WHEELS

Introduction

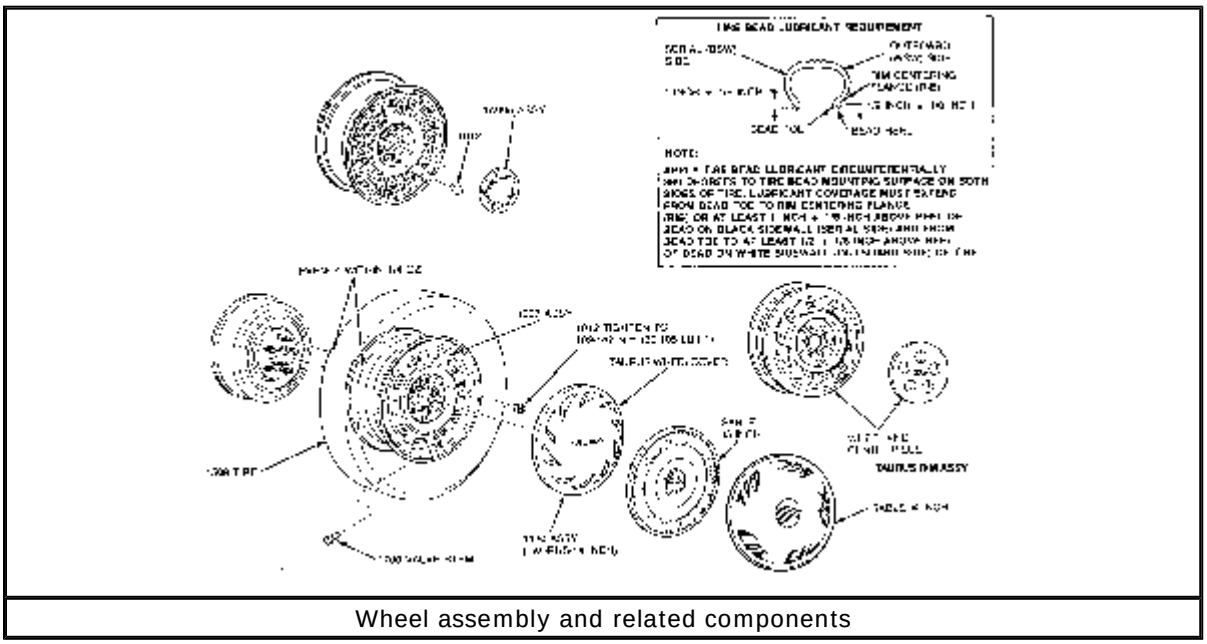
REMOVAL & INSTALLATION

All vehicles use Metric (M-12) lug nuts. Replacement lug nuts must be of the same type and thread size. Metric lug nuts are identified by the word "Metric'' stamped in the top surface of the nut.

1. **Position the vehicle on a level surface. Apply the emergency brake.**
2. **If equipped with automatic transaxle, be sure that the selector lever is in the PARK position.**
3. **If equipped with manual transaxle, be sure that the selector lever is gear.**
4. **Using the tapered end of the lug nut wrench, remove the hub cap from the wheel and tire assembly.**

Aluminum wheels require a special bulge-type lug nut with an enlarged chamfer to prevent distortion of the wheel hub bolt nut seat.

5. **Using the proper size lug nut wrench, loosen, but do not remove, the lug nuts from the wheel and tire assembly.**
6. **Raise and properly support the vehicle.**
7. **Finish loosening, then remove the lug nuts from the wheel and tire assembly.**
8. **Remove the wheel and tire assembly from its mounting.**



Wheel assembly and related components

Click to enlarge

To install:

9. **Install the tire and wheel assembly to the brake rotor or drum.**
10. **Install the lug nuts, then finger-tighten then is a crisscross pattern. Lower the vehicle to the ground.**
11. **Cross-tighten the lug nuts to 85-105 ft. lbs. (115-142 Nm).**
12. **Align the hub cap/wheel cover with the tire valve and cap extension, matching the hole in the cover (also identified on the backside of the wheel cover with the valve stem logo). With the palm of your hand, hit on the outside edges of the cover until it is snapped in place all the way around.**

INSPECTION

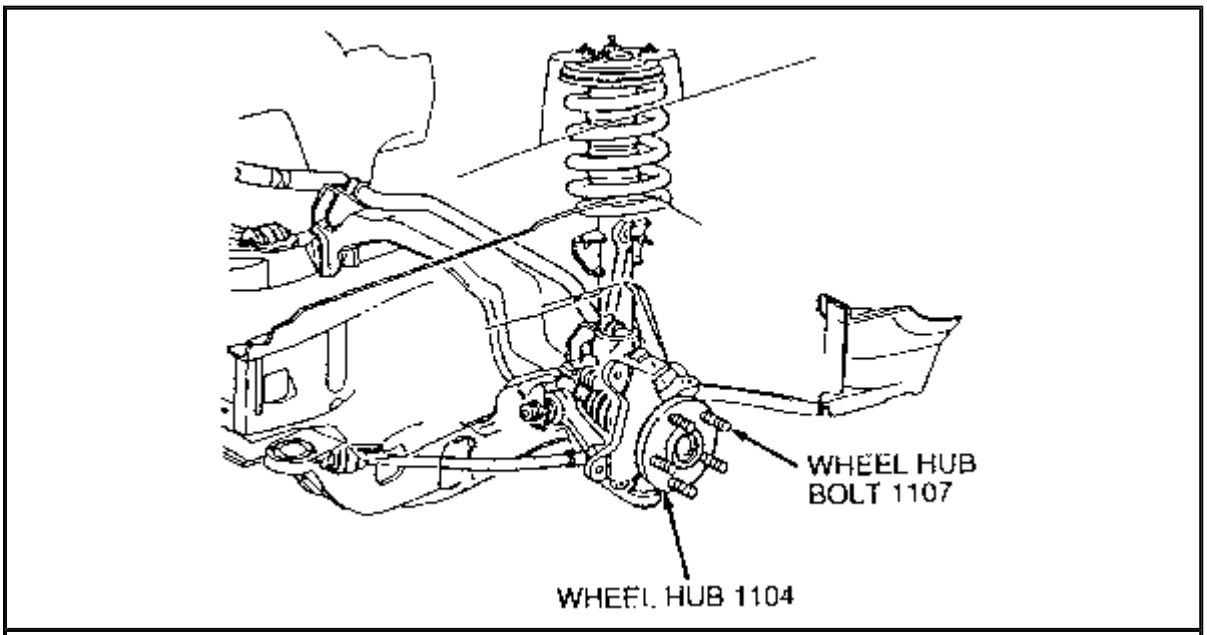
Replace wheels if they are bent, dented, heavily rusted, have air leaks, elongated bolt holes or excessive lateral and radial run-out.

Also inspect wheel lug nuts and be sure that they are tightened to specification.

Wheel Lug Studs/Hub Bolts

REPLACEMENT

1. **Raise and safely support the vehicle.**
2. **Remove the wheel and tire assembly.**
3. **Remove the caliper and rotor. For details, please refer to the procedures located in *Section 9* of this manual.**
4. **Position the wheel hub bolt/stud to clear the steering knuckle.**
5. **Remove the bolt/stud from the wheel hub.**



View of the wheel hub and hub bolts/studs

Click to enlarge

To install:

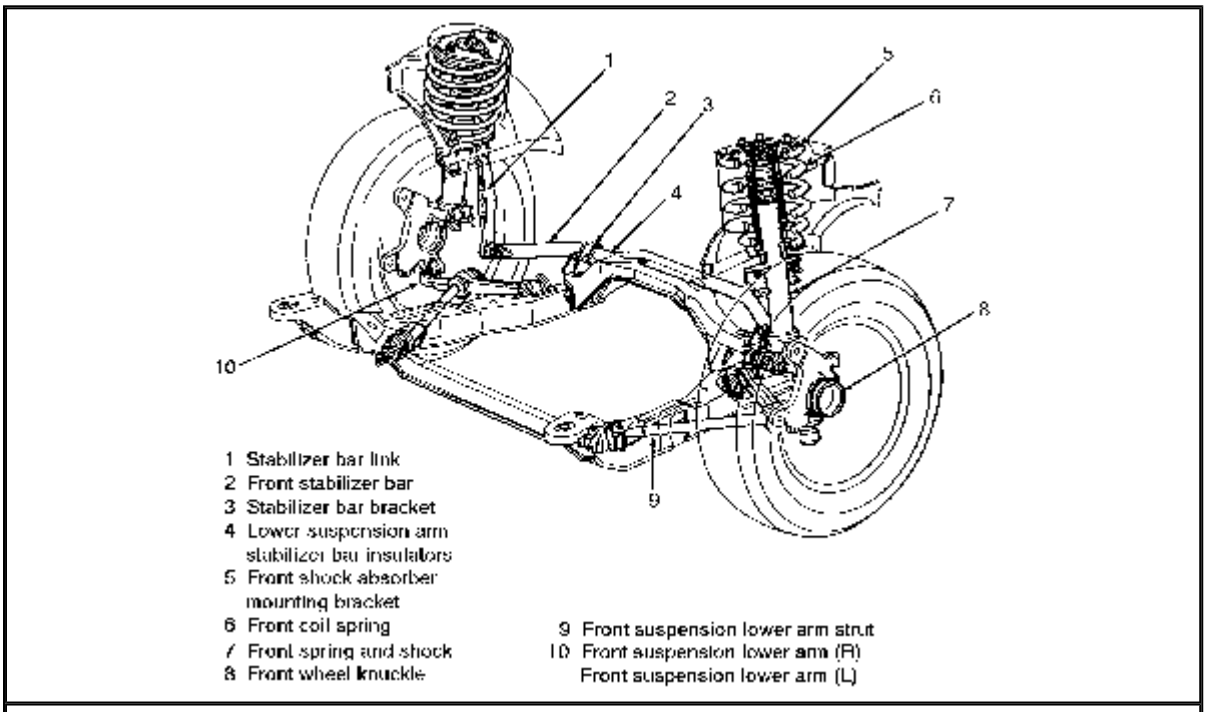
6. **Install the bolt/stud into the wheel hub.**
7. **Using a lug nut, seat the bolt/stud into the wheel hub.**
8. **Install the caliper and rotor.**
9. **Install the wheel and tire assembly, then carefully lower the vehicle.**

