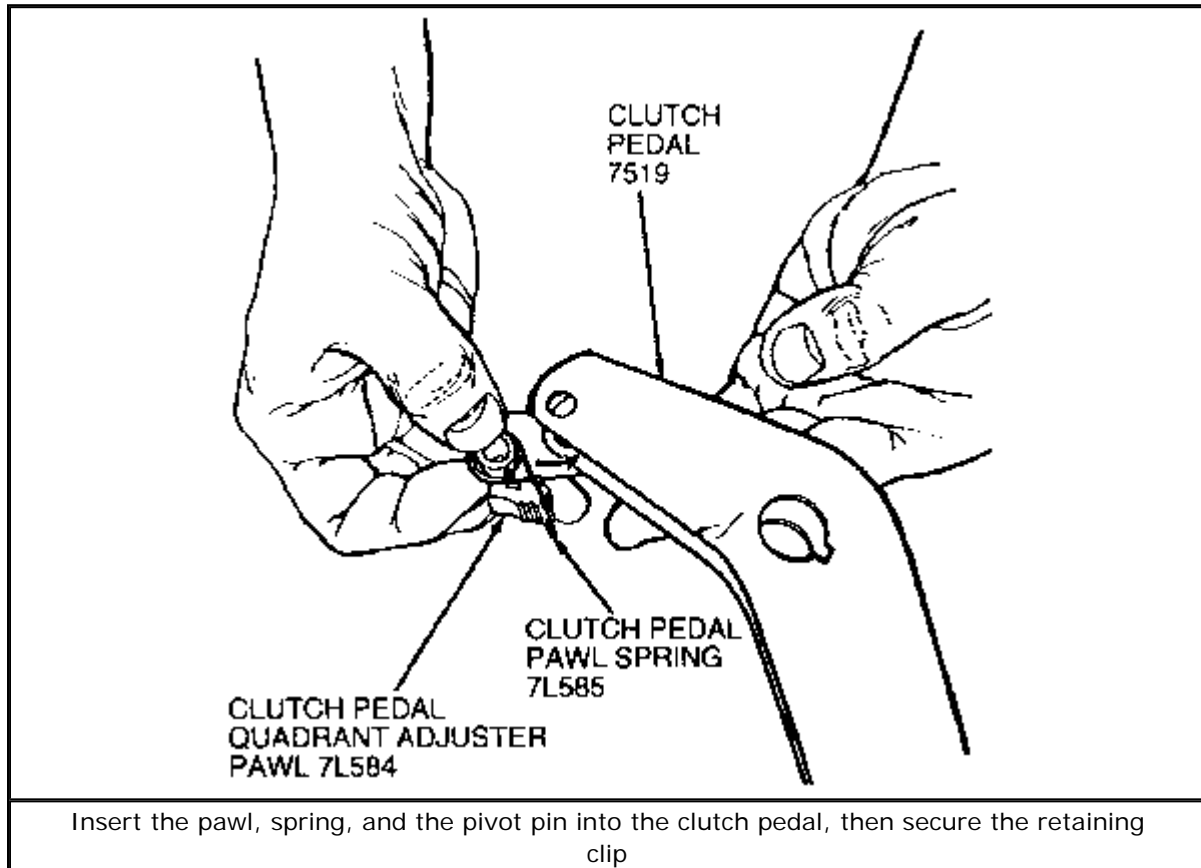


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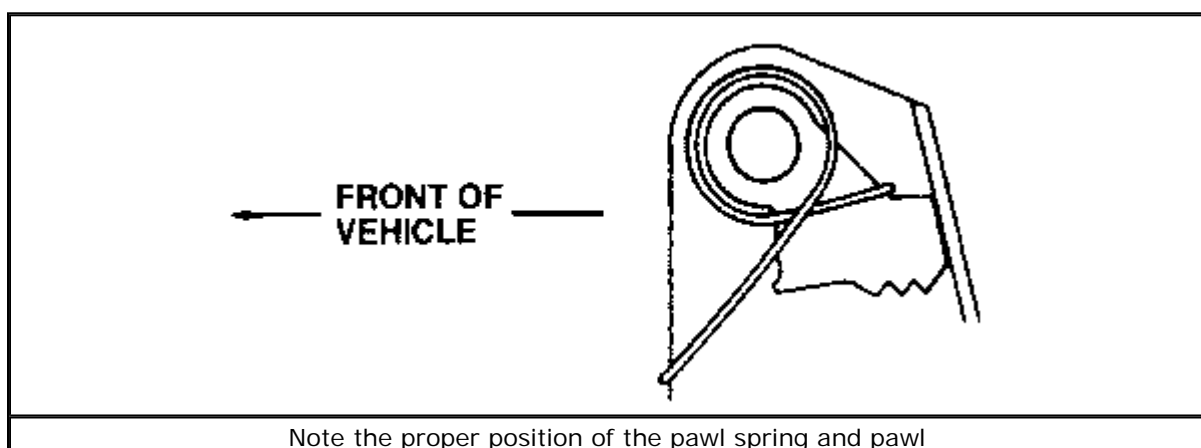
8. Pull the clutch release lever cable out through the recess between the pedal and adjuster quadrant.
9. Unseat the clutch release lever cable from the insulator at the clutch pedal bumper bracket.
10. Disconnect the clutch pedal position switch.
11. Remove the clutch release plate and pedal assembly from the brake pedal support by removing the two nuts from the brake booster studs and two screws from the pedal support.
12. Disconnect the retaining nuts securing the clutch pedal bumper bracket to the clutch pedal release plate, then remove the clutch pedal.
13. If pawl removal is necessary, disconnect the clutch pedal lever assist spring from the pedal. Remove the spacer nut and pivot bolt from the clutch pedal and pivot sleeve. Remove the clutch and brake pedal shaft spring washer, two clutch release idler lever rod bushings, pivot sleeve and clutch pedal adjuster quadrant. Remove the pawl pivot pin retaining clip, pawl pivot pin, clutch pedal pawl spring and the pawl.

To install:

14. Lubricate the quadrant pivot bore, pawl pivot bore, quadrant pivot pin, and quadrant pivot sleeve with Premium Long Life Grease XG-1-C, or equivalent.
15. Insert the pawl, spring, and the pivot pin into the clutch pedal, then secure the retaining clip. Note the proper position of the pawl spring and pawl. Note the proper position of the clutch pedal pawl spring and clutch pedal quadrant adjuster pawl.

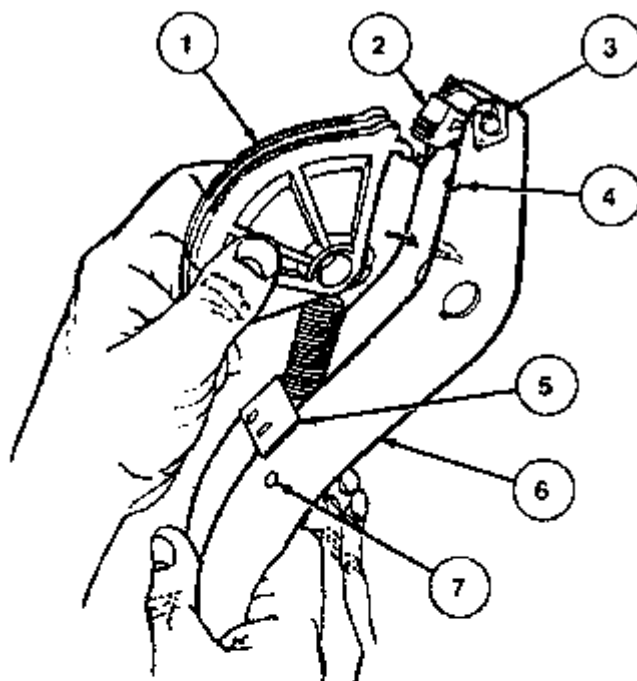


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16. Connect the clutch pedal lever assist spring to the quadrant, noting the direction of the hook on the free end of the spring.



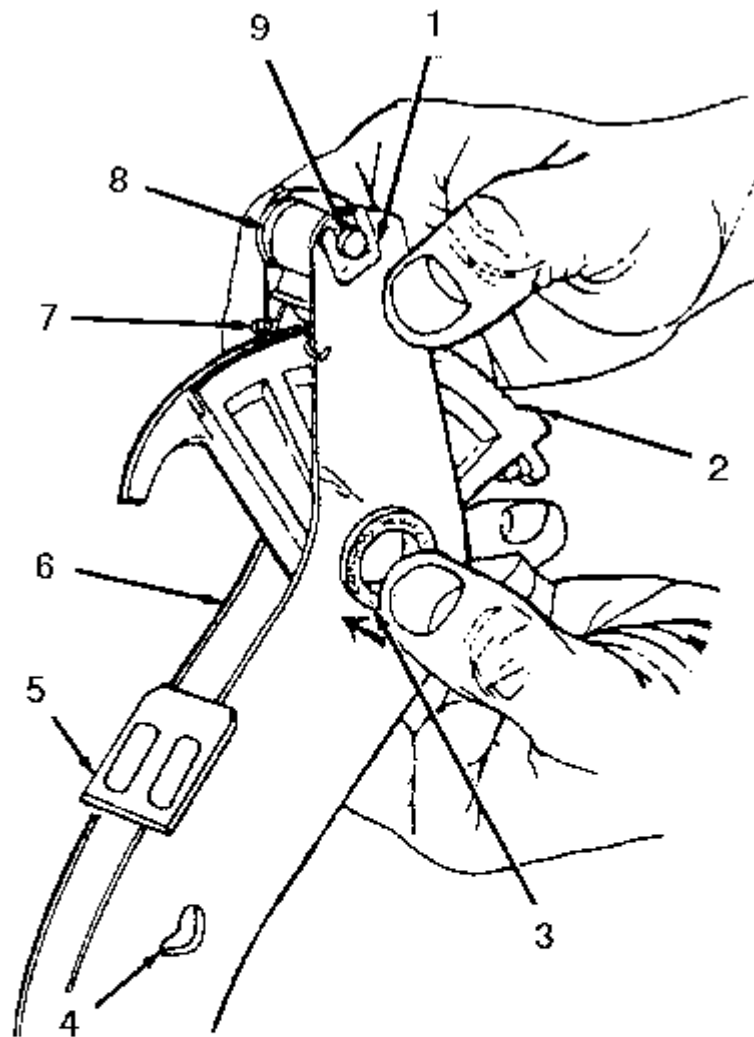


Item	Part Number	Description
1	7L583	Clutch Pedal Adjuster Quadrant
2	7L584	Clutch Pedal Quadrant Adjuster Pawl
3	N801406-S2	Retainer (2 Req'd)
4	7534	Clutch Pedal Lever Assist Spring
5	—	Pedal Stop Bracket (Part of 7519)
6	7519	Clutch Pedal
7	—	Spring Retainer Hole (Part of 7519)

Connect the clutch pedal lever assist spring to the quadrant, noting the direction of the hook on the free end of the spring

[Click to enlarge](#)

17. Feed the clutch pedal lever assist spring into the clutch pedal. Rotate the clutch pedal adjuster quadrant, then place the pawl on the quadrant face.
18. Install the two clutch release idler level rod bushings and pivot sleeve into the clutch pedal.



1. Retainer (2 req'd)
2. Clutch pedal adjuster quadrant
3. Clutch release idler lever  
rod bushing (2 req'd)
4. Spring retainer hole (part of 7519)
5. Pedal stop bracket (part of 7519)
6. Clutch pedal
7. Clutch pedal pawl spring
8. Clutch pedal quadrant  
adjuster pawl
9. Clutch pedal pawl pin

Install the two clutch release idler level rod bushings and pivot sleeve into the clutch pedal.

[Click to enlarge](#)

19. Hook the clutch pedal lever assist spring to the hole in the clutch pedal.

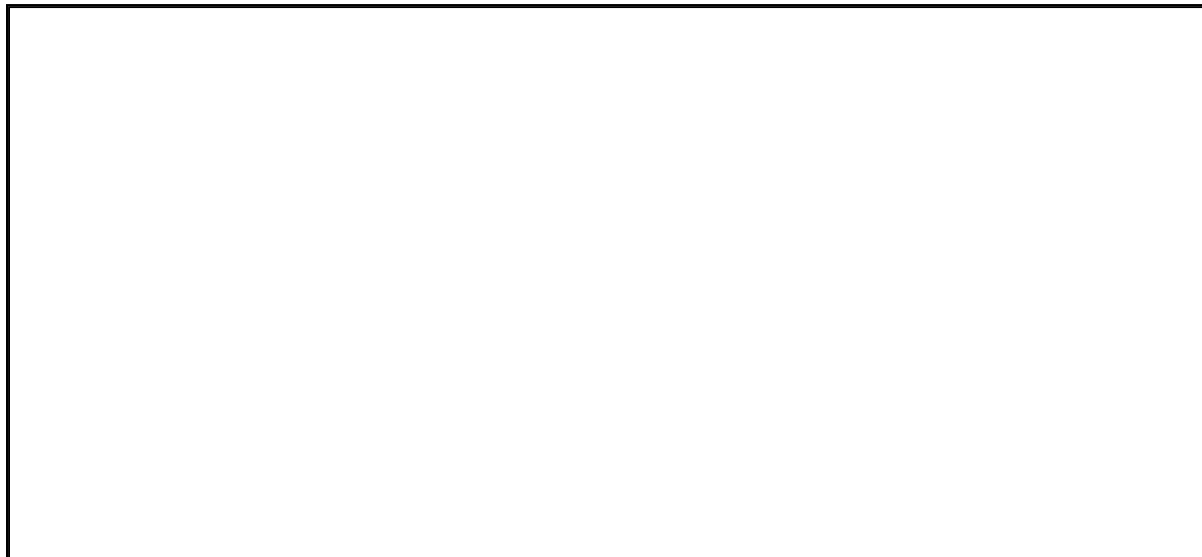
Make sure the spring washer is functional and is not trapped under the pivot sleeve.

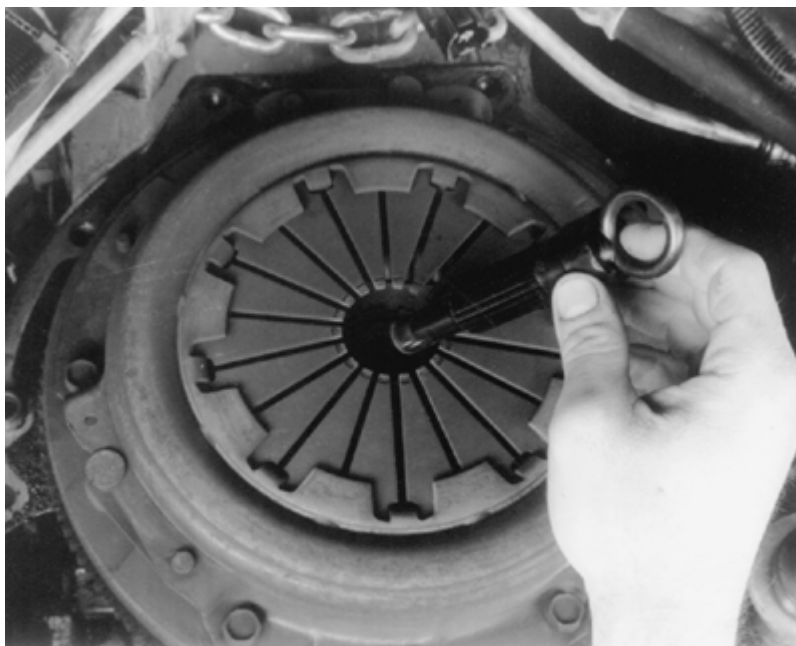
20. Place the bolt through the pivot sleeve. Position the clutch and brake pedal shaft spring washer, clutch and brake pedal shaft spring washer, clutch pedal bumper bracket, then install the clutch pedal position switch mounting bracket and pivot bolt nut. Tighten to 26-29 ft. lbs. (34-40 Nm).
21. Position the clutch pedal assembly on the clutch release plate, then install the retaining nuts. Tighten to 15-25 ft. lbs. (20-34 Nm).
22. Secure the clutch pedal assembly and release plate to the brake booster studs and brake pedal support.
23. With the quadrant at the window stop position, pull the clutch release lever cable through the clutch release cable insulator, clutch pedal bumper bracket and the recess between the clutch pedal and the clutch pedal adjuster quadrant. Rotate the quadrant forward by lifting up on the clutch pedal to release the pawl and hook the cable into the quadrant.
24. Secure the clutch pedal shield to the clutch release plate, then tighten to 71-106 inch lbs. (8-12 Nm).
25. Install the clutch pedal position switch, then adjust by pressing the clutch pedal to the floor.
26. Using a piece of wire, cord or tape, secure the clutch pedal in its upmost position to make sure the clutch pedal quadrant adjuster pawl is disengaged from the quadrant.
27. Hook the clutch release lever cable into the clutch assist lever in the engine compartment.
28. Remove the equipment used to secure the clutch pedal up in step 25.
29. Reposition the fuse panel.
30. Adjust the clutch by pressing the clutch pedal several times.
31. Install the air cleaner, then connect the negative battery cable.

## Driven Disc and Pressure Plate

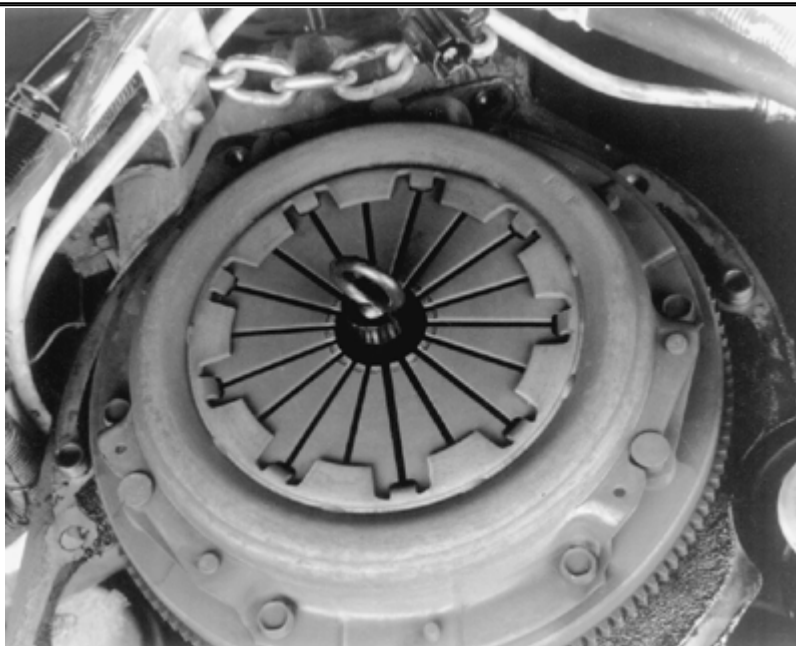
### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable, then raise and safely support the vehicle.
2. Remove the transaxle. For details, please refer to the procedure located earlier in this section.

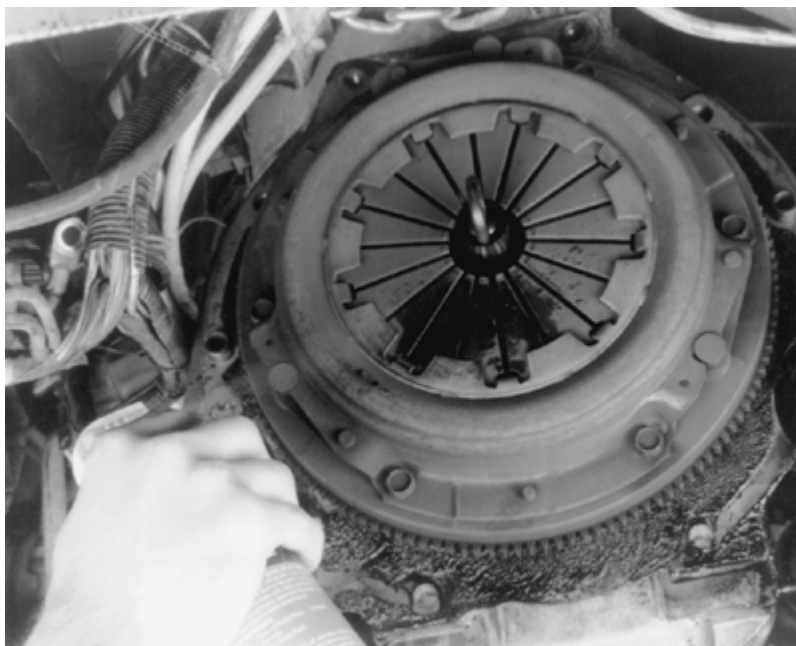




Installing the clutch arbor/alignment tool-this can be done before removal, or during installation

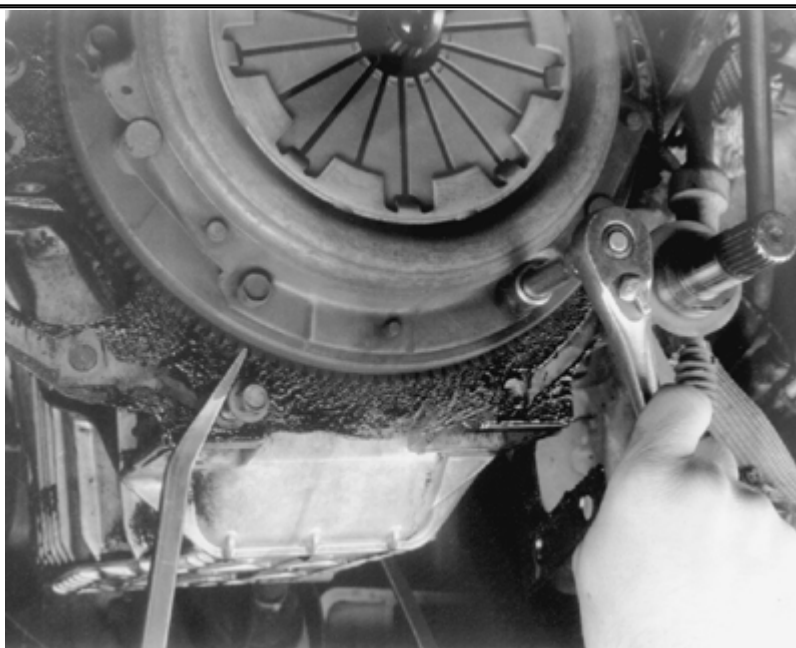


Once the transaxle is removed, the clutch pressure plate cover is visible



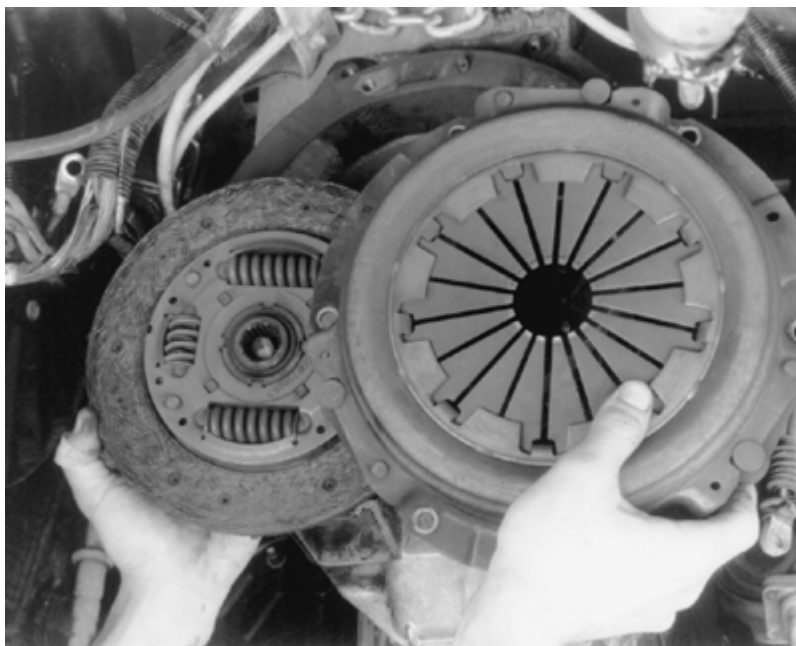
If the pressure plate cover is dirty or dusty, clean it with a commercially available spray cleaner

3. Loosen the six clutch pressure plate cover retaining bolts evenly to release the spring tension gradually, and to avoid distorting the cover. If the same clutch pressure plate and cover are to be installed, mark the cover and the flywheel so the pressure plate can be installed in its original position.

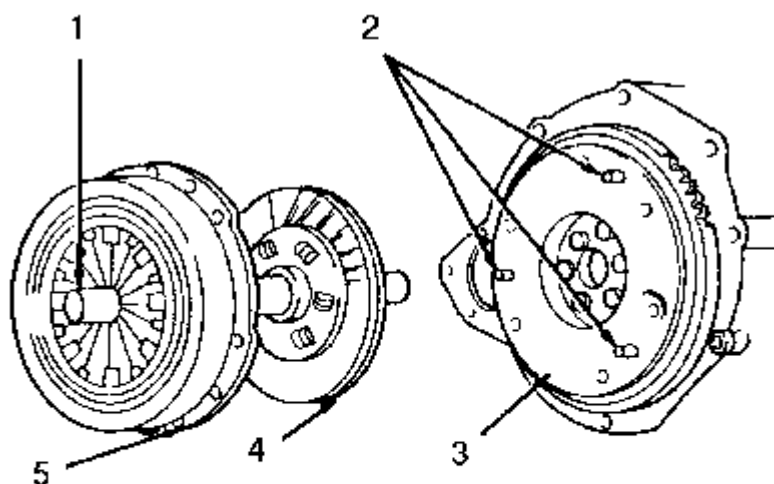


Loosen the six pressure plate retaining bolts evenly to release the tension gradually

4. Remove the pressure plate and clutch disc from the flywheel.



After all of the retaining bolts are removed, you can remove the pressure plate and clutch disc from the flywheel

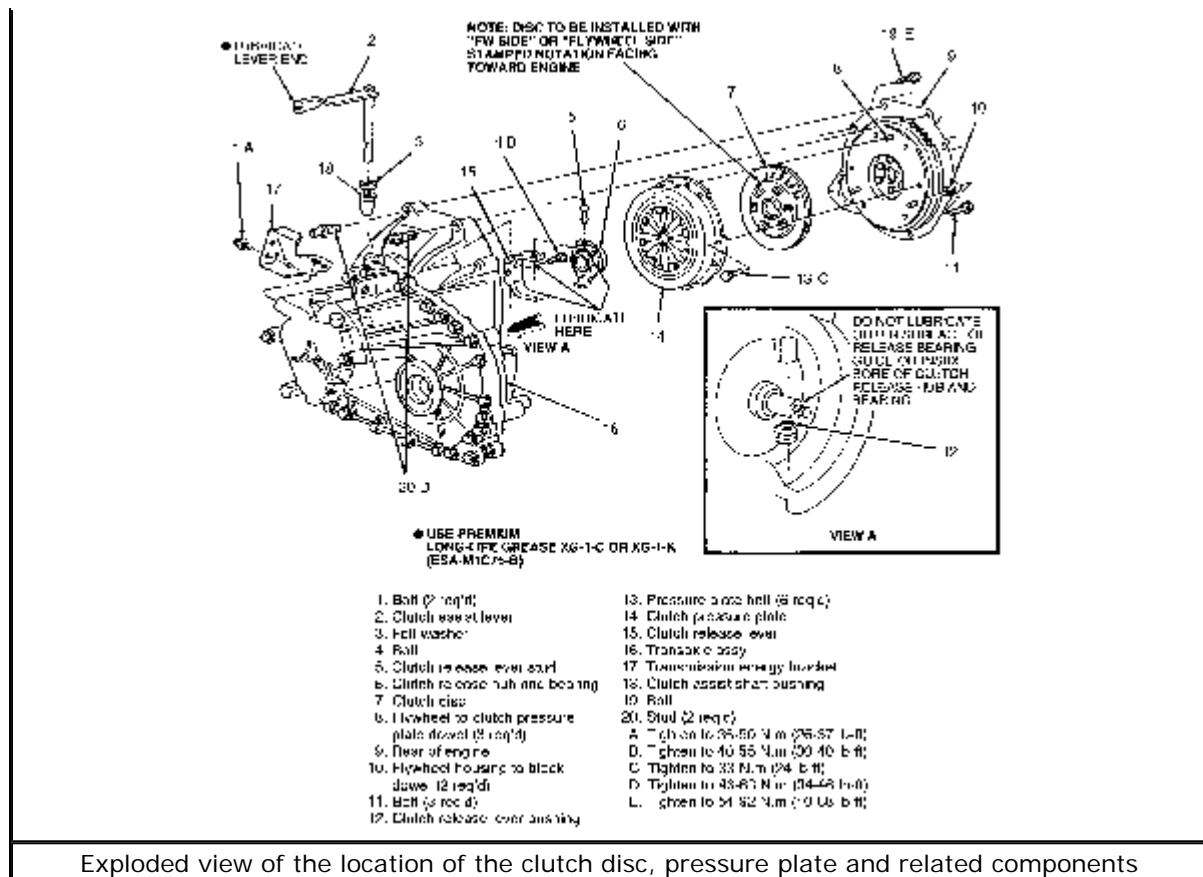


1. Clutch aligner
2. Flywheel-to-clutch pressure plate (3 req'd)
3. Flywheel
4. Clutch disc
5. Clutch pressure plate

View of a common clutch disc and pressure plate mounting

[Click to enlarge](#)

5. Inspect the flywheel, clutch disc, pressure plate, throwout bearing and the clutch fork for wear. Replace parts as required. If the flywheel shows any signs of overheating (blue discoloration) or if it is badly grooved or scored, it should be refaced or replaced.

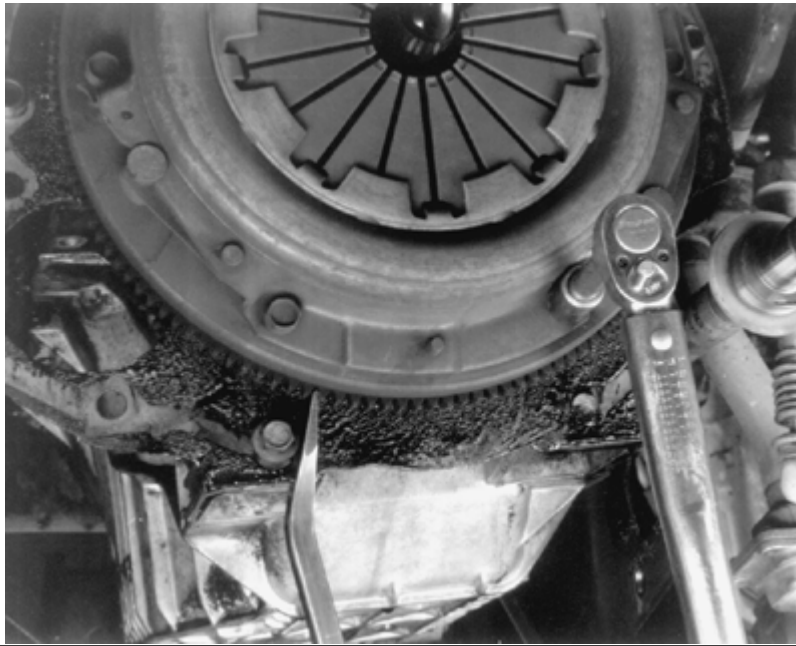


[Click to enlarge](#)

#### To install:

**Avoid touching the clutch disc face, dropping parts or contaminating parts with oil or grease.**

- 6. The clutch disc must be assembled so that the stamped notation is facing toward the engine. The three flywheel-to-clutch pressure plate dowels must be properly aligned with the clutch pressure plate. (Bent, damaged or missing dowels must be replaced.)**
- 7. Clean the pressure plate and flywheel surfaces thoroughly.**
- 8. Position the disc and pressure plate on the flywheel, then insert the cover retaining bolts, but do not tighten them at this time.**
- 9. Align the clutch disc using Clutch Arbor/Aligner Tool T81P-7550-A or equivalent, inserted in the crankshaft. To avoid clutch pressure plate cover distortion, alternately tighten the cover bolts until the cover is fully seated, then tighten to 24 ft. lbs. (33 Nm) for 1993-95 vehicles. For 1986-92 vehicles, alternately tighten the cover bolts to 12-24 ft. lbs. (16-33 Nm). Remove the alignment tool.**



Alternately tighten the bolts, in a crisscross pattern, until the cover is fully seated to avoid cover distortion, then tighten the bolts to specification

10. Install the transaxle. For details, please refer to the procedure earlier in this section.
11. Connect the negative battery cable.

## Clutch Cable

### REMOVAL & INSTALLATION

Whenever the clutch cable is disconnected for any reason, such as transaxle removal or clutch/clutch pedal/clutch cable replacement, the proper method for installing the clutch cable must be followed.

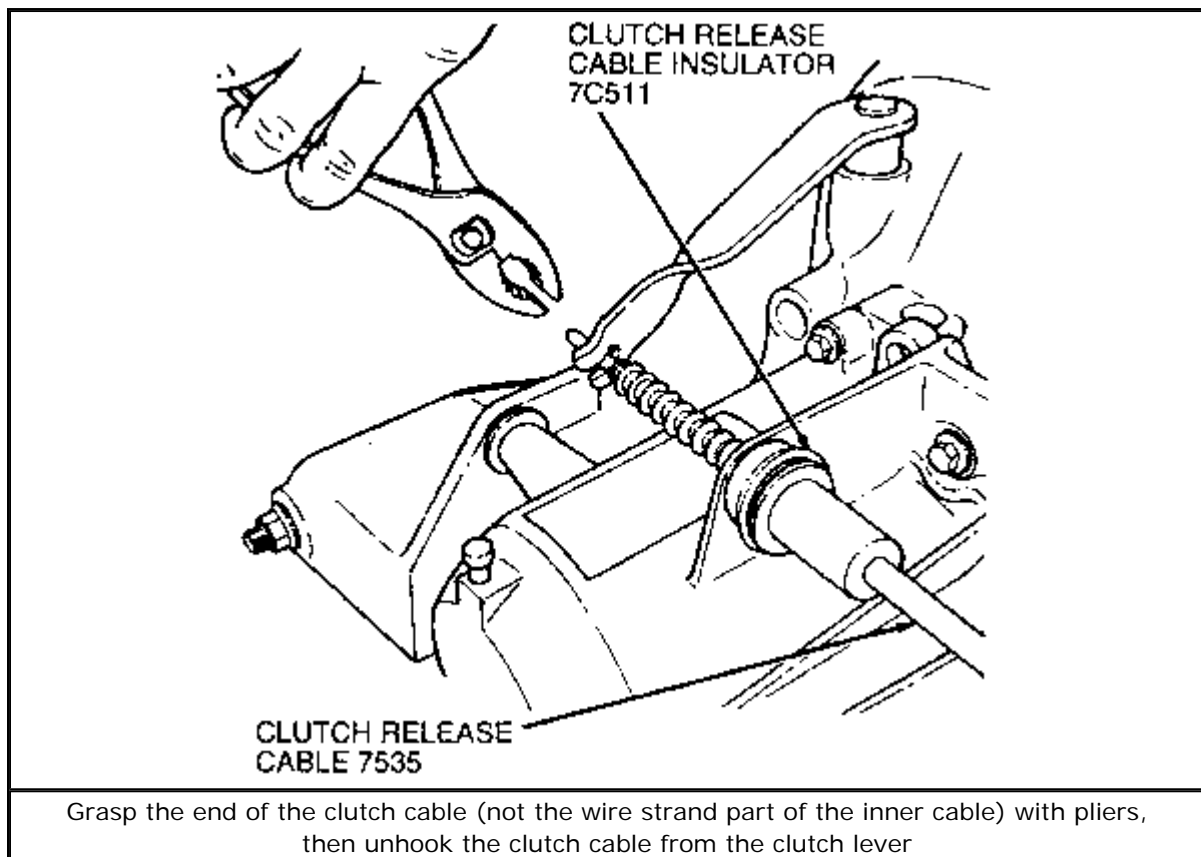
1. Disconnect the negative battery cable.
2. Position the clutch shield away from the mounting plate bracket/clutch release plate by removing the rear retaining screw. Loosen the front retaining screw located near the toe board, then rotate the clutch pedal shield aside. Secure by tightening the front screw. (The rear retaining screw is closest the the instrument panel.)
3. Prop up the clutch pedal to lift the pawl free of the quadrant which is part of the self-adjuster mechanism.

Do NOT allow the clutch pedal adjuster quadrant to snap back.

4. With the clutch pedal lifted up to release the clutch pedal quadrant adjuster pawl, rotate the clutch pedal adjuster quadrant forward. Unhook the clutch cable from the quadrant. Allow the quadrant to swing rearward.
5. Remove the air cleaner assembly to gain access to the clutch cable.
6. Grasp the end of the clutch cable using pliers, then unhook the clutch cable from the clutch bearing release lever.

Do not grasp the wire strand portion of the inner cable since this might cut the wires and result in cable failure.



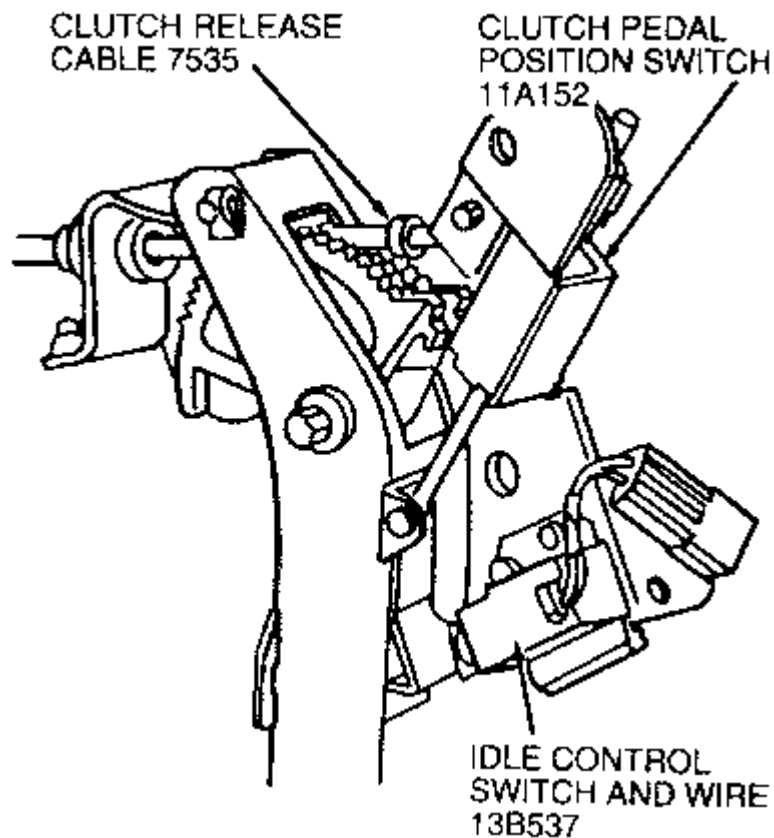


7. Disconnect the cable from the insulator that is located on the rib of the transaxle.
8. Pull the cable out through the recess between the pedal and the quadrant, and from the insulator on the pedal assembly.
9. Remove the cable by withdrawing it through the engine compartment.

**To install:**

The clutch pedal must be lifted to disengage the adjusting mechanism during cable installation. Failure to do so will result in damage to the self-adjuster mechanism. A prying instrument must never be used to install the cable into the quadrant.

10. Insert the clutch cable assembly from the engine or passenger compartment (if the clutch pedal was removed) through the dash panel and dash panel grommet. Make sure the cable is routed inboard of the brake lines and not trapped at the spring tower by the brake lines.
11. With the quadrant at the window stop position, push the clutch cable through the insulator on the stop bracket and through the recess between the pedal and the gear quadrant.



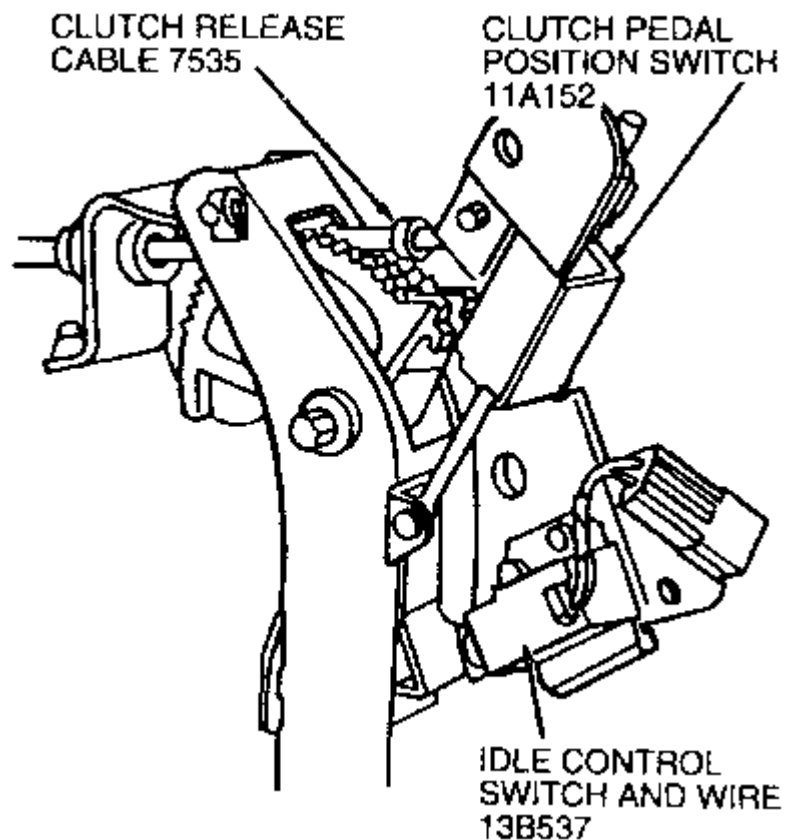
With the quadrant at the window stop position, push the cable through the insulator on the bumper bracket and through the recess between the pedal and quadrant

12. With the clutch pedal lifted up to release the pawl, rotate the gear quadrant forward. Hook the cable into the gear quadrant.
13. Secure the clutch shield on the clutch mounting/release plate.
14. Using a piece of wire, cord or other suitable device, secure the pedal in the upmost position.
15. Install the clutch cable in the insulator on the rib of the transaxle.
16. Hook the cable into the clutch release lever in the engine compartment.
17. Remove the device that was used to temporarily secure the pedal against its stop.
18. Adjust the clutch by pressing the clutch pedal down several times.
19. Install the air cleaner, then connect the negative battery cable.

## Clutch Interlock/Pedal Position Switch

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Disengage the switch electrical connector.
3. Remove the retaining screw and hairpin clip, then remove the switch from the vehicle.



Common clutch interlock/pedal position switch location

**To install:**

Always install the switch with the self adjusting clip about 1 in. (25mm) from the end of the rod. Be sure that the clutch pedal is in the full up position or the switch will be improperly adjusted.

4. Insert the eyelet end of the rod over the pin on the clutch pedal, then secure with the retaining clip.
5. Align the mounting boss with the corresponding hole in the bracket, then install the screw. Tighten the screw to 80-115 inch lbs. (9-13 Nm).
6. Reset the switch by pressing the clutch pedal to the floor.
7. Engage the switch electrical connector, then connect the negative battery cable.

## AUTOMATIC TRANSAXLE

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### Identification

Four automatic transaxle units are available. The ATX (automatic transaxle) model which is used with the 2.5L engine, and the AXOD (automatic transaxle overdrive) which is used with the 3.0L and 3.8L engine. Beginning in 1991 some vehicles were equipped with the AXOD-E transaxle which is basically the same as the AXOD with the addition of electronic transaxle controls. Beginning in 1993, some vehicles came equipped with the AX4S (automatic transaxle four-speed) or AX4N (automatic transaxle four-speed non-synchronized) transaxle. The AX4S was formerly the AXOD and is basically the same as the AXOD-E. And the AX4N which is also very similar, but is non-synchronized, hence the N in the name.

The ATX automatic transaxle is a 3-speed unit. A unique feature is a patented split path torque converter. The engine torque in second and third gears is divided, so that part of the engine torque is transmitted hydrokinetically through the torque converter, and part is transmitted mechanically by direct connection of the engine and transaxle. In the third gear, 93% of the torque is transmitted mechanically, making the ATX highly efficient. Torque splitting is accomplished through a splitter gear set. A conventional compound gear set is also used.

Only one band is used in the ATX. In service fluid additions, or fluid changes may be made with **Motorcraft Type H** automatic transmission fluid.

The AXOD, AXOD-E, AX4S and AX4N automatic transaxles are 4-speed units. They all have two planetary gear sets and a combination planetary/differential gear set. Four multiple plate clutches, two band assemblies, and two one-way clutches act together for proper operation of the planetary gear sets.

A lock-up torque converter is coupled to the engine crankshaft and transmits engine power to the gear train by means of a drive link assembly (chain) that connects the drive and the driven sprockets. The application of the converter clutch is controlled through an electronic control integrated in the on-board EEC-IV system computer. These controls, along with the hydraulic controls in the valve body, operate a piston plate clutch in the torque converter to provide improved fuel economy by eliminating converter slip when applied.

In-service fluid additions, or fluid changes, may be made with **Motorcraft Type H** automatic transmission fluid.

The AXOD-E uses a turbine speed sensor in conjunction with a vehicle electronic control system. These components send operational signals to the EEC-IV microprocessor.

### Fluid Pan

### REMOVAL & INSTALLATION

In normal service it should not be necessary or required to drain and refill the

automatic transaxle. However, under severe operation or dusty conditions the fluid should be changed every 20 months or 20,000 miles (32,206 km).

1. Raise and safely support the vehicle on jack stands.
2. If the pan is equipped with a drain plug, drain the fluid into a suitable container.
3. If the pan does not have a drain plug, place a suitable drain pan underneath the transaxle oil pan. Loosen the oil pan mounting bolts and allow the fluid to drain until it reaches the level of the pan flange. Remove the attaching bolts, leaving one end attached so that the pan will tip and the rest of the fluid will drain.
4. Remove the oil pan. Thoroughly clean the pan. Remove the old gasket. Make sure that the gasket mounting surfaces are clean.
5. Remove the transaxle filter screen retaining bolt. Remove the screen.

To install:

6. Install a new filter screen and O-ring. Place a new gasket on the pan and install the pan to the transaxle. Tighten the transaxle pan to 15-19 ft. lbs. (20-26 Nm).
7. Fill the transaxle to the correct level. Remove the jackstands and lower the car to the ground.

## Adjustments

### SHIFT LINKAGE

#### AXOD and AXOD-E Transaxle

1. Position the selector lever in the OD position against the rearward stop. The shift lever must be held in the rearward position using a constant force of 3 lbs. (1.4 Kg) while the linkage is being adjusted.
2. Loosen the manual lever-to-control cable retaining nut.
3. Move the transaxle manual lever to the OD position, second detent from the most rearward position.
4. Tighten the retaining nut to 11-19 ft. lbs. (15-26 Nm).
5. Check the operation of the transaxle in each selector lever position. Make sure the park and neutral start switch are functioning properly.

#### ATX Transaxle

1. Position the selector lever in the D position against the drive stop. The shift lever must be held in the D position while the linkage is being adjusted.
2. Loosen the transaxle manual lever-to-control cable adjustment trunnion bolt.
3. Move the transaxle manual lever to the D position, second detent from the most rearward position.
4. Tighten the adjustment trunnion bolt to 12-20 ft. lbs. (16-27 Nm).
5. Check the operation of the transaxle in each selector lever position. Make sure the neutral start switch functions properly in P and N and the back-up lights are on in R.

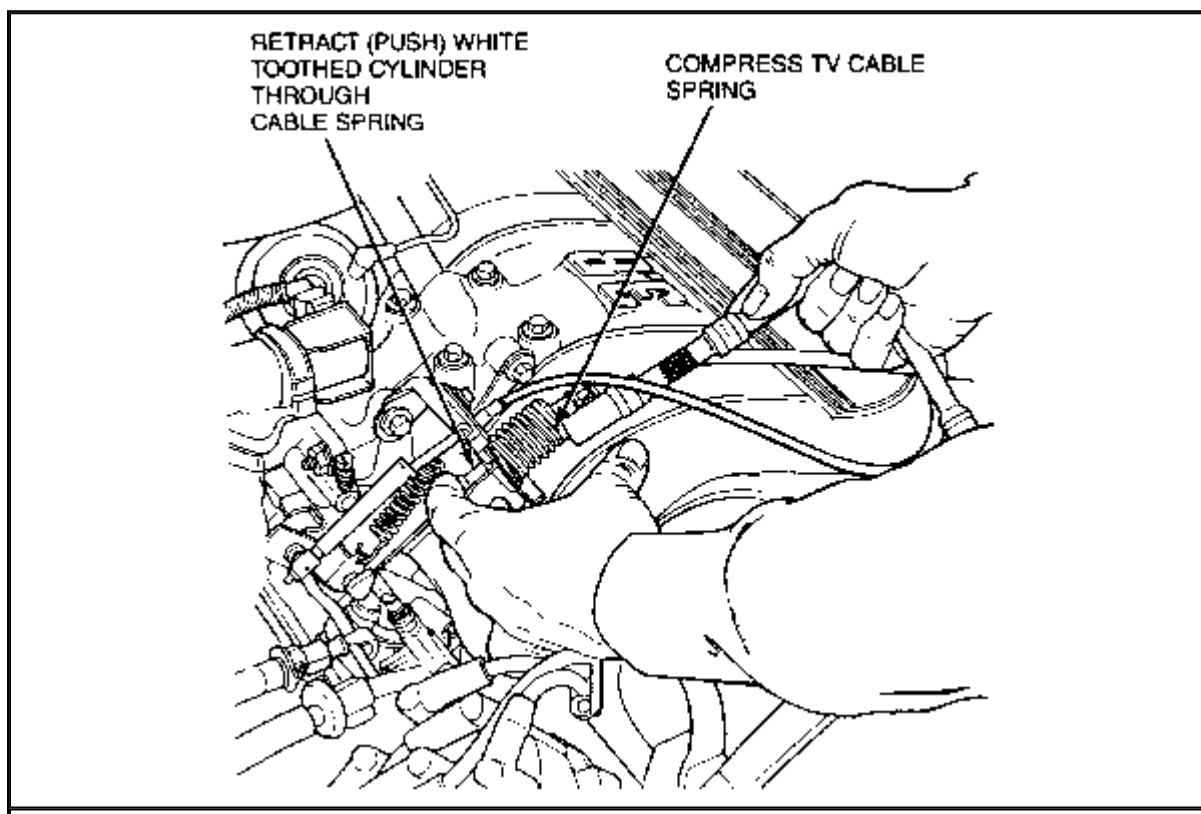
### THROTTLE CABLE

Transaxle downshift control is controlled through the throttle position switch on 1991-95 vehicles equipped with the electronic automatic overdrive transaxle.

### 1986-90 3.0L and 3.8L Engines

The Throttle Valve (TV) cable normally does not need adjustment. The cable should be adjusted only if one of the following components is removed for service or replacement:

- Main control assembly
  - Throttle valve cable
  - Throttle valve cable engine mounting bracket
  - Throttle control lever link or lever assembly
  - Engine throttle body
  - Transaxle assembly
1. Connect the TV cable eye to the transaxle throttle control lever link, then attach the cable boot to the chain cover.
  2. If equipped with the 3.0L engine, with the TV cable mounted in the engine bracket, make sure the threaded shank is fully retracted. To retract the shank, pull up on the spring rest with the index fingers and wiggle the top of the thread shank while pressing the shank through the spring with the thumbs.
  3. If equipped with the 3.8L engine, the TV cable must be unclipped from the right intake manifold clip. To retract the shank, span the crack between the two 180 degree segments of the adjuster spring rest with a suitable tool. Compress the spring by pushing the rod toward the throttle body with the right hand. While the spring is compressed, push the threaded shank toward the spring with the index and middle fingers of the left hand. Do not pull on the cable sheath.

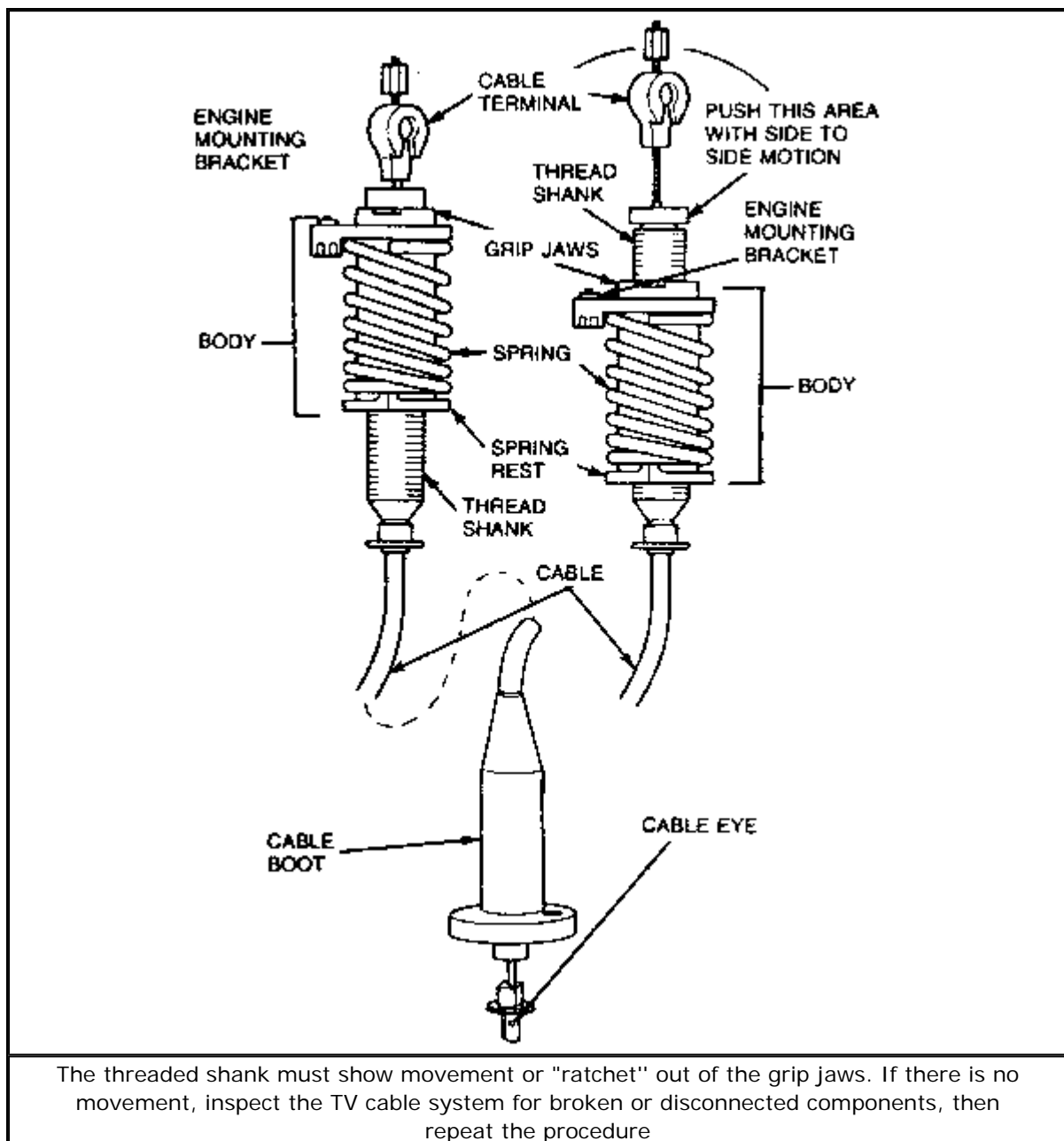


While the spring is compressed, push the threaded shank toward the spring with the index and middle fingers of the left hand. Do not pull on the cable sheath

[Click to enlarge](#)

4. Attach the end of the TV cable to the throttle body.
5. If equipped with the 3.8L engine, rotate the throttle body primary lever by hand, the lever to which the TV-driving nailhead is attached, to the wide-open-throttle position. The white adjuster shank must be seen to advance. If not, look for cable sheath/foam hang-up on engine/body components. Attach the TV cable into the top position of the right intake manifold clip.

The threaded shank must show movement or "ratchet" out of the grip jaws. If there is no movement, inspect the TV cable system for broken or disconnected components, then repeat the procedure.



[Click to enlarge](#)

## THROTTLE VALVE CONTROL LINKAGE

### ATX Transaxle

The Throttle Valve (TV) Control Linkage System consists of a lever on the throttle body of the injection unit, linkage shaft assembly, mounting bracket assembly, control rod assembly, a control lever on the transaxle and a lever return spring.

The coupling lever follows the movement of throttle lever and has an adjustment screw that is used for setting TV linkage adjustment when a line pressure gauge is used. If a pressure gauge is not available, a manual adjustment can be made.

A number of shift troubles can occur if the throttle valve linkage is not in adjustment. Some are:

- **Symptom: Excessively early and/or soft upshift with or without slip-bump feel. No forced downshift (kickdown) function at appropriate speeds.**
- **Cause: TV control linkage is set too short.**
- **Remedy: Adjust linkage.**
- **Symptom: Extremely delayed or harsh upshifts and harsh idle engagement.**
- **Cause: TV control linkage is set too long.**
- **Remedy: Adjust linkage.**
- **Symptom: Harsh idle engagement after the engine is warmed up. Shift clunk when throttle is backed off after full or heavy throttle acceleration. Harsh coasting downshifts (automatic 3-2, 2-1 shift in D range). Delayed upshift at light acceleration.**
- **Cause: Interference due to hoses, wires, etc. prevents return of TV control rod or TV linkage shaft. Excessive friction caused by binding grommets prevents the TV control linkage to return to its proper location.**
- **Remedy: Correct the interference area, check for bent or twisted rods, levers. or damaged grommets. Repair or replace whatever is necessary. Check and adjust linkage is necessary.**
- **Symptom: Erratic/delayed upshifts, possibly no kickdown, harsh engagement.**
- **Cause: Clamping bolt on trunnion at the upper end of the TV control rod is loose.**
- **Remedy: Reset TV control linkage.**
- **Symptom: No upshift and harsh engagements.**
- **Cause: TV control rod is disconnected or the linkage return spring is broken or disconnected.**
- **Remedy: Reconnect TV control rod, check and replace the connecting grommet if necessary, reconnect or replace the TV return spring.**

The TV control linkage is adjusted at the sliding trunnion block.

1. **Operate the engine until normal operating temperature is reached. Adjust the curb idle speed to specification.**
2. **After the curb idle speed has been set, shut off the engine. Make sure the choke is completely opened. Check the throttle lever to make sure it is against the hot engine curb idle stop.**



3. Set the coupling lever adjustment screw at its approximate midrange. Make sure the TV linkage shaft assembly is fully seated upward into the coupling lever.

### CAUTION

If adjustment of the linkage is necessary, allow the EGR valve to cool so you won't get burned.

4. To adjust, loosen the bolt on the sliding block on the TV control rod a minimum of one turn. Clean any dirt or corrosion from the control rod, free-up the trunnion block so that it will slide freely on the control rod.
5. Rotate the transaxle TV control lever up using a finger and light force, to insure that the TV control lever is against its internal stop. With reducing the pressure on the control lever, tighten the bolt on the trunnion block.
6. Check the throttle lever to be sure it is still against the hot idle stop. If not, repeat the adjustment steps.

## TRANSAXLE CONTROL LEVER

### ATX Transaxle

1. Position the selector lever in **DRIVE** against the rear stop.
2. Raise the car and support it safely on jackstands. Loosen the manual lever to control lever nut.
3. Move the transaxle lever to the Drive position, second detent from the rear most position. Tighten the attaching nut. Check the operation of the transaxle in each selector position. Readjust if necessary. Lower the car.

### AXOD and AXOD-E Transaxles

1. Position the selector lever in the **OVERDRIVE** position against the rearward stop.
2. If the vehicle is equipped with a floor shift selector the shift lever must be held in the rearward position using a constant force of about 3 lbs. as the linkage is being adjusted.
3. Loosen the manual lever to control cable retaining nut. Be sure that the transaxle lever is in the **OVERDRIVE** position. Tighten the retaining nut to 11-19 ft. lbs. (15-26 Nm).
4. Check operation of the transaxle in each range. Be sure that the park switch and neutral safety switch are working properly.

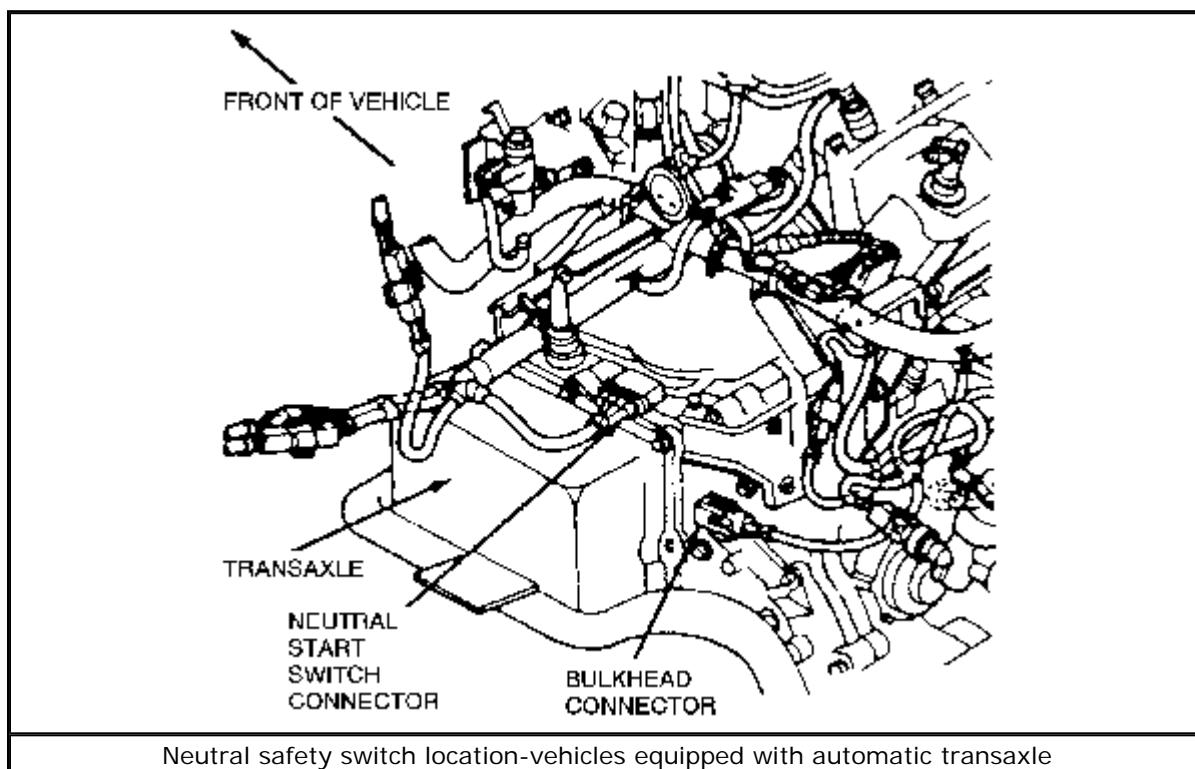
## Neutral Safety Switch/Back-Up Light Switch

The neutral start and backup switch are one unit mounted on the top left end of the transaxle. The neutral start portion of the switch allows electrical current to travel to the ignition system when the shift selector is in park or neutral only. The vehicle will not start when the selector is in any other gear. The backup portion operates the rear backup lamps when selector is in the reverse gear.

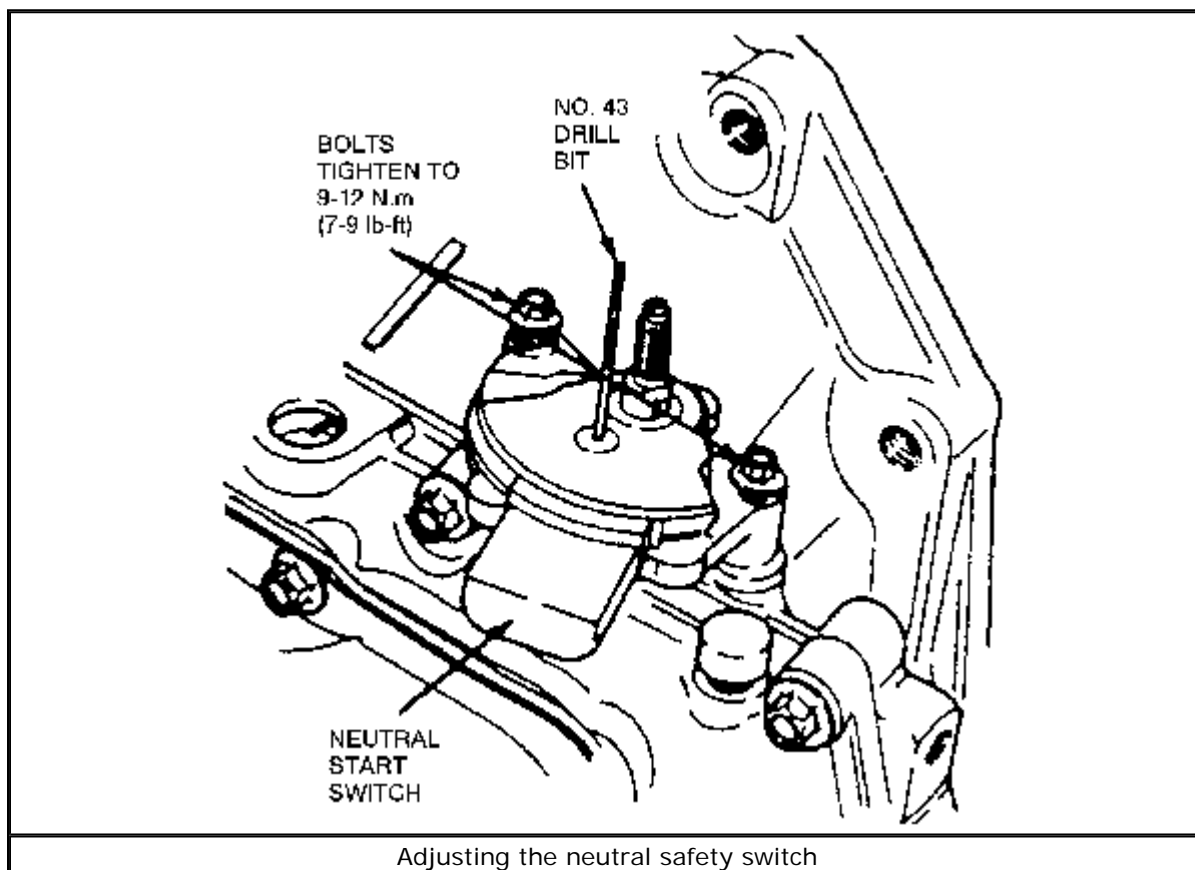
## REMOVAL & INSTALLATION

1. Make sure the shift selector in the Park position, then apply the emergency brake.

2. Disconnect the negative battery cable.
3. Disengage the neutral start switch electrical connector, then remove the shift control lever on top of the switch.
4. Remove the two neutral switch attaching bolts, then remove the switch.



[Click to enlarge](#)



[Click to enlarge](#)

To install:

5. Install the switch on the manual shaft.
6. Loosely install the two attaching bolts and washers.
7. Insert a No. 43 drill (0.089 in.) through the hole.
8. Tighten the attaching bolts to 7-9 ft. lbs. (9-12 Nm), then remove the drill.
9. Engage the switch electrical connector, then connect the negative battery cable.

## Shift Lever Cable

### REMOVAL AND INSTALLATION

1. Remove the shift knob, locknut, console, bezel assembly, control cable clip and cable retaining pin.
2. Disengage the rubber grommet from the floor pan by pushing it into the engine compartment.
3. Raise the car and safely support it on jackstands.
4. Remove the retaining nut and control cable assembly from the transaxle lever.
5. Remove the control cable bracket bolts. Pull the cable through the floor.

To install:

6. To install the cable, feed the round end through the floor board. Press the rubber grommet into its mounting hole.
7. Position the control cable assembly in the selector lever housing and install the spring clip.
8. Install the bushing and control cable assembly on the selector lever and housing assembly shaft and secure it with the retaining pin.
9. Install the bezel assembly, console, locknut and shift knob.
10. Position the selector lever in the Drive position. The selector lever must be held in this position while attaching the other end of the control cable.
11. Position the control cable bracket on the retainer bracket and secure the two mounting bolts.
12. Shift the control lever into the second detent from full rearward (Drive position).
13. Place the cable end on the transaxle lever stud. Align the flats on the stud with the slot in the cable. Make sure the transaxle selector lever has not moved from the second detent position and tighten the retaining nut.
14. Lower the car to the ground. Check the operation of the transaxle selector in all positions. Make sure the neutral safety switch is operating properly. The engine should start only in the Park or Neutral position.

## Transaxle

### REMOVAL & INSTALLATION

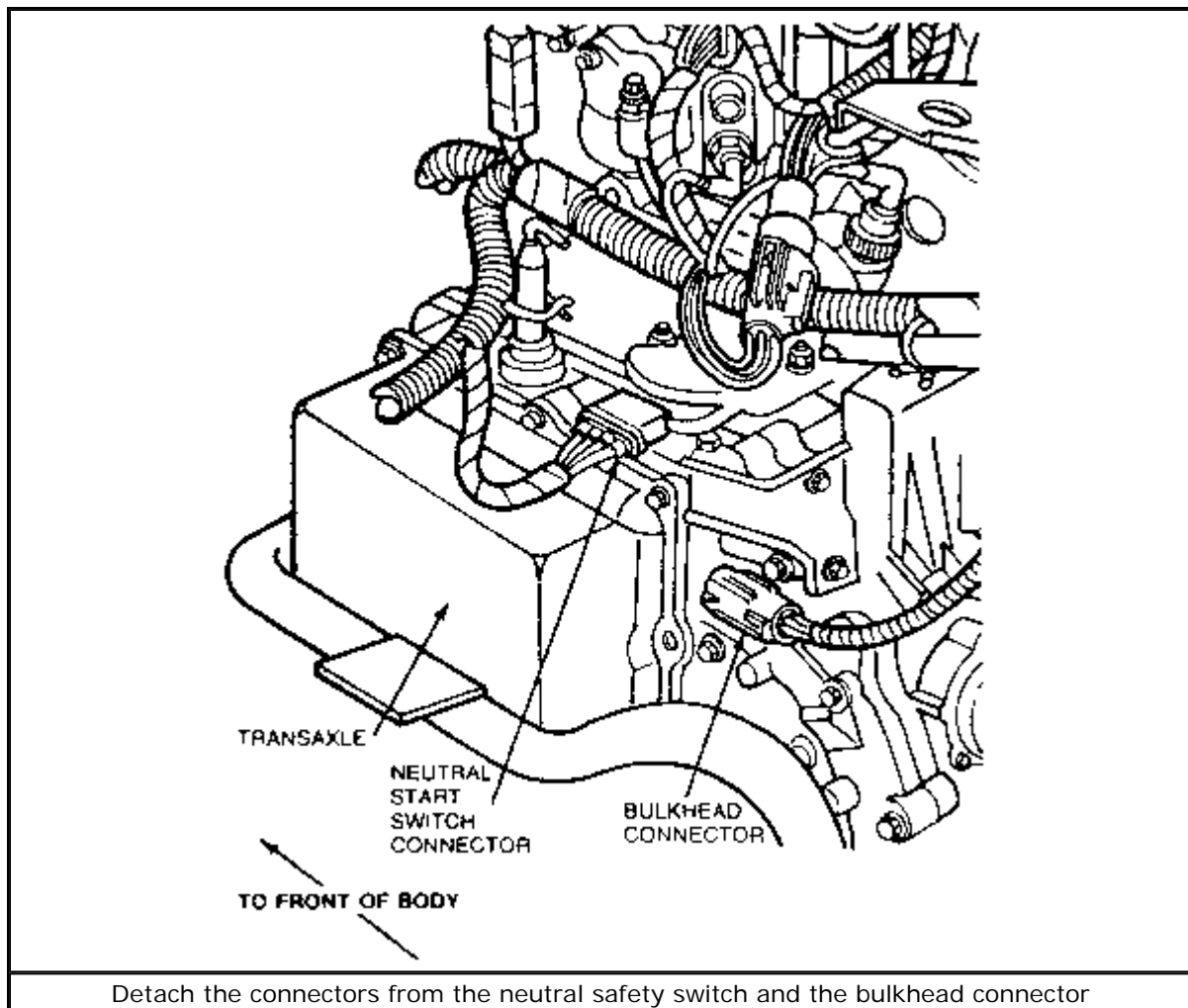
#### 1986-90 Vehicles

**EXCEPT TAURUS WITH 2.5L ENGINE**

1. Disconnect the negative battery cable.
2. Remove the air cleaner assembly.
3. Remove the bolt retaining the shift cable and bracket assembly to the transaxle.

Hold the bracket with a prybar in the slot to prevent the bracket from moving.

4. Remove the shift cable bracket bolts and bracket from the transaxle.
5. Disengage the electrical connector from the neutral safety switch.
6. Detach the electrical bulkhead connector from the rear of the transaxle.



Detach the connectors from the neutral safety switch and the bulkhead connector

[Click to enlarge](#)

7. Remove the oil dipstick.
8. For 3.8L engines, remove the throttle valve cable cover. Unsnap the throttle valve cable from the throttle body lever. Remove the throttle valve cable from the transaxle case.



- Pulling too hard on the throttle valve may bend the internal TV bracket.**



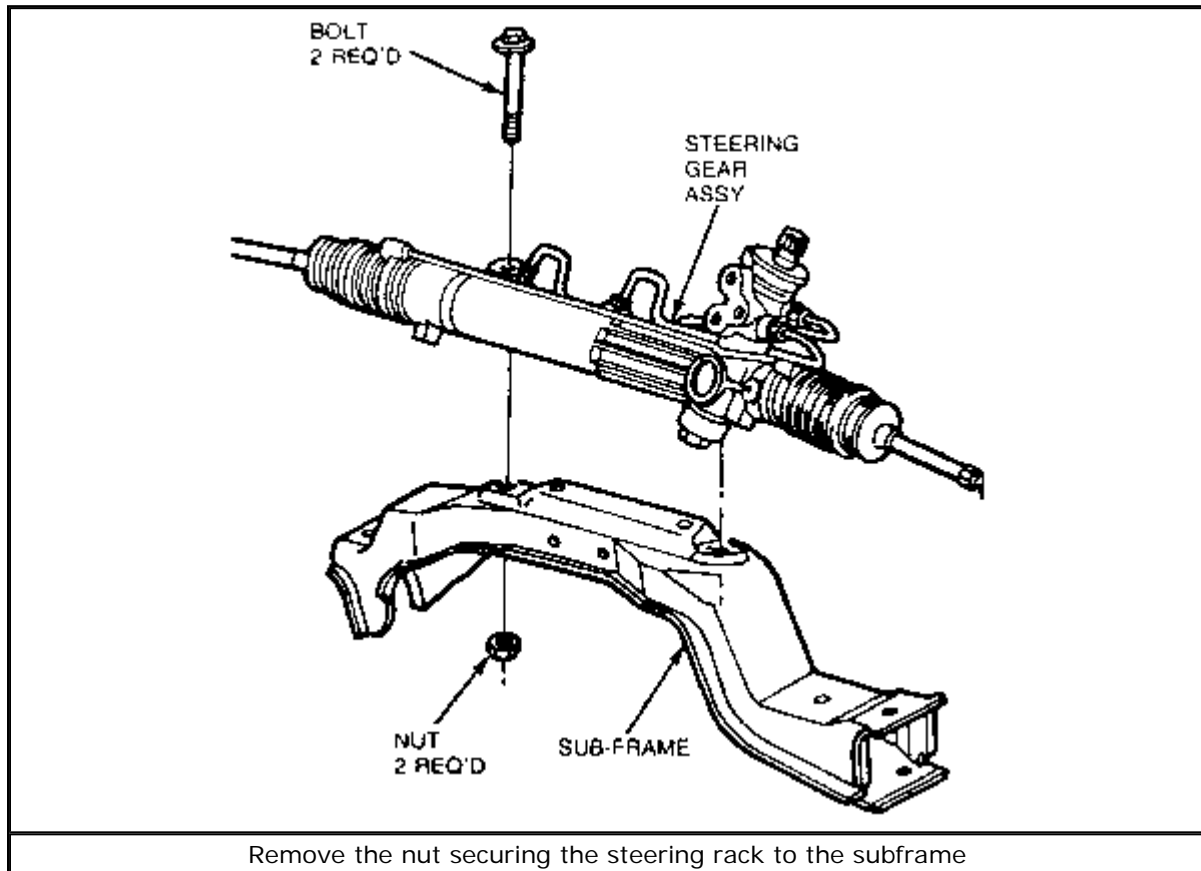
- 10. Install engine lifting brackets.**



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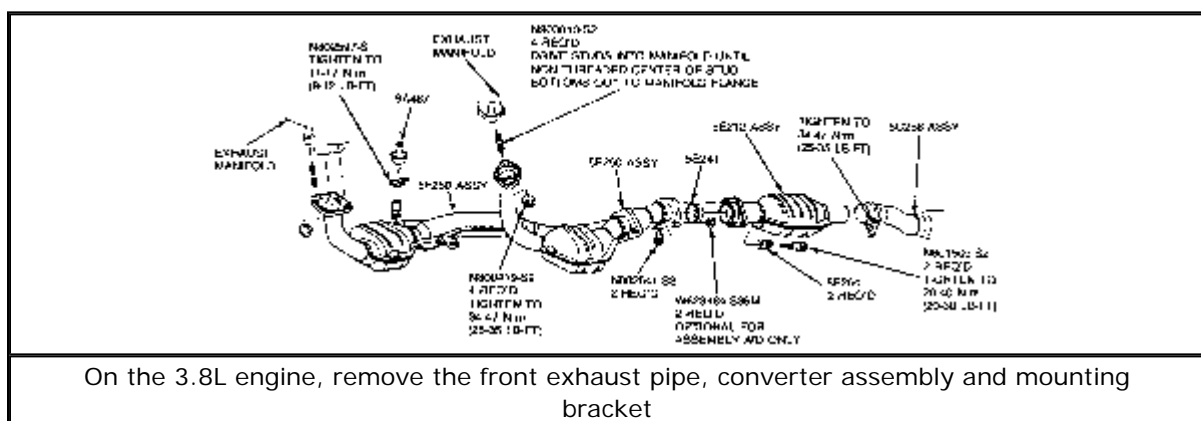
13. Install a suitable engine support fixture.
14. Raise the and safely support the vehicle.
15. Remove both front wheels. Remove the left-side outer tie rod end.

16. Remove the lower ball joint attaching nuts and bolts. Remove the lower ball joints and remove the lower control arms from each spindle. Remove stabilizer bar bolts.
17. Remove the nuts securing the steering rack to the subframe.



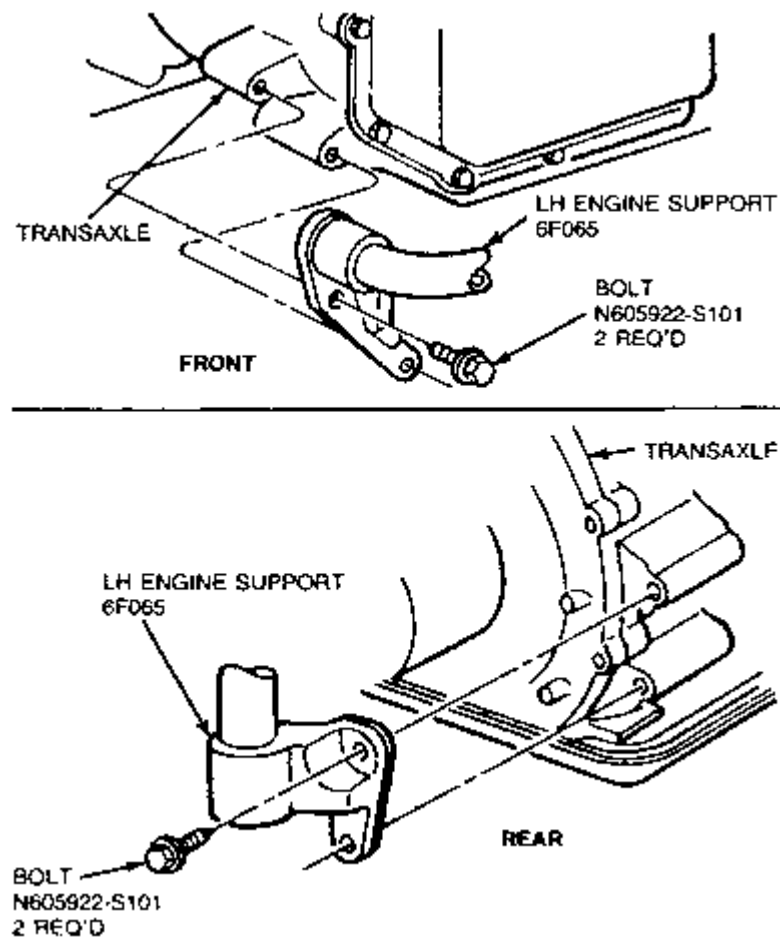
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- 18. For 3.8L engines, disengage the oxygen sensor electrical connection, then remove the exhaust pipe, converter assembly and mounting bracket.**



**Click to enlarge**

- 19. Remove the two 15mm bolts from the transaxle mount. Remove the four 15mm bolts from the left engine support, then remove the bracket.**

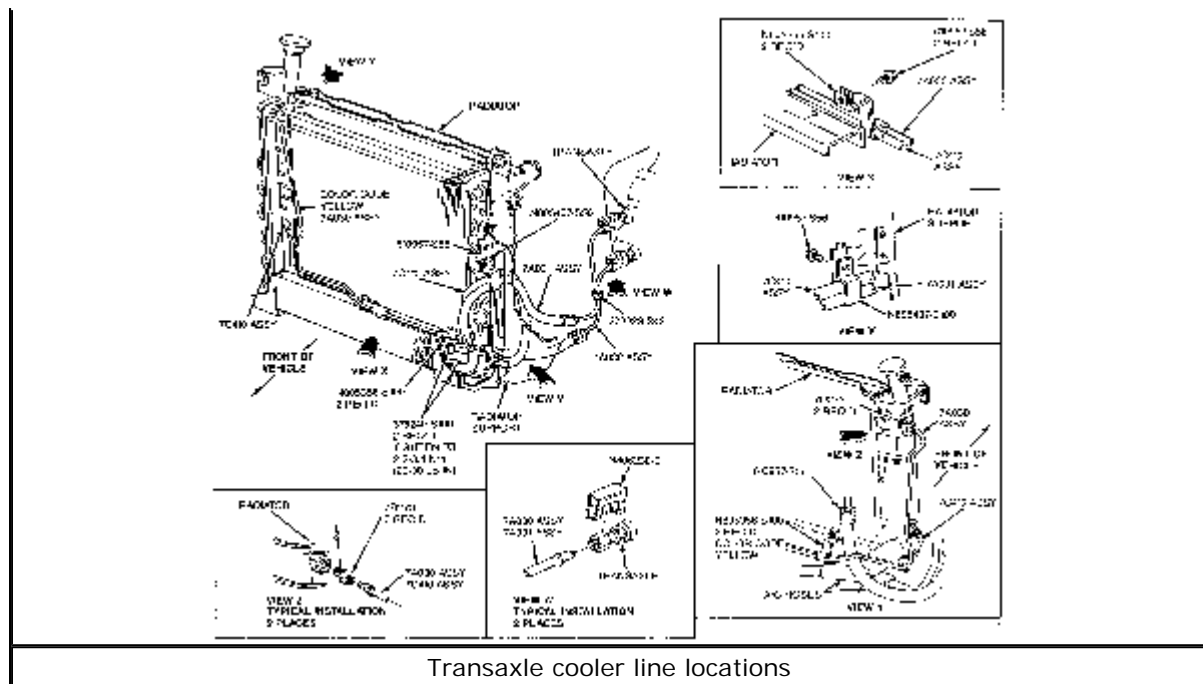


Remove the bolts from the left engine support, then remove the support

[Click to enlarge](#)

20. Position a suitable subframe removal tool.
21. Remove the steering gear from the subframe and secure to the rear of the engine compartment. Remove the subframe-to-body retaining bolts, then remove the subframe.
22. Remove the dust cover retaining bolt and the starter retaining bolts then position the starter out of the way. Remove the dust cover.
23. Rotate the engine by the crankshaft pulley bolt to align the torque converter bolts with the starter drive hole. Remove the torque converter-to-flywheel retaining nuts.
24. Remove the transaxle cooler line fitting retaining clips. Using Cooler Line Disconnect Tool T86P-77265-AH or equivalent, disconnect the transaxle cooler lines.

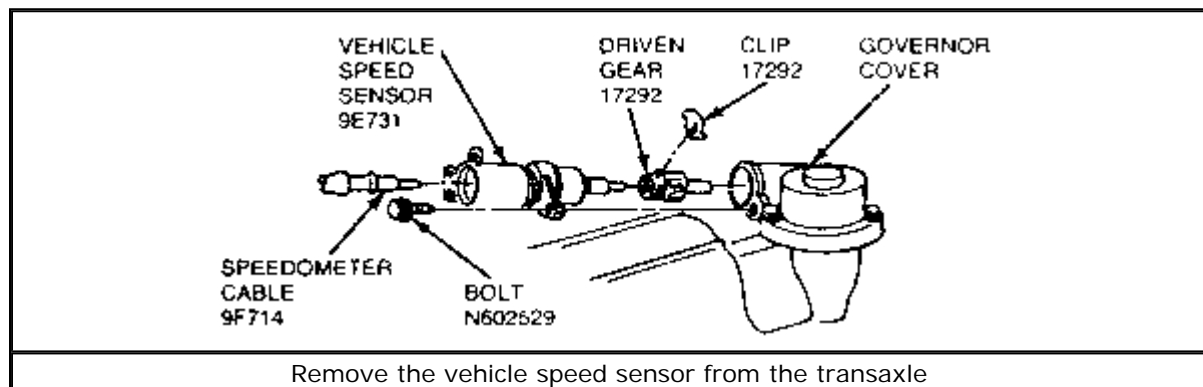




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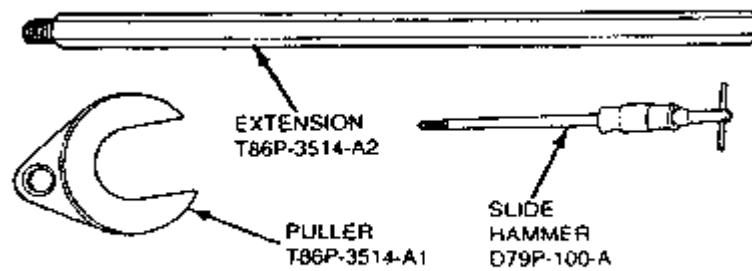
25. Remove the engine-to-transaxle retaining bolts.
26. Remove the speedometer sensor heat shield.
27. Remove the vehicle speed sensor from the transaxle.

Vehicles with electronic instrument clusters do not use a speedometer cable.



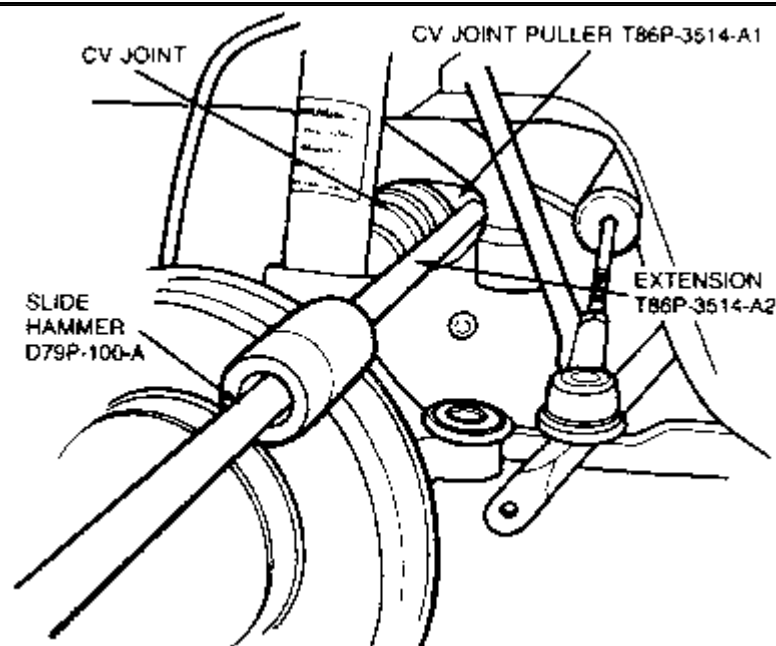
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28. Position a suitable transaxle jack.
29. Remove the halfshafts as follows:
  1. Screw Extension T86P-3514-A2 into CV Joint Puller T86P-3514-A1, and insert Slide Hammer D79P-100-A or equivalent into the extension.
  2. Position the puller behind the CV joint, then remove the joint.
  3. Install shipping plugs.



Tools necessary to remove the halfshafts

[Click to enlarge](#)



Position the puller behind the CV-joint, then remove the joint

[Click to enlarge](#)

30. Remove the two remaining torque converter housing bolts.
31. Separate the transaxle from the engine, then carefully lower the transaxle from the vehicle.

**To install:**

32. Installation is the reverse of the removal procedure. During installation be sure to observe the following:
  1. Clean the transaxle oil cooler lines.
  2. Install new circlips on the CV-joint seals.
  3. Carefully install the halfshafts in the transaxle by aligning the splines of the CV-joint with the splines of the differential.
  4. Attach the lower ball joint to the steering knuckle

with a new nut and bolt. Tighten the nut to 37-44 ft. lbs.

5. When installing the transaxle to the engine, verify that the converter-to-transaxle engagement is maintained. Prevent the converter from moving forward and disengaging during installation.
6. Adjust the TV and manual linkages. Check the transaxle fluid level.
7. Tighten the following bolts to the torque specifications listed:
  - Transaxle-to-engine bolts: 41-50 ft. lbs. (55-68 Nm)
  - Control arm-to-knuckle bolts: 36-44 ft. lbs. (49-60 Nm)
  - Stabilizer U-clamp-to-bracket bolts: 60-70 ft. lbs. (81-95 Nm)
  - Tie rod-to-knuckle nut: 23-35 ft. lbs. (31-47 Nm)
  - Starter-to-transaxle bolts: 30-40 ft. lbs. (41-54 Nm)
  - Converter-to-flywheel bolts: 23-39 ft. lbs. (31-53 Nm)
  - Insulator-to-bracket bolts: 55-70 ft. lbs. (75-95 Nm)

#### **TAURUS WITH 2.5L ENGINE**

1. Disconnect the negative battery cable.
2. Remove the air cleaner assembly.
3. Position the engine control wiring harness away from the transaxle converter housing area.
4. Disconnect the TV linkage and manual lever cable at the respective levers. Failure to disconnect the linkage during transaxle removal and allowing the transaxle to hang will fracture the throttle valve cam shaft joint (located under the transaxle cover).
5. Remove the power steering hose brackets.
6. Remove the upper transaxle-to-engine attaching bolts.
7. Install suitable engine lifting brackets to the right and left areas of the cylinder head and attach with bolts. Install two suitable engine support bars.

An engine support bar may be made from a length of 4x4 wood cut to about 57 in. (1.45m).

8. Place one of the engine support bars across the vehicle in front of each engine

shock tower. Place another support bar across the vehicle approximately between the alternator and valve cover. Attach chains to the lifting brackets.

9. Raise and safely support the vehicle. Remove the wheel and tire assemblies.
10. Remove the catalytic converter inlet pipe and disconnect the exhaust air hose assembly.
11. Remove each tie rod end from it's spindle. Separate the lower ball joints from the struts, then remove the lower control arm from each spindle.
12. Disconnect the stabilizer bar by removing the retaining nuts.
13. Disconnect and remove the rack and pinion and auxiliary cooler from the subframe. Position the rack and pinion away from the subframe and secure with wire.
14. Remove the right front axle support and bearing assembly retaining bolts, then remove the assembly.
15. Remove the halfshaft and link shaft assembly out of the right side of the transaxle.
16. Disengage the left halfshaft from the differential side gear. Pull the halfshaft from the transaxle.

Support and secure the halfshaft from an underbody component with a length of wire. Do not allow the halfshafts to hang unsupported.

17. Plug the seal holes, by installing Shipping Plugs T81P-1177-B or equivalent.
18. Remove the front support insulator and position the left front splash shield aside.
19. Position a workbench or shop table to support the subframe after it is disconnected. Lower the vehicle to the bench table surface. Position blocks or support for the subframe, as required. Remove the subframe retaining bolts, then remove the subframe. Disconnect the neutral start switch wire assembly.
20. Raise the vehicle after the subframe is removed. Disconnect the speedometer cable.
21. Disconnect and remove the shift cable from the transaxle.
22. Disconnect the oil cooler lines using Cooler Line Disconnect Tool T86P-77265-AH or equivalent.
23. Disconnect the starter mounting bolts, then remove the starter.
24. Remove the dust cover from the torque converter housing and remove the torque converter-to-flywheel housing nuts.
25. Position a suitable transaxle jack under the transaxle.
26. Remove the remaining transaxle-to-engine retaining bolts.

Before the transaxle can be lowered from the vehicle, the torque converter studs must be clear of the flywheel. Insert a suitable tool between the flywheel and converter, then carefully guide the transaxle and converter away from the engine.

27. Lower the transaxle from the engine.

To install:

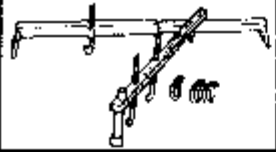

28. Installation is the reverse of the removal procedure. During installation be sure to observe the following:

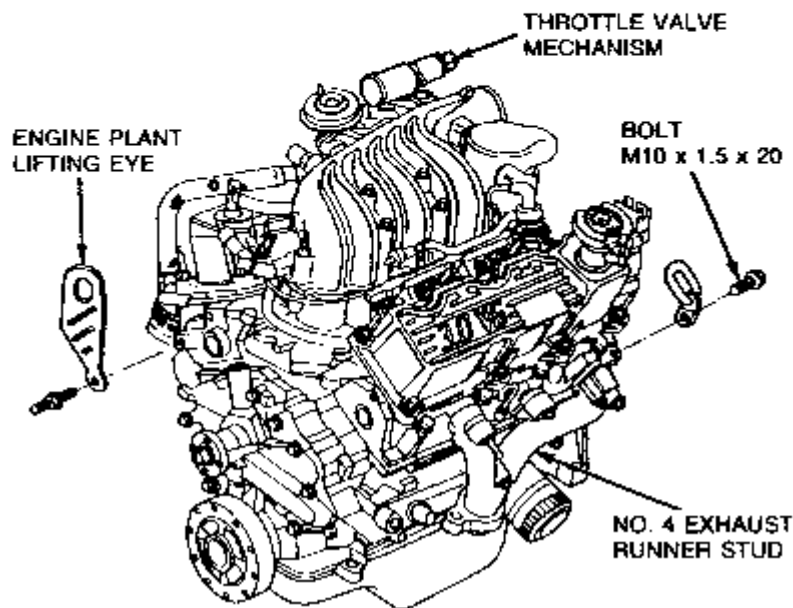
1. Clean the transaxle oil cooler lines using Rotunda Torque Converter Cleaner 014-00028 or equivalent.
2. Install new circlips on the CV-joint seals.
3. Carefully install the halfshafts in the transaxle by aligning the splines of the CV-joint with the splines of the differential.
4. Attach the lower ball joint to the steering knuckle with a new nut and bolt. Tighten the nut to 37-44 ft. lbs. (50-60 Nm). DO NOT tighten the bolt!
5. When installing the transaxle to the engine, make sure that the converter-to-transaxle engagement is maintained. Prevent the converter from moving forward and disengaging during installation.
6. Adjust the TV and manual linkages. Check the transaxle fluid level.
7. Tighten the following bolts to the torque specifications listed:
  - Transaxle-to-engine bolts: 25-33 ft. lbs. (34-45 Nm)
  - Control arm-to-knuckle bolts: 36-44 ft. lbs. (50-60 Nm)
  - Stabilizer U-clamp-to-bracket bolts: 60-70 ft. lbs. (81-95 Nm)
  - Tie rod-to-knuckle nut: 23-35 ft. lbs. (31-47 Nm)
  - Starter-to-transaxle bolts: 30-40 ft. lbs. (41-54 Nm)
  - Converter-to-flywheel bolts: 23-39 ft. lbs. (31-53 Nm)
  - Insulator-to-bracket bolts: 55-70 ft. lbs. (75-90 Nm)

### 1991-95 Vehicles

1. Disconnect the battery cables, then remove the battery and battery tray.
2. Place a drain pan under the transaxle, then properly drain the fluid into a suitable container.
3. Remove the air cleaner assembly, hoses and tubes.
4. Disengage the electrical connectors from the engine, then remove the bolt retaining the main wiring harness bracket.
5. Remove the shift lever.
6. Remove the EGR bracket and throttle body bracket retaining bolts.

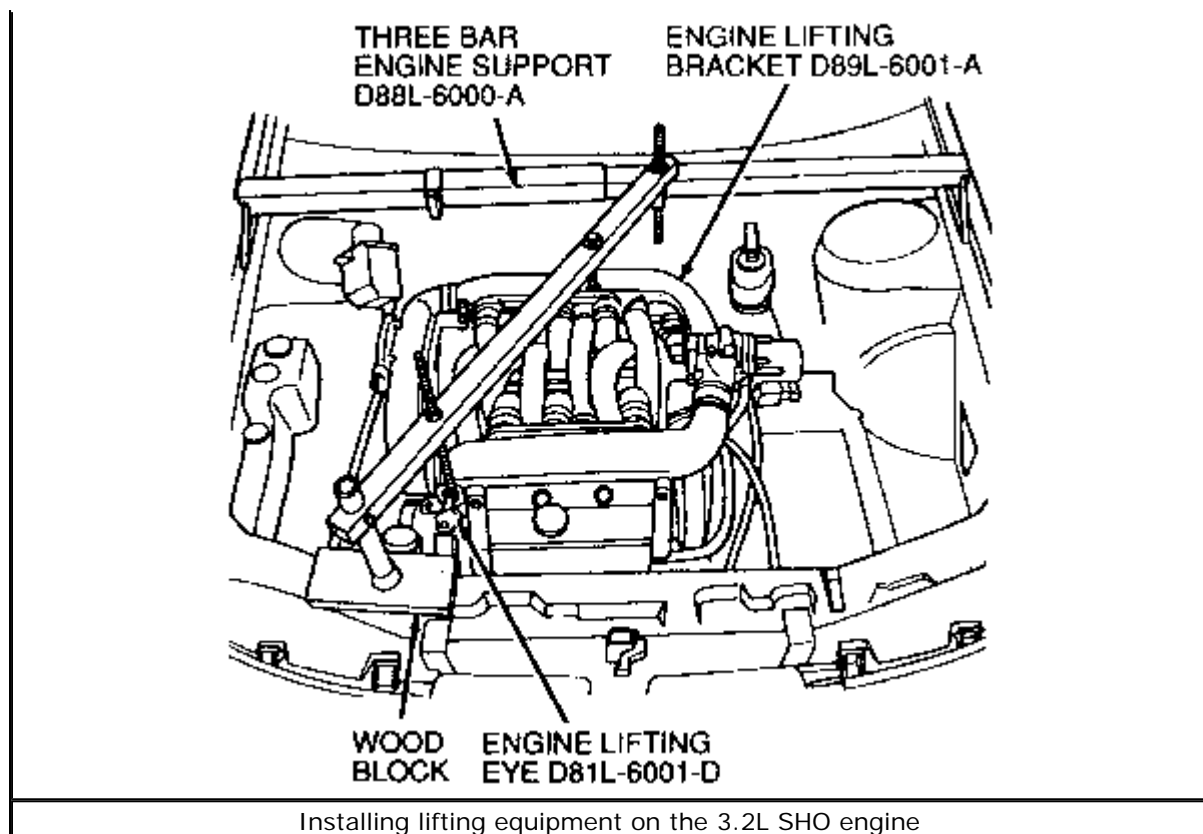
7. On the 3.0L engine, install engine lifting eyes D81L-6001-D to the left rear cylinder with a bolt. The engine plant lifting eye should still be on the right front cylinder. If not, install second lifting eye. On the 3.2L SHO, remove the bracket on the back of the engine that retains the wiring harness and coolant line and attach Engine Lifting Eyes to the alternator bracket. On the 3.8L engine, install engine lifting eyes to the left front exhaust manifold stud and right rear exhaust manifold stud.

	D88L-6000-A	THREE BAR ENGINE SUPPORT
	D81L-6001-D	ENGINE LIFTING EYES



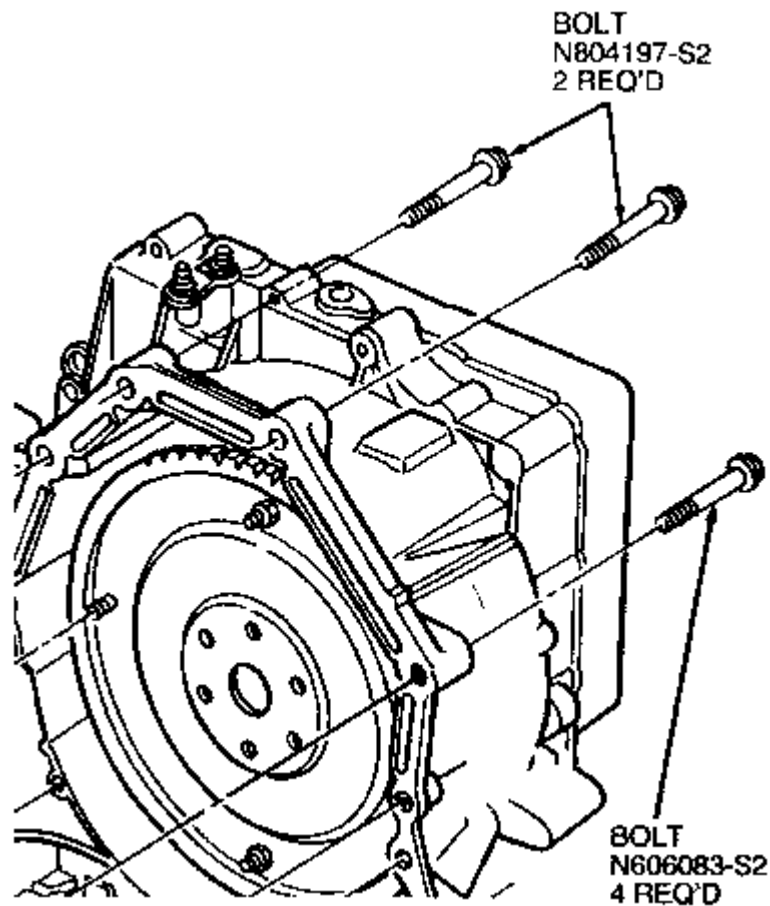
On the 3.0L engine, install engine lifting eye to the left rear cylinder

[Click to enlarge](#)



[Click to enlarge](#)

8. Secure the wiring harness aside and remove the radiator sight shield.
9. Position a suitable engine support fixture.
10. Position Three Bar Engine Support D88L-6000-A or equivalent.
11. If equipped with air suspension, turn the air suspension switch located in the luggage compartment to the OFF position.
12. Remove the oil level dipstick and disconnect the power steering pump pressure and return line bracket.
13. Remove the four torque converter housing bolts from the top of the transaxle.

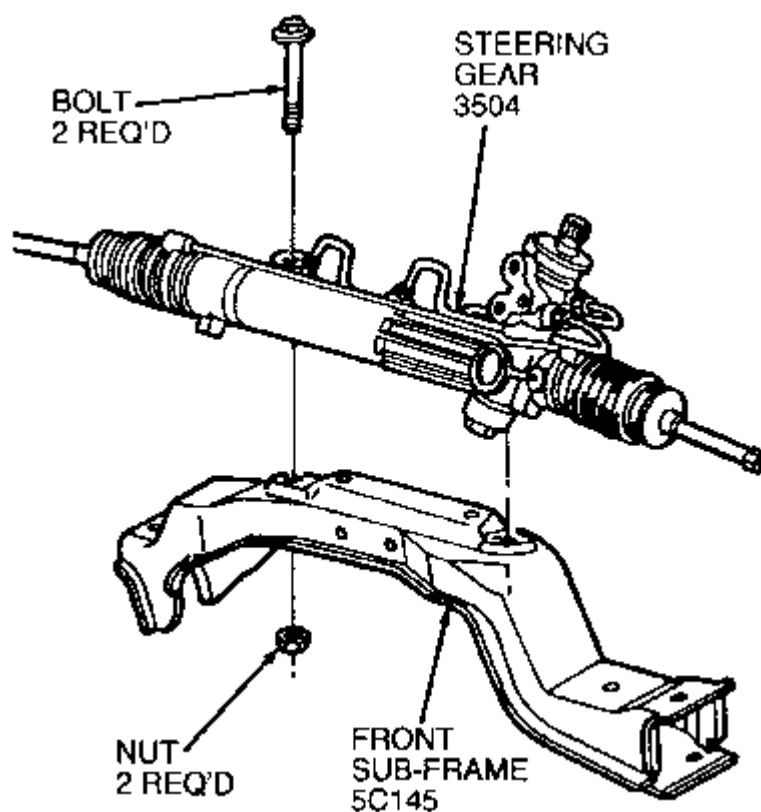


Remove the four torque converter housing bolts from the top of the transaxle

[Click to enlarge](#)

14. Raise and safely support the vehicle. Remove the front wheel and tire assemblies.
15. Disconnect the left outer tie rod end. Remove the suspension height sensor, if equipped. Disconnect the brake line support brackets.
16. Remove the retaining bolts from the front stabilizer bar assembly. Disconnect the right and left lower arm assemblies.
17. Remove the steering gear retaining nuts from the subframe. Remove the front heated oxygen sensor, exhaust pipe, converter assembly and mounting bracket.

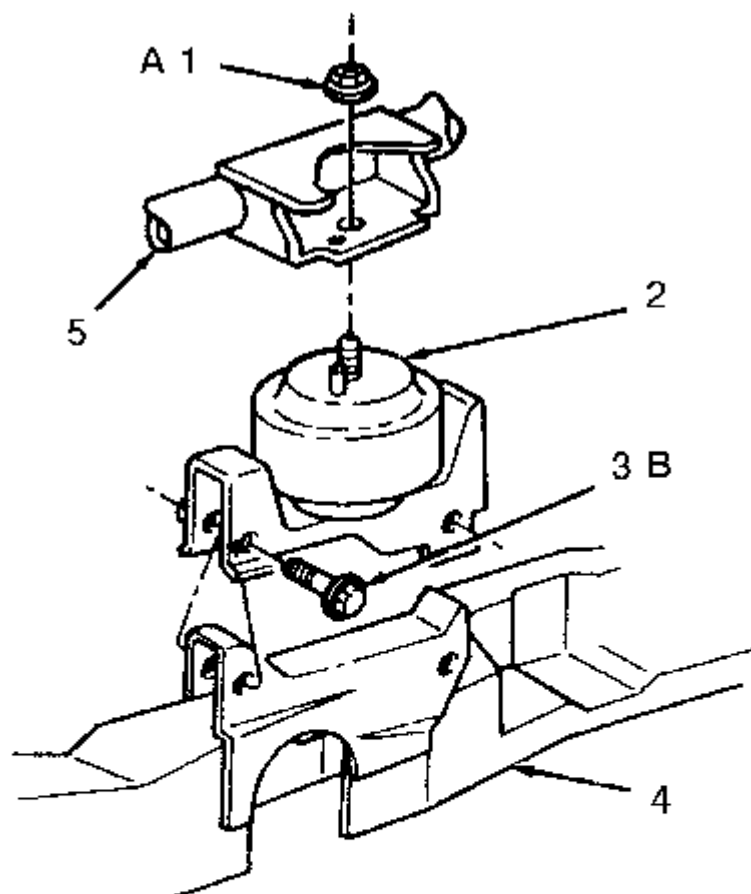




Remove the steering gear-to-subframe retaining nuts

[Click to enlarge](#)

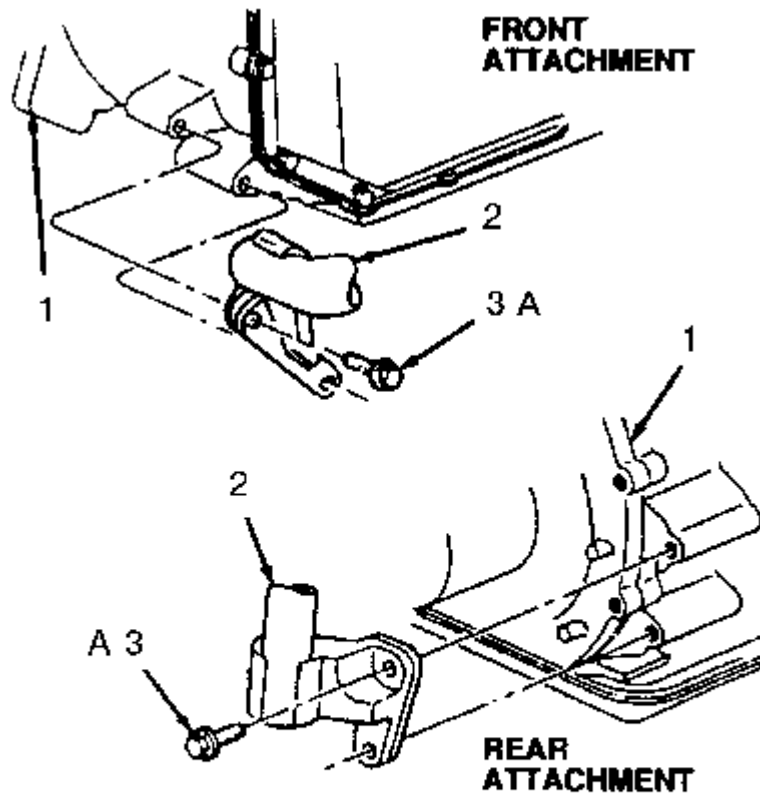
18. Remove the two bolts from the engine mount and the four bolts from the left engine support, then remove the support.



- 1. Nut
- 2. Engine mount assy
- 3. Bolt (2 req'd)
- 4. Inner floor side member
- 5. Support assy
- A. Tighten to 74-102 N.m  
(55-75 lb-ft)
- B. Tighten to 81-116 N.m  
(60-85 lb-ft)

Remove the two retaining bolts from the engine mount, then remove the mount

[Click to enlarge](#)



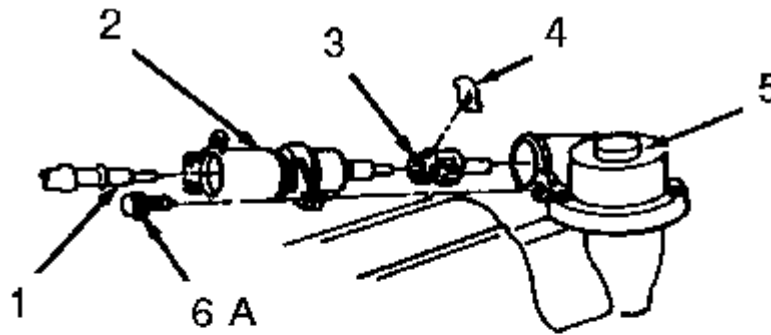
- 1. Transaxle case
- 2. Support assy
- 3. Bolt (2 req'd)
- A. Tighten to 54-75 N.m  
(40-55 lb-ft)

Remove the four bolts from the left engine support, then remove the support

[Click to enlarge](#)

19. Position Rotunda Subframe Removal Kit 014-00751, or equivalent. Remove the steering gear from the subframe and secure it to the rear of the engine compartment. Remove the subframe-to-body bolts, then lower the subframe.
20. Remove the two starter retaining bolts, then position the starter out of the way.
21. Remove the dust cover.
22. Rotate the engine with a  $\frac{1}{2}$  in. drive ratchet and  $\frac{7}{8}$  in. deep well socket on the crankshaft pulley bolt to align the torque converter bolts with the starter drive hole. Remove the four torque converter-to-flywheel retaining nuts.
23. Remove the transaxle cooler line fitting retaining clips. Using Cooler Line Disconnect Tool T86P-77265-AH or equivalent, disconnect the transaxle cooler lines.
24. Remove the engine-to-transaxle retaining bolts.
25. Remove the speedometer sensor heat shield. Remove the vehicle speed sensor from the transaxle.

Vehicles with electronic instrument clusters do not use a speedometer cable.



1. Speed control cable and vehicle speed sensor
2. Vehicle speed sensor
3. Speedometer driven gear
4. Speedometer driven gear retainer
5. Speedometer cover
6. Bolt
- A. Tighten to 3.4-4.5 N.m (31-39 lb-in)

Remove the vehicle speed sensor from the transaxle

[Click to enlarge](#)

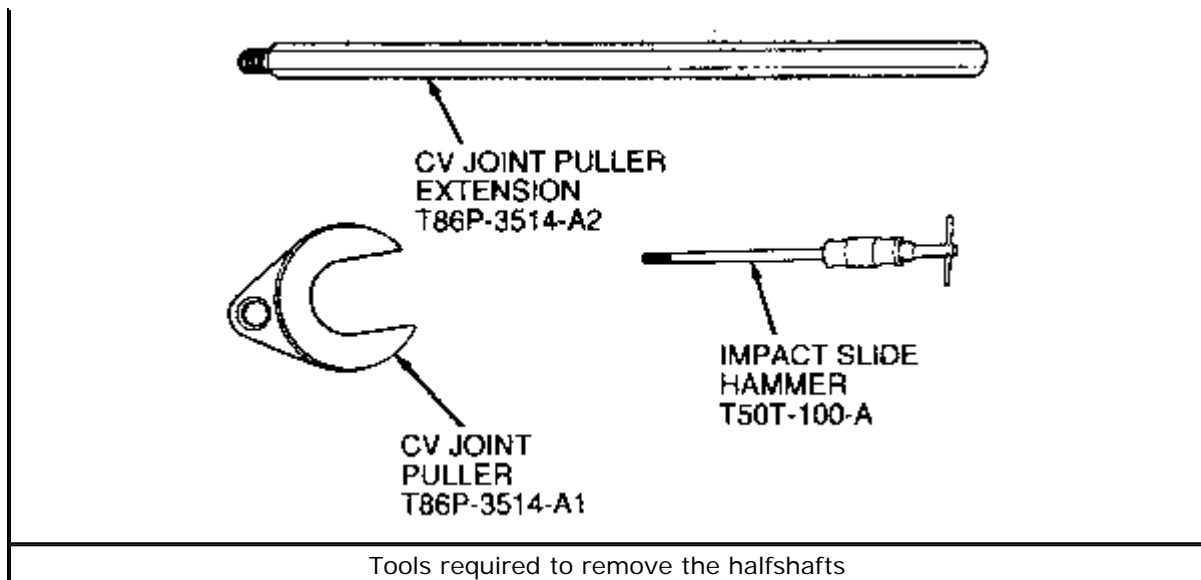
26. Position a suitable transaxle jack.

### WARNING

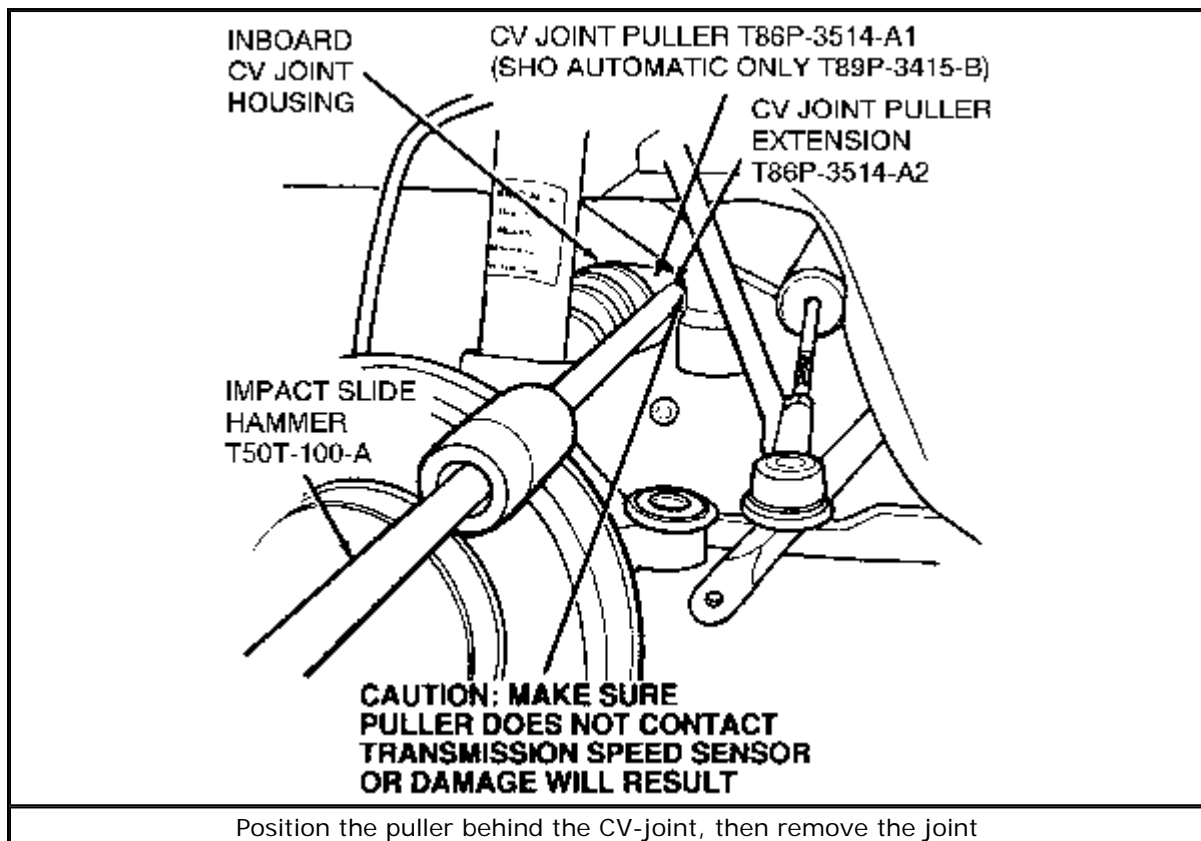
Make sure the puller does not contact the speed sensor or damage will occur. Do NOT pry against the case.

27. Remove the halfshafts as follows:

1. Screw Extension T86P-35140A2 into the CV-Joint Puller and install Impact Slide Hammer D79P-100-A or equivalent into the extension.
2. Position the puller behind the CV-joint, then remove the joint.
3. Install shipping plugs.



[Click to enlarge](#)



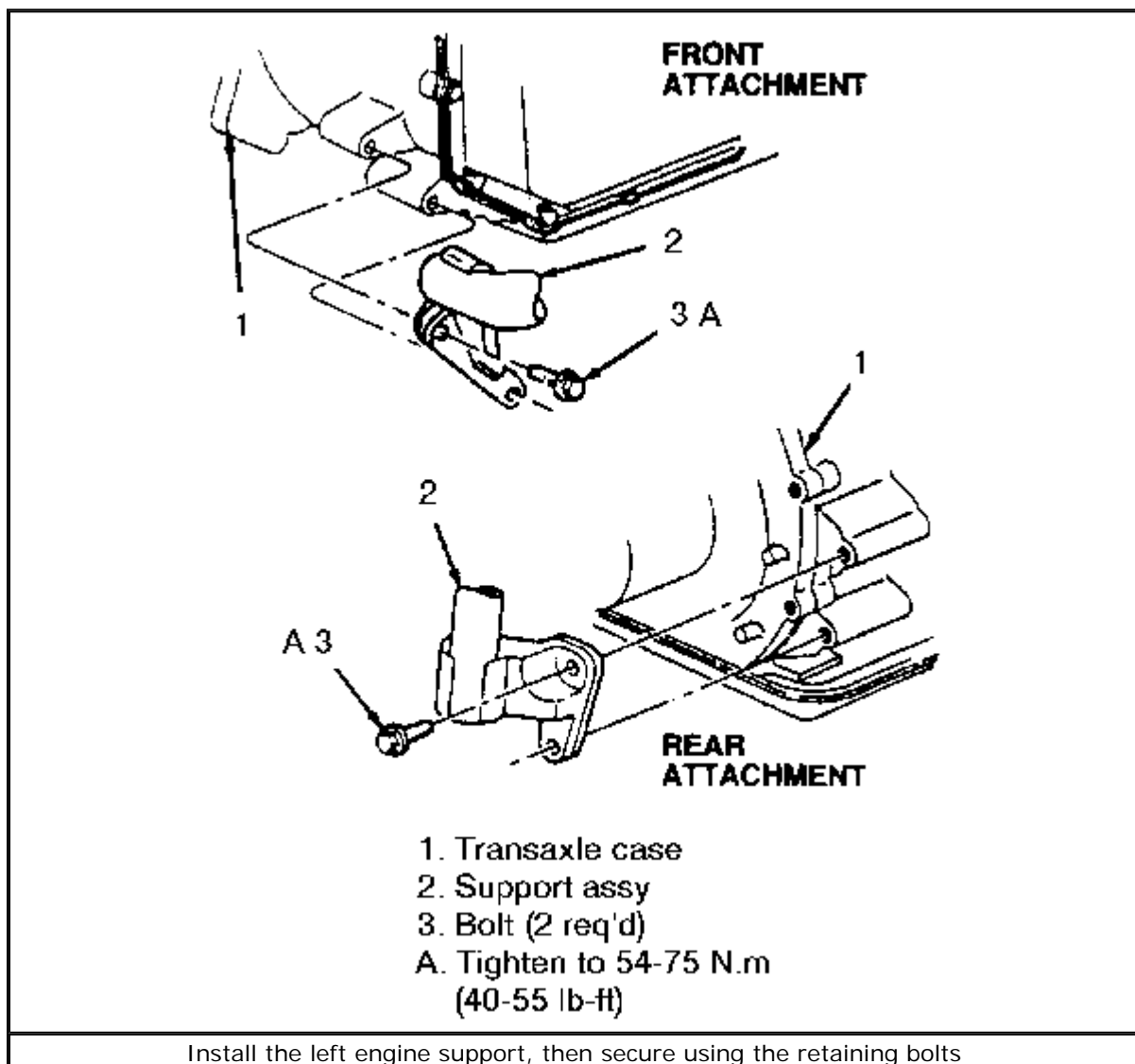
[Click to enlarge](#)

28. Remove the last two torque converter housing bolts, carefully separate the transaxle from the engine and lower out of the vehicle.

To install:

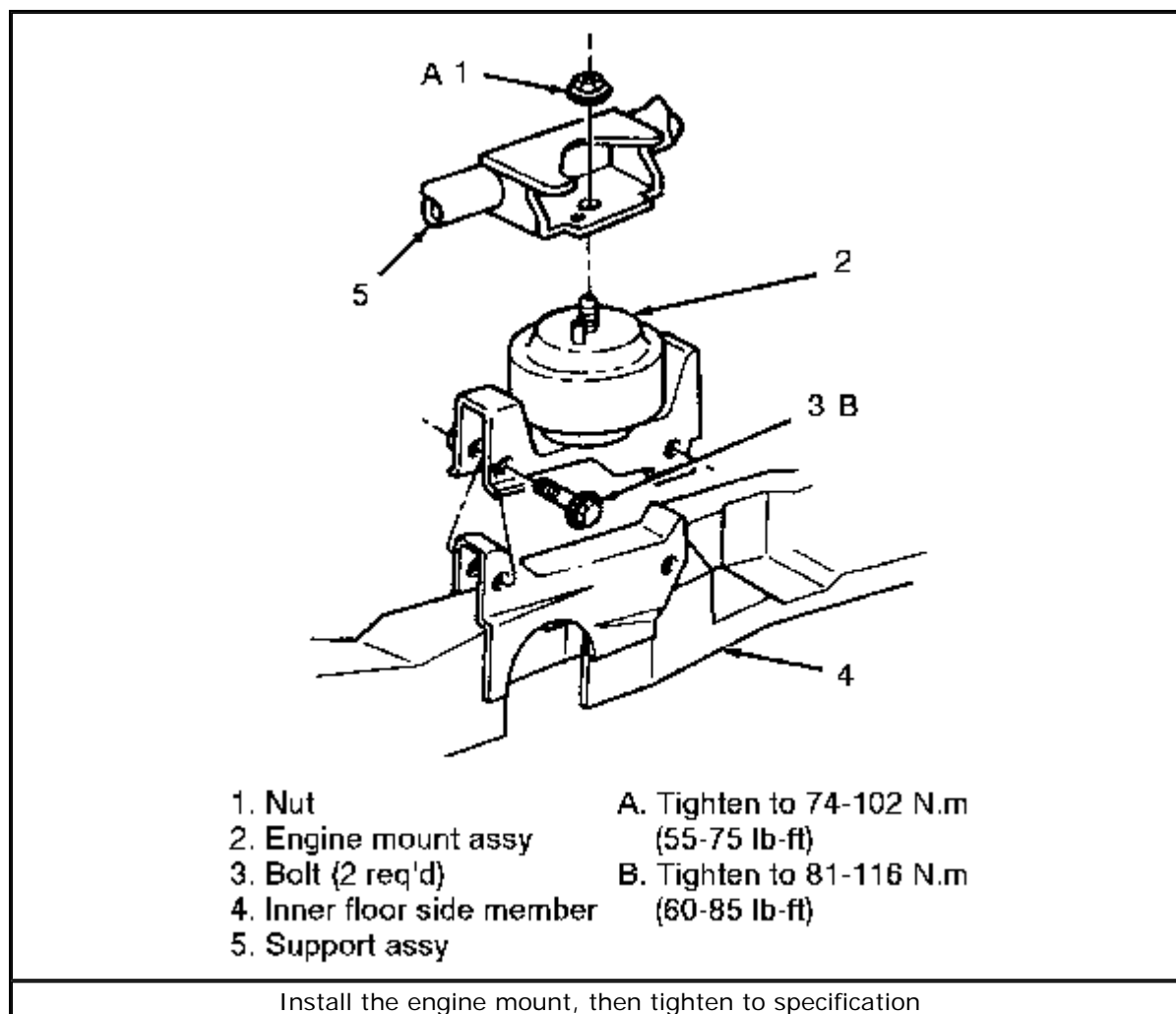
29. Place the transaxle assembly on the jack, and raise to the engine.
30. Position the transaxle to the engine, then align the torque converter bolts to the flywheel.

31. Install the transaxle housing bolts, then tighten to 41-50 ft. lbs. (55-68 Nm).
32. Install the four torque converter bolts through the starter drive hole by rotating the engine at the crankshaft pulley bolt with a  $\frac{7}{8}$  in. deep well socket and  $\frac{1}{2}$  in. drive ratchet. Tighten to 23-39 ft. lbs. (31-53 Nm).
33. Remove the transaxle jack.
34. Install the halfshaft assemblies.
35. Install the vehicle speed sensor, then tighten to 31-39 inch lbs. (3.4-4.5 Nm).
36. Install the transaxle cooler lines. At the transaxle, tighten to 18-23 ft. lbs. (24-31 Nm). At the oil cooler, tighten to 8-12 ft. lbs. (11-16 Nm).
37. Install the dust cover, then tighten to 7-9 ft. lbs. (9-12 Nm).
38. Install the starter, then tighten the mounting bolts to 30-40 ft. lbs. (41-50 Nm).
39. Raise the subframe and install the retaining bolts, then tighten the bolts to 55-75 ft. lbs. (75-102 Nm). Remove the subframe removal kit.
40. Install the left engine support. Tighten the four bolts to 40-55 ft. lbs. (54-75 Nm).



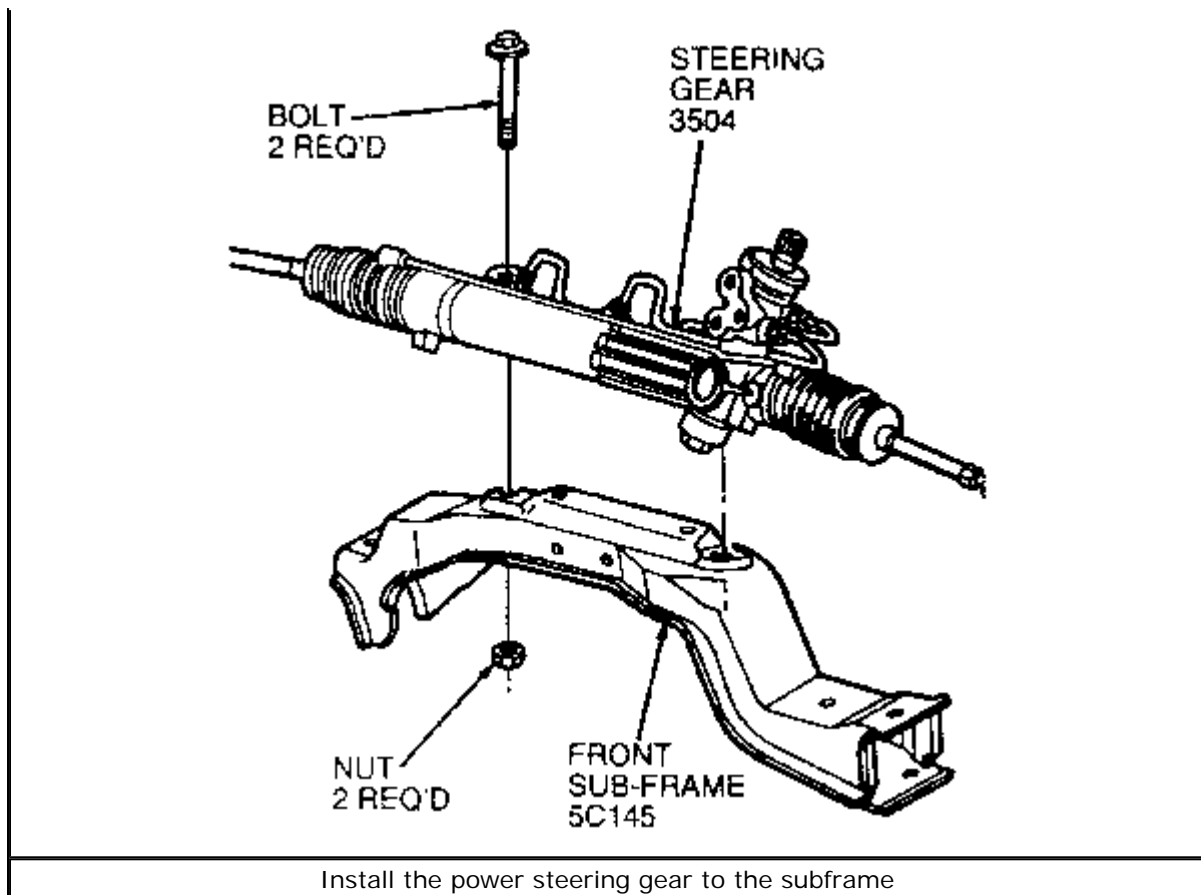
[Click to enlarge](#)

41. Install the engine mount, then tighten to 60-85 ft. lbs. (81-116 Nm).



[Click to enlarge](#)

42. Install the front exhaust pipe, converter assembly and mounting bracket. Connect the heated oxygen sensor.
43. Install the power steering gear assembly and retaining nuts, then tighten the nuts to 85-100 ft. lbs. (115-135 Nm).



[Click to enlarge](#)

44. Install the left and right lower arm assembly, Insert a new pinch bolt and nut, then tighten to 40-53 ft. lbs. (53-72 Nm).
45. Install the stabilizer retaining bolts, then tighten to 23-29 ft. lbs. (30-40 Nm).
46. Install the brake line support brackets, then tighten to 8 ft. lbs. (11 Nm).
47. Install the left and right tie rod retaining nuts. Tighten to 23-35 ft. lbs. (31-47 Nm). Tighten to the minimum specified torque, then continue tightening to the nearest cotter pin slot, then install a new cotter pin.
48. Install the front wheel and tire assemblies, then tighten the lug nuts to 85-105 ft. lbs. (115-142 Nm). Carefully lower the vehicle.
49. Install the power steering pump pressure and return bracket, then tighten to 40-50 inch lbs. (4.5-5.7 Nm).
50. Remove the Three Bar Engine Support. Install the radiator sight shield.
51. Remove all of the engine support equipment.
52. Install the shift lever.
53. Fasten the main wiring harness bracket, then engage the electrical connectors to the engine.
54. Install the battery tray and battery, then connect the positive and negative battery cables.
55. Install the air cleaner assembly, hoses and tubes.
56. Fill the transaxle with the specified quantity and type of oil. Start the engine, then move the transaxle selector lever through all of the ranges and check for leaks.



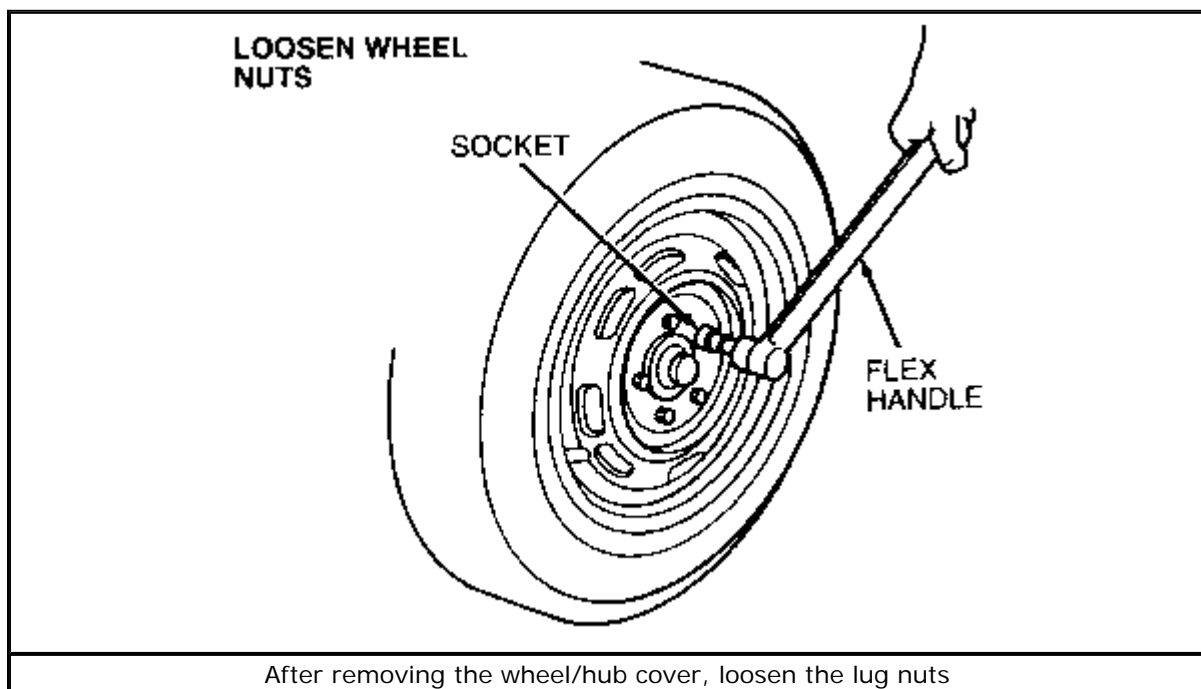
## Halfshafts

When removing both the left and right halfshafts, install suitable shipping plugs to prevent dislocation of the differential side gears. Should the gears become misaligned, the differential will have to be removed from the transaxle to re-align the side gears.

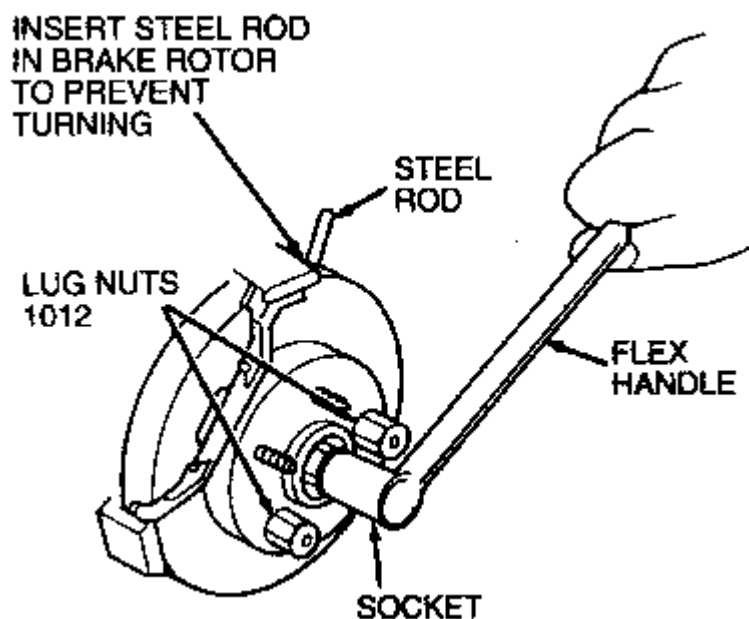
Due to the automatic transaxle case configuration, the right halfshaft assembly must be removed first. Differential Rotator T81P-4026-A or equivalent, is then inserted into the transaxle to drive the left inboard CV-joint assembly from the transaxle. If only the left halfshaft assembly is to be removed for service, remove only the right halfshaft assembly from the transaxle. After removal, support it with a length of wire. Then, drive the left halfshaft assembly from the transaxle.

## REMOVAL & INSTALLATION

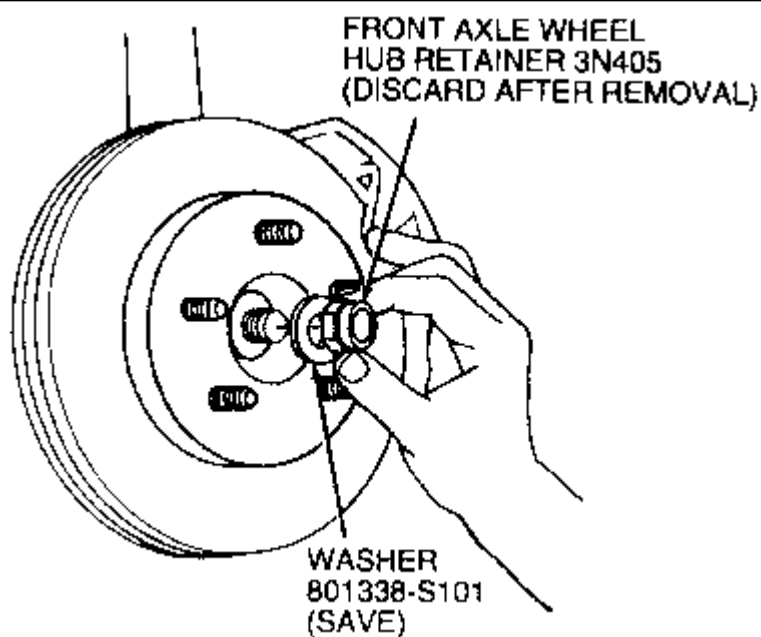
1. Disconnect the negative battery cable.
2. Remove the wheel cover/hub cover from the wheel and tire assembly, then loosen the lug nuts.



3. Raise and safely support the vehicle, then remove the wheel and tire assembly. Insert a steel rod in the rotor to prevent it from turning, then remove the hub nut and washer. Discard the old hub nut.

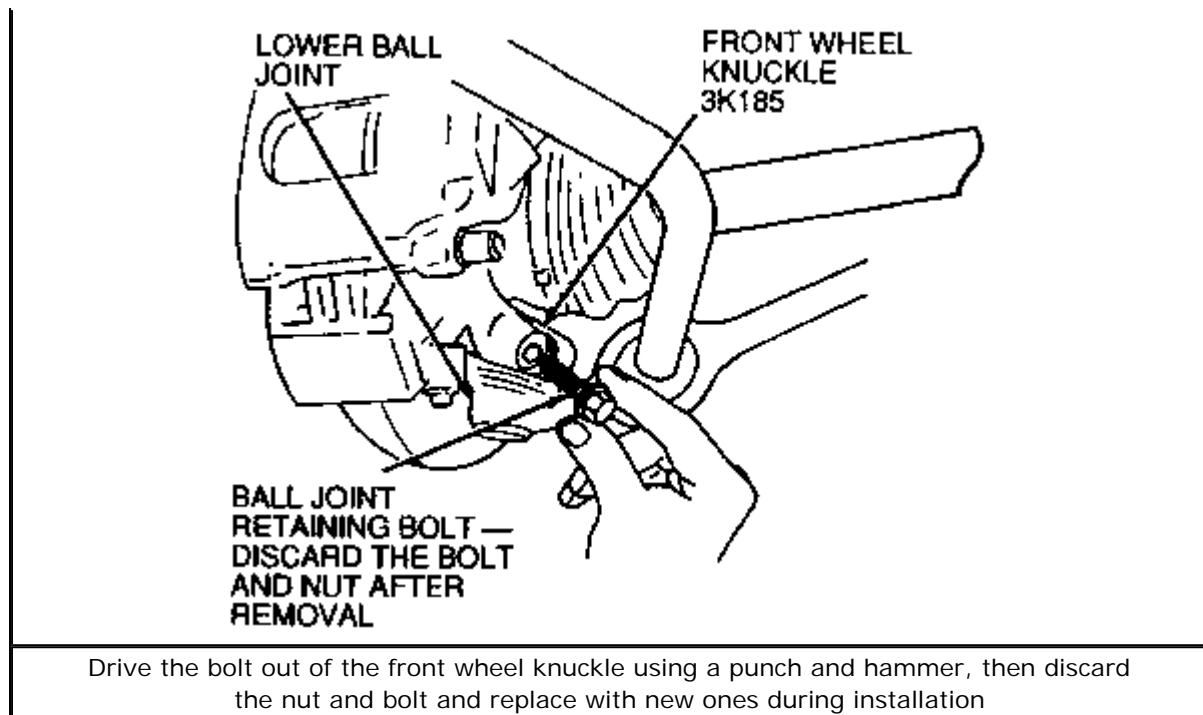


Before removing the hub nut and washer, insert a steel rod in the rotor to prevent it from turning



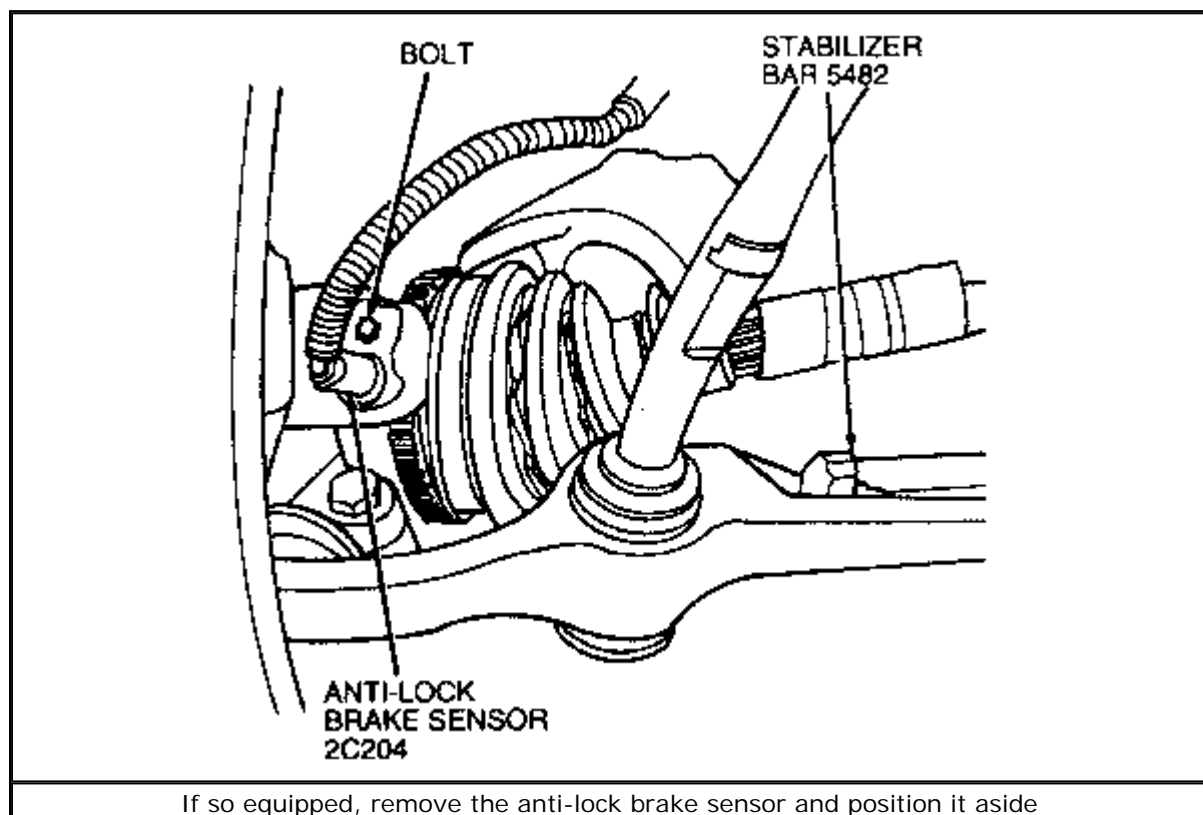
Remove the hub nut and washer, then discard the nut and replace with a new one during installation

4. Remove the nut from the ball joint to steering knuckle attaching bolts.
5. Drive the bolt out of the steering knuckle using a punch and hammer. Discard this bolt and nut after removal.



[Click to enlarge](#)

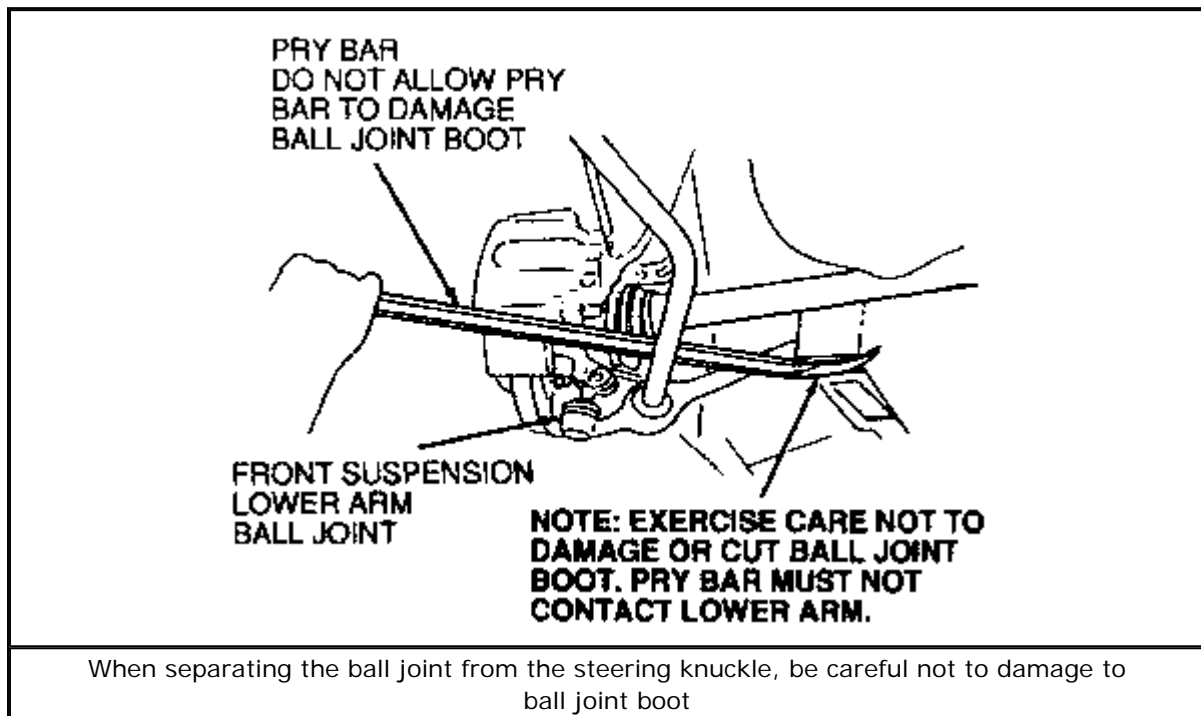
6. If equipped with anti-lock brakes, remove the anti-lock brake sensor and position it aside. If equipped with air suspension, remove the height sensor bracket retaining bolt and wire sensor bracket to inner fender. Position the sensor link aside.



[Click to enlarge](#)

7. Separate the ball joint from the steering knuckle using a suitable prybar. Position the end of the prybar outside of the bushing pocket to avoid damage to the

bushing. Use care to prevent damage to the ball joint boot. Remove the stabilizer bar link at the stabilizer bar.



[Click to enlarge](#)

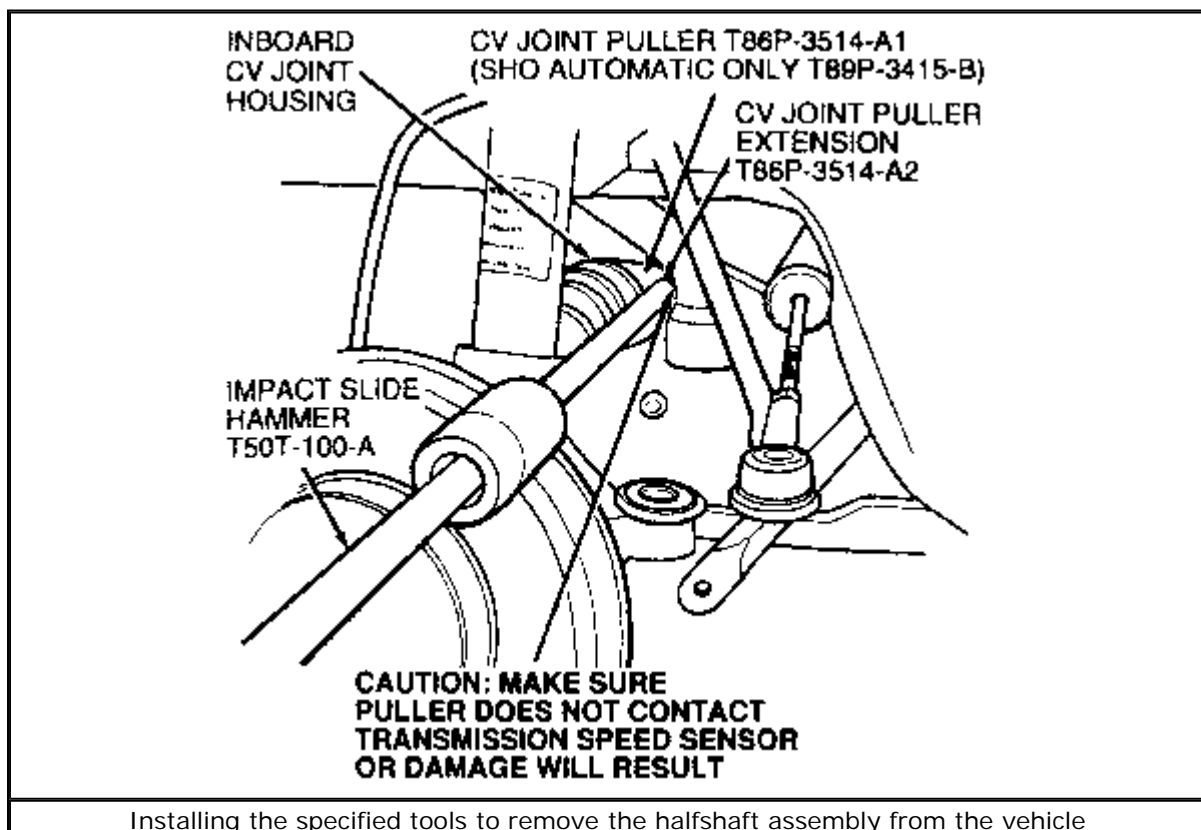
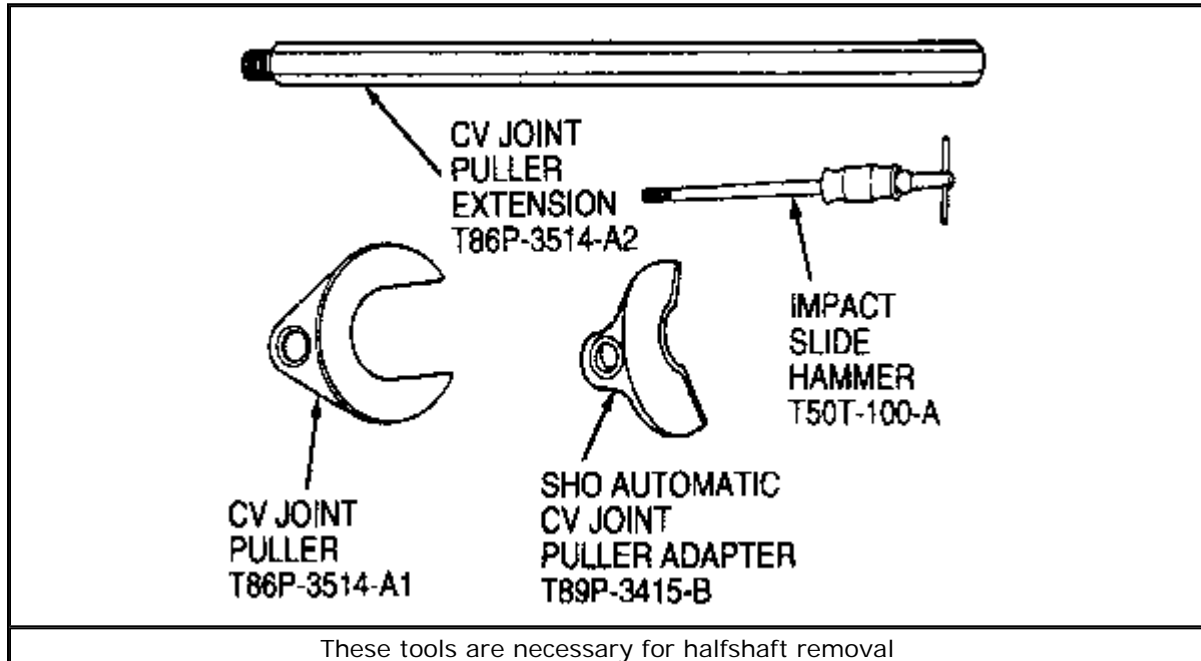
8. The following removal procedure applies to the right-side halfshaft/link shaft for the 1986-90 2.5L engine Taurus. (For all other automatic transaxles, proceed to Step 9):

1. Remove the bolts attaching the bearing support to the bracket. Slide the link shaft out of the transaxle. Support the end of the shaft by suspending it from a convenient underbody component with a piece of wire. Do not allow the shaft to hang unsupported, damage to the outboard CV-joint may occur.
2. Separate the outboard CV-joint from the hub using front hub remover tool T81P-1104-C or equivalent and metric adapter tools T83P-1104-BH, T86P-1104-AI and T81P-1104-A or equivalent.

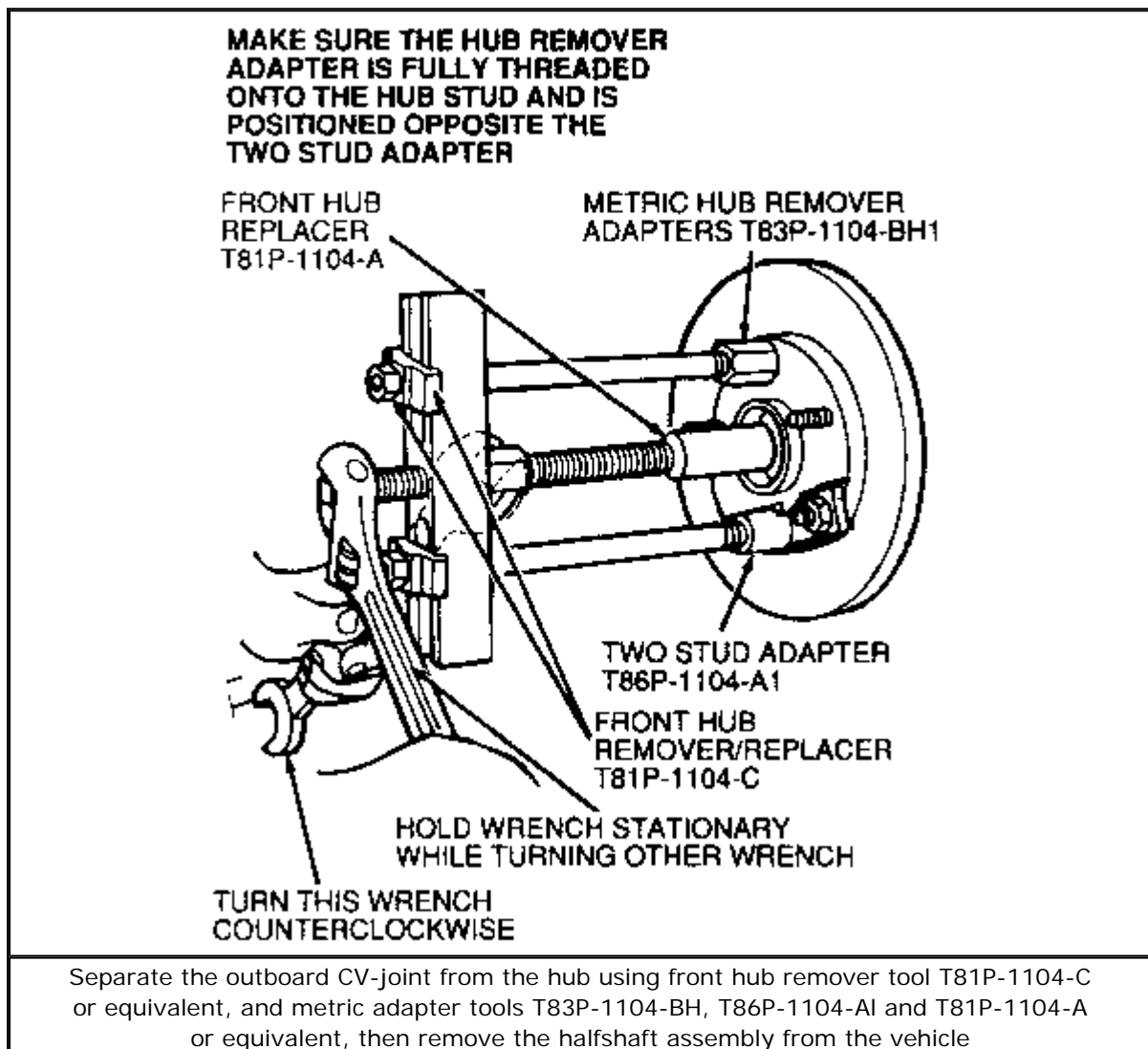
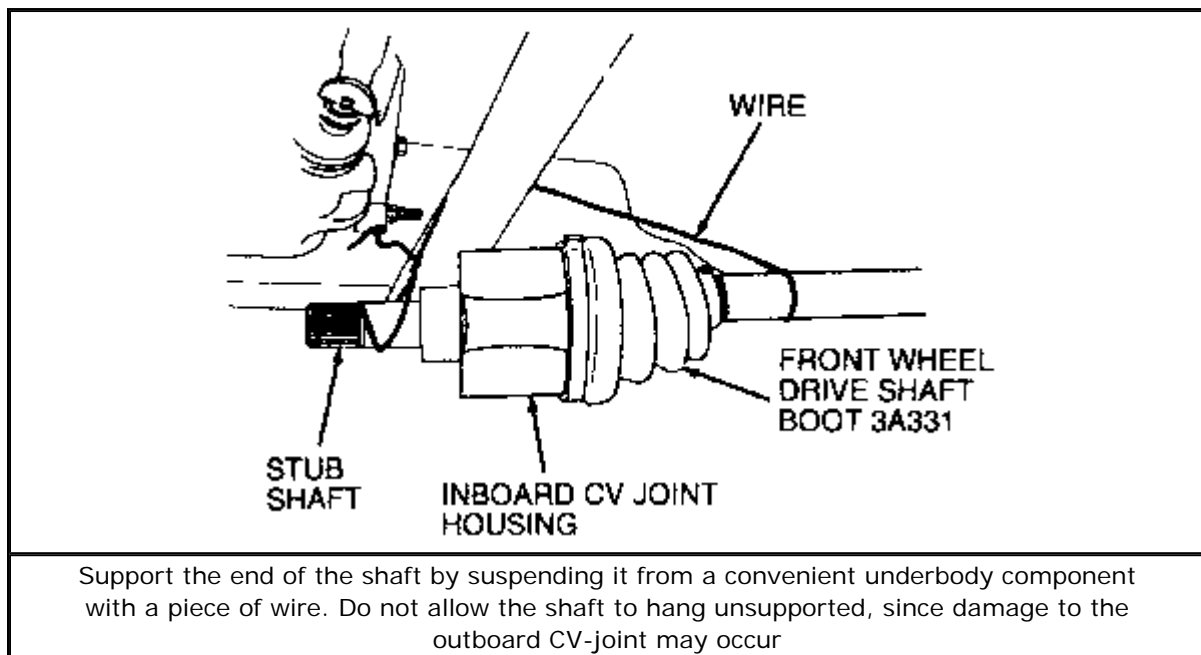
**NEVER** use a hammer to separate the outboard CV-joint stubshaft from the hub. Damage to the CV-joint threads and internal components may result. The right-side link shaft and halfshaft assembly is removed as a complete unit.

9. The following removal procedure applies to the right and left-side halfshafts of the automatic transaxle, except for 1986-90 Tauruses with a 2.5L engine.
1. Install the CV-joint puller tool T86P-3514-A1 or equivalent, between CV-joint and transaxle case. Turn the steering hub and/or wire strut assembly aside.
  2. Screw extension tool T86P-3514-A2 or equivalent, into the CV-joint puller and hand tighten. Screw an impact slide hammer onto the extension and remove the CV-joint.

3. Support the end of the shaft by suspending it from a convenient underbody component with a piece of wire. Do not allow the shaft to hang unsupported, damage to the outboard CV-joint may occur.
4. Separate the outboard CV-joint from the hub using front hub remover tool T81P-1104-C or equivalent and metric adapter tools T83P-1104-BH, T86P-1104-AI and T81P-1104-A or equivalent.
5. Remove the halfshaft assembly from the vehicle.



[Click to enlarge](#)

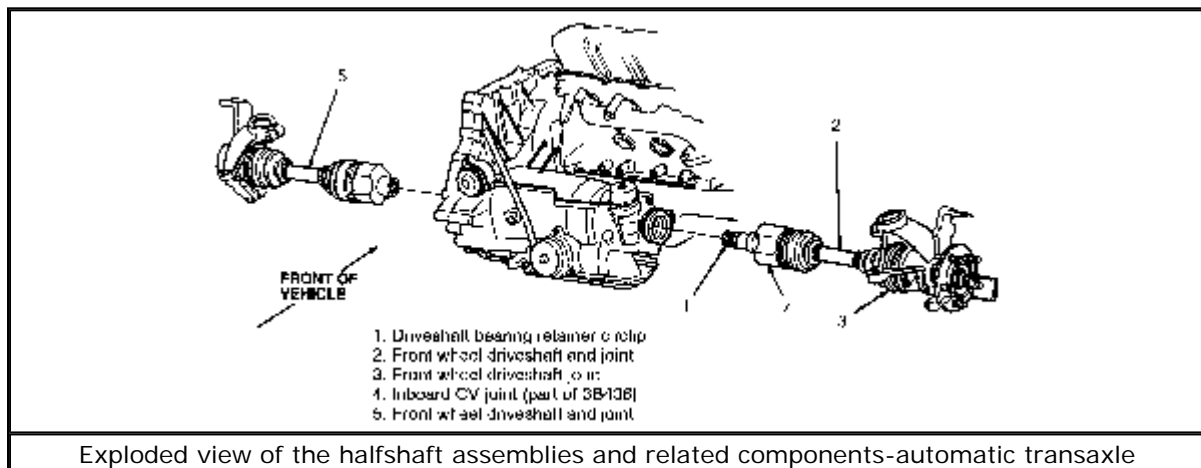


[Click to enlarge](#)

10. The following removal procedure applies to the left-side halfshaft for the 1986-90 Taurus with 2.5L engine automatic transaxle:

Due to the automatic transaxle case configuration, the right halfshaft assembly must be removed first. Differential rotator tool T81P-4026-A or equivalent, is then inserted into the transaxle to drive the left inboard CV-joint assembly from the transaxle. If only the left halfshaft assembly is to be removed for service, remove the right halfshaft assembly from the transaxle first. After removal, support it with a length of wire. Then drive the left halfshaft assembly from the transaxle.

1. Support the end of the shaft by suspending it from a convenient underbody component with a piece of wire. Do not allow the shaft to hang unsupported as damage to the outboard CV-joint may occur.
2. Separate the outboard CV-joint from the hub front hub remover tool T81P-1104-C or equivalent and metric adapter tools T83P-1104-BH, T86P-1104-AI and T81P-1104-A or equivalent.
3. Remove the halfshaft assembly from the vehicle.

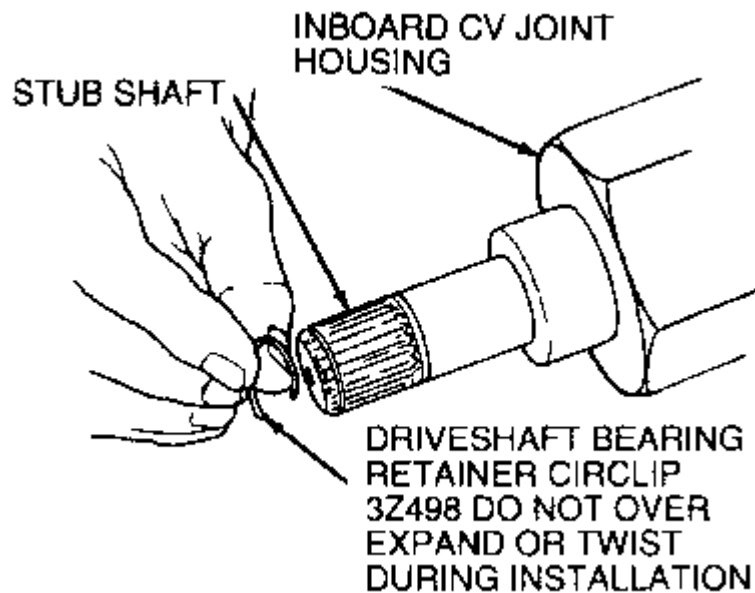


[Click to enlarge](#)

#### To install:

11. Install a new circlip on the inboard CV-joint stub shaft and/or link shaft. The outboard CV-joint does not have a circlip. When installing the circlip, start one end in the groove and work the circlip over the stub shaft end into the groove. This will avoid overexpanding the circlip.

The circlip must not be re-used. A new circlip must be installed each time the inboard CV-joint is installed into the transaxle differential.

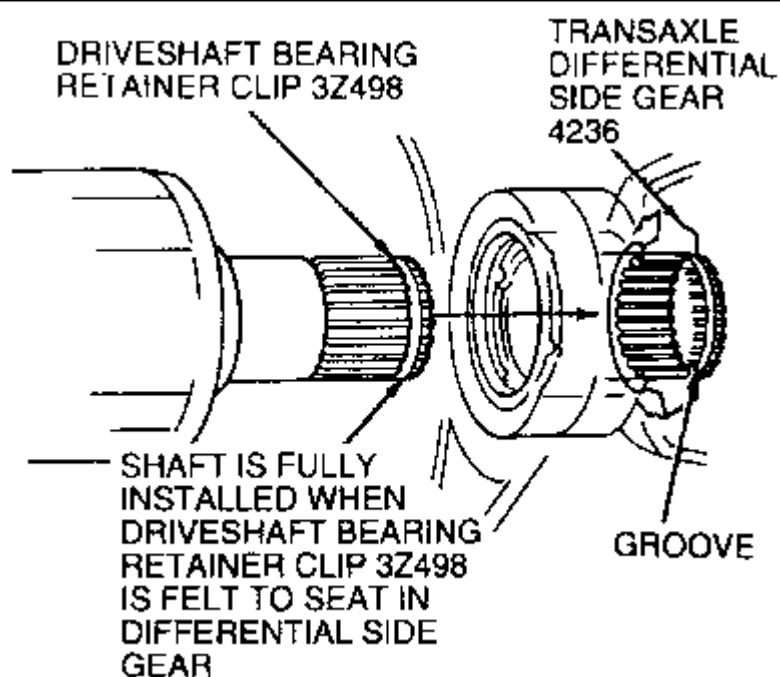


Always use a new circlip on the inboard CV-joint stub shaft and/or link shaft. When installing the new circlip, start one end in the groove and work the circlip over the stub shaft end into the groove. This will avoid overexpanding the circlip

12. Carefully align the splines of the inboard CV-joint stub shaft with the splines in the differential. Exerting some force, push the CV-joint into the differential until the circlip is felt to seat in the differential side gear. Use care to prevent damage to the differential oil seal. If equipped, tighten the link shaft bearing to 16-23 ft. lbs. (22-31 Nm).

A non-metallic mallet may be used to aid in seating the circlip into the differential side gear groove. If a mallet is necessary, tap only on the outboard CV-joint stub shaft.

13. Carefully align the splines of the outboard CV-joint stub shaft with the splines in the hub and push the shaft into the hub as far as possible.



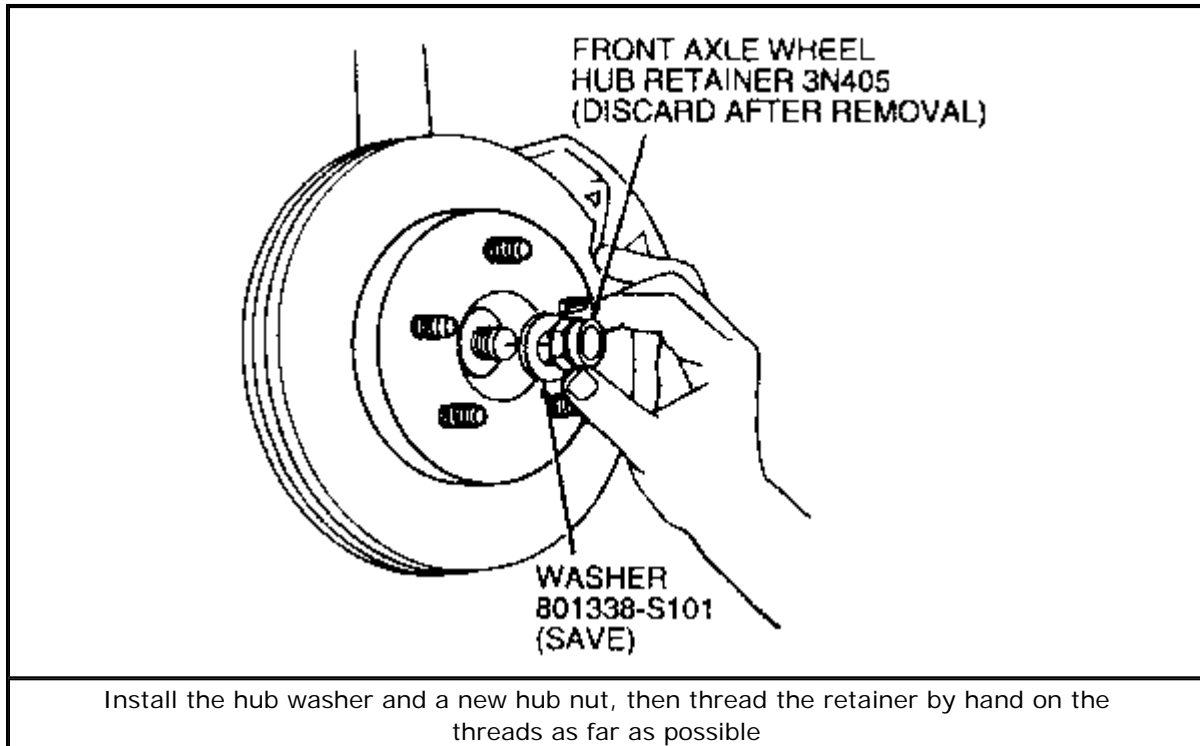
Carefully align the splines of the inboard CV-joint stub shaft with the splines in the



differential

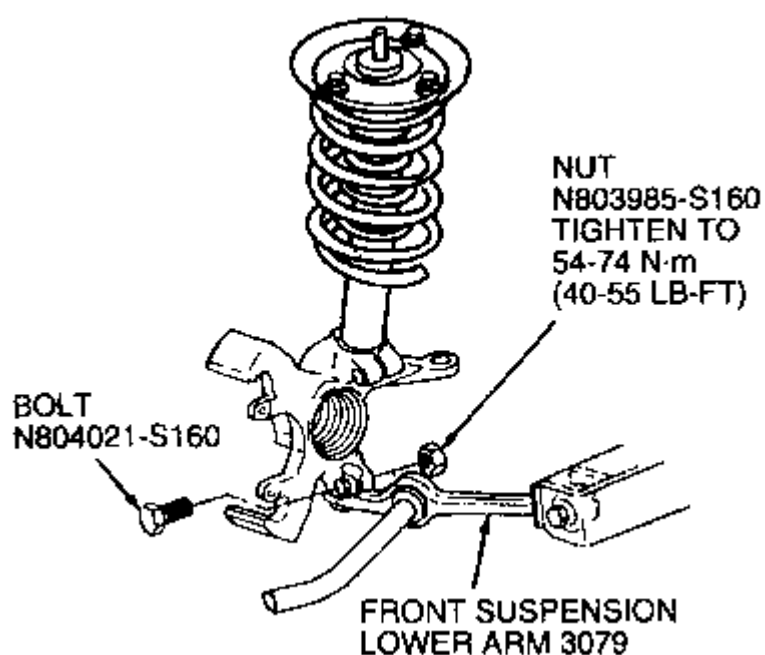
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14. Temporarily fasten the rotor to the hub with washers and two wheel lug nuts. Insert a steel rod into the rotor and rotate clockwise to contact the knuckle to prevent the rotor from turning during the CV-joint installation.
15. Install the hub nut washer and a new hub nut. Manually thread the retainer onto the CV-joint as far as possible.



[Click to enlarge](#)

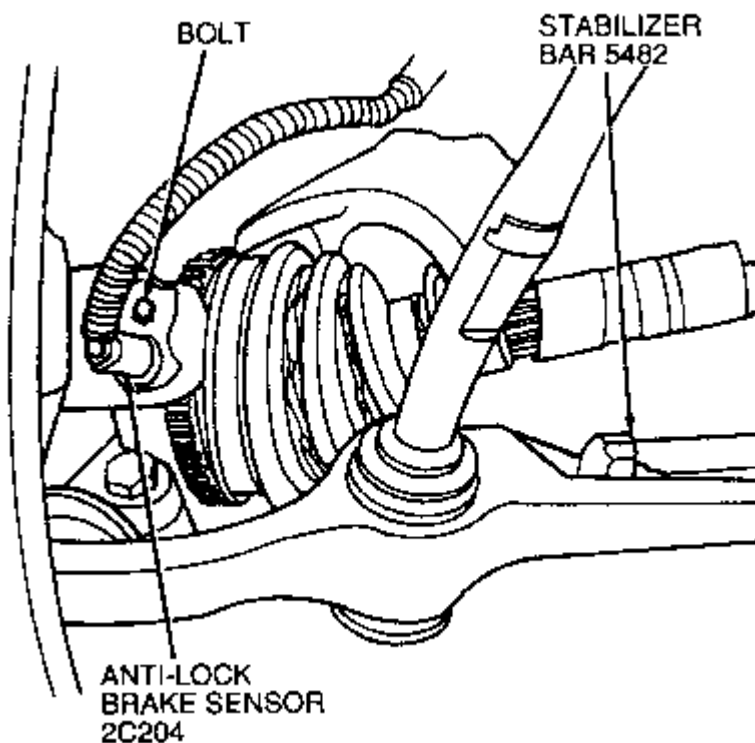
16. Connect the control arm to the steering knuckle, then install a new nut and bolt. Tighten the nut to 40-55 ft. lbs. (54-74 Nm).



Connect the control arm to the steering knuckle and install a new nut and bolt. Tighten to 40-55 ft. lbs. (54-74 Nm)

[Click to enlarge](#)

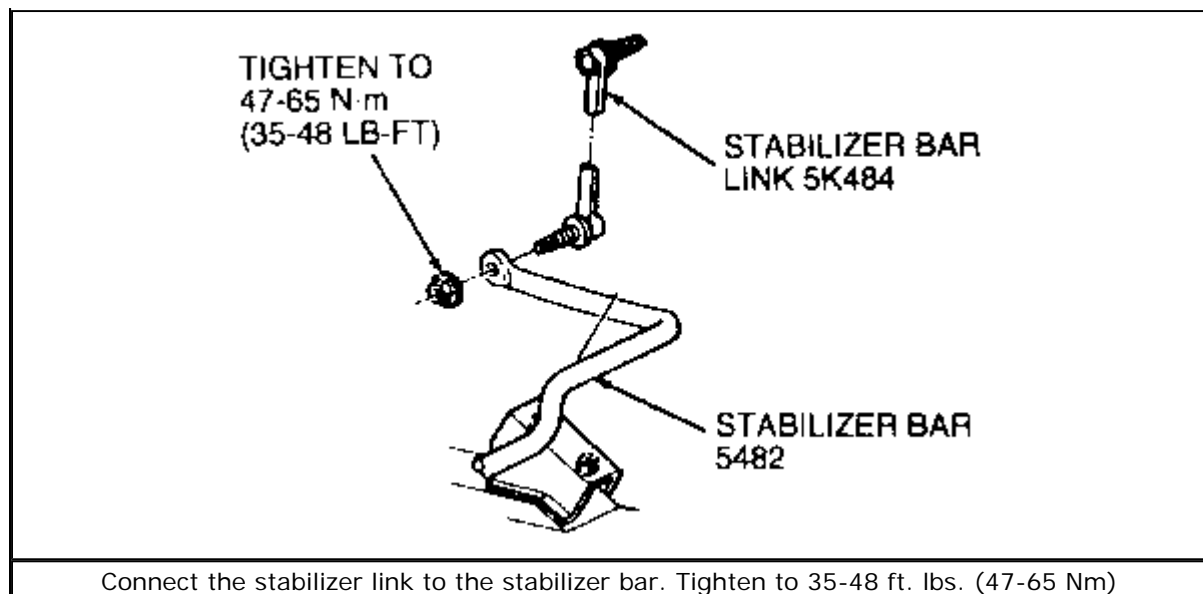
17. If equipped, install the anti-lock brake sensor and/or the ride height sensor bracket.



If equipped, install the anti-lock brake sensor

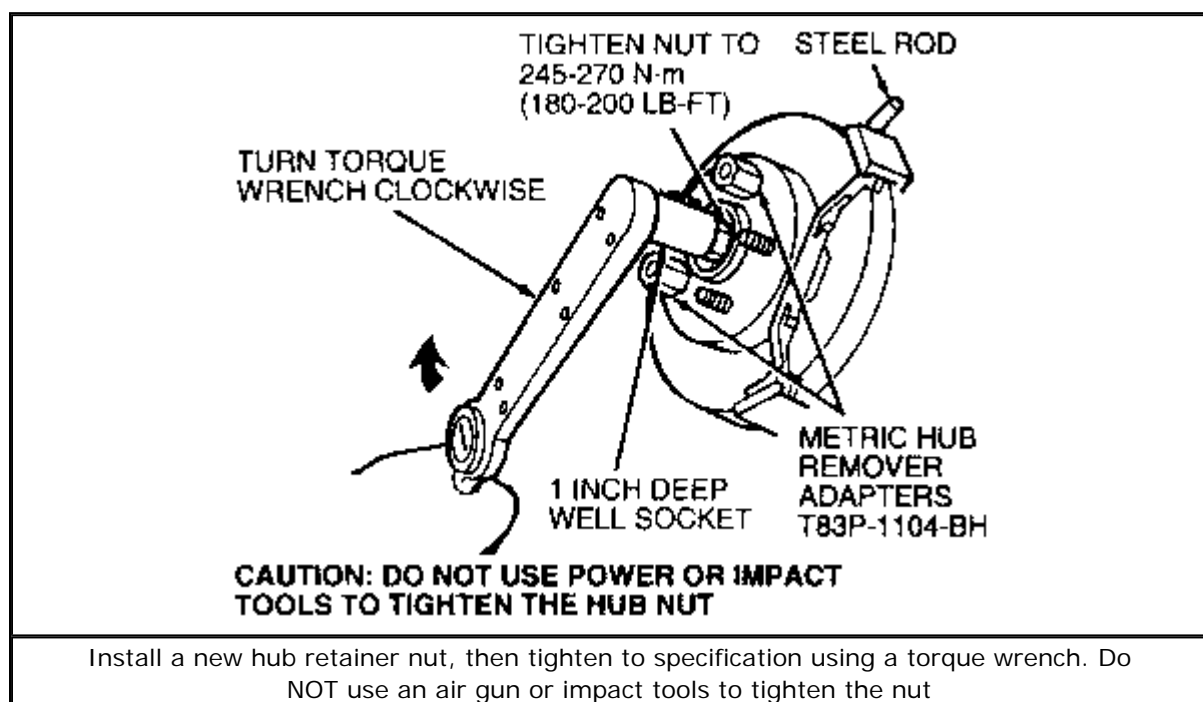
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18. Connect the stabilizer link to the stabilizer bar. Tighten to 35-48 ft. lbs. (47-65 Nm).



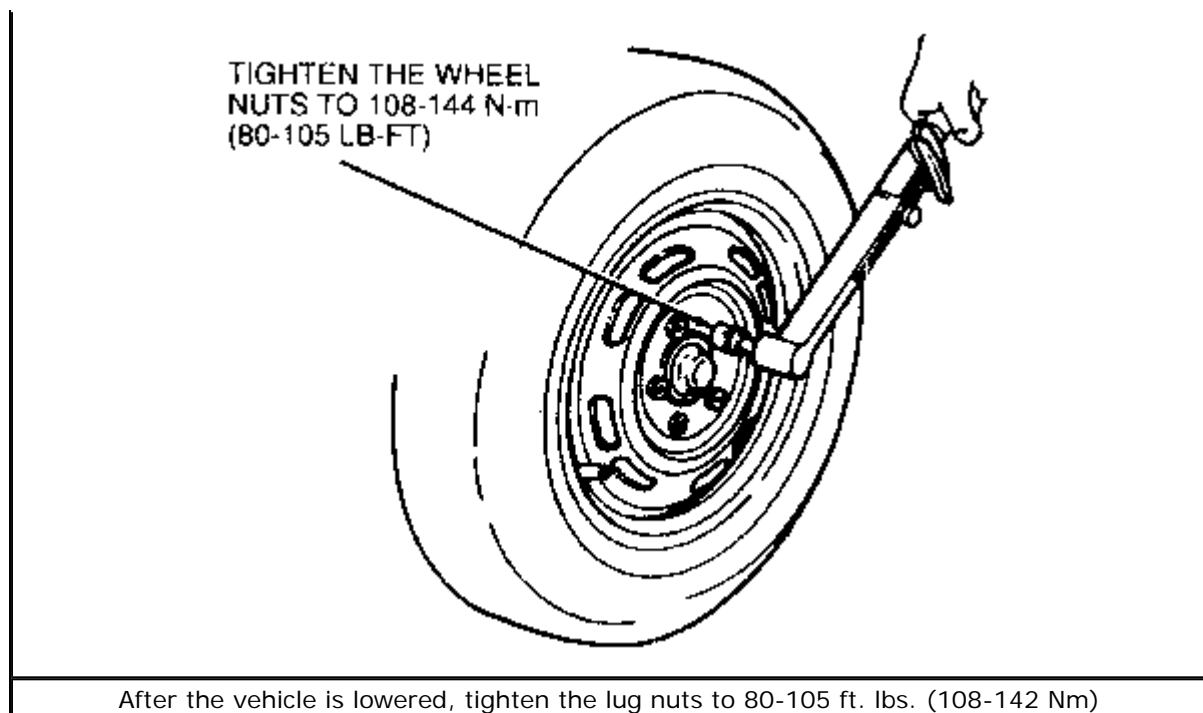
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19. Install a new hub retainer nut, then tighten the nut to 180-200 ft. lbs. (245-270 Nm). Remove the steel rod.



[Click to enlarge](#)

20. Install the wheel and tire assembly, snugging the lug nuts by hand, then lower the vehicle. Tighten the wheel lug nuts to 80-105 ft. lbs. (108-142 Nm). Fill the transaxle to the proper level with the specified fluid.

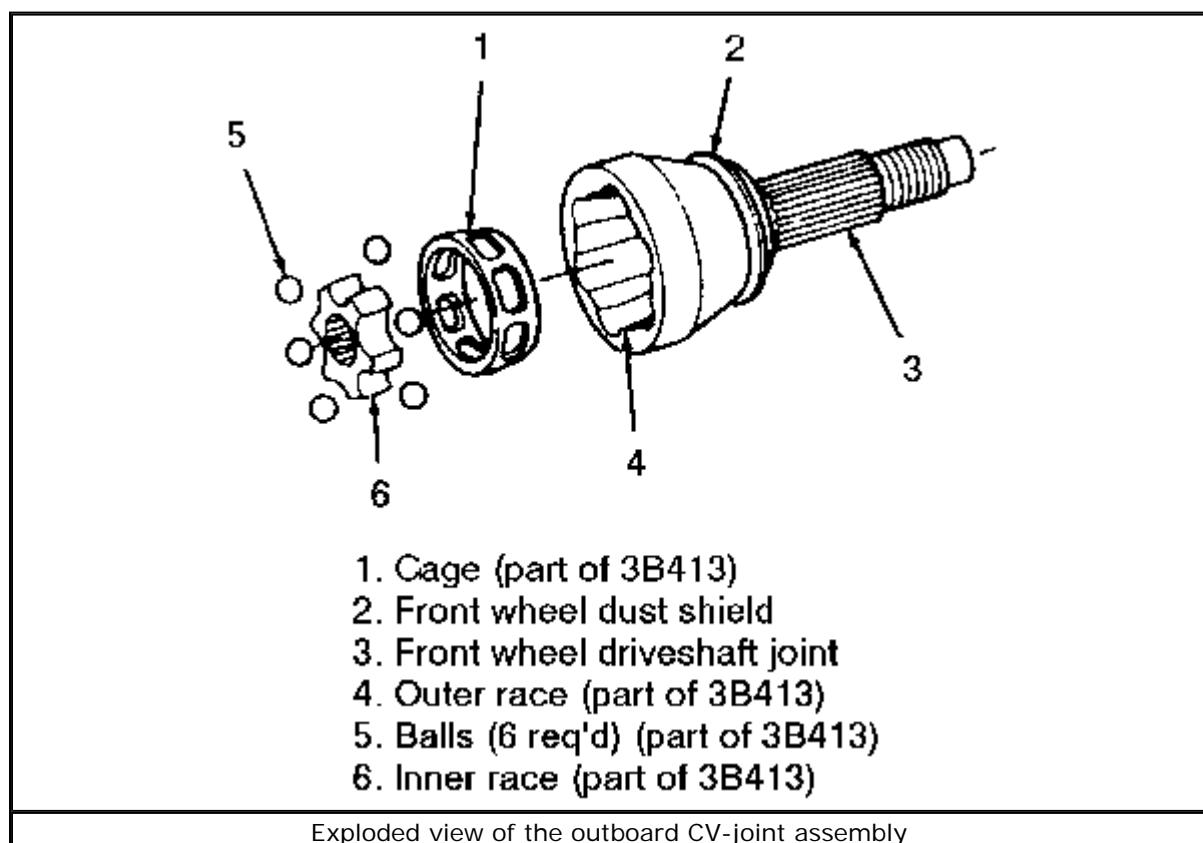


## CV-Joint

### REMOVAL & INSTALLATION

#### Outboard CV-Joint

1. Disconnect the negative battery cable. Raise and safely support the vehicle.



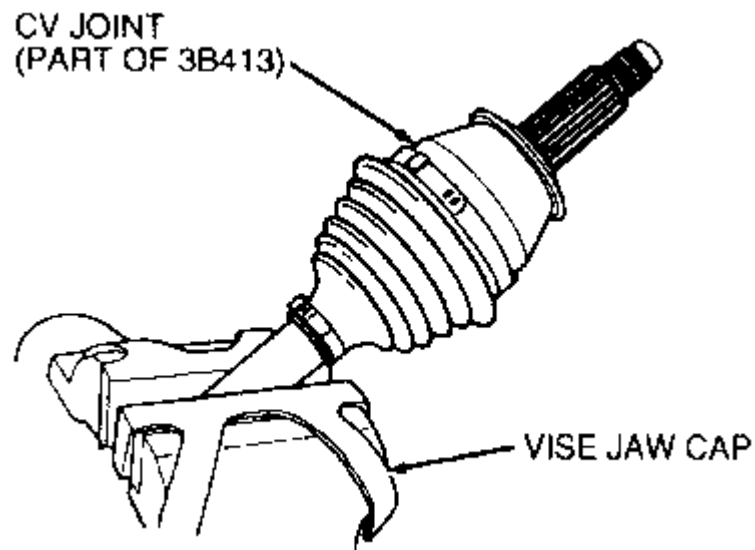


Before removal, check the CV-boot for wear or damage



Clean the CV-joint prior to removing the boot, but be careful not to damage anything

2. **Remove the halfshaft assembly from the vehicle. For details, please refer to the procedure located earlier in this section.**
3. **Clamp the halfshaft in a vise that is equipped with soft jaw covers. Do not allow the vise jaws to contact the boot or boot clamp.**



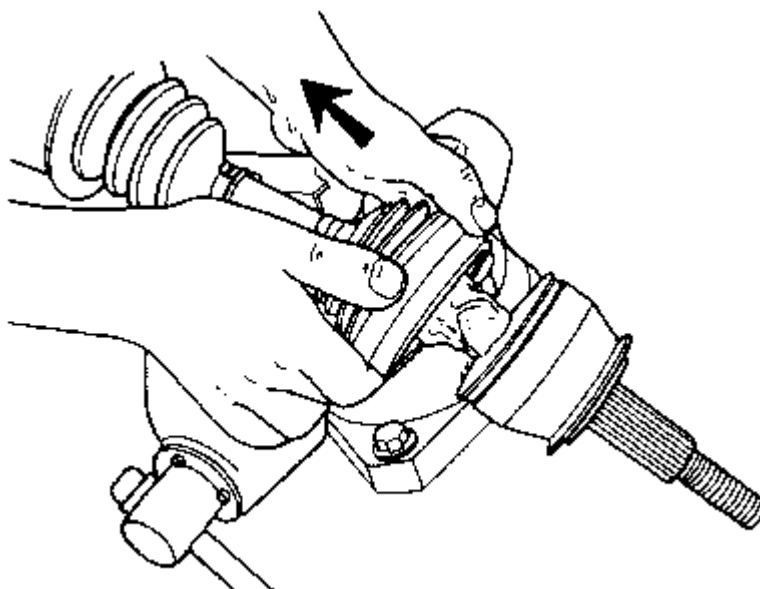
Clamp the halfshaft in a vise with soft jaw covers, but do not allow the vise jaws to contact the boot or boot clamp

4. Cut the boot clamp with a pair of side cutters, then pull the clamp away from the boot. Slide the boot back over the shaft after the clamp has been removed.

AFTER CUTTING CLAMP  
"PEEL" CLAMP AWAY  
FROM BOOT IN DIRECTION  
OF ARROW

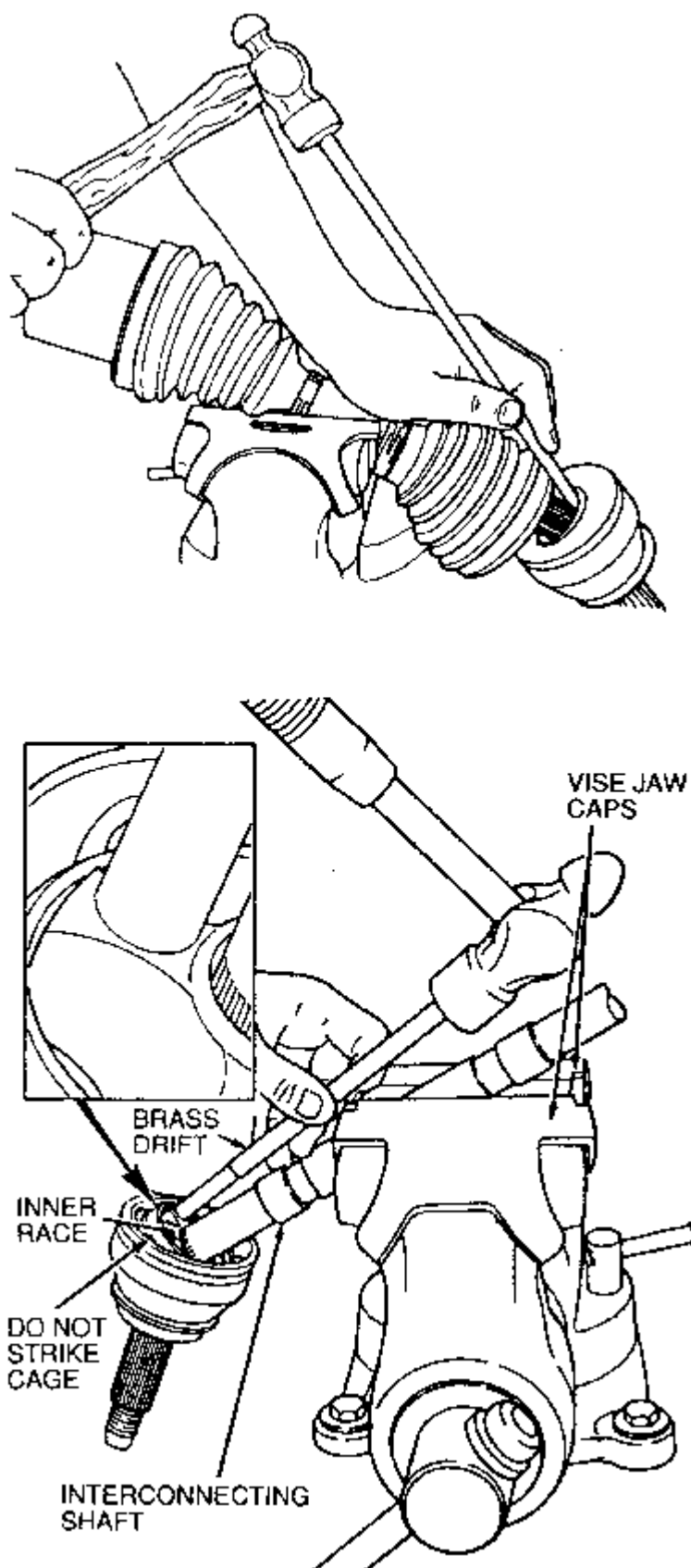
Cut the boot clamp with a pair of side cutters, then pull the clamp away from the boot

[Click to enlarge](#)



Slide the boot back over the shaft once the clamp has been removed

5. **Support the interconnecting shaft in a soft jawed vise and angle the CV-joint pointing downward so the inner bearing race is exposed.**
6. **Use a brass drift and hammer, give a sharp tap to the inner bearing race to dislodge the internal driveshaft bearing retainer circlip and separate the CV-joint from the interconnecting shaft. Make sure to secure the CV-joint so it does not drop after separation.**

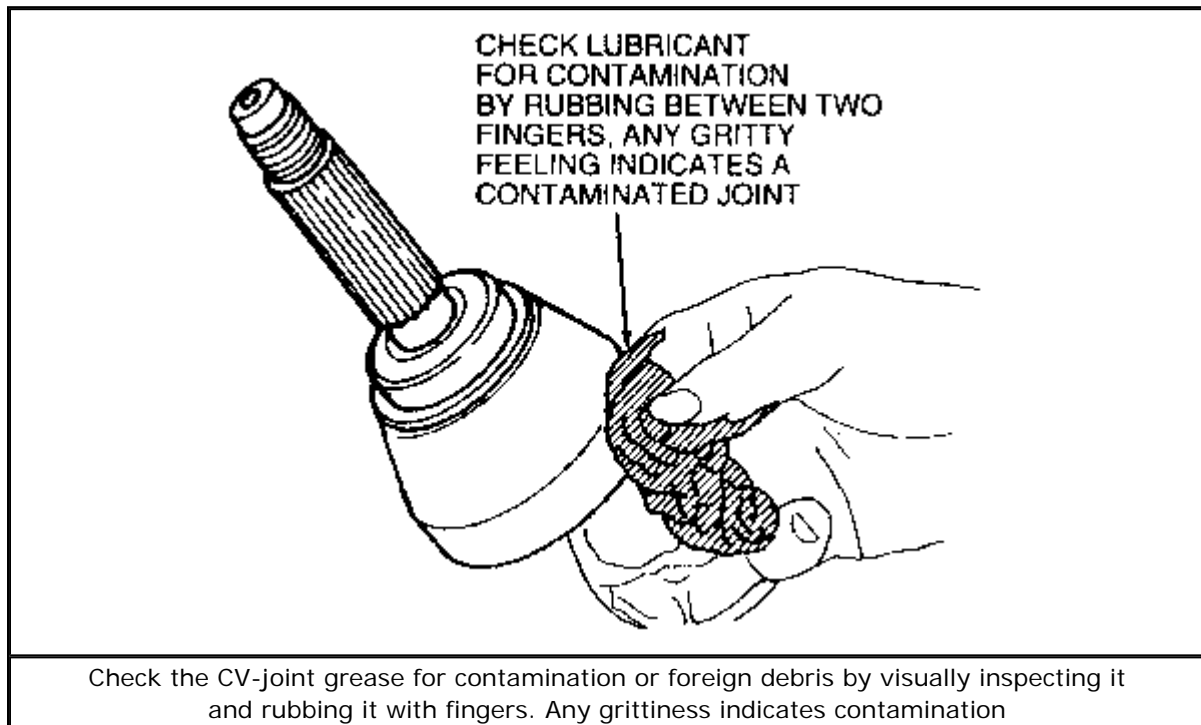


Using a brass drift and hammer, give a sharp tap to the inner bearing race to dislodge the internal driveshaft bearing retainer circlip and separate the CV-joint from the interconnecting shaft. Make sure to secure the CV-joint so it does not drop after separation. The boot cannot be removed from the shaft

[Click to enlarge](#)



7. Remove the boot from the shaft.
8. Inspect the CV-joint grease for contamination. If the CV-joints are working correctly, and the grease doesn't seem to be contaminated, add grease, then replace the CV-joint boot.