FRONT SUSPENSION

MacPherson Struts

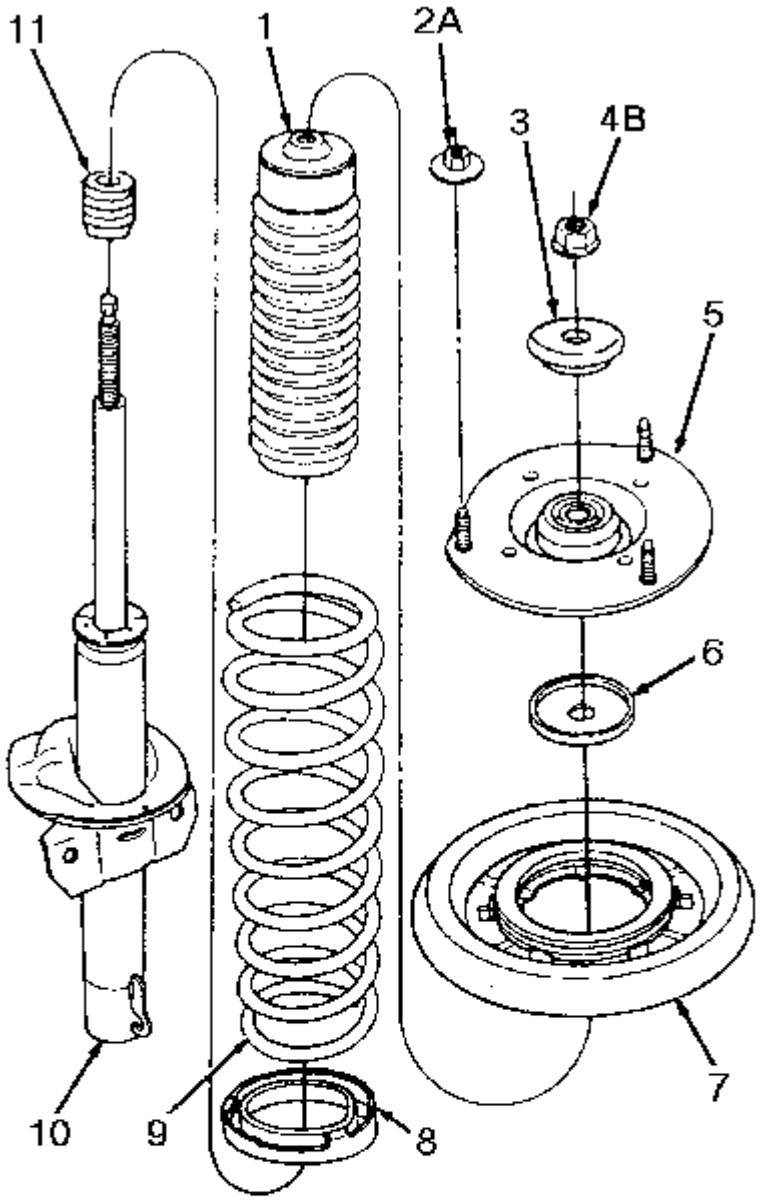
REMOVAL & INSTALLATION

1. **Place the ignition switch in the OFF position and the steering column in the UNLOCKED position.**



View of the front suspension components

Click to enlarge

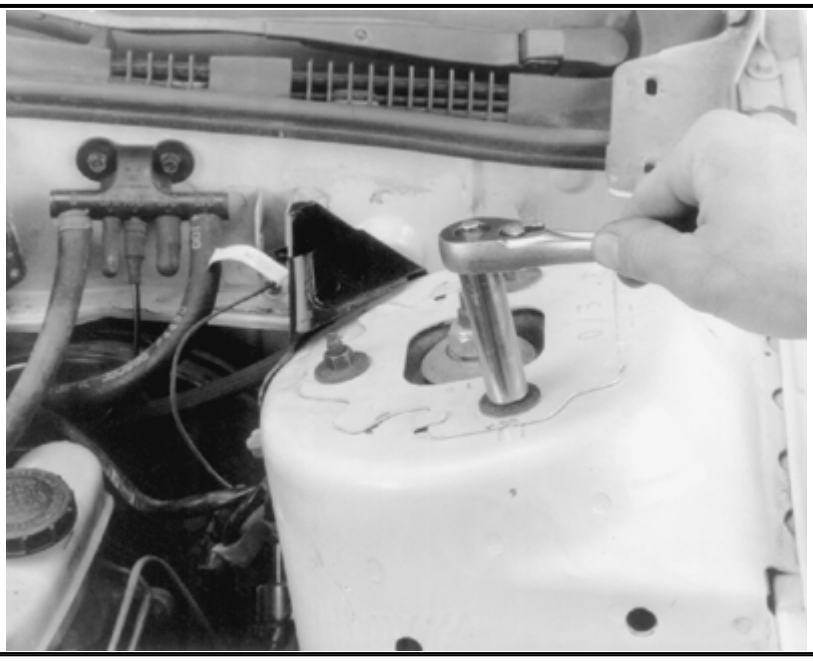


1 Dust boot
2 Nut (3 req'd)
3 Washer
4 Nut
5 Front shock absorber mounting bracket
6 Washer
7 Front suspension bearing and seal
8 Front spring insulator
9 Front coil spring
10 Front spring and shock
11 Jounce bumper
A Tighten to 30-40 Nm (23-29 lb.ft.)
B Tighten to 53-72 Nm (40-53 lb.ft.)

Exploded view of a MacPherson strut assembly

Click to enlarge

2. **Remove the hub nut.**
3. **Loosen the 3 top mount-to-shock tower nuts; but do not remove the nuts at this time.**



Loosen, but do not remove, the 3 top mount-to-shock tower nuts

4. **Raise and safely support the vehicle.**

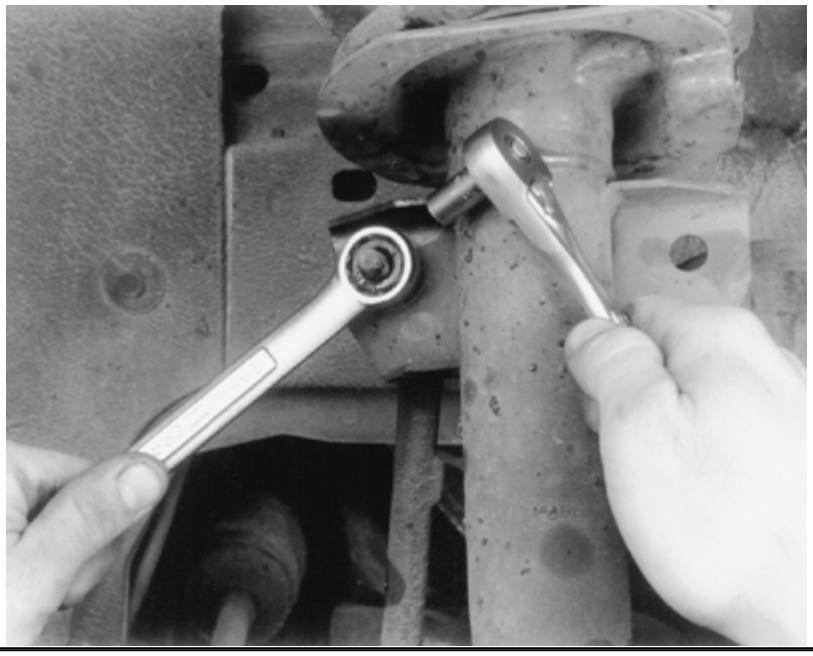
When raising the vehicle, do not lift by using the lower control arms.

5. **Remove the tire and wheel assembly.**
6. **Remove the brake caliper, then support it on a wire, out of the way. Remove the rotor.**
7. **At the tie rod end, remove the cotter pin and the castle nut. Discard the cotter pin and nut, and replace with new ones during installation.**
8. **Using tie rod end remover tool 3290-D and the tie rod remover adapter tool T81P-3504-W or equivalents, separate the tie rod from the steering knuckle.**

WARNING

Use extreme care not to damage the link ball joint boot seal.

9. **Unfasten the stabilizer bar link nut, then remove the stabilizer bar link from the strut.**

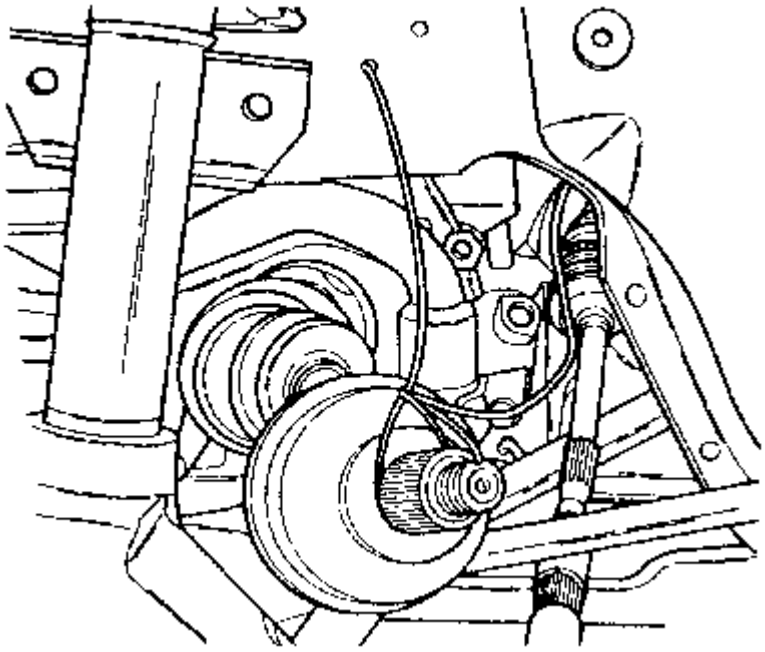


Remove the stabilizer bar link nut, then ...

... remove the stabilizer bar link from the strut

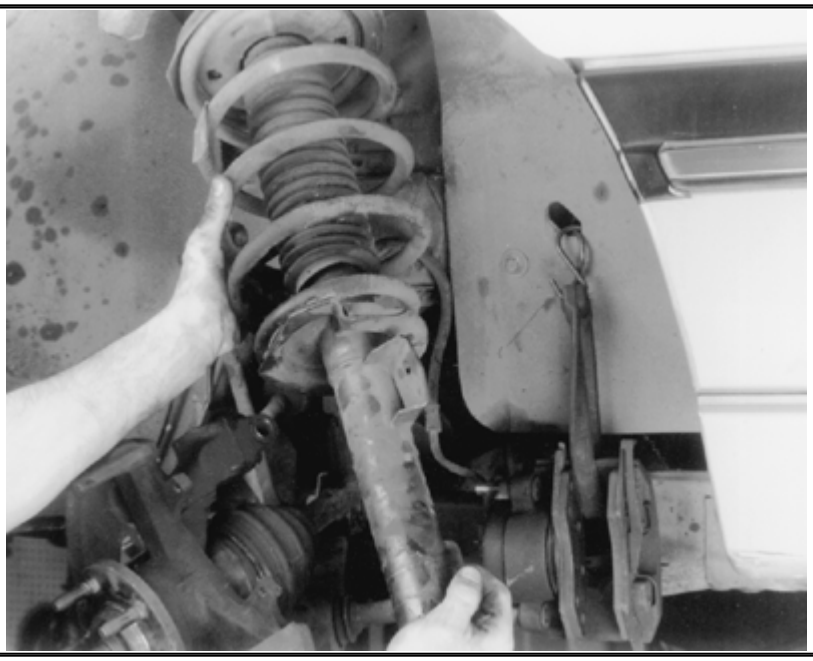
10. **Remove the lower arm-to-steering knuckle pinch bolt and nut; it may be necessary to use a drift punch to remove the bolt. Using a suitable tool, spread the knuckle-to-lower arm pinch joint, then remove the lower arm from the steering knuckle. Discard the pinch nut/bolt and replace with a new one during installation.**
11. **Remove the halfshaft from the hub and support it with a wire to maintain a level position.**

When removing the halfshaft, do not allow it to move outward as theinternal parts of the tripod CV-joint could separate, causing failure of the joint.