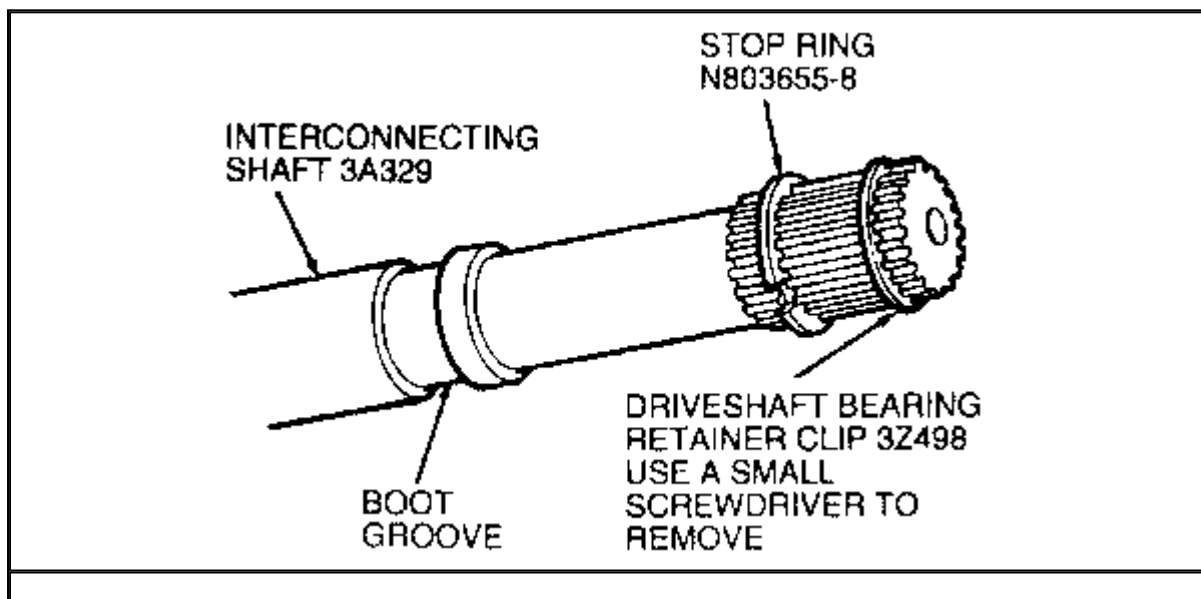


[Click to enlarge](#)

9. If the lubricant appears to be contaminated, proceed with a complete CV-joint disassembly.

Do NOT reuse the circlip. Replace the used circlip with a new one before assembly.

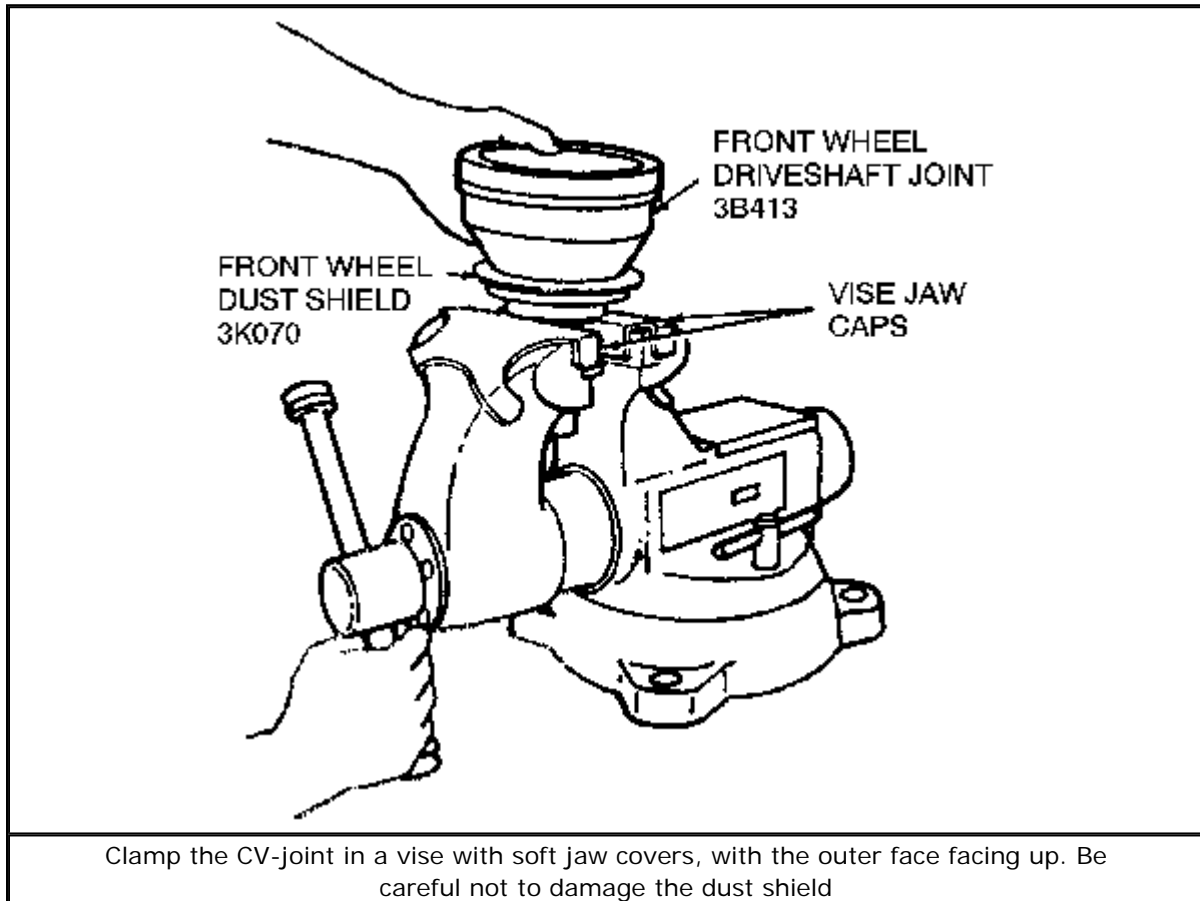
10. Remove and discard the circlip located near the end of the interconnecting shaft. The stop ring, located just below the circlip should be removed and replaced only if damaged or worn.



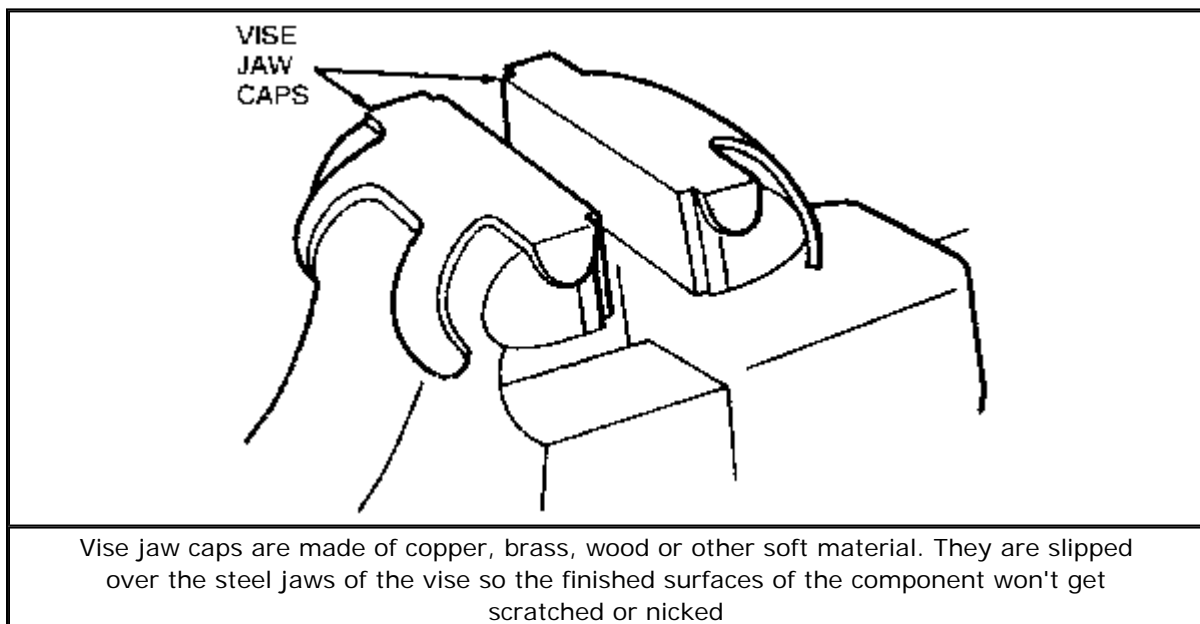
The stop ring, located just below the circlip, should be removed and replaced only if damaged or worn

The vise must be equipped with soft jaw covers to avoid damaging the shaft splines.

11. Clamp the CV-joint in a vise with soft jaw covers, with the outer face pointing upward. Be careful not to damage the dust shield.

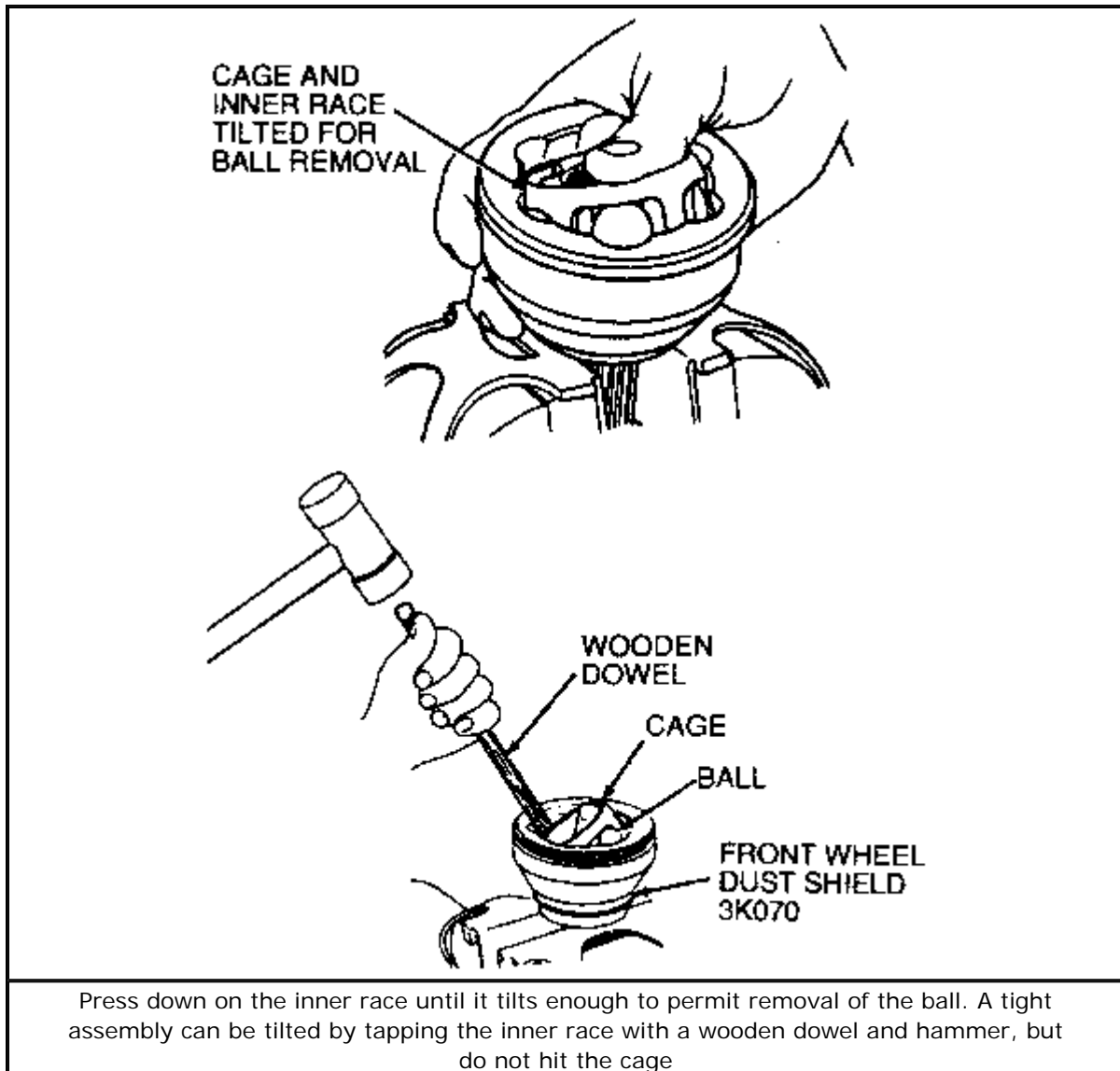


[Click to enlarge](#)



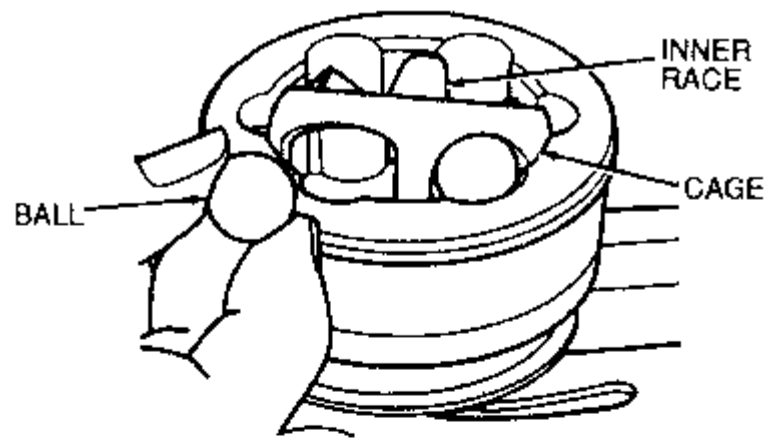
[Click to enlarge](#)

12. Press down on the inner race until it tilts enough to permit removal of the ball. A tight assembly can be tilted by tapping the inner race with a wooden dowel and hammer, but do not hit the cage.

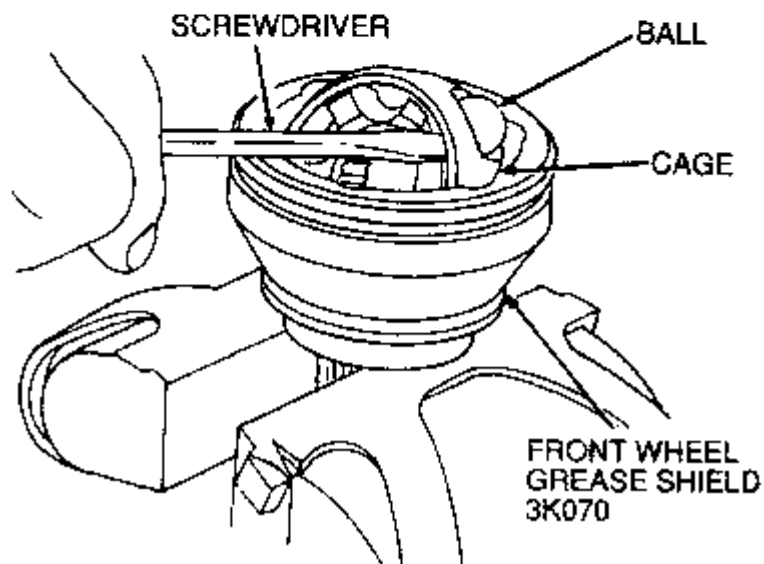
[Click to enlarge](#)**WARNING**

Be careful not to scratch or damage the inner race or cage spheres.

13. With the cage sufficiently tilted, remove the ball from the cage. Repeat this until all of the balls are removed. If the balls are tight in the cage, use a blunt edged prytool to pry the balls from the cage.



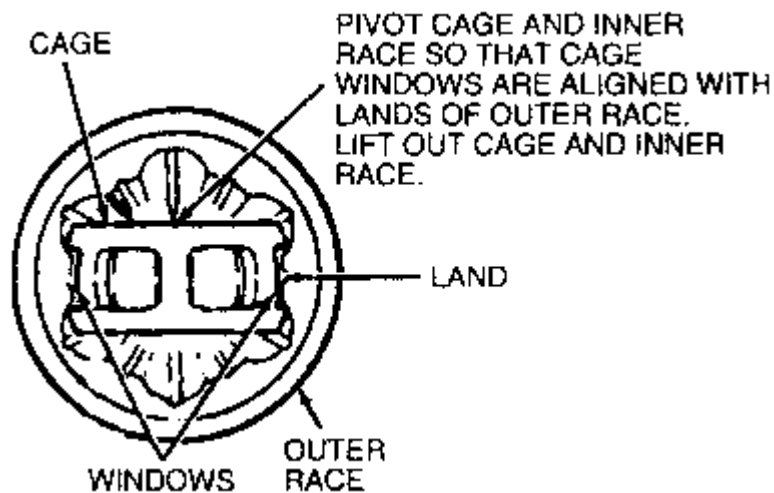
**NOTE: SHARP EDGES ON  
SCREWDRIVER SHOULD  
BE BLUNTED TO PRE-  
VENT SCRATCHING OF  
FINISHED SURFACES.**



With the cage sufficiently tilted, remove a ball from the cage. Repeat this until all of the balls are removed. If the balls are tight in the cage, use a blunt edged prytool to pry the balls from the cage

[Click to enlarge](#)

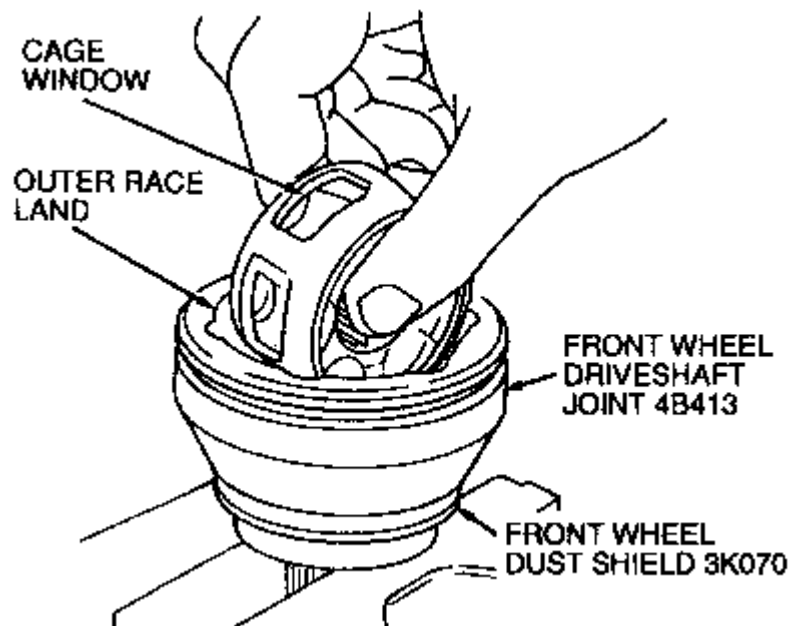
14. Pivot the cage and inner race assembly until it is straight up and down in the outer race. Align the cage windows with the outer race lands while pivoting the bearing cage.



Pivot the cage and inner race assembly until it is straight up and down in the outer race.  
Align the cage windows with the outer race lands while pivoting the bearing cage

[Click to enlarge](#)

15. With the cage pivoted and aligned, lift the assembly from the outer race. Rotate the inner race up and out of the cage.

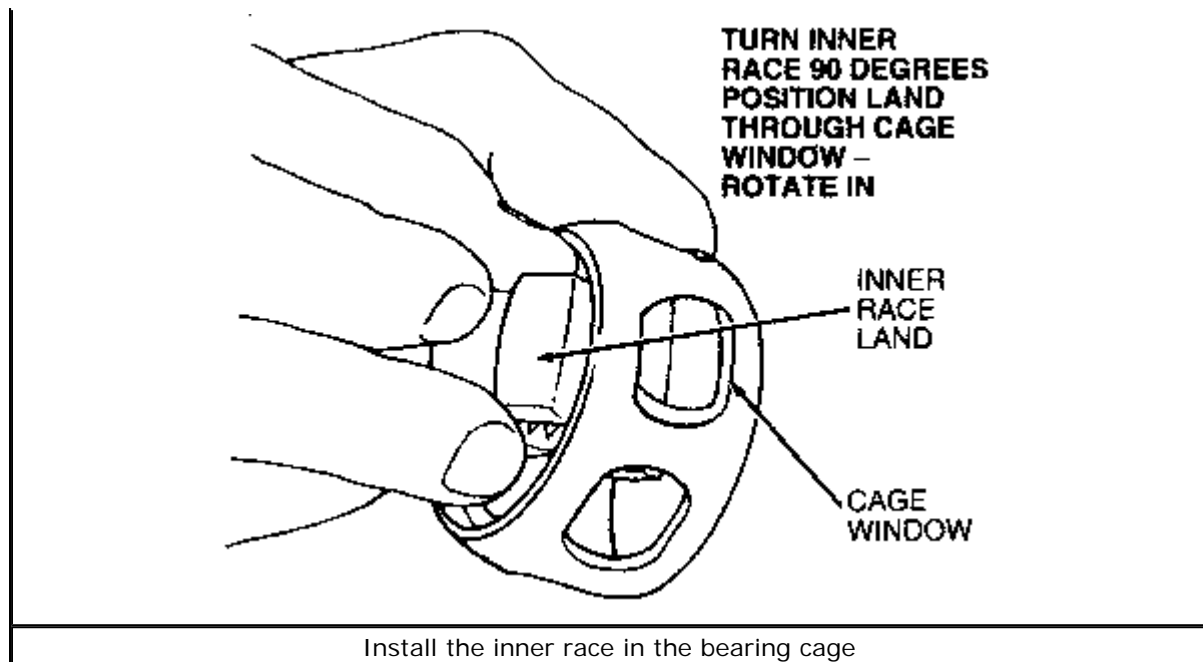


With the cage pivoted and aligned, lift the assembly from the outer race. Rotate the inner race up and out of the cage

[Click to enlarge](#)

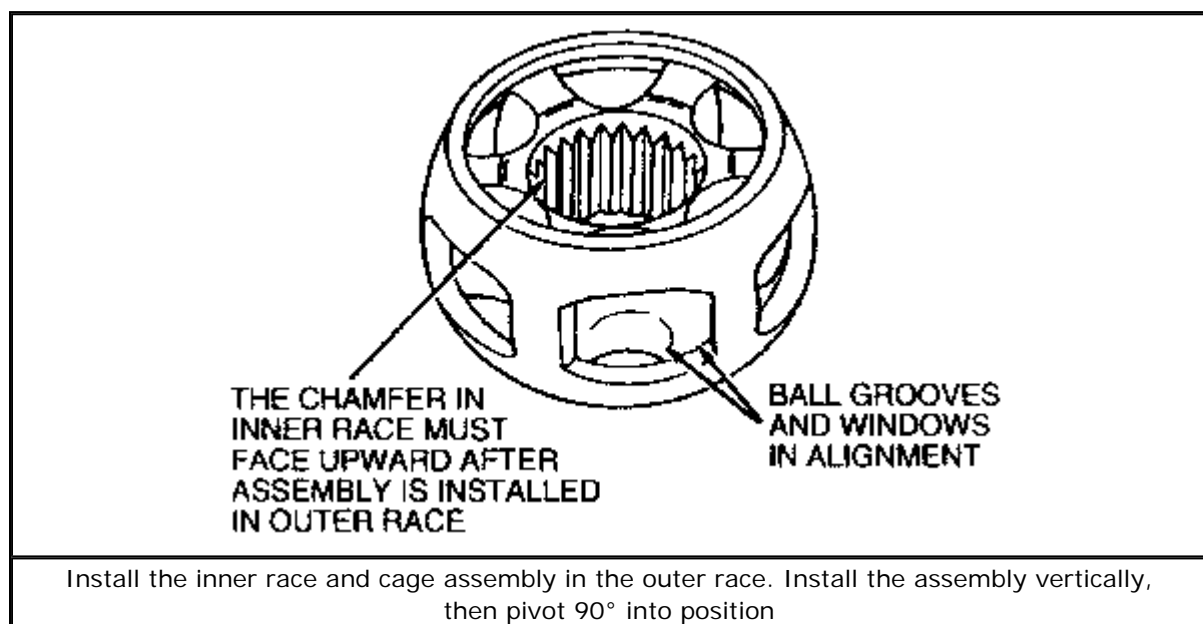
To install:

16. Apply a light coating of Ford High Temperature Constant Velocity Joint Grease E43Z-19590-A or equivalent, on the inner and outer ball races.
17. Install the inner race in the bearing cage.



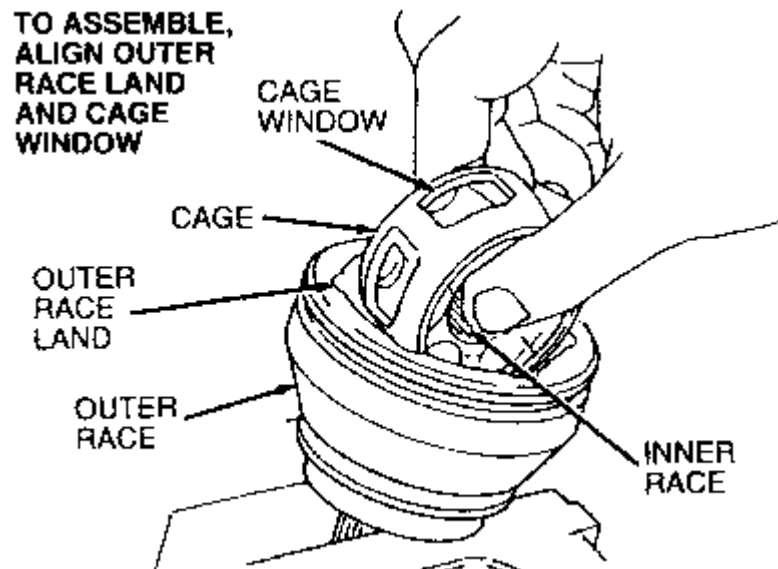
[Click to enlarge](#)

18. Install the inner race and cage assembly in the outer race. Install the assembly vertically, then pivot 90° into position.



[Click to enlarge](#)

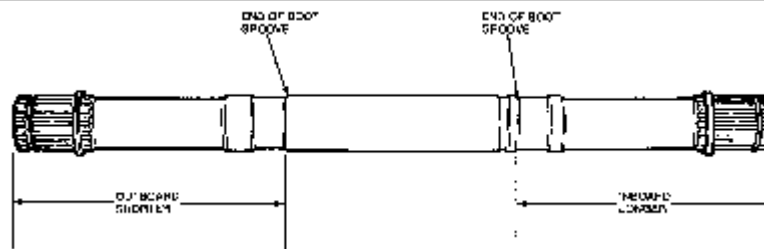
19. Align the bearing cage and inner race with the outer race. Tilt the inner race and cage, then install a ball. Repeat until all balls are installed.



Align the bearing cage and inner race with the outer race. Tilt the inner race and cage, then install a ball. Repeat until all balls are installed

[Click to enlarge](#)

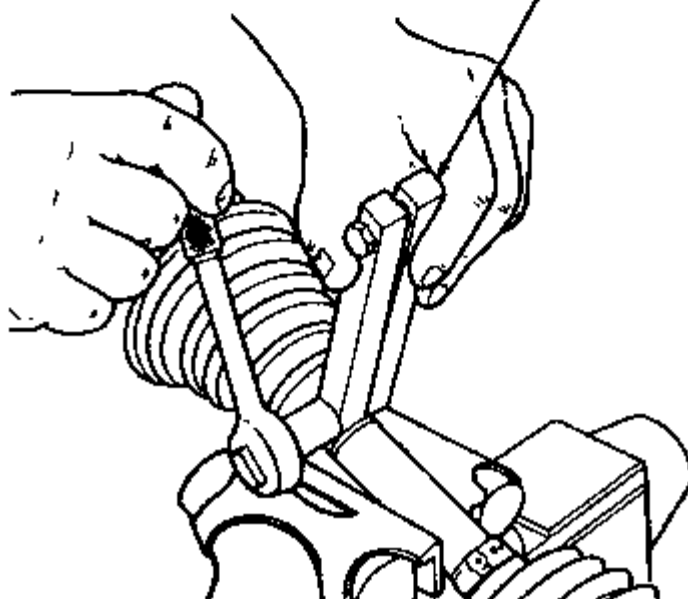
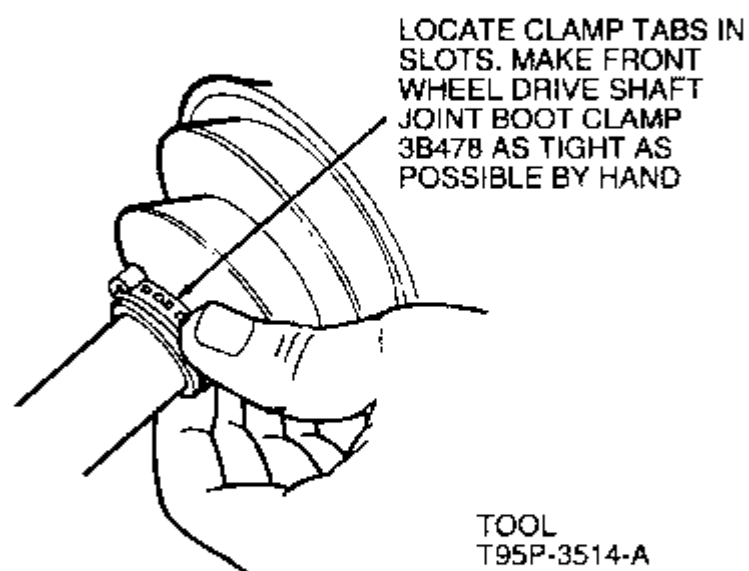
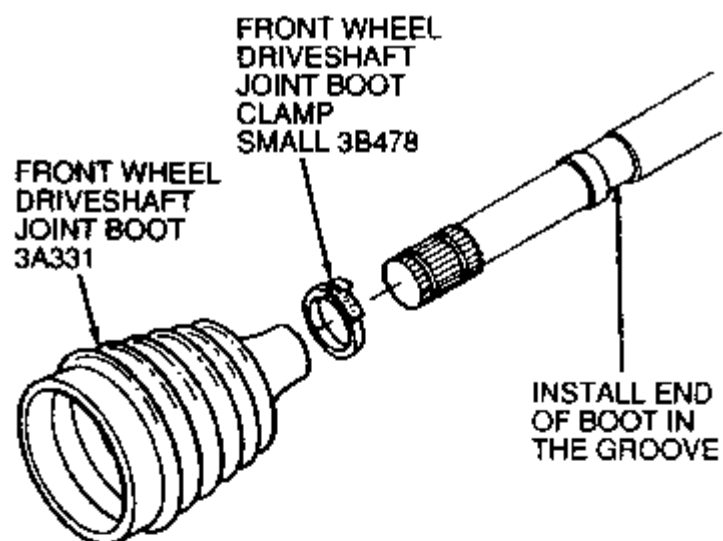
20. On some vehicles, the left and right interconnecting shafts are different, depending on year and vehicle application. The outboard end of the shaft is shorter from the end of the shaft to the end of the boot groove than the inboard end. Take a measurement to insure correct installation.



On some vehicles, the left and right interconnecting shafts are different, depending on year and vehicle application. The outboard end of the shaft is shorter from the end of the shaft to the end of the boot groove than the inboard end. Take a measurement to insure correct installation

[Click to enlarge](#)

21. If removed, install the CV-joint boot after removing the stop ring. Make sure the CV boot is seated in its groove and the clamp is in position using Boot Clamp Installer T95P-3514-A or equivalent. Tighten the tool through the bolt until it's in a closed position, then remove the tool.



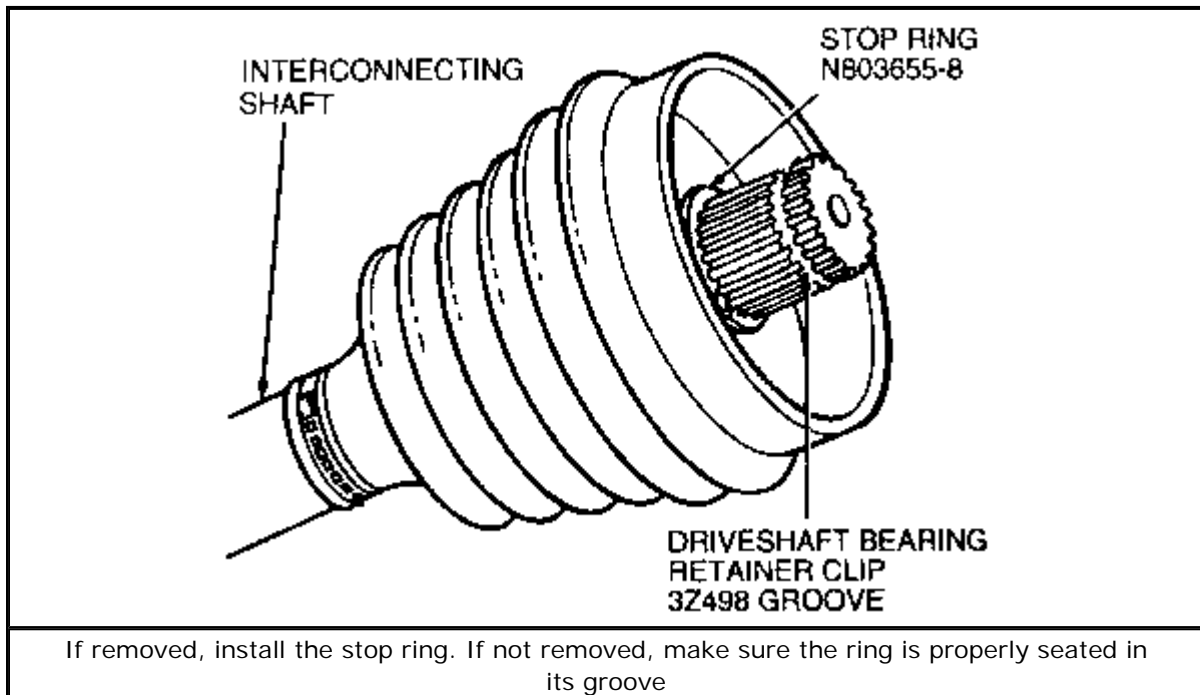
Make sure the CV boot is seated in its groove and the clamp is in position using Boot



Clamp Installer T95P-3514-A or equivalent. Tighten the tool through the bolt until it's in a closed position, then remove the tool

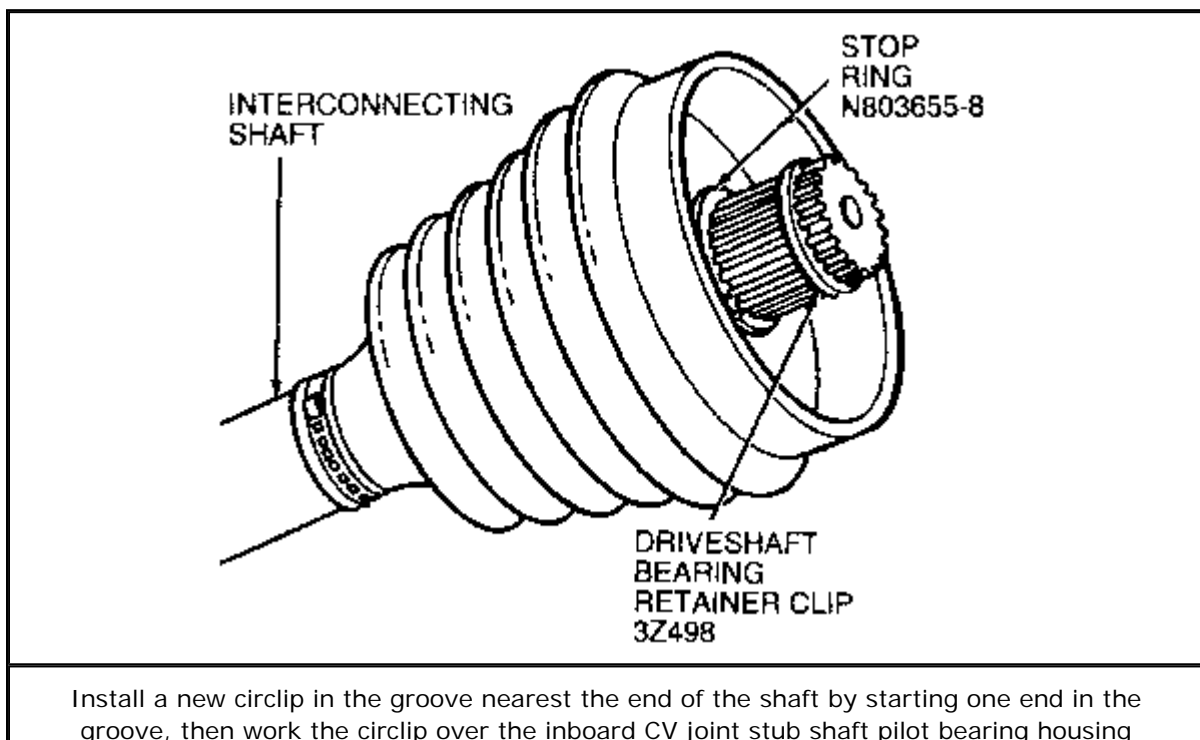
[Click to enlarge](#)

22. If removed, install the stop ring. If not removed, make sure the ring is properly seated in its groove.



[Click to enlarge](#)

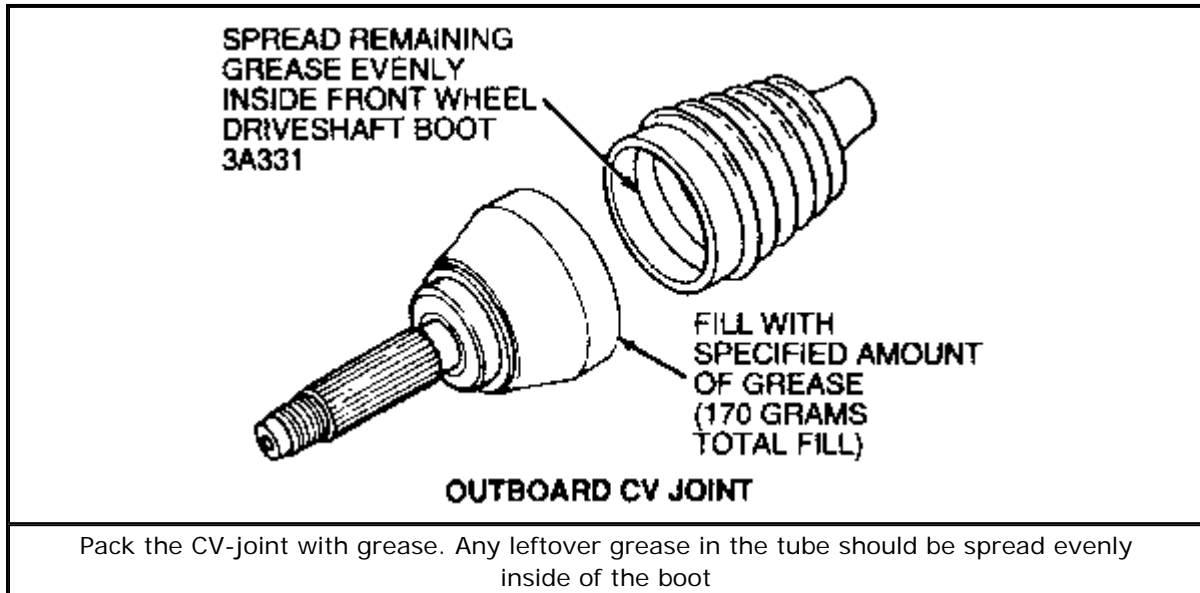
23. Install a new circlip in the groove nearest the end of the shaft by starting one end in the groove, then work the circlip over the inboard CV joint stub shaft pilot bearing housing end and into the groove. This will avoid overexpanding the circlip.



end and into the groove. This will avoid overexpanding the circlip

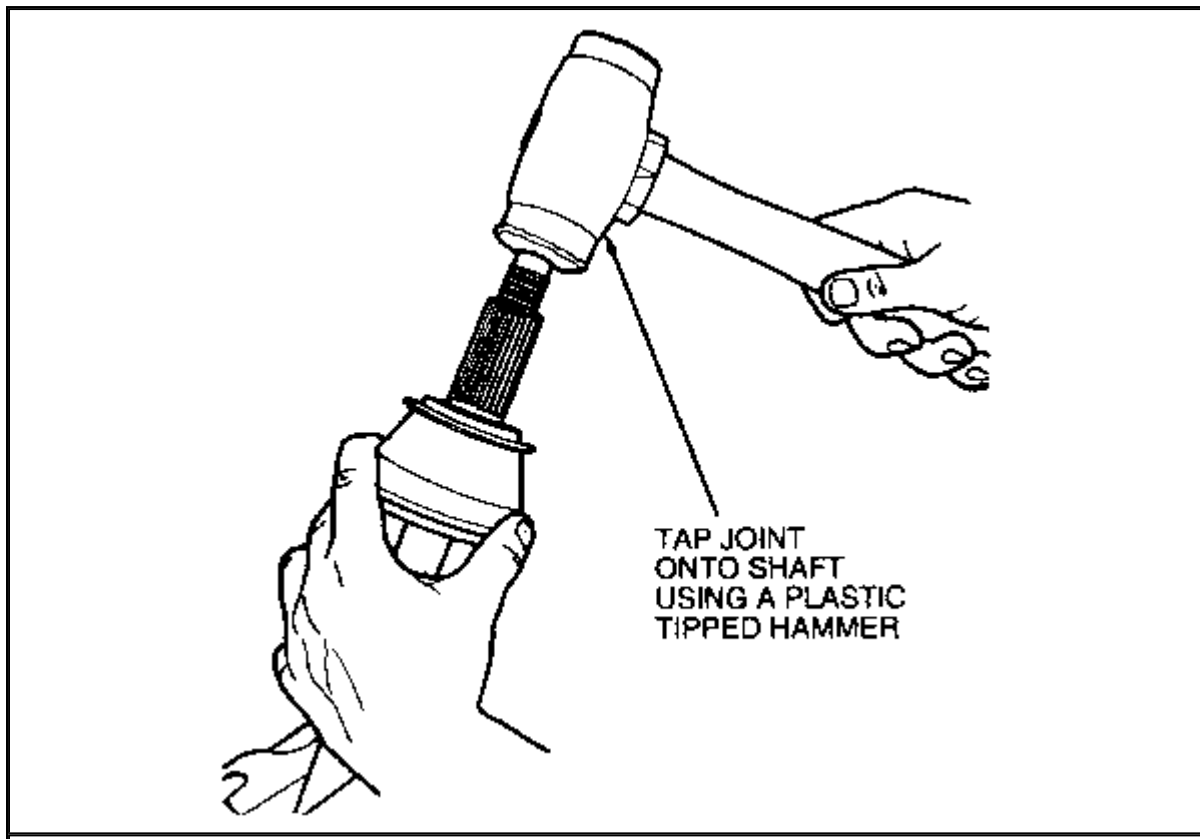
[Click to enlarge](#)

24. Before positioning the boot over the CV-joint, pack the joint and boot with Ford High Temperature Constant Velocity Joint Grease E43Z-19590-A or equivalent. Pack the joint with grease. Any remaining grease in the tube is to be spread evenly inside of the boot.



[Click to enlarge](#)

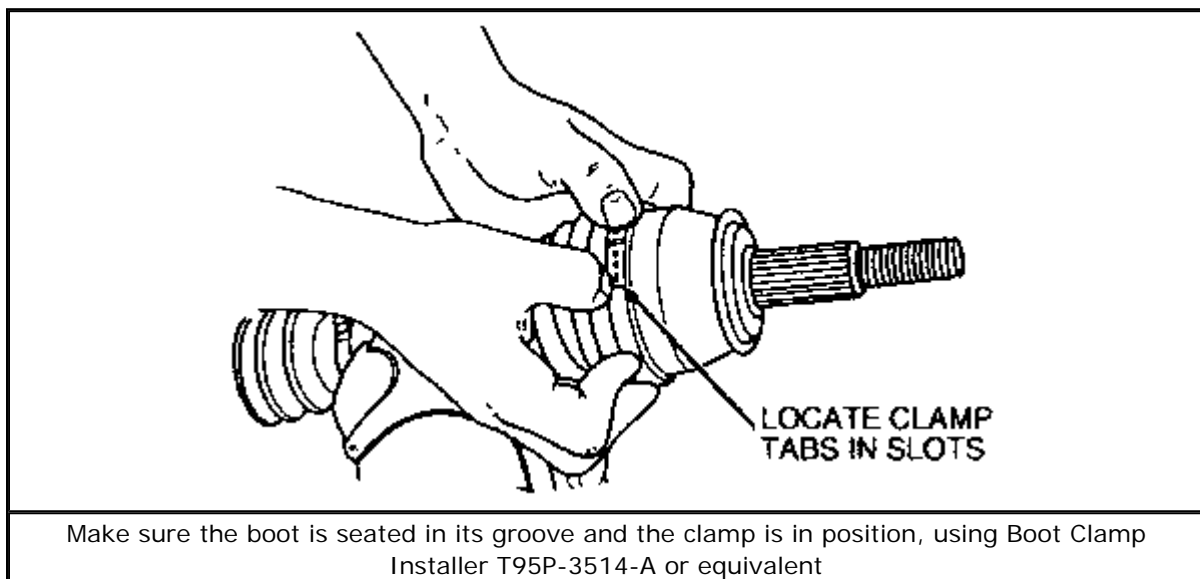
25. With the front wheel driveshaft joint boot held back, position the CV-joint on the shaft and tap into position using a plastic tipped hammer.



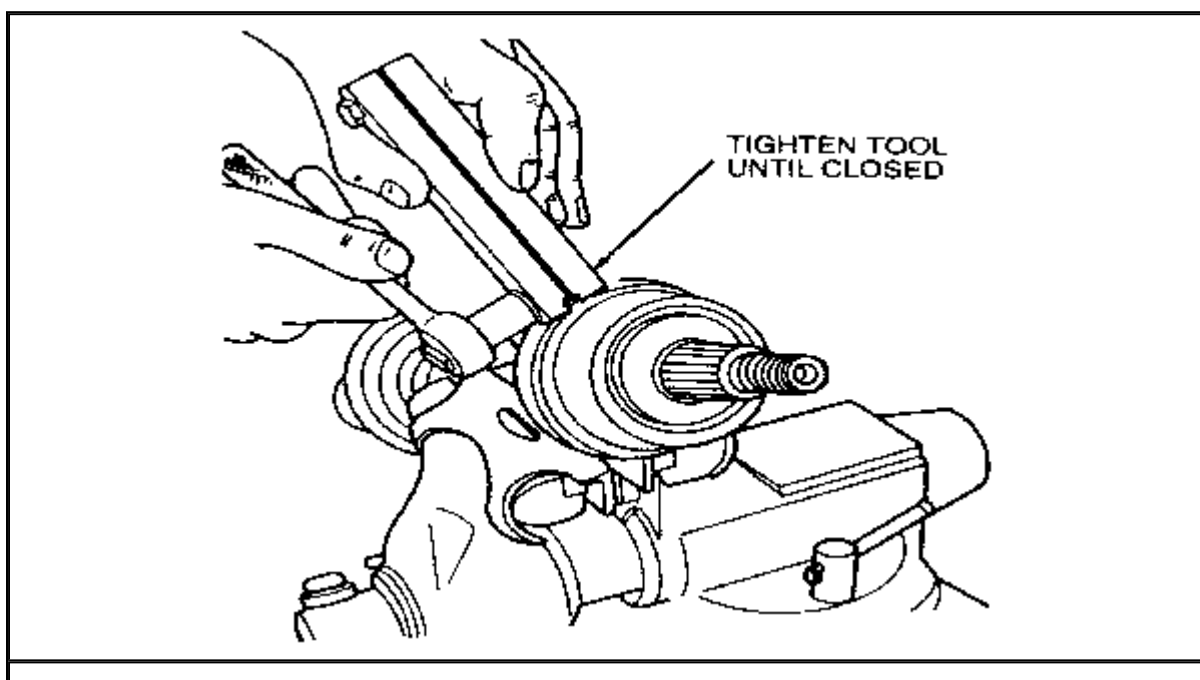
With the front wheel driveshaft joint boot held back, position the CV-joint on the shaft and tap into position using a plastic tipped hammer

[Click to enlarge](#)

26. The CV-joint is fully seated when the circlip locks in the groove cut into the CV-joint inner race. Check for seating by trying to pull the joint away from the shaft.
27. Remove all excess grease from the CV-joint external surfaces and mating boot surface. Position the boot over the joint.
28. Before installing the boot clamp, make sure all air pressure that may have built up in the boot is removed. Pry up on the boot lip to allow the air to escape.
29. Position the boot over the joint, then make sure the boot is seated in its groove and the clamp is in position using Boot Clamp Installer T95P-3514-A or equivalent. Position the tool on the clamp ear, then tighten the tool through the bolt, until it is in the closed position. Remove the tool.



[Click to enlarge](#)



Position the tool on the clamp ear and tighten the tool through the bolt, until it is in the closed position, then remove the tool

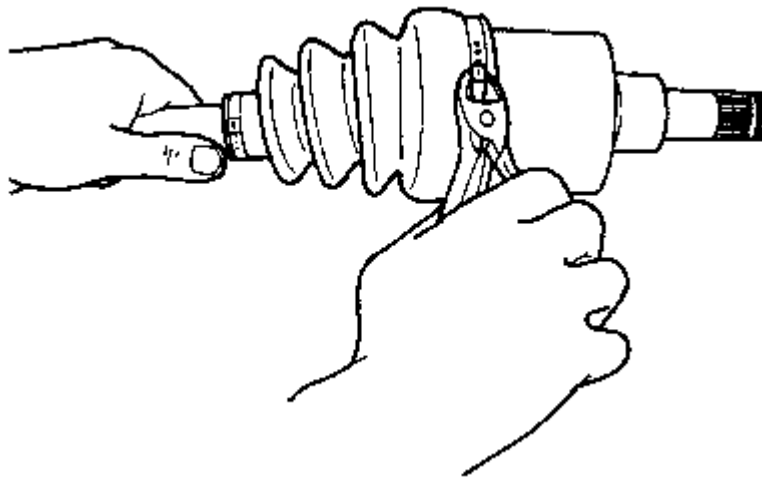
[Click to enlarge](#)

30. Install the halfshaft assembly and lower the vehicle. Connect the negative battery cable.

## Inboard CV-Joint

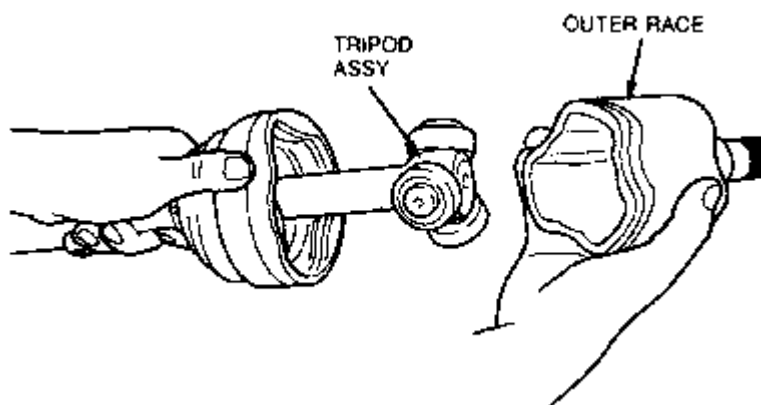
### 1986-92 VEHICLES

1. Disconnect the negative battery cable. Raise and safely support the vehicle.
2. Remove the halfshaft assembly from the vehicle.
3. Clamp the halfshaft in a vise that is equipped with soft jaw covers. Do not allow the vise jaws to contact the boot or boot clamp.
4. Cut and remove both boot clamps, then slide the boot back on the shaft. Remove the clamp by engaging the pincer jaws of boot clamp pliers D87P-1090-A or equivalent, in the closing hooks on the clamp and draw together. Disengage the windows and locking hooks, then remove the clamp.



Cut and remove both boot clamps, then slide the boot back on the shaft

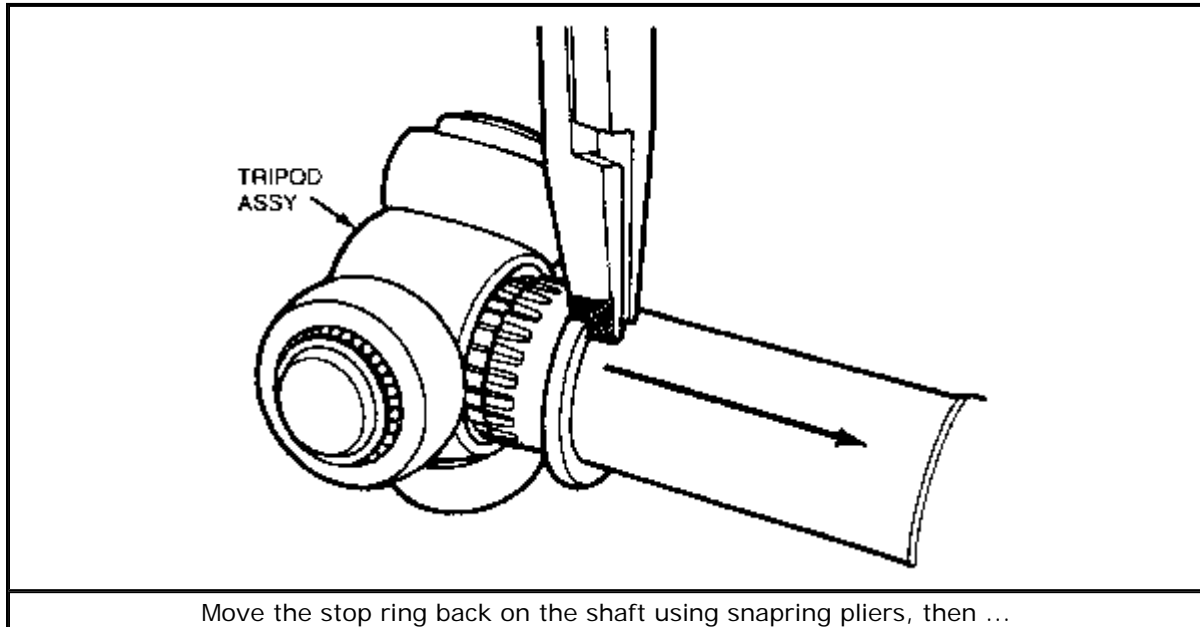
5. Mark the position of the outer race in relation to the shaft, then remove the outer race from the tripod.



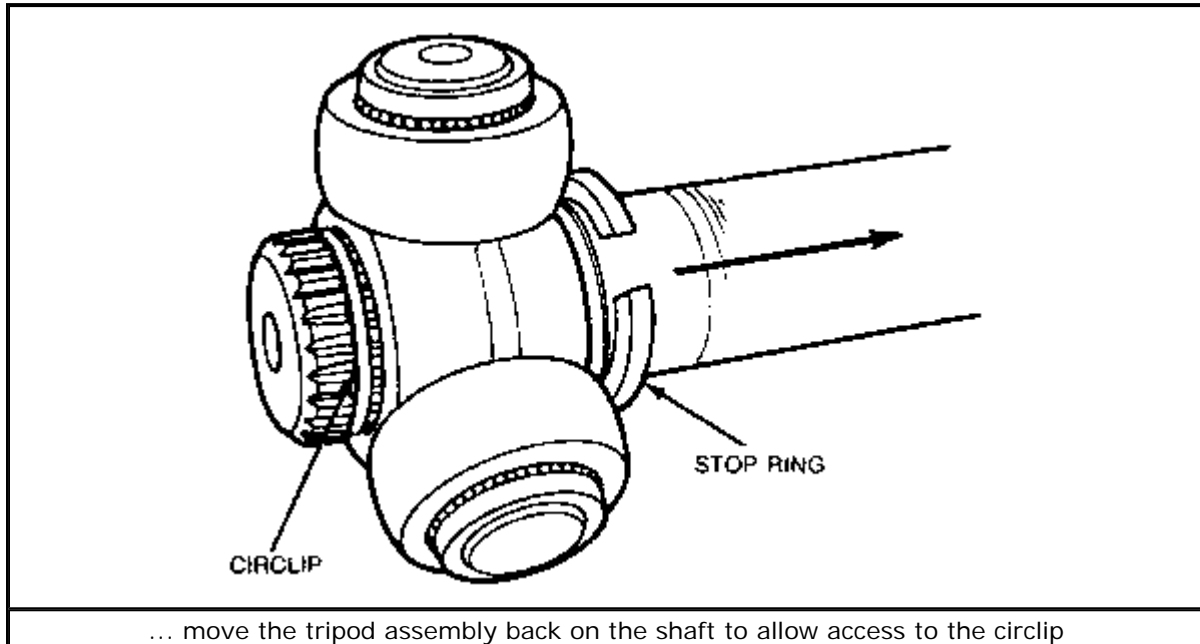
Slide the outer race off of the tripod

[Click to enlarge](#)

6. Move the stop ring back on the shaft using snapping pliers. Move the tripod assembly back on the shaft to allow access to the circlip.



[Click to enlarge](#)



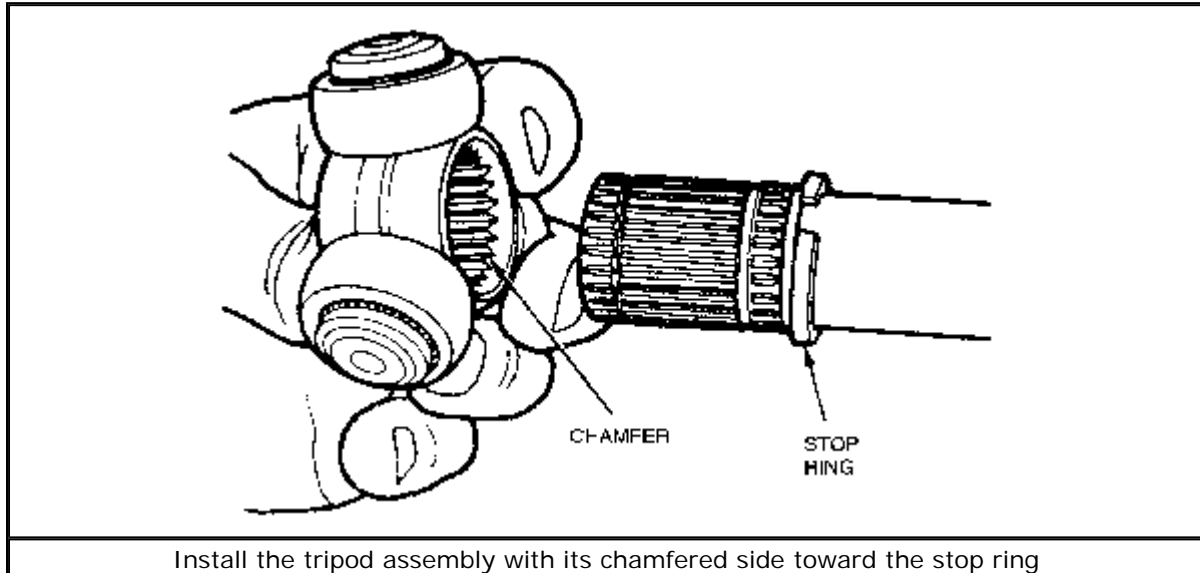
[Click to enlarge](#)

7. Remove and discard the circlip from the shaft, then replace with a new one during installation. Mark the position of the tripod on the shaft and remove the tripod assembly. Remove the boot.
8. Check the CV-joint grease for contamination. If the CV-joints are operating properly and the grease is not contaminated, add grease and replace the boot. If the grease appears contaminated, disassemble the CV-joint and clean or replace,

as necessary.

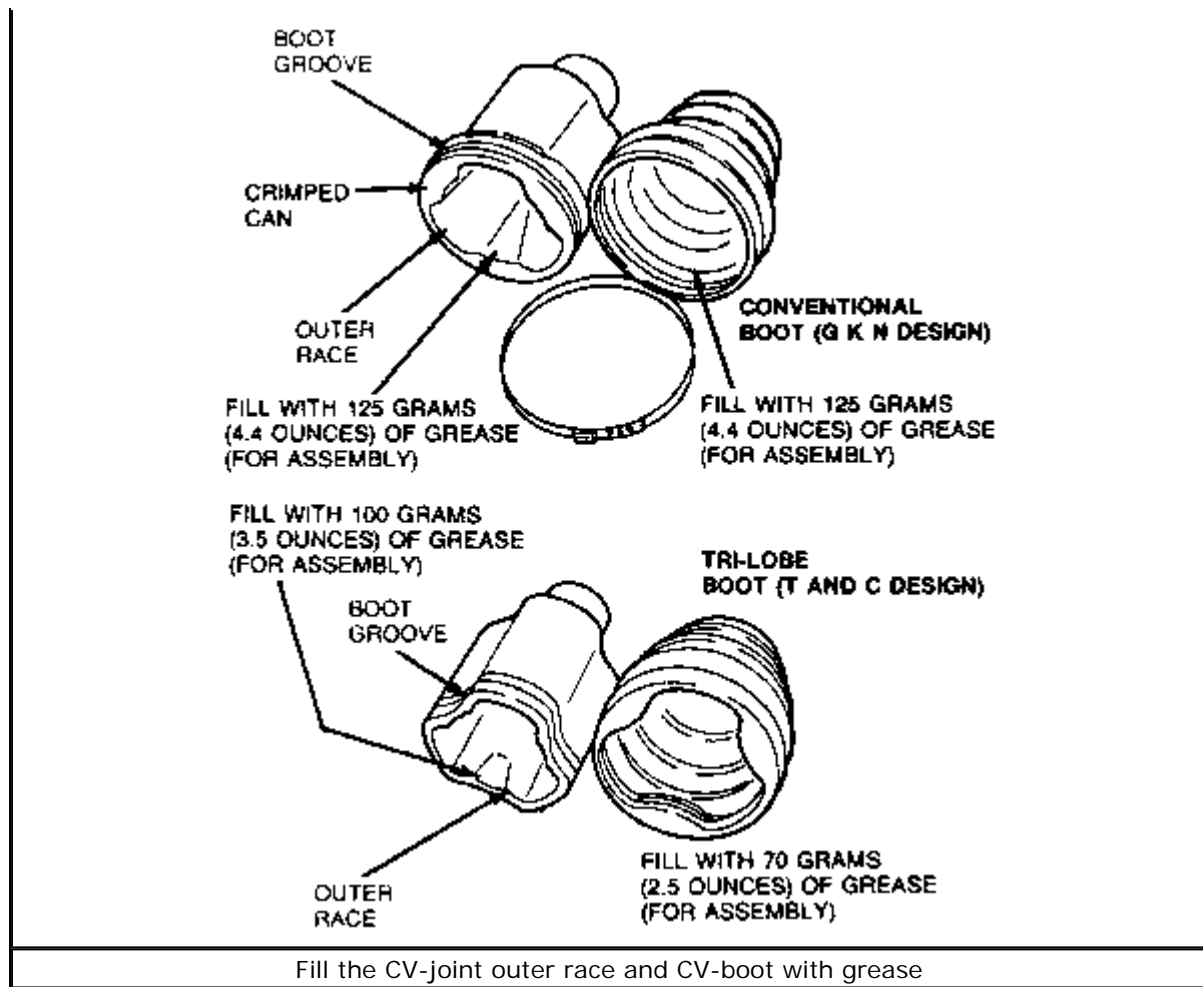
**To install:**

9. Install the CV-joint boot. Make sure the boot is seated in the boot groove on the shaft. Tighten the clamp using crimping pliers, but do not tighten to the point where the clamp bridge is cut or the boot is damaged.
10. Install the tripod assembly with chamfered side toward the stop ring. If the tripod is being reused, align the marks that were made during the removal procedure.



[Click to enlarge](#)

11. Install a new circlip. Compress the circlip and slide the tripod assembly forward over the circlip to expose the stop ring groove.
12. Move the stop ring into the groove using snapping pliers, making sure it is fully seated in the groove.
13. Fill the CV-joint outer race and CV-boot with grease. Install the outer race over the tripod assembly, aligning the marks made during the removal procedure.



[Click to enlarge](#)

14. Remove all excess grease from the CV-joint external surfaces and mating boot surface. Position the boot over the CV-joint making sure the boot is seated in the groove. Move the CV-joint in and out, as necessary, to adjust the length to the following specifications:
  - Automatic transaxle left halfshaft, except 1986-90 Taurus with 2.5L engine-18.27 in. (464mm)
  - Automatic transaxle right halfshaft, except 1986-90 Taurus with 2.5L engine-23.58 in. (599mm)
  - Automatic transaxle left halfshaft, 1986-90 Taurus with 2.5L engine-22.80 in. (579mm)
  - Automatic transaxle right halfshaft, 1986-90 Taurus with 2.5L engine-20.09 in. (510mm)
  - Manual transaxle left halfshaft-21.24 in. (539.5mm)
  - Manual transaxle right halfshaft-21.63 in. (549.5mm)
15. Before installing the boot clamp, make sure any air pressure that may have built up in the boot is relieved. Insert a small prybar between the boot and outer race to allow the trapped air to escape. Release the air only after adjusting the length dimension.
16. Seat the boot in the groove and clamp in position using crimping pliers D87P-1098-A or equivalent. Install the clamp as follows:
  1. With the boot seated in the groove, place the clamp over the boot.

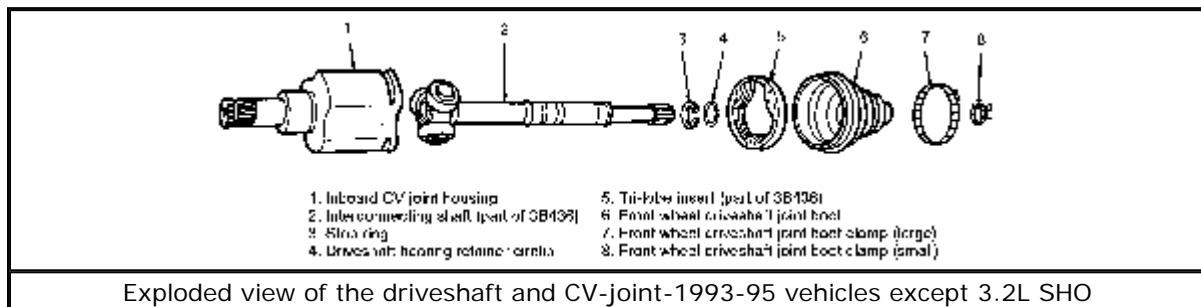
2. Engage hook C in the window.
3. Place the pincer jaws of the crimping pliers in closing hooks A and B.
4. Secure the clamp by drawing the closing hooks together. When windows 1 and 2 are above locking hooks D and E, the spring tab will press the windows over the locking hooks and engage the clamp.

17. Install the halfshaft and lower the vehicle. Connect the negative battery cable.

#### 1993-95 VEHICLES EXCEPT 3.2L SHO

On this design, the tripod assembly cannot be removed from the interconnecting shaft. If a tripod assembly, or interconnecting shaft is required, a driveshaft and joint assembly must be used. But if CV-joint boots or boot clamps are needed, they are available separately.

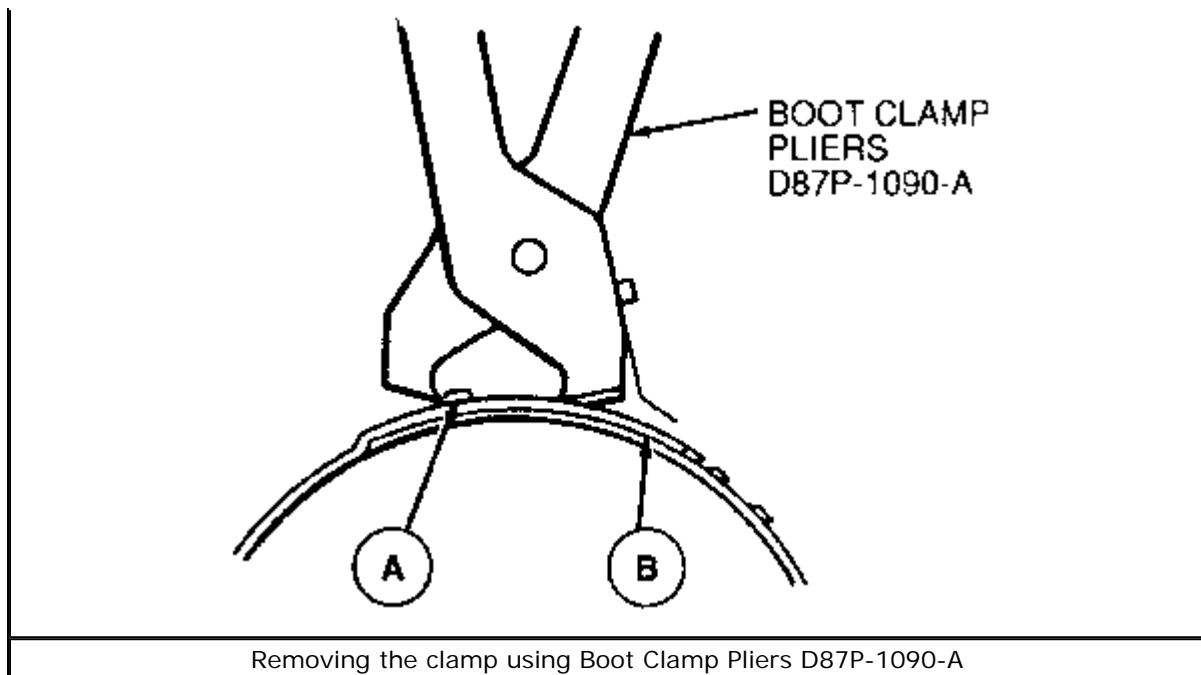
1. Disconnect the negative battery cable. Raise and safely support the vehicle.
2. Remove the halfshaft assembly from the vehicle.



[Click to enlarge](#)

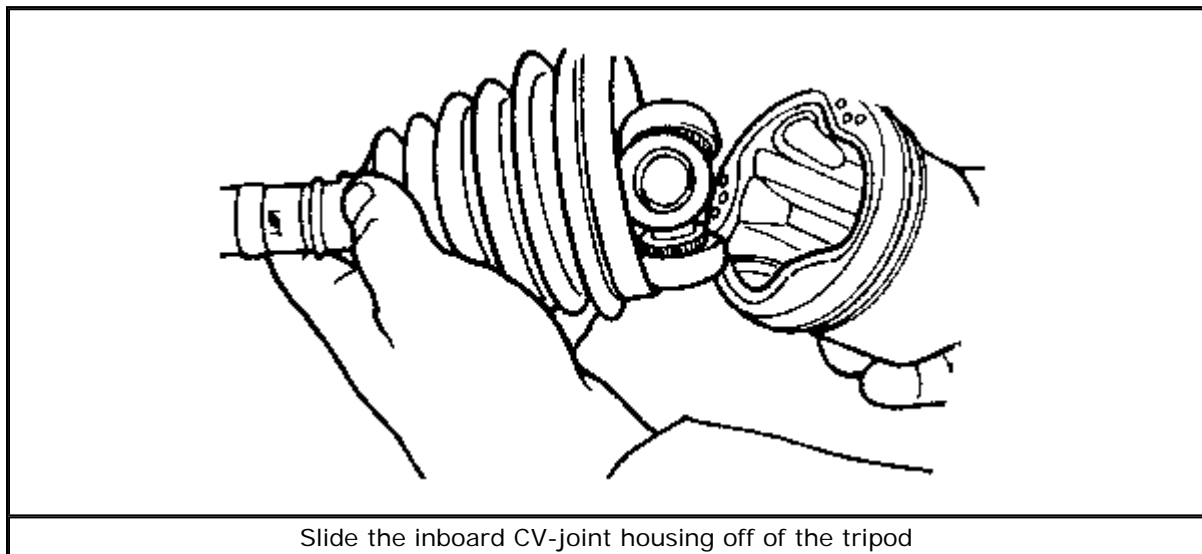
3. Clamp the halfshaft in a vise that is equipped with soft jaw covers. Do not allow the vise jaws to contact the boot or boot clamp.
4. Cut and remove both boot clamps, then slide the boot back on the shaft. Remove the clamp by engaging the pincer jaws of boot clamp pliers D87P-1090-A or equivalent, in the closing hooks on the clamp and draw together. Disengage the windows and locking hooks, then remove the clamp.



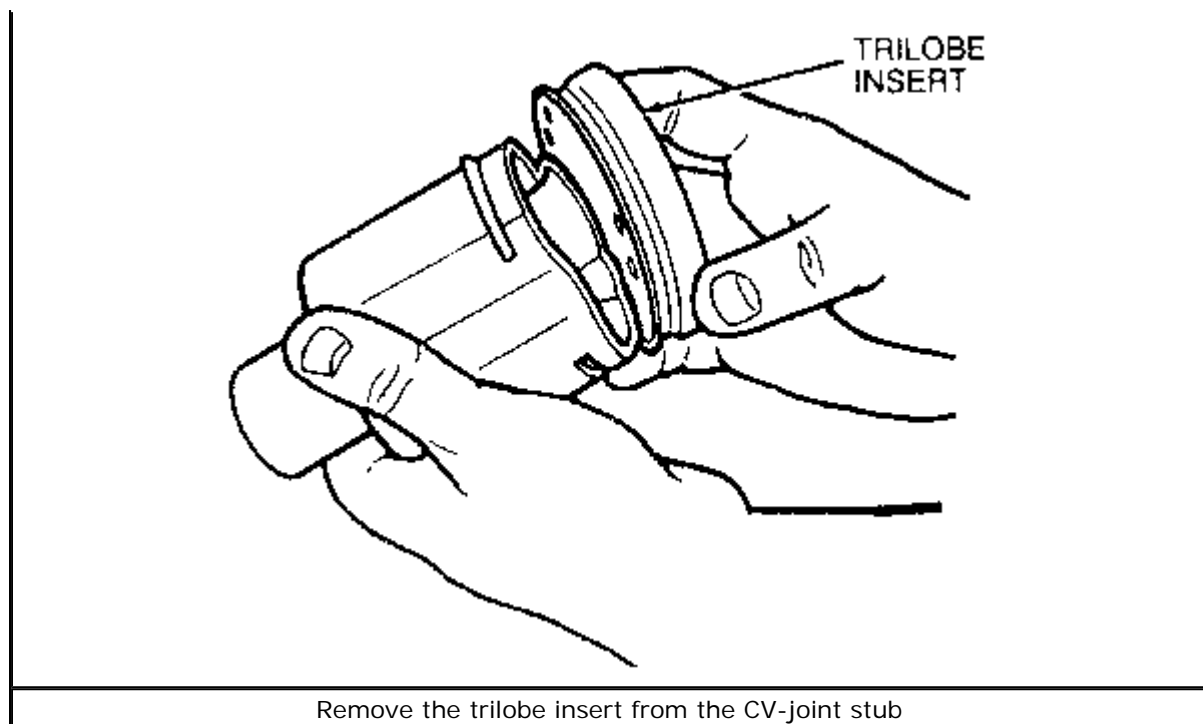


[Click to enlarge](#)

5. Slide the inboard CV-joint housing off of the tripod.



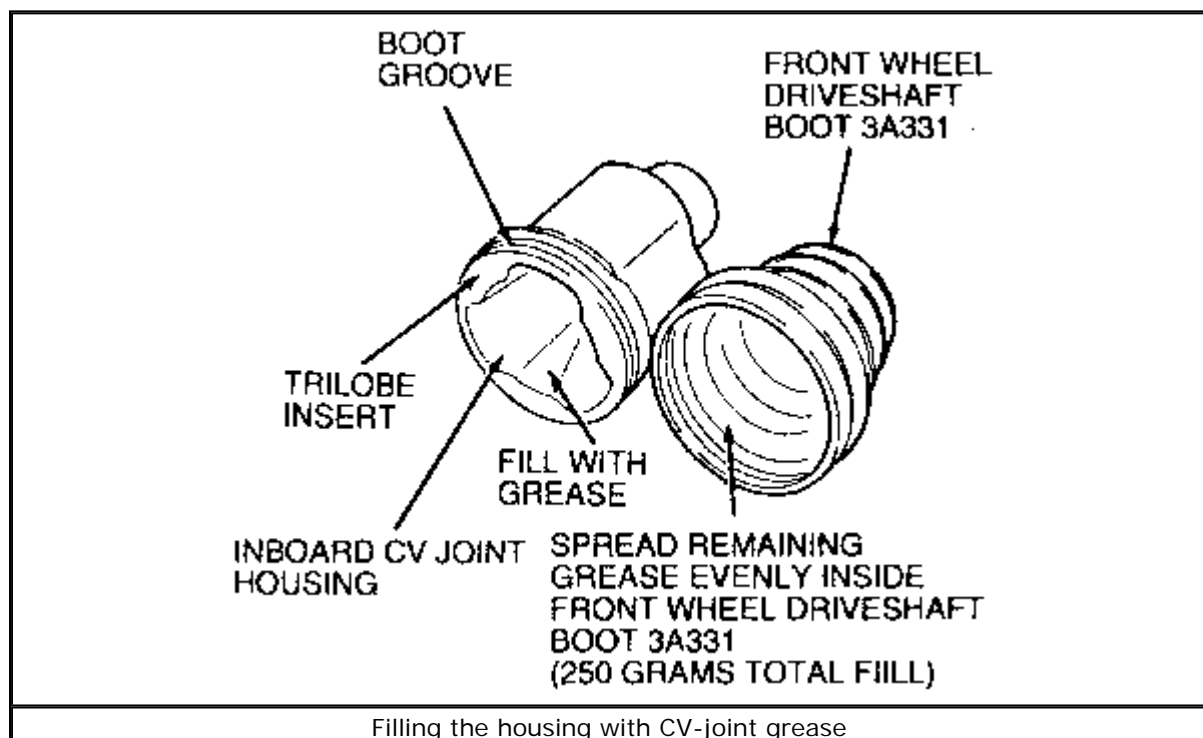
6. When replacing damaged boots, the grease should be checked for contamination. If the CV-joints are operating satisfactorily, and the grease does not seem to be contaminated, add grease, then replace the boot. If the grease is contaminated, you will have to proceed with a complete CV-joint disassembly and inspection.
7. If further disassembly is required, remove the outboard CV-joint and boot as described earlier in this section.
8. Remove the driveshaft joint stop ring and bearing retainer circlip.
9. Slide the inboard boot off of the interconnecting shaft.
10. Remove the trilobe insert from the CV-joint stub. Remove the grease from the outer race, then inspect the outer race and tripod assembly.



[Click to enlarge](#)

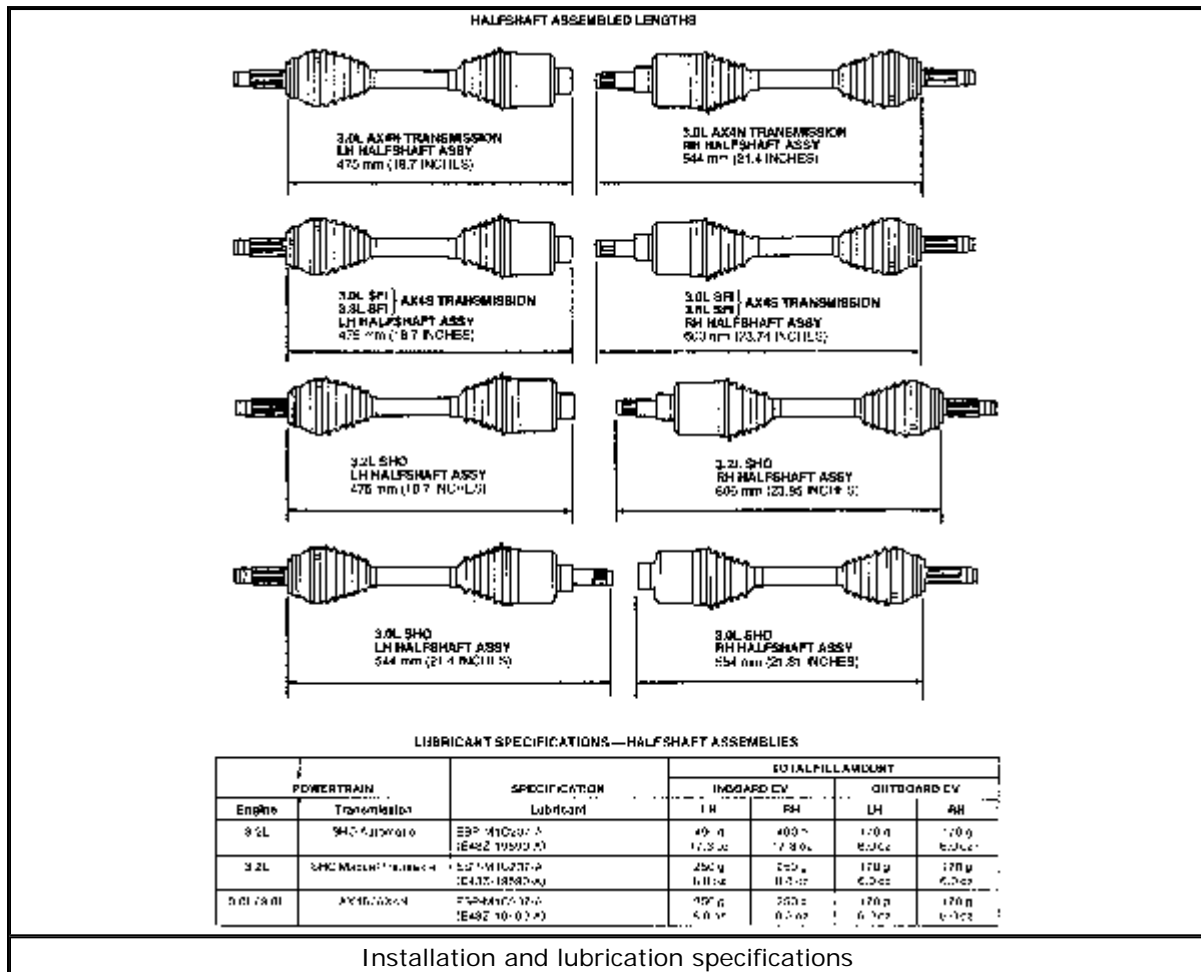
**To install:**

11. Install the boot on the interconnecting halfshaft. Position the boot to allow for the CV-joint housing installation.
12. Install the trilobe insert on the CV-joint housing positioning in the groove on the outer race.
13. Fill the CV-joint housing with Ford High Temperature Constant Velocity Grease E43Z-19590-A or equivalent, and spread remaining grease evenly inside of the joint boot. The total fill amount is 9 oz. (250 grams).



[Click to enlarge](#)

14. Install the CV-joint on the tripod assembly.
15. Before installing the boot clamp, make sure any air pressure that may have built up in the boot is relieved. Insert a small prybar between the boot and outer race to allow the trapped air to escape. Release the air only after adjusting the length dimension.
16. Remove all excess grease from the CV-joint external surfaces and mating boot surface. Position the boot over the CV-joint making sure the boot is seated in the groove. Move the CV-joint in and out, as necessary, to adjust the length to the specifications in the accompanying figure.



[Click to enlarge](#)

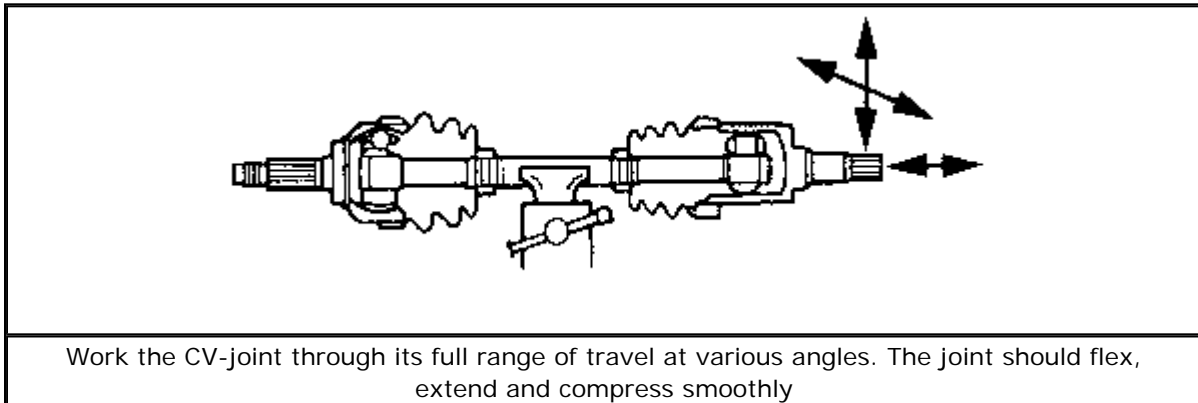
All vehicles, except SHO vehicles, require a reusable low profile large front CV-joint boot clamp on the right-hand side inboard CV-joint.

17. Seat the boot in the grooves, then clamp in position using Boot Clamp Installer T94P-3514-A or equivalent, on the left CV-joint housing.
18. Install the large low profile right-hand boot clamp as follows:
  1. With the boot seated in the groove, place the clamp over the boot.
  2. Engage hook C in the window.
  3. Place the pincer jaws of the crimping pliers in closing hooks A and B.

4. Secure the clamp by drawing the closing hooks together. When windows 1 and 2 are above locking hooks D and E, the spring tab will press the windows over the locking hooks and engage the clamp.
19. Position Boot Clamp Installer Tool T95P-3514-A or equivalent, on the clamp ears, then tighten the tool through the bolt until the tool is in the closed position. Remove the tool.

Do not overexpand or twist the circlip during installation. ALWAYS replace the circlip with a new one during installation.

20. On the right-hand side inboard CV-joint housing, install a new circlip, in the groove nearest the end of the shaft by starting one end in the groove, then working the circlip over the stub shaft and into the groove.
21. Work the CV-joint through its full range of travel at various angles. The joint should flex, extend and compress smoothly.

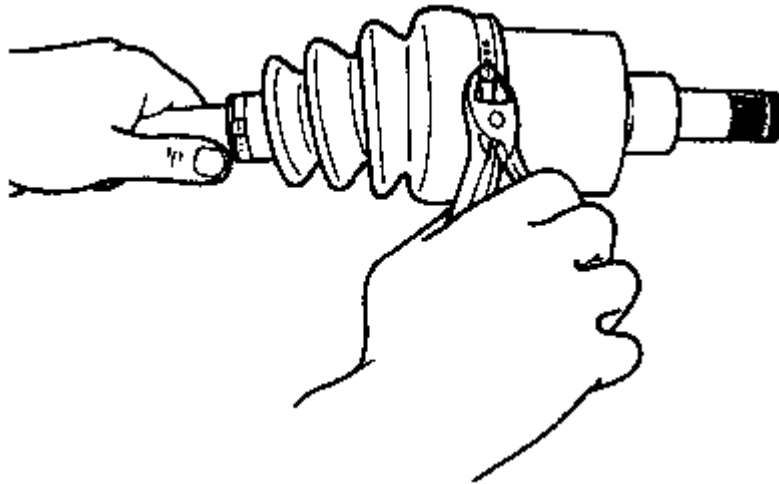


22. Install the halfshaft assembly, then carefully lower the vehicle.
23. Connect the negative battery cable.

### 3.2L SHO

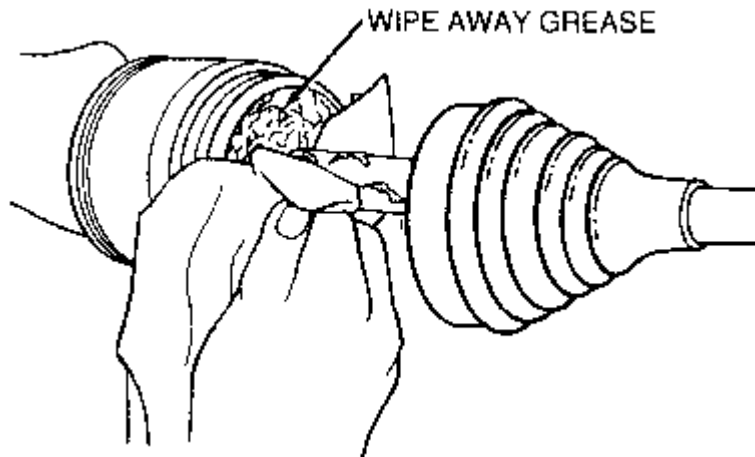
The inboard CV-joint assembly on these vehicles is permanently retained to the interconnecting shaft. The service CV-joint includes the shaft and CV-joint boot. The boot or driveshaft and joint replacement will necessitate removal of the CV-joint and boot.

1. Disconnect the negative battery cable. Raise and safely support the vehicle.
2. Remove the halfshaft assembly from the vehicle.
3. Clamp the halfshaft in a vise that is equipped with soft jaw covers. Do not allow the vise jaws to contact the boot or boot clamp.
4. Cut and remove both of the CV-joint boot clamps.



Removing the boot clamps using pliers

5. Slide the boot back on the shaft, then wipe the grease away from the CV-joint.



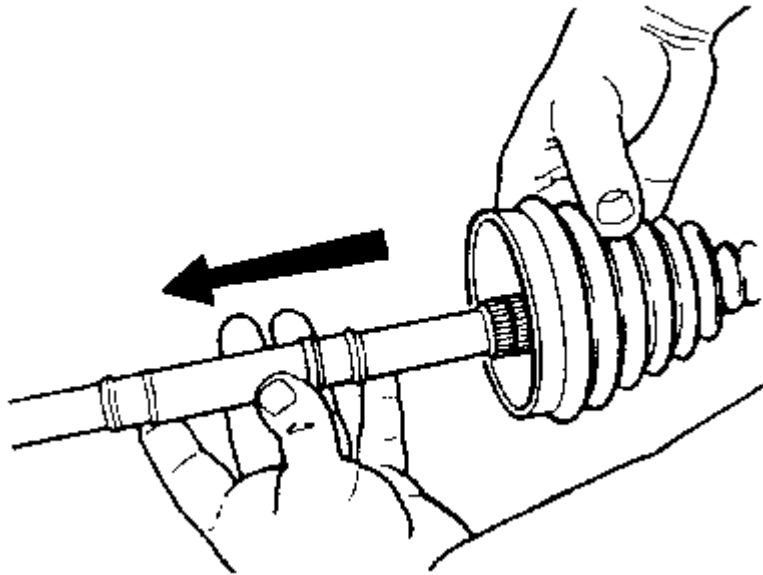
After sliding the boot back on the shaft, wipe away the grease from the CV-joint

[Click to enlarge](#)

6. When replacing damaged boots, the grease should be checked for contamination. If the CV-joints are operating satisfactorily, and the grease does not seem to be contaminated, add grease, then replace the boot. If the grease is contaminated, you will have to proceed with a complete CV-joint disassembly and inspection.
7. If further disassembly is required, remove the driveshaft and CV-joint, and the boot.
8. Remove the driveshaft stop ring and bearing retainer circlip, the slide the joint boot off of the interconnecting shaft.

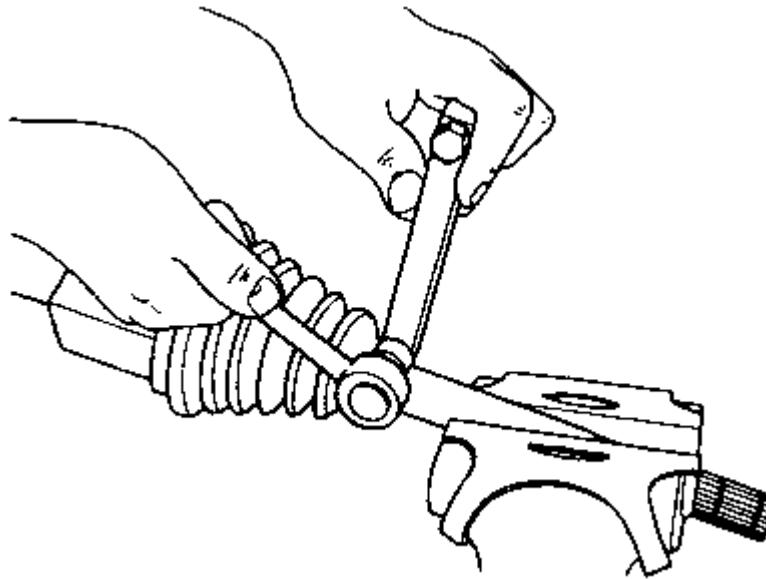
To install:

9. Install the CV-joint boot on the interconnecting shaft. Position the boot to allow for inboard CV-joint housing installation.



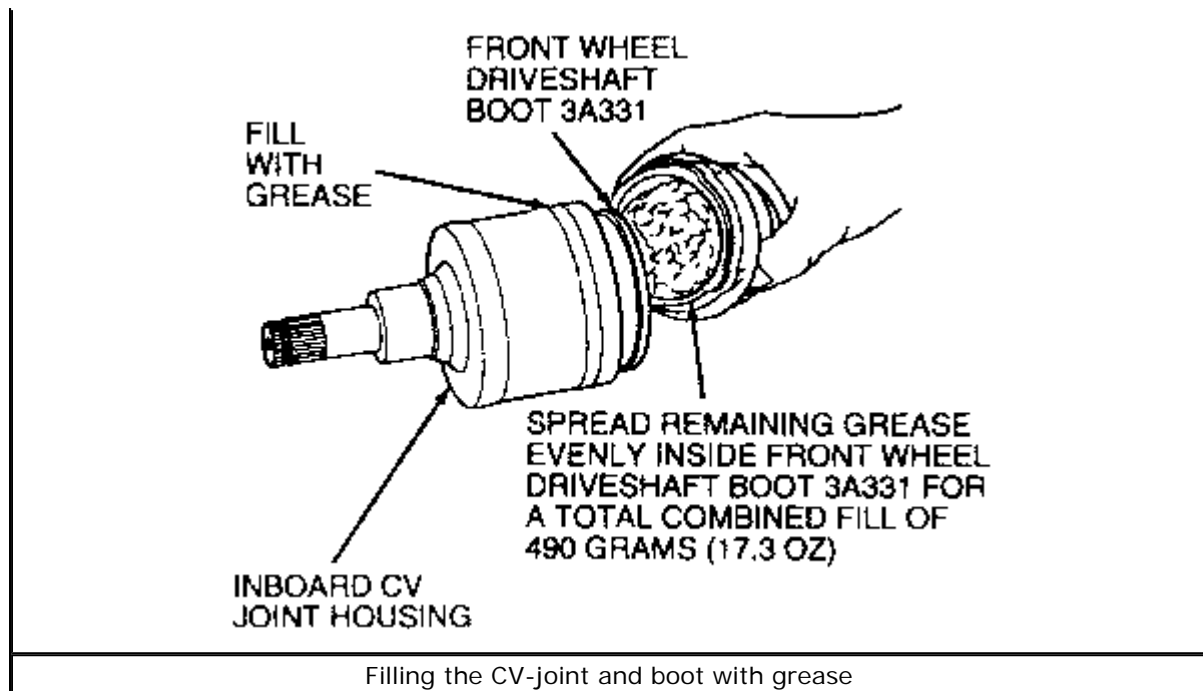
Installing the CV-joint boot on the interconnecting shaft; make sure to position the boot to allow for CV-joint housing installation

10. Position the CV-joint boot in the small boot groove. Using Boot Clamp Installer T95P-3514-A or equivalent, move the small boot clamp in position. Tighten the tool through the bolt until the tool is in the closed position.



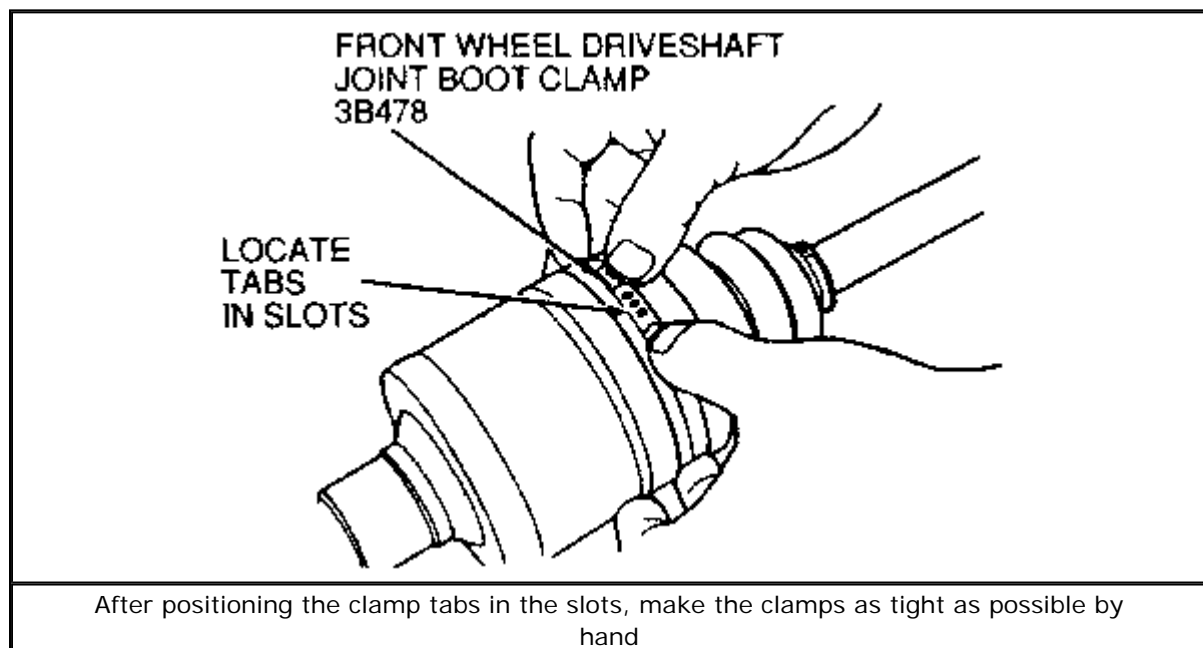
Using the boot clamp installer to fasten the small boot clamp

11. Using Ford High Temperature Constant Velocity Grease E43Z-19590-A or equivalent, fill the inboard CV-joint with grease, then spread the remaining grease evenly inside of the boot.



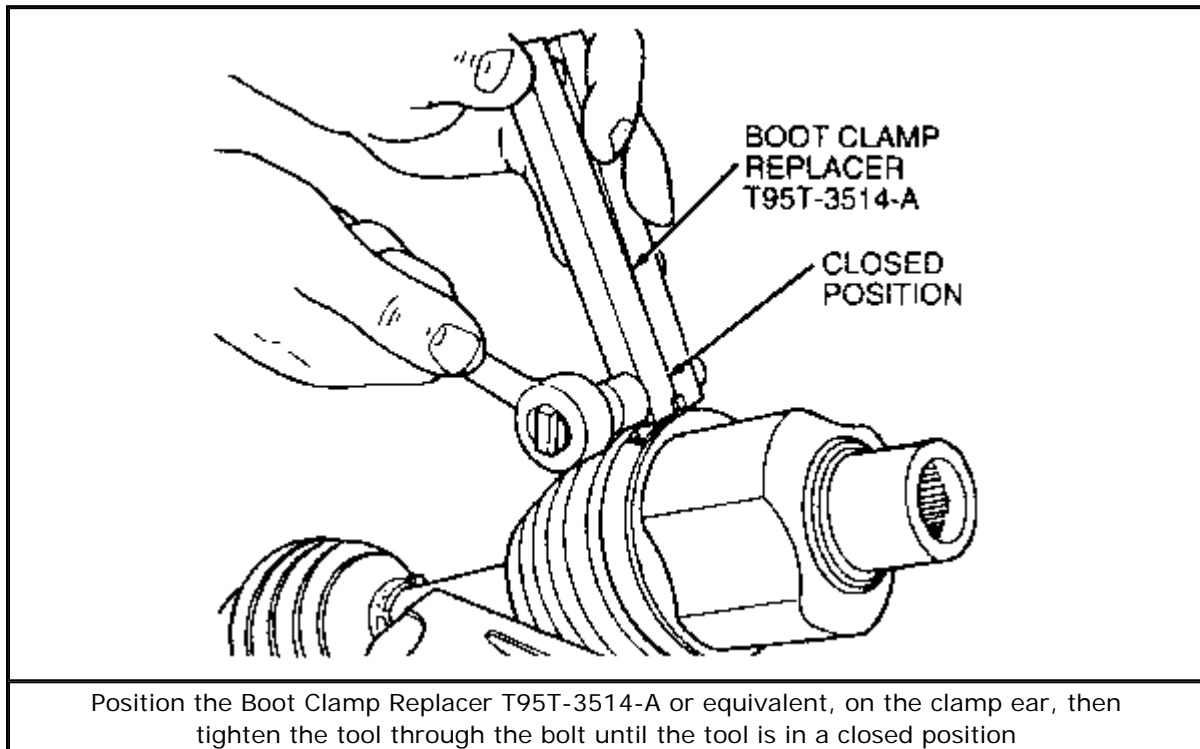
[Click to enlarge](#)

12. Before installing the boot clamp, make sure any air pressure that may have built up in the boot is relieved. Insert a small prybar between the boot and outer race to allow the trapped air to escape. Release the air only after adjusting the length dimension.
13. Remove all excess grease from the external CV-joint surfaces, and boot sealing surfaces. Slide the CV-joint boot into position on the inboard CV-joint housing. Move the CV-joint in and out, as necessary, to adjust to the specified length shown in the accompanying figure.
14. Locate the clamp tabs in the slots, then make the clamps as tight as possible by hand.



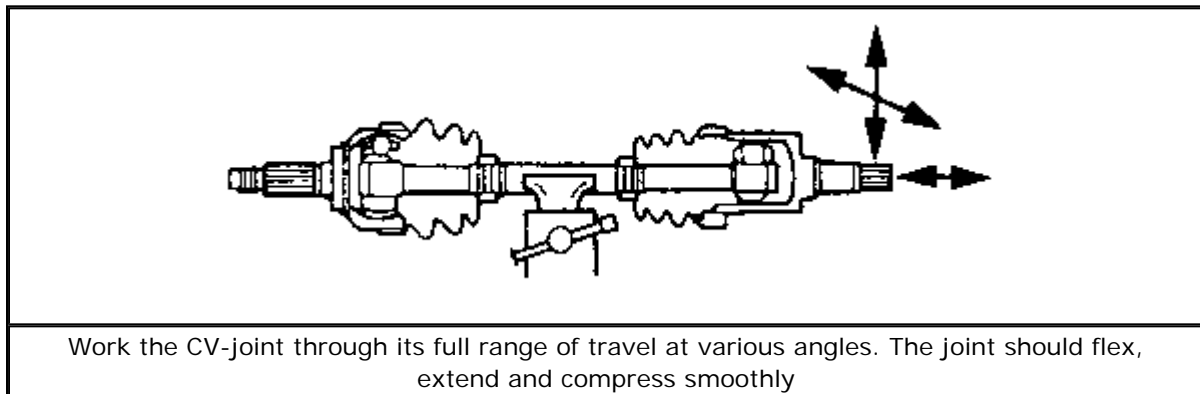
[Click to enlarge](#)

15. Make sure the boot is seated in its groove and the clamp is in position. Position the Boot Clamp Replacer T95T-3514-A or equivalent on the clamp ear, then tighten the tool through the bolt until the tool is in a closed position.



[Click to enlarge](#)

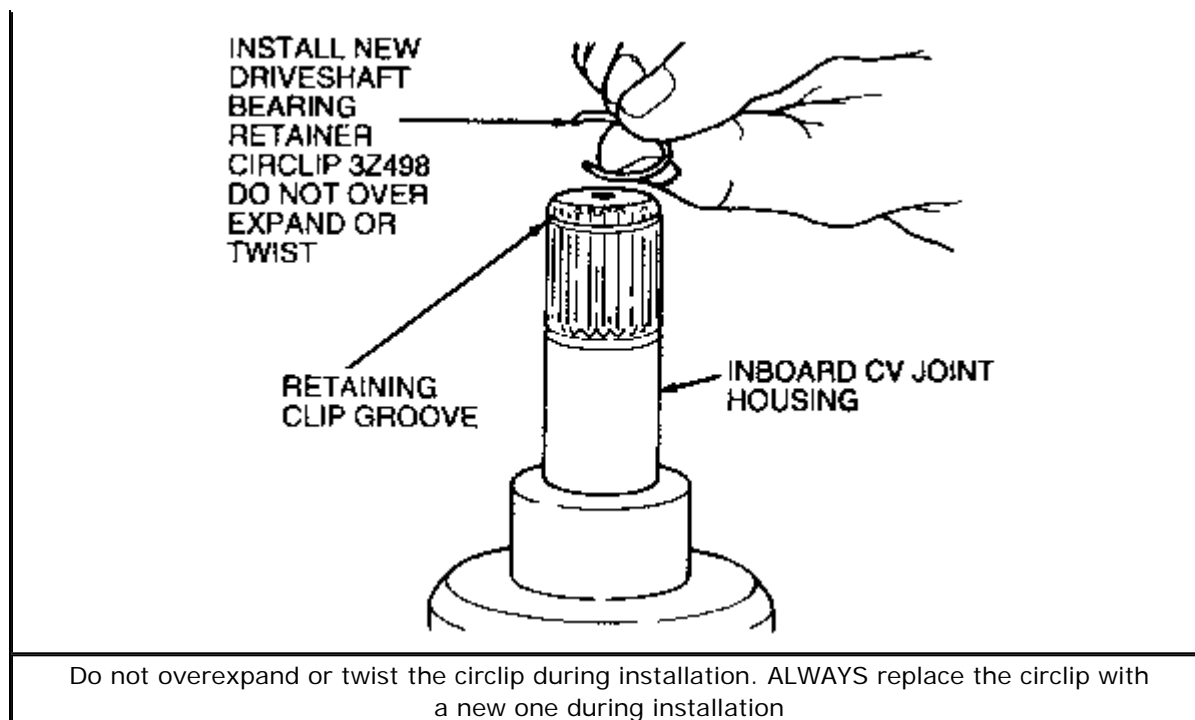
16. Work the CV-joint through its full range of travel at various angles. The joint should flex, extend and compress smoothly.



**Do not overexpand or twist the circlip during installation. ALWAYS replace the circlip with a new one during installation.**

17. Install a new circlip, in the groove nearest the end of the shaft by starting one end in the groove, then working the circlip over the stub shaft and into the groove.





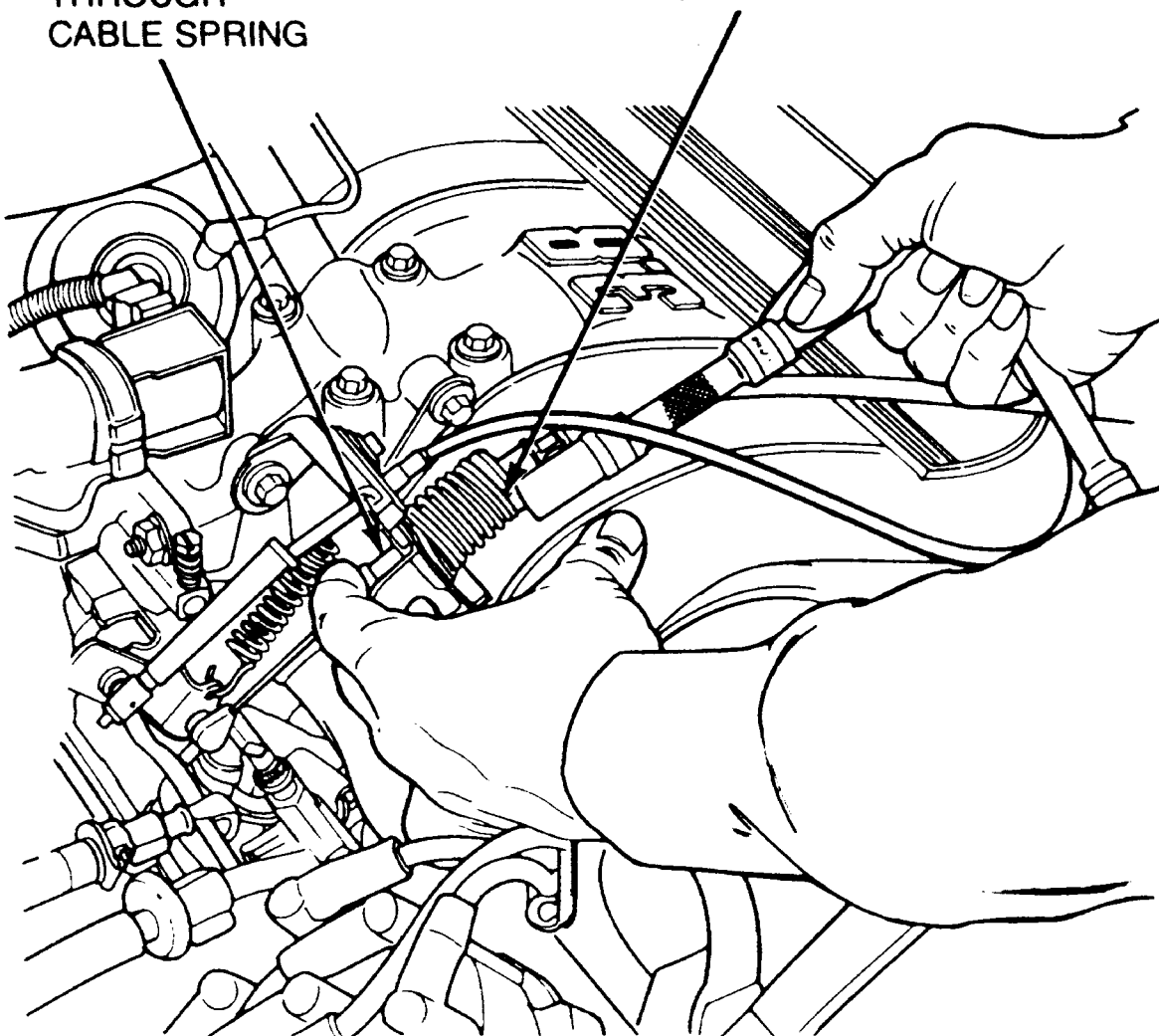
[Click to enlarge](#)

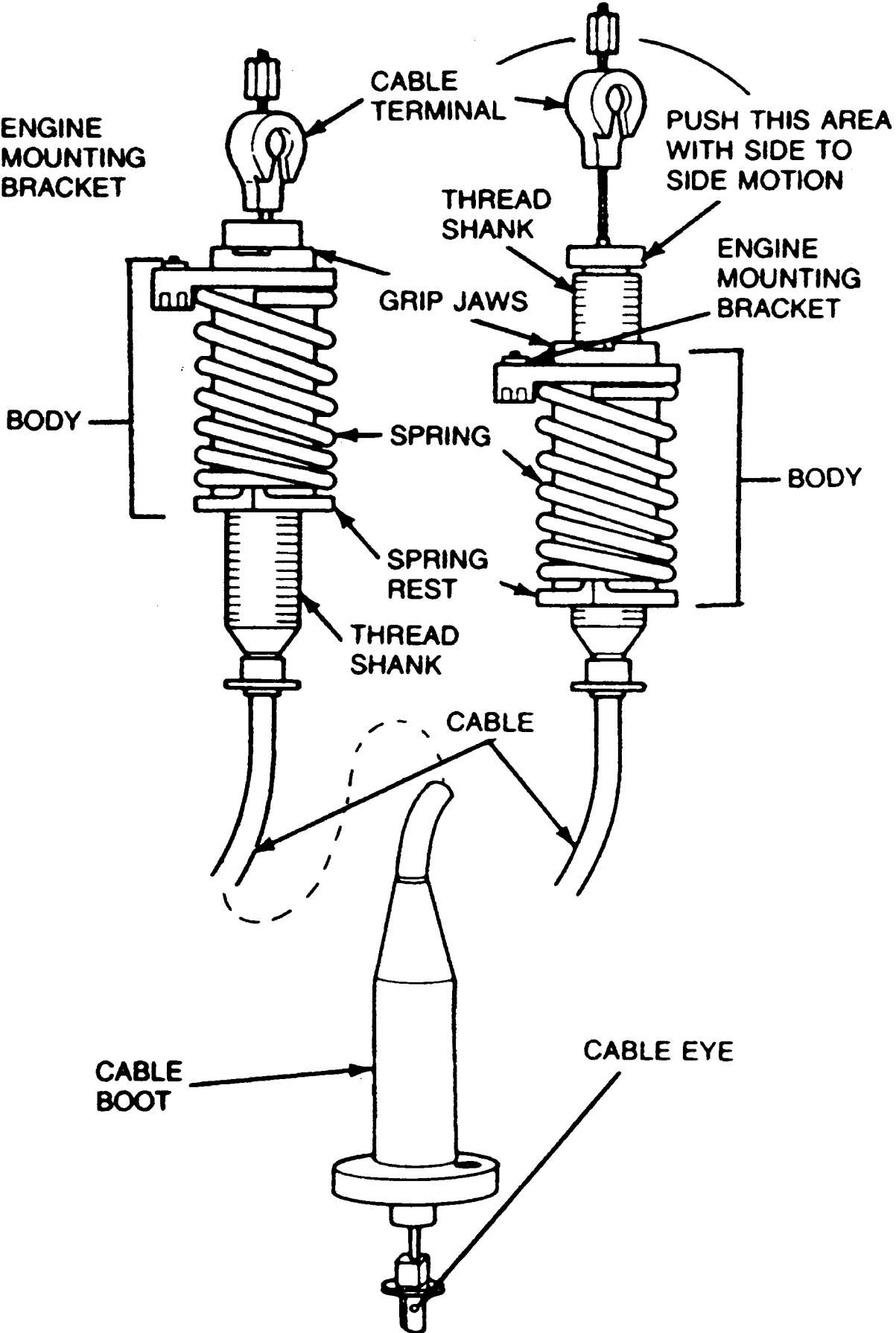
18. Install the halfshaft assembly, then carefully lower the vehicle.
19. Connect the negative battery cable.

Chilton® Automotive Information Systems. © 2004 Thomson Delmar Learning.

RETRACT (PUSH) WHITE  
TOOTHED CYLINDER  
THROUGH  
CABLE SPRING

COMPRESS TV CABLE  
SPRING



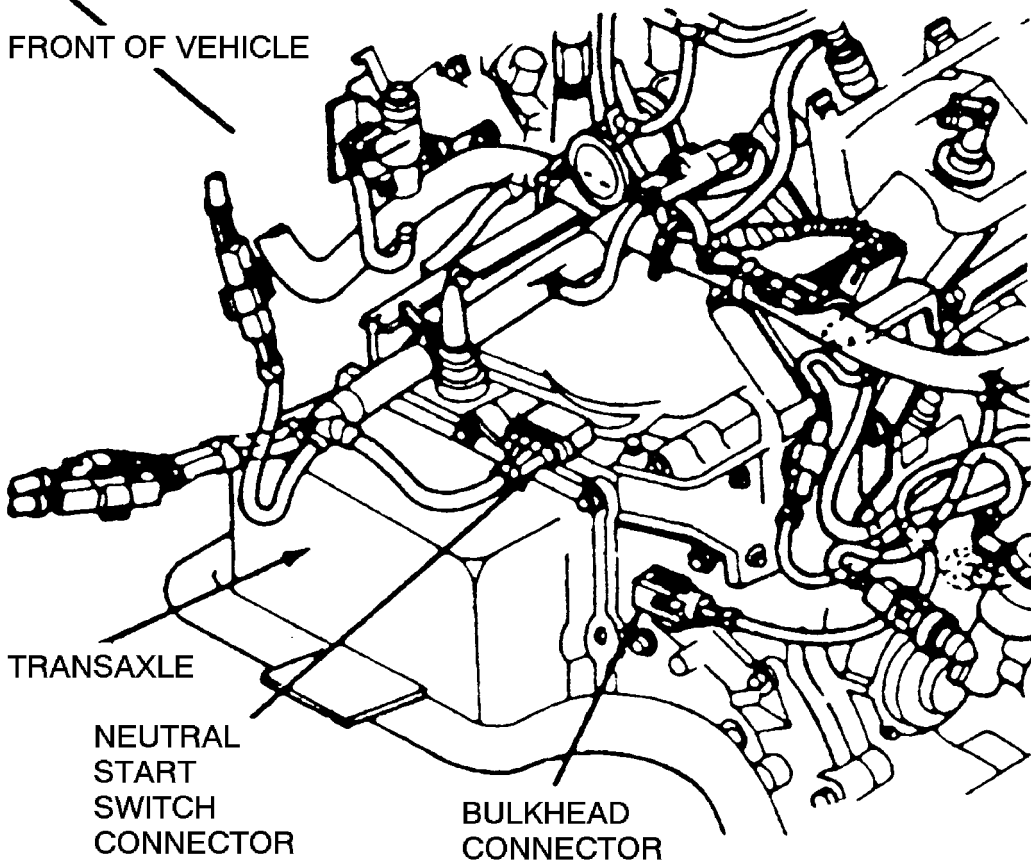


FRONT OF VEHICLE

TRANSAXLE

NEUTRAL  
START  
SWITCH  
CONNECTOR

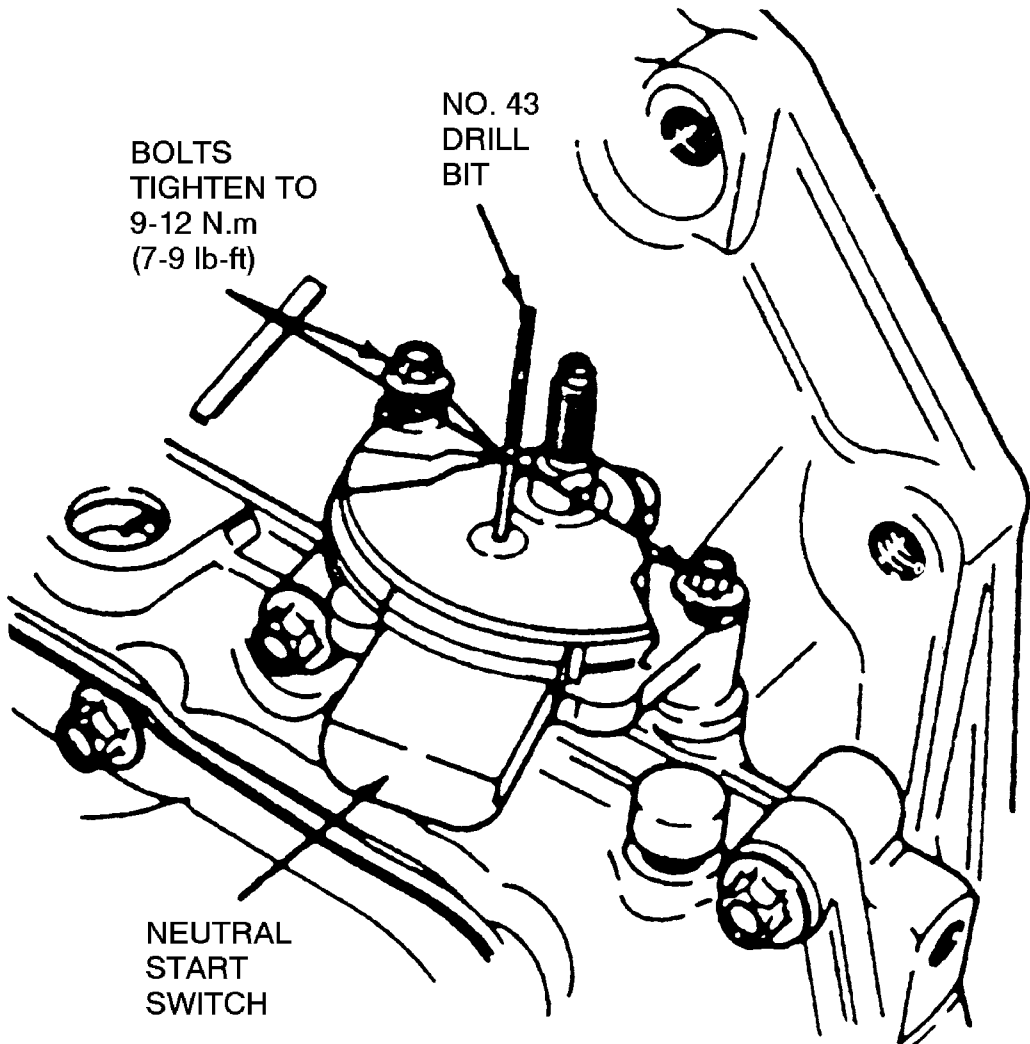
BULKHEAD  
CONNECTOR

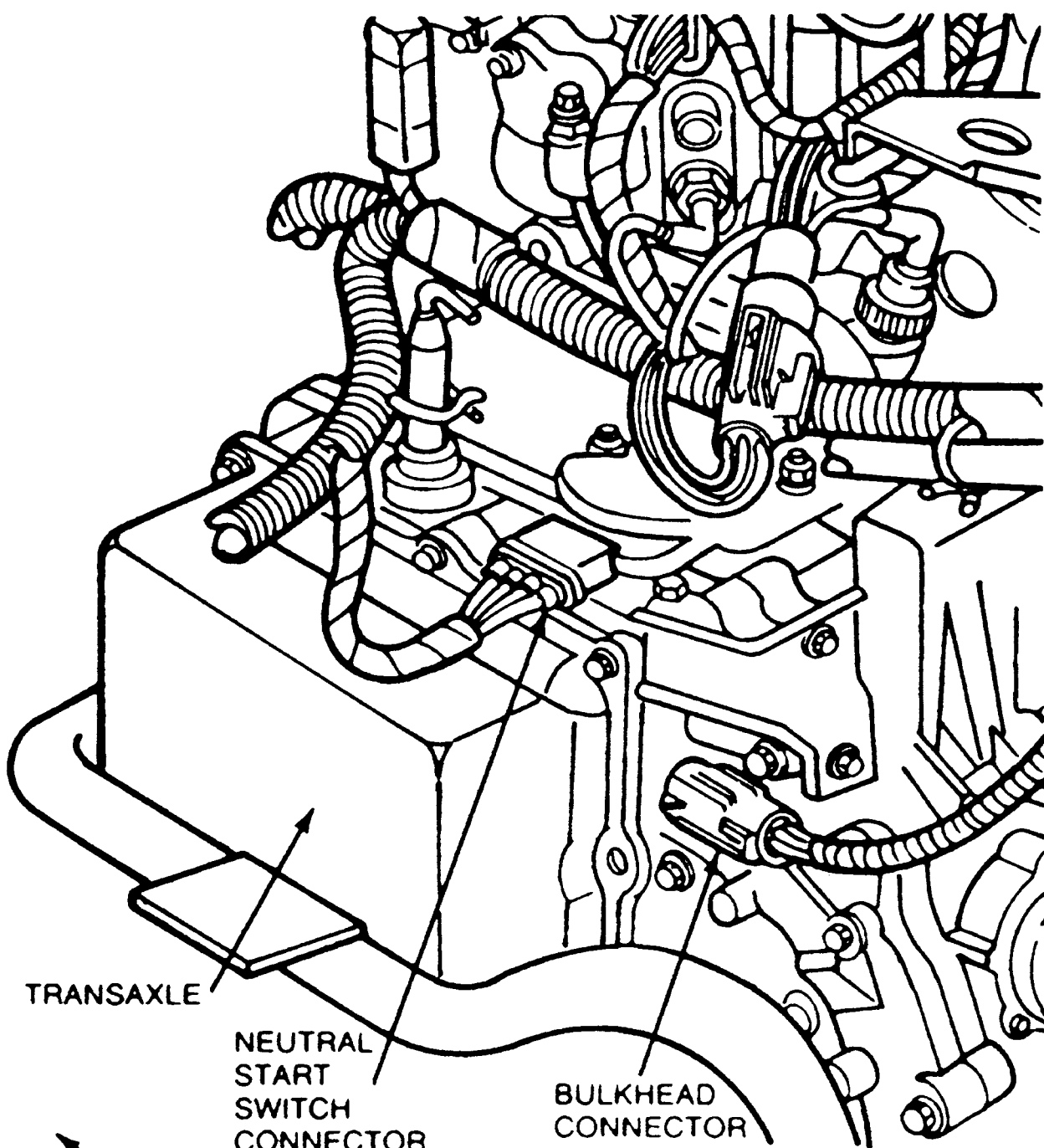


BOLTS  
TIGHTEN TO  
9-12 N.m  
(7-9 lb-ft)

NO. 43  
DRILL  
BIT

NEUTRAL  
START  
SWITCH



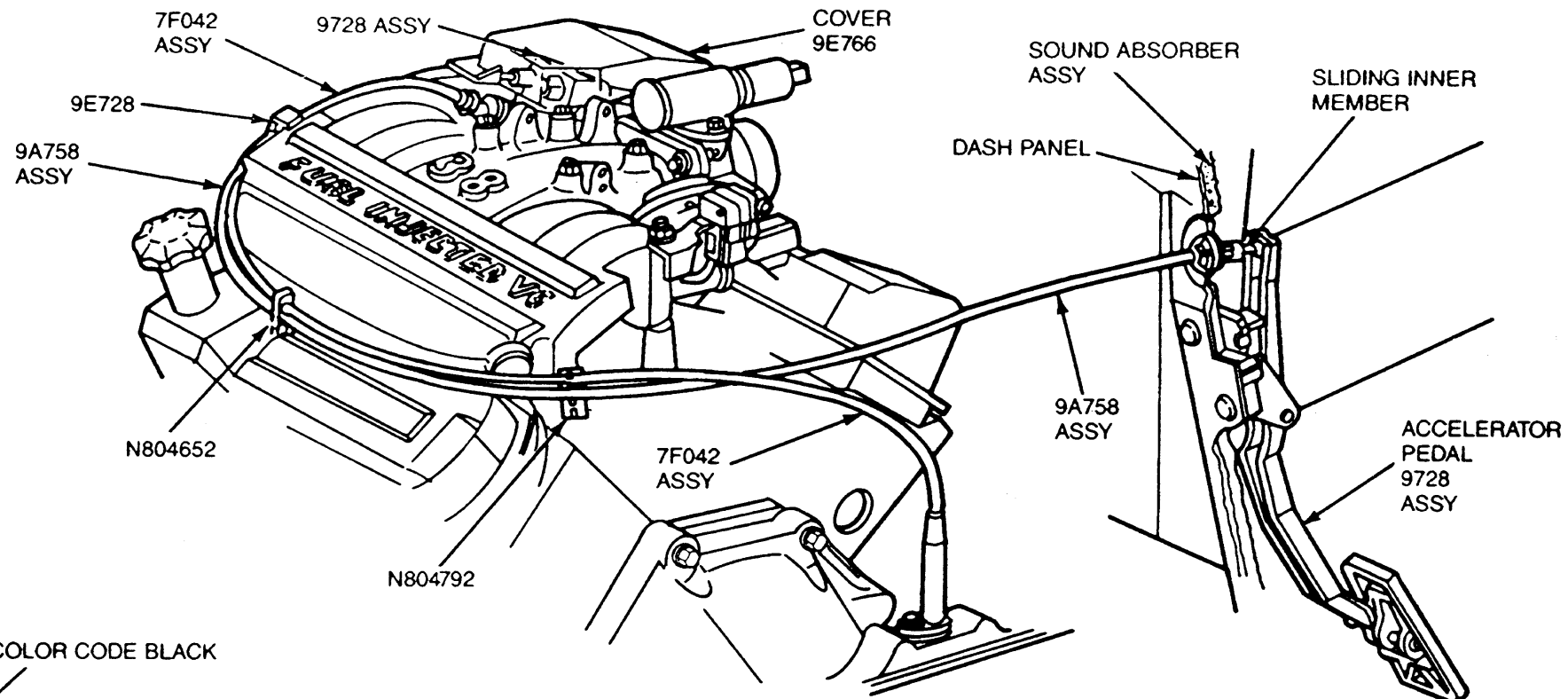


TRANSAXLE

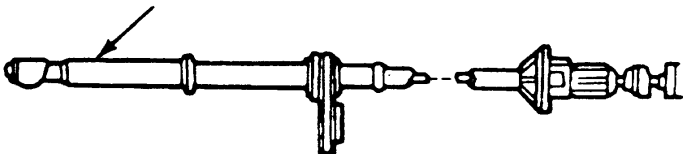
NEUTRAL  
START  
SWITCH  
CONNECTOR

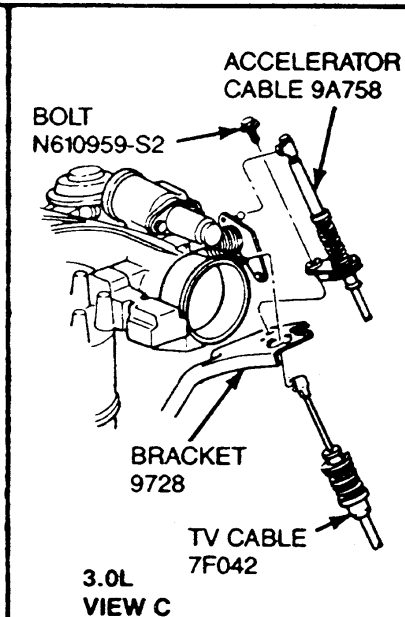
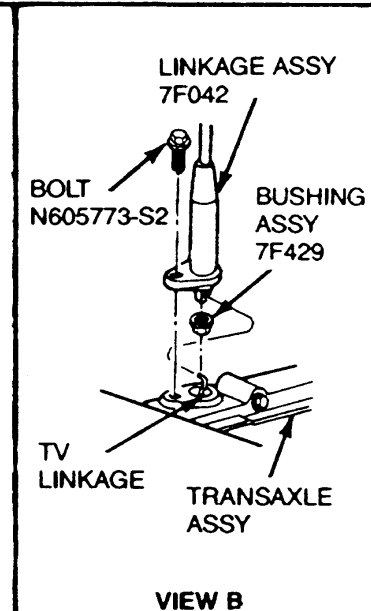
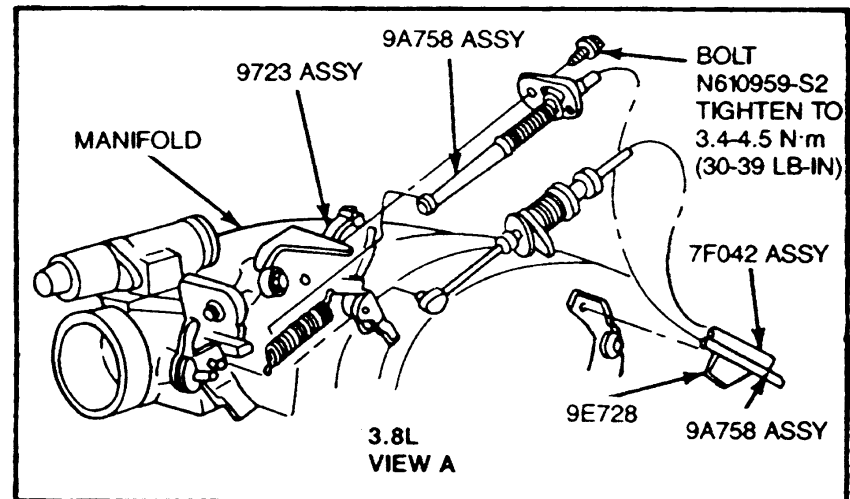
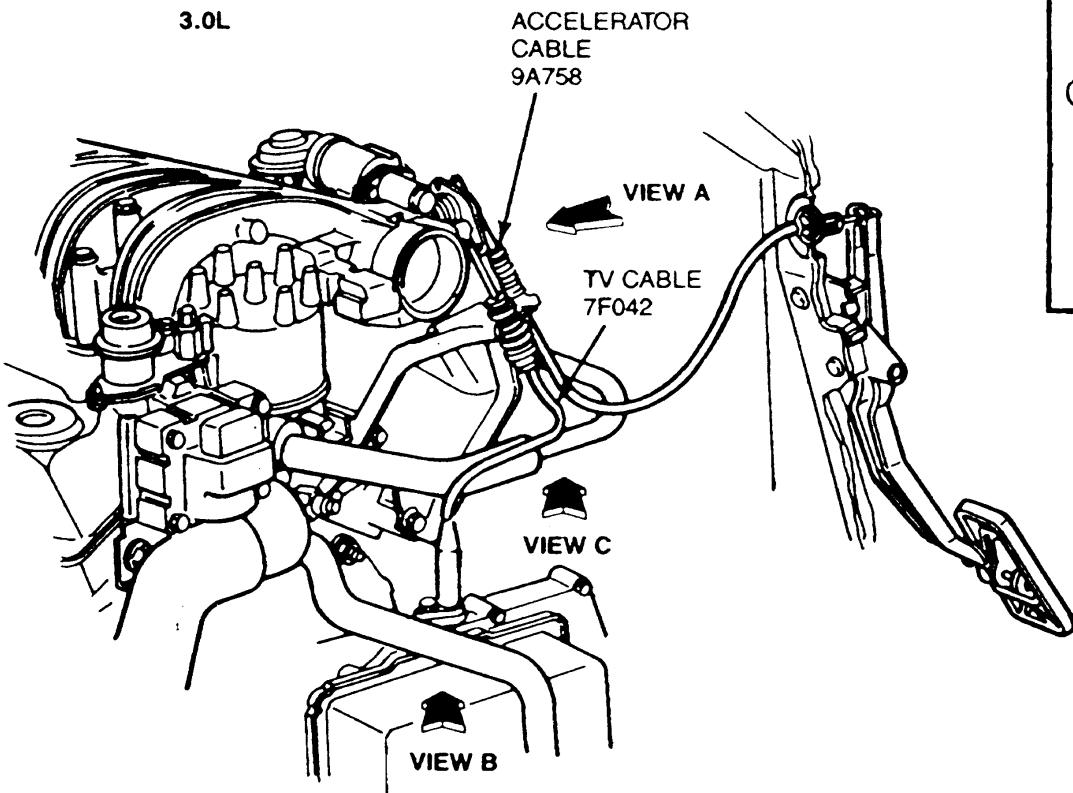
BULKHEAD  
CONNECTOR

TO FRONT OF BODY

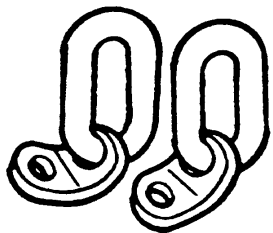


SHIELD COLOR CODE BLACK



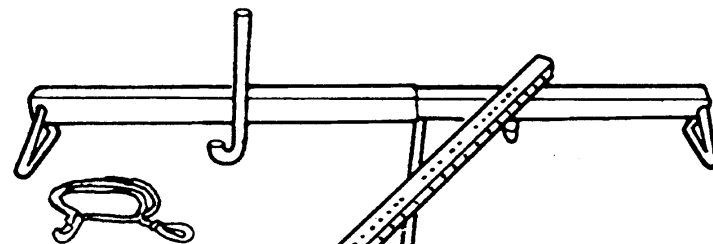






ENGINE LIFTING  
BRACKET D81L-6001-D

THROTTLE VALVE  
MECHANISM

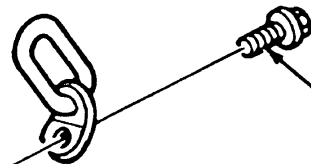


THREE BAR ENGINE  
SUPPORT D87L-6000-A



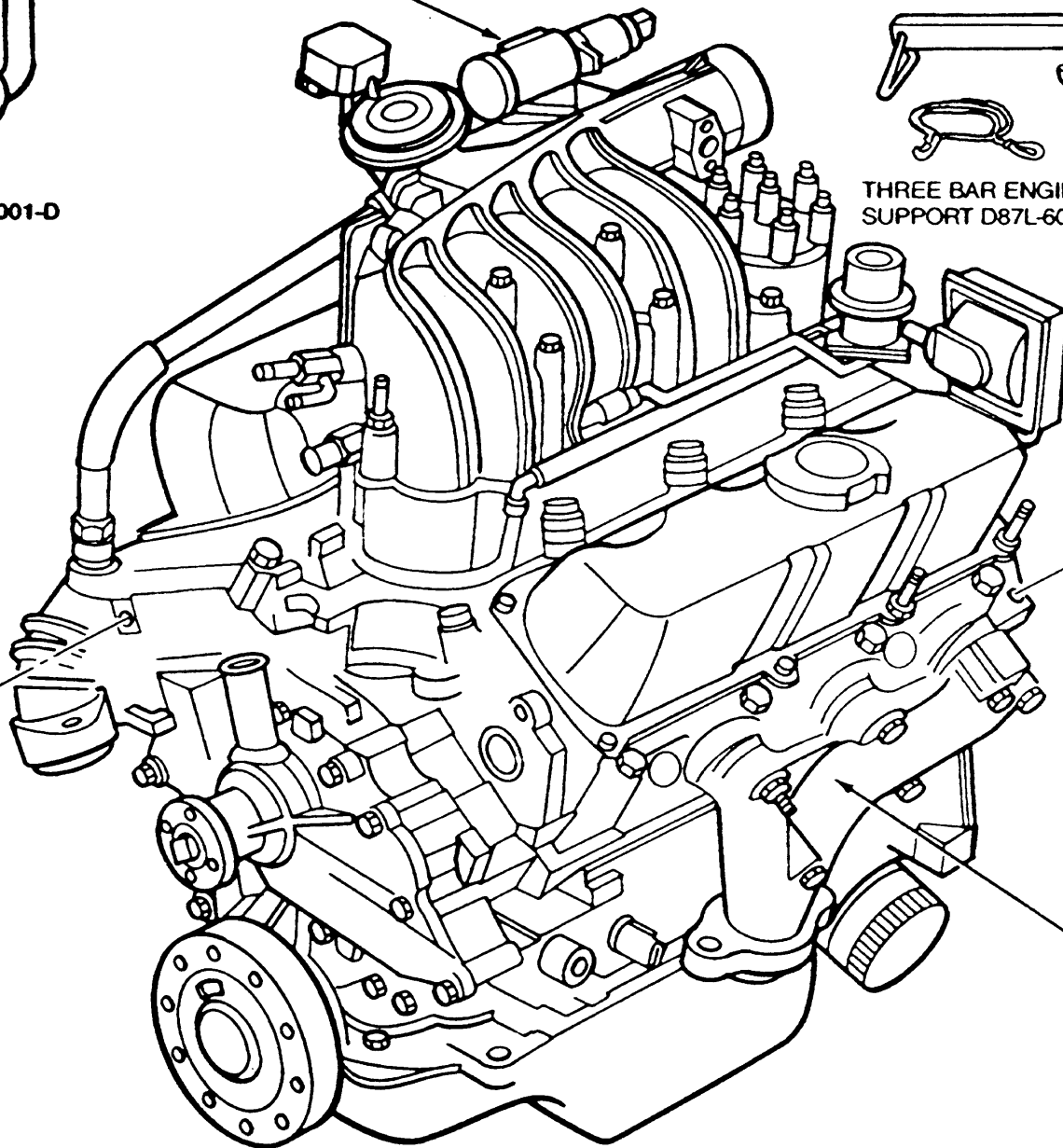
ENGINE SUPPORT BAR  
D87L-6000-A

ENGINE PLANT  
LIFTING EYE



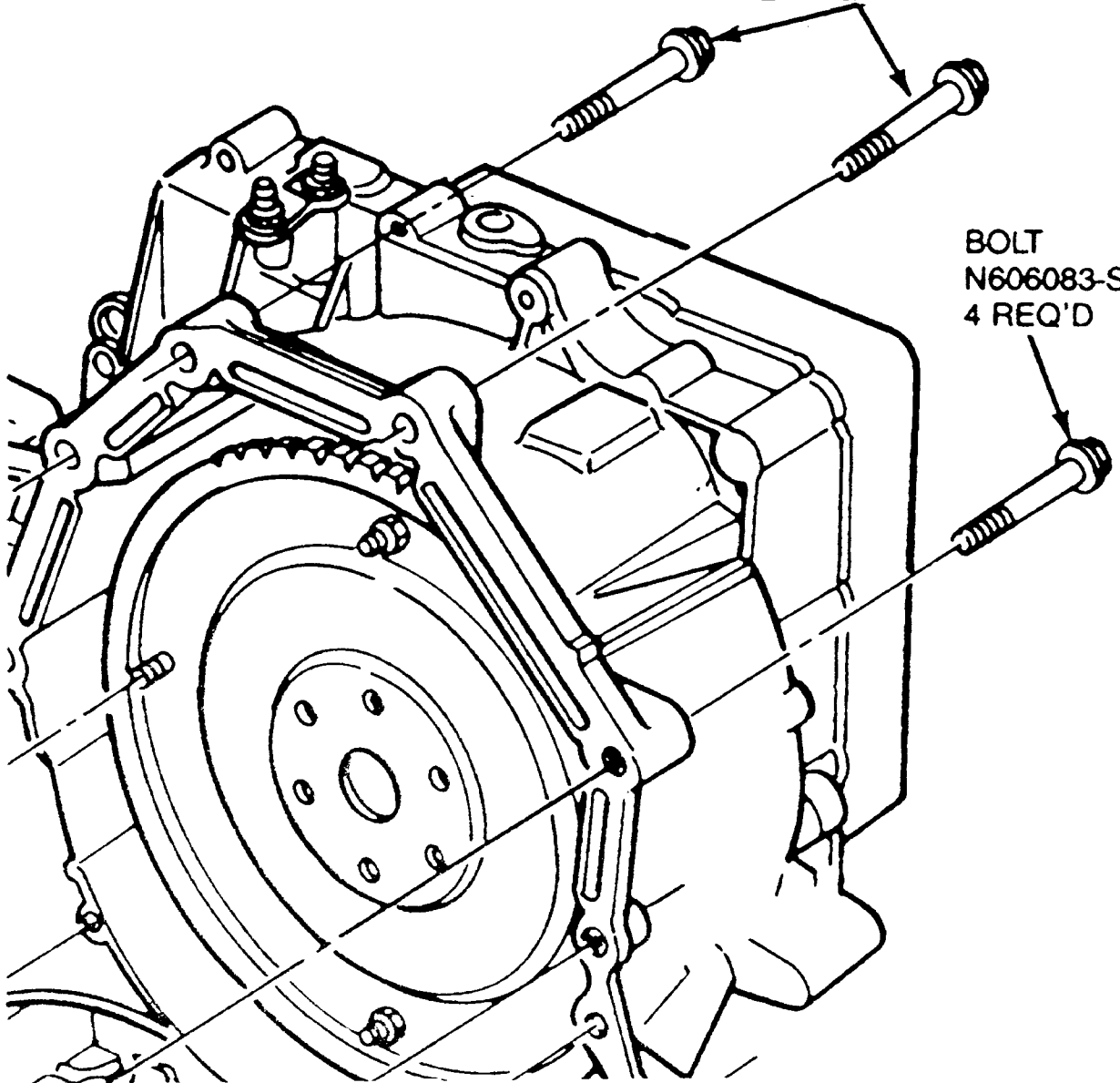
BOLT

NO. 4 EXHAUST  
RUNNER STUD



BOLT  
N804197-S2  
2 REQ'D

BOLT  
N606083-S2  
4 REQ'D

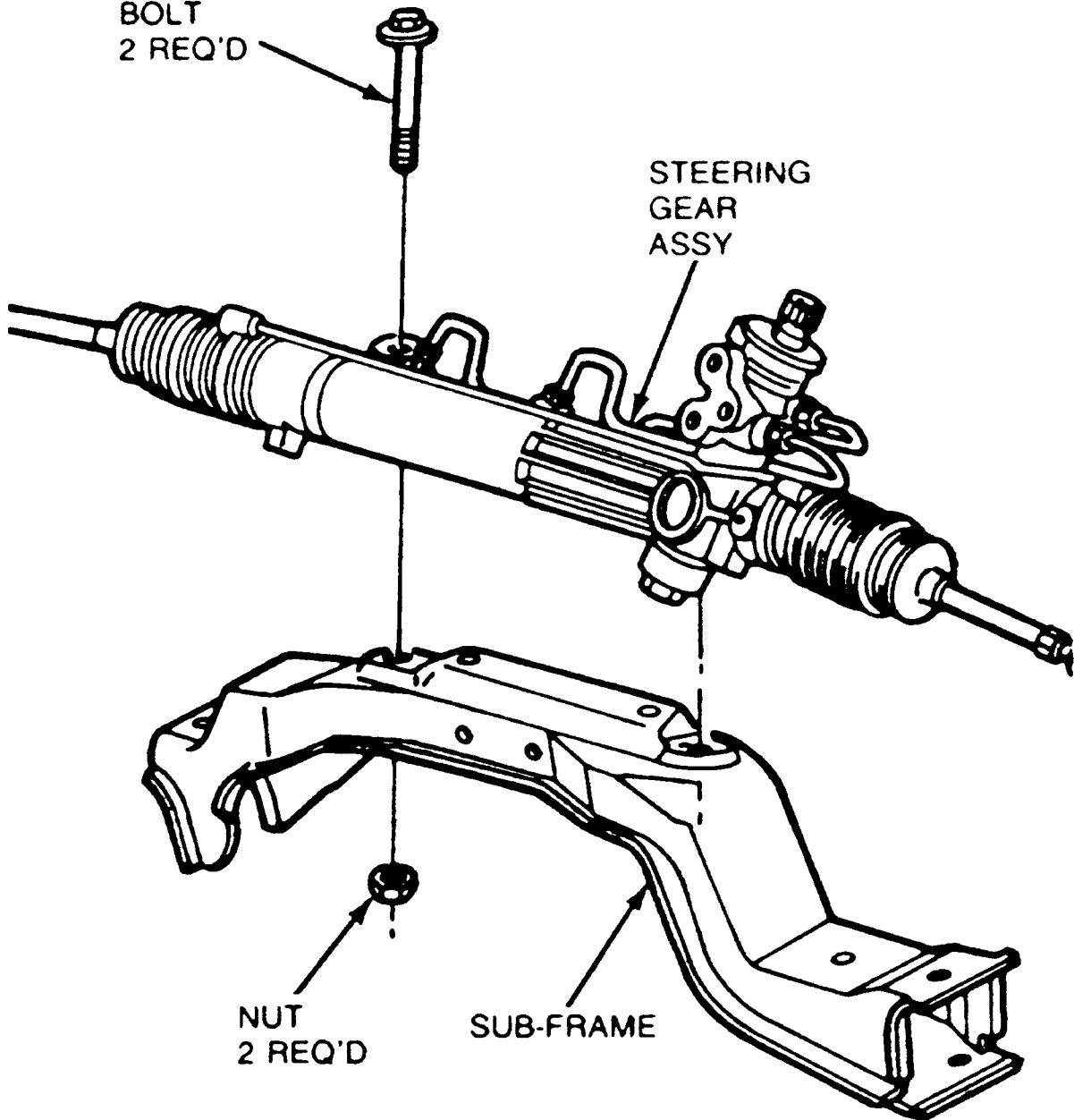


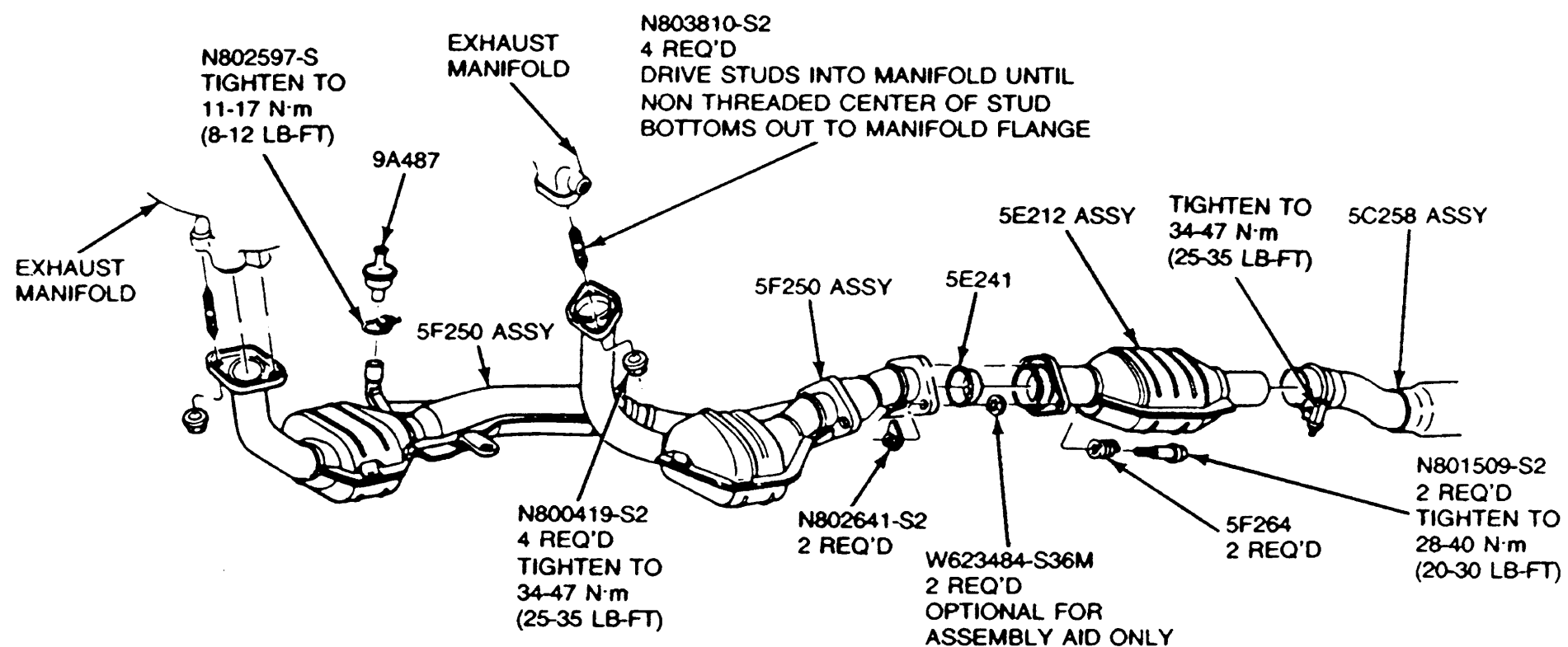
BOLT  
2 REQ'D

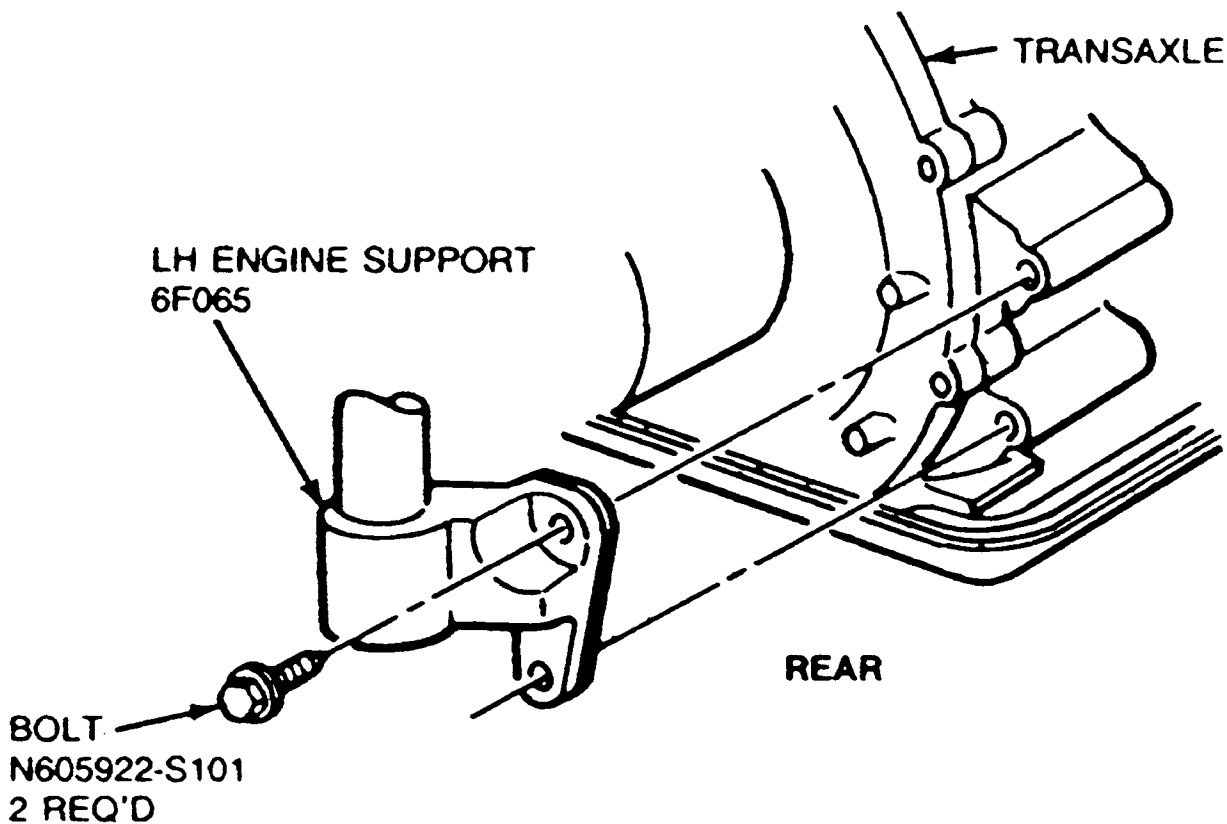
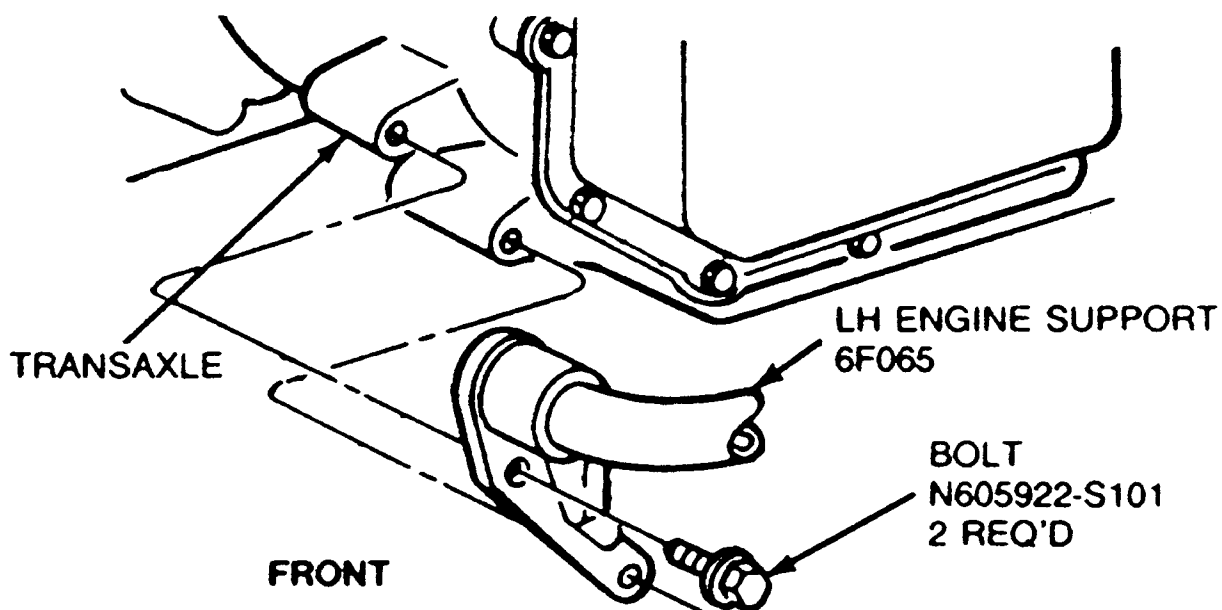
STEERING  
GEAR  
ASSY

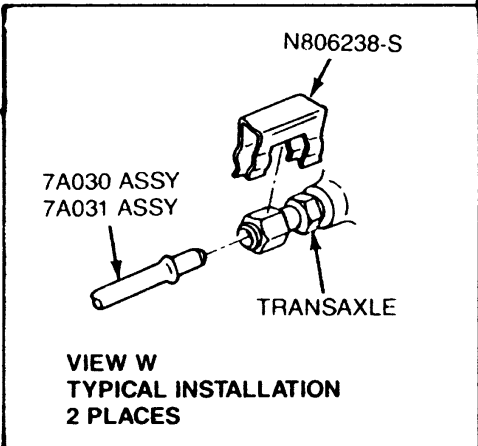
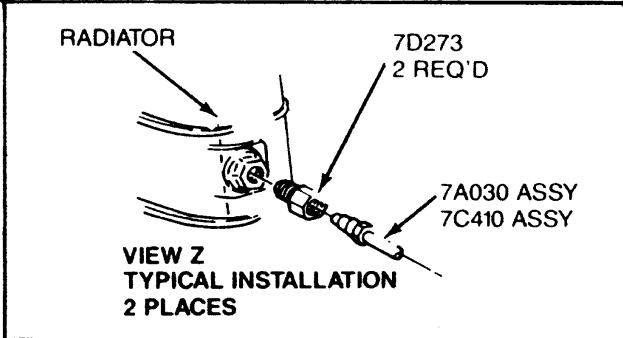
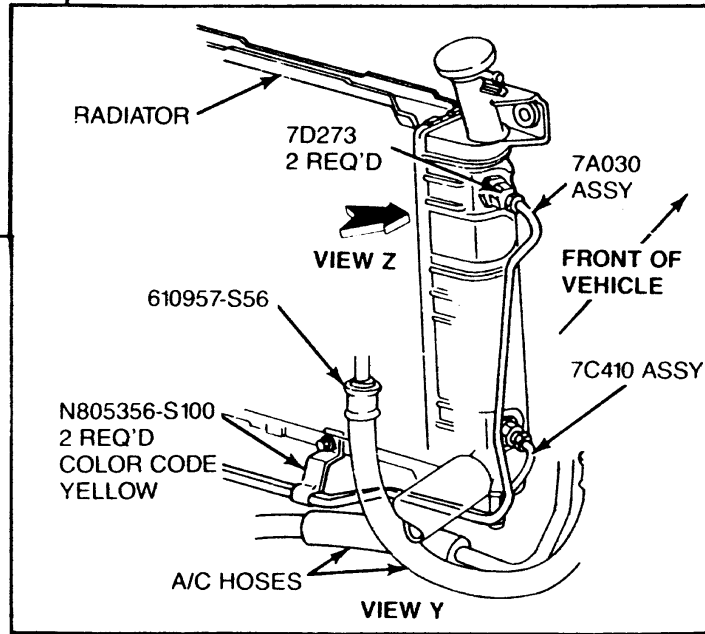
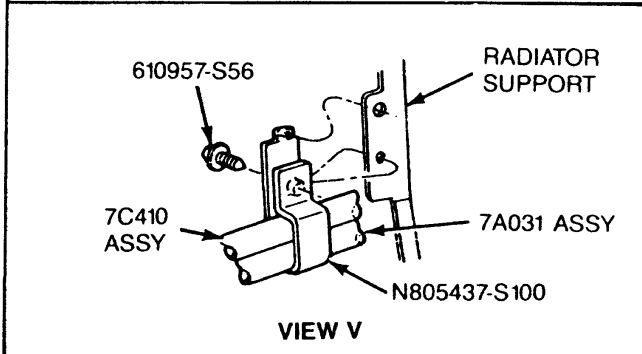
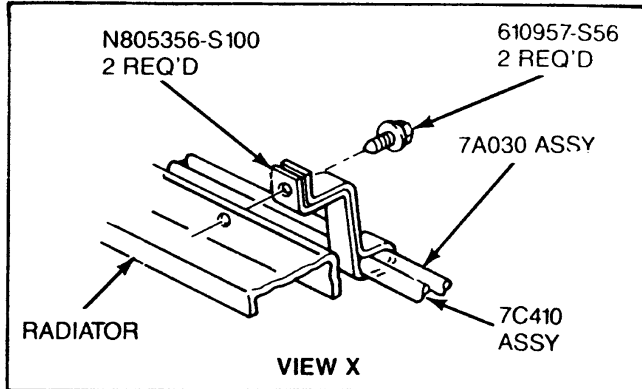
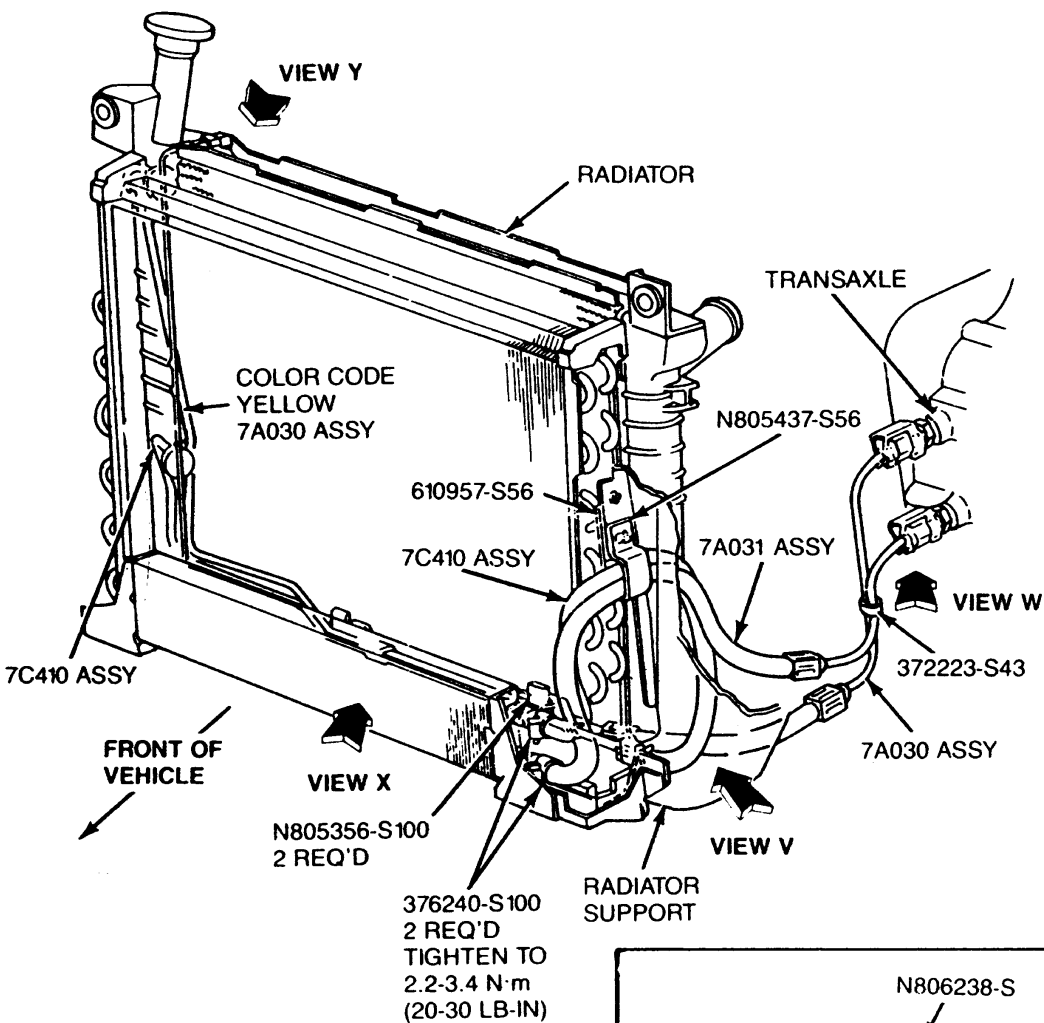
NUT  
2 REQ'D

SUB-FRAME









VEHICLE  
SPEED  
SENSOR  
9E731

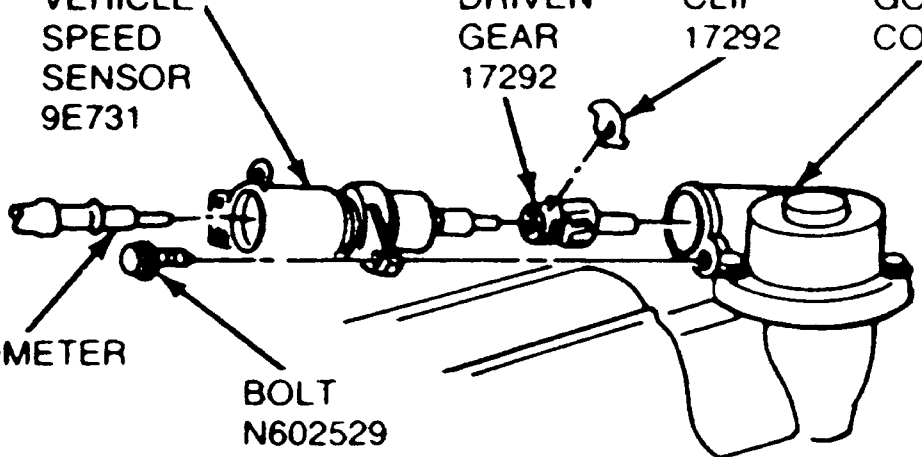
DRIVEN  
GEAR  
17292

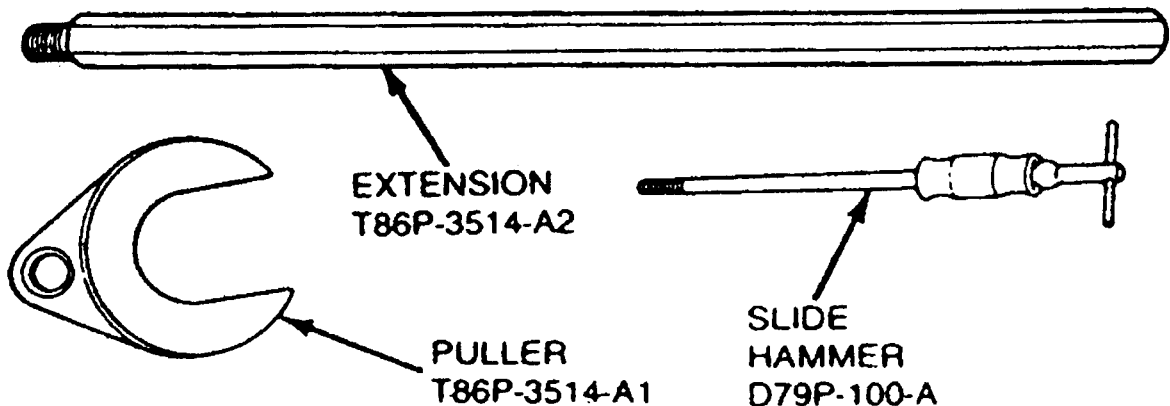
CLIP  
17292

GOVERNOR  
COVER

SPEEDOMETER  
CABLE  
9F714

BOLT  
N602529





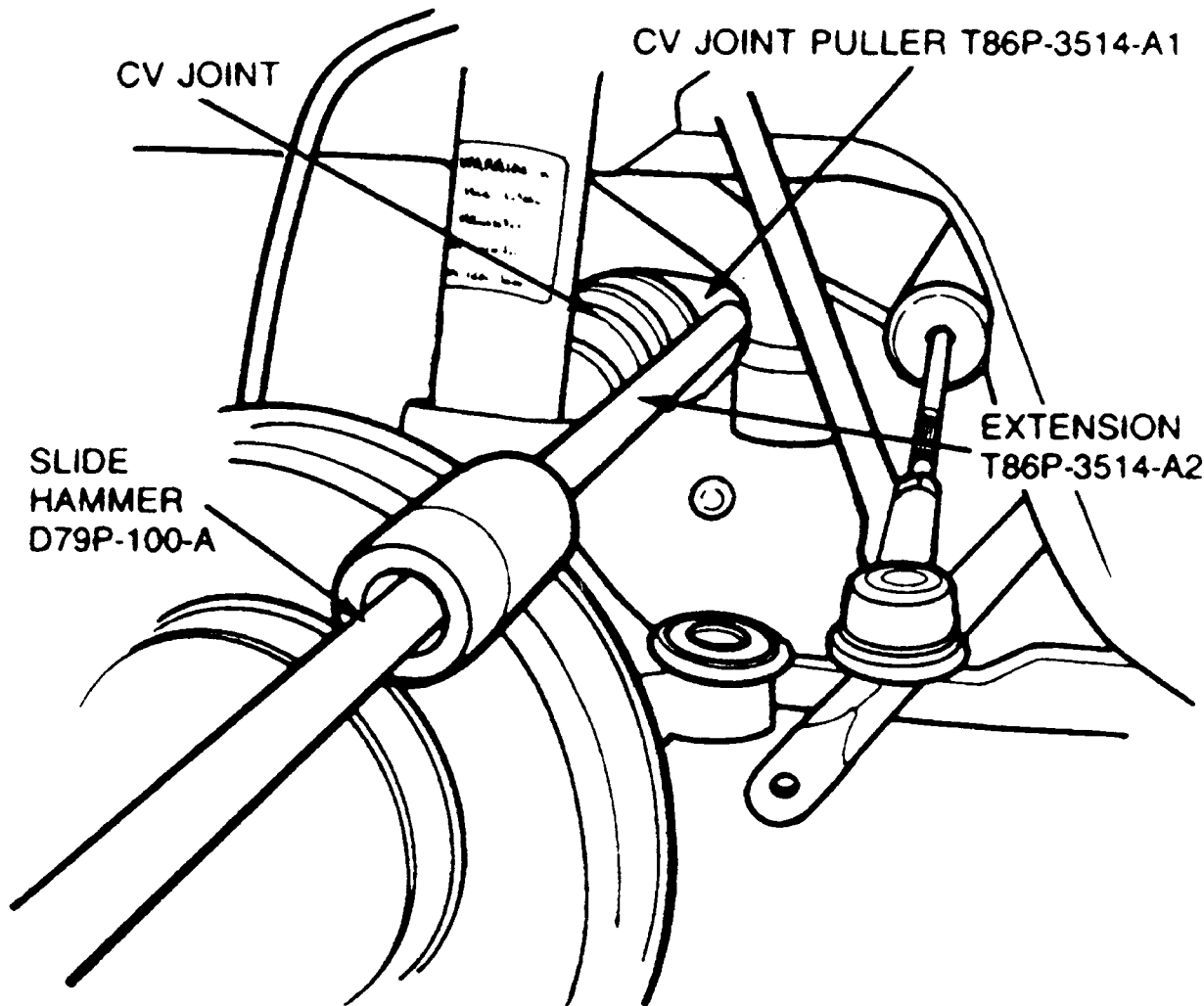


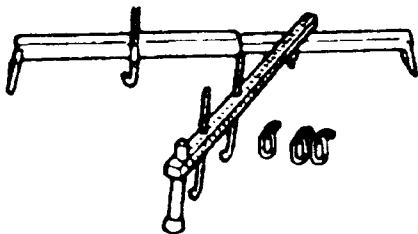
CV JOINT

CV JOINT PULLER T86P-3514-A1

SLIDE  
HAMMER  
D79P-100-A

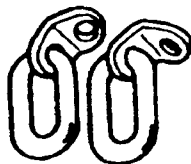
EXTENSION  
T86P-3514-A2





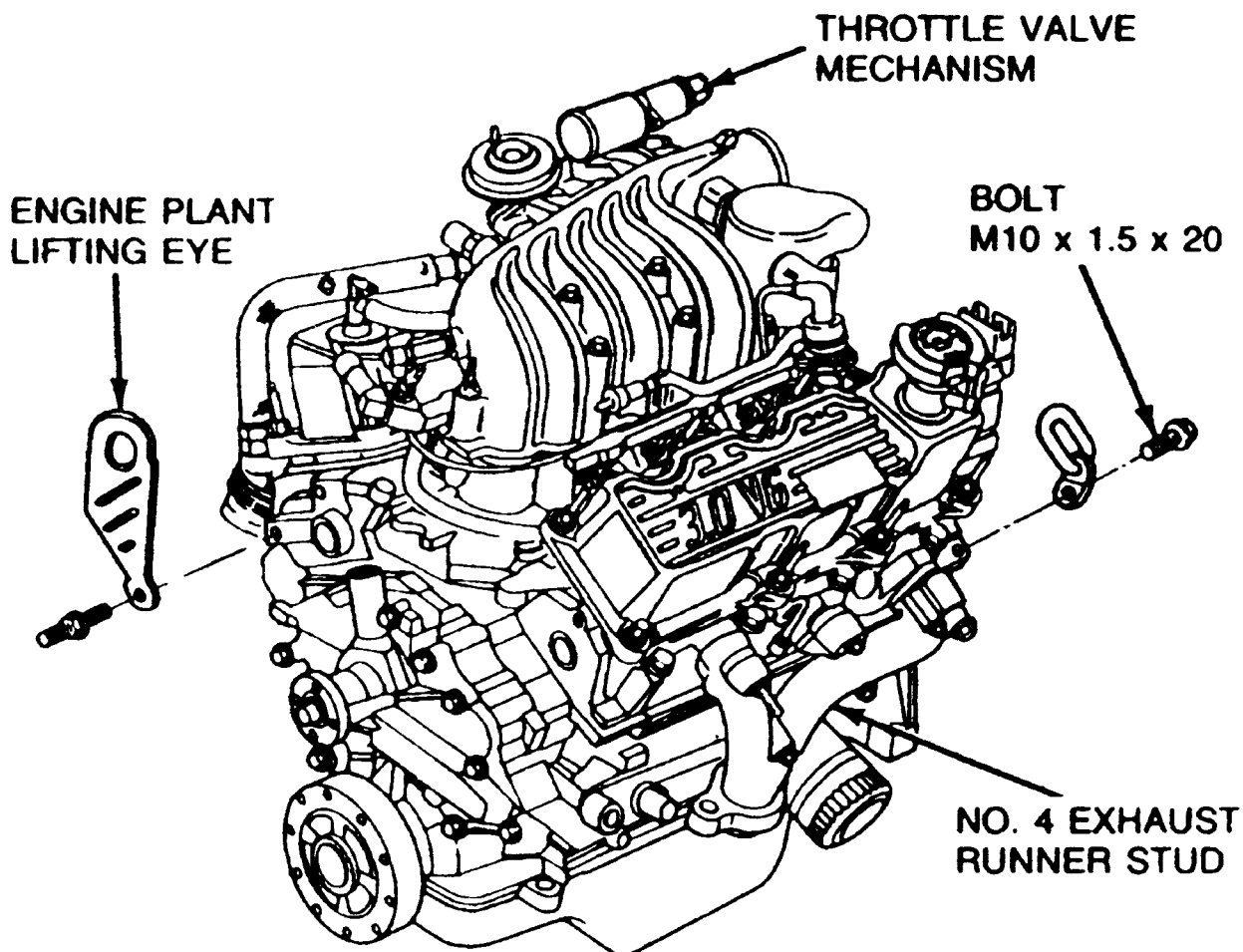
D88L-6000-A

THREE BAR ENGINE  
SUPPORT



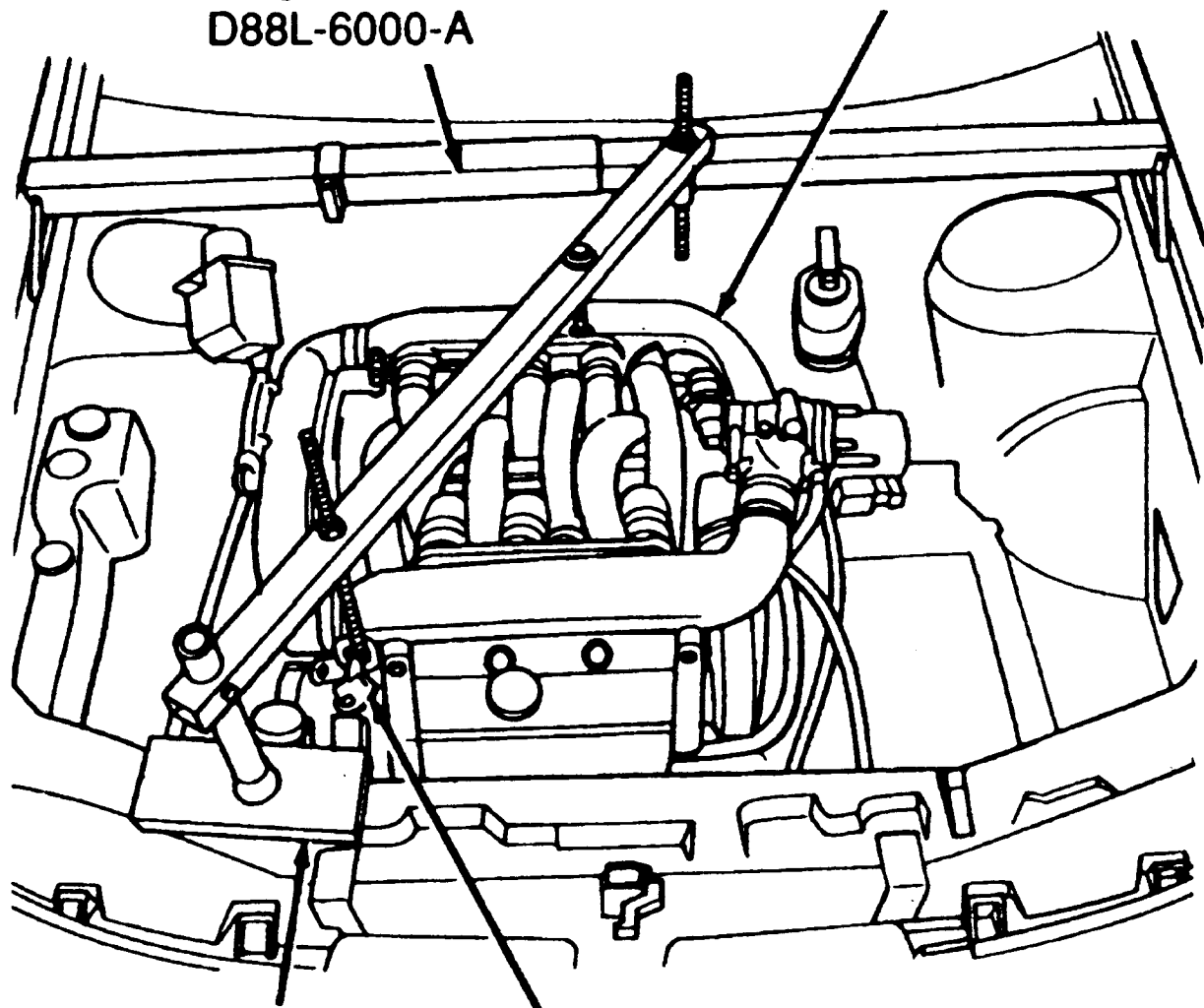
D81L-6001-D

ENGINE LIFTING EYES



THREE BAR  
ENGINE SUPPORT  
D88L-6000-A

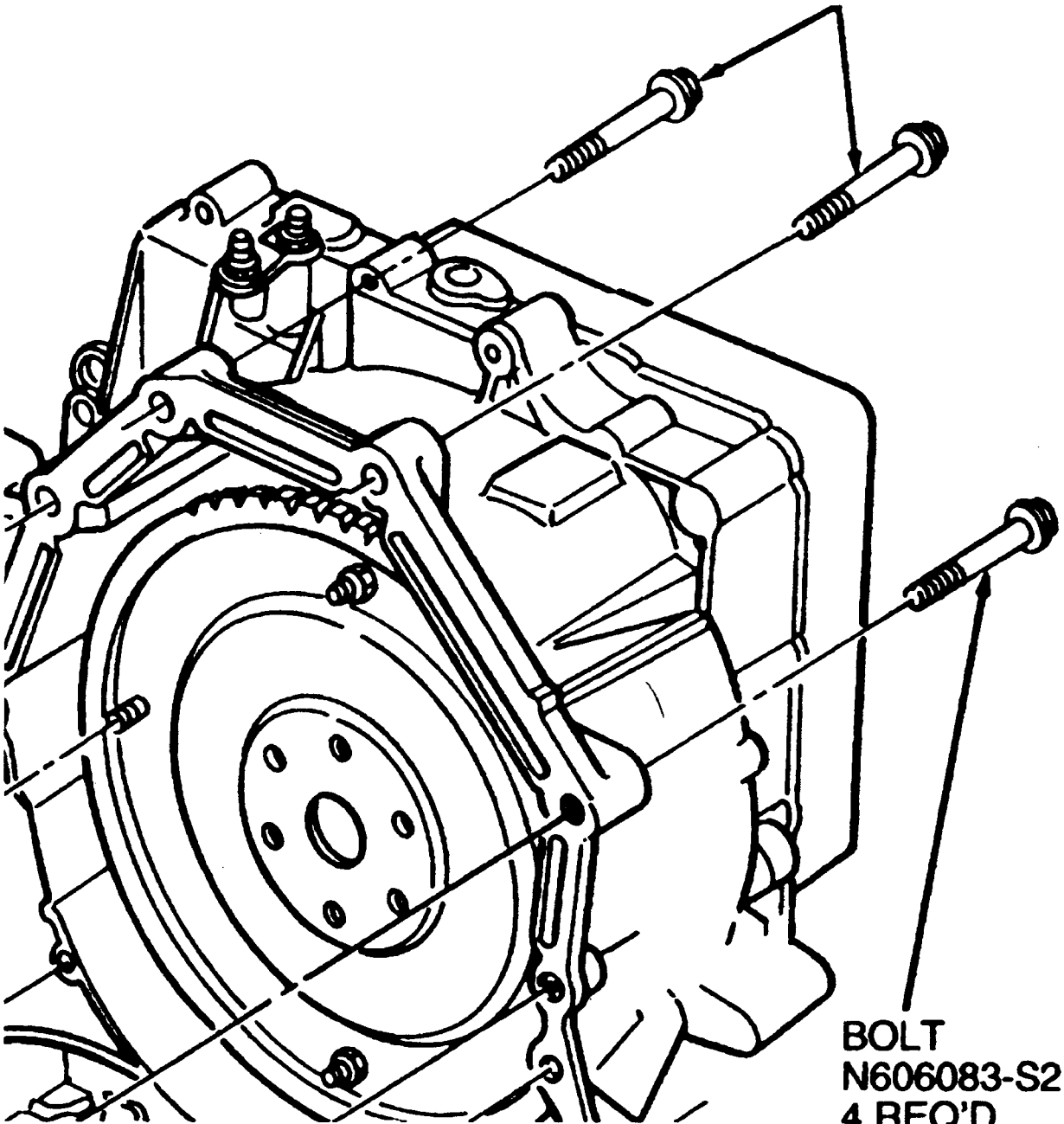
ENGINE LIFTING  
BRACKET D89L-6001-A



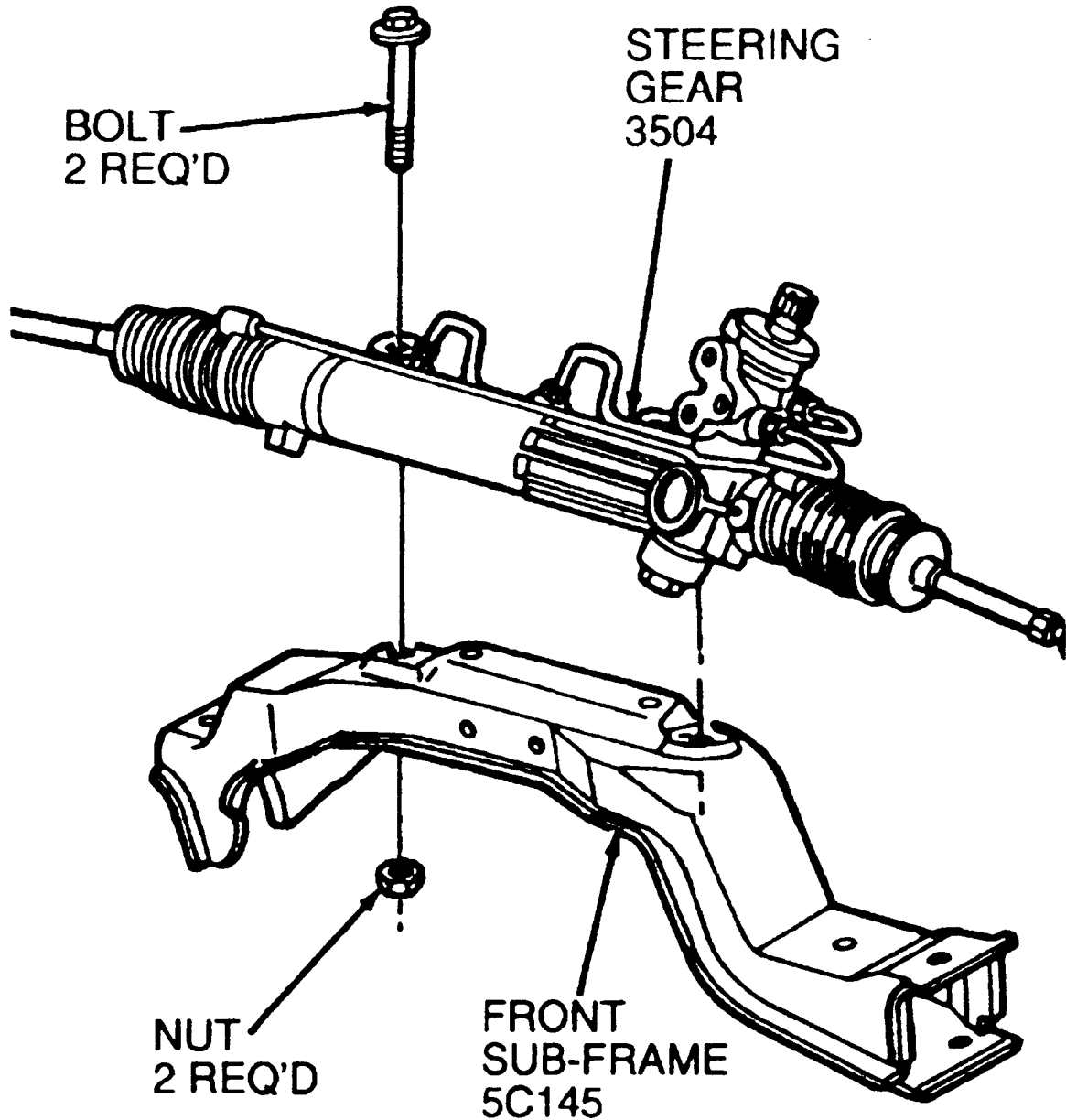
WOOD  
BLOCK

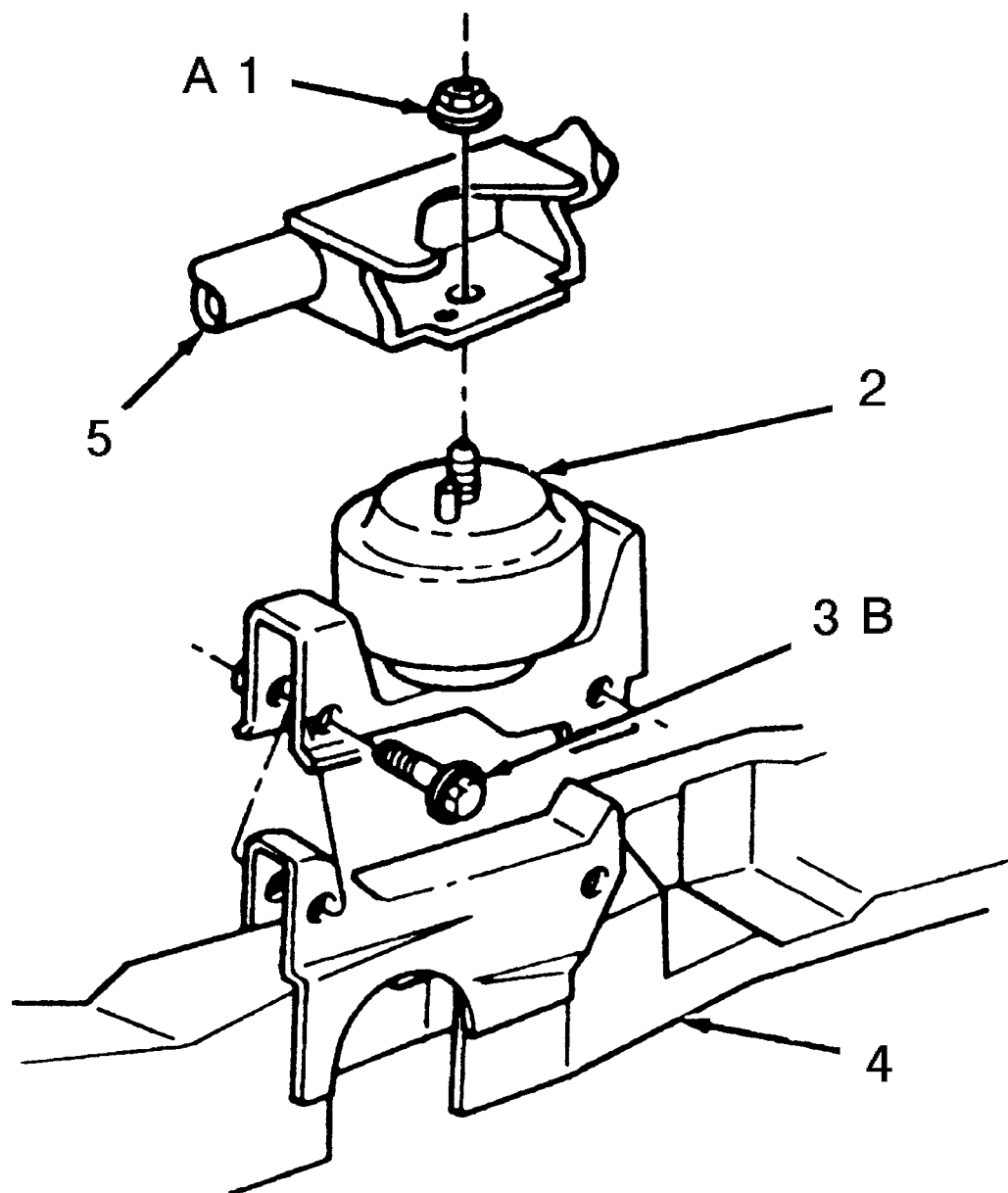
ENGINE LIFTING  
EYE D81L-6001-D

BOLT  
N804197-S2  
2 REQ'D

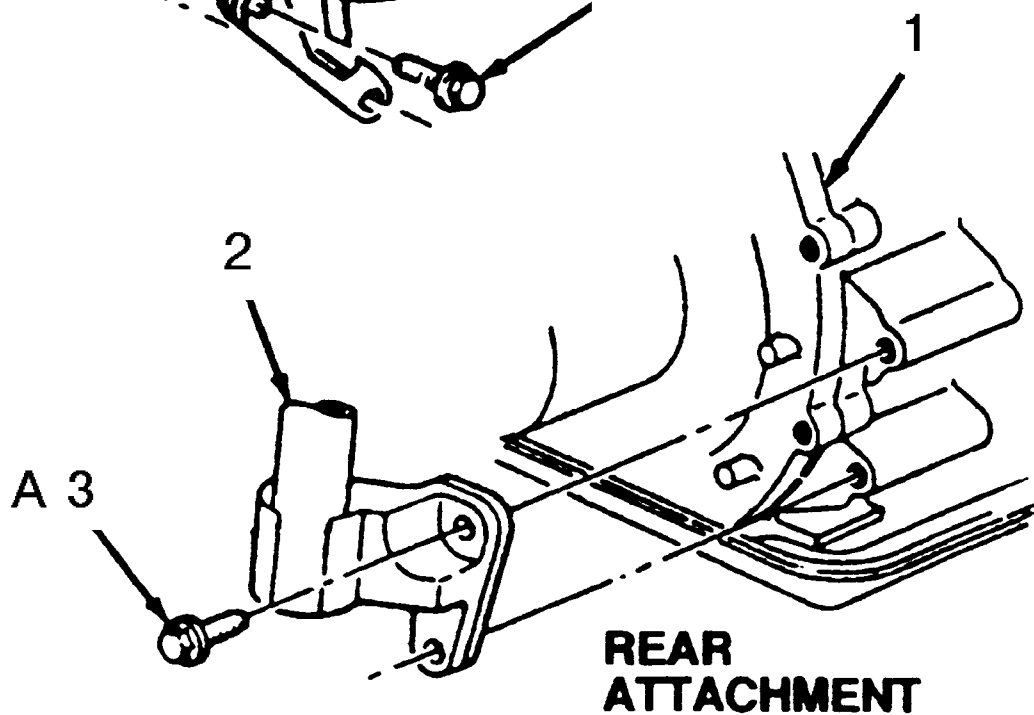
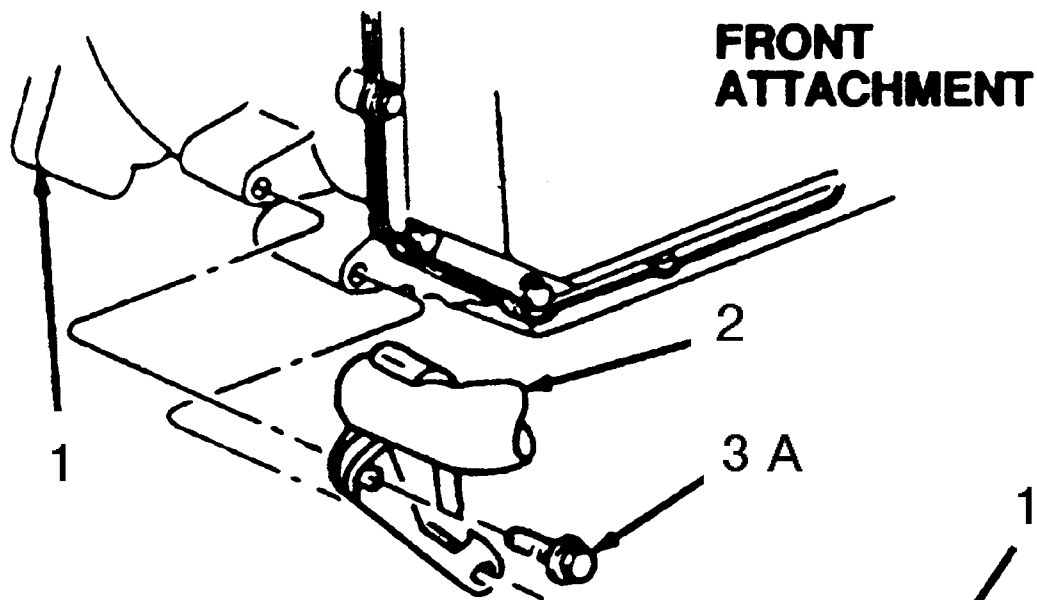