Remove the halfshaft from the hub and support it on a wire to maintain a level position

12. **Remove the strut-to-steering knuckle pinch bolt. Using a small prybar, spread the pinch bolt joint and separate the strut from the steering knuckle. Remove the steering knuckle/hub assembly from the strut.**
13. **Remove the 3 top mount-to-shock tower nuts, then remove the strut and coil spring assembly from the vehicle.**



After removing the 3 top mount-to-shock tower nuts, remove the strut and spring assembly from the vehicle

To install:

14. **Install the strut and coil spring assembly and the 3 top mount-to-shock tower nuts.**
15. **Install the steering knuckle and hub assembly to the strut.**

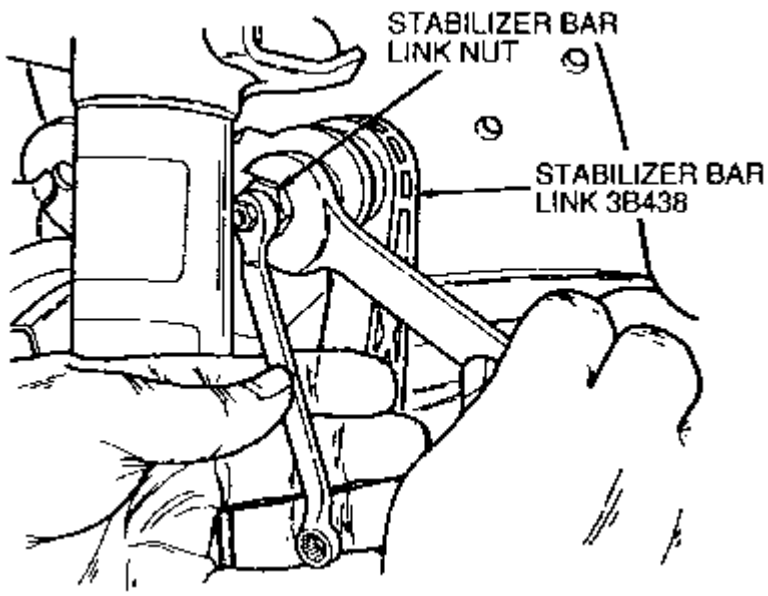
16. **Install a new strut-to-steering knuckle pinch bolt. Tighten the bolt to 73-97 ft. lbs. (98-132 Nm).**

17. **Install the halfshaft into the hub.**

18. **Install the lower arm to the steering knuckle, making sure the ball stud groove is properly positioned. Be very careful not to damage the ball joint seal. Fasten using a new pinch bolt and nut. Tighten to 40-53 ft. lbs. (54-72 Nm).**

The letters "Top LH'' and "Top RH'' are moulded into thestabilizer bar link for correct assembly to the strut.

19. **Install the stabilizer link to the strut, making sure the link is positioned properly, then install a new stabilizer bar link nut. Tighten to 57-75 ft. lbs. (77-102 Nm).**



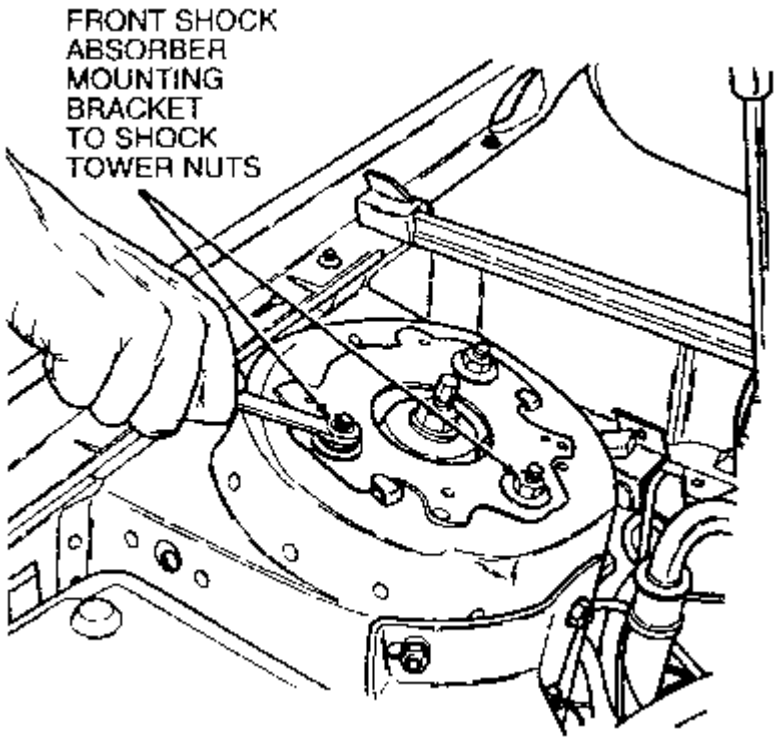
Install the stabilizer link to the strut, making sure the link is positioned properly, then install a new stabilizer bar link nut. Tighten to 57-75 ft. lbs. (77-102 Nm).

Click to enlarge

20. **Using a new castle/slotted nut, install the tie rod end onto the knuckle. Tighten the nut to 23-35 ft. lbs. (31-47 Nm) for vehicles through 1994. For 1995 vehicles, tighten the nut to 35-46 ft. lbs. (47-63 Nm). Retain the castle/slotted nut with a new cotter pin.**

21. **Install the disc brake rotor, caliper and tire/wheel assembly. Tighten the wheel lug nuts to 85-105 ft. lbs. (115-142 Nm).**

22. **Tighten the 3 top mount-to-shock tower nuts to 23-29 ft. lbs. (31-40 Nm).**



Tighten the 3 top mount-to-shock tower nuts to 23-29 ft. lbs. (31-40 Nm)

Click to enlarge

23. **Lower the vehicle, then tighten the hub nut to 170-203 ft. lbs. (230-275 Nm).**
24. **Depress the brake pedal a few times before moving the vehicle.**

OVERHAUL

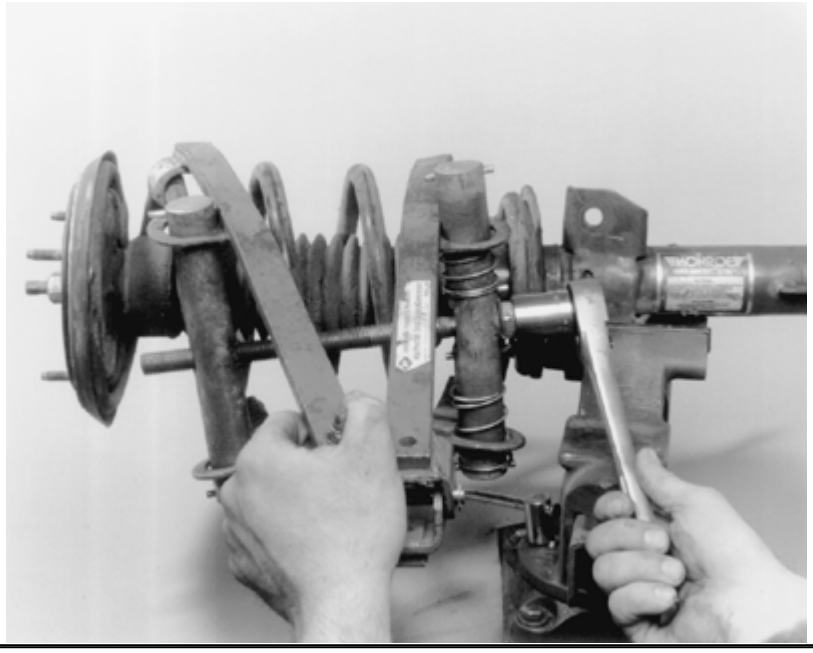
CAUTION

NEVER attempt to disassemble the spring or top mount without firstcompressing the spring using Strut Compressor Tool No. D85P-7178-A, RotundaSpring Compressor 086-00029B or equivalent. Failure to properly compress thespring before disassembly can result in serious injury or death.

The following procedure is performed with the strut assembly removed from the car.

A MacPherson Strut compression tool is required for the disassembly ofthe strut, a cage type tool such as part No. D85P-7178-A or equivalent isrequired.

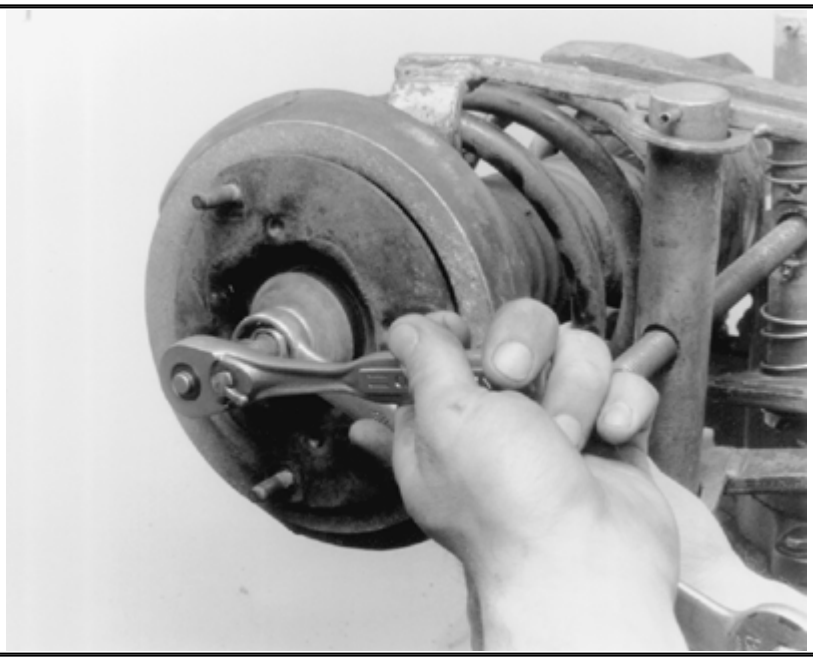
1. **Compress the spring with the coil spring compressor part No. D85P-7178-A or equivalent.**



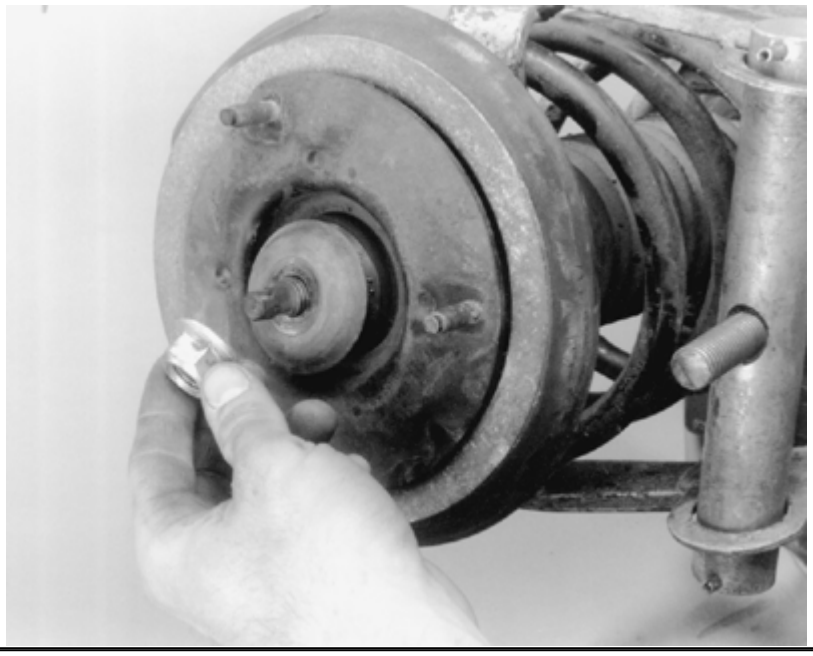
Carefully compress the spring using a suitable spring compressor tool

2. **Place a 10mm box wrench on top of the shock strut shaft and hold while removing the top shaft mounting nut with a 21mm 6-point crow's foot wrench and ratchet.**

It is important that the mounting nut be turned and the rod held still toprevent fracture of the rod at the base of the hex.

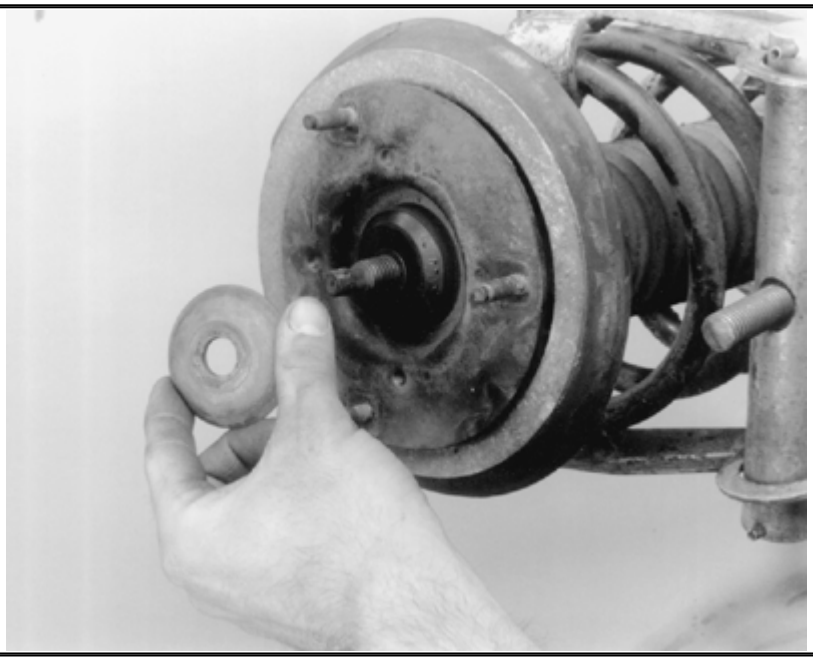


Place a 10mm box wrench on top of the shock strut shaft and hold while loosening the top shaft mounting nut with a 21mm 6-point crow's foot wrench and ratchet, then ...

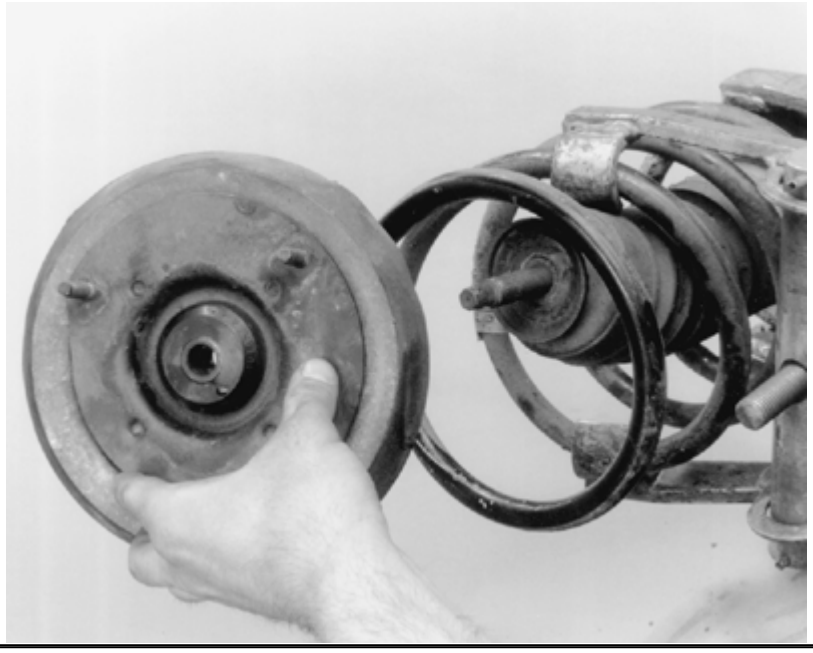


... remove the mounting nut

27. Loosen the spring compressor tool, then remove the top mounting bracket assembly, bearing plate assembly and spring.



After loosening the spring compressor tool, remove the washer, then ...

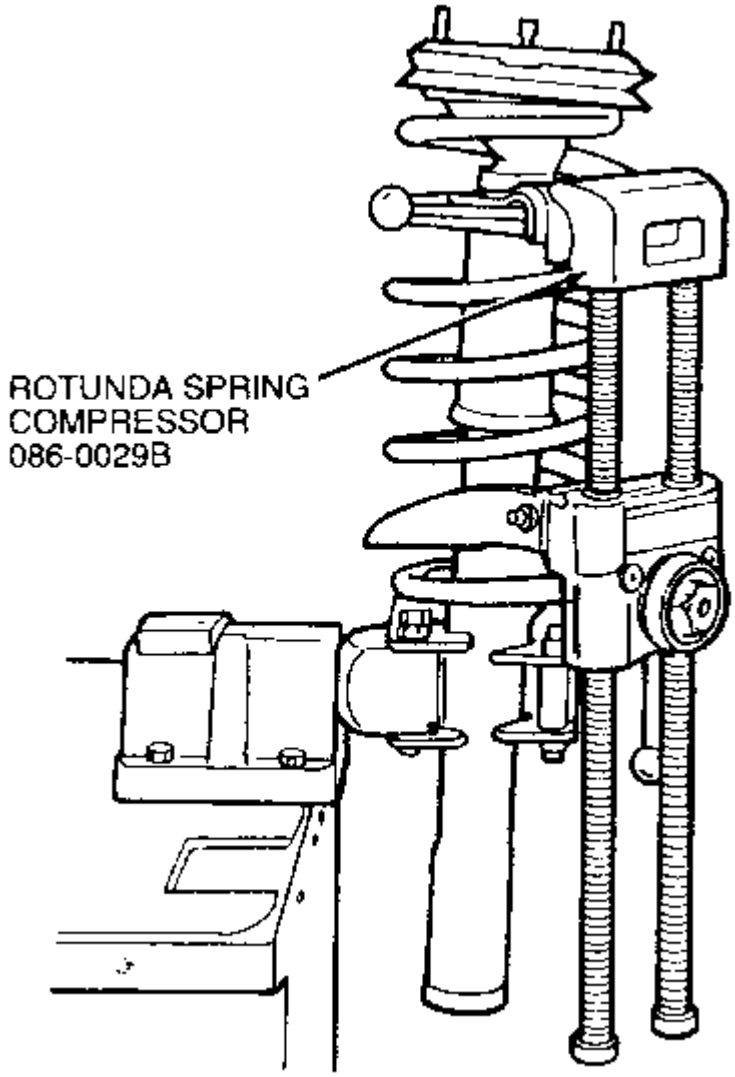


... remove the mounting bracket and bearing plate assembly

To assemble:

Ensure that the correct assembly sequence and proper positioning of thebearing and seat assembly are followed. The bearing and seat assembly ispress-fit onto the upper mount. The mount washers must be installed with thecorrect orientation.

4. **Install the spring compressor tool part No. D85P-7178-A or equivalent.**
5. **Install the spring, bearing plate assembly, lower washer and top mount bracket assembly.**
6. **Compress the spring with the coil spring compressor tool.**



Compress the coil spring using the proper tool

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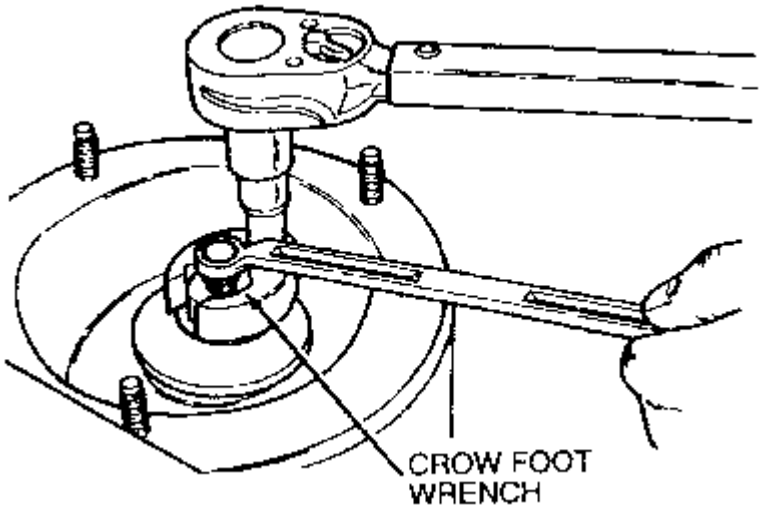
7. **Install the upper washer and nut on the shock strut shaft.**
8. **Place a 10mm box end wrench on the top of the shock strut shaft and hold while tightening the top shaft mounting nut with a 21mm 6-point crow's foot wrench and a ratchet. Tighten to 40-53 ft. lbs. (53-72 Nm).**



Place a 10mm box end wrench on top of the shock strut shaft, and hold while tightening the top shaft mounting nut with a 21mm 6-point crow's foot wrench and ratchet. Tighten to 40-53 ft. lbs. (53-72 Nm)

Click to enlarge

33. **The strut assembly may now be installed in the vehicle. For details, please refer to the procedure located earlier in this section.**

Lower Ball Joint

INSPECTION

1. **Disconnect the negative battery cable.**
2. **Raise and safely support the vehicle so the wheels fall to the full-down position.**
3. **Have an assistant grasp the lower edge of the tire, then move the wheel and tire assembly in and out.**
4. **Observe the lower end of the knuckle and the lower control arm as the wheel is being moved in and out. Any movement indicates abnormal ball joint wear.**
5. **If there is any movement, install a new lower control arm assembly.**
6. **Lower the vehicle, then connect the negative battery cable.**

REMOVAL & INSTALLATION

Ball joints are integral parts of the lower control arms. If inspection reveals an unsatisfactory ball joint, the entire lower control arm assembly must be replaced.