BOLT  
N606083-S2  
4 REQ'D

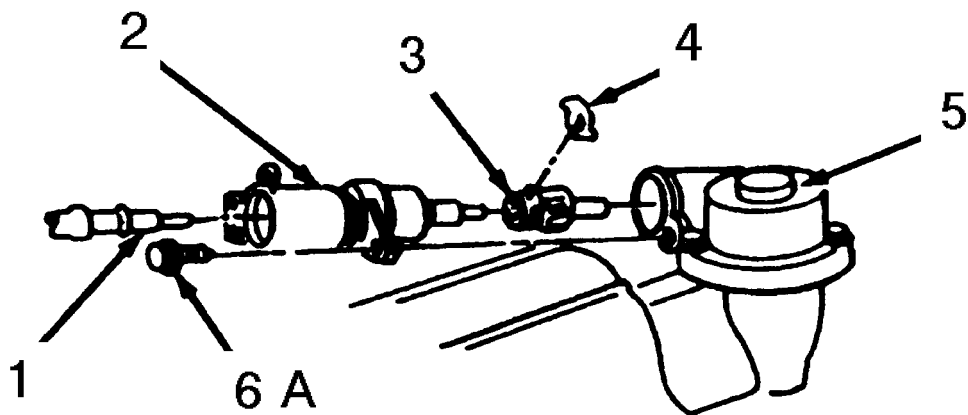




- 1. Nut
- 2. Engine mount assy
- 3. Bolt (2 req'd)
- 4. Inner floor side member
- 5. Support assy
- A. Tighten to 74-102 N.m  
(55-75 lb-ft)
- B. Tighten to 81-116 N.m  
(60-85 lb-ft)

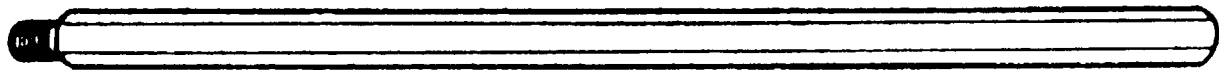


1. Transaxle case
2. Support assy
3. Bolt (2 req'd)
- A. Tighten to 54-75 N.m  
(40-55 lb-ft)

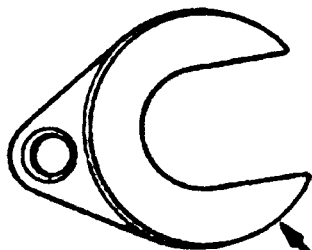


1. Speed control cable and vehicle speed sensor
  2. Vehicle speed sensor
  3. Speedometer driven gear
  4. Speedometer driven gear retainer
  5. Speedometer cover
  6. Bolt
- A. Tighten to 3.4-4.5 N.m  
(31-39 lb-in)

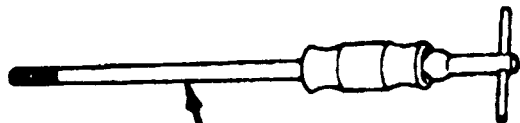




CV JOINT PULLER  
EXTENSION  
T86P-3514-A2



CV JOINT  
PULLER  
T86P-3514-A1



IMPACT SLIDE  
HAMMER  
T50T-100-A

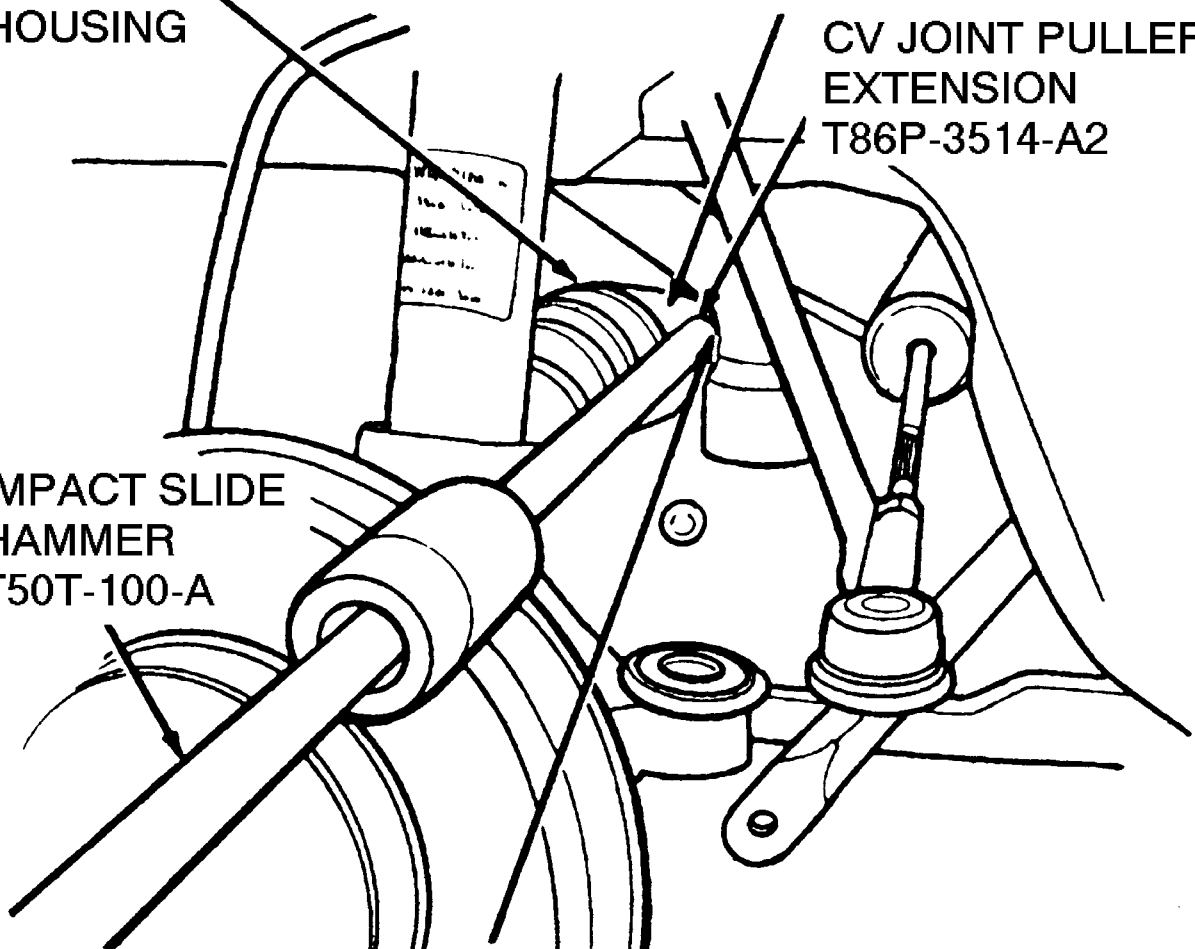
INBOARD  
CV JOINT  
HOUSING

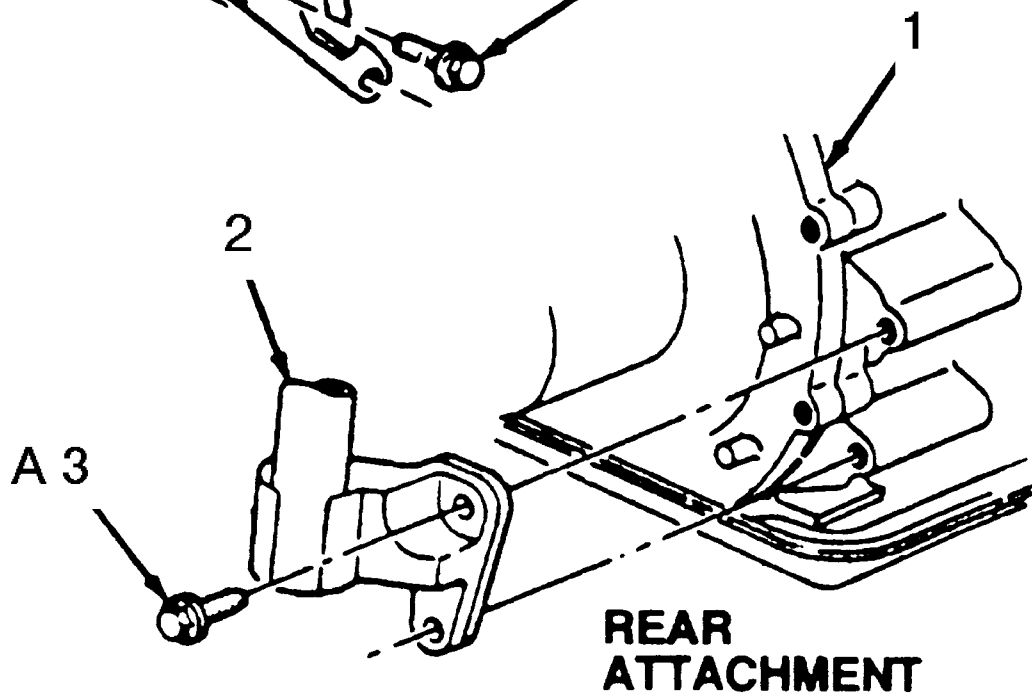
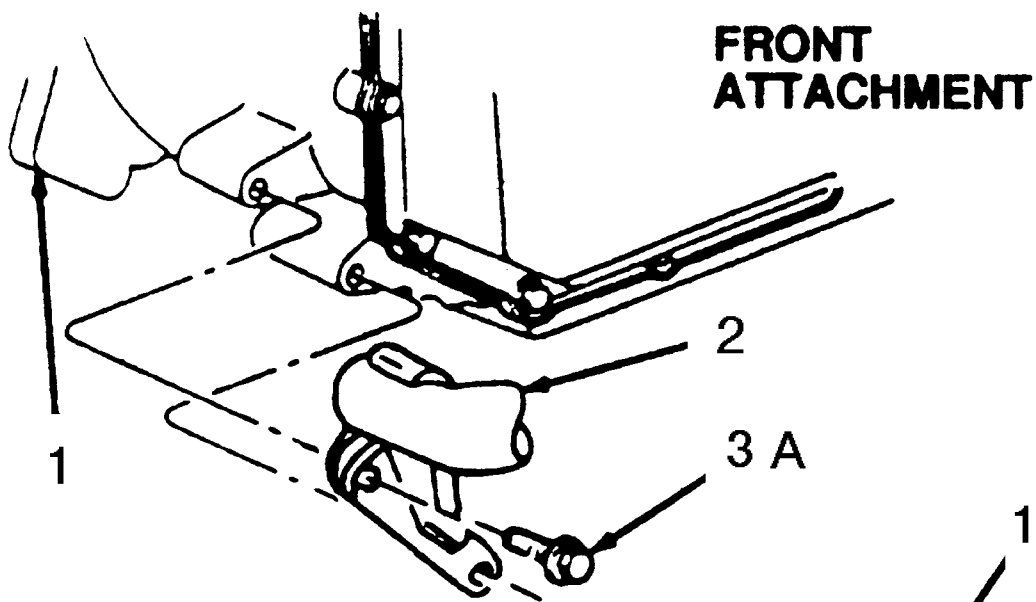
CV JOINT PULLER T86P-3514-A1  
(SHO AUTOMATIC ONLY T89P-3415-B)

CV JOINT PULLER  
EXTENSION  
T86P-3514-A2

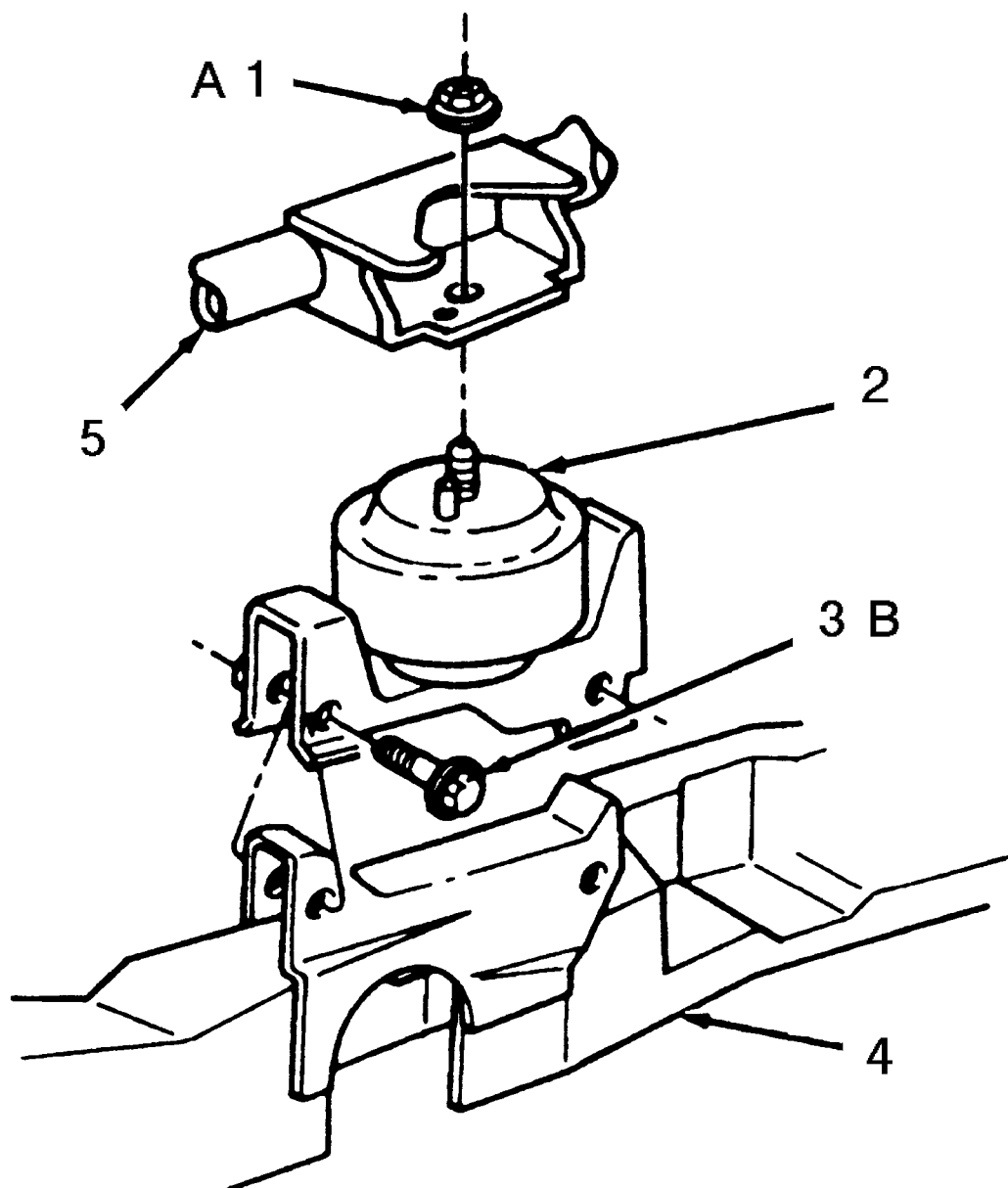
IMPACT SLIDE  
HAMMER  
T50T-100-A

**CAUTION: MAKE SURE  
PULLER DOES NOT CONTACT  
TRANSMISSION SPEED SENSOR  
OR DAMAGE WILL RESULT**



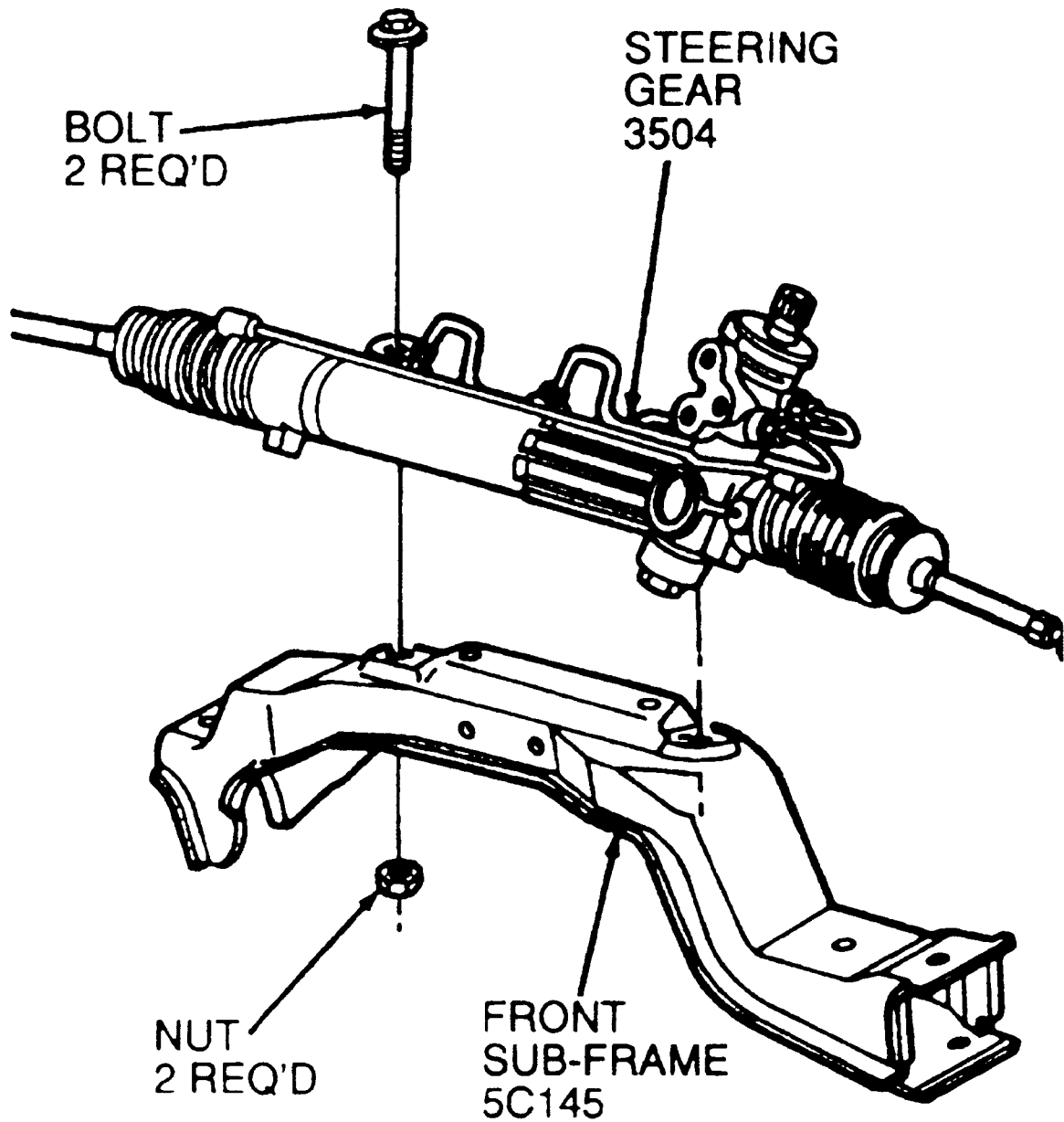


- 1. Transaxle case
- 2. Support assy
- 3. Bolt (2 req'd)
- A. Tighten to 54-75 N.m  
(40-55 lb-ft)



- 1. Nut
- 2. Engine mount assy
- 3. Bolt (2 req'd)
- 4. Inner floor side member
- 5. Support assy

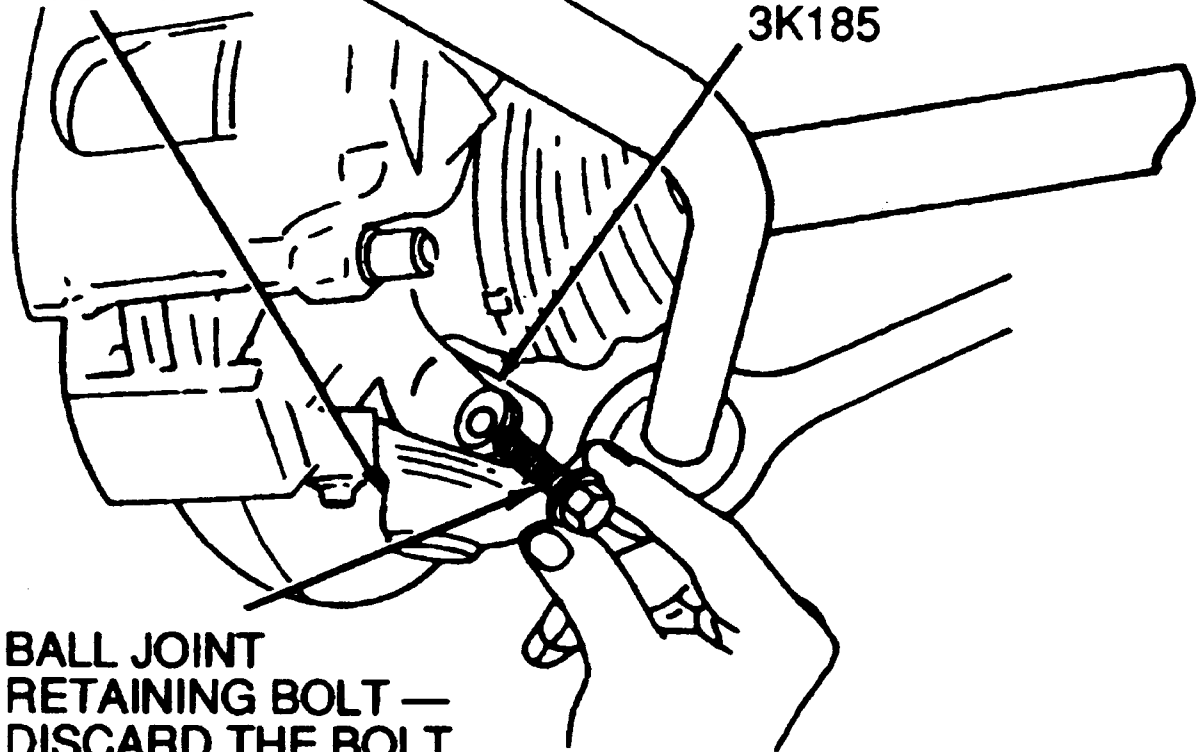
- A. Tighten to 74-102 N.m  
(55-75 lb-ft)
- B. Tighten to 81-116 N.m  
(60-85 lb-ft)



**LOWER BALL  
JOINT**

**FRONT WHEEL  
KNUCKLE  
3K185**

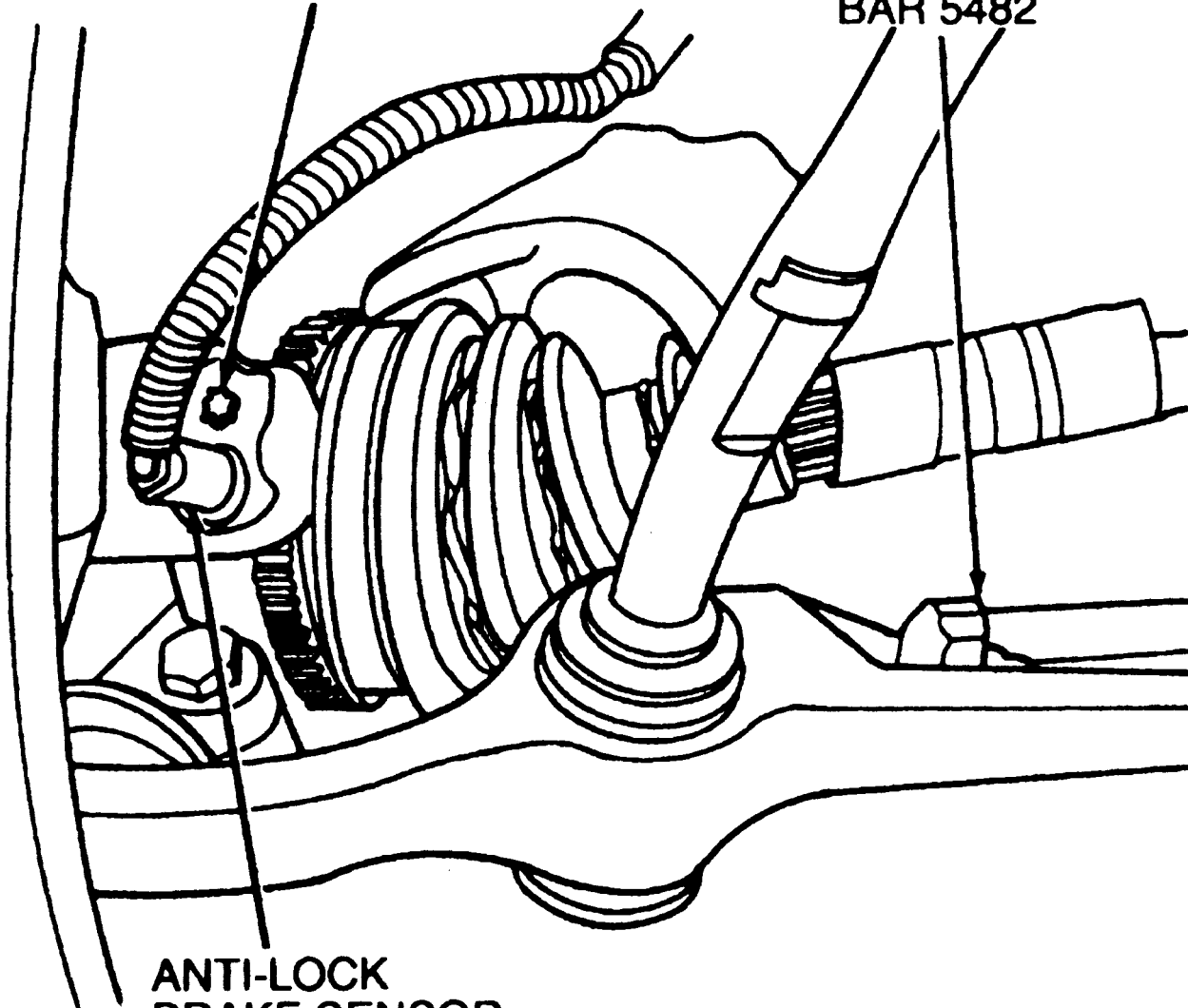
**BALL JOINT  
RETAINING BOLT —  
DISCARD THE BOLT  
AND NUT AFTER  
REMOVAL**



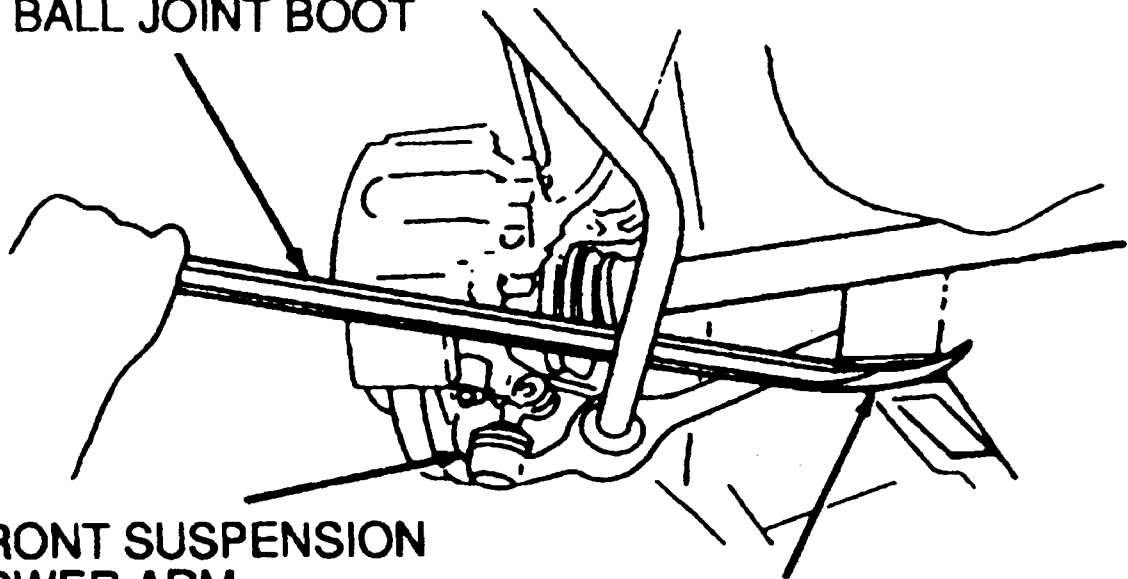
BOLT

STABILIZER  
BAR 5482

ANTI-LOCK  
BRAKE SENSOR  
2C204



**PRY BAR  
DO NOT ALLOW PRY  
BAR TO DAMAGE  
BALL JOINT BOOT**



**FRONT SUSPENSION  
LOWER ARM  
BALL JOINT**

**NOTE: EXERCISE CARE NOT TO  
DAMAGE OR CUT BALL JOINT  
BOOT. PRY BAR MUST NOT  
CONTACT LOWER ARM.**



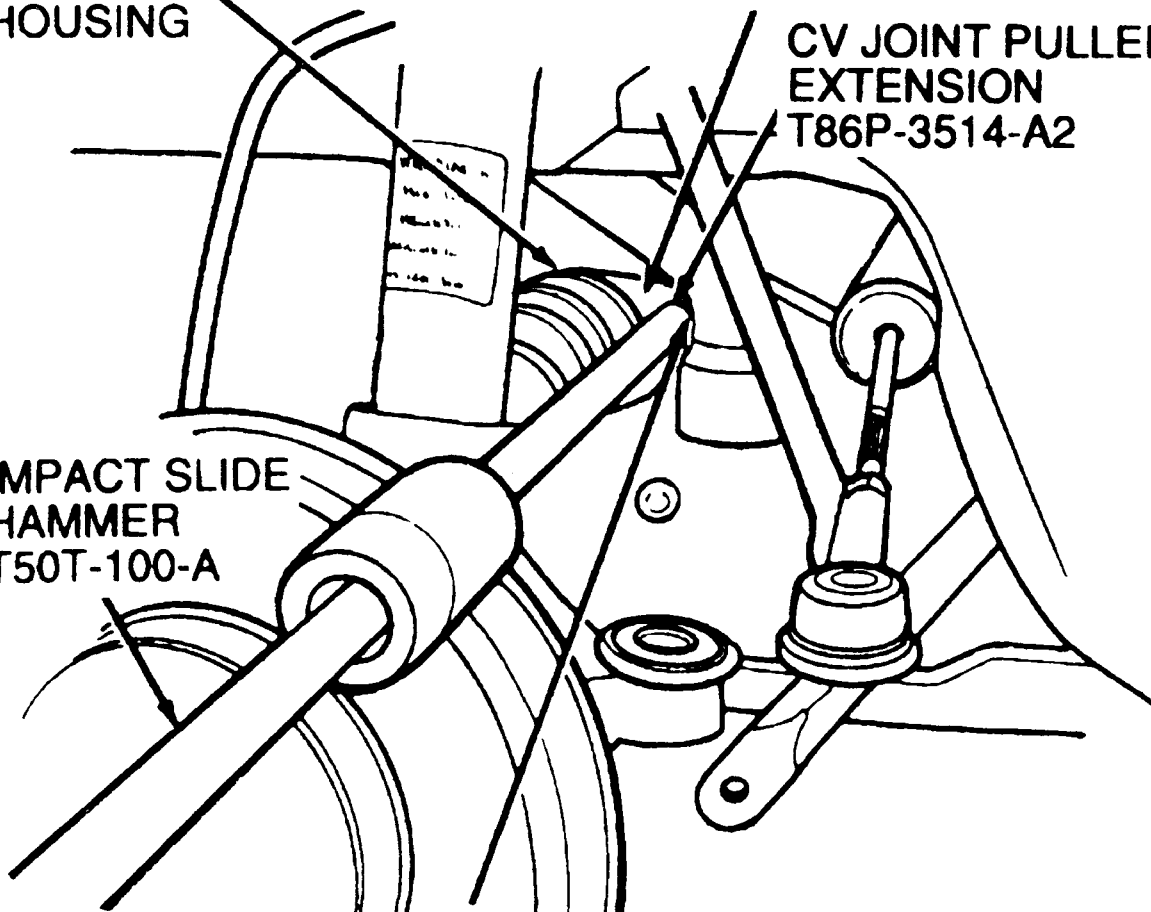
**INBOARD  
CV JOINT  
HOUSING**

**CV JOINT PULLER T86P-3514-A1  
(SHO AUTOMATIC ONLY T89P-3415-B)**

**CV JOINT PULLER  
EXTENSION  
T86P-3514-A2**

**IMPACT SLIDE  
HAMMER  
T50T-100-A**

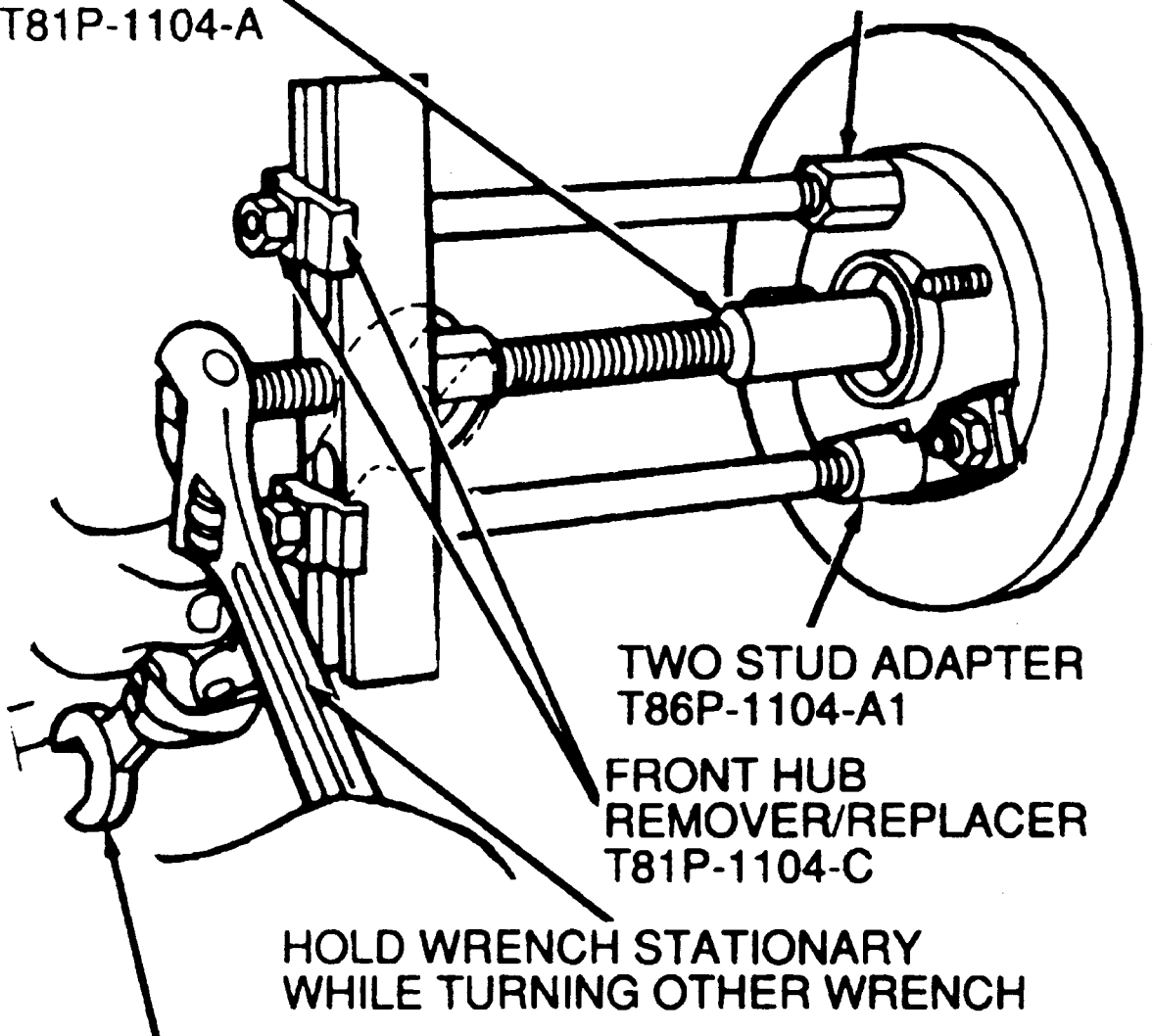
**CAUTION: MAKE SURE  
PULLER DOES NOT CONTACT  
TRANSMISSION SPEED SENSOR  
OR DAMAGE WILL RESULT**



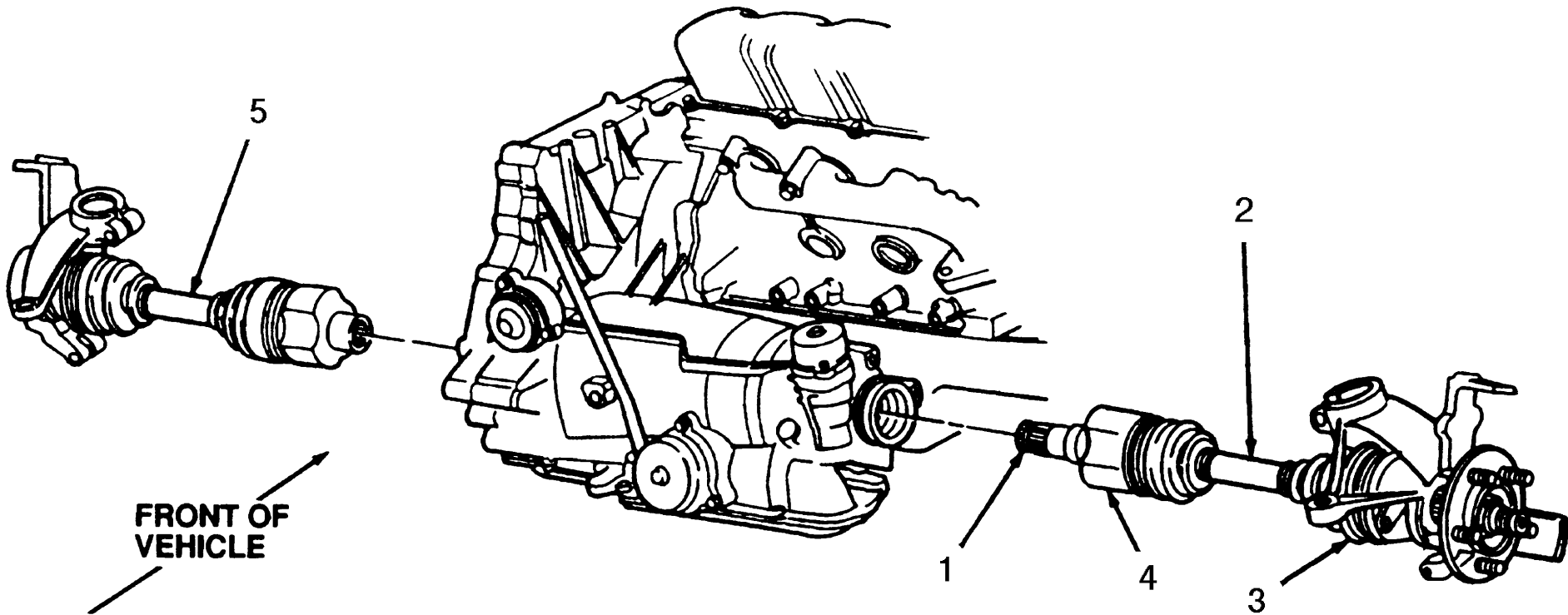
**MAKE SURE THE HUB REMOVER  
ADAPTER IS FULLY THREADED  
ONTO THE HUB STUD AND IS  
POSITIONED OPPOSITE THE  
TWO STUD ADAPTER**

**FRONT HUB  
REPLACER  
T81P-1104-A**

**METRIC HUB REMOVER  
ADAPTERS T83P-1104-BH1**



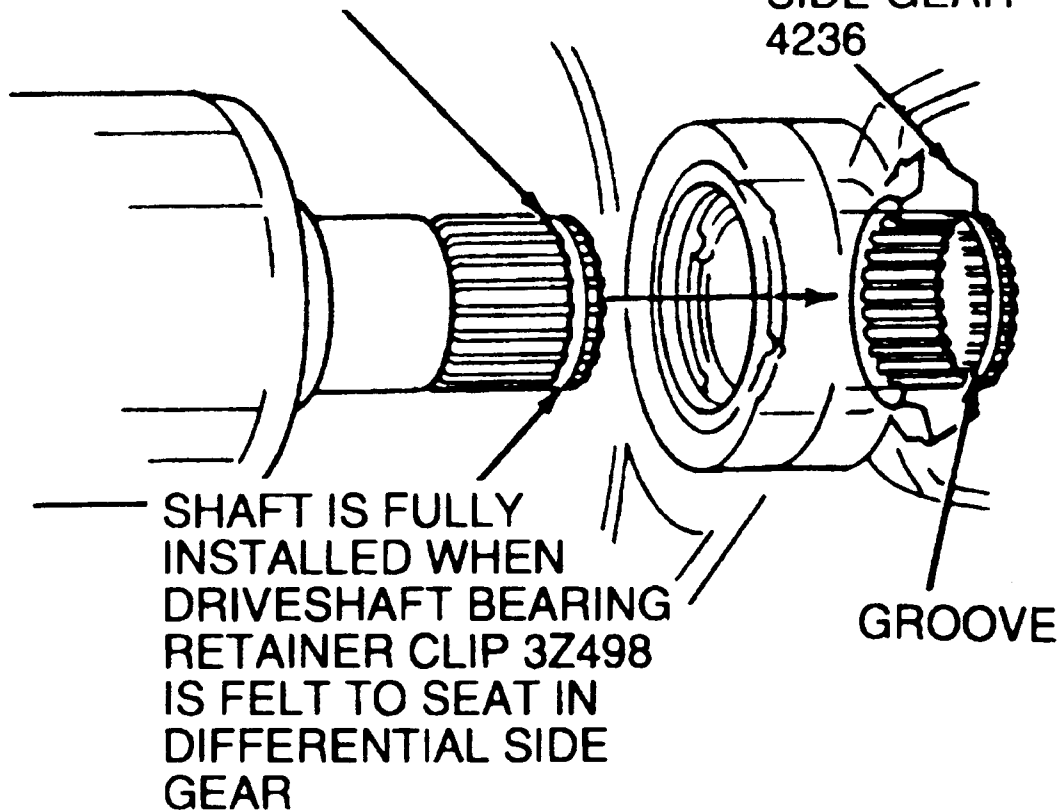
**TURN THIS WRENCH  
COUNTERCLOCKWISE**



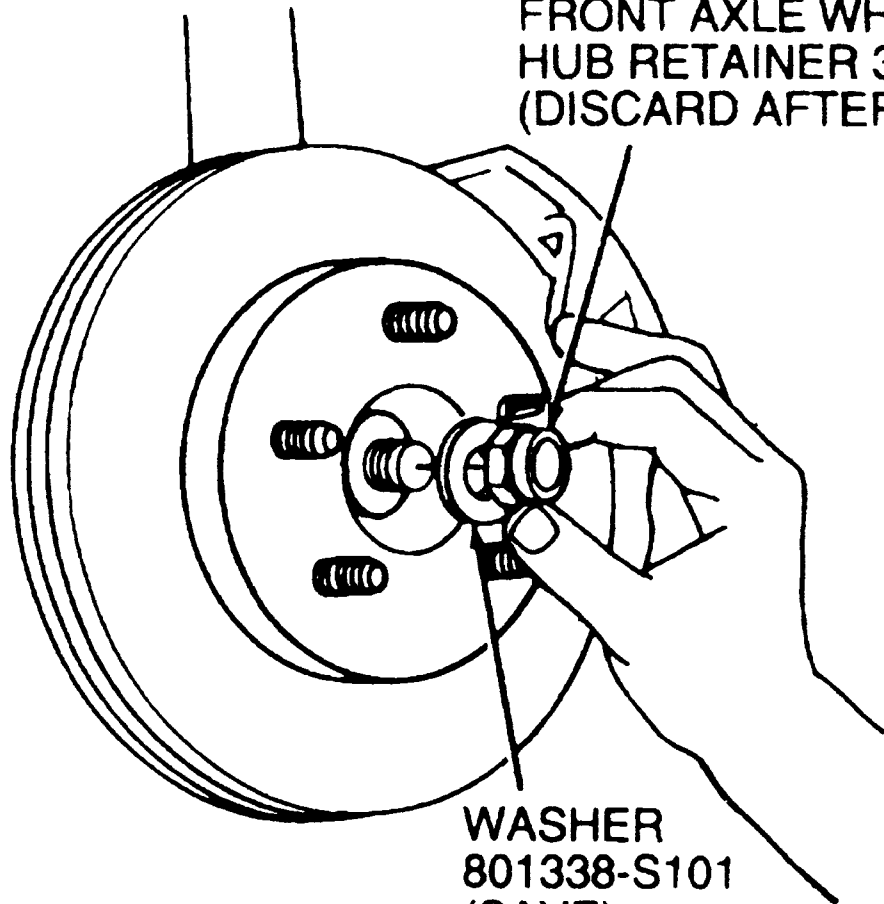
1. Driveshaft bearing retainer circlip
2. Front wheel driveshaft and joint
3. Front wheel driveshaft joint
4. Inboard CV joint (part of 3B436)
5. Front wheel driveshaft and joint

DRIVESHAFT BEARING  
RETAINER CLIP 3Z498

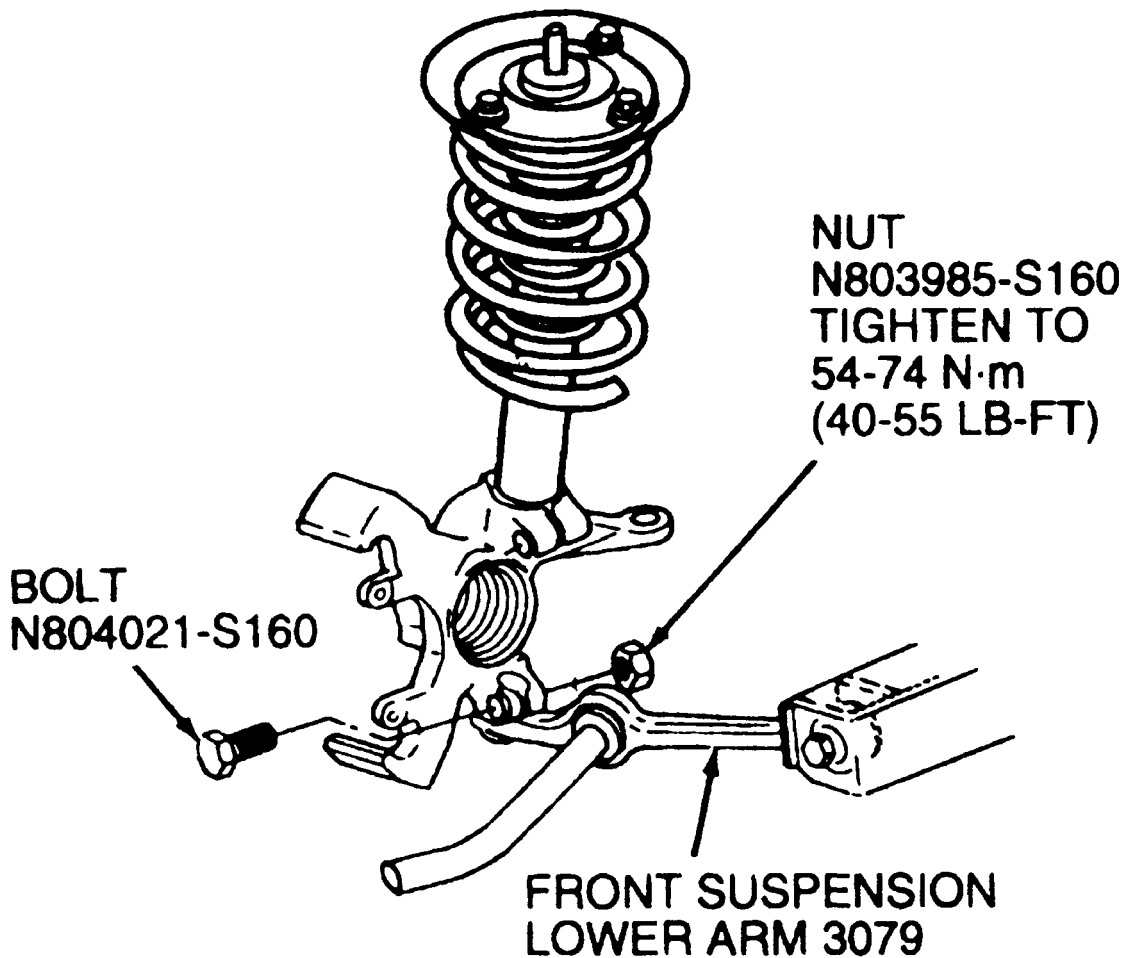
TRANSAXLE  
DIFFERENTIAL  
SIDE GEAR  
4236



FRONT AXLE WHEEL  
HUB RETAINER 3N405  
(DISCARD AFTER REMOVAL)



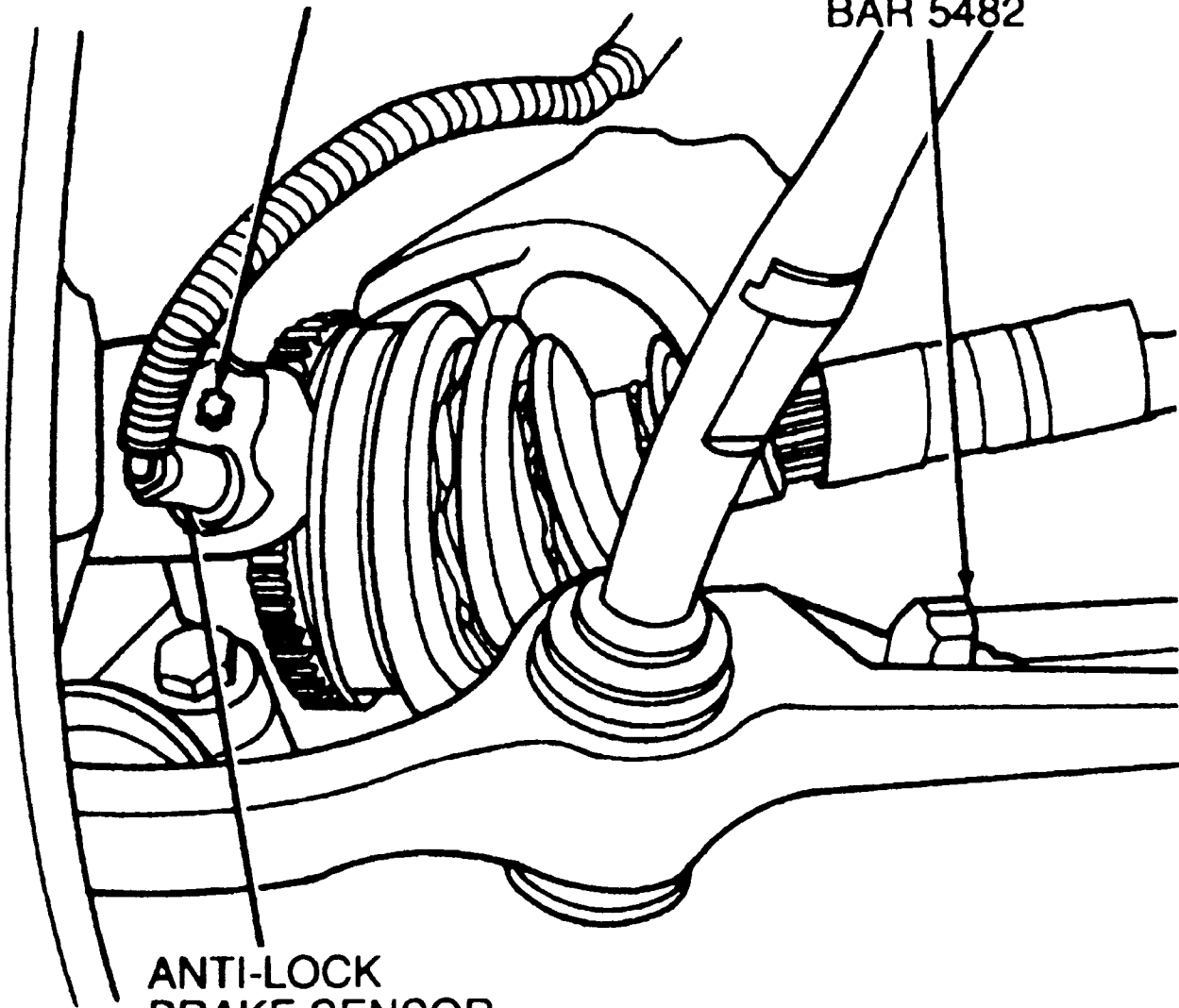
WASHER  
801338-S101  
(SAVE)



BOLT

STABILIZER  
BAR 5482

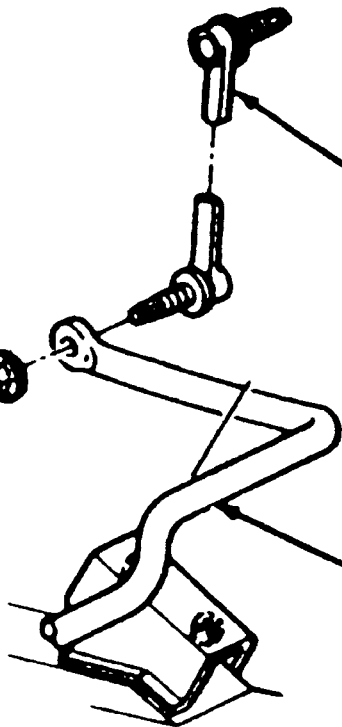
ANTI-LOCK  
BRAKE SENSOR  
2C204



TIGHTEN TO  
47-65 N·m  
(35-48 LB-FT)

STABILIZER BAR  
LINK 5K484

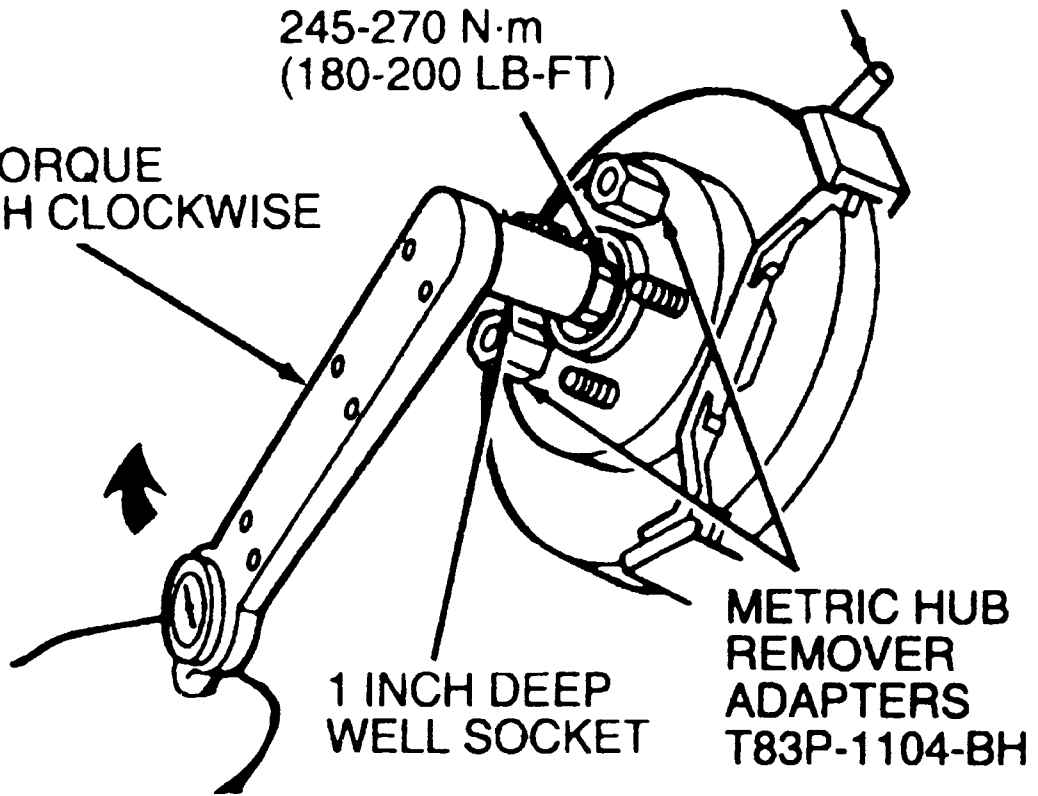
STABILIZER BAR  
5482





TIGHTEN NUT TO STEEL ROD  
245-270 N·m  
(180-200 LB-FT)

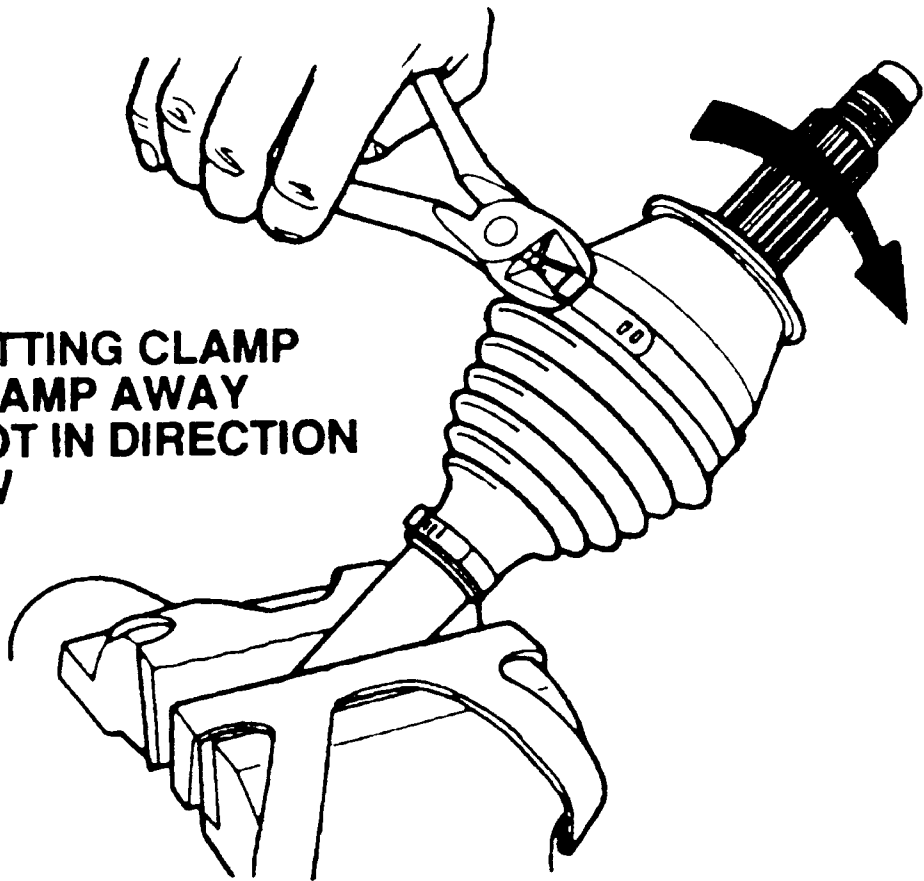
TURN TORQUE  
WRENCH CLOCKWISE

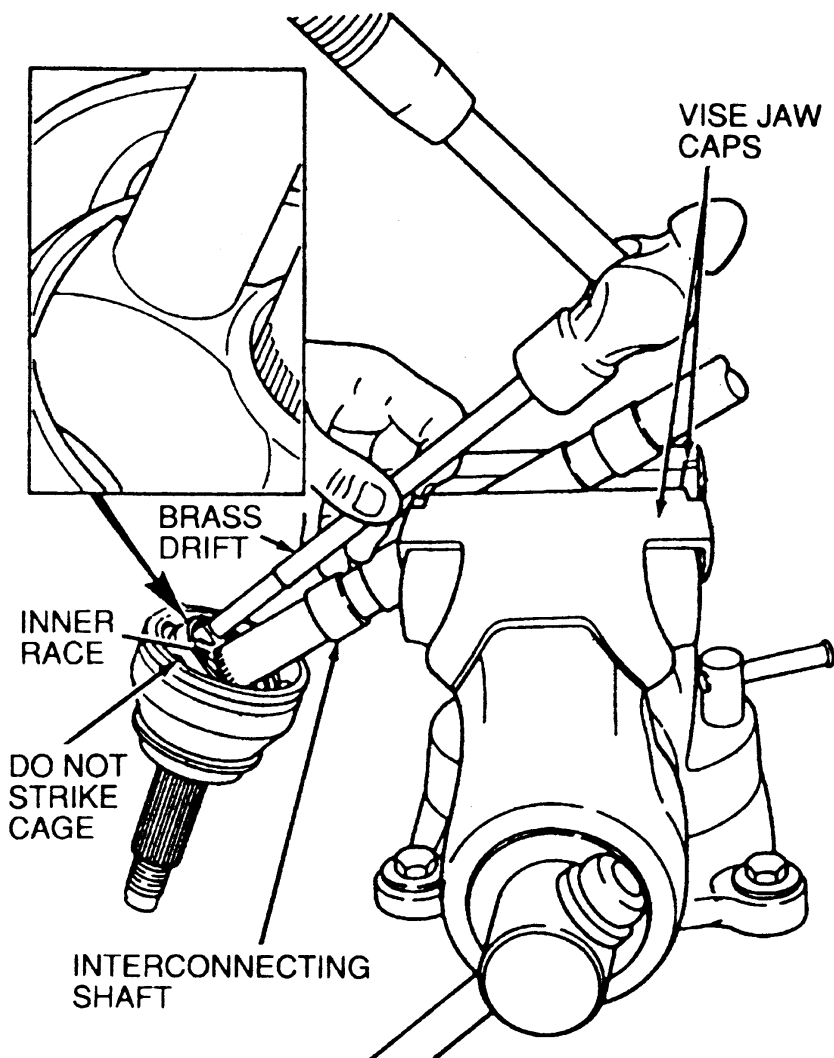
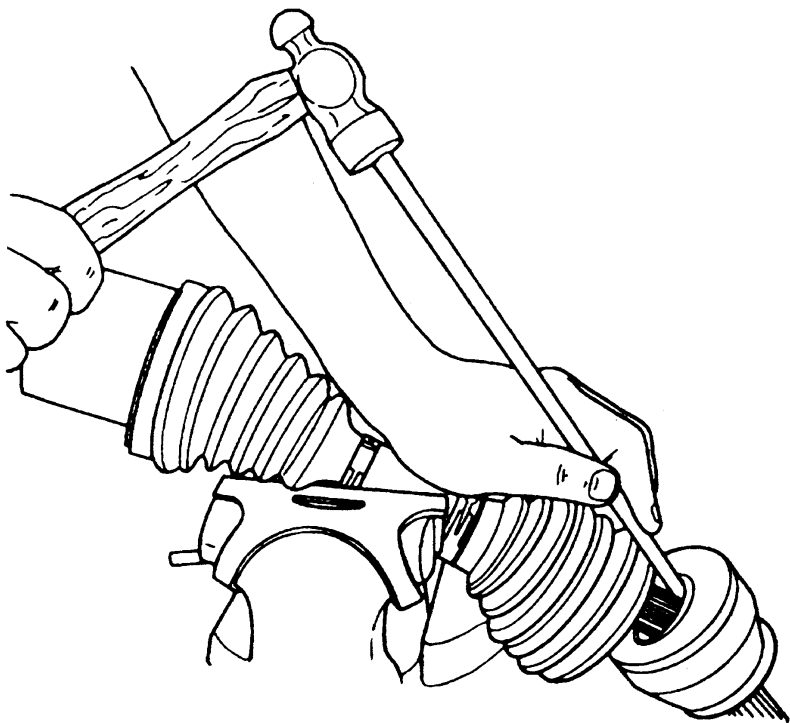


METRIC HUB  
REMOVER  
ADAPTERS  
T83P-1104-BH

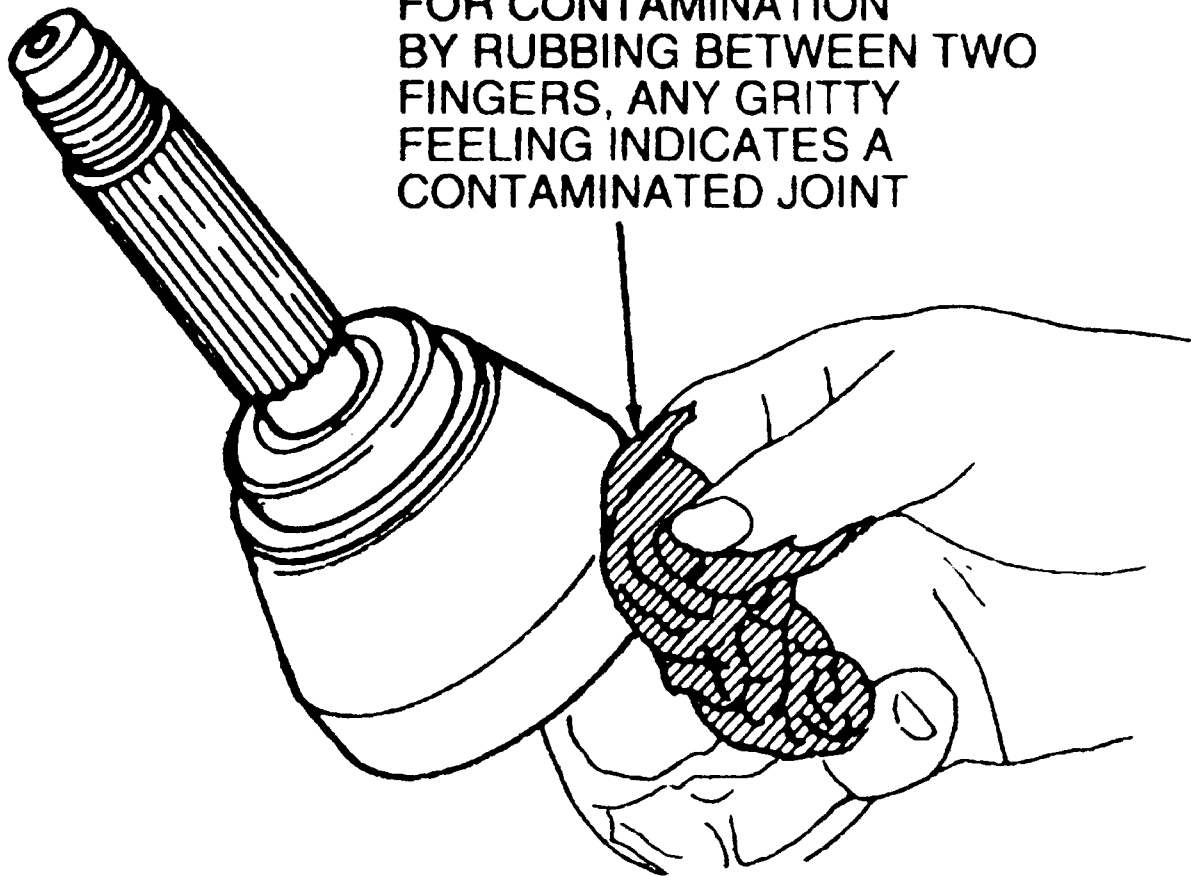
**CAUTION: DO NOT USE POWER OR IMPACT  
TOOLS TO TIGHTEN THE HUB NUT**

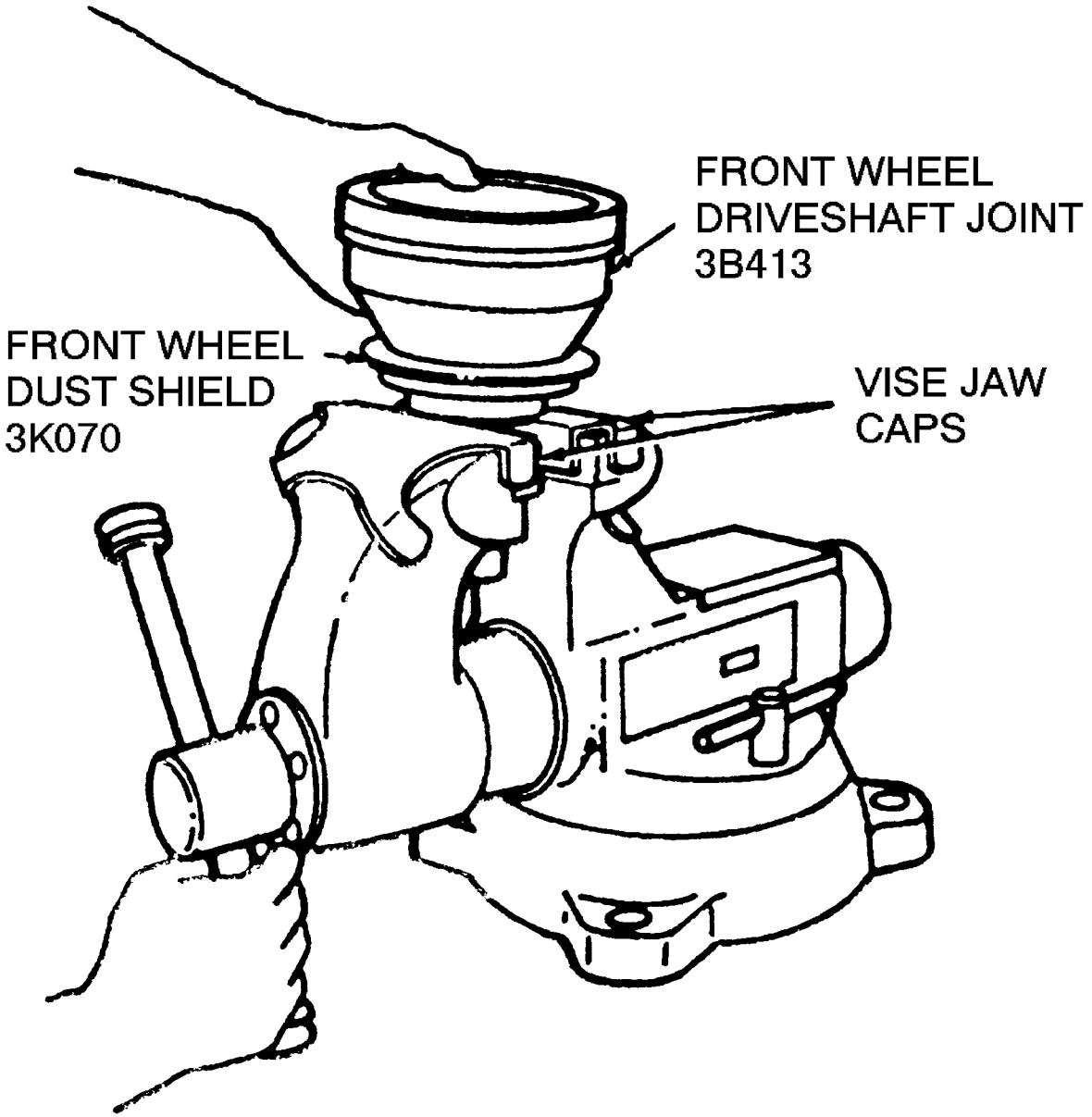
**AFTER CUTTING CLAMP  
"PEEL" CLAMP AWAY  
FROM BOOT IN DIRECTION  
OF ARROW**





CHECK LUBRICANT  
FOR CONTAMINATION  
BY RUBBING BETWEEN TWO  
FINGERS, ANY GRITTY  
FEELING INDICATES A  
CONTAMINATED JOINT



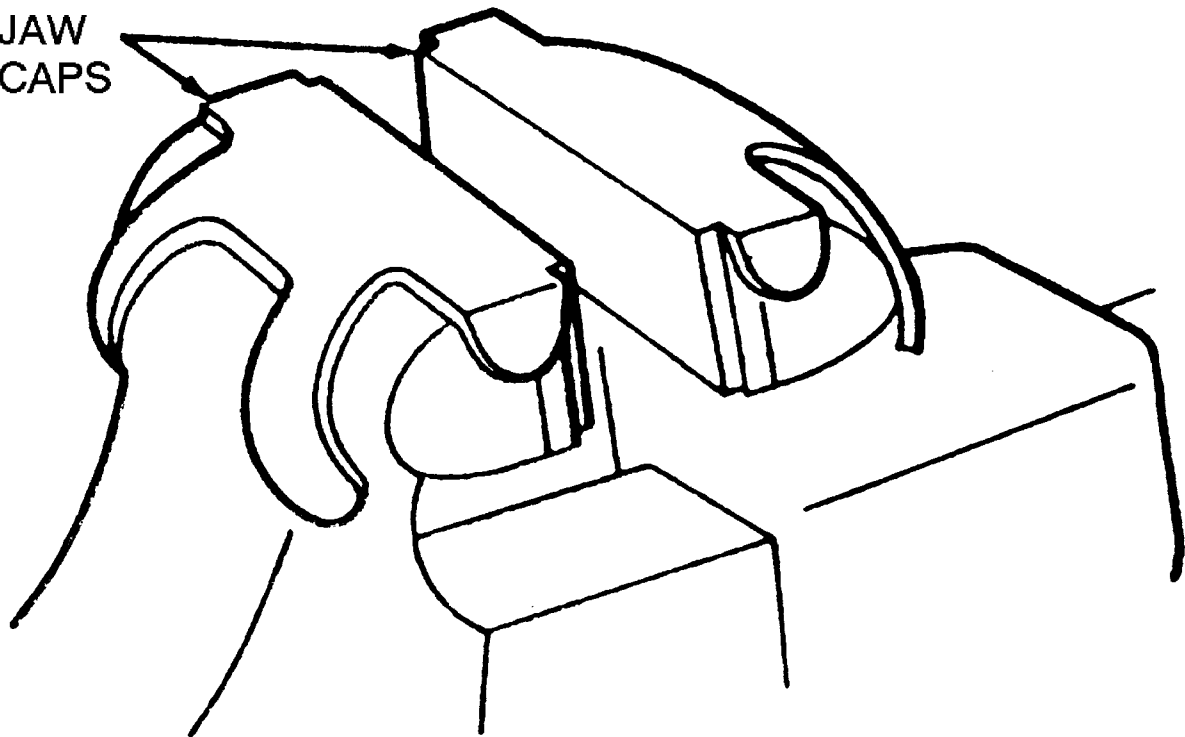


FRONT WHEEL  
DRIVESHAFT JOINT  
3B413

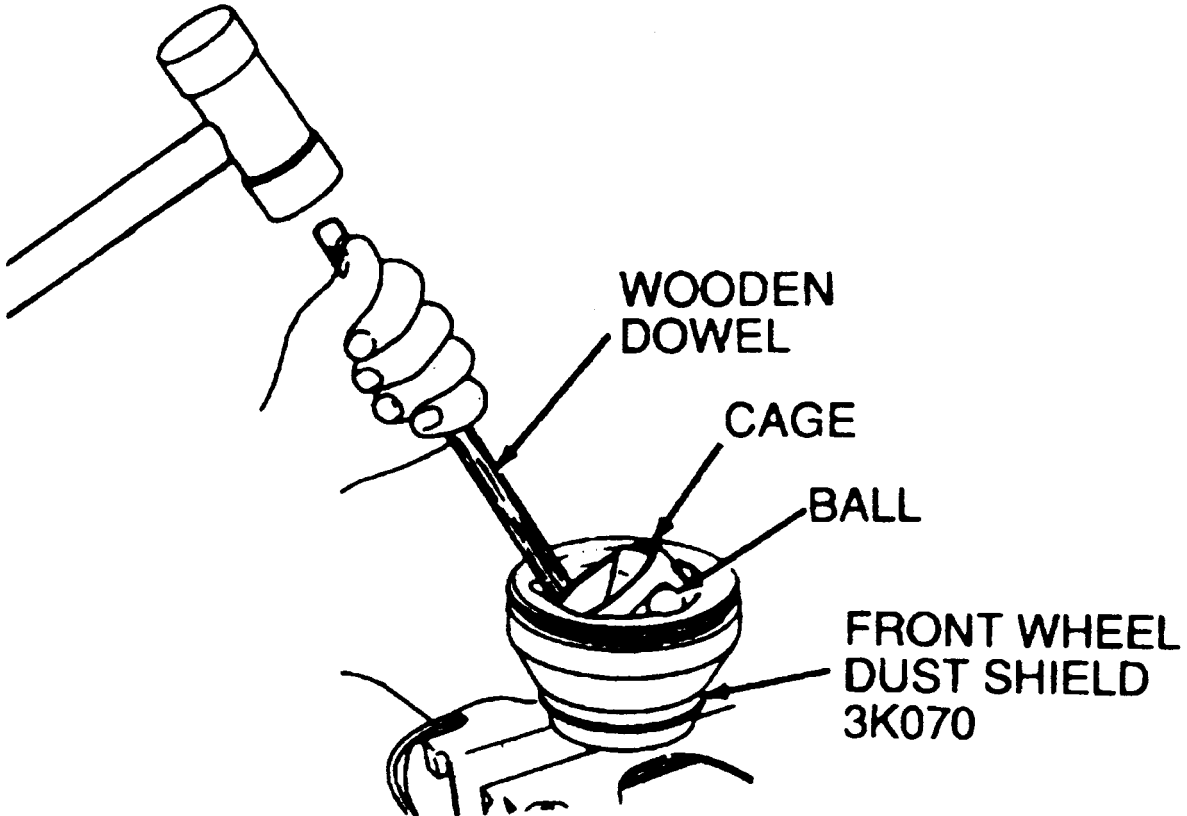
FRONT WHEEL  
DUST SHIELD  
3K070

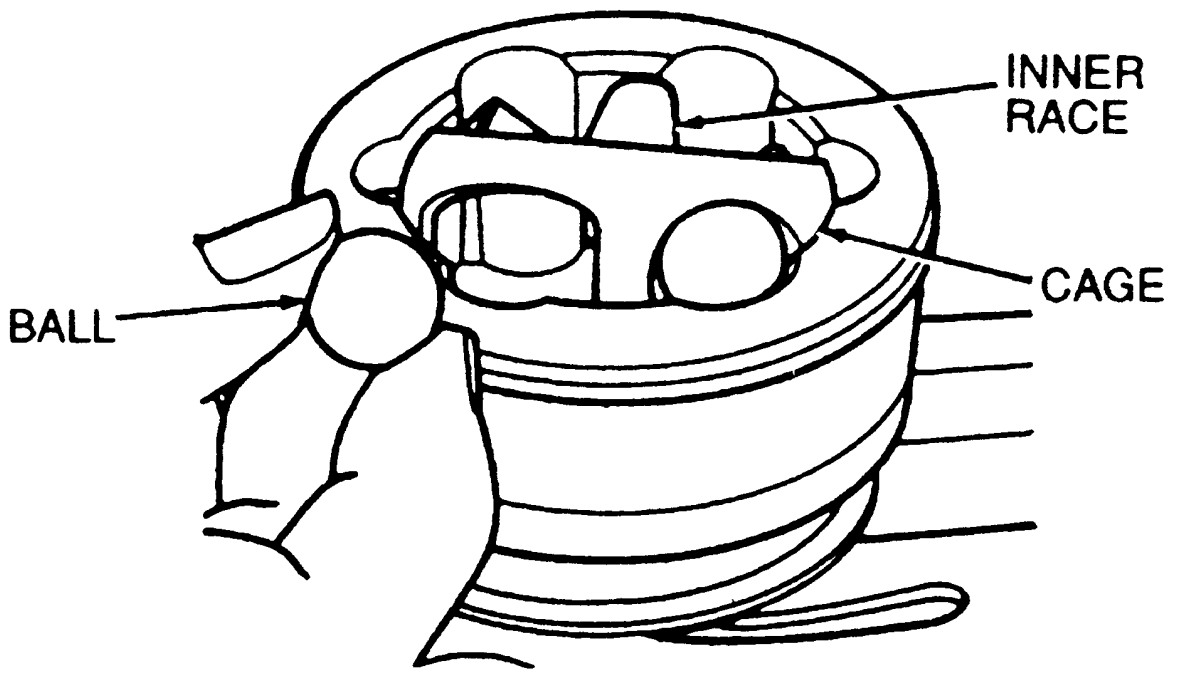
VISE JAW  
CAPS

WISE  
JAW  
CAPS

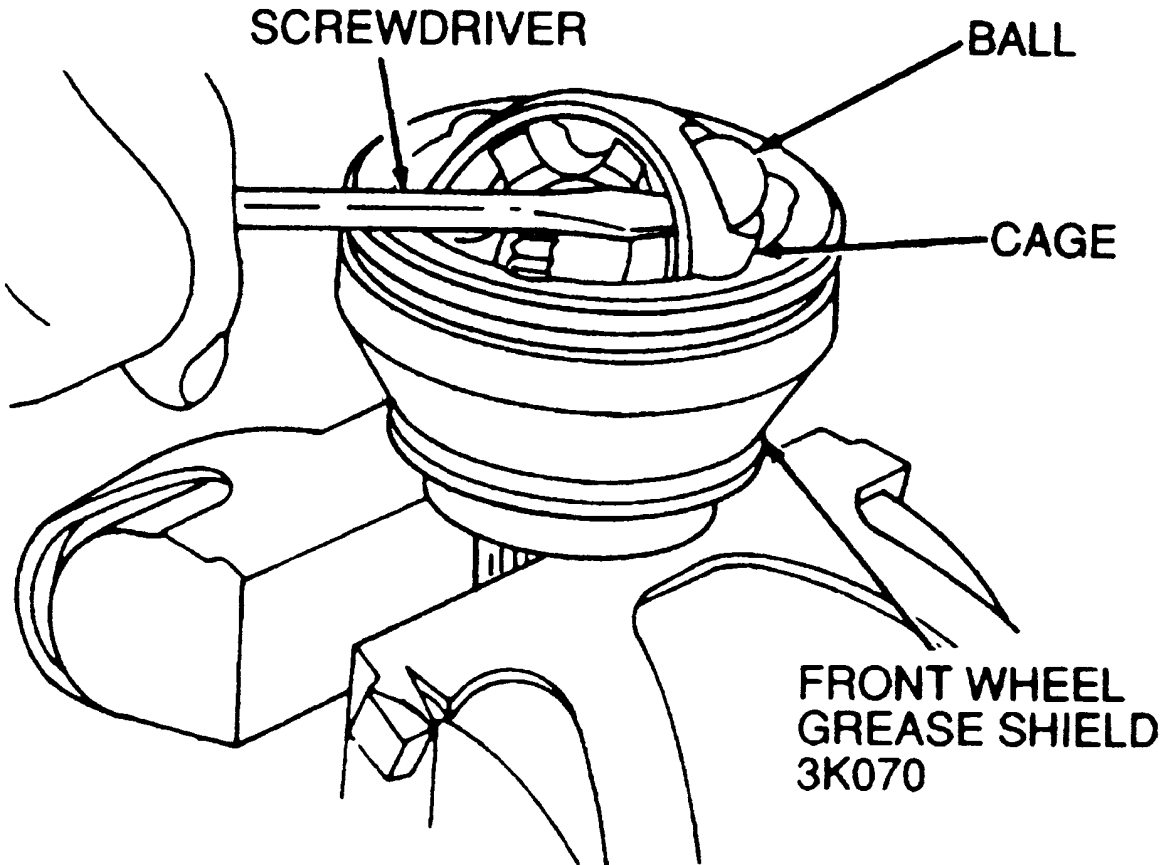


CAGE AND  
INNER RACE  
TILTED FOR  
BALL REMOVAL



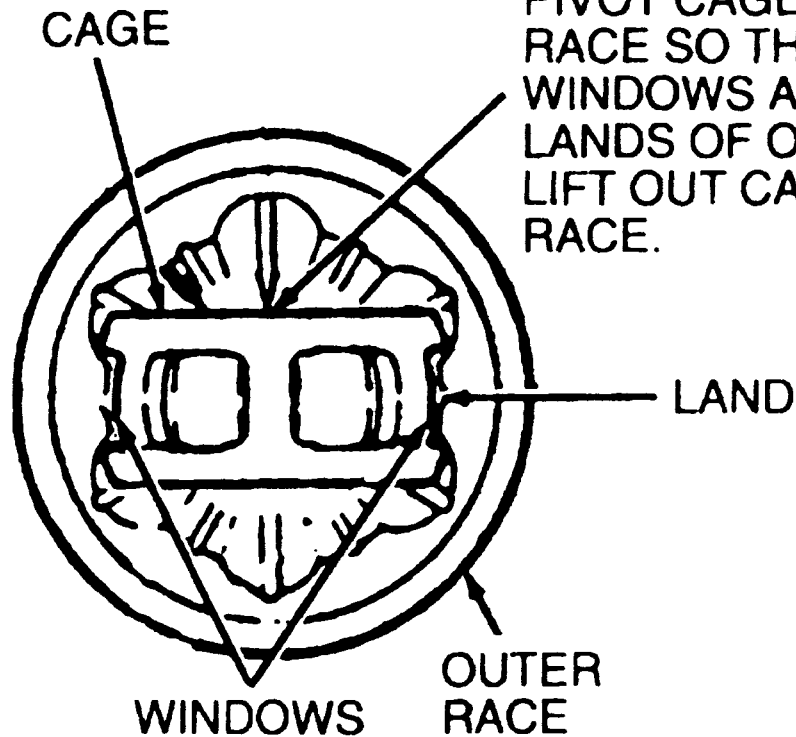


**NOTE: SHARP EDGES ON  
SCREWDRIVER SHOULD  
BE BLUNTED TO PRE-  
VENT SCRATCHING OF  
FINISHED SURFACES.**





PIVOT CAGE AND INNER  
RACE SO THAT CAGE  
WINDOWS ARE ALIGNED WITH  
LANDS OF OUTER RACE.  
LIFT OUT CAGE AND INNER  
RACE.