Stabilizer Bar

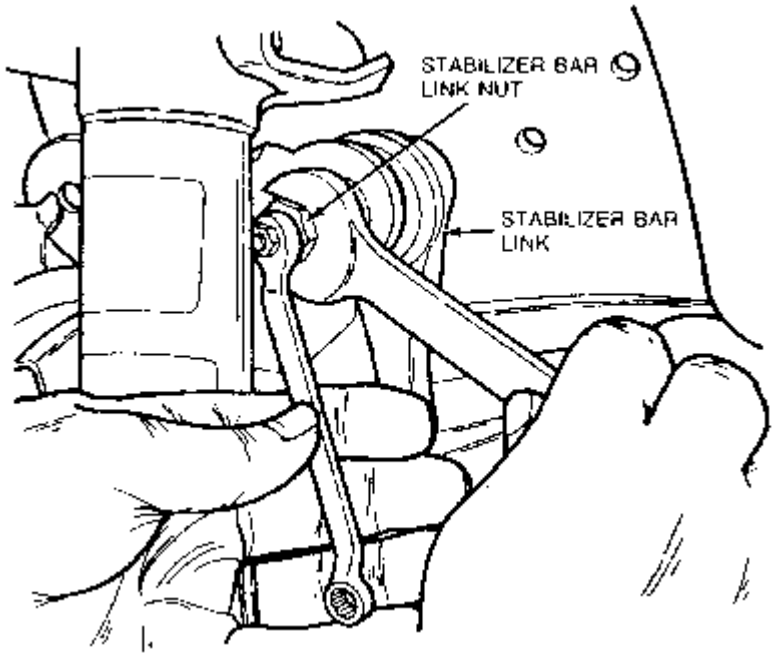
REMOVAL & INSTALLATION

1. **Raise and safely support the vehicle. Support the vehicle with jackstands behind the front subframe.**

Do NOT raise or support the vehicle by the front control arms.

2. **Remove the stabilizer bar link-to-stabilizer bar nut, the stabilizer bar link-to-strut nut and the link from the vehicle with an 8mm closed-end wrench and an 18mm open-end wrench. Discard the nuts, and replace with new ones during installation.**

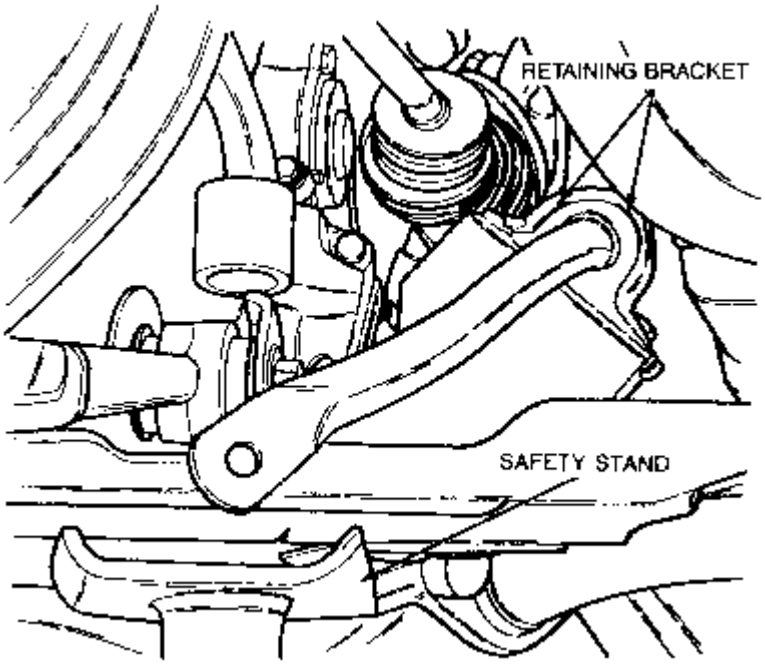
Be very careful not to damage the line ball joint boot seal.



Remove the stabilizer bar link-to-stabilizer bar nut, the stabilizer bar link-to-strut nut and the link from the vehicle with an 8mm closed-end wrench and an 18mm open-end wrench. Discard the nuts, and replace with new ones during installation

Click to enlarge

3. **Remove the steering gear-to-subframe nuts, then move the gear from the subframe.**
4. **Position another set of jackstands under the front subframe, then remove the rear subframe-to-frame bolts. Lower the rear or the subframe to access the stabilizer bar brackets.**



Position another set of jackstands under the front subframe, then remove the rear subframe-to-frame bolts. Lower the rear or the subframe to access the stabilizer bar brackets

Click to enlarge

5. **Remove the stabilizer bar U-bracket bolts and the stabilizer bar from the vehicle.**

When removing the stabilizer bar, replace the insulators and the U-bracket bolts with new ones.

To install:

6. **Clean the stabilizer bar to remove dirt and debris.**
7. **To install, reverse the removal procedure. Tighten the bolts to the following torque specifications:**
   - **U-bracket-to-subframe 23-29 ft. lbs. (30-40 Nm)**
   - **Subframe-to-steering gear 85-100 ft. lbs. (115-135 Nm)**
   - **Stabilizer bar-to-stabilizer bar link 35-48 ft. lbs. (47-65 Nm)**
   - **Stabilizer bar-to-strut 55-75 ft. lbs. (75-101 Nm)**
8. **Prior to assembly, coat the inside diameter of the new insulators with No. E25Y-19553-A or equivalent lubricant. Do not use any mineral or petroleum base lubricants, as they will cause deterioration of the rubber insulators.**

Lower Control Arm

REMOVAL & INSTALLATION

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

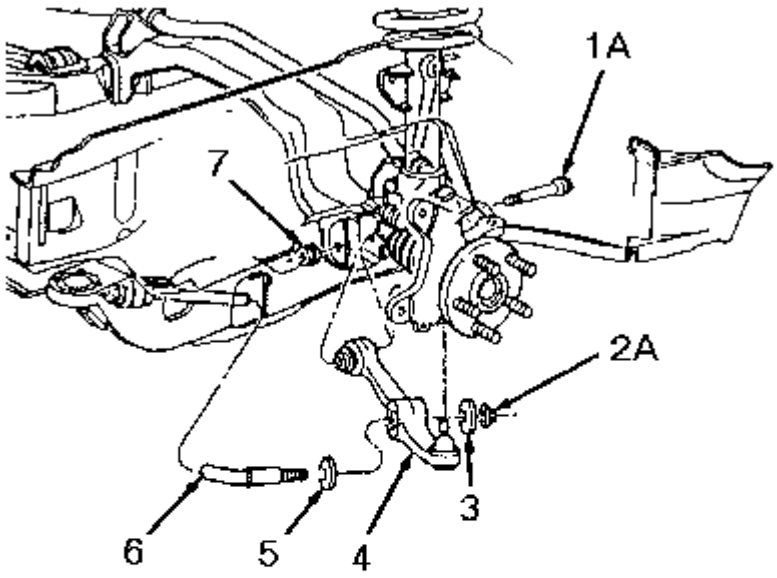
3. **Remove the wheel and tire assembly.**
4. **Remove and discard the tension strut-to-control arm nut, then pull off the dished washer.**

When separating the control arm from the steering knuckle, do not use a hammer. Be careful not to damage the ball joint boot seal.

5. **Remove and discard the control arm-to-steering knuckle pinch bolt. Using a small prybar, spread the pinch joint slightly, then separate the control arm from the steering knuckle. A drift punch may be used to remove the bolt, but be very careful not to damage the ball joint boot seal.**

Do not allow the halfshaft to move outward, or the tripod CV-joint internal parts could separate, causing failure of the joint.

6. **Remove and discard the lower control arm inner pivot bolt and nut.**
7. **Remove the lower control arm from the frame and the tension strut.**



1 Bolt (2 req'd)
2 Nut (2 req'd)
3 Washer (2 req'd)
4 Front suspension lower arm
5 Washer (2 req'd)
6 Front suspension lower arm strut
7 Nut (2 req'd)
A Tighten to 53-72 Nm (40-53 lb.ft.)

Exploded view of the lower control arm and related components

Click to enlarge

To install:

Make sure the front washer is at the strut-to-lower control arm

attachment.

8. **Insert the strut into the inner bushing.**
9. **Position the lower control arm into the subframe bracket, using a new nut and bolt. Tighten to 73-97 ft. lbs. (98-132 Nm).**
10. **Assemble the lower control arm ball joint stud to the steering knuckle, making sure the ball stud groove is positioned properly. Be very careful not to damage the lower control arm seal.**
11. **Insert a new pinch bolt and nut, then tighten to 40-53 ft. lbs. (53-72 Nm).**
12. **Clean the strut threads to remove dirt and/or debris.**
13. **Install the dished washer, with its dished side away from the control arm bushing. Install a new nut on the strut and tighten to 73-97 ft. lbs. (98-132 Nm).**
14. **Install the wheel and tire assembly, tightening the lug nuts to 85-105 ft. lbs. (115-142 Nm), then carefully lower the vehicle.**

BUSHING REPLACEMENT

Inner Pivot Bushing

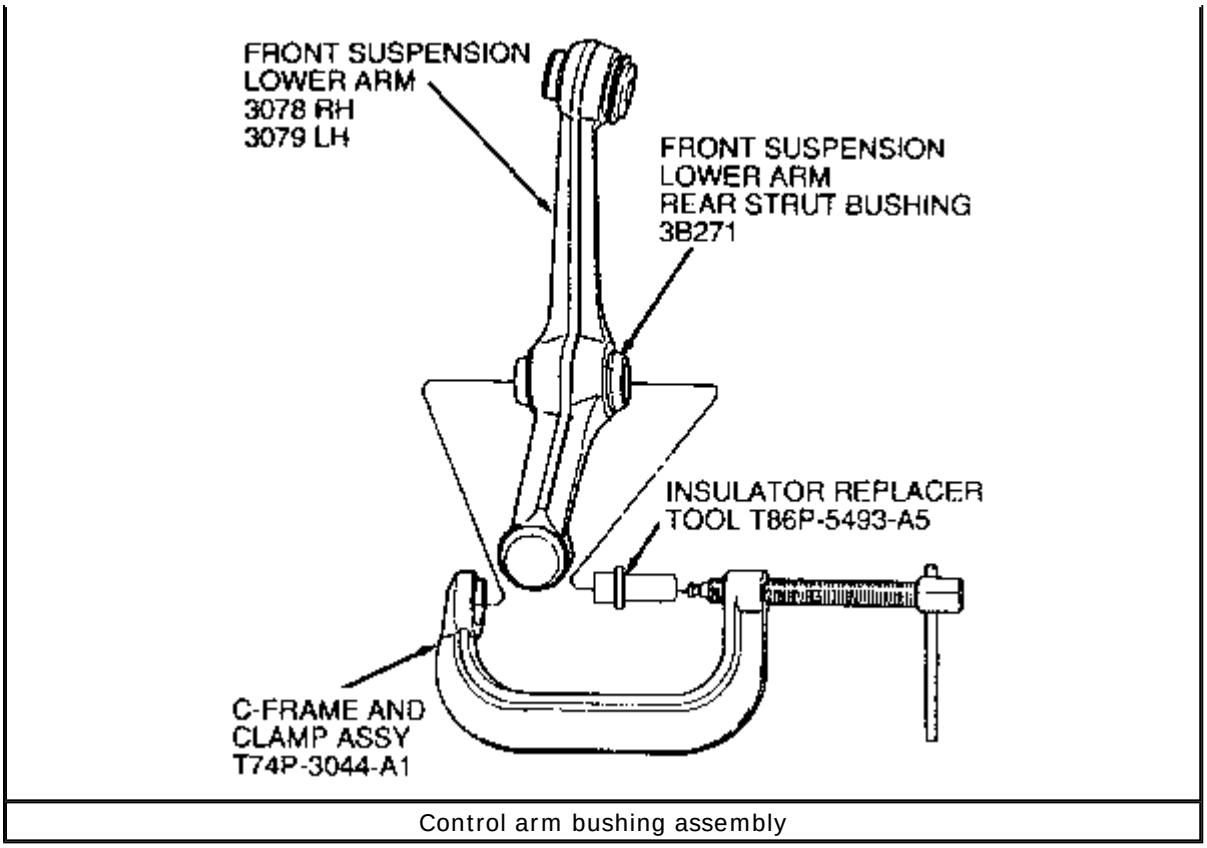
1. **Remove the lower control arm from the vehicle.**
2. **Using bushing removal tools T86P-5493-A3 and T86P-5493-A2, or equivalents, and a C clamp assembly, remove the old bushings from the control arm assembly.**

To install:

3. **Use the bushing removal tool and press new bushings in place on the lower control arm assembly.**
4. **Be sure that the bushing flange is at the front of the arm.**
5. **Install the lower control arm on the vehicle.**

Control Arm/Tension Strut Bushing

1. **Remove the lower control arm from the vehicle.**
2. **Using bushing removal tools T86P-5493-A5 and T86P-5493-A, or equivalents, and a C clamp assembly, remove the old bushings from the control arm assembly. Be sure that the C clamp is positioned tightly in a bench vise.**



Control arm bushing assembly

Click to enlarge

To install:

3. **Before installing the new bushing, saturate it in vegetable oil, as this will aid in the installation process. Use only vegetable oil; do NOT use mineral or petroleum based oil, as these will deteriorate the rubber.**
4. **Use the bushing removal tool and install new bushings in place on the lower control arm assembly. Stop tightening the C clamp when the bushing pops in place.**
5. **Install the lower control arm on the vehicle.**

Tension Strut/Sub Frame Insulators

1. **Remove the lower control arm from the vehicle.**
2. **Remove and discard the nut, washer and insulator from the front of the tension strut. Pull the strut rearward to remove it from the subframe.**
3. **Remove and discard the insulator from the tension strut.**

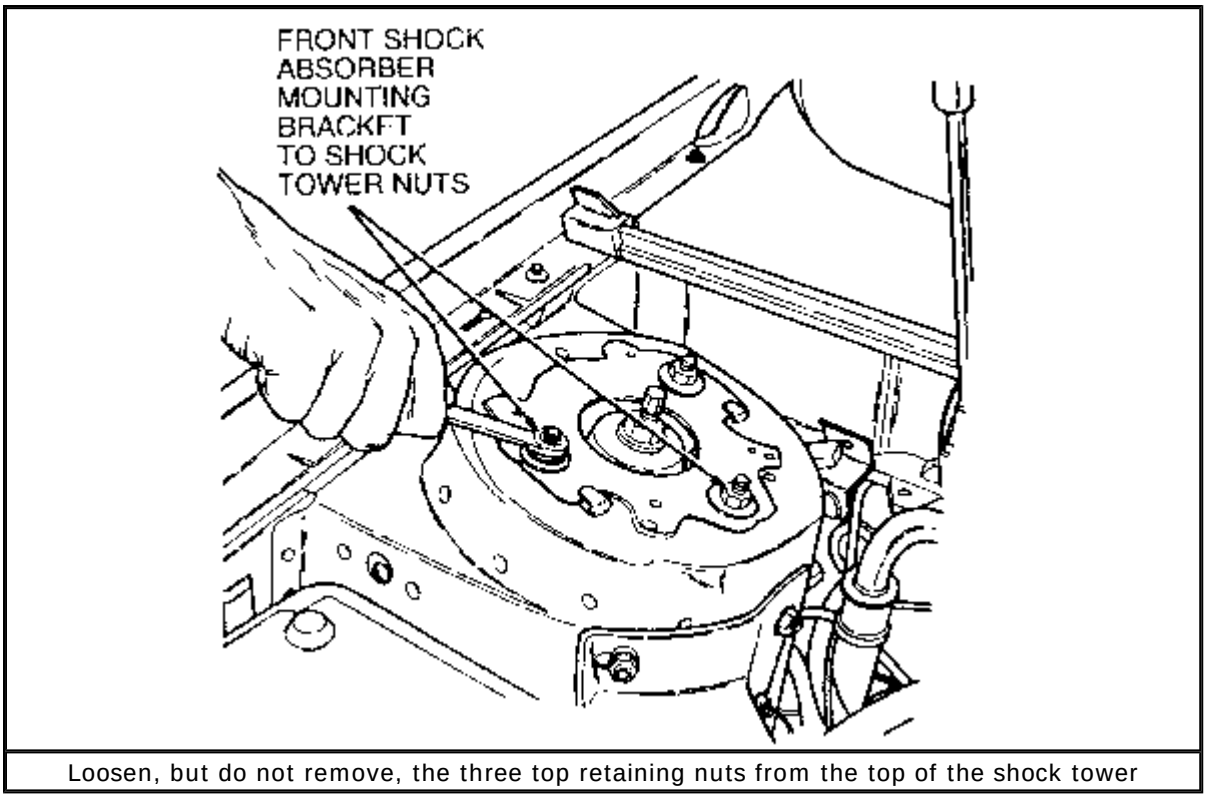
To install:

4. **Install a new insulator on the tension strut end and insert it into the subframe.**
5. **Install a new front insulator. Clean the tension strut threads. Install a new washer and nut. Tighten to 70-95 ft. lbs. (95-129 Nm).**
6. **Install the lower control arm on the vehicle.**

Knuckle and Spindle

REMOVAL & INSTALLATION

1. **Turn the ignition switch to the OFF position. Position the steering wheel in the unlocked position.**
2. **Remove the hub nut.**
3. **Raise and safely support the vehicle, then remove the tire and wheel assembly.**
4. **Remove the cotter pin from the tie rod end stud, then remove the slotted nut. Discard the cotter pin and nut.**
5. **Using Tie Rod End Remover TOOL-3290-D or equivalent, remove the tie rod end from the steering knuckle.**
6. **Remove the stabilizer bar link assembly from the strut.**
7. **Remove the brake caliper, then wire it aside in order to gain working clearance. Remove the brake rotor.**
8. **Loosen, but do not remove, the three top retaining nuts from the top of the shock tower.**



Loosen, but do not remove, the three top retaining nuts from the top of the shock tower

Click to enlarge

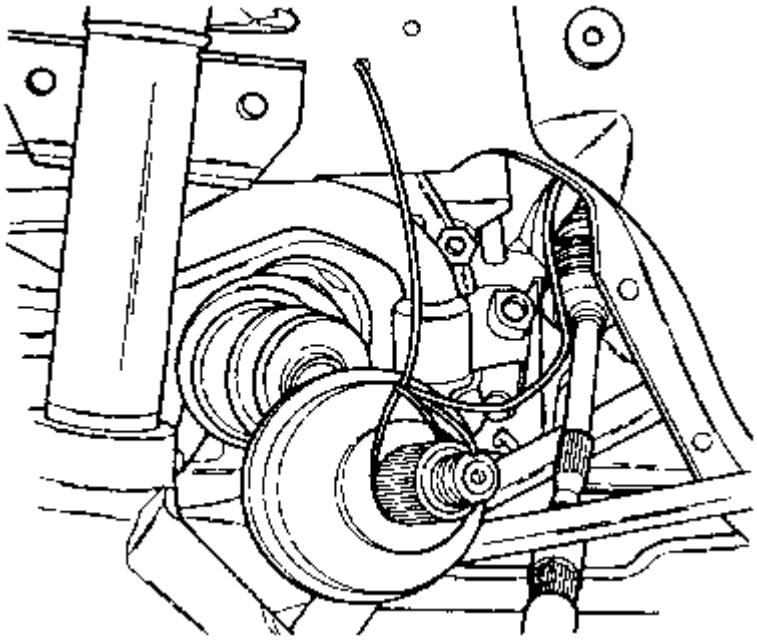
9. **Remove and discard the lower arm to steering knuckle pinch bolt and nut. A drift may be used to remove the bolt. Using a small prybar, spread the knuckle-to-lower arm pinch joint. Remove the lower arm from the steering knuckle.**

Be sure that the steering column is in the unlockedposition. Do not use a hammer to perform this operation. Use extreme care notto damage the boot seal.

10. **Remove the shock absorber strut-to-steering knuckle pinch bolt.**

Do NOT allow the halfshaft to move outboard.Overextension of the CV joint could result in separation of internal parts,causing failure of the joint.