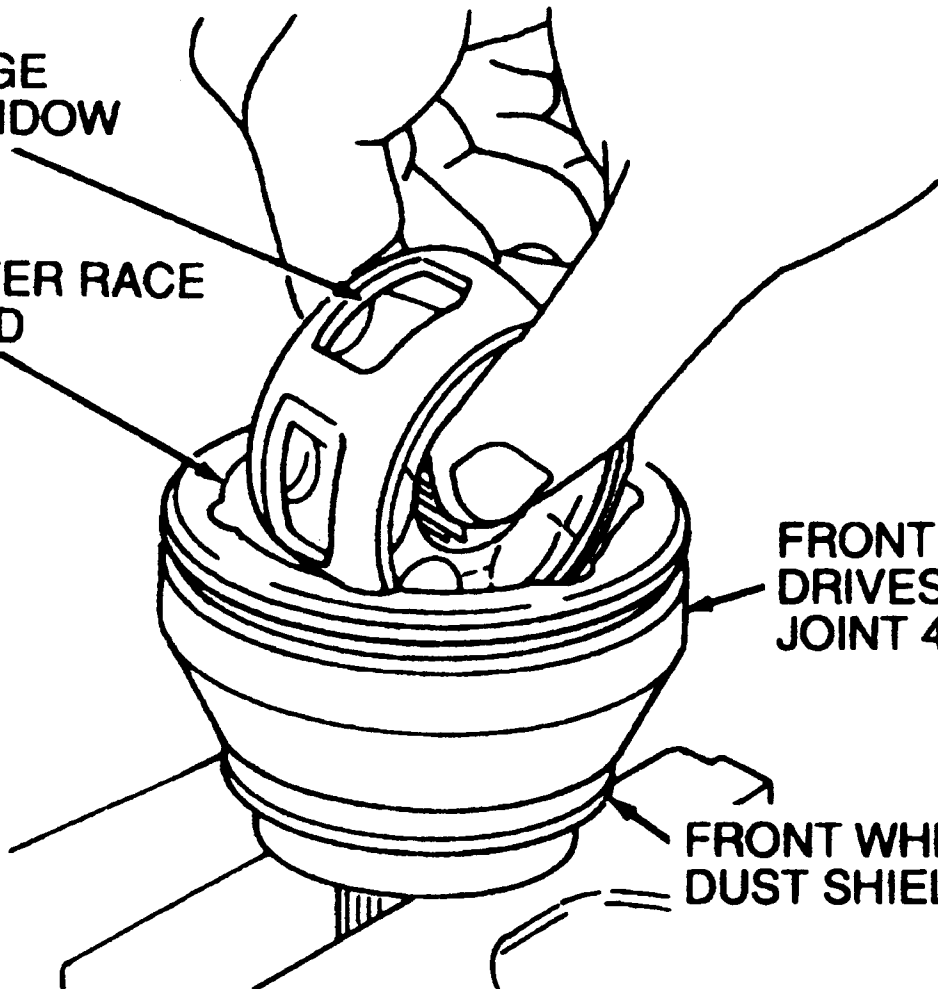


**CAGE  
WINDOW**

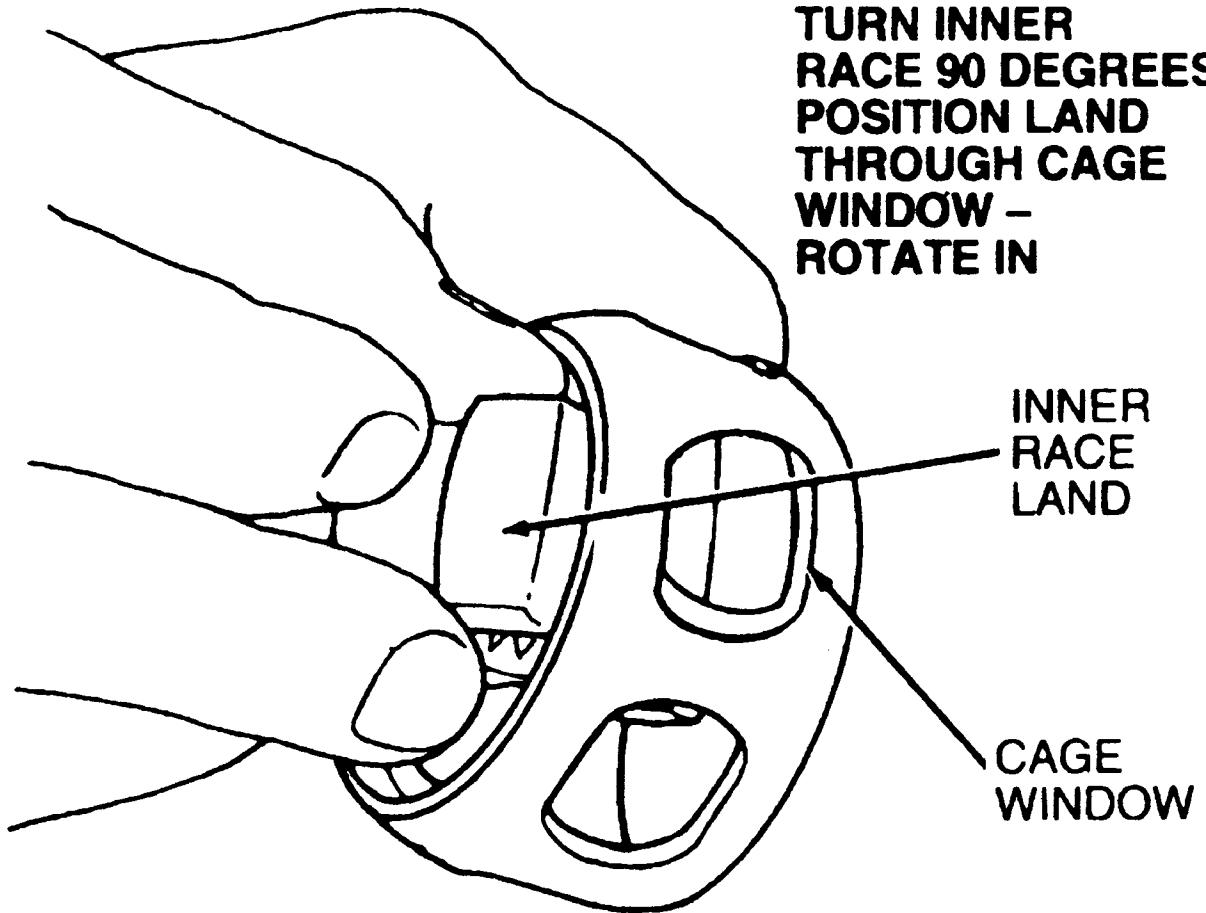
**OUTER RACE  
LAND**

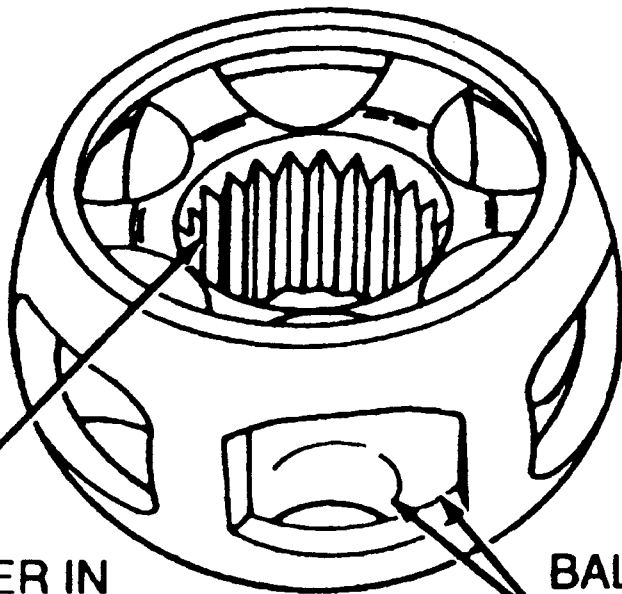
**FRONT WHEEL  
DRIVESHAFT  
JOINT 4B413**

**FRONT WHEEL  
DUST SHIELD 3K070**



**TURN INNER  
RACE 90 DEGREES  
POSITION LAND  
THROUGH CAGE  
WINDOW –  
ROTATE IN**





THE CHAMFER IN  
INNER RACE MUST  
FACE UPWARD AFTER  
ASSEMBLY IS INSTALLED  
IN OUTER RACE

BALL GROOVES  
AND WINDOWS  
IN ALIGNMENT

**TO ASSEMBLE,  
ALIGN OUTER  
RACE LAND  
AND CAGE  
WINDOW**

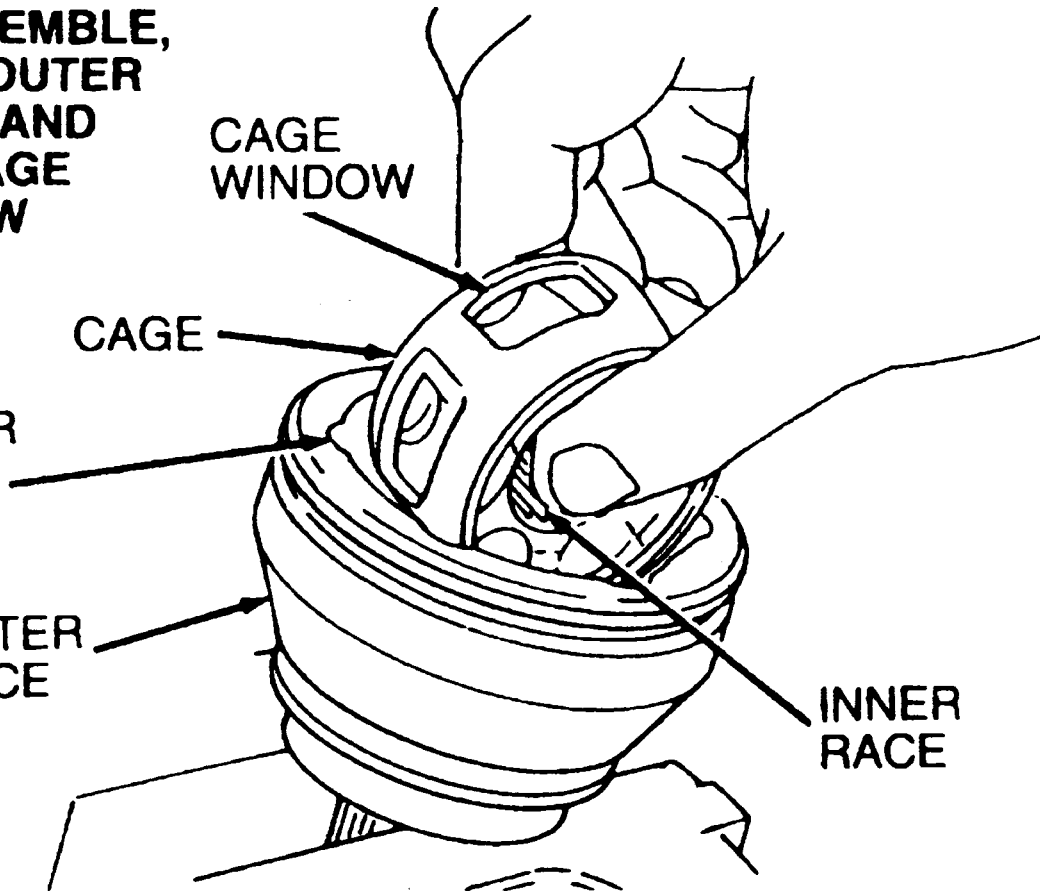
**CAGE  
WINDOW**

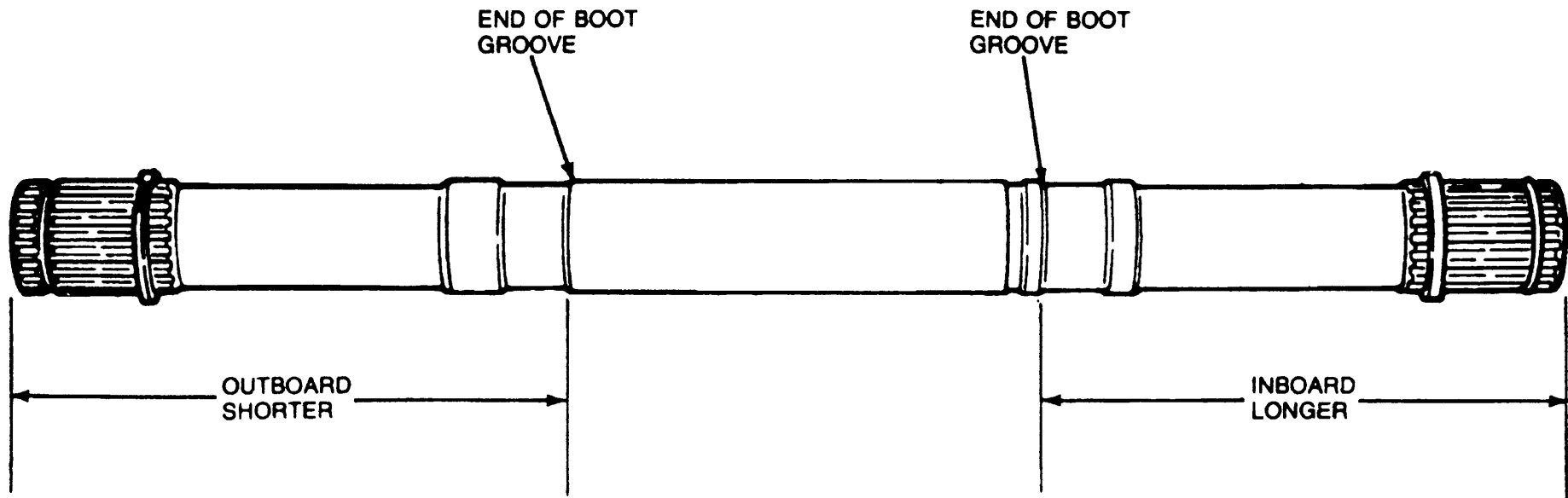
**CAGE**

**OUTER  
RACE  
LAND**

**OUTER  
RACE**

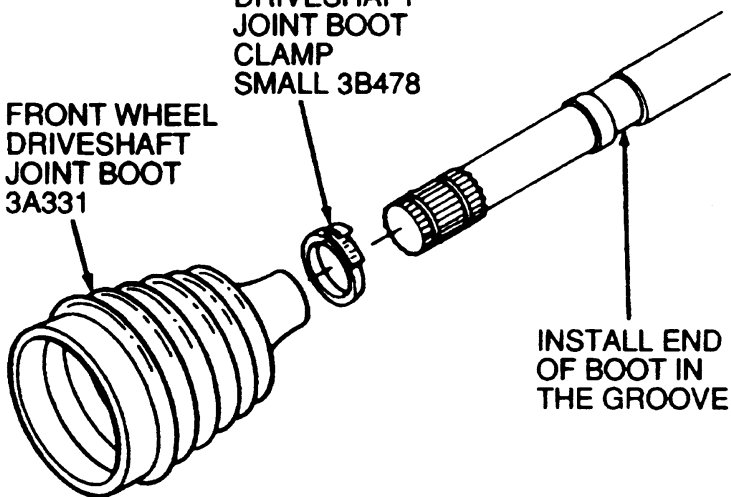
**INNER  
RACE**



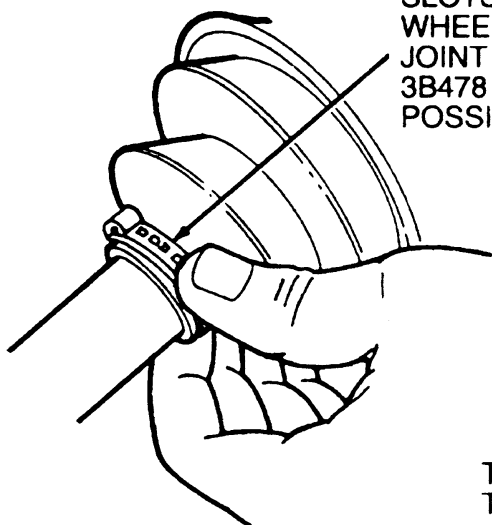


FRONT WHEEL  
DRIVESHAFT  
JOINT BOOT  
3A331

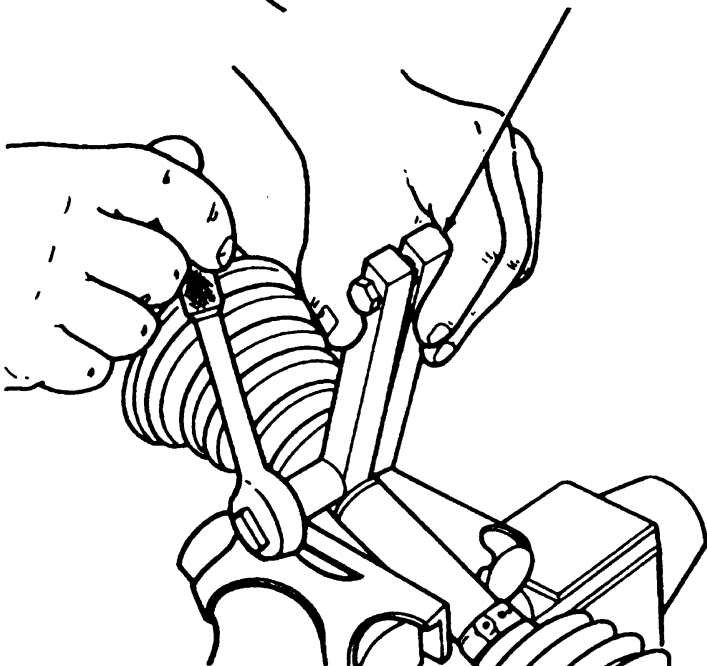
FRONT WHEEL  
DRIVESHAFT  
JOINT BOOT  
CLAMP  
SMALL 3B478



LOCATE CLAMP TABS IN  
SLOTS. MAKE FRONT  
WHEEL DRIVE SHAFT  
JOINT BOOT CLAMP  
3B478 AS TIGHT AS  
POSSIBLE BY HAND



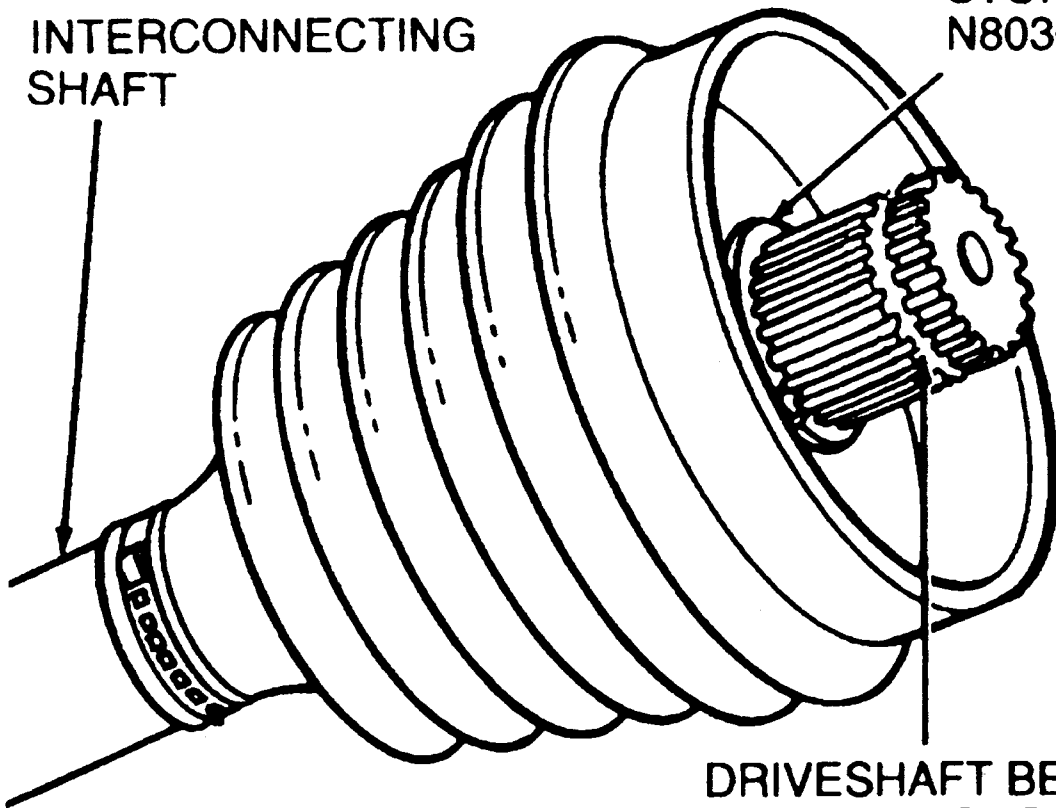
TOOL  
T95P-3514-A



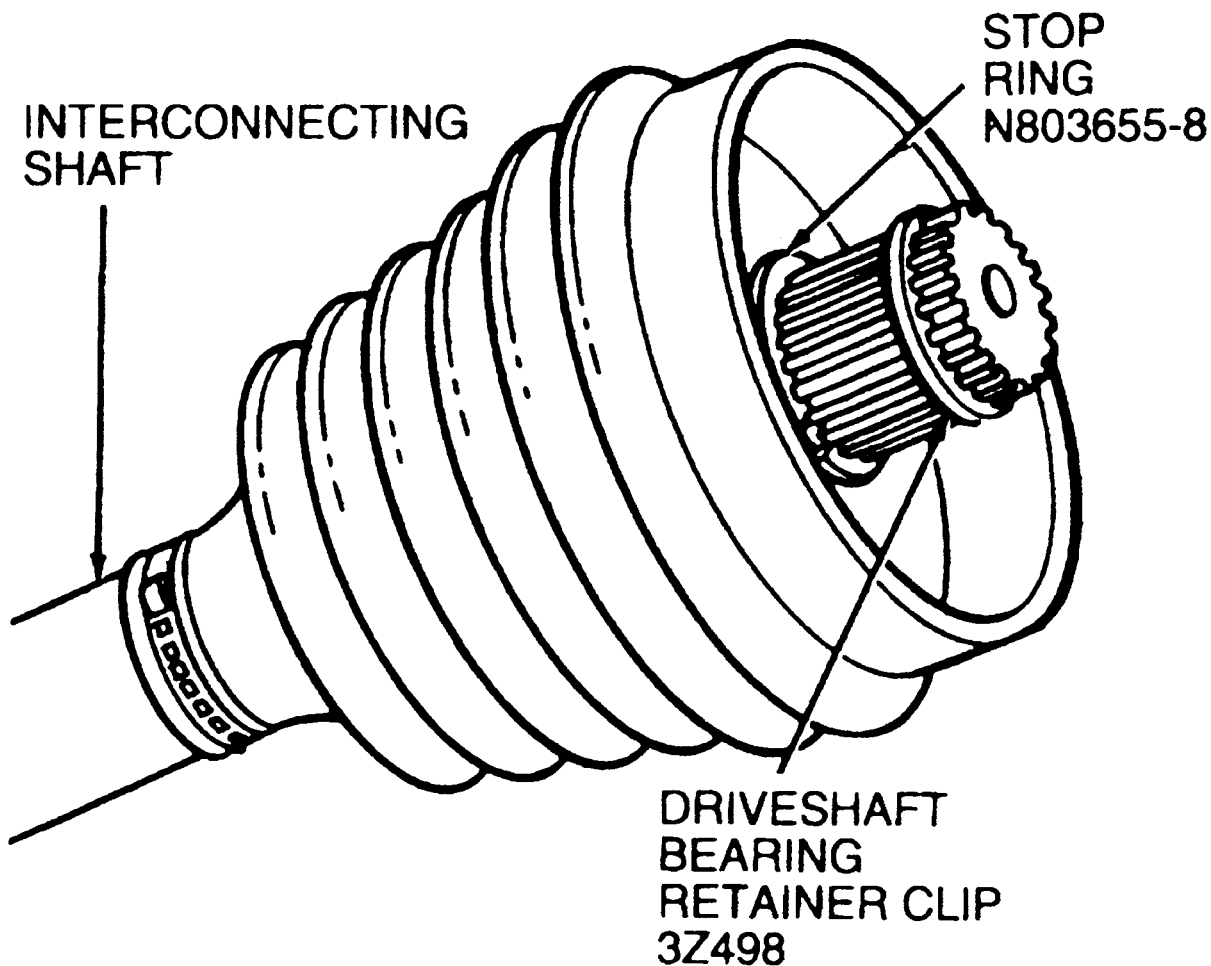
INTERCONNECTING  
SHAFT

STOP RING  
N803655-8

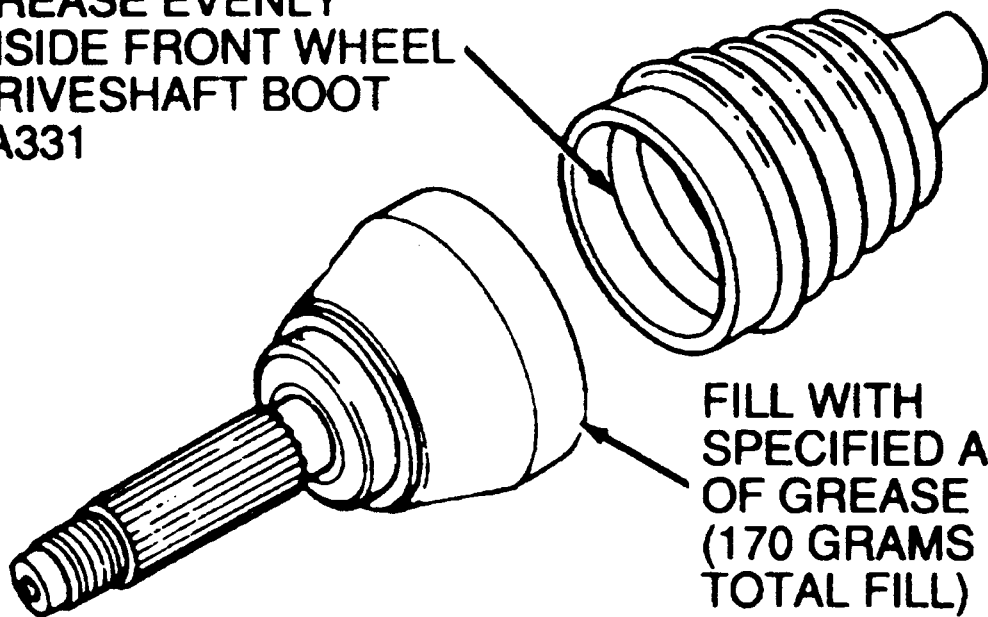
DRIVESHAFT BEARING  
RETAINER CLIP  
3Z498 GROOVE





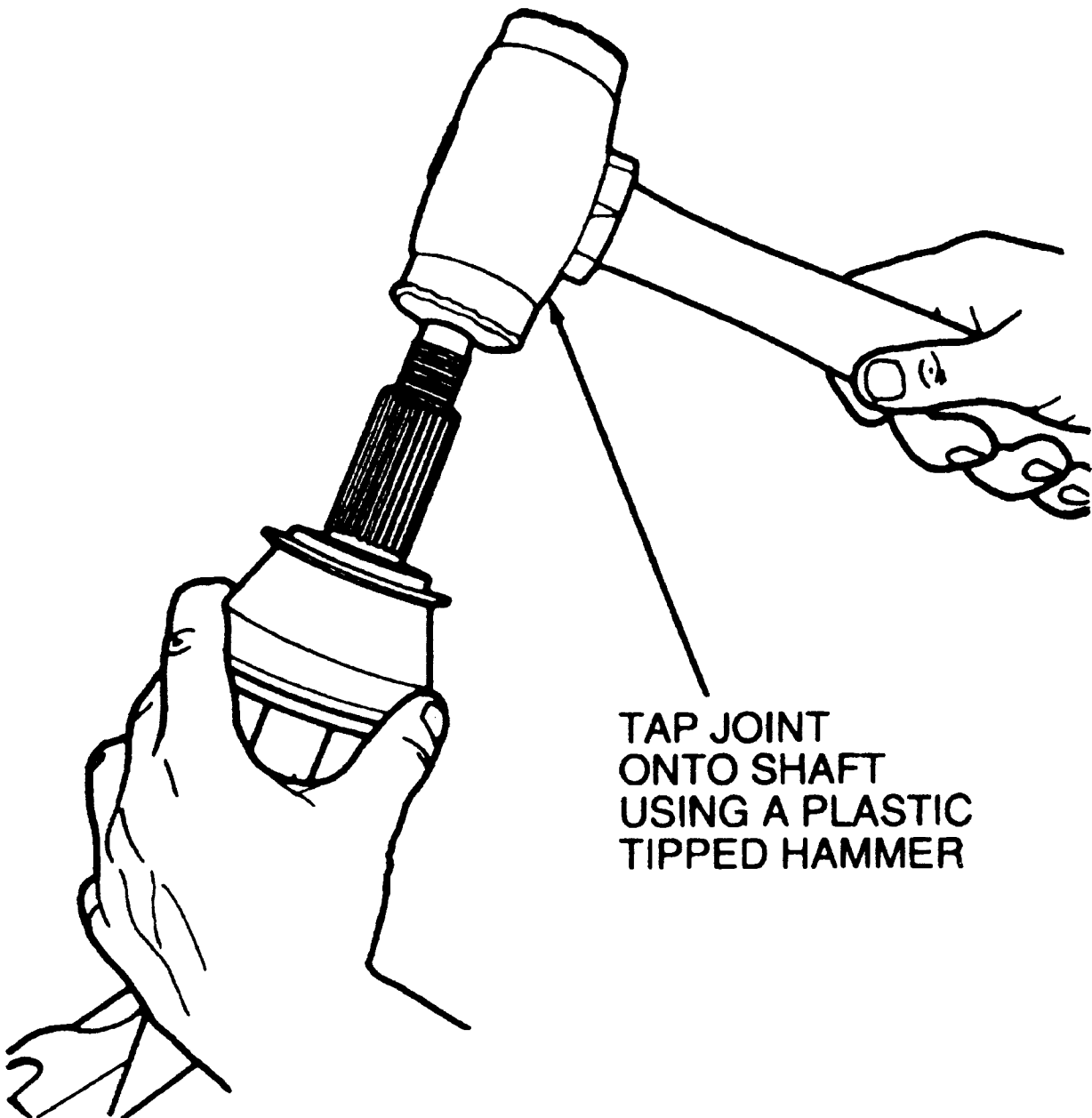


**SPREAD REMAINING  
GREASE EVENLY  
INSIDE FRONT WHEEL  
DRIVESHAFT BOOT  
3A331**

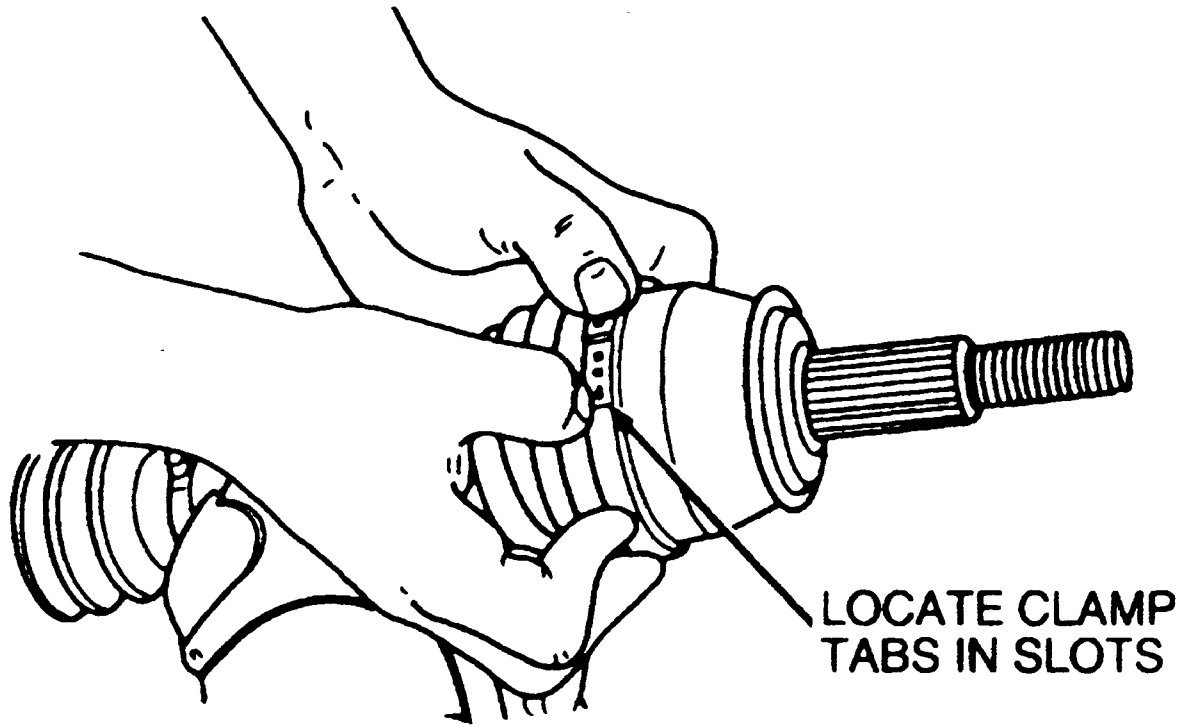


**FILL WITH  
SPECIFIED AMOUNT  
OF GREASE  
(170 GRAMS  
TOTAL FILL)**

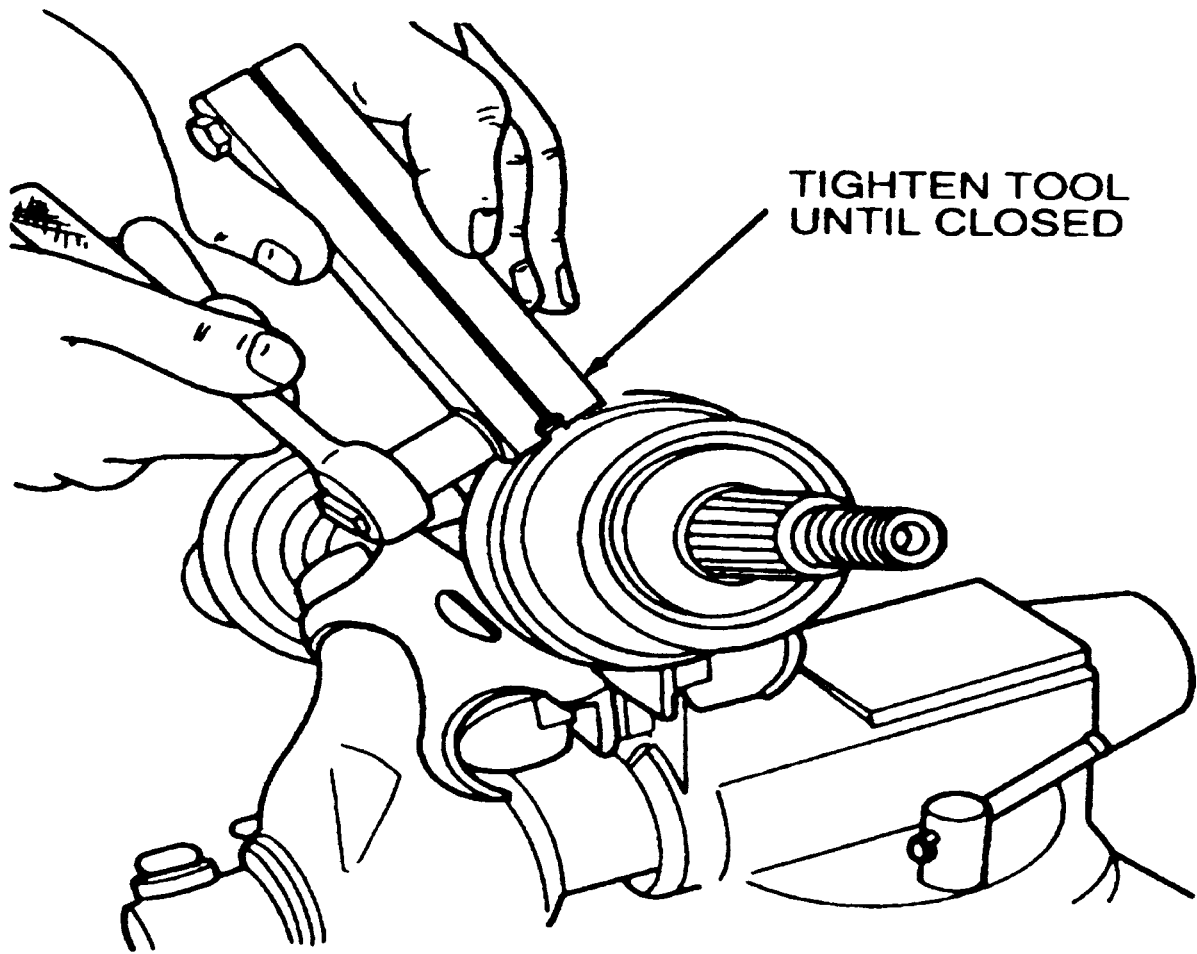
**OUTBOARD CV JOINT**



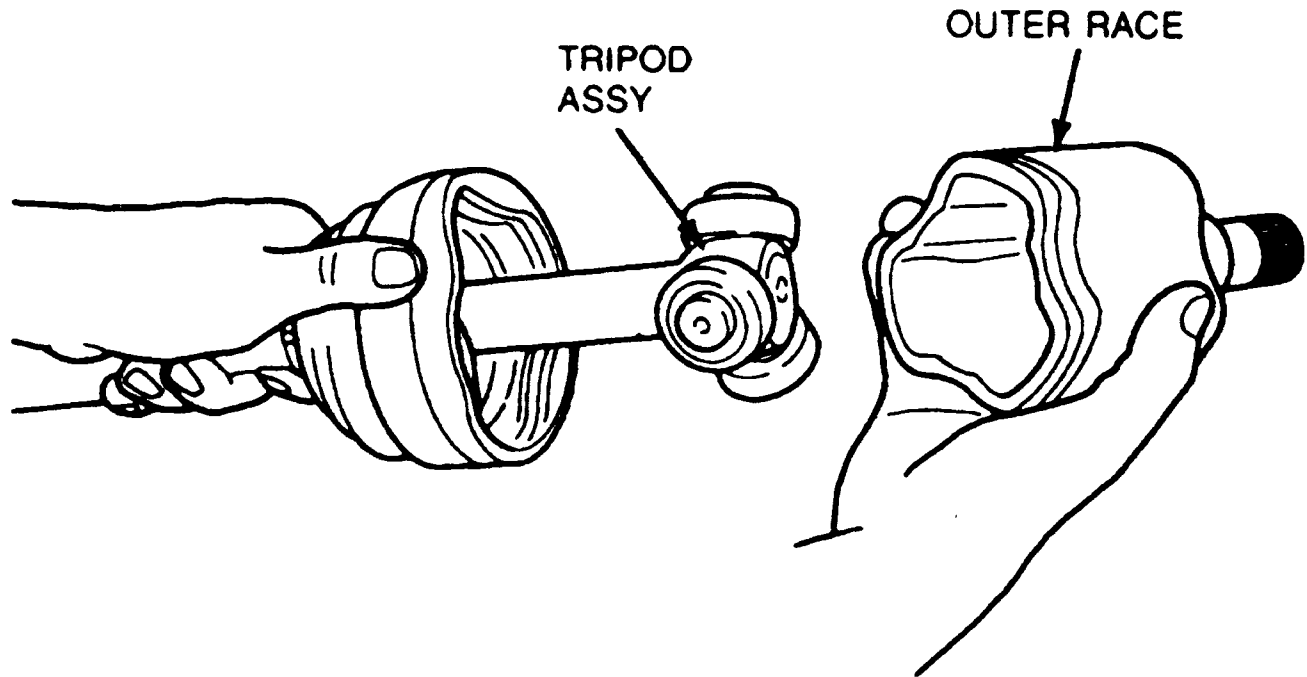
TAP JOINT  
ONTO SHAFT  
USING A PLASTIC  
TIPPED HAMMER



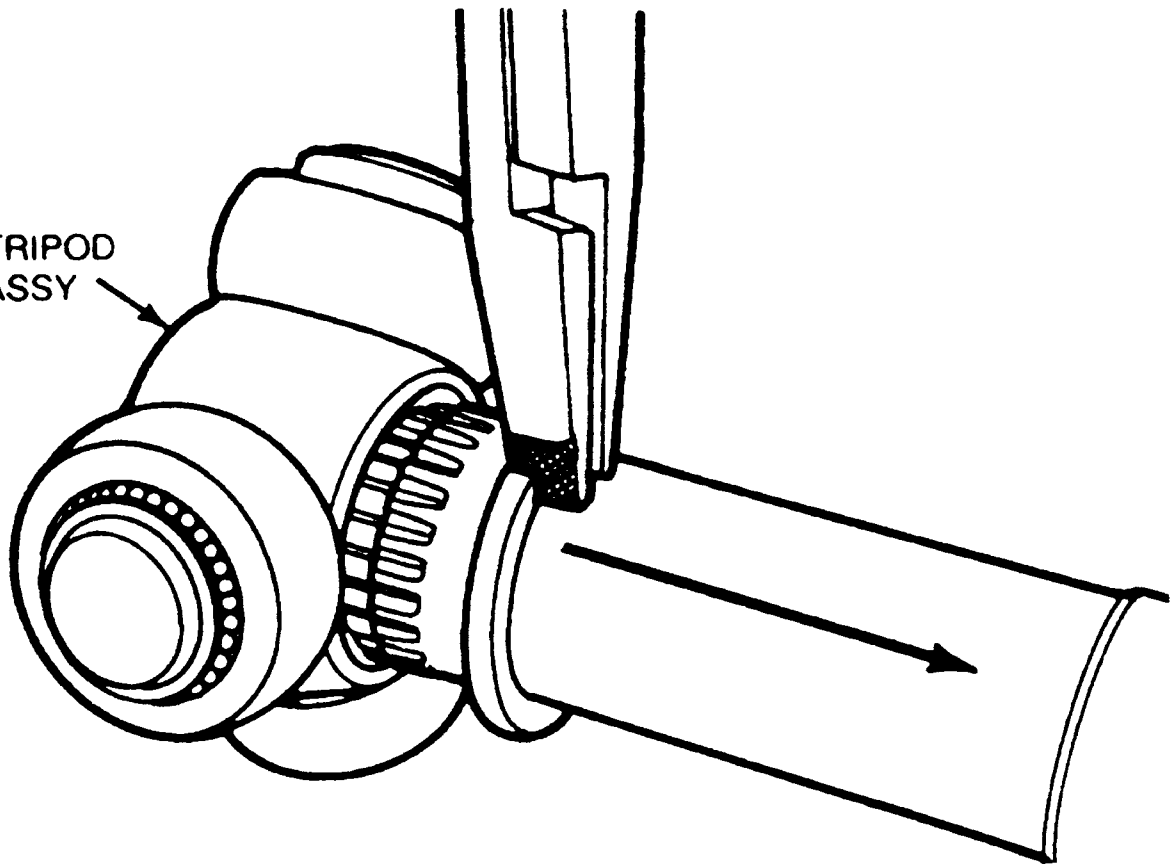
LOCATE CLAMP  
TABS IN SLOTS

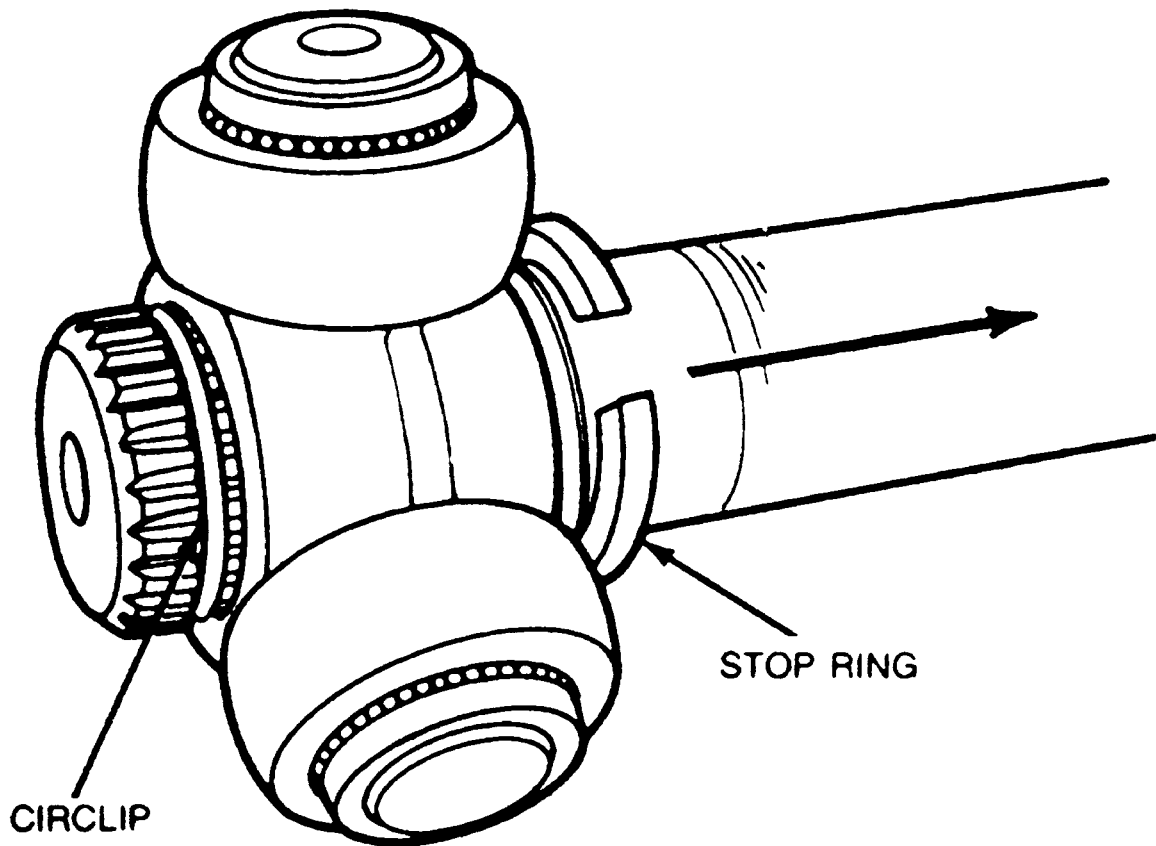


TIGHTEN TOOL  
UNTIL CLOSED

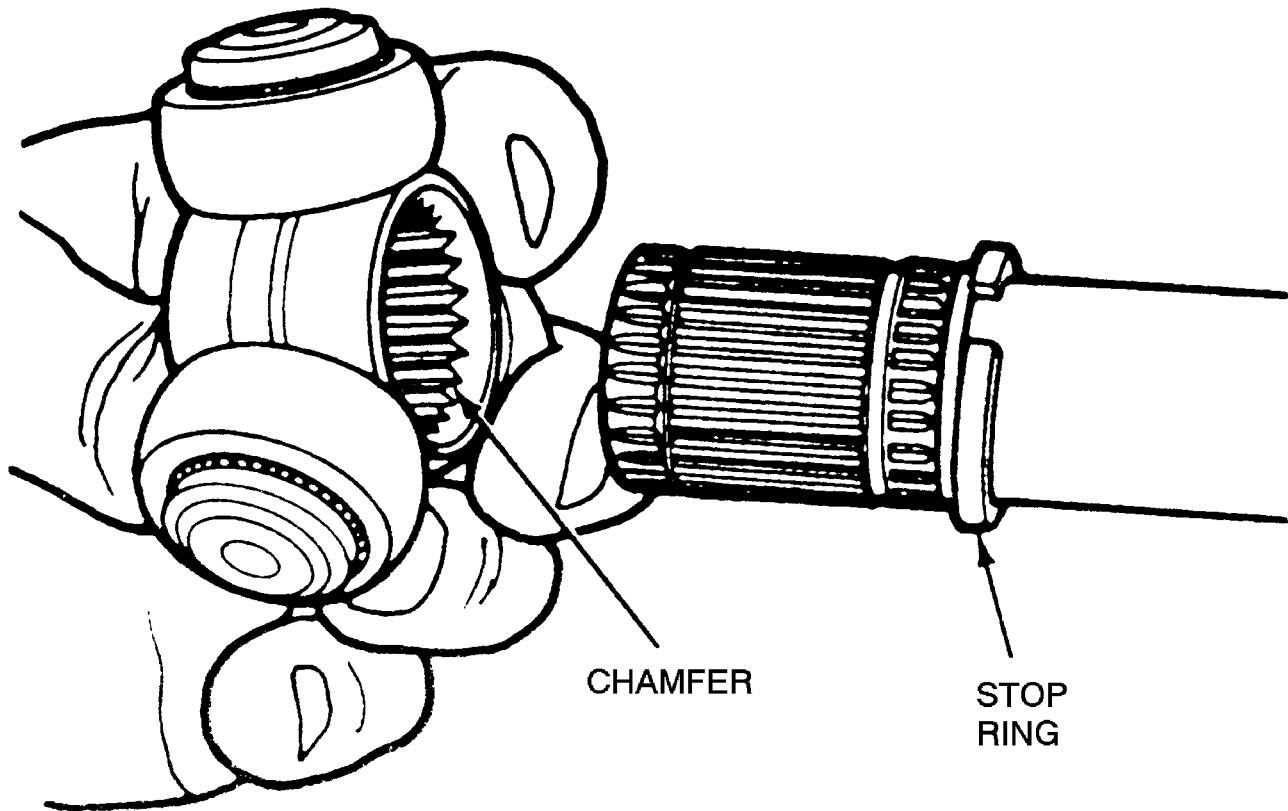


TRIPOD  
ASSY









**BOOT  
GROOVE**

**CRIMPED  
CAN**

**OUTER  
RACE**

**FILL WITH 125 GRAMS  
(4.4 OUNCES) OF GREASE  
(FOR ASSEMBLY)**

**CONVENTIONAL  
BOOT (G K N DESIGN)**

**FILL WITH 125 GRAMS  
(4.4 OUNCES) OF GREASE  
(FOR ASSEMBLY)**

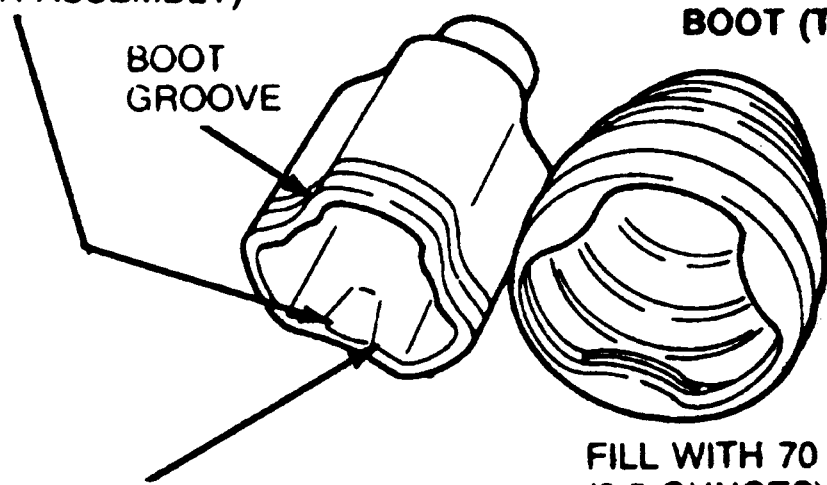
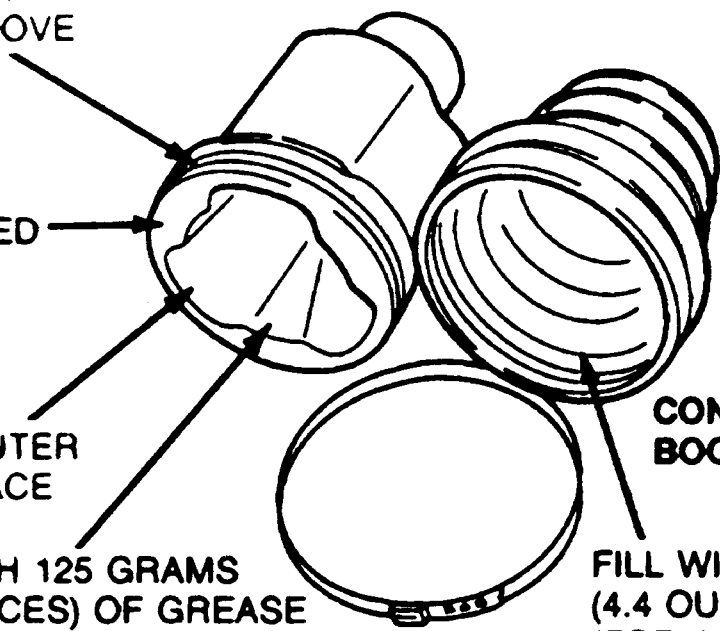
**FILL WITH 100 GRAMS  
(3.5 OUNCES) OF GREASE  
(FOR ASSEMBLY)**

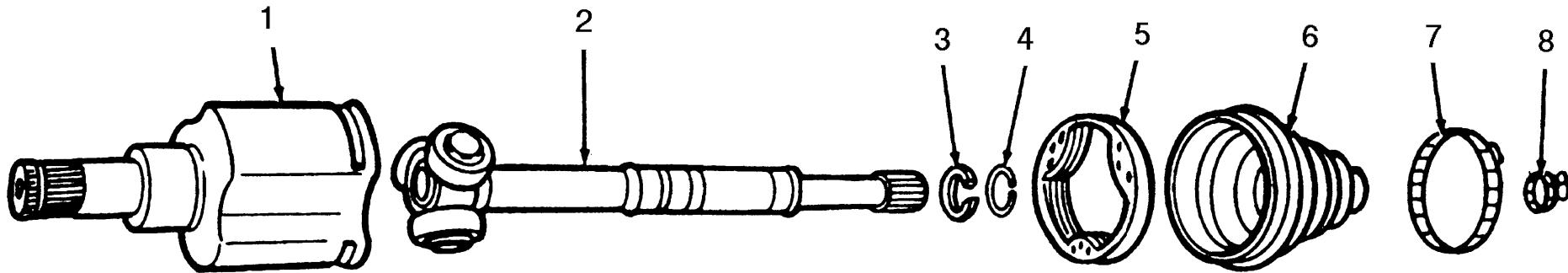
**TRI-LOBE  
BOOT (T AND C DESIGN)**

**BOOT  
GROOVE**

**OUTER  
RACE**

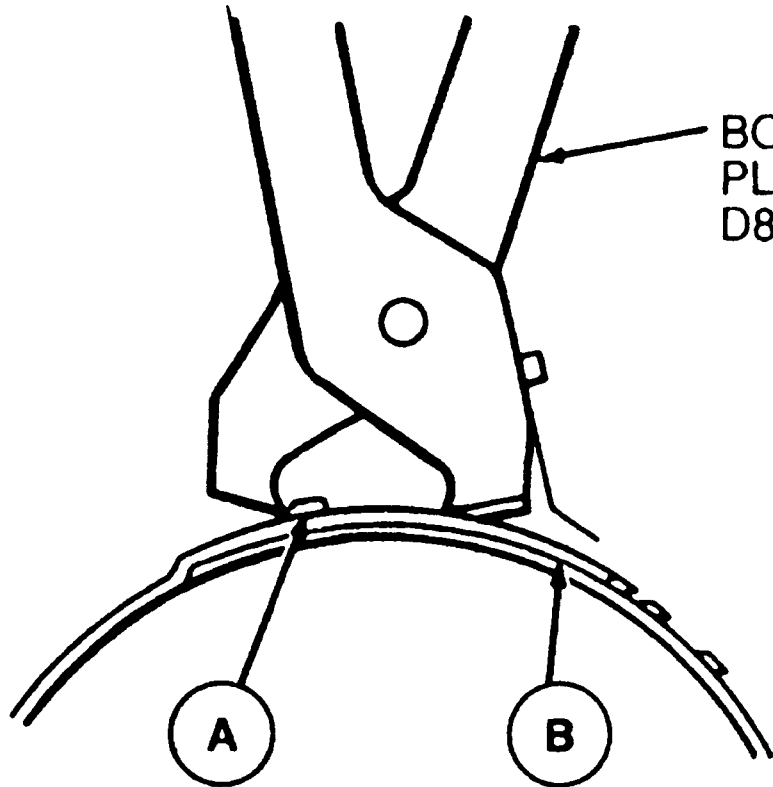
**FILL WITH 70 GRAMS  
(2.5 OUNCES) OF GREASE  
(FOR ASSEMBLY)**





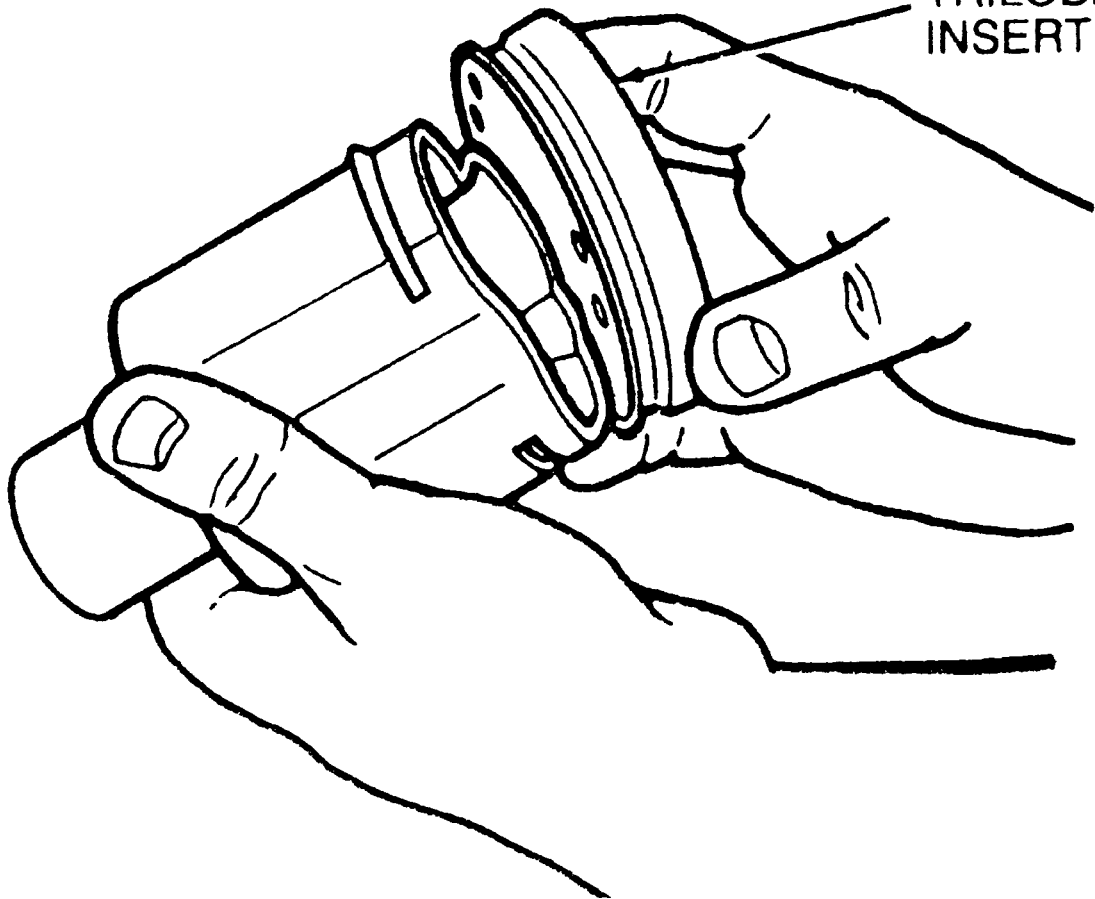
- 1. Inboard CV joint housing
- 2. Interconnecting shaft (part of 3B436)
- 3. Stop ring
- 4. Driveshaft bearing retainer circlip

- 5. Tri-lobe insert (part of 3B436)
- 6. Front wheel driveshaft joint boot
- 7. Front wheel driveshaft joint boot clamp (large)
- 8. Front wheel driveshaft joint boot clamp (small)



BOOT CLAMP  
PLIERS  
D87P-1090-A

TRILOBE  
INSERT



BOOT  
GROOVE

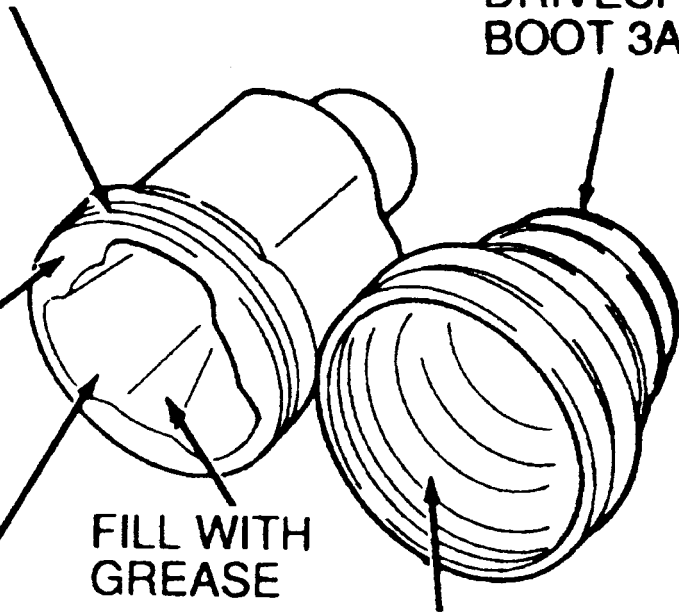
FRONT WHEEL  
DRIVESHAFT  
BOOT 3A331

TRILobe  
INSERT

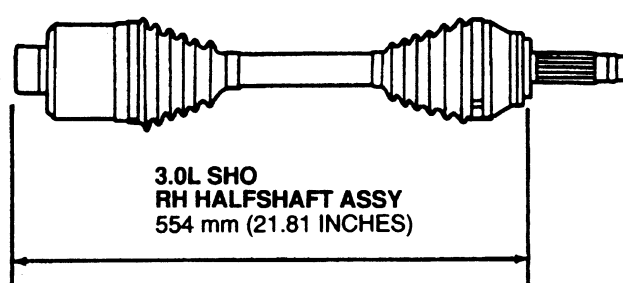
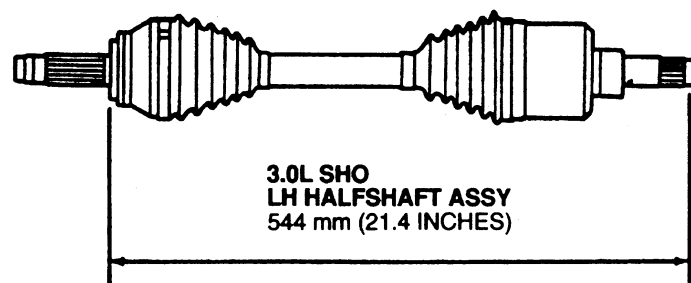
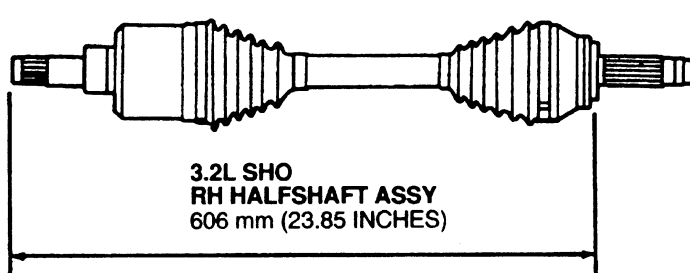
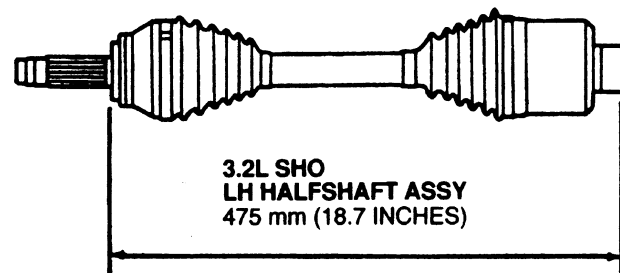
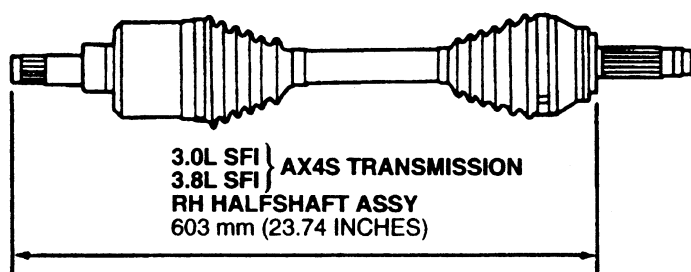
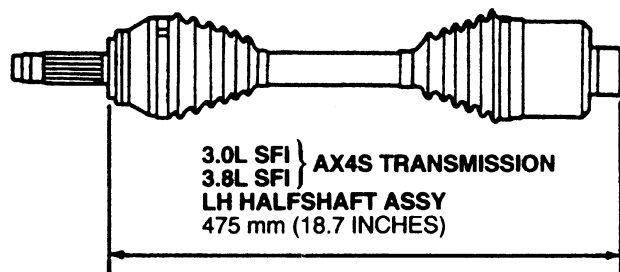
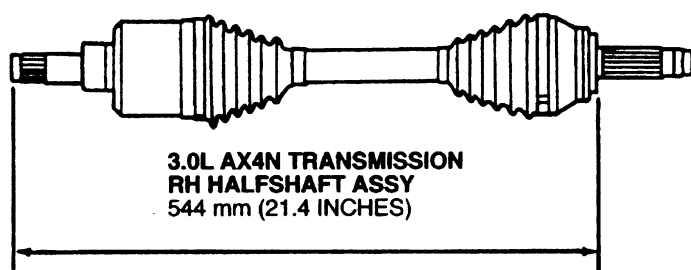
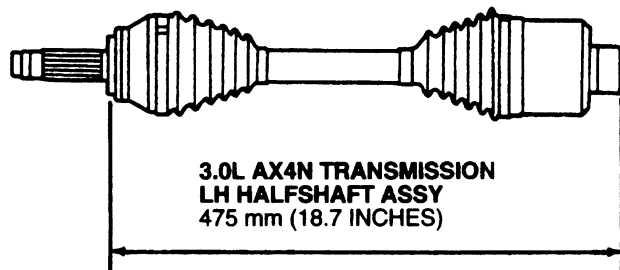
FILL WITH  
GREASE

INBOARD CV JOINT  
HOUSING

SPREAD REMAINING  
GREASE EVENLY INSIDE  
FRONT WHEEL DRIVESHAFT  
BOOT 3A331  
(250 GRAMS TOTAL FILL)



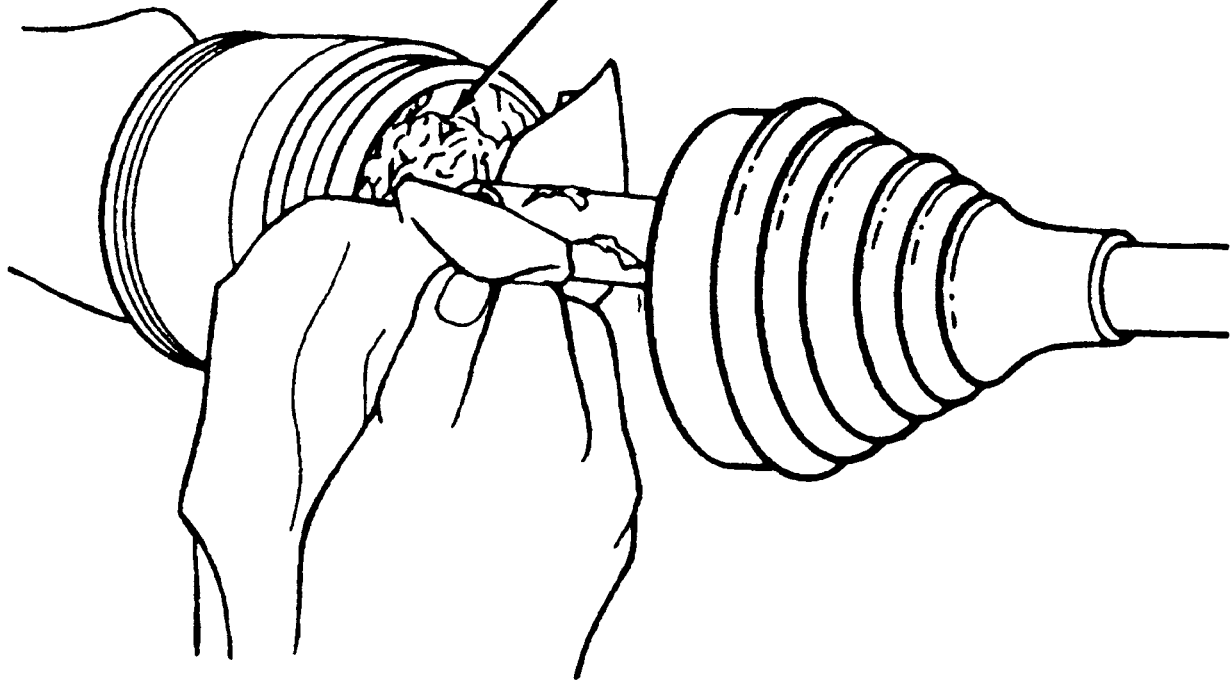
# HALFSHAFT ASSEMBLED LENGTHS



## LUBRICANT SPECIFICATIONS—HALFSHAFT ASSEMBLIES

POWERTRAIN		SPECIFICATION	TOTAL FILL AMOUNT			
			INBOARD CV		OUTBOARD CV	
Engine	Transmission	Lubricant	LH	RH	LH	RH
3.2L	SHO Automatic	ESP-M1C207-A (E43Z-19590-A)	490 g 17.3 oz	490 g 17.3 oz	170 g 6.0 oz	170 g 6.0 oz
3.2L	SHO Manual Transaxle	ESP-M1C207-A (E43Z-19590-A)	250 g 8.8 oz	250 g 8.8 oz	170 g 6.0 oz	170 g 6.0 oz
3.0L/3.8L	AX45/AX4N	ESP-M1C207-A (E43Z-19590-A)	250 g 8.8 oz	250 g 8.8 oz	170 g 6.0 oz	170 g 6.0 oz

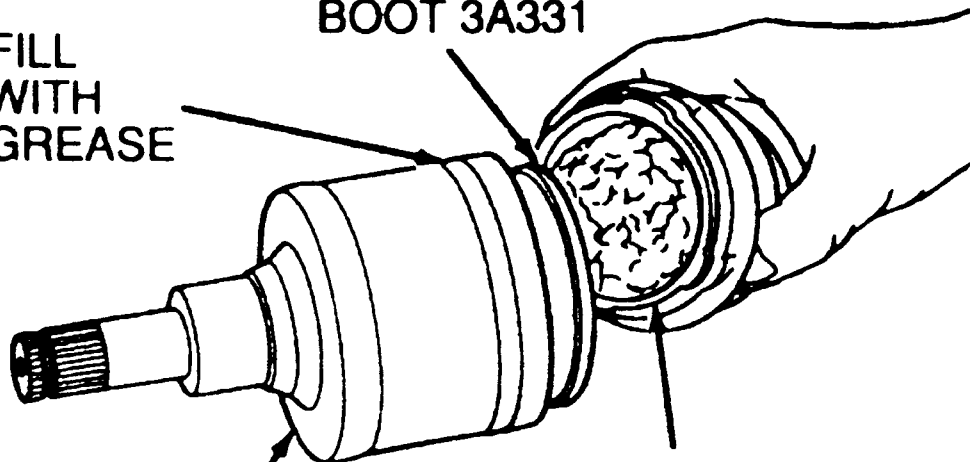
WIPE AWAY GREASE





**FRONT WHEEL  
DRIVESHAFT  
BOOT 3A331**

**FILL  
WITH  
GREASE**

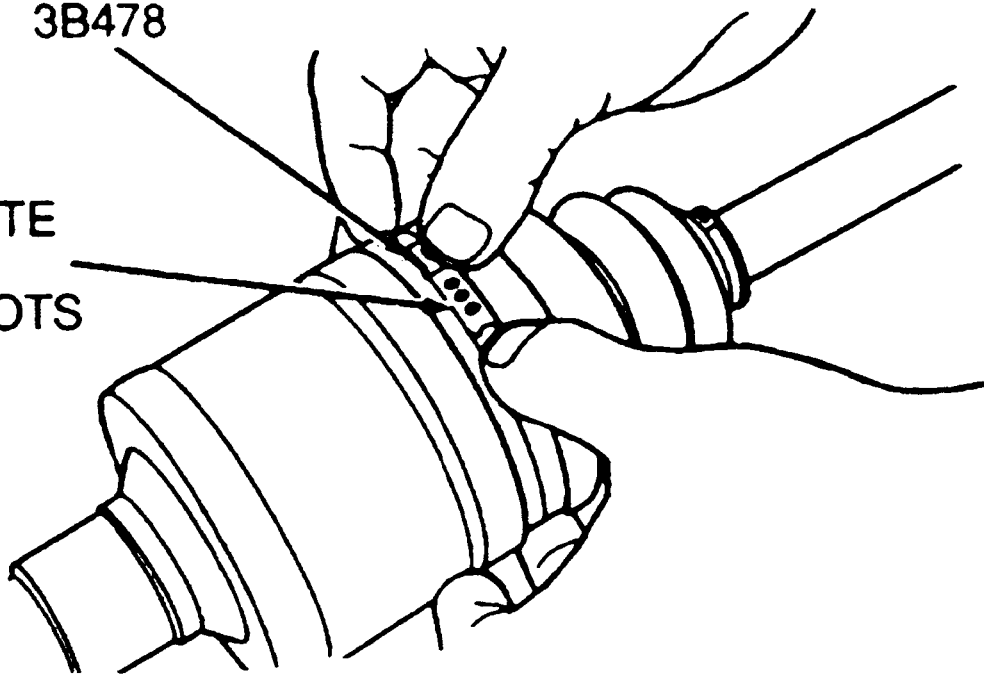


**SPREAD REMAINING GREASE  
EVENLY INSIDE FRONT WHEEL  
DRIVESHAFT BOOT 3A331 FOR  
A TOTAL COMBINED FILL OF  
490 GRAMS (17.3 OZ)**

**INBOARD CV  
JOINT HOUSING**

FRONT WHEEL DRIVESHAFT  
JOINT BOOT CLAMP  
3B478

LOCATE  
TABS  
IN SLOTS





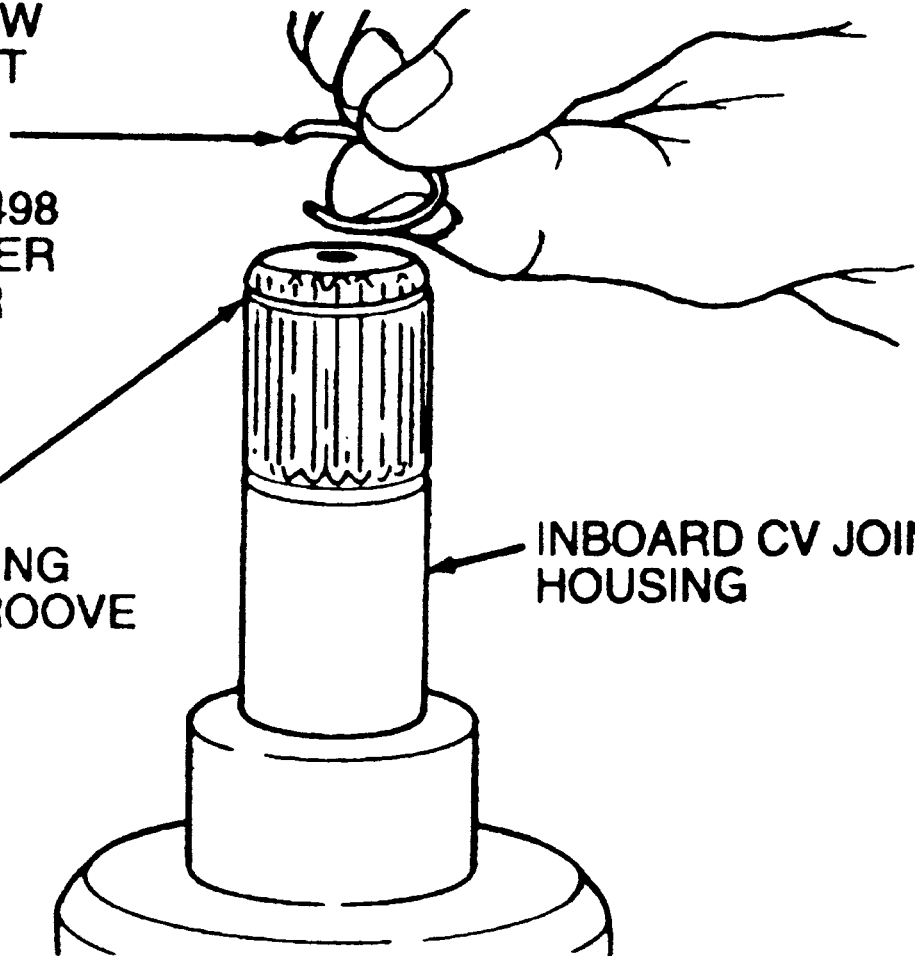
BOOT CLAMP  
REPLACER  
T95T-3514-A

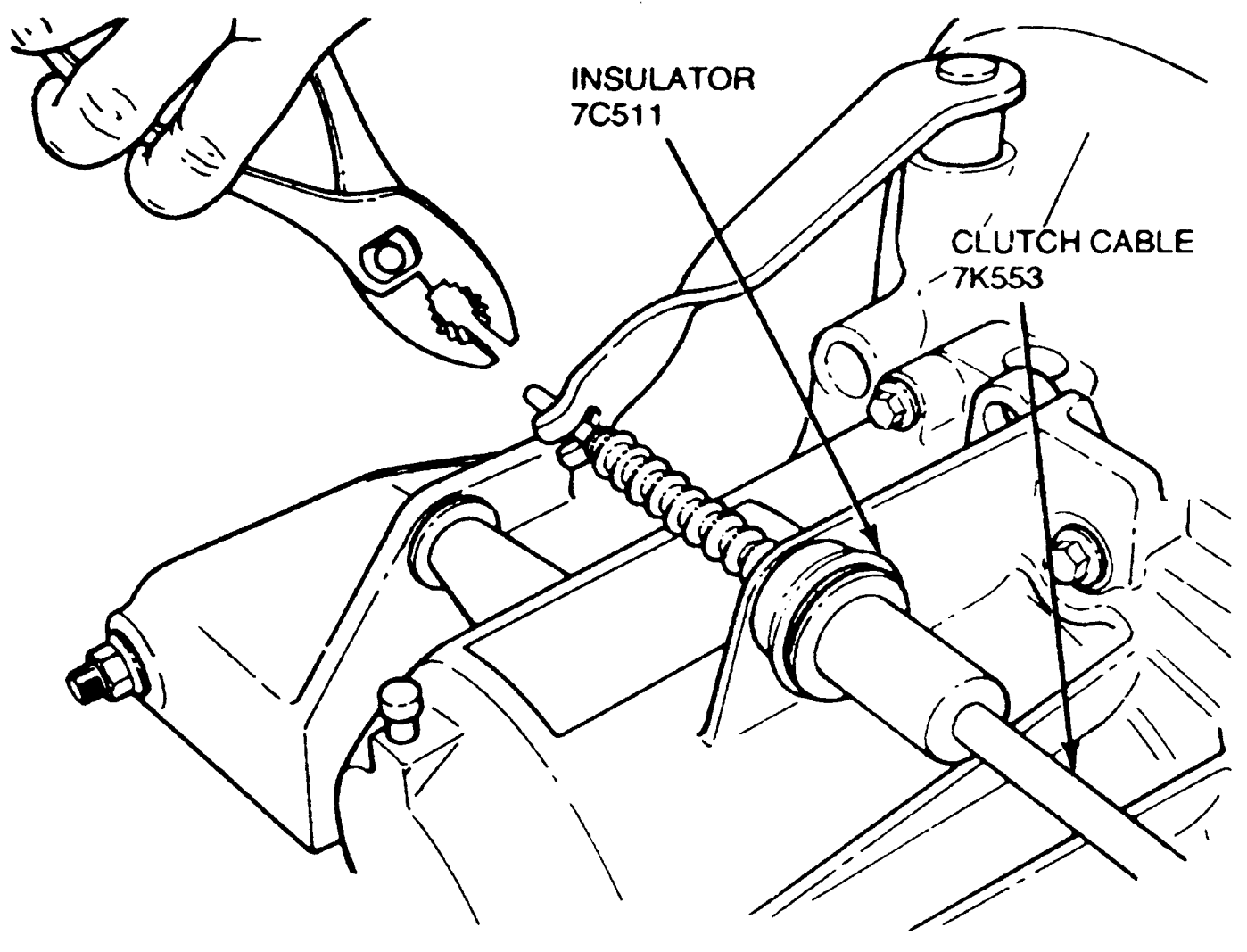
CLOSED  
POSITION

**INSTALL NEW  
DRIVESHAFT  
BEARING  
RETAINER  
CIRCLIP 3Z498  
DO NOT OVER  
EXPAND OR  
TWIST**

**RETAINING  
CLIP GROOVE**

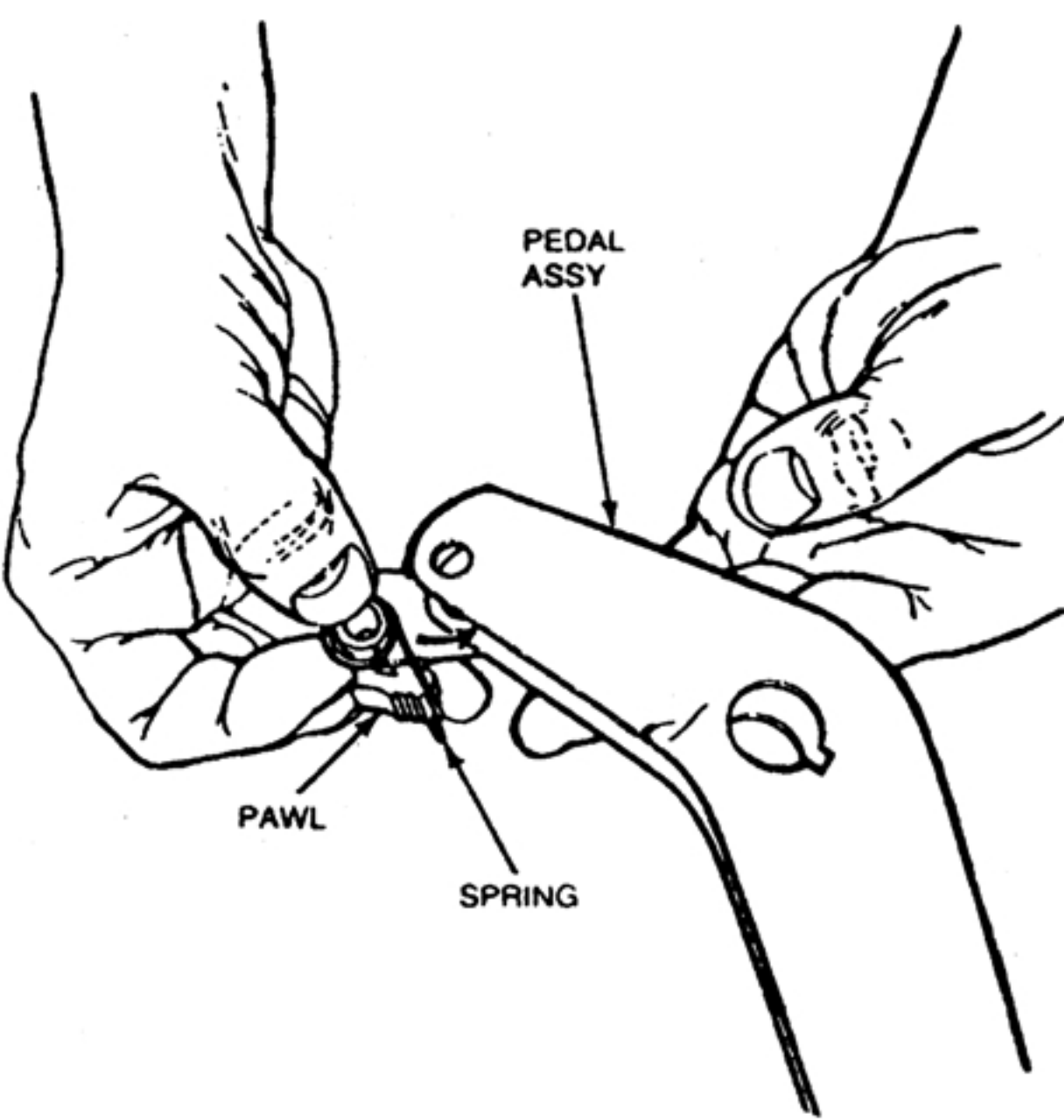
**INBOARD CV JOINT  
HOUSING**



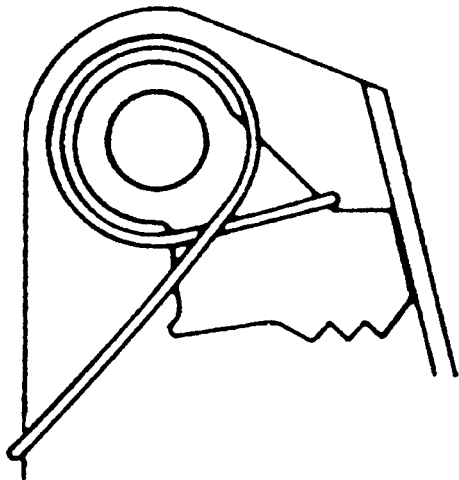


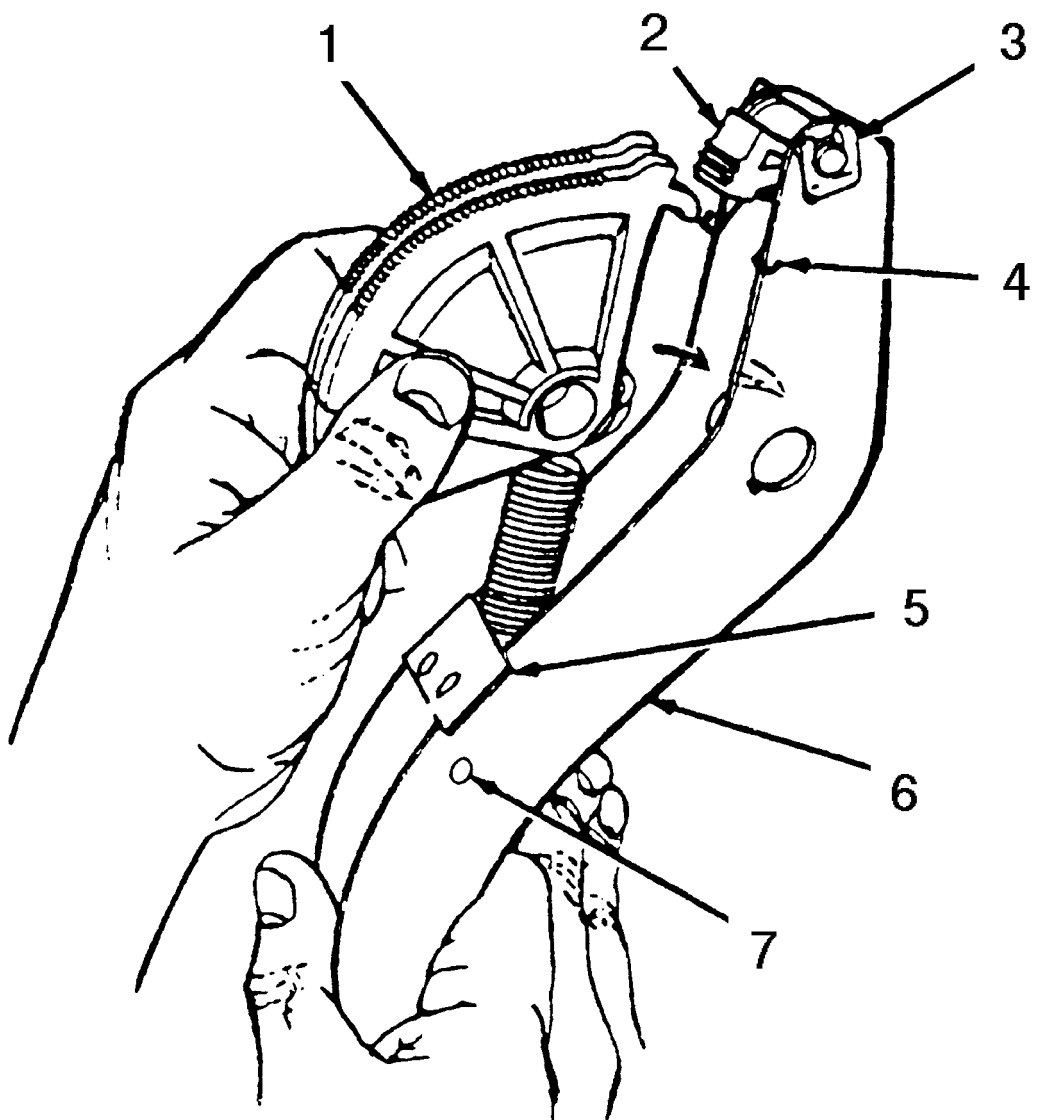
INSULATOR  
7C511

CLUTCH CABLE  
7K553



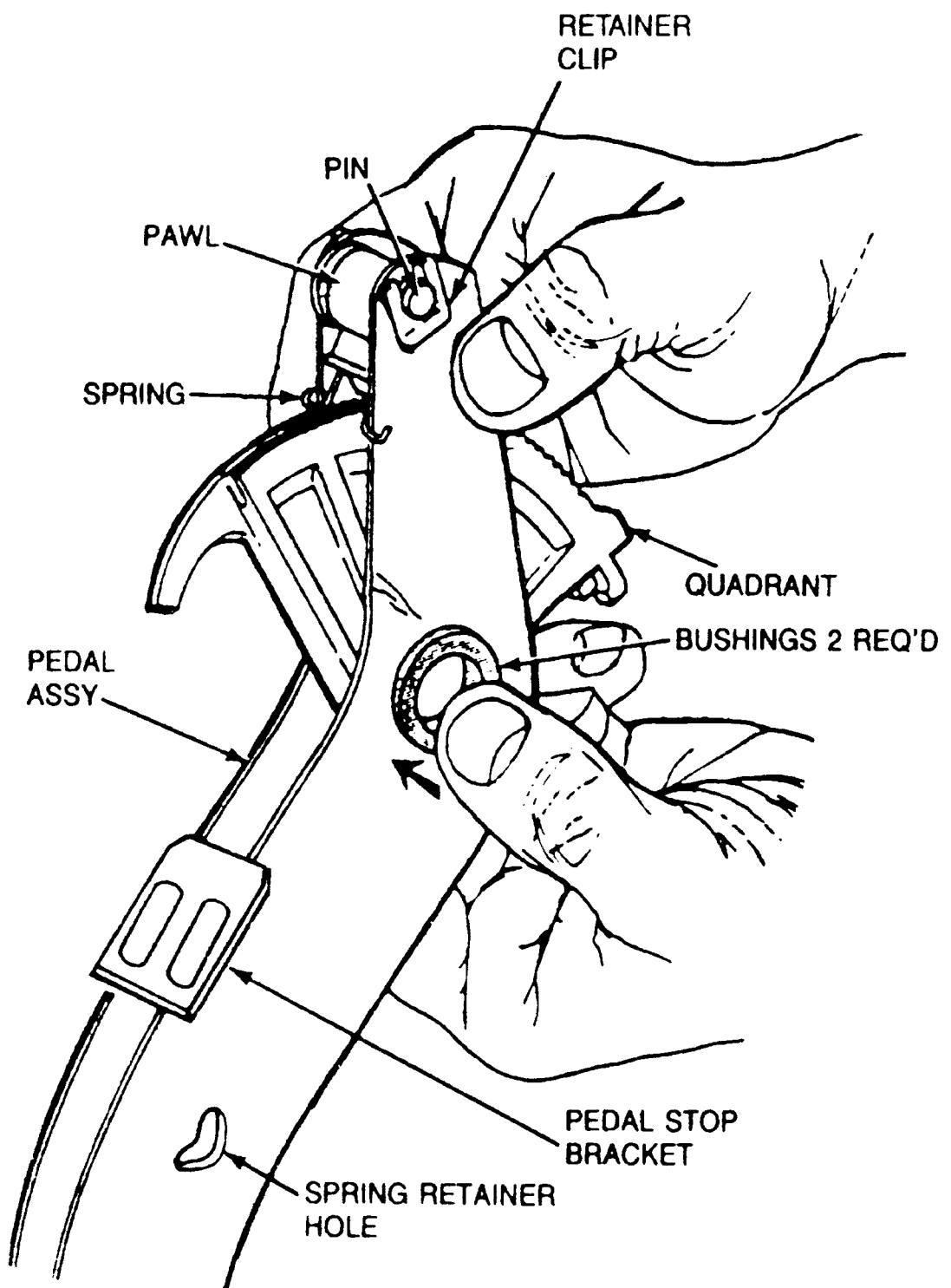
FRONT OF  
VEHICLE

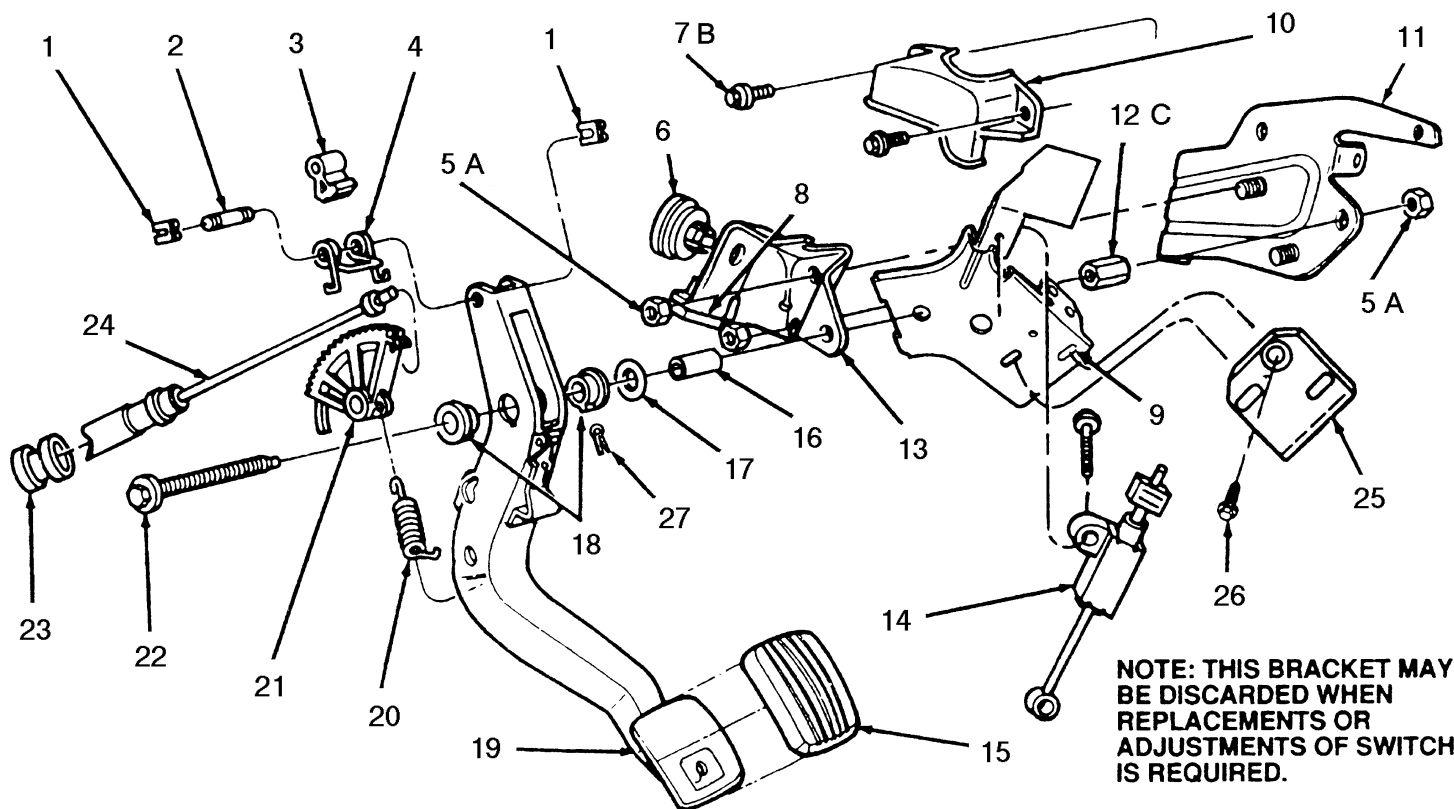




1. Gear quadrant
2. Pawl
3. Retainer
4. Spring
5. Pedal stop bracket
6. Pedal assy
7. Spring retainer hole



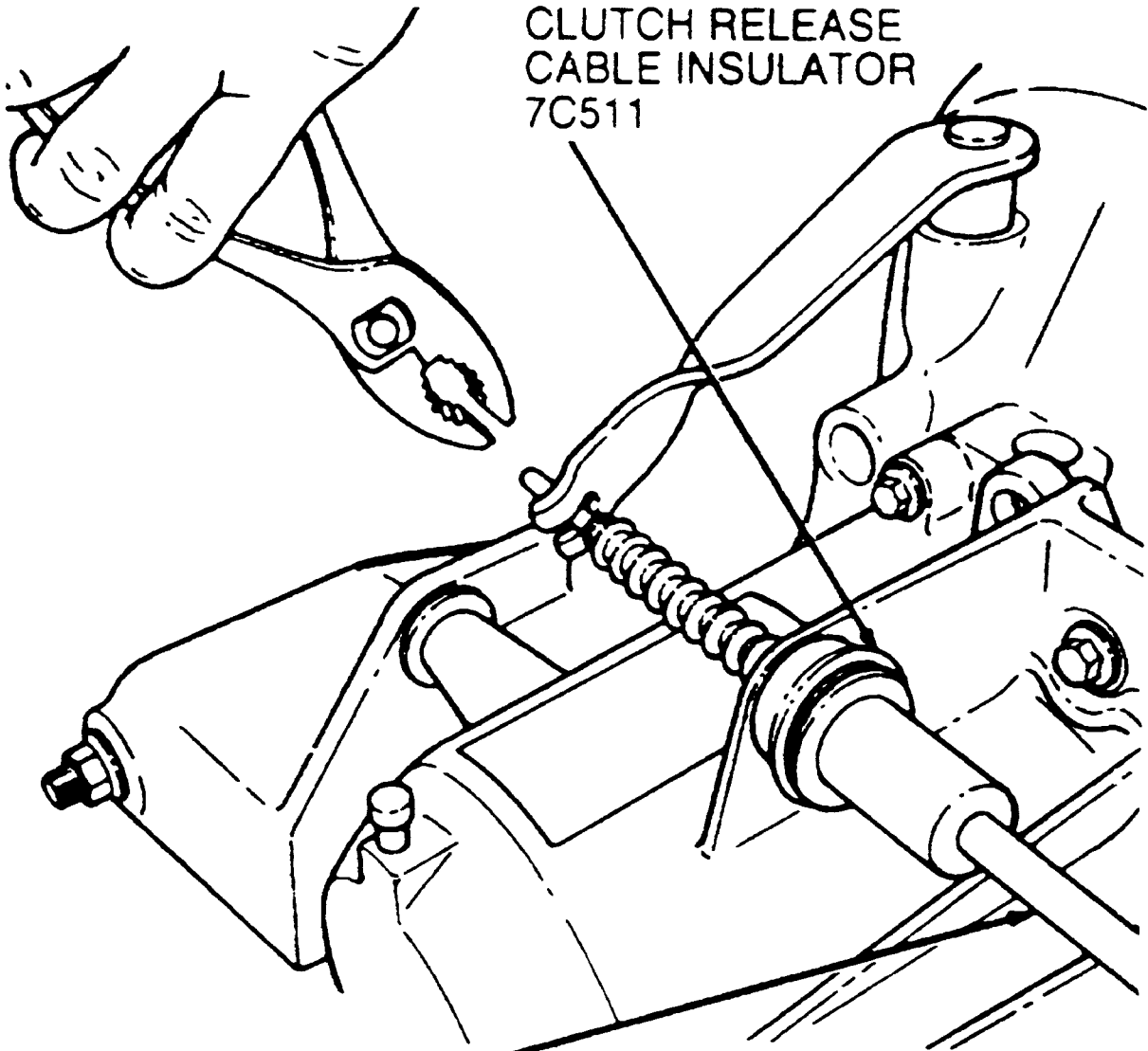




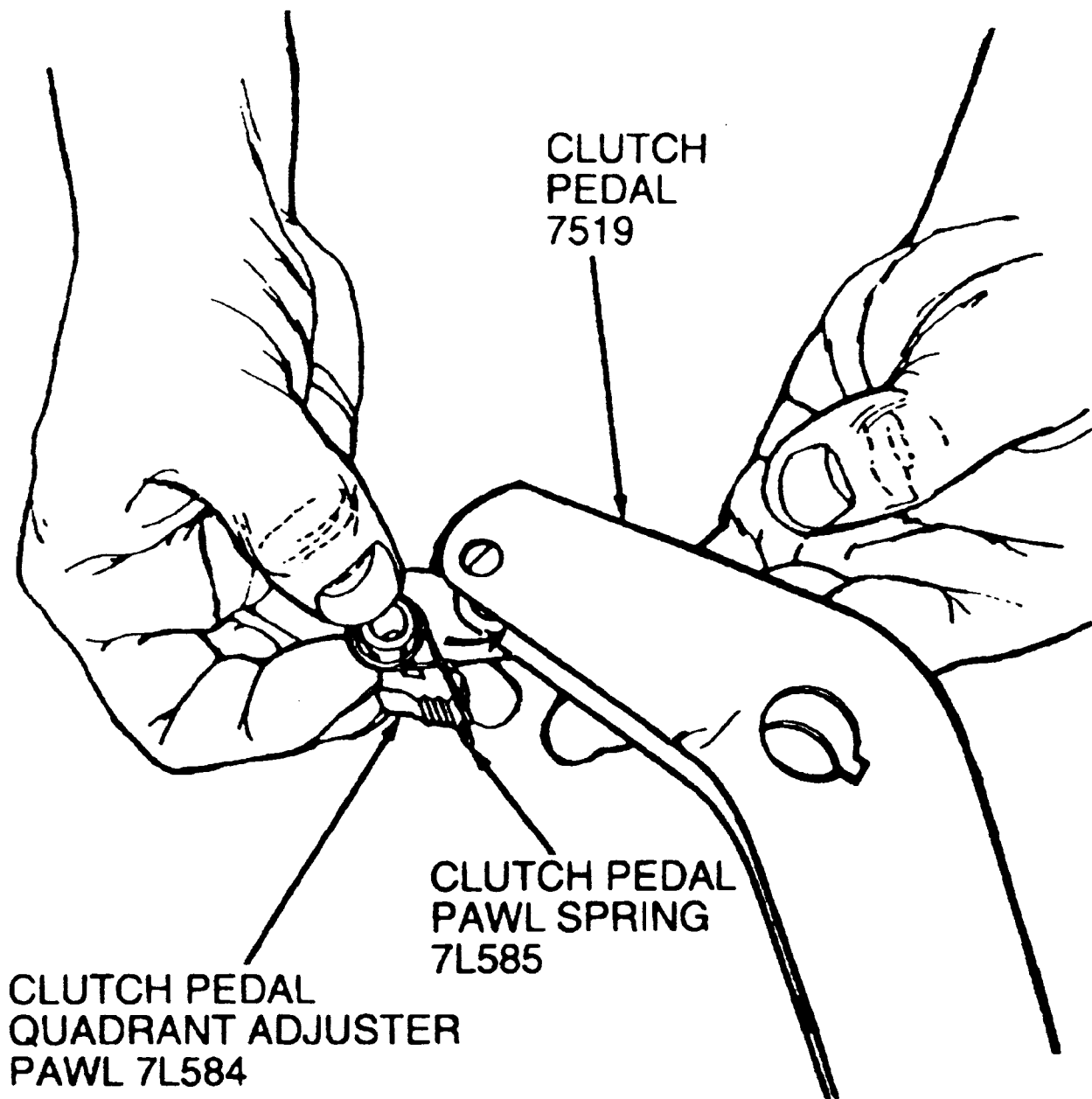
1. Retaining clip (2 req'd)
2. Clutch pedal pawl pin
3. Clutch pedal quadrant adjuster pawl
4. Clutch pedal pawl spring
5. Nut (3 req'd)
6. Clutch release cable insulator
7. Screw (2 req'd)
8. Clutch pedal stop
9. Clutch pedal position switch mounting bracket
10. Clutch pedal shield
11. Clutch release plate
12. Spacer nut
13. Clutch pedal bumper bracket
14. Clutch pedal position switch
15. Pad

16. Pivot sleeve
  17. Clutch and brake pedal shaft spring washer
  18. Clutch release idler lever rod bushing (2 req'd)
  19. Clutch pedal
  20. Clutch pedal lever assist spring
  21. Clutch pedal adjuster quadrant
  22. Pivot bolt
  23. Dash panel grommet
  24. Clutch release lever cable
  25. Bracket (part of 11A152)
  26. Bolt
  27. Clip
- A. Tighten to 20-34 N.m (15-25 lb-ft)  
 B. Tighten to 8-12 N.m (71-106 lb-in)  
 C. Tighten to 28-45 N.m (21-33 lb-ft)