11. **Press the halfshaft from the hub. Wire the halfshaft to the body to maintain a level position.**

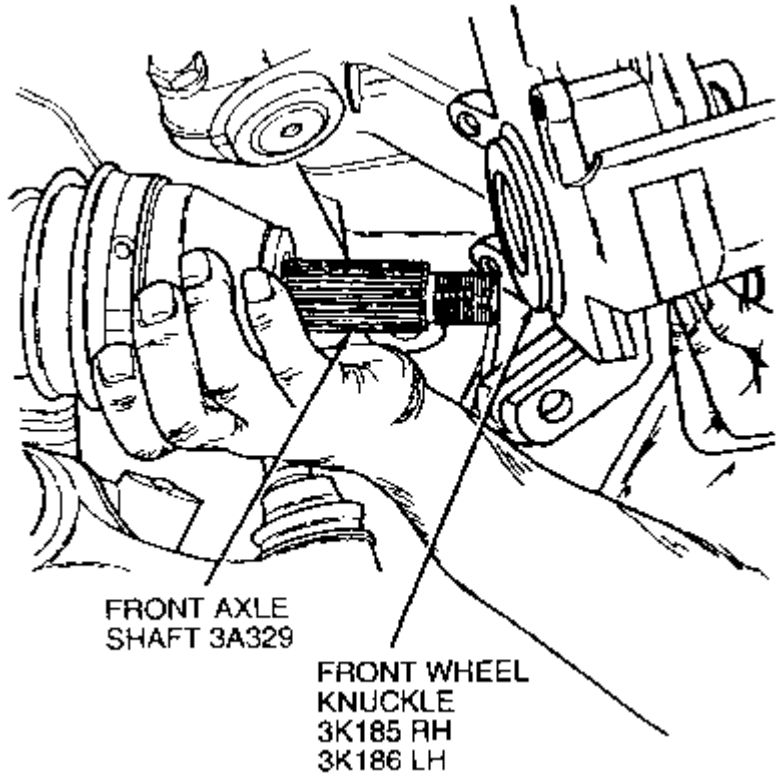


Wire the halfshaft to the body to maintain a level position

12. **If equipped, remove the rotor splash shield from the steering knuckle.**
13. **Remove the steering knuckle and hub assembly from the shock absorber strut.**
14. **Position the assembly on a workbench, then remove the hub retainer ring and front wheel bearing.**

To install:

15. **If equipped, install the rotor splash shield using new rivets and Heavy Duty Riveter D80L-23200-A or equivalent.**
16. **Install the front wheel bearing, retainer ring and hub. If necessary, replace the seal on the outboard CV-joint.**
17. **Install the steering knuckle onto the shock absorber strut, then loosely install a new pinch bolt in the knuckle to retain the strut.**
18. **Install the steering knuckle and hub onto the halfshaft.**



Install the steering knuckle and hub onto the halfshaft

Click to enlarge

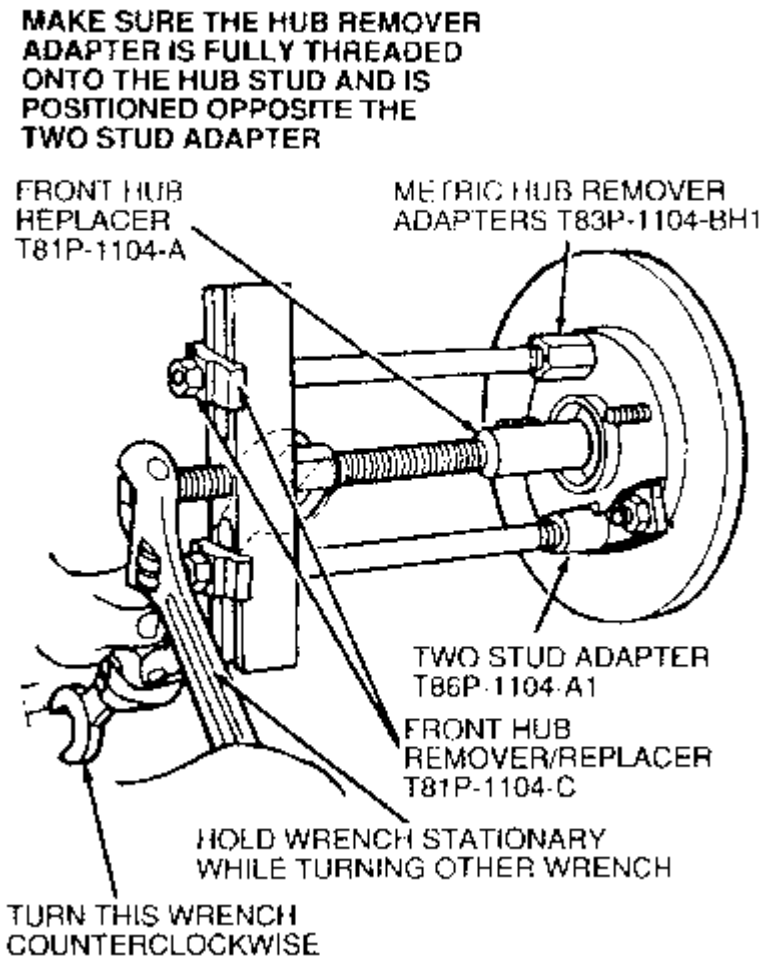
19. **Install the lower control arm to the knuckle, making sure that the ball stud groove is properly positioned. Install a new nut and bolt, then tighten to 40-53 ft. lbs. (53-72 Nm). Tighten the strut-to-knuckle pinch bolt to 73-97 ft. lbs. (98-132 Nm).**
20. **Install the rotor and brake caliper. For vehicles equipped with caliper retaining pins, tighten them to 18-25 ft. lbs. (24-34 Nm). For vehicles equipped with caliper retaining bolts, tighten them to 85 ft. lbs. (115 Nm).**
21. **Position the tie rod into the knuckle, then install a new slotted nut and tighten. If necessary, advance the nut to align a slot, then install a cotter pin. Tighten the nut to 23-35 ft. lbs. (31-47 Nm) for vehicles through 1994. For 1995 vehicles, tighten the nut to 35-46 ft. lbs. (47-63 Nm).**
22. **Install the stabilizer link bar assembly to the front shock absorber assembly. Tighten to 57-75 ft. lbs. (77-103 Nm).**
23. **Install the tire and wheel assembly, tightening the lug nuts to 85-105 ft. lbs. (115-142 Nm).**
24. **Carefully lower the vehicle.**
25. **Install the three top mount shock tower retaining bolts, and tighten to 23-29 ft. lbs. (30-40 Nm).**
26. **Tighten the hub nut to 170-203 ft. lbs. (230-275 Nm).**
27. **Pump the brake pedal prior to moving the vehicle, in order to reposition the brake linings.**

Front Hub and Bearing

REMOVAL & INSTALLATION

Do NOT start this procedure unless a new wheel hub retainer and washer as well as a new inboard CV-joint circlip are available. These components cannot be reused because their holding or retention ability is decreased during removal.

1. **Remove the wheel cover/hub cover and loosen the wheel nuts.**
2. **Remove the hub nut retainer and washer by applying sufficient torque to the nut to overcome the prevailing torque feature of the crimp in the nut collar. Do not use an impact-type tool to remove the hub nut retainer. The hub nut retainer is not reusable and must be discarded after removal.**
3. **Raise and safely support the vehicle. Remove the wheel and tire assembly.**
4. **If equipped with caliper locating pins, remove the brake caliper by loosening the pins and rotating the caliper off of the rotor, starting from the lower end of the caliper and lifting upwards. Do not remove the pins from the caliper assembly. If equipped with bolted-on calipers, remove the caliper by loosening, then rotating the mounting bolts. Lift the caliper off of the rotor. Once the caliper is free of the rotor, support it with a length of wire. Do not allow the caliper to hang from the brake hose.**
5. **Remove the rotor from the hub by pulling it off of the hub bolts. If the rotor is difficult to remove, strike it sharply between the studs with a rubber or plastic hammer. If the rotor will not pull off, apply a suitable rust penetrator to the inboard and outboard rotor hub mating surfaces. Install a suitable 3-jaw puller and remove the rotor by pulling on the rotor outside diameter and pushing on the hub center. If excessive force is required to remove the rotor, check it for lateral run-out prior to installation. Lateral run-out must be checked with the nuts clamping the stamped hat section of the rotor.**
6. **Remove the rotor splash shield.**
7. **Disconnect the lower control arm and tie rod from the knuckle, but leave the strut attached. Loosen the two strut top mount-to-apron nuts.**
8. **Loosen the three shock/strut tower retaining nuts.**
9. **Install Front Hub Replacer T81P-1104-A with Front Hub Remover/Replacer T81P-1104-C and Metric Hub Remover Adapters T83P-1104-BH1 and Two Stud Adapter T86P-1104-A1 or equivalents, then remove the wheel hub, bearing and knuckle assembly by pushing out the CV-joint outer shaft until it is free of the assembly.**

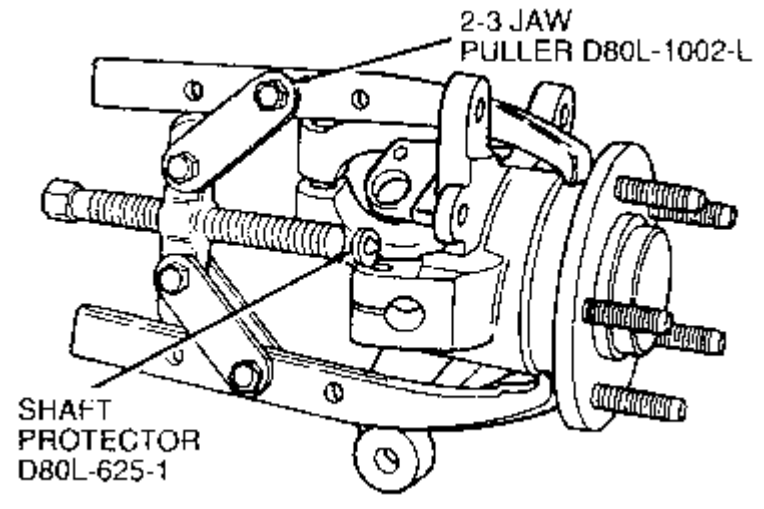


Installing the required tools to remove the wheel hub

Click to enlarge

10. **Support the knuckle with a length of wire, remove the strut bolt and slide the hub/bearing/knuckle assembly off of the strut. Remove the support wire and carry the hub/bearing/knuckle assembly to a bench.**

11. **Install 2-3 Jaw Puller D80L-1002-L and Shaft Protector D80L-625-1 or equivalent, with the jaws of the puller on the knuckle bosses. Make sure the shaft protector is centered, clears the bearing inside diameter, and rests on the end face of the hub journal. Remove the hub.**

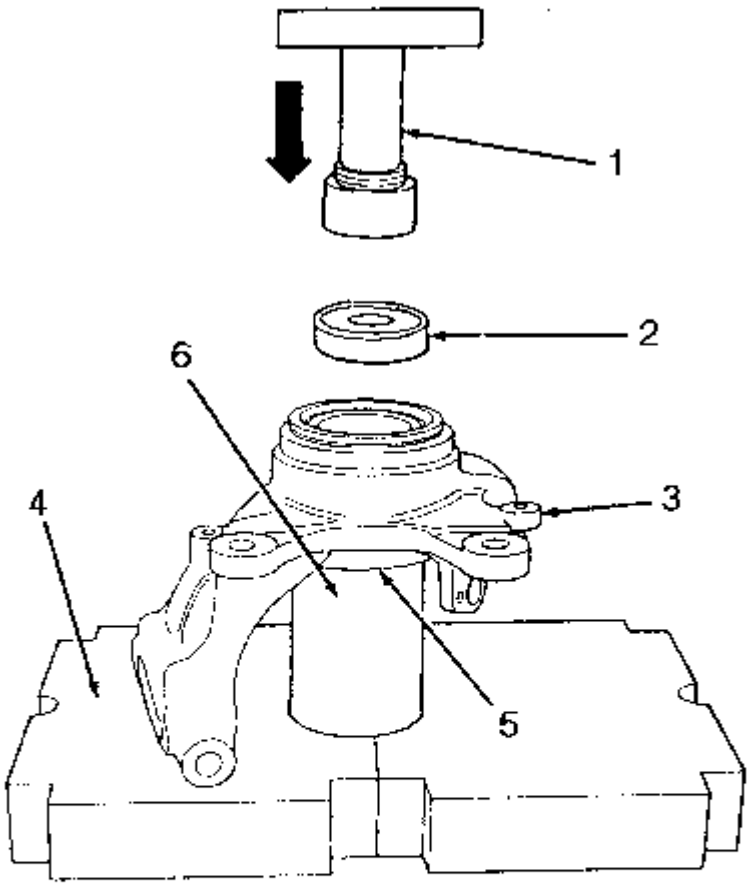


Installation of the 2-3 Jaw Puller and Shaft Protector

Click to enlarge

12. **Using snapring pliers, remove the snapring that retains the bearing in the knuckle assembly, then discard the ring.**