CLUTCH RELEASE  
CABLE INSULATOR  
7C511



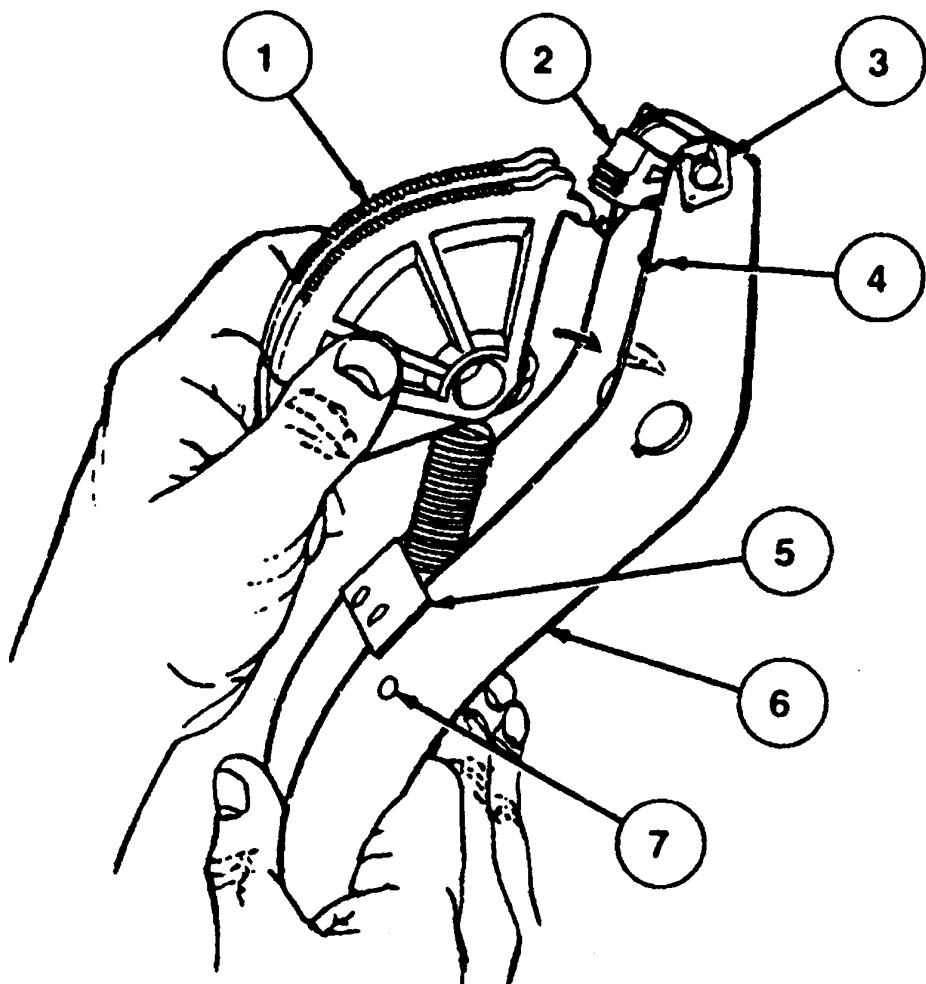
CLUTCH RELEASE  
CABLE 7535



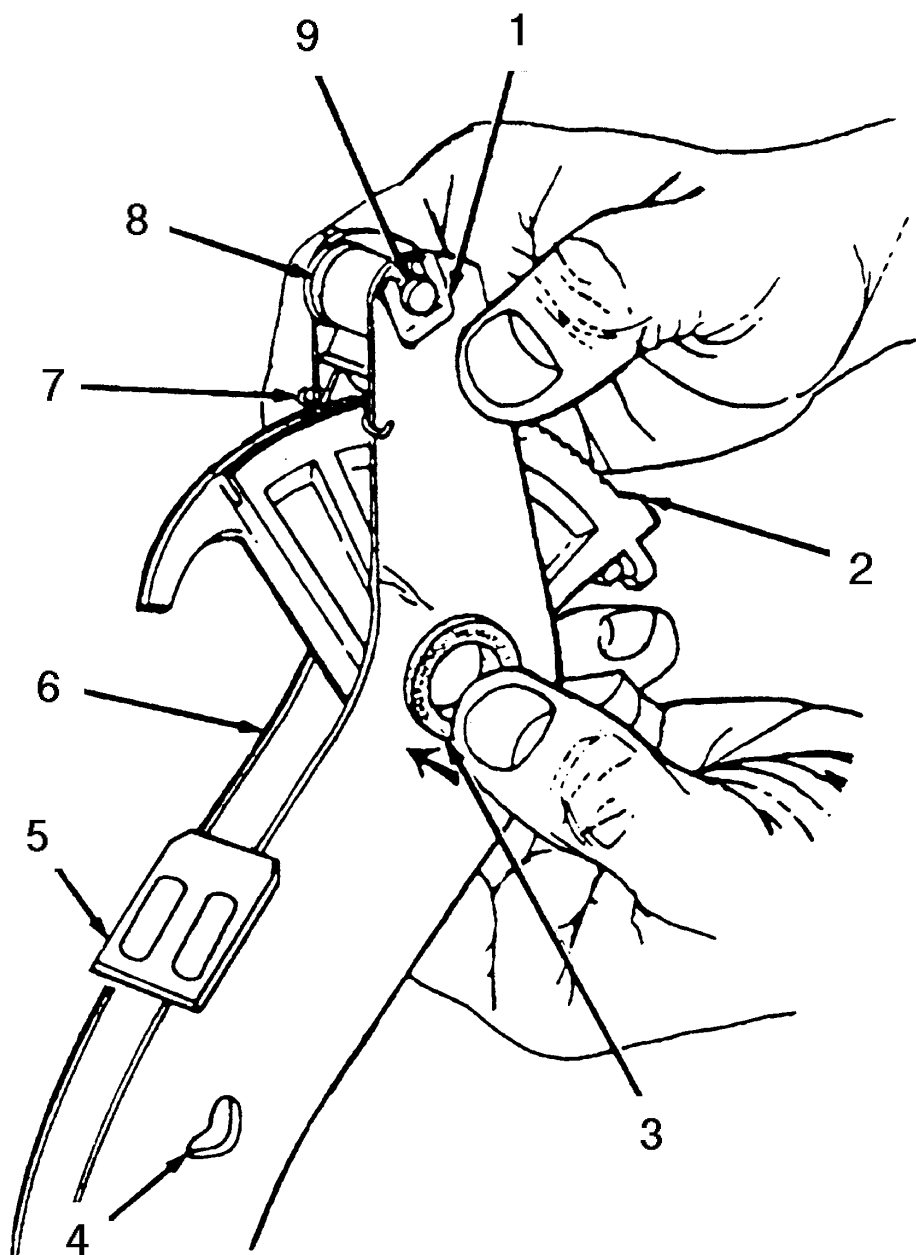
CLUTCH  
PEDAL  
7519

CLUTCH PEDAL  
PAWL SPRING  
7L585

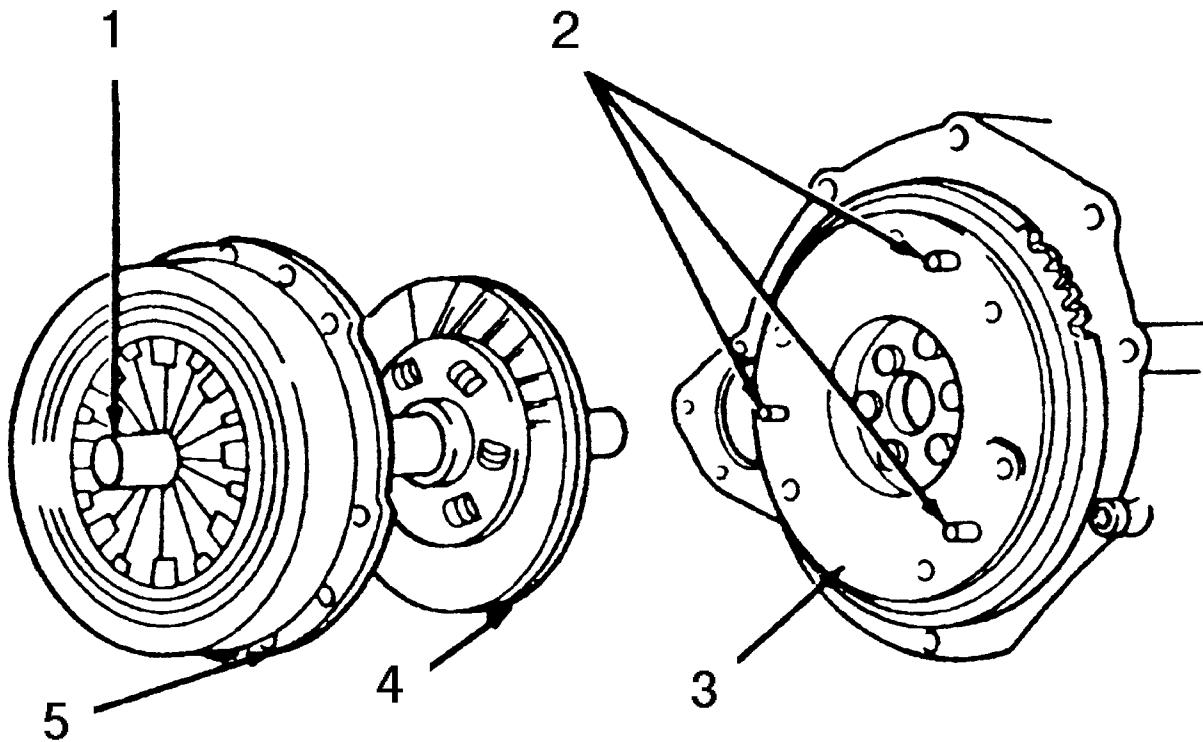
CLUTCH PEDAL  
QUADRANT ADJUSTER  
PAWL 7L584



Item	Part Number	Description
1	7L583	Clutch Pedal Adjuster Quadrant
2	7L584	Clutch Pedal Quadrant Adjuster Pawl
3	N801406-S2	Retainer (2 Req'd)
4	7534	Clutch Pedal Lever Assist Spring
5	—	Pedal Stop Bracket (Part of 7519)
6	7519	Clutch Pedal
7	—	Spring Retainer Hole (Part of 7519)

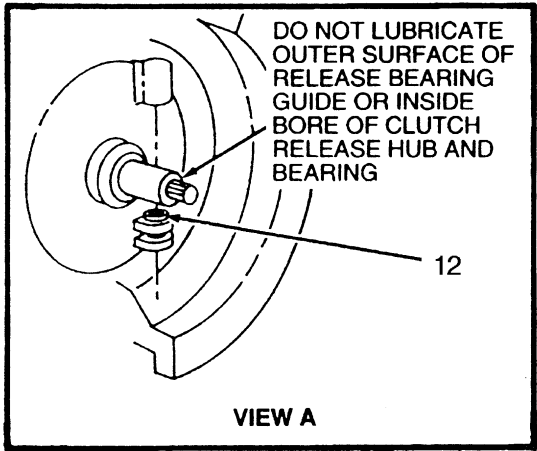


1. Retainer (2 req'd)
2. Clutch pedal adjuster quadrant
3. Clutch release idler lever  
rod bushing (2 req'd)
4. Spring retainer hole (part of 7519)
5. Pedal stop bracket (part of 7519)
6. Clutch pedal
7. Clutch pedal pawl spring
8. Clutch pedal quadrant  
adjuster pawl
9. Clutch pedal pawl pin



1. Clutch aligner
2. Flywheel-to-clutch pressure plate (3 req'd)
3. Flywheel
4. Clutch disc
5. Clutch pressure plate

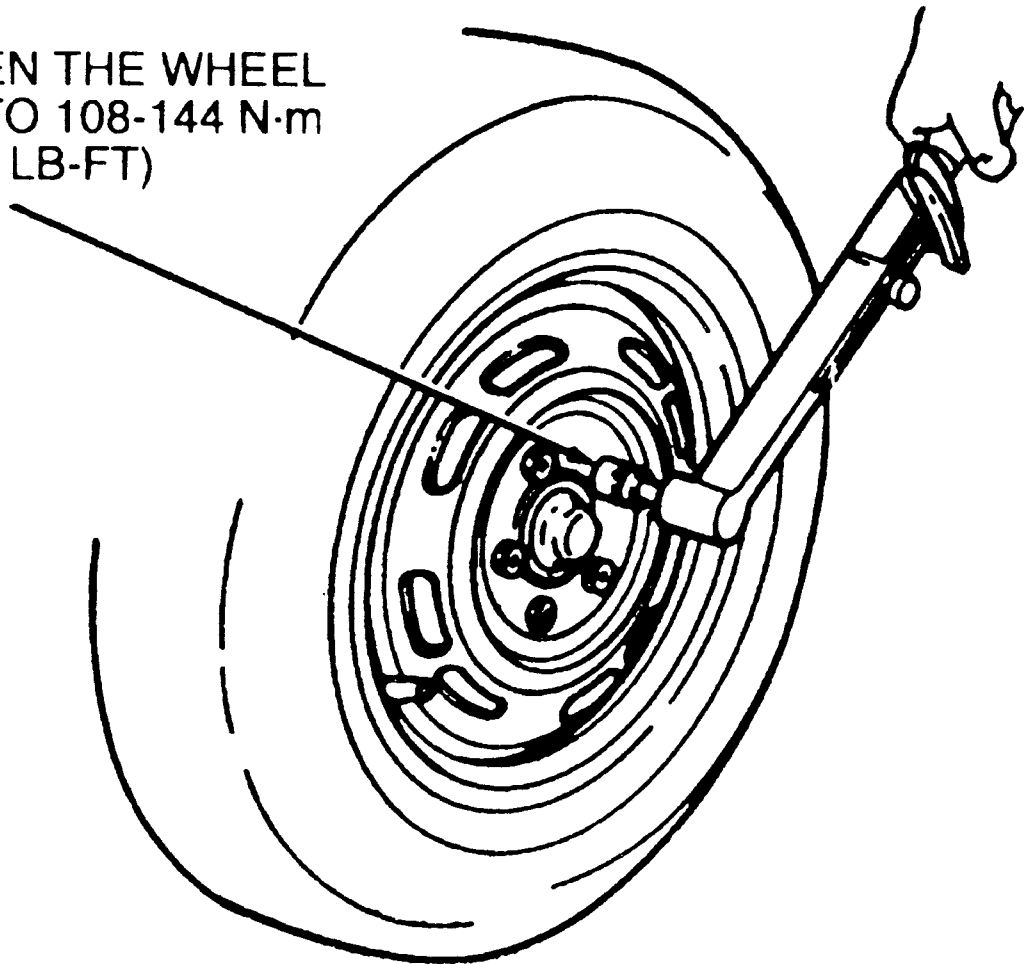
● LUBRICATE  
LEVER END

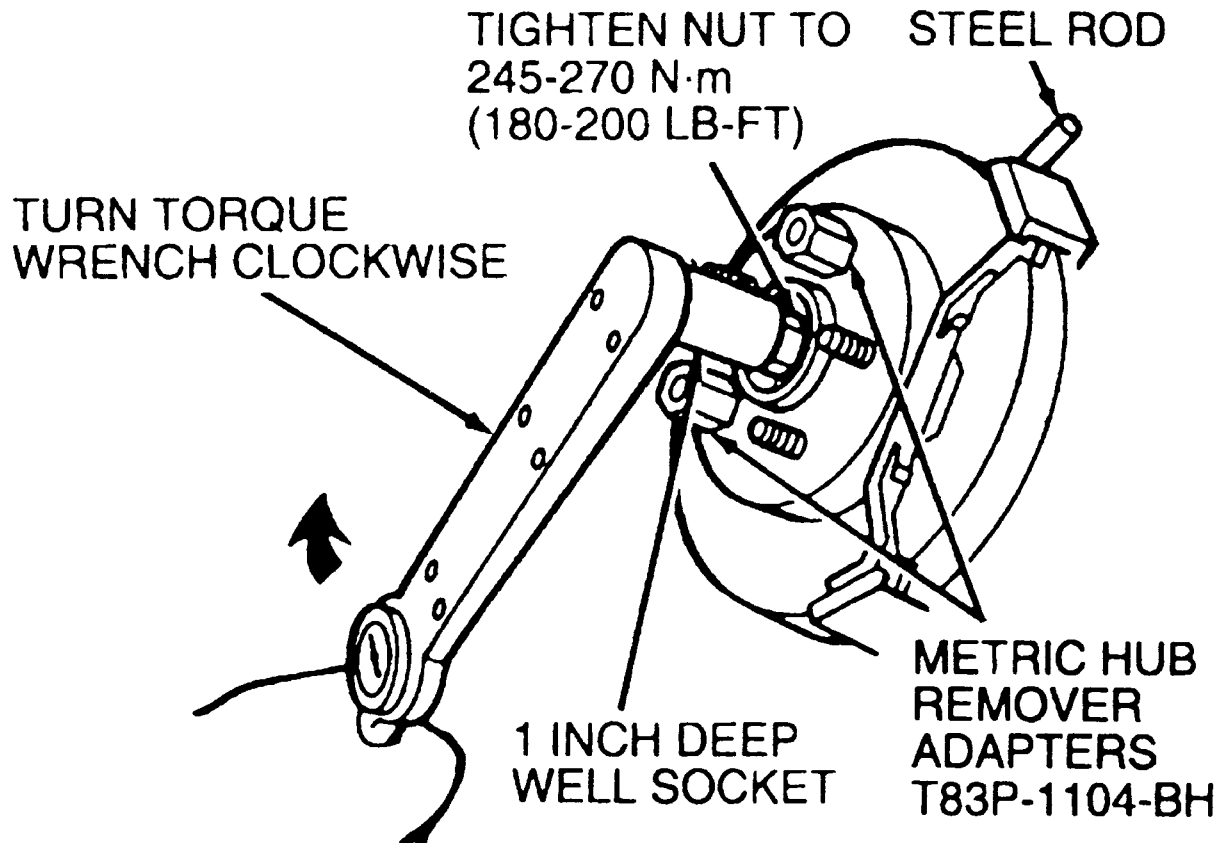


1. Bolt (2 req'd)
2. Clutch assist lever
3. Felt washer
4. Bolt
5. Clutch release lever stud
6. Clutch release hub and bearing
7. Clutch disc
8. Flywheel-to-clutch pressure plate dowel (3 req'd)
9. Rear of engine
10. Flywheel housing to block dowel (2 req'd)
11. Bolt (3 req'd)
12. Clutch release lever bushing
13. Pressure plate bolt (6 req'd)
14. Clutch pressure plate
15. Clutch release lever
16. Transaxle assy
17. Transmission energy bracket
18. Clutch assist shaft bushing
19. Bolt
20. Stud (2 req'd)
  - A. Tighten to 35-50 N.m (26-37 lb-ft)
  - B. Tighten to 40-55 N.m (30-40 lb-ft)
  - C. Tighten to 33 N.m (24 lb-ft)
  - D. Tighten to 46-63 N.m (34-46 lb-ft)
  - E. Tighten to 54-92 N.m (40-68 lb-ft)



TIGHTEN THE WHEEL  
NUTS TO 108-144 N·m  
(80-105 LB-FT)



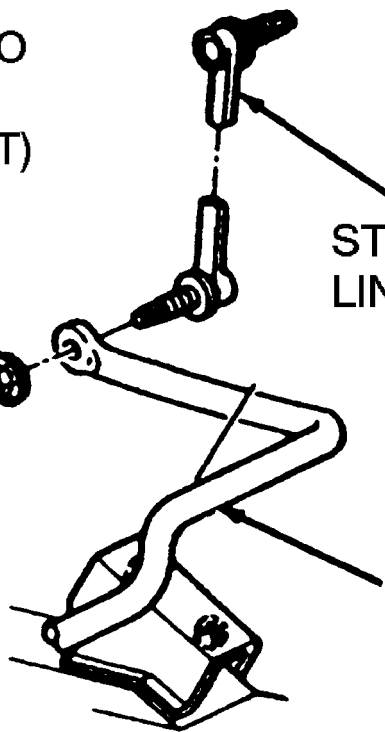


**CAUTION: DO NOT USE POWER OR IMPACT  
TOOLS TO TIGHTEN THE HUB NUT**

TIGHTEN TO  
47-65 N.m  
(35-48 LB-FT)

STABILIZER BAR  
LINK 5K484

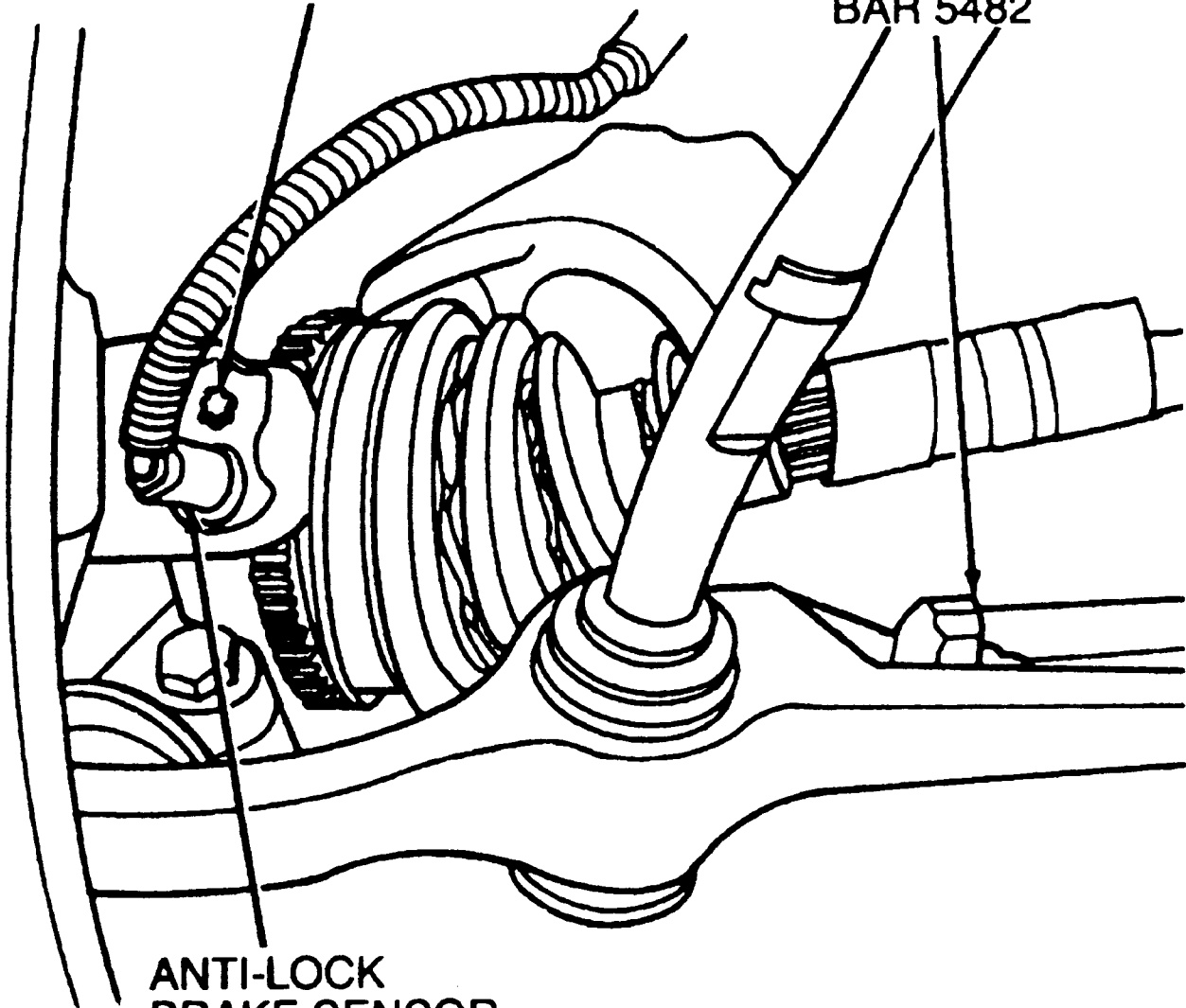
STABILIZER BAR  
5482

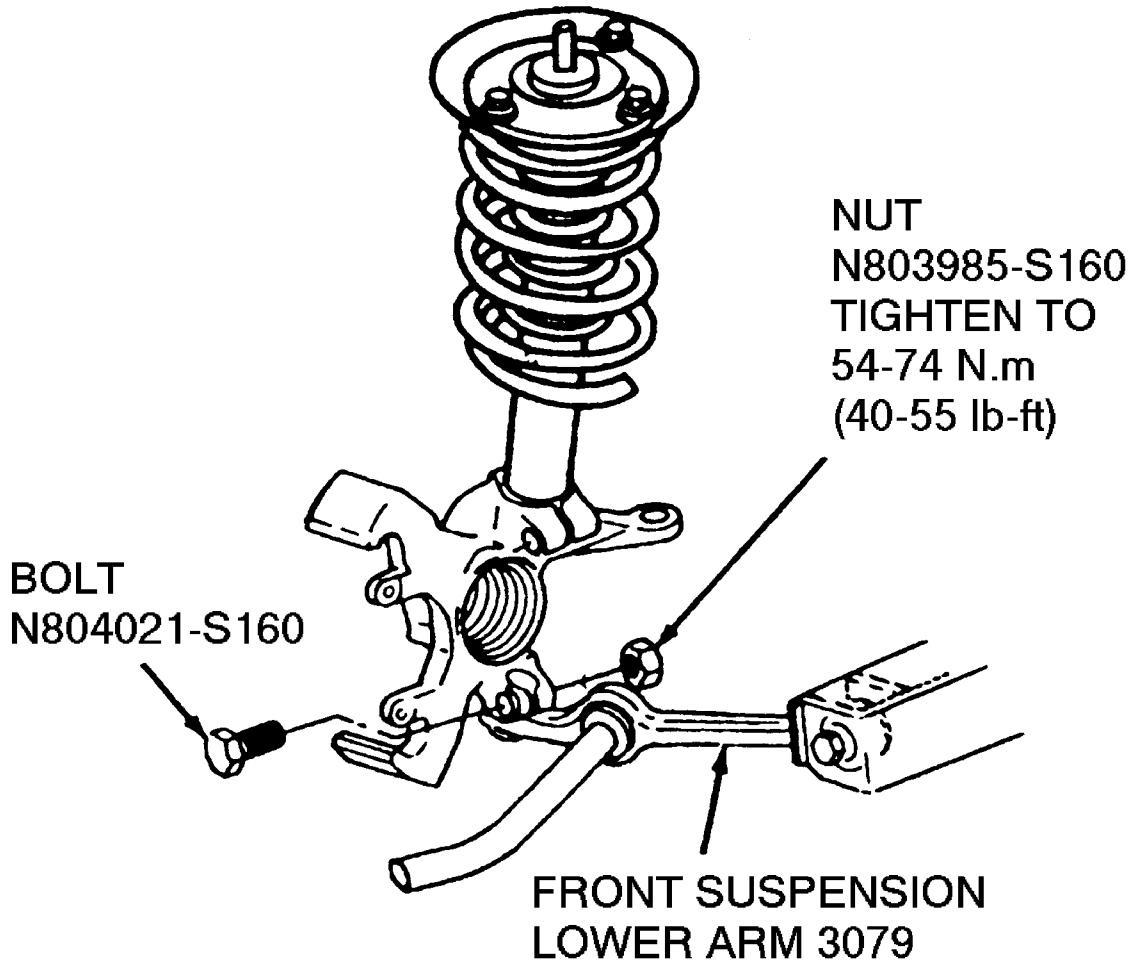


BOLT

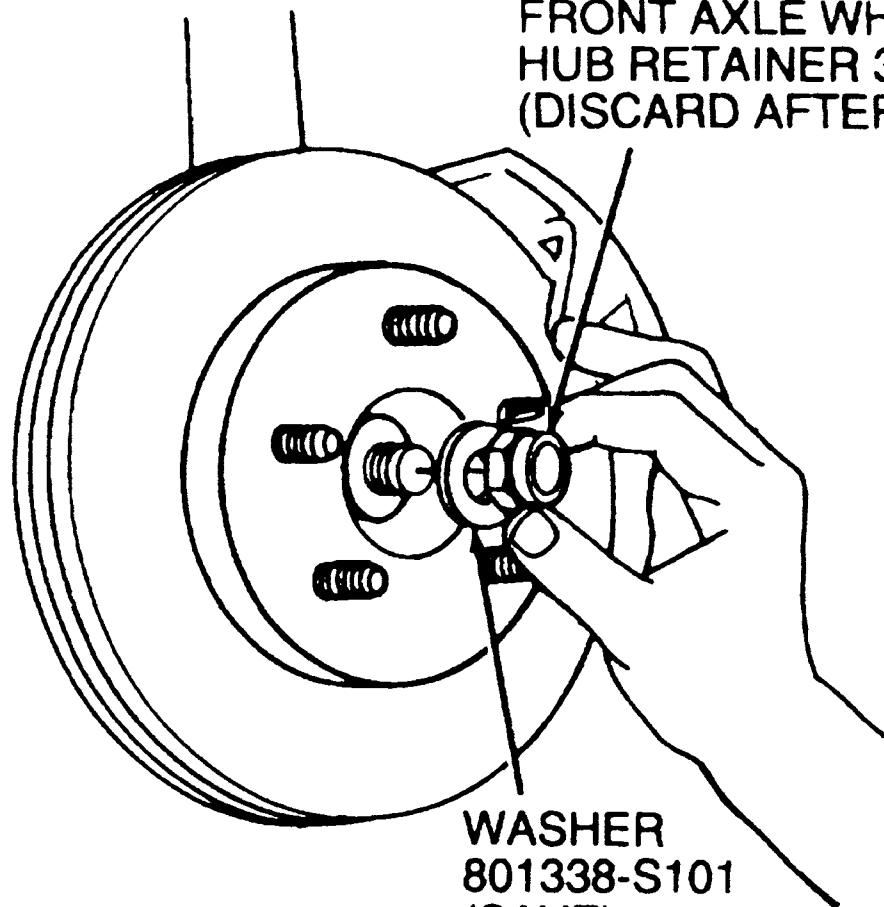
STABILIZER  
BAR 5482

ANTI-LOCK  
BRAKE SENSOR  
2C204





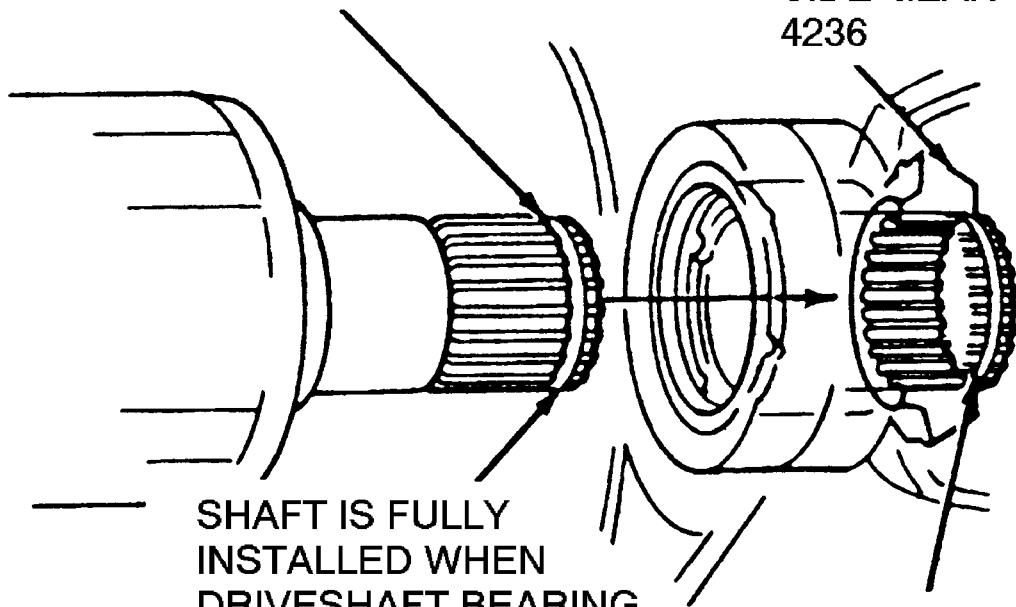
FRONT AXLE WHEEL  
HUB RETAINER 3N405  
(DISCARD AFTER REMOVAL)



WASHER  
801338-S101  
(SAVE)

DRIVESHAFT BEARING  
RETAINER CLIP 3Z498

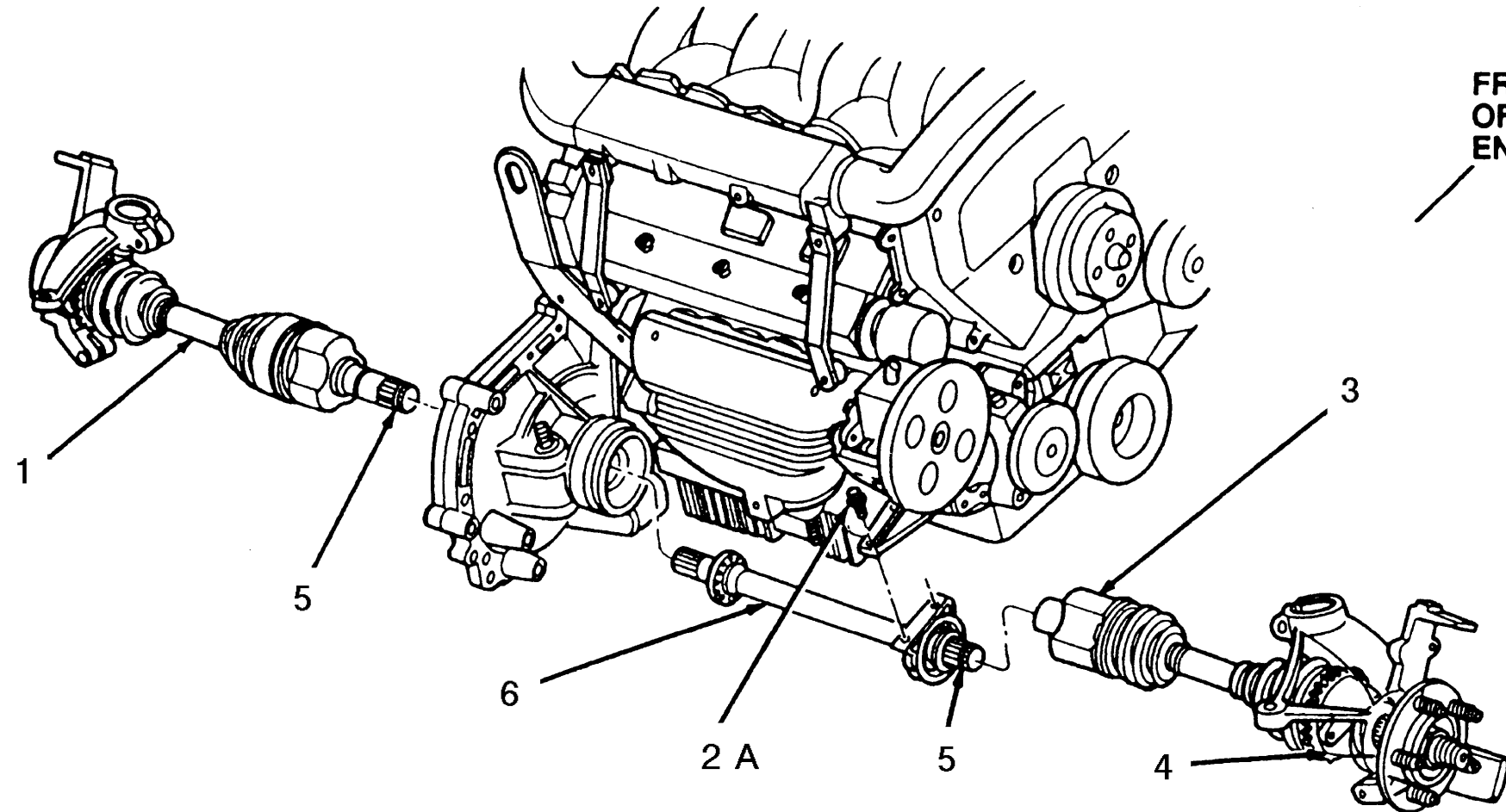
TRANSAXLE  
DIFFERENTIAL  
SIDE GEAR  
4236



SHAFT IS FULLY  
INSTALLED WHEN  
DRIVESHAFT BEARING  
RETAINER CLIP 3Z498  
IS FELT TO SEAT IN  
DIFFERENTIAL SIDE  
GEAR

GROOVE

FRONT  
OF  
ENGINE



1. Front wheel driveshaft and joint

2. Bolt (2 req'd)

3. Inboard CV joint housing (part of 3B436)

4. Front wheel driveshaft joint

5. Driveshaft bearing retainer circlip

6. Halfshaft

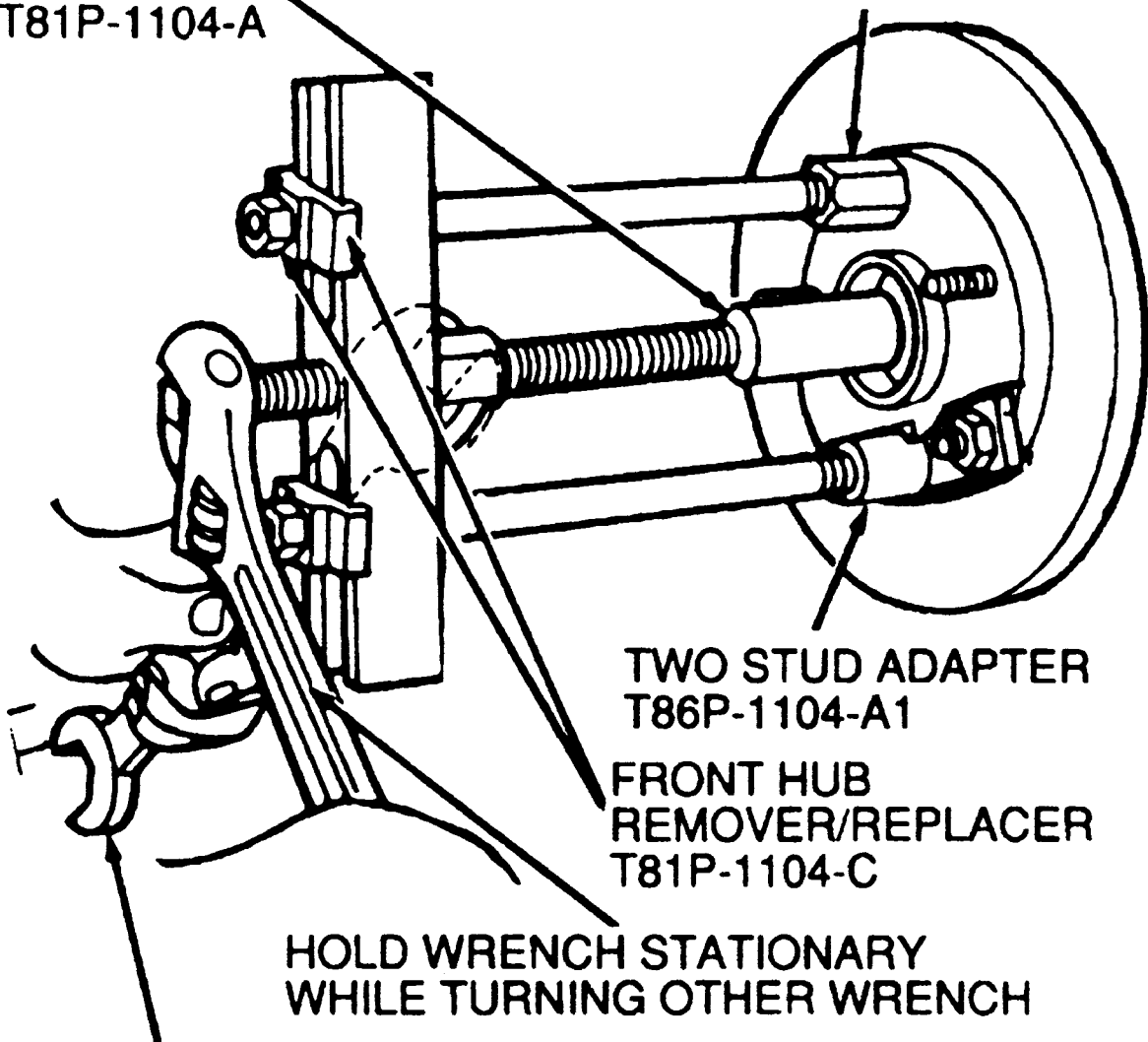
A. Tighten to 21-32 N.m (16-23 lb-ft)



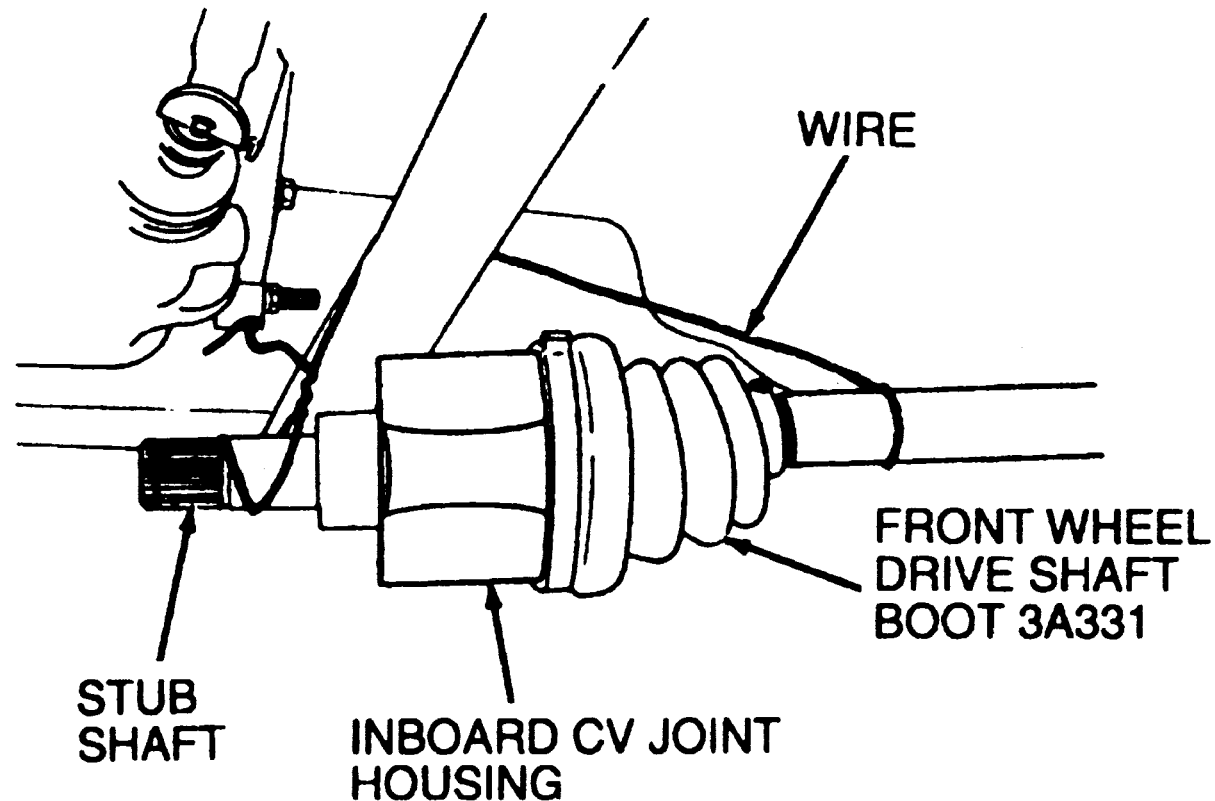
**MAKE SURE THE HUB REMOVER  
ADAPTER IS FULLY THREADED  
ONTO THE HUB STUD AND IS  
POSITIONED OPPOSITE THE  
TWO STUD ADAPTER**

**FRONT HUB  
REPLACER  
T81P-1104-A**

**METRIC HUB REMOVER  
ADAPTERS T83P-1104-BH1**



**TURN THIS WRENCH  
COUNTERCLOCKWISE**



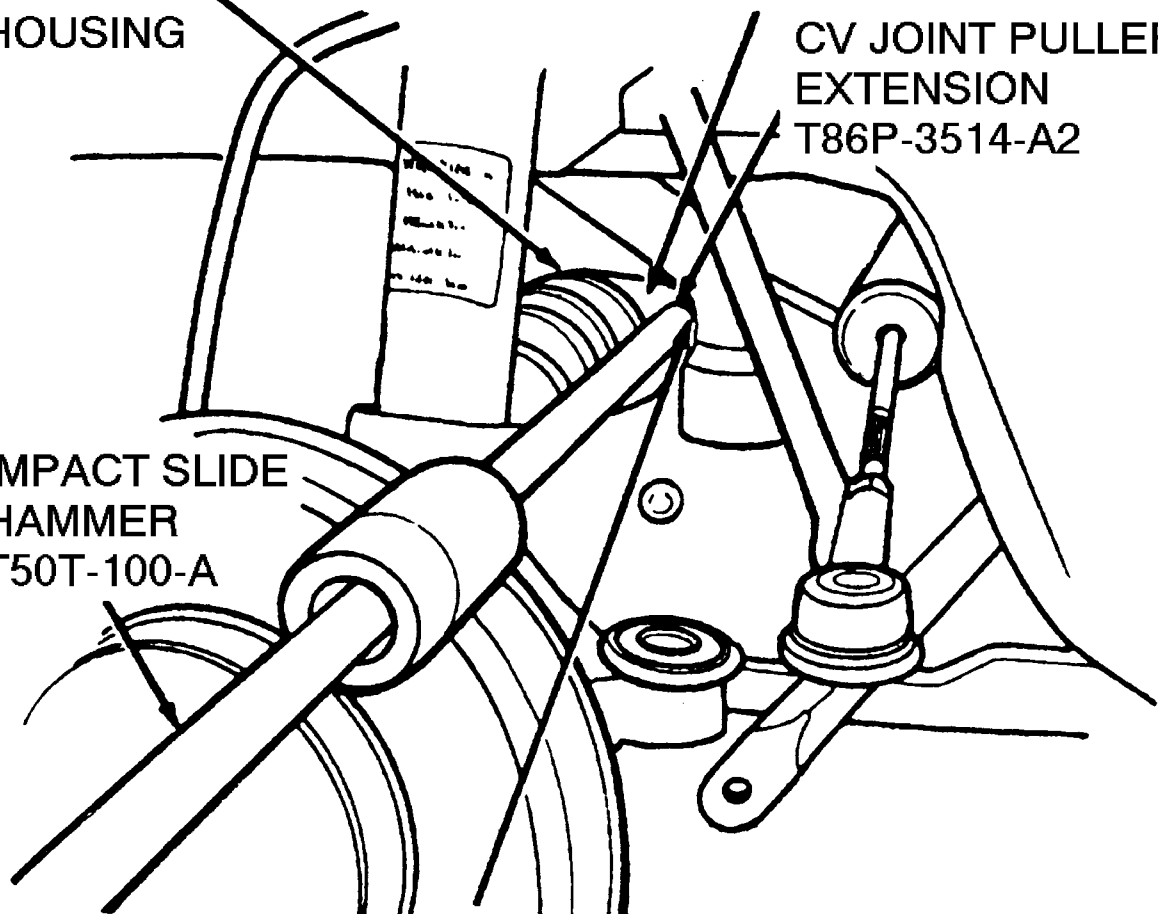
INBOARD  
CV JOINT  
HOUSING

CV JOINT PULLER T86P-3514-A1  
(SHO AUTOMATIC ONLY T89P-3415-B)

CV JOINT PULLER  
EXTENSION  
T86P-3514-A2

IMPACT SLIDE  
HAMMER  
T50T-100-A

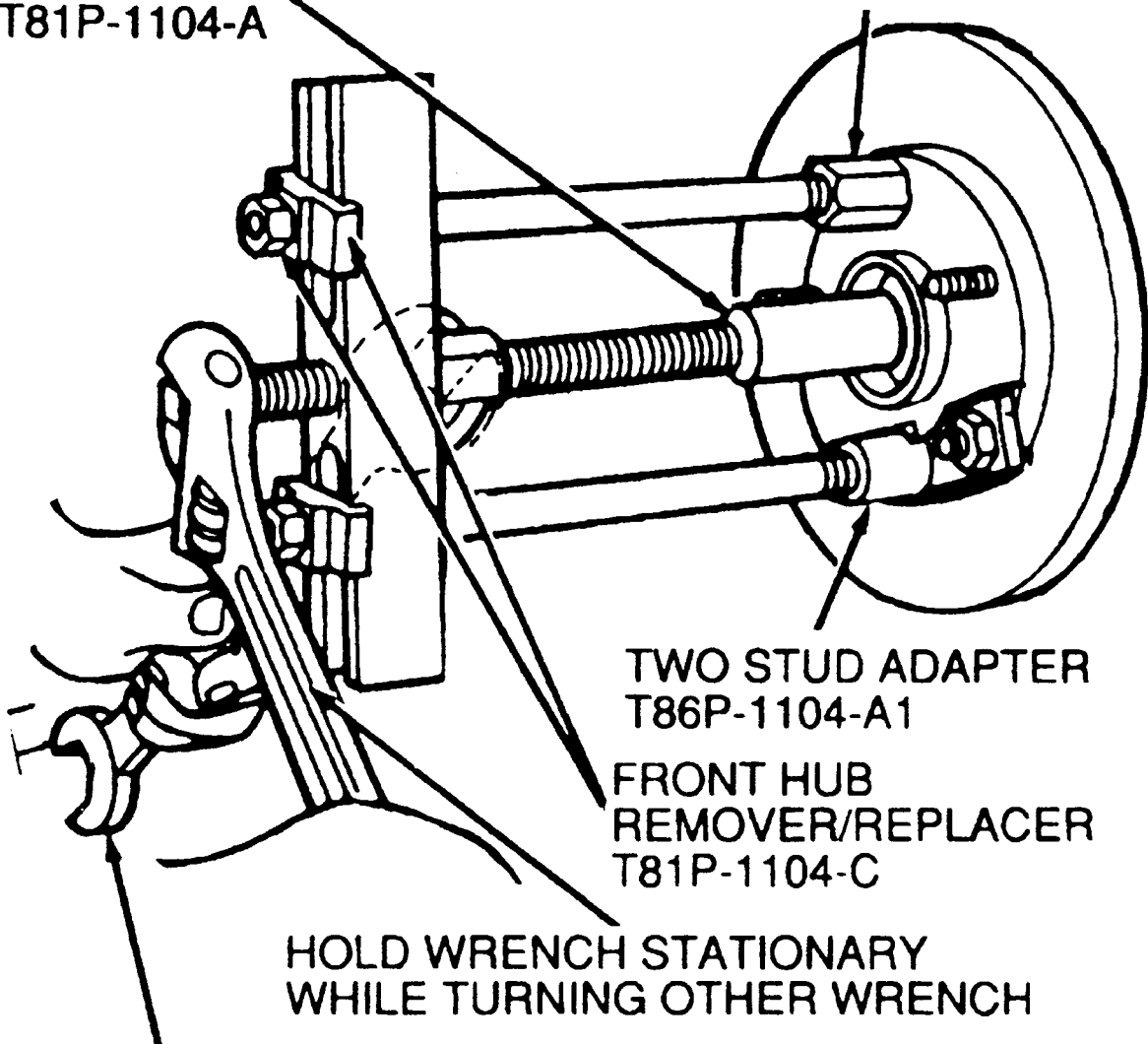
**CAUTION: MAKE SURE  
PULLER DOES NOT CONTACT  
TRANSMISSION SPEED SENSOR  
OR DAMAGE WILL RESULT**



**MAKE SURE THE HUB REMOVER  
ADAPTER IS FULLY THREADED  
ONTO THE HUB STUD AND IS  
POSITIONED OPPOSITE THE  
TWO STUD ADAPTER**

**FRONT HUB  
REPLACER  
T81P-1104-A**

**METRIC HUB REMOVER  
ADAPTERS T83P-1104-BH1**

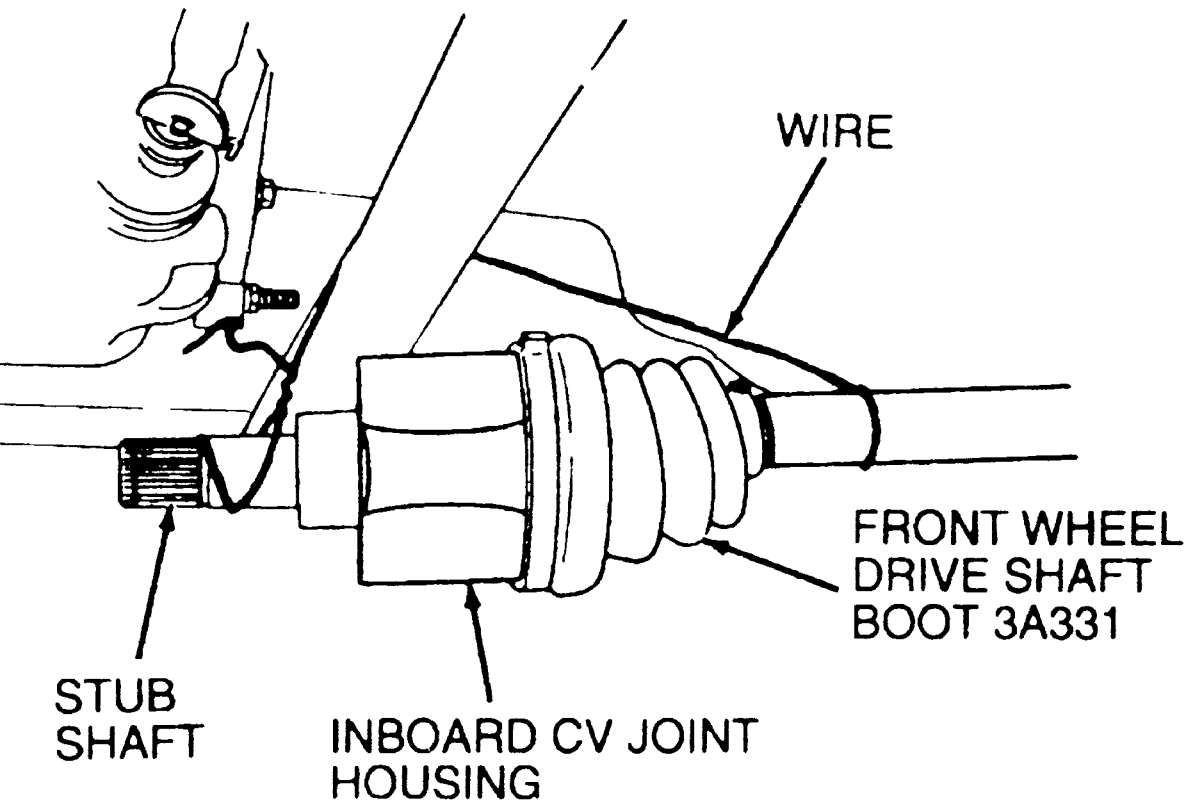


**TWO STUD ADAPTER  
T86P-1104-A1**

**FRONT HUB  
REMOVER/REPLACER  
T81P-1104-C**

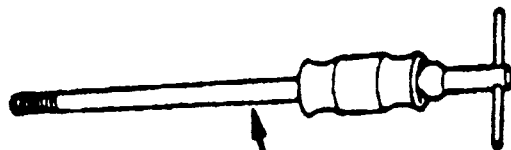
**HOLD WRENCH STATIONARY  
WHILE TURNING OTHER WRENCH**

**TURN THIS WRENCH  
COUNTERCLOCKWISE**

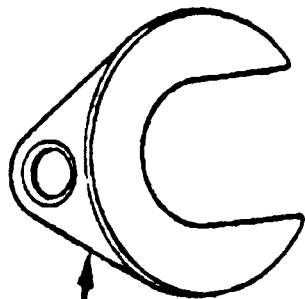




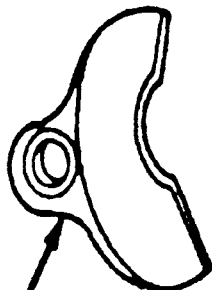
CV JOINT  
PULLER  
EXTENSION  
T86P-3514-A2



IMPACT  
SLIDE  
HAMMER  
T50T-100-A

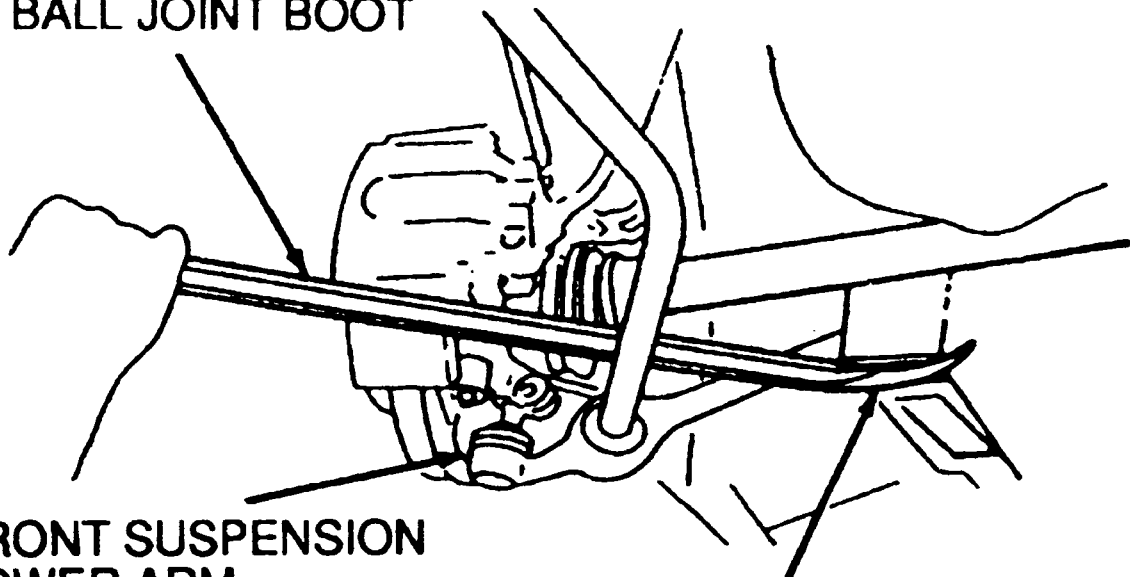


CV JOINT  
PULLER  
T86P-3514-A1



SHO AUTOMATIC  
CV JOINT  
PULLER ADAPTER  
T89P-3415-B

**PRY BAR  
DO NOT ALLOW PRY  
BAR TO DAMAGE  
BALL JOINT BOOT**



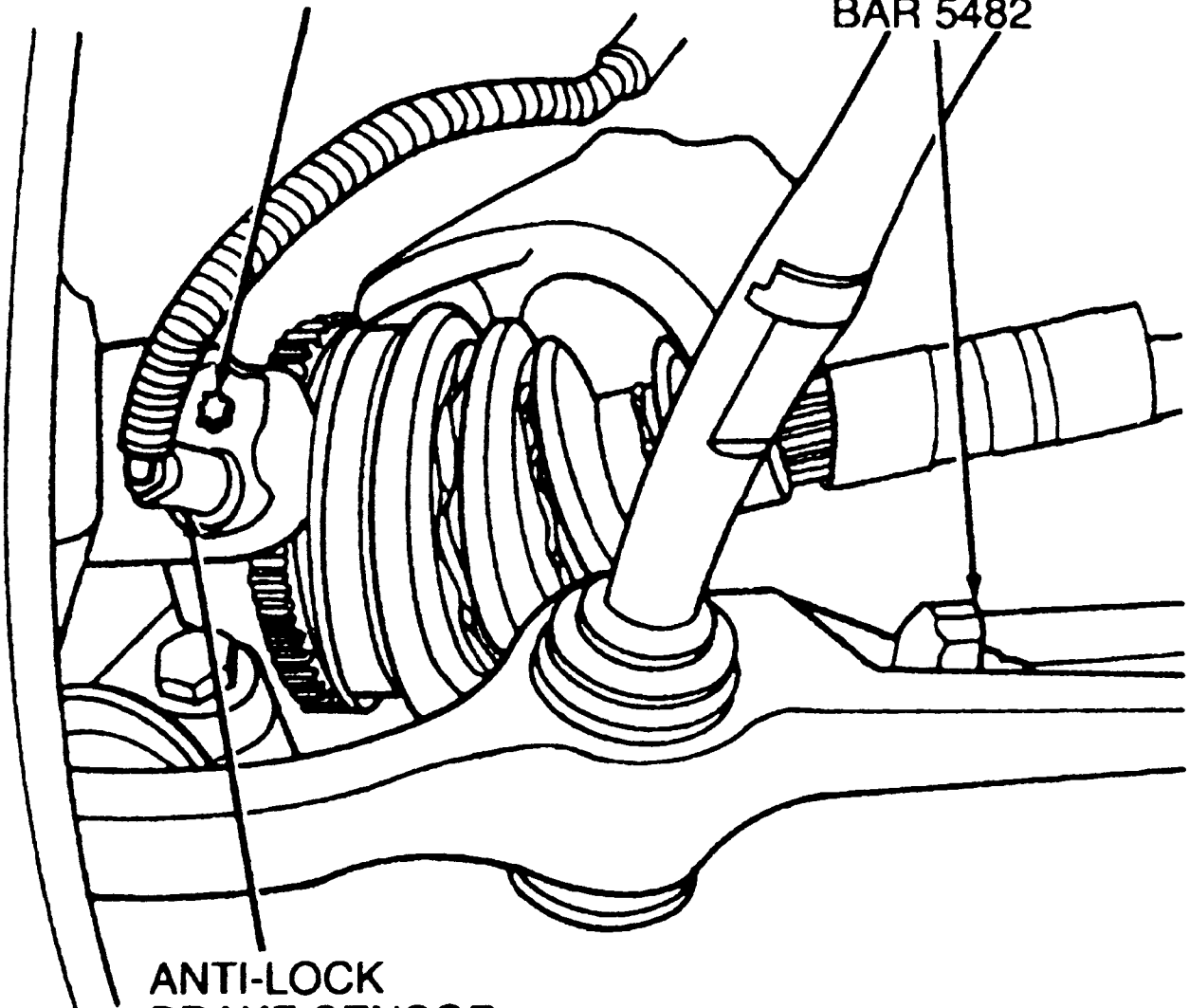
**FRONT SUSPENSION  
LOWER ARM  
BALL JOINT**

**NOTE: EXERCISE CARE NOT TO  
DAMAGE OR CUT BALL JOINT  
BOOT. PRY BAR MUST NOT  
CONTACT LOWER ARM.**

BOLT

STABILIZER  
BAR 5482

ANTI-LOCK  
BRAKE SENSOR  
2C204

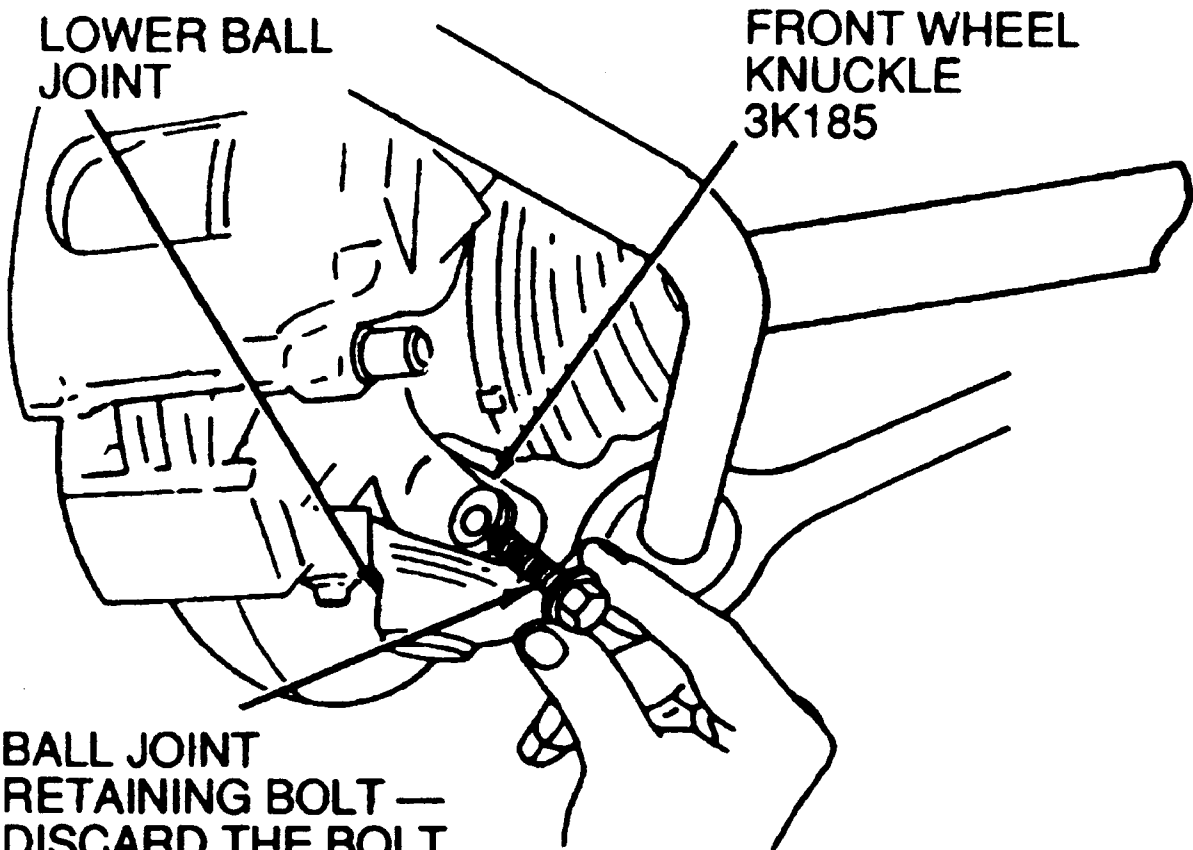




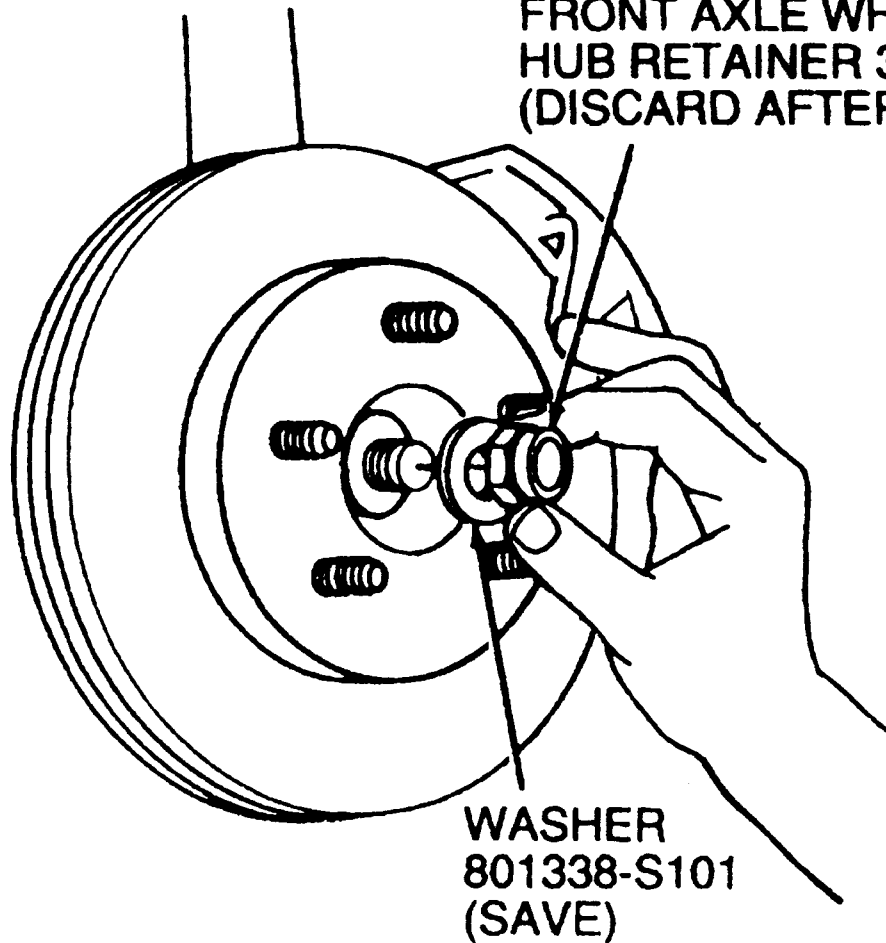
**LOWER BALL  
JOINT**

**FRONT WHEEL  
KNUCKLE  
3K185**

**BALL JOINT  
RETAINING BOLT —  
DISCARD THE BOLT  
AND NUT AFTER  
REMOVAL**

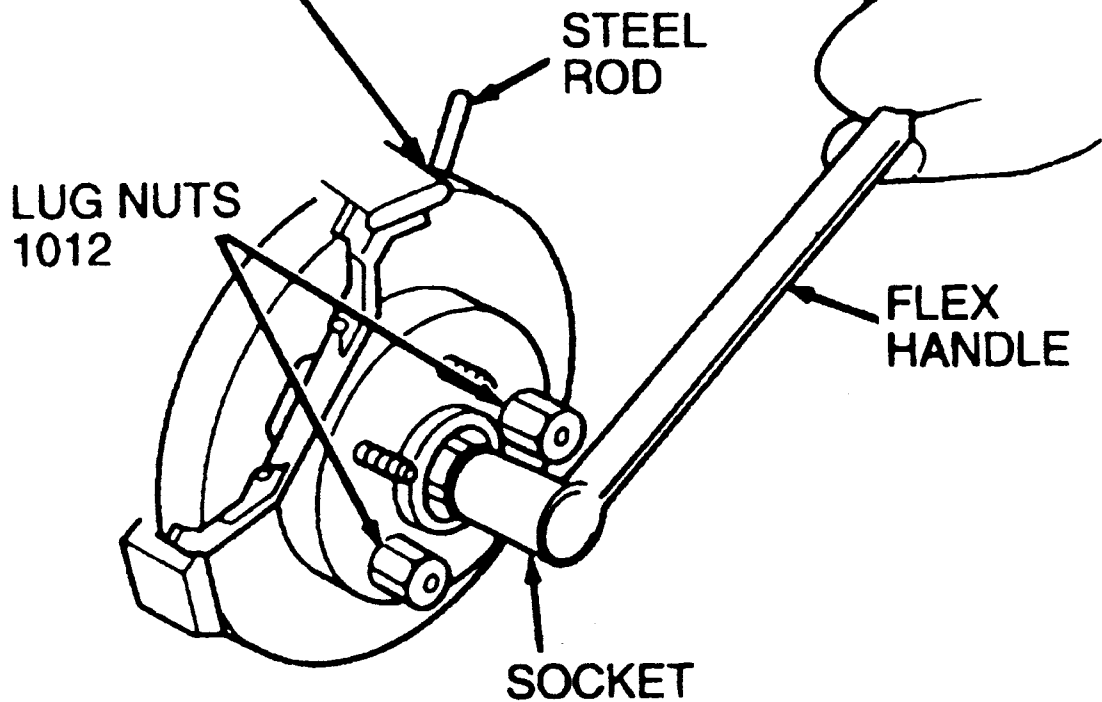


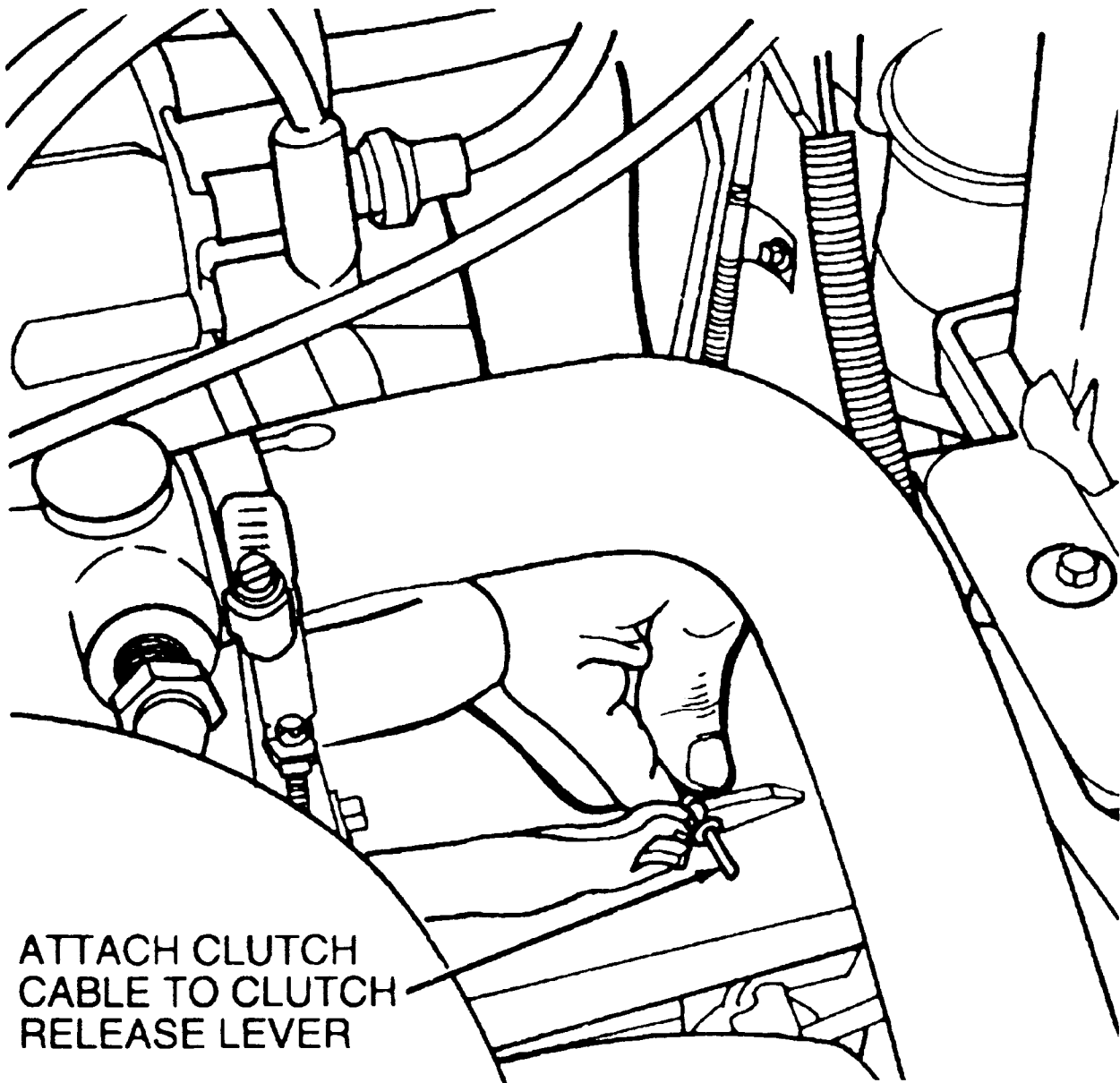
FRONT AXLE WHEEL  
HUB RETAINER 3N405  
(DISCARD AFTER REMOVAL)



WASHER  
801338-S101  
(SAVE)

**INSERT STEEL ROD  
IN BRAKE ROTOR  
TO PREVENT  
TURNING**



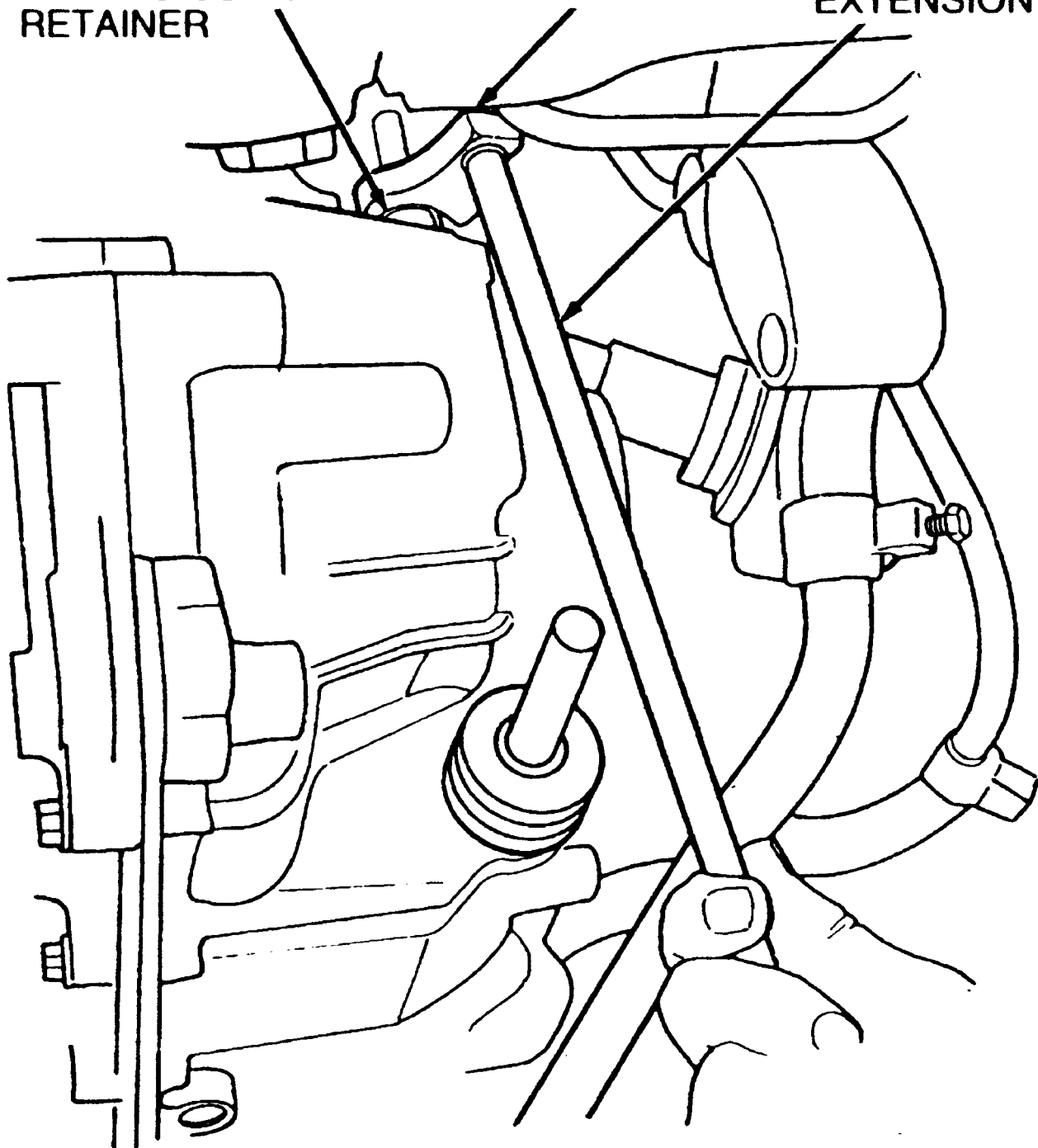


ATTACH CLUTCH  
CABLE TO CLUTCH  
RELEASE LEVER

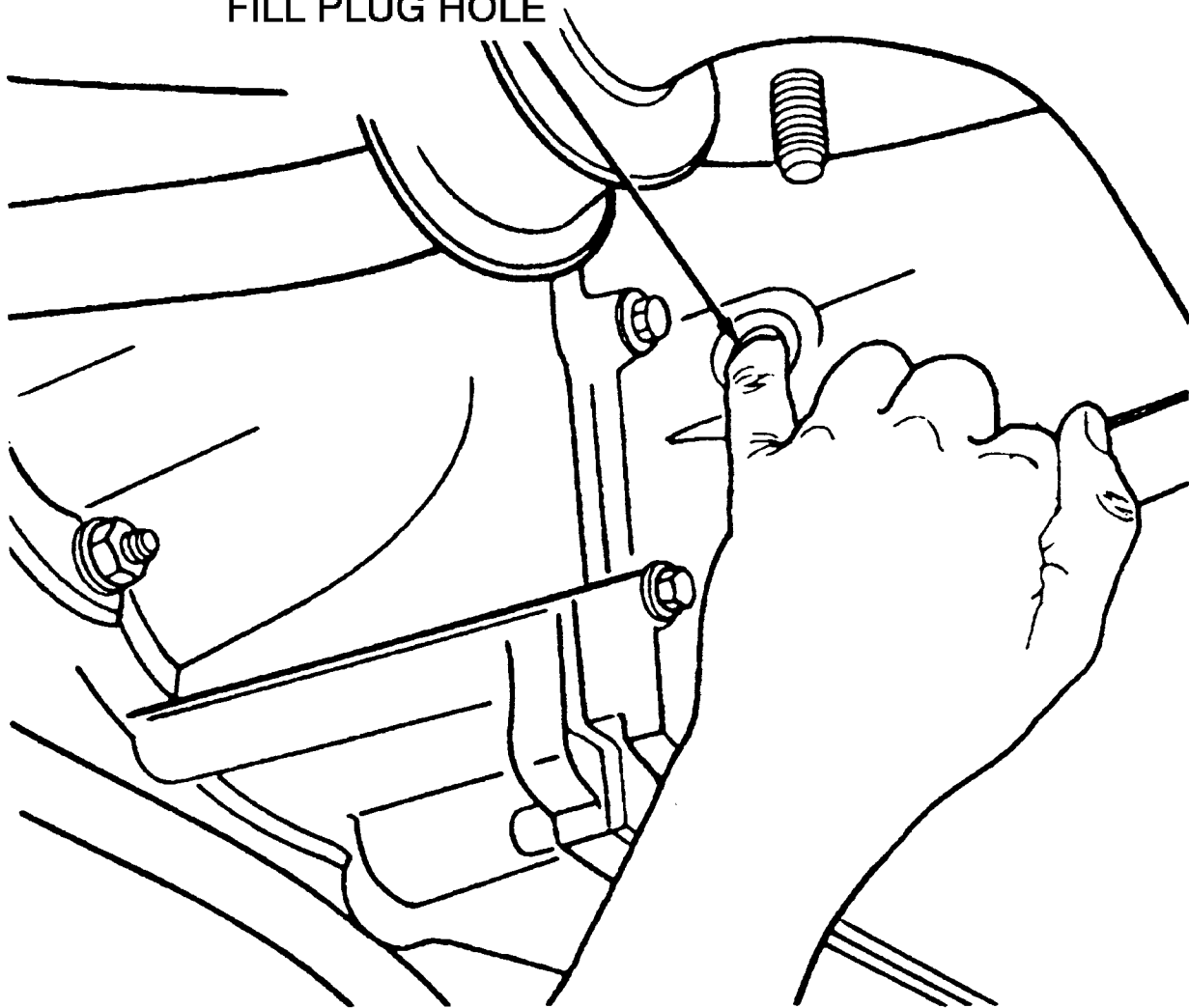
ATTACH SPEEDO  
CABLE NUT TO  
SPEEDO GEAR  
RETAINER

CROWS  
FOOT  
WRENCH

SOCKET  
EXTENSION

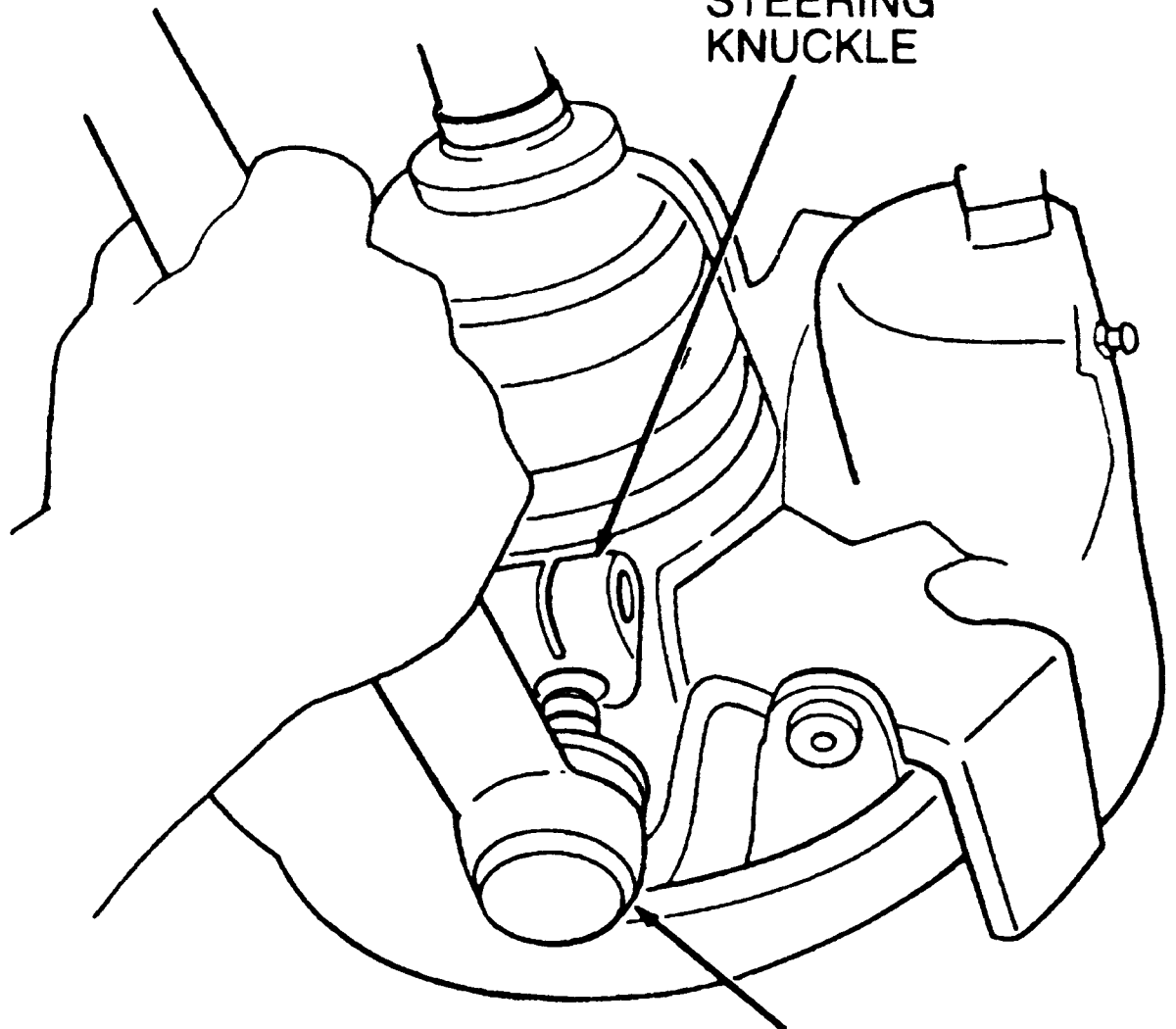


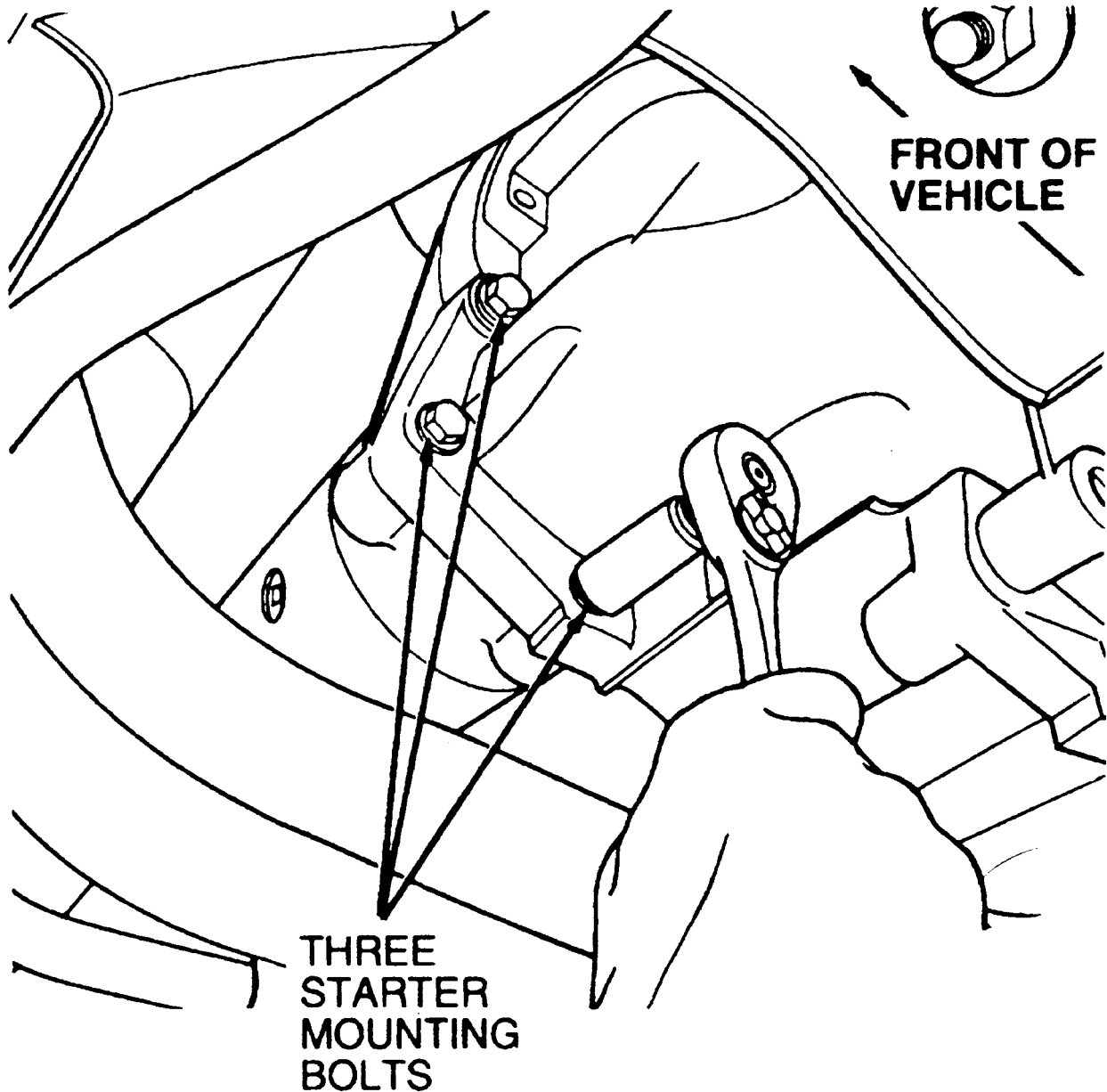
FILL PLUG -  
FILL TRANSAXLE  
TO BOTTOM OF  
FILL PLUG HOLE



STEERING  
KNUCKLE

FRONT SUSPENSION  
CONTROL ARM



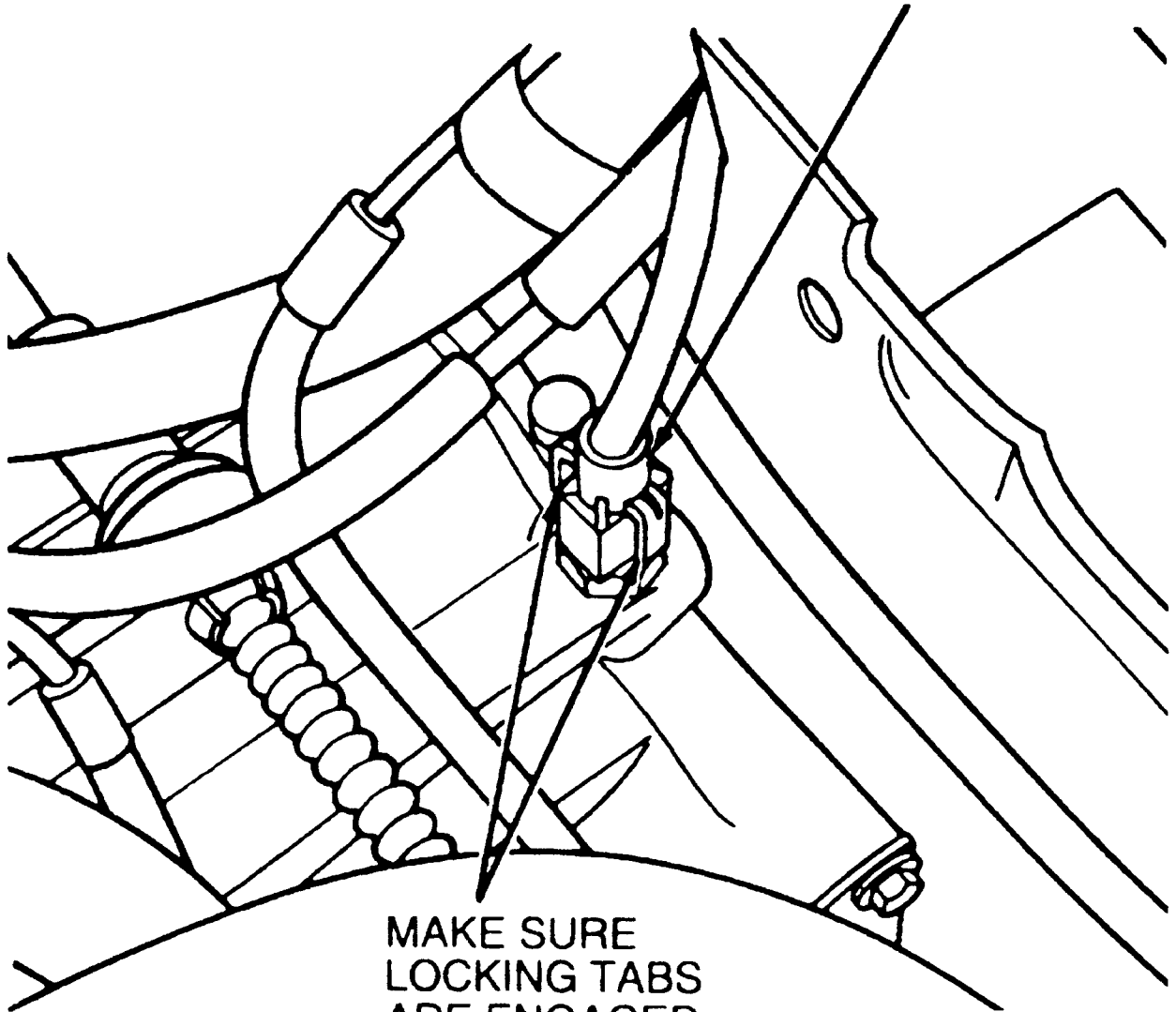


**FRONT OF  
VEHICLE**

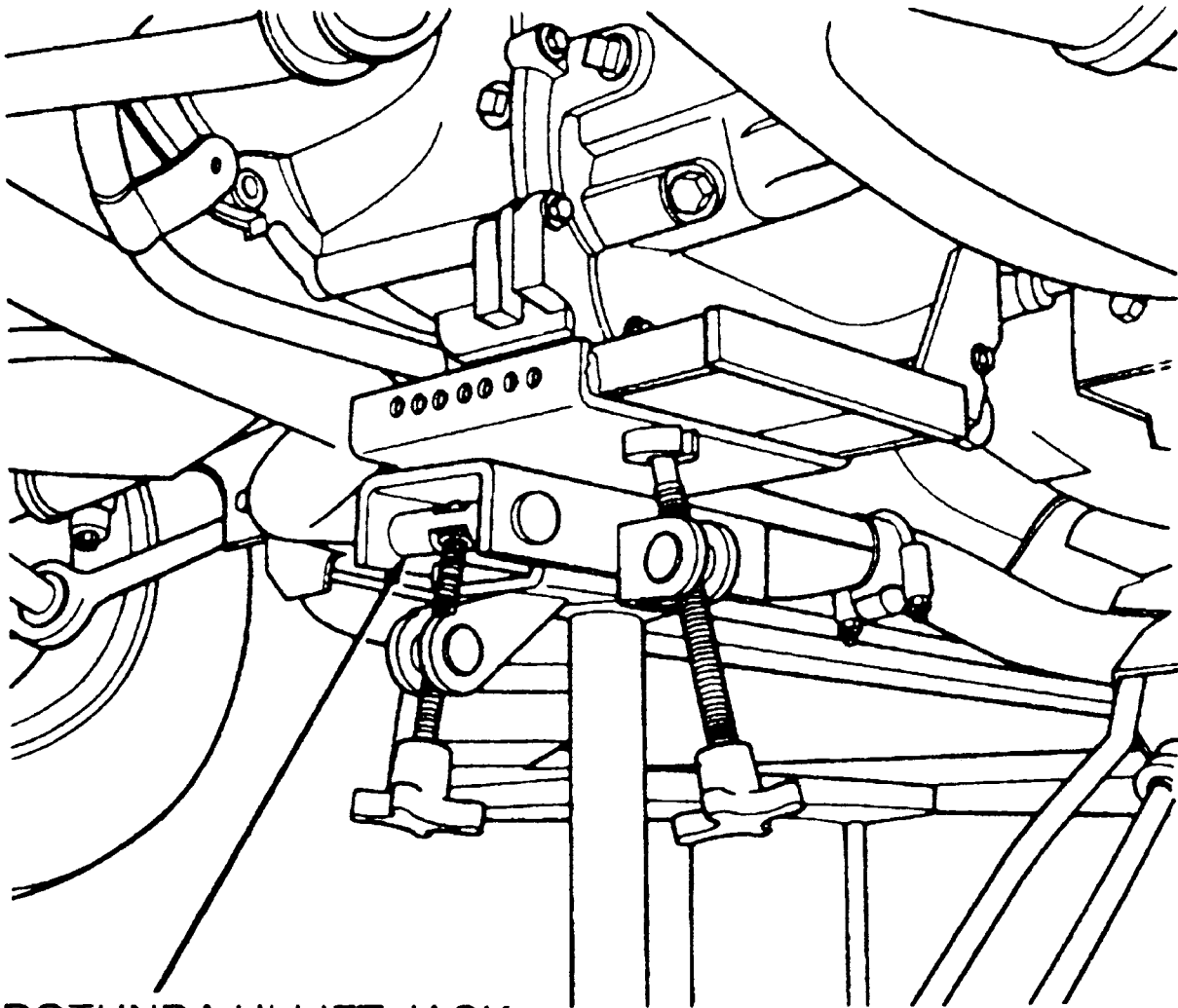
**THREE  
STARTER  
MOUNTING  
BOLTS**



BACKUP LAMP  
SWITCH CONNECTOR



MAKE SURE  
LOCKING TABS  
ARE ENGAGED

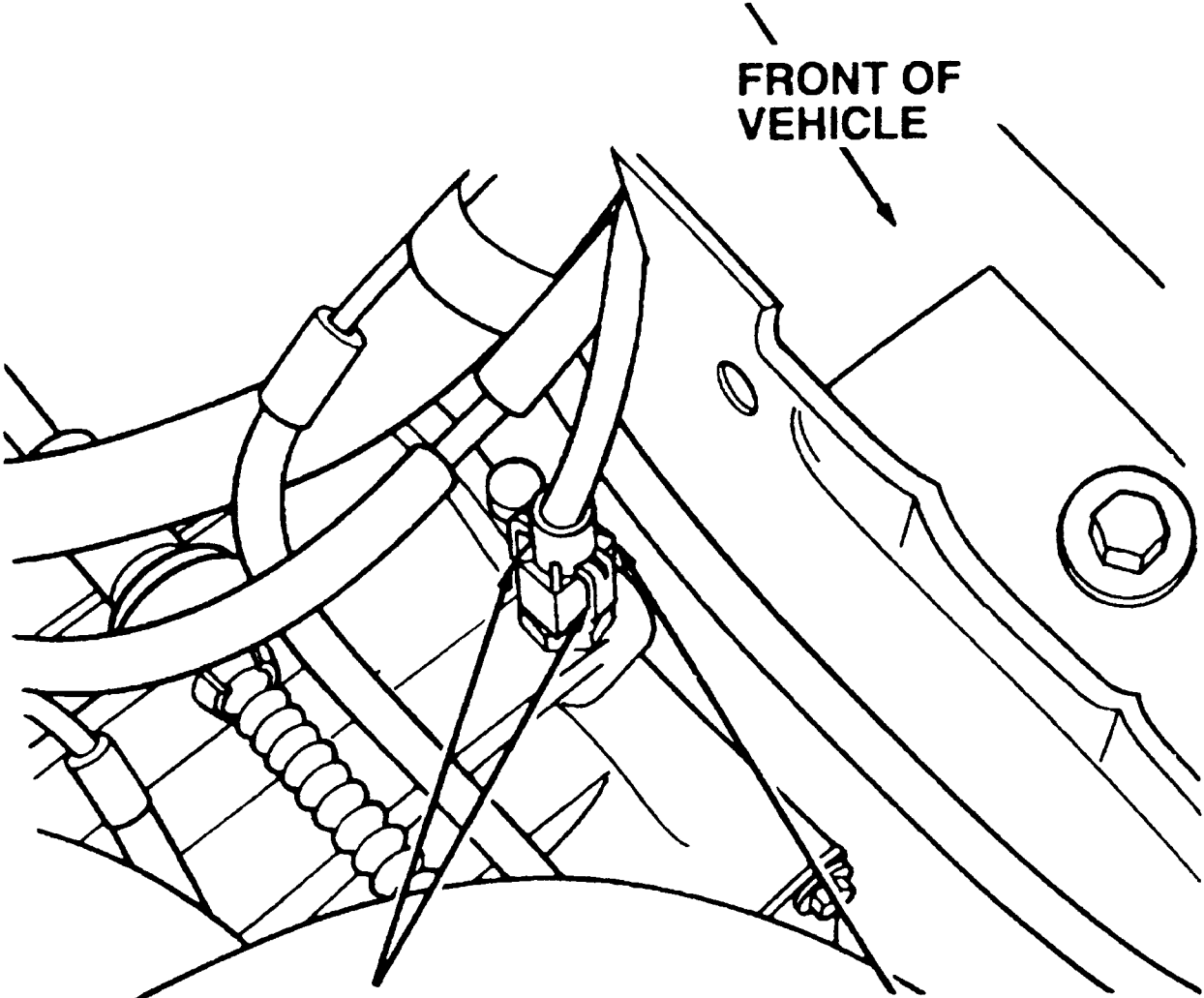


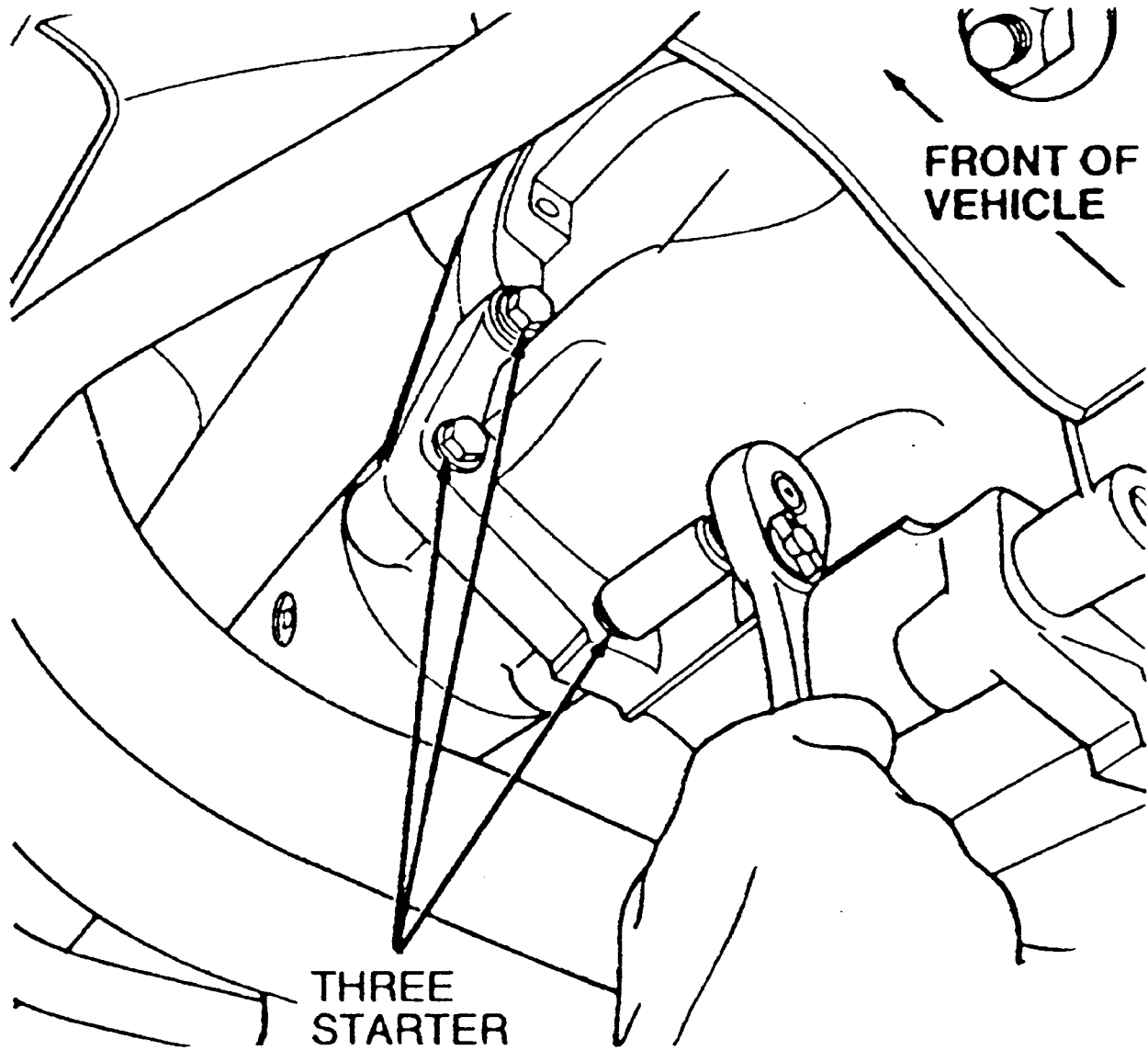
ROTUNDA HI-LIFT JACK  
014-00210

FRONT OF  
VEHICLE

DISENGAGE  
CONNECTOR  
LOCKING TABS

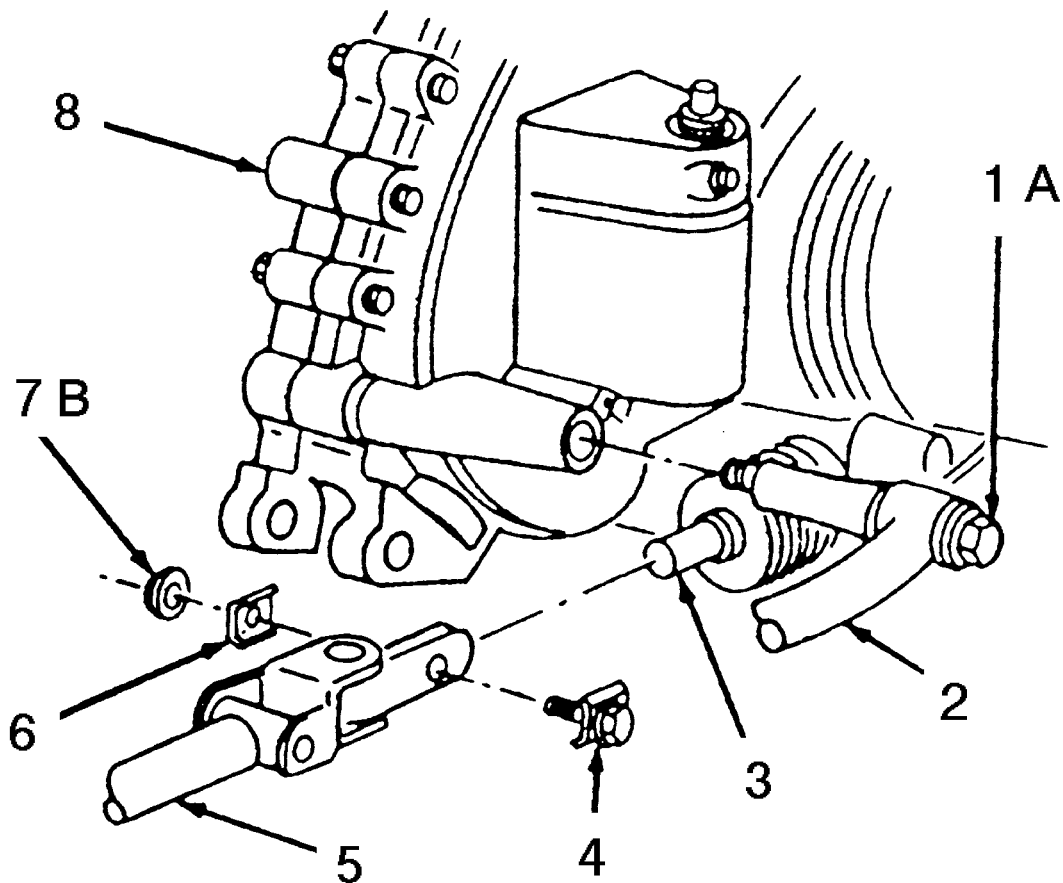
BACKUP LAMP  
SWITCH CONNECTOR





FRONT OF  
VEHICLE

THREE  
STARTER  
MOUNTING  
BOLTS



1. Nut M 12 x 1.75

2. Gear shift control

3. Input shift shaft

4. Clamp

5. Shift rod

6. Main shift control  
shaft block

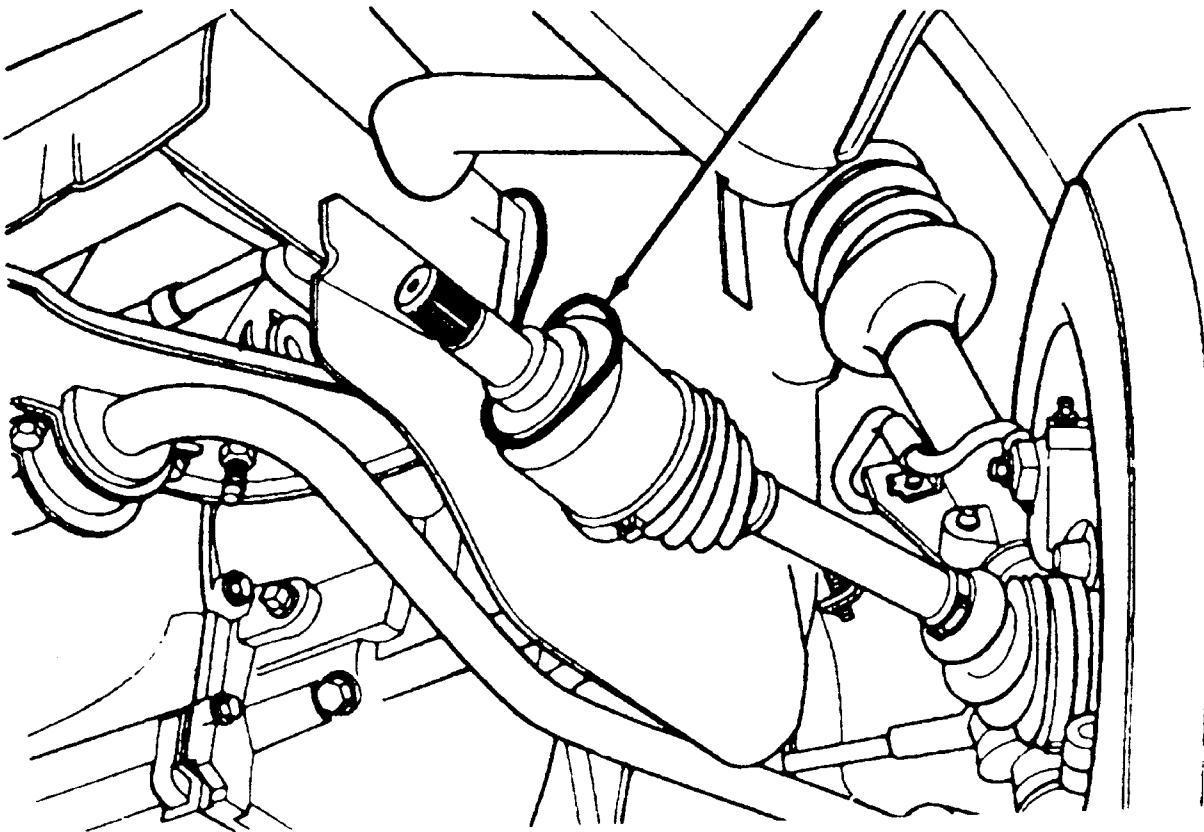
7. Nut M6 x 1.00

8. Transaxle assy

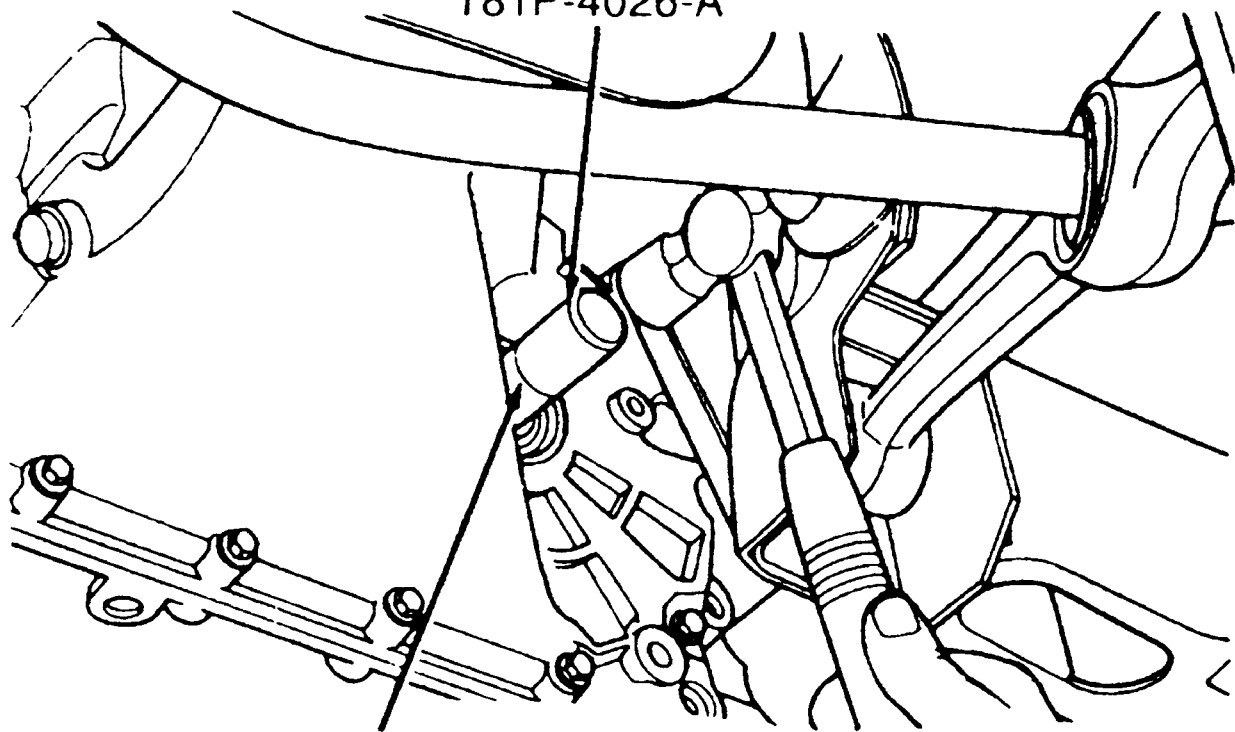
A. Tighten to 47-63 N.m  
(35-46 lb-ft)

B. Tighten to 9-12 N.m  
(80-106 lb-in)

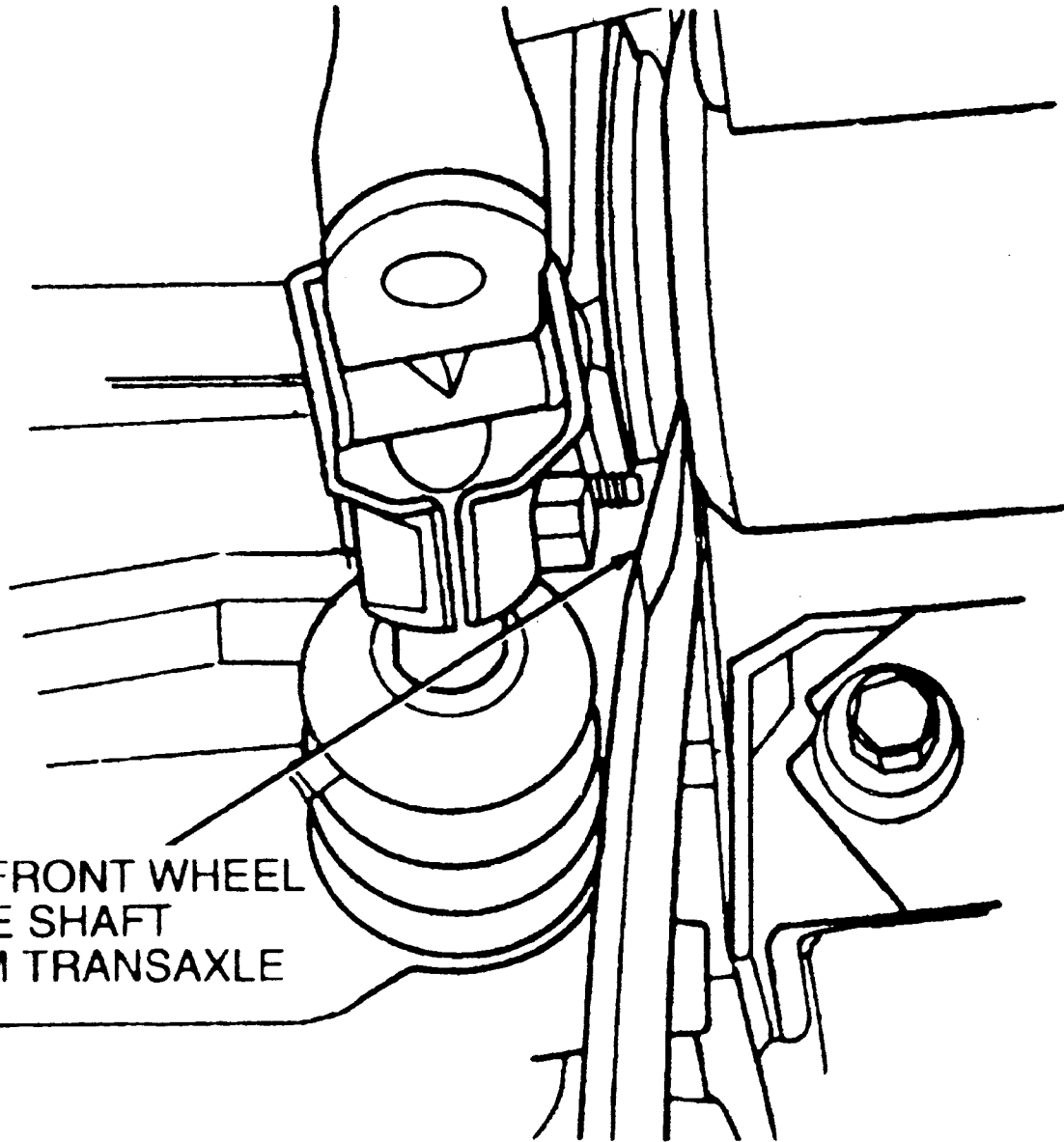
# WIRE HOLDING CV JOINT



# DIFFERENTIAL ROTATOR T81P-4026-A

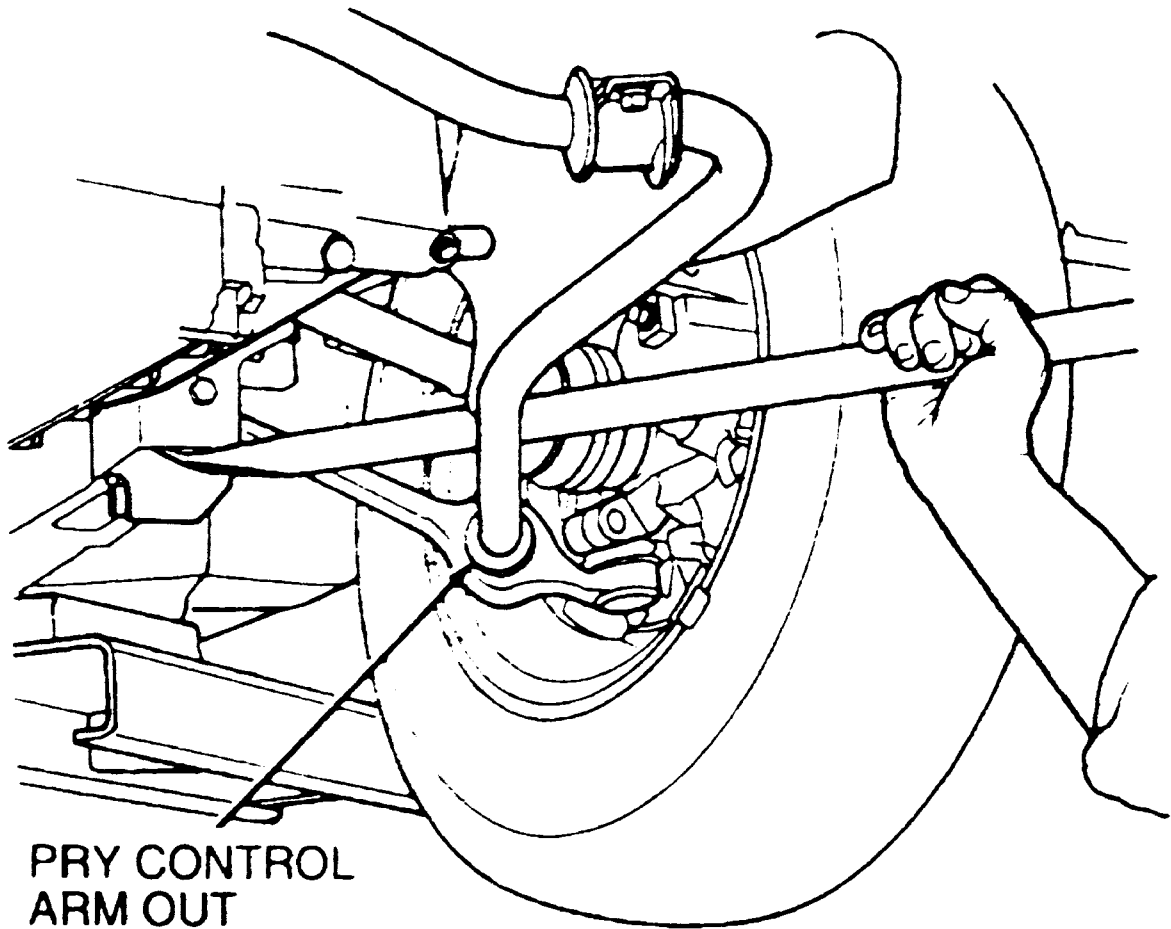


TAP CV JOINT  
OUT OF  
TRANSAXLE

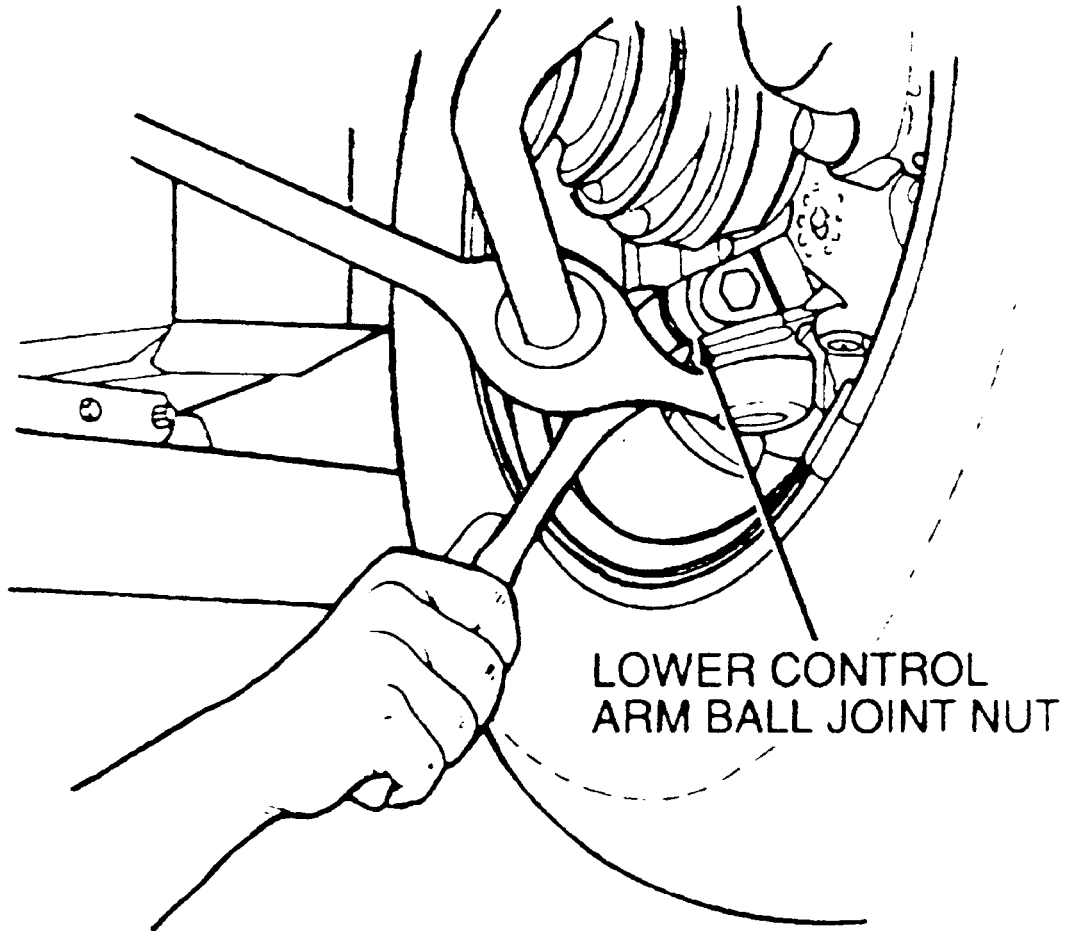


PRY FRONT WHEEL  
DRIVE SHAFT  
FROM TRANSAXLE





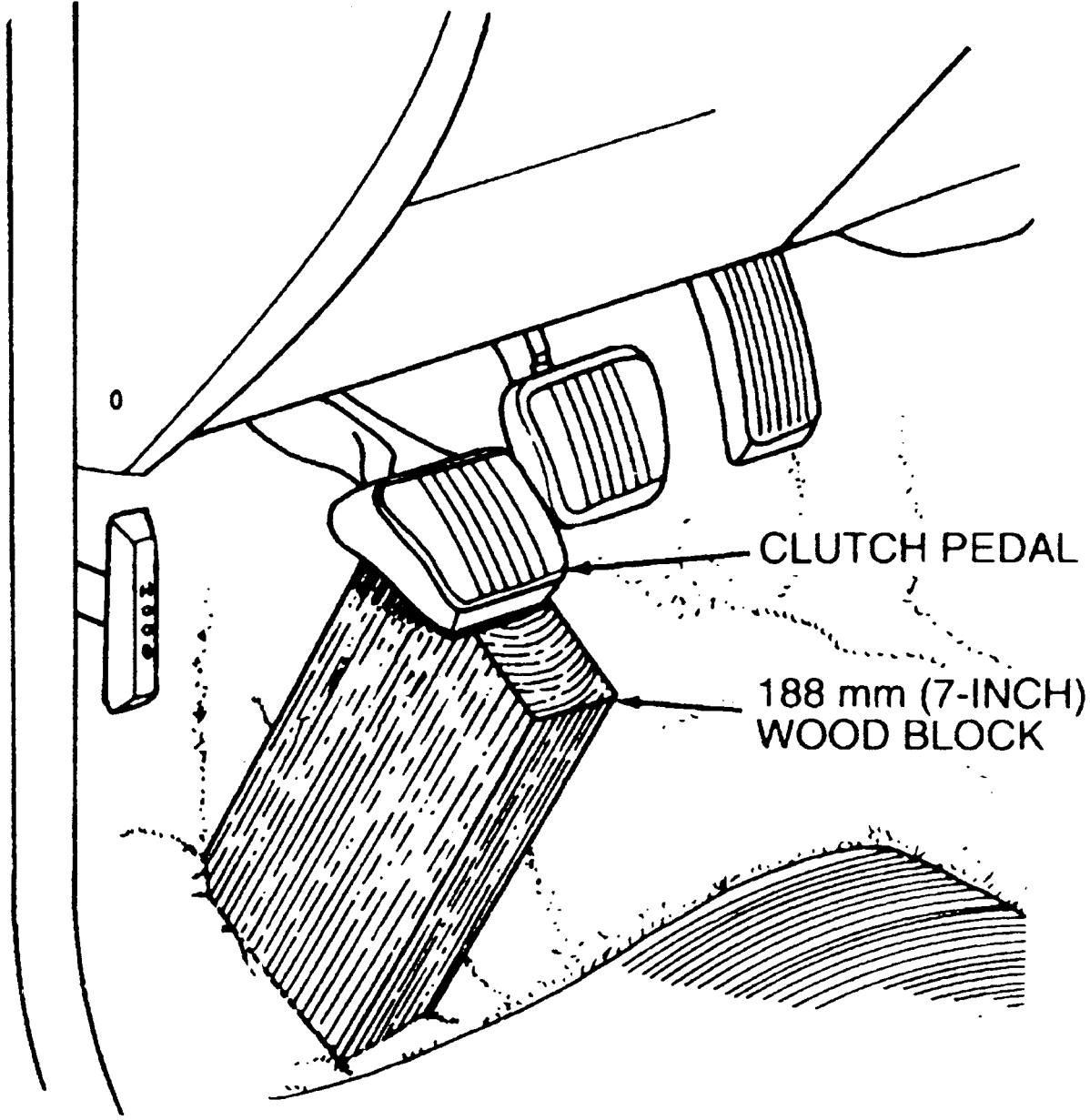
PRY CONTROL  
ARM OUT  
OF KNUCKLE





CLUTCH  
RELEASE  
SHAFT  
7515

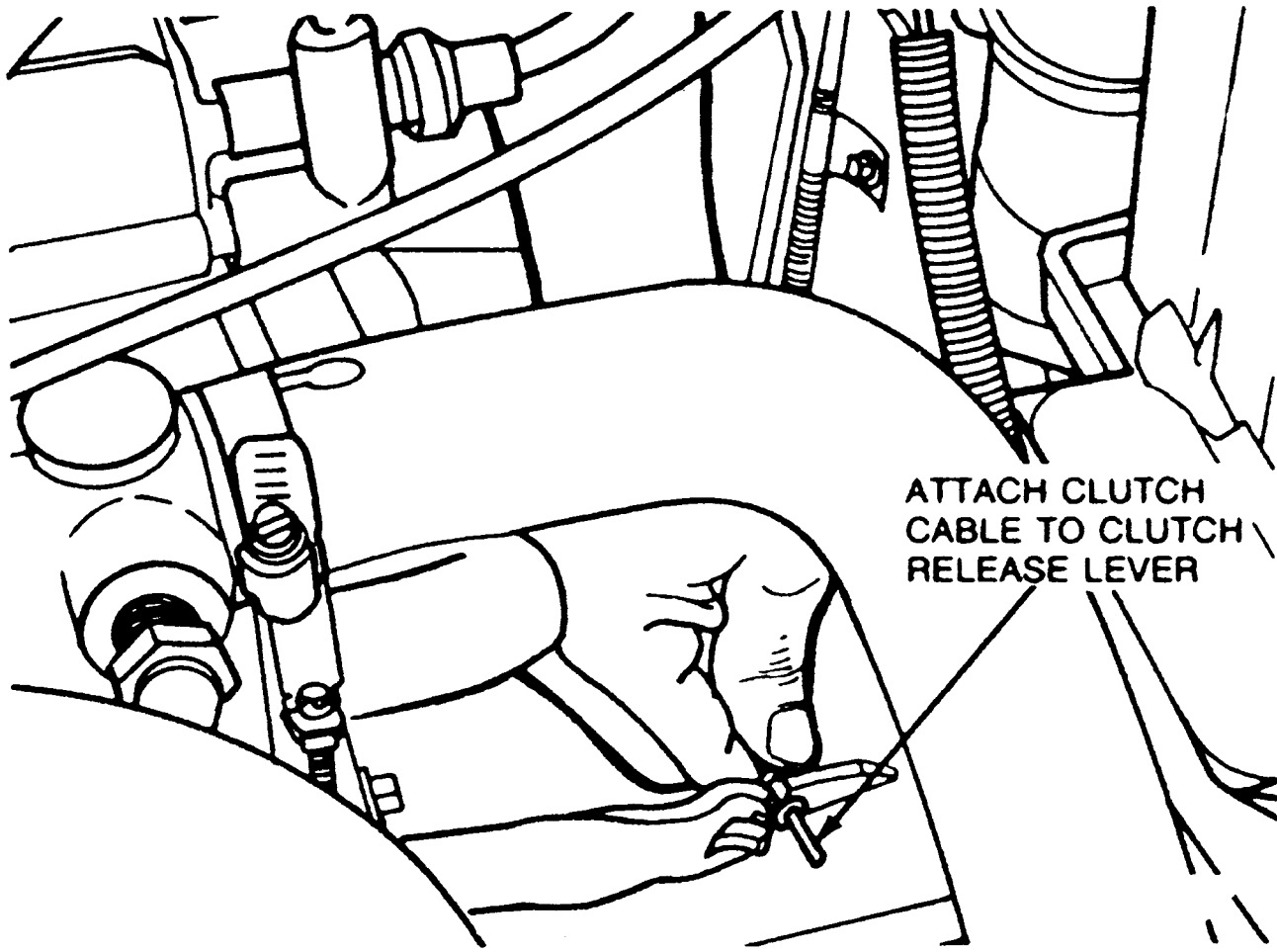
CLUTCH  
CABLE



0

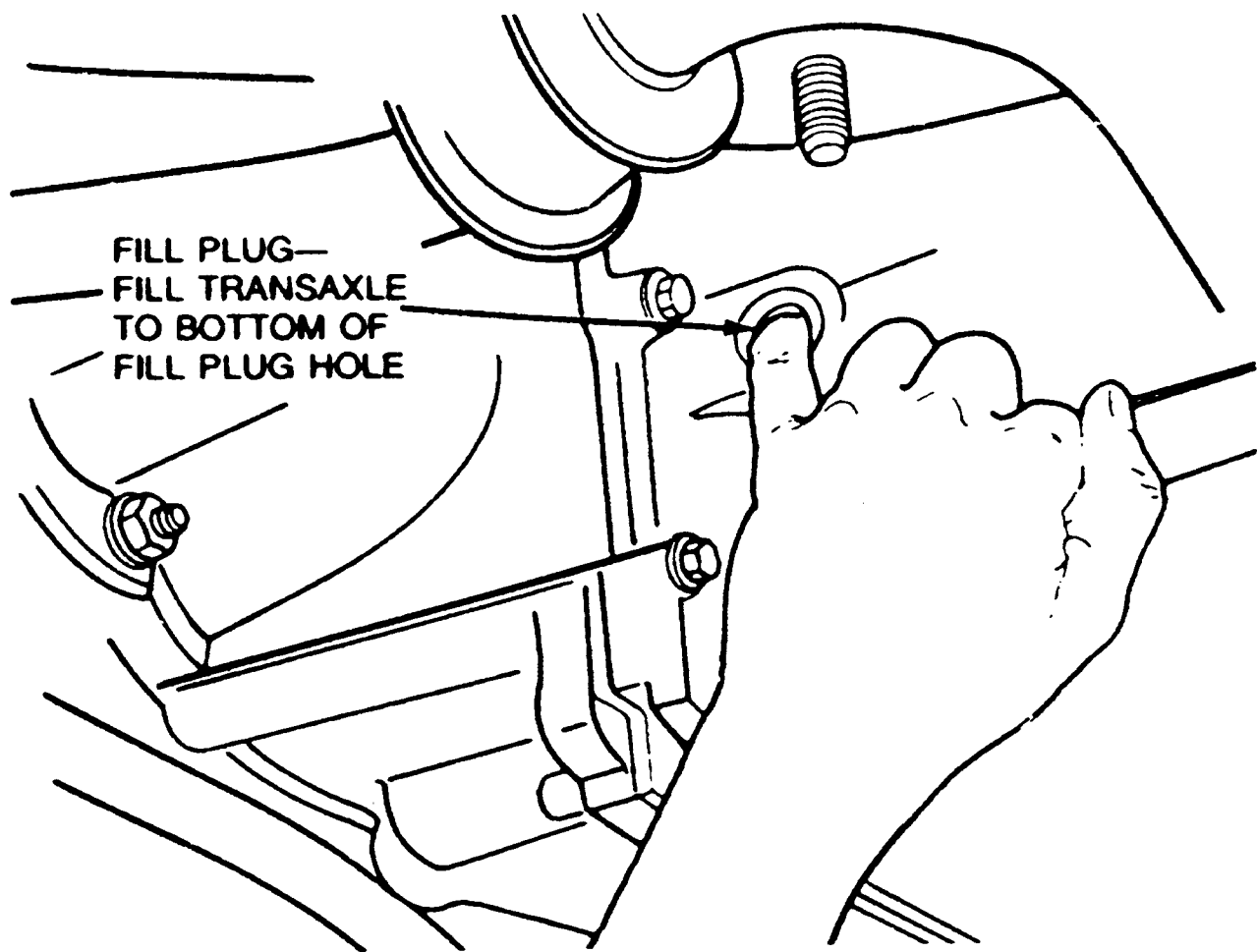
CLUTCH PEDAL

188 mm (7-INCH)  
WOOD BLOCK



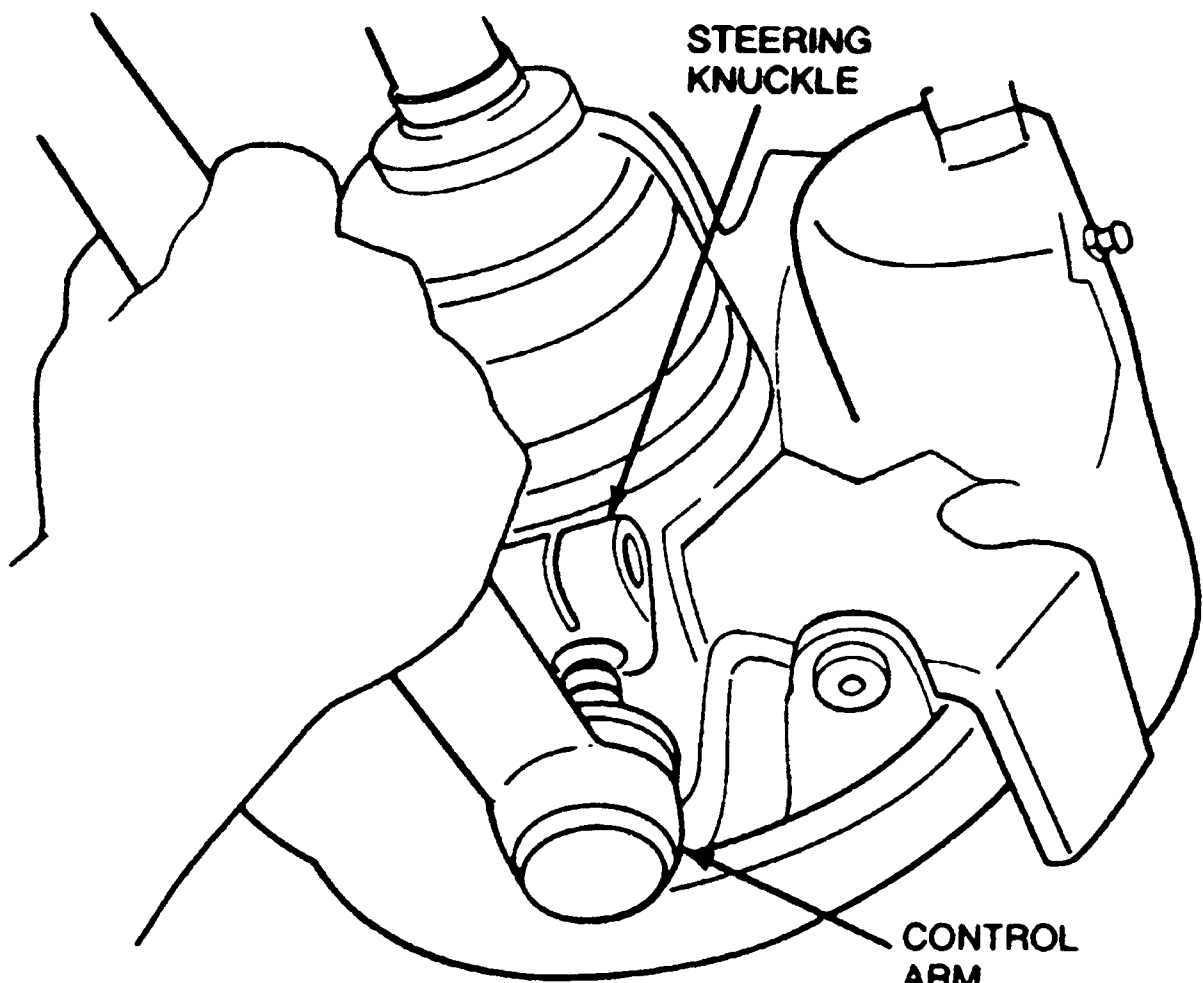
ATTACH CLUTCH  
CABLE TO CLUTCH  
RELEASE LEVER

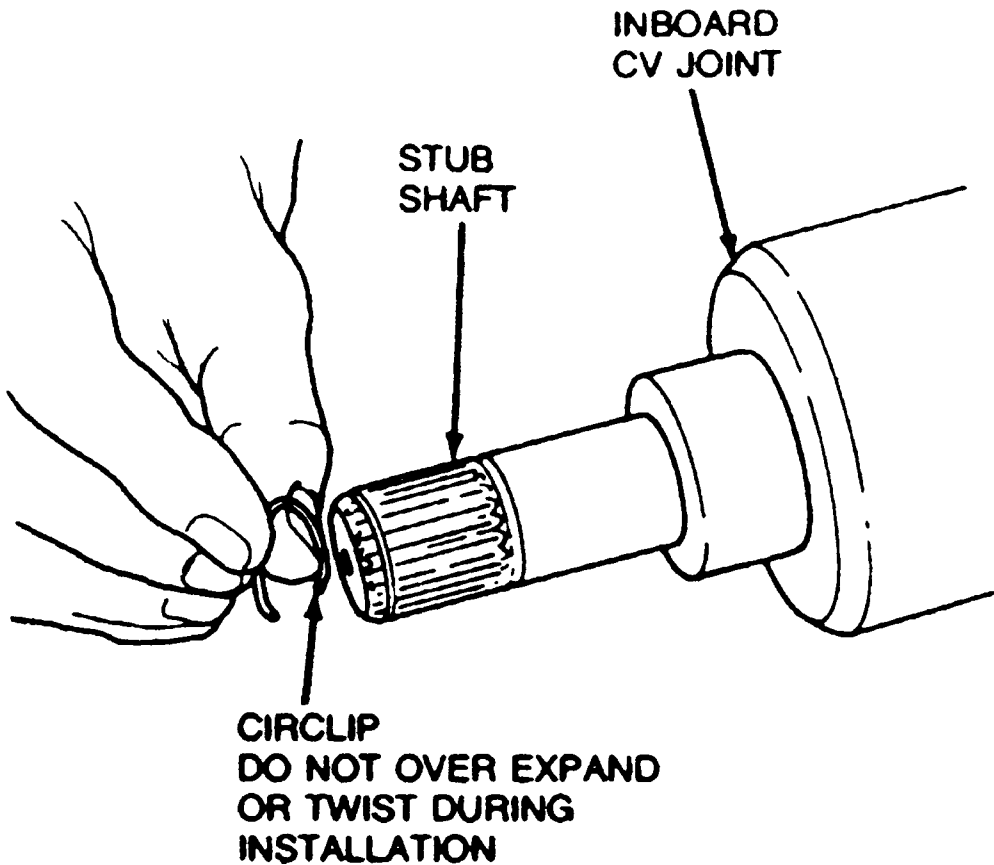
FILL PLUG—  
FILL TRANSAXLE  
TO BOTTOM OF  
FILL PLUG HOLE



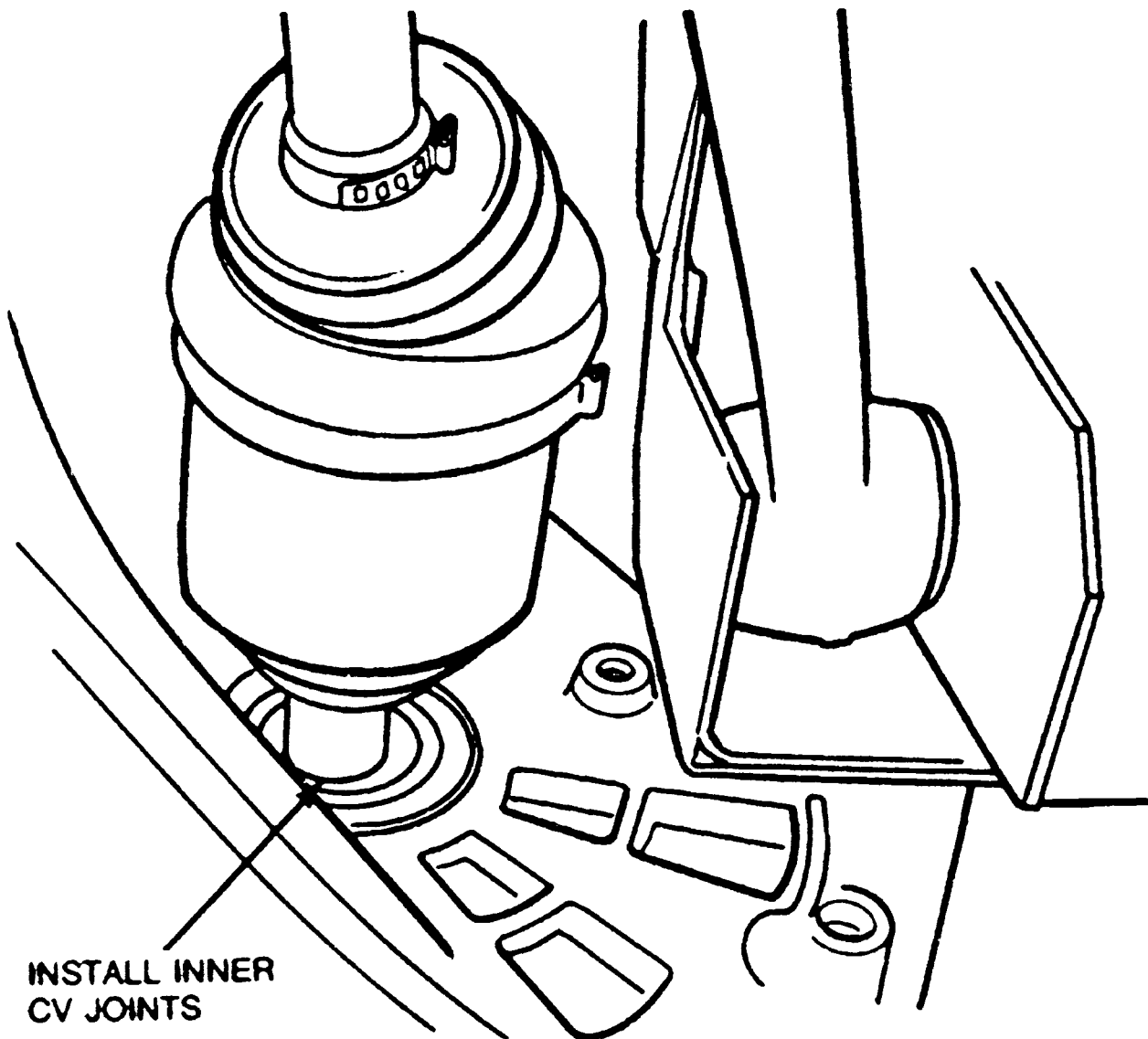
**STEERING  
KNUCKLE**

**CONTROL  
ARM**

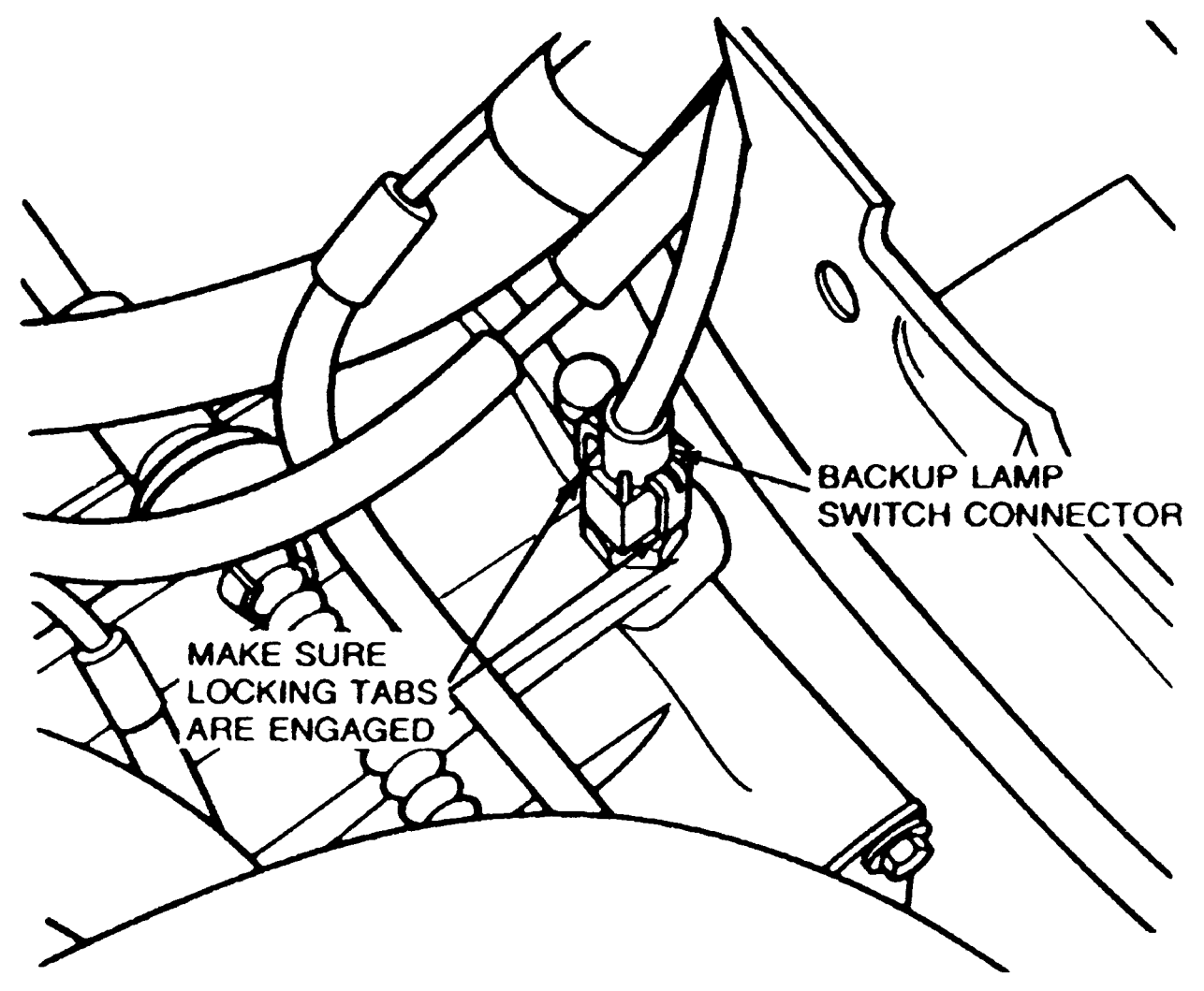






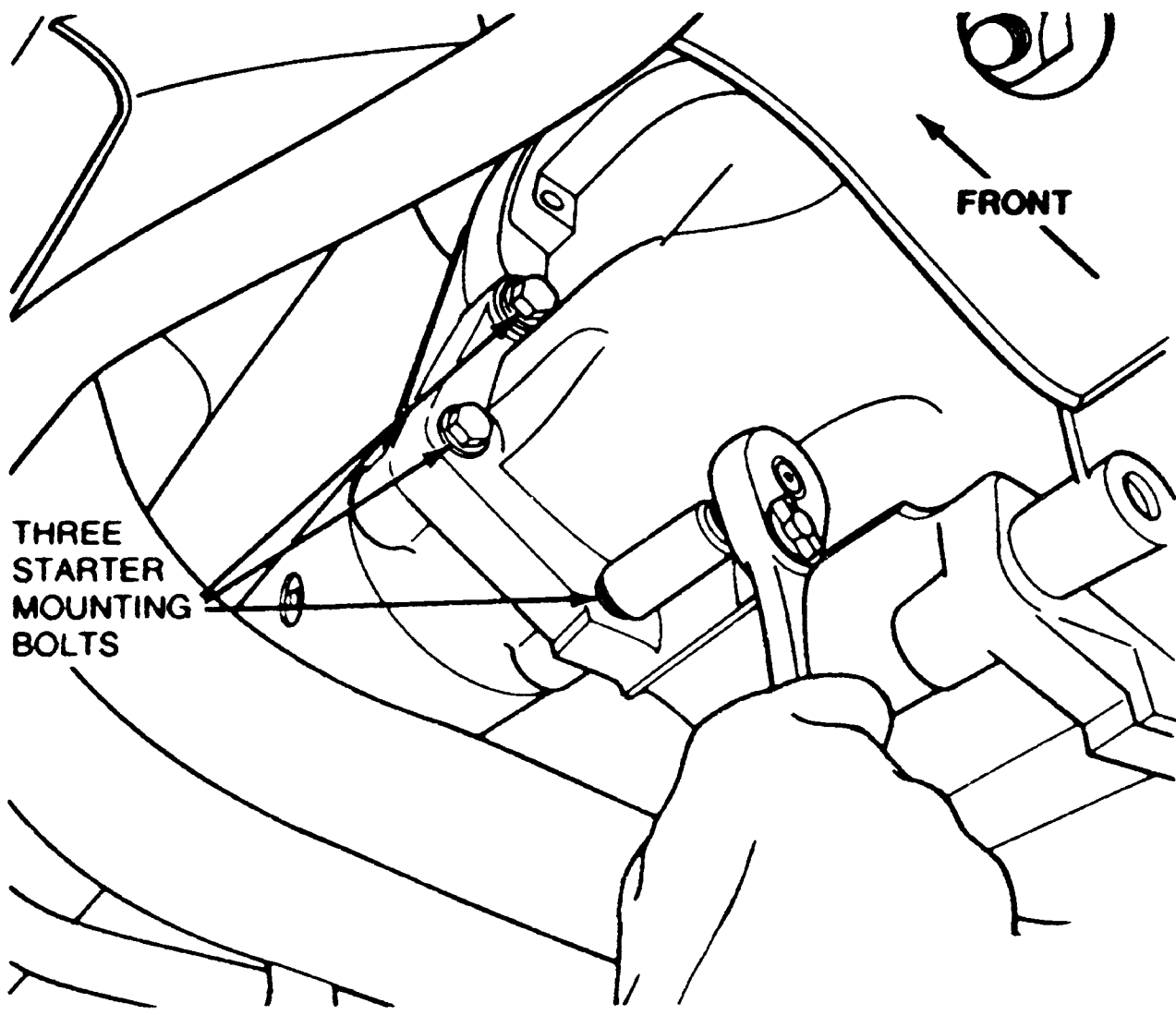


INSTALL INNER  
CV JOINTS



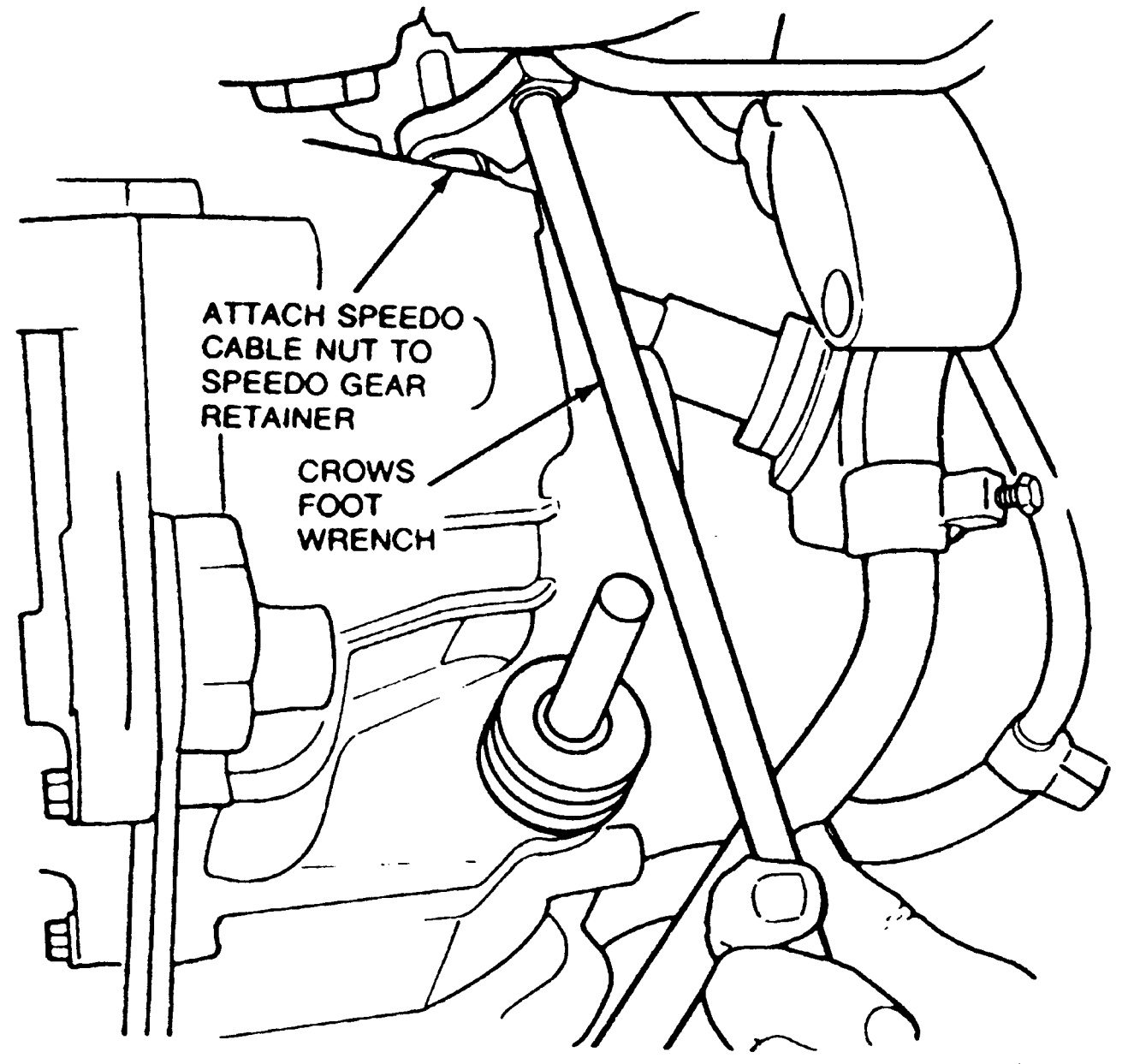
MAKE SURE  
LOCKING TABS  
ARE ENGAGED

BACKUP LAMP  
SWITCH CONNECTOR



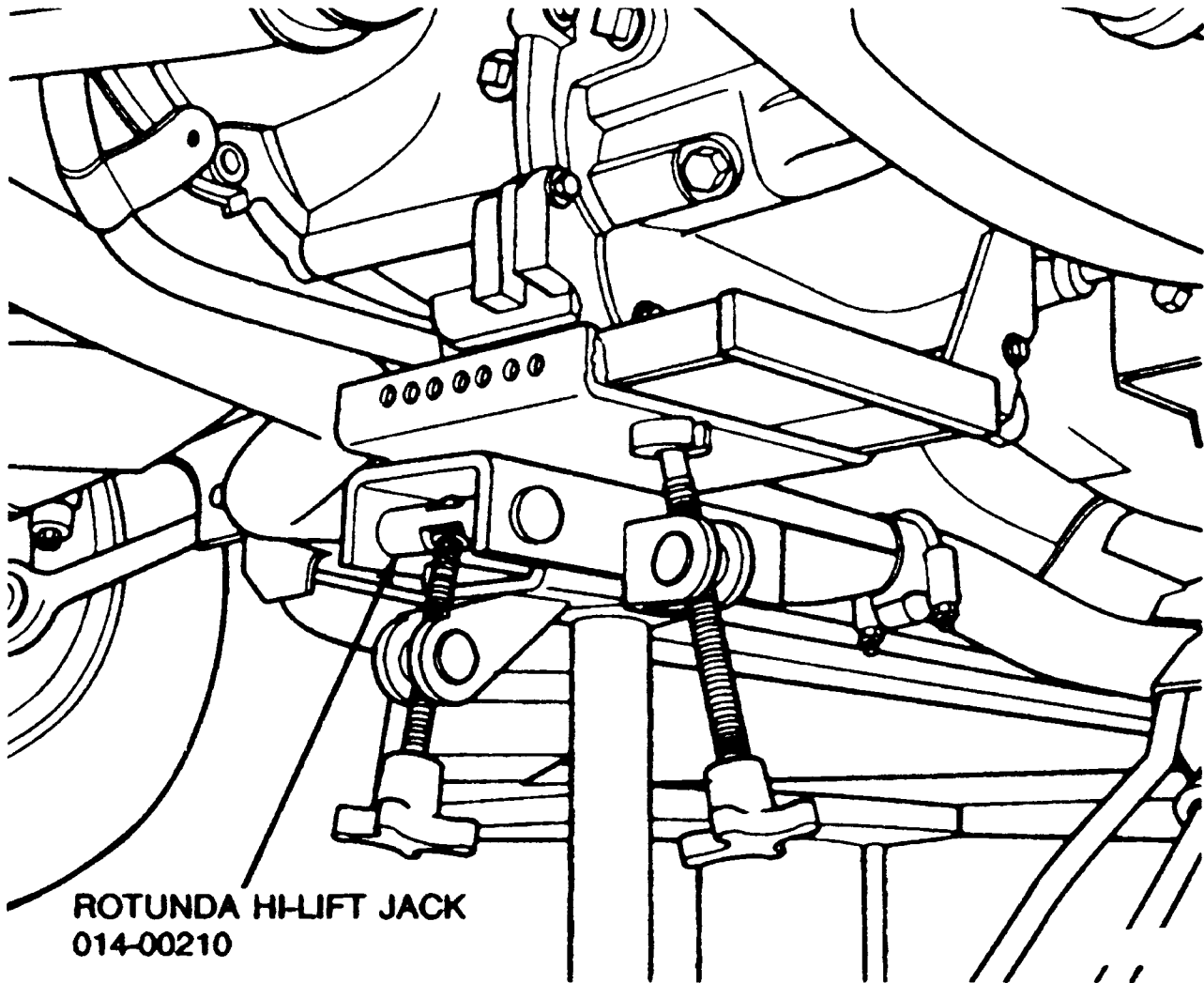
FRONT

THREE  
STARTER  
MOUNTING  
BOLTS

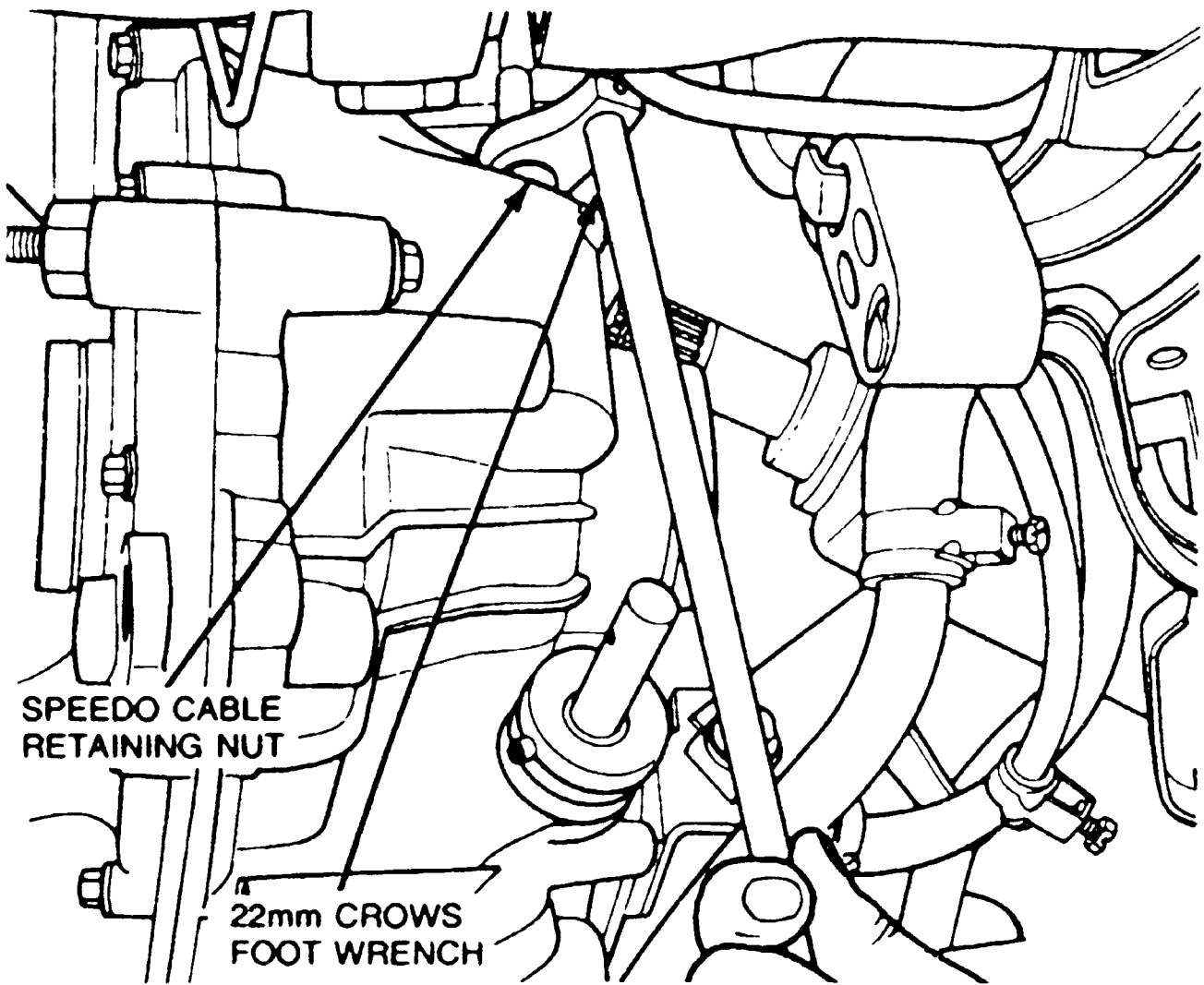


ATTACH SPEEDO  
CABLE NUT TO  
SPEEDO GEAR  
RETAINER

CROWS  
FOOT  
WRENCH

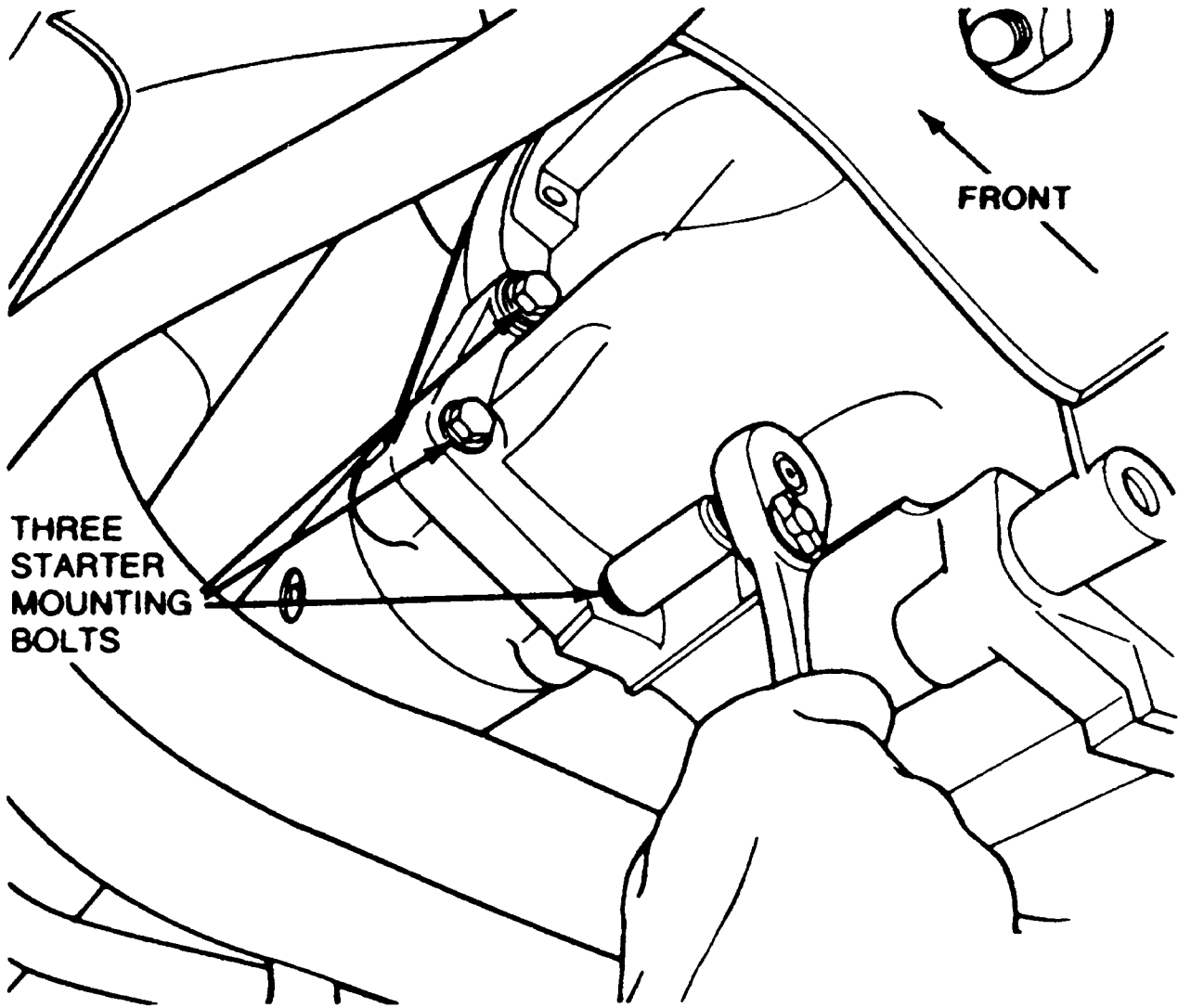


**ROTUNDA HI-LIFT JACK**  
**014-00210**



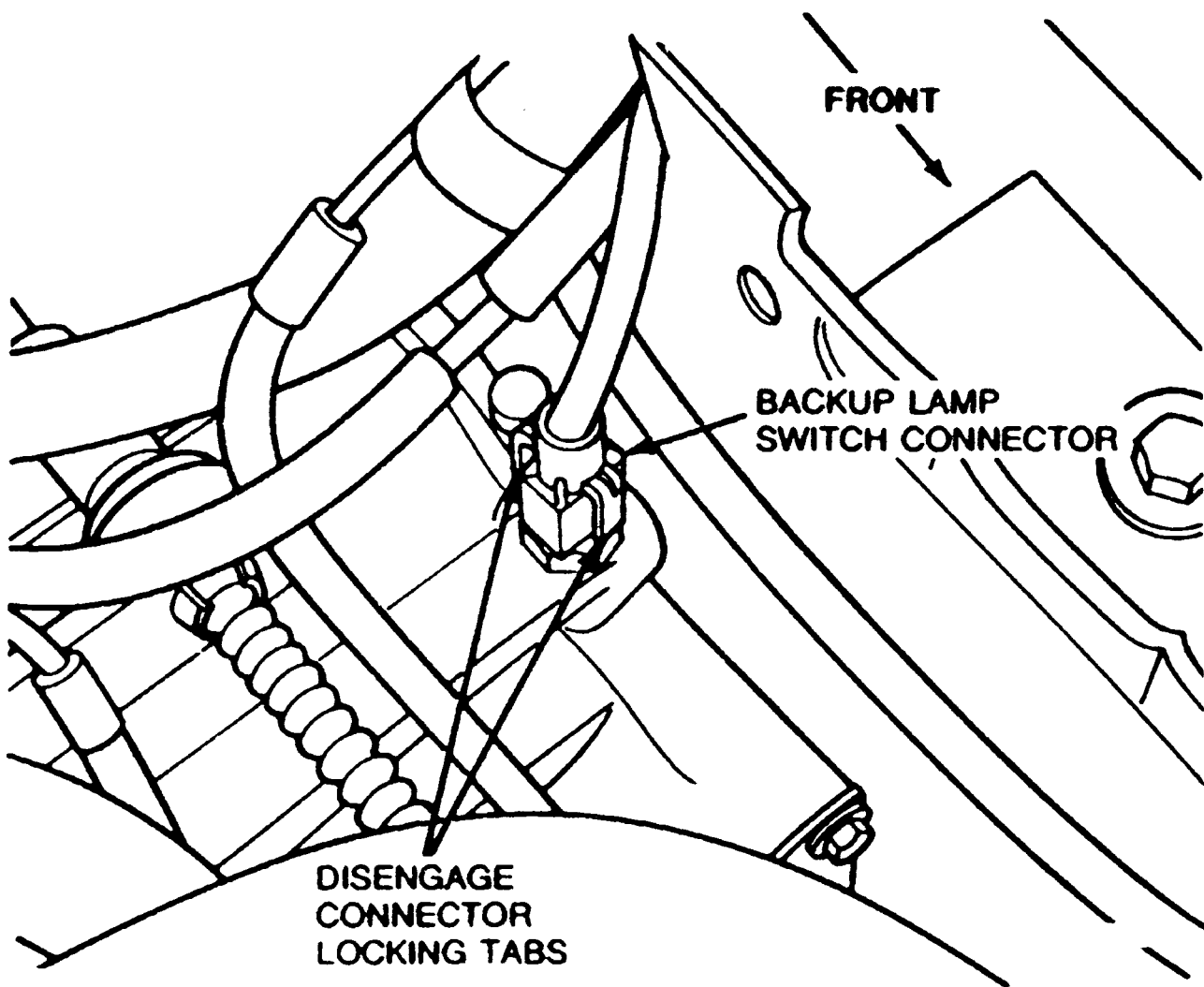
**SPEEDO CABLE  
RETAINING NUT**

**22mm CROWS  
FOOT WRENCH**



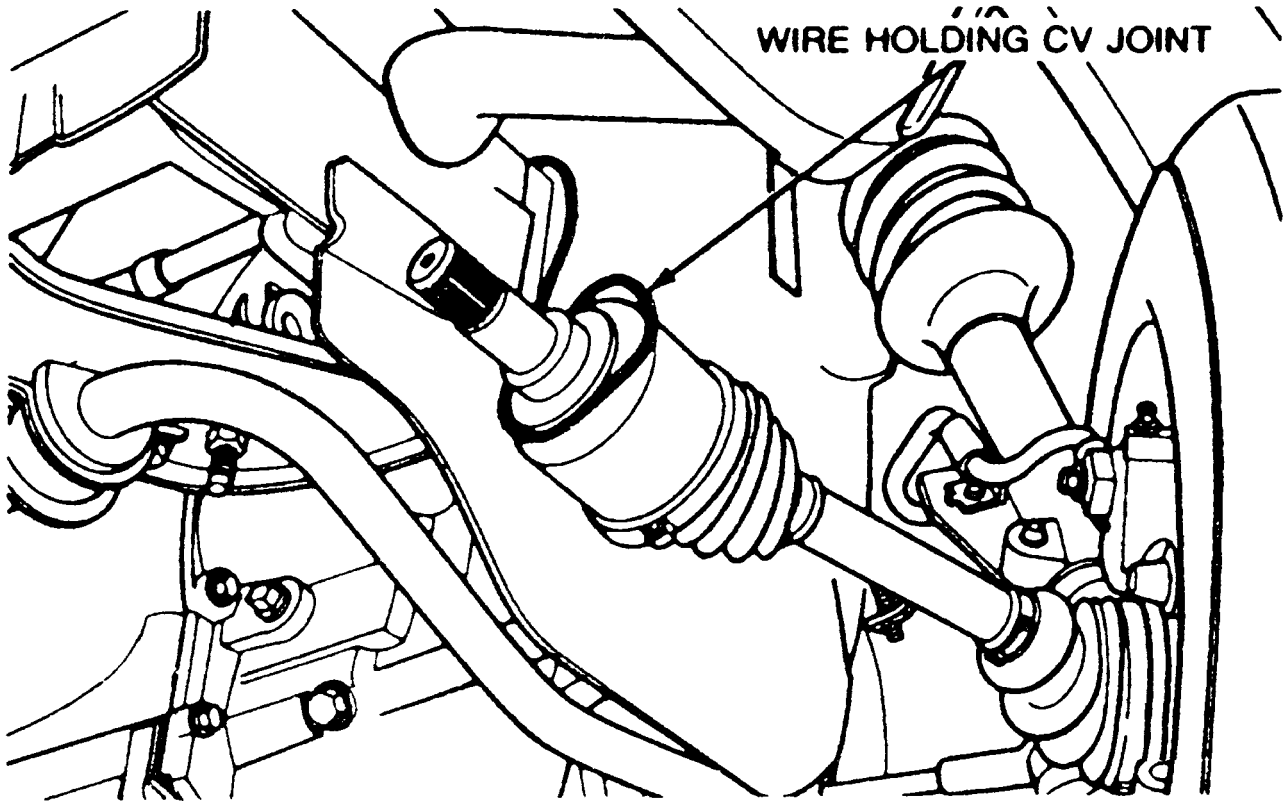
FRONT

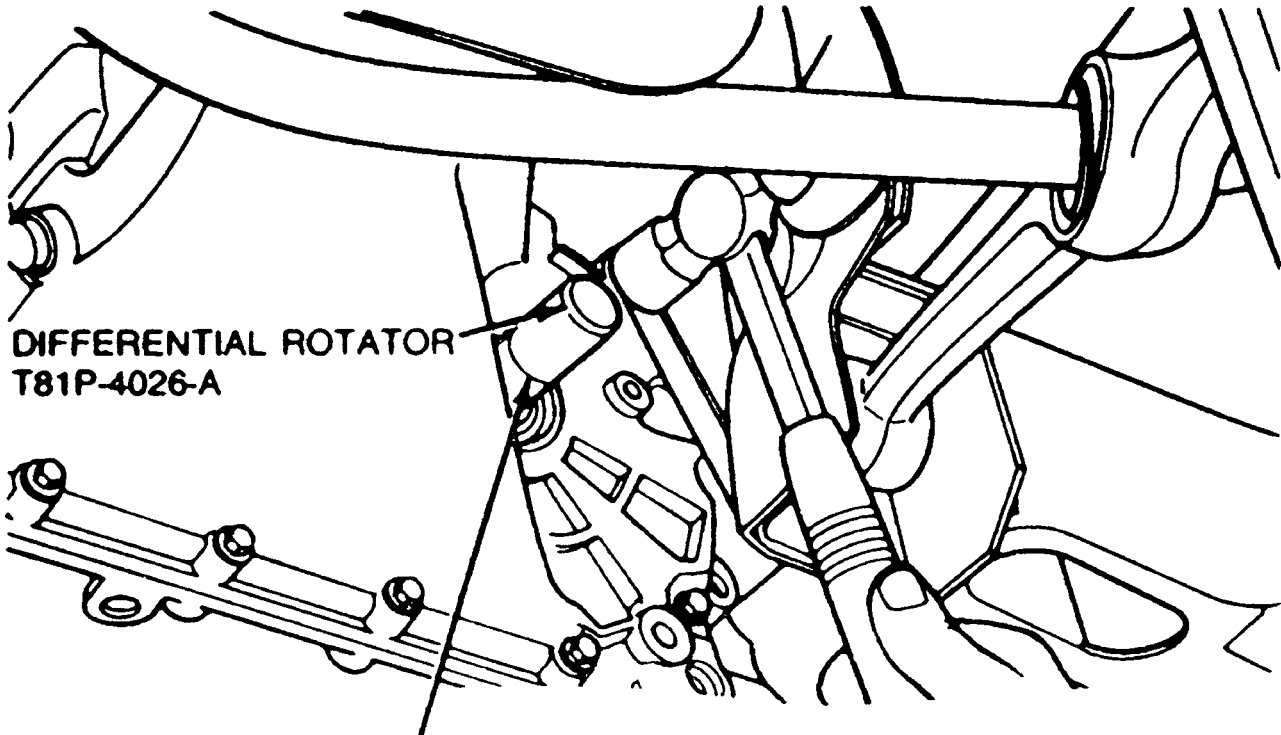
THREE  
STARTER  
MOUNTING  
BOLTS





WIRE HOLDING CV JOINT

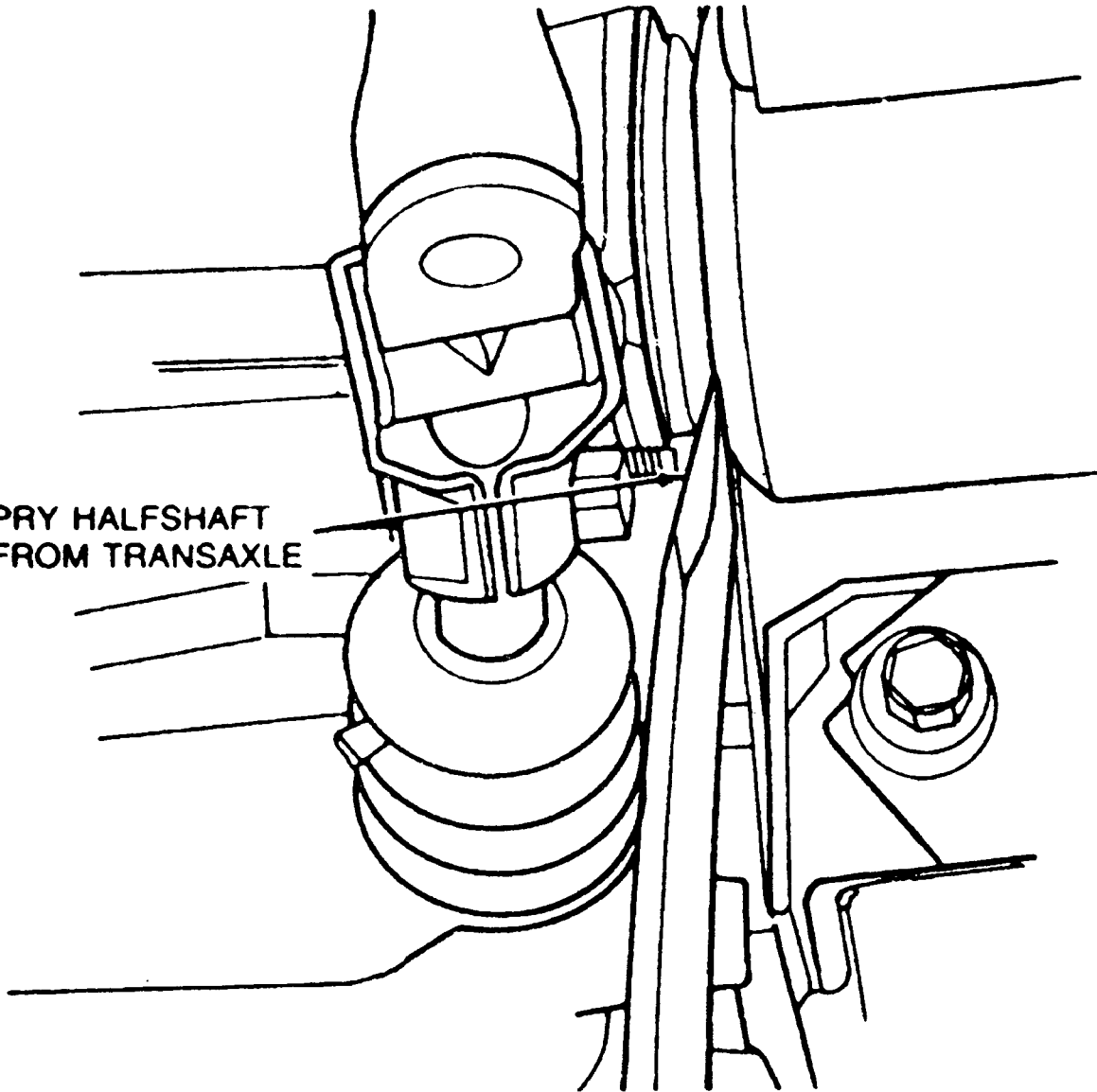


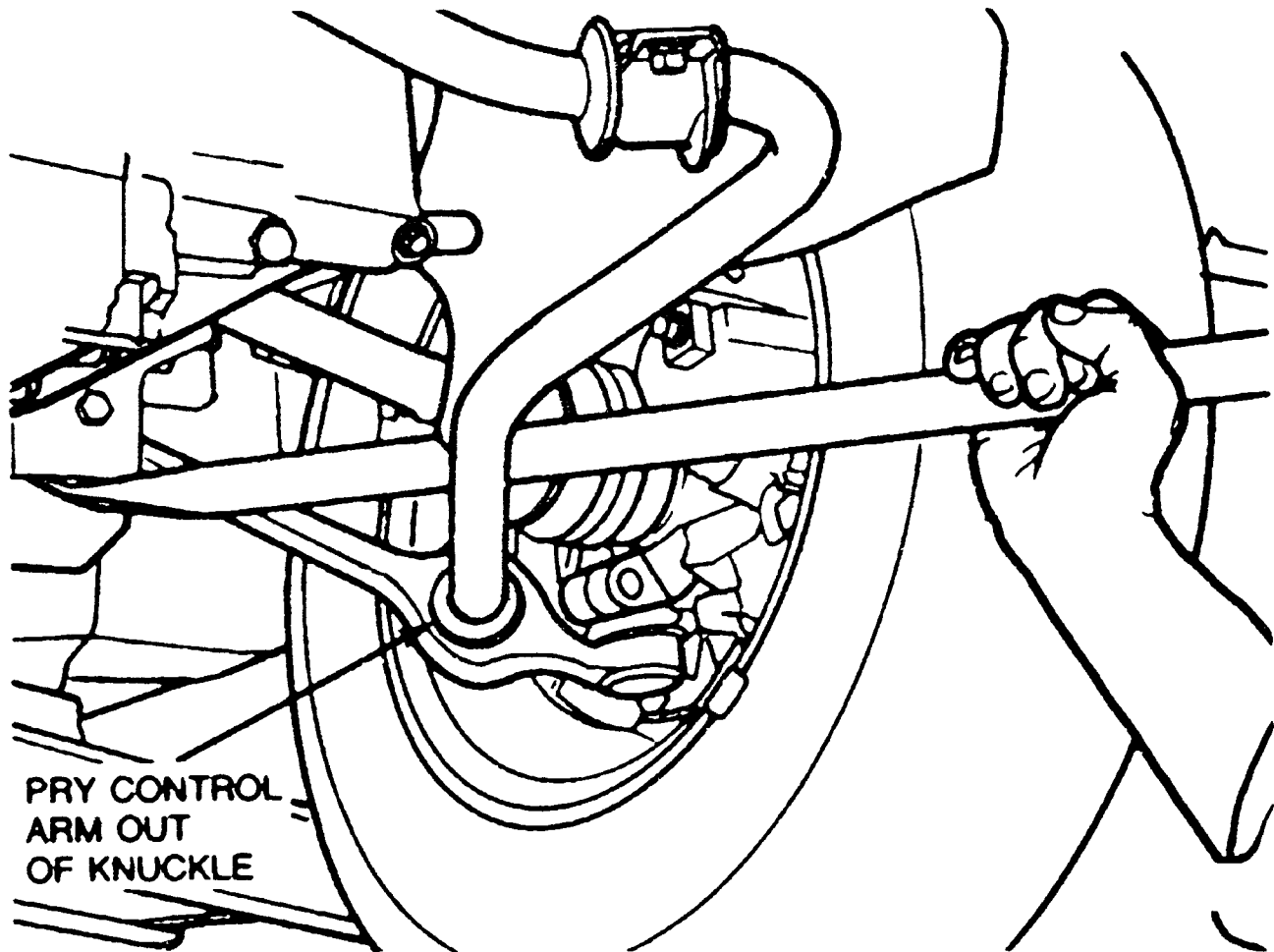


DIFFERENTIAL ROTATOR  
T81P-4026-A

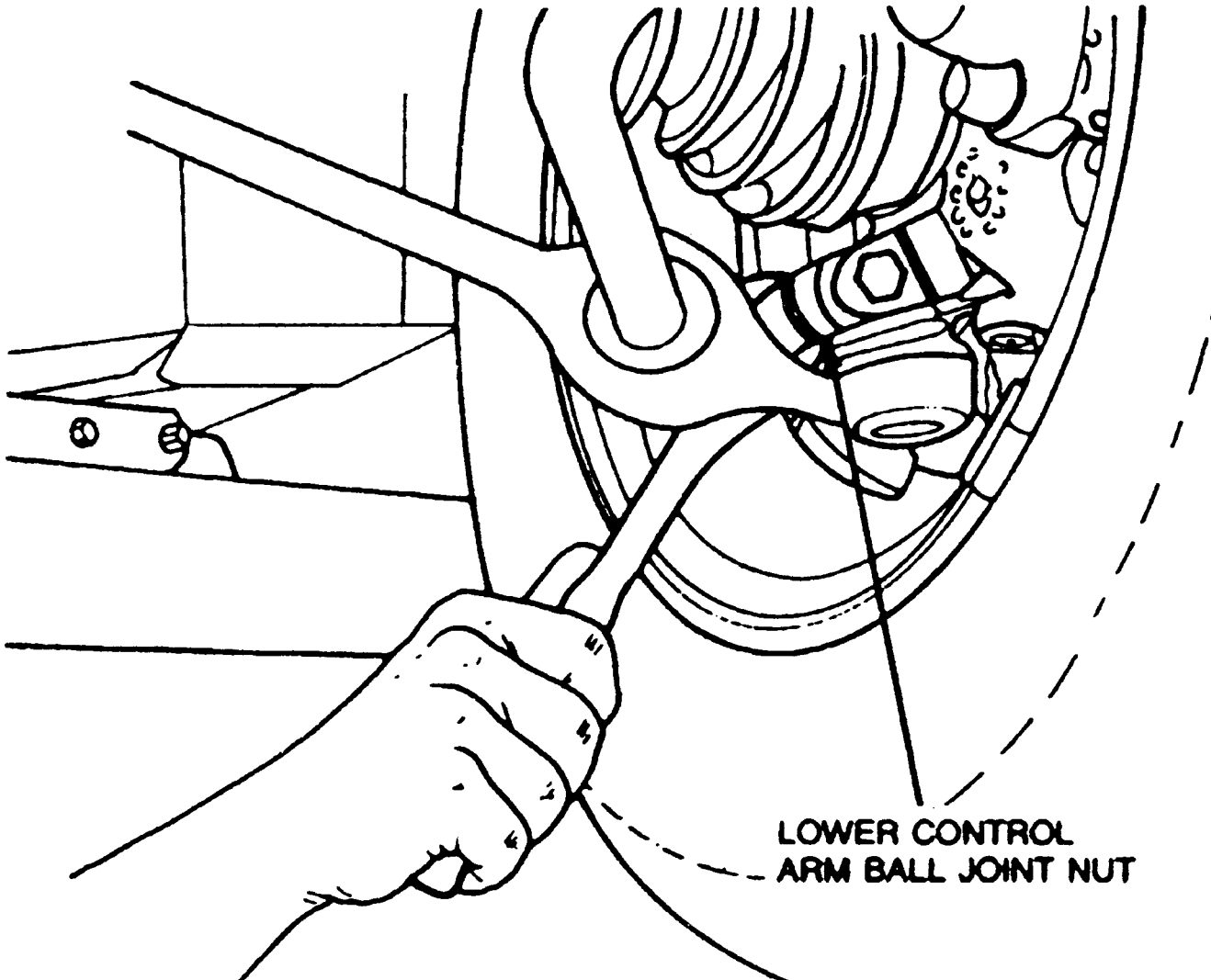
TAP CV JOINT  
OUT OF  
TRANSAXLE

PRY HALFSHAFT  
FROM TRANSAXLE





PRY CONTROL  
ARM OUT  
OF KNUCKLE



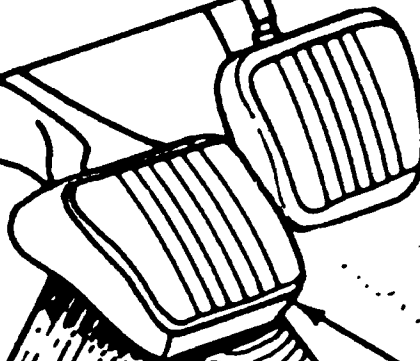
**LOWER CONTROL  
ARM BALL JOINT NUT**



CLUTCH  
RELEASE  
LEVER

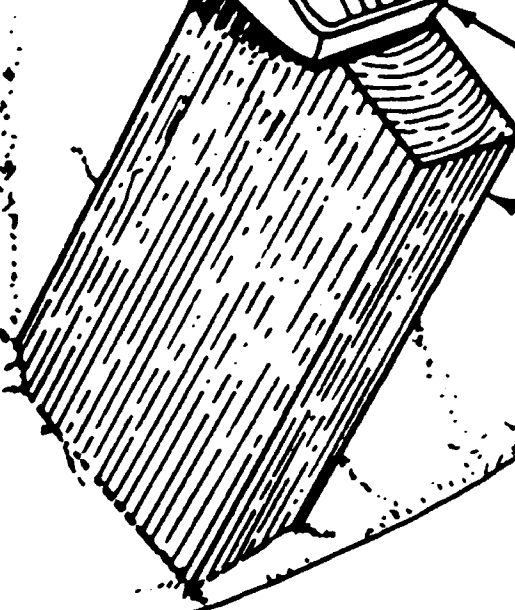
CLUTCH  
CABLE

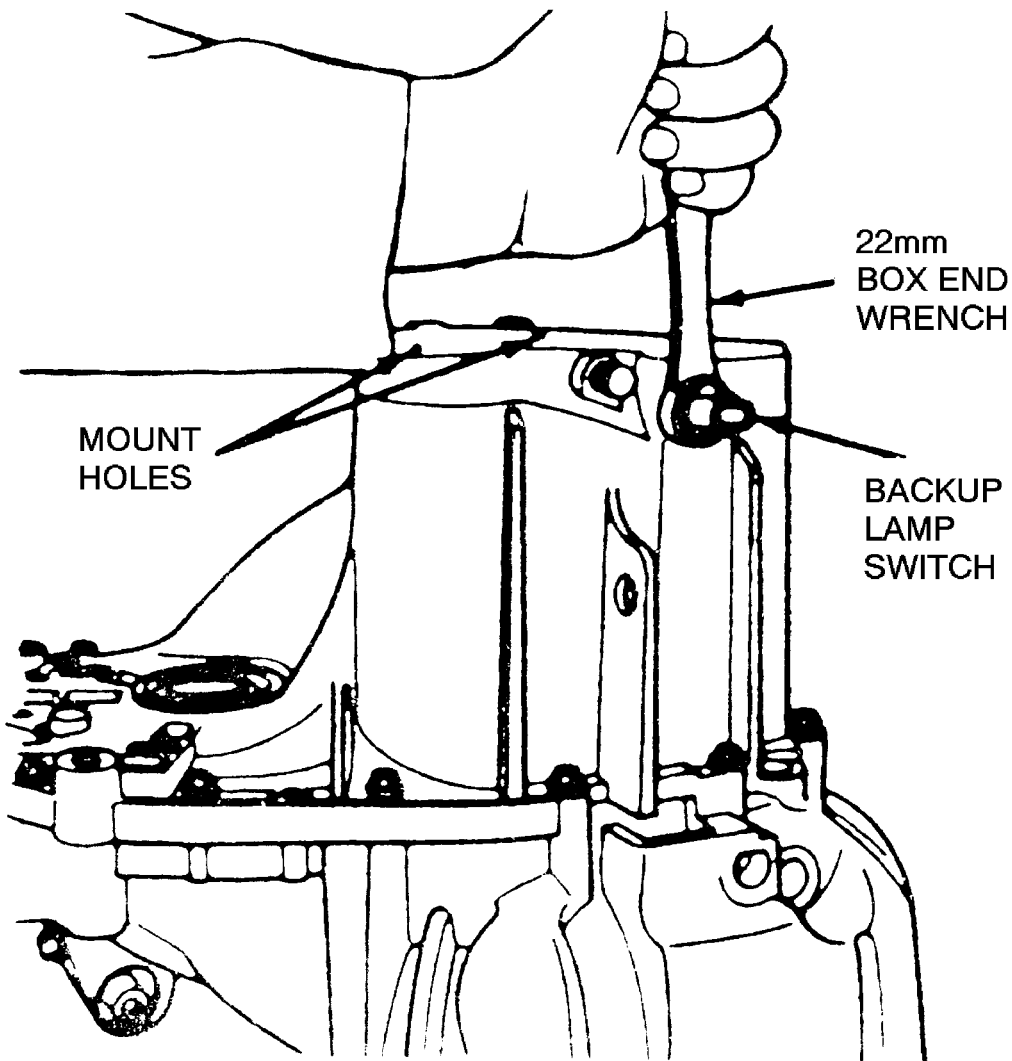
0



CLUTCH PEDAL

188mm (7-INCH)  
WOOD BLOCK





22mm  
BOX END  
WRENCH

MOUNT  
HOLES

BACKUP  
LAMP  
SWITCH