13. **Using a suitable hydraulic press, place Front Bearing Spacer T86P-1104-A2, or equivalent, on the press plate with the step side facing up, then position the knuckle with the outboard side up on the spacer. Install Front Bearing Remover/Replacer T83P-1104-AH2 or equivalent, centered on the bearing inner race, then press the bearing out of the knuckle and discard.**



1 Arbor press
2 Front bearing remover/replacer
3 Front wheel knuckle and bearing assembly
4 Face plate
5 Step side up
6 Front bearing spacer

Removing the bearing using the specified tools

Click to enlarge

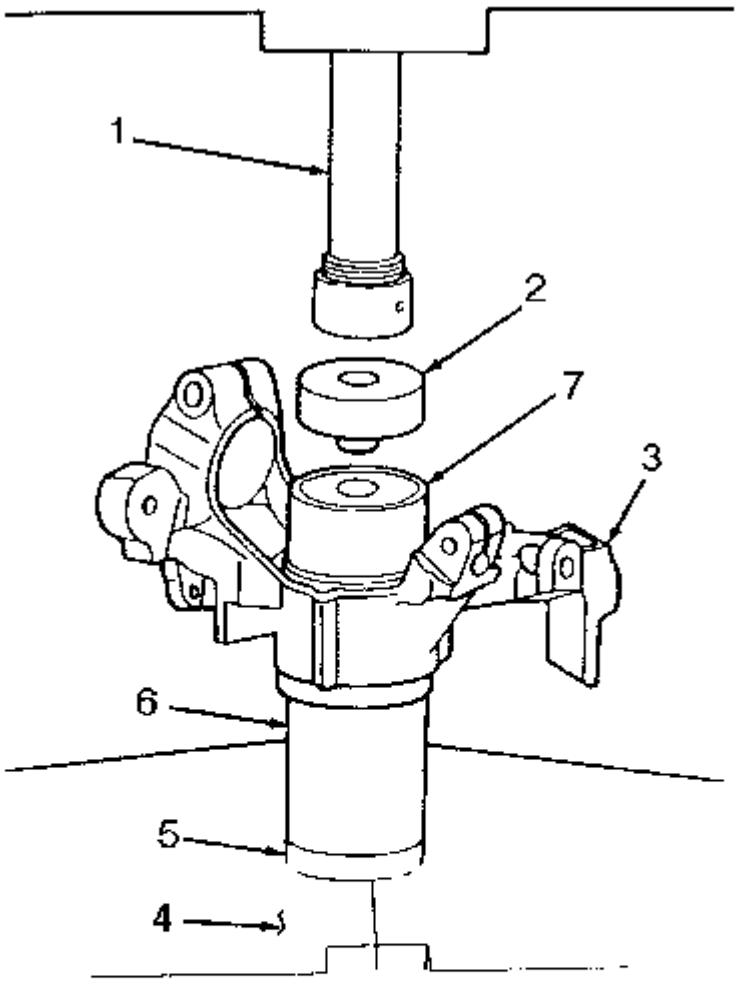
To install:

14. **Remove all foreign material from the knuckle bearing bore and hub bearing journal to be sure of correct seating of the new bearing.**

If the hub bearing journal is scored or damaged, it must be replaced. The front wheel bearings are pre-greased and sealed, and require no scheduled maintenance. The bearings are preset and cannot be adjusted. If a bearing is disassembled for any reason, it must be replaced as a unit, since individual service seals, rollers and races are not available.

15. **Place Front Bearing Spacer T86P-1104-A2 or equivalent, with the step side down on the hydraulic press plate, then position the knuckle with the outboard side down on the spacer. Position a new bearing in the inboard side of the knuckle. Install Bearing Installer T86P-1104-A3 or equivalent, with the undercut side facing the bearing, on the bearing outer race, then press the bearing into the knuckle. Make sure the bearing seats completely against the shoulder of the knuckle bore.**

Bearing installer T86P-1104-A3 or equivalent, must be positioned as indicated to prevent bearing damage during installation.



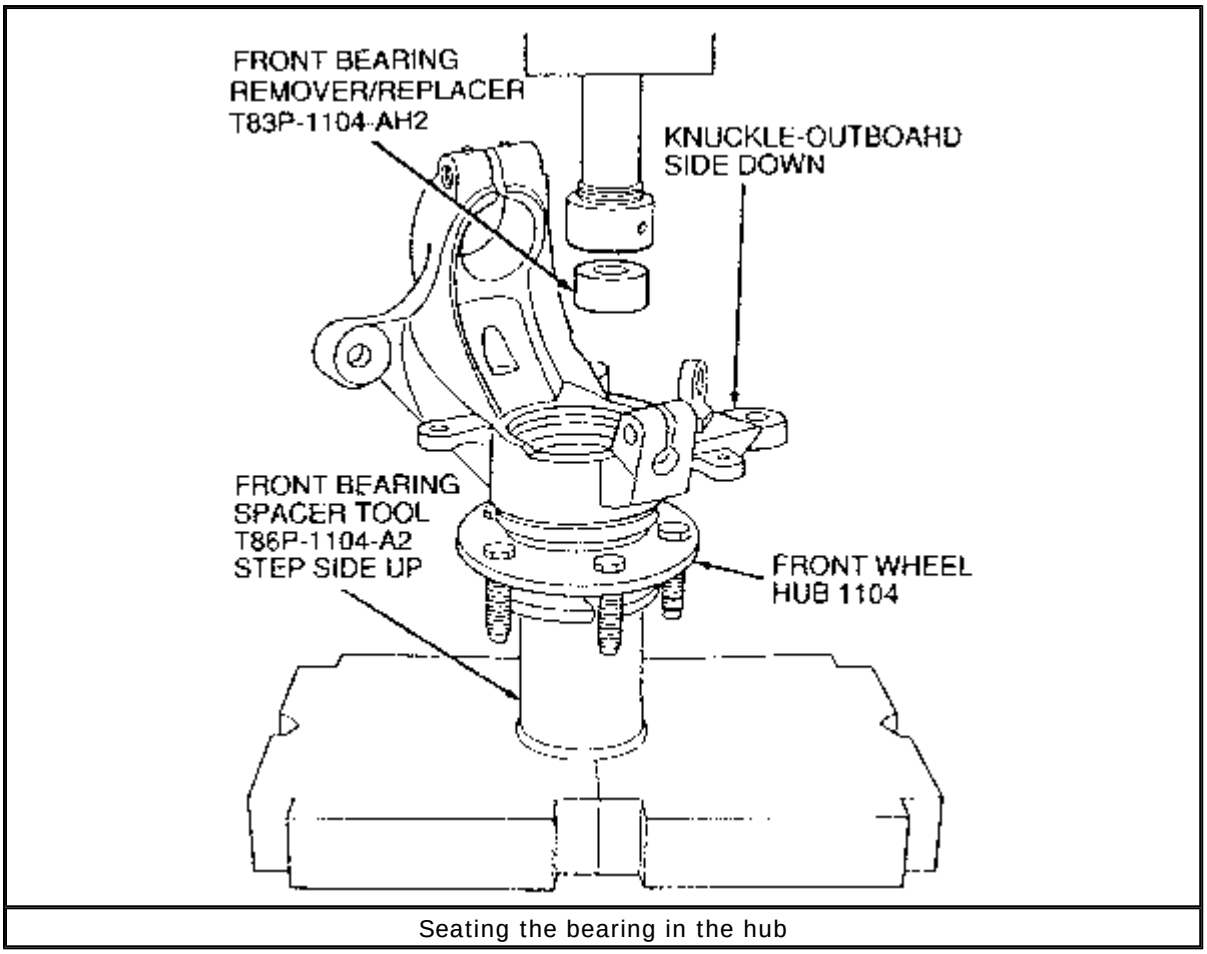
1 Arbor press
2 Bearing replacer (must be positioned with undercut side facing bearing)
3 Front wheel knuckle - outboard side
4 Face plate
5 Step side down
6 Front bearing spacer
7 Front wheel bearing

To prevent damage to the bearing during installation, the replacer tool must be positioned as shown

Click to enlarge

16. **Install a new snapring (part of the bearing kit) in the knuckle groove using snapring pliers.**

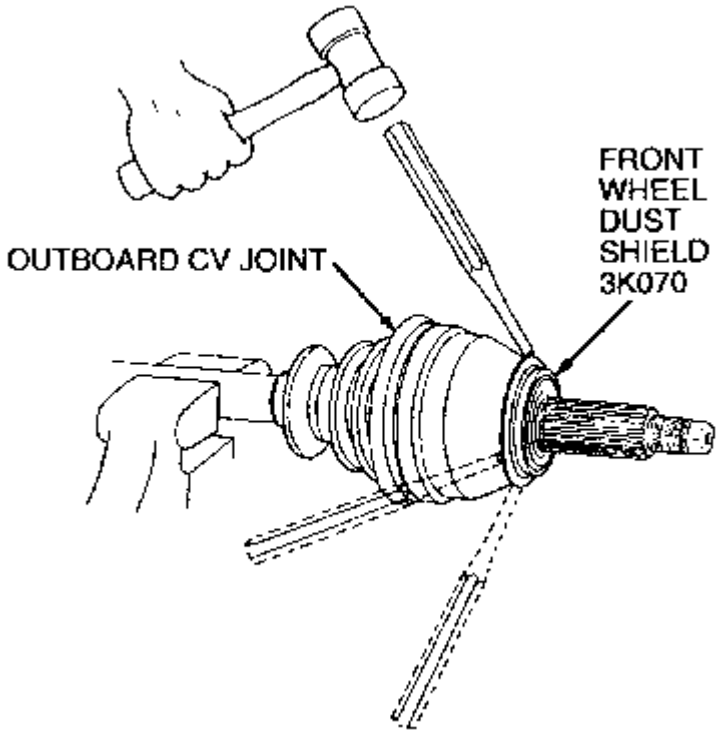
17. **Place Front Bearing Spacer T86P-1104-A2 or equivalent, on the press plate, then position the hub on the tool with the lugs facing downward. Position the knuckle assembly with the outboard side down on the hub barrel. Place Bearing Remover T83P-1104-AH2 or equivalent, with its flat side down, centered on the inner race of the bearing, then press down on the tool until the bearing is fully seated onto the hub. Make sure the hub rotates freely in the knuckle after installation.**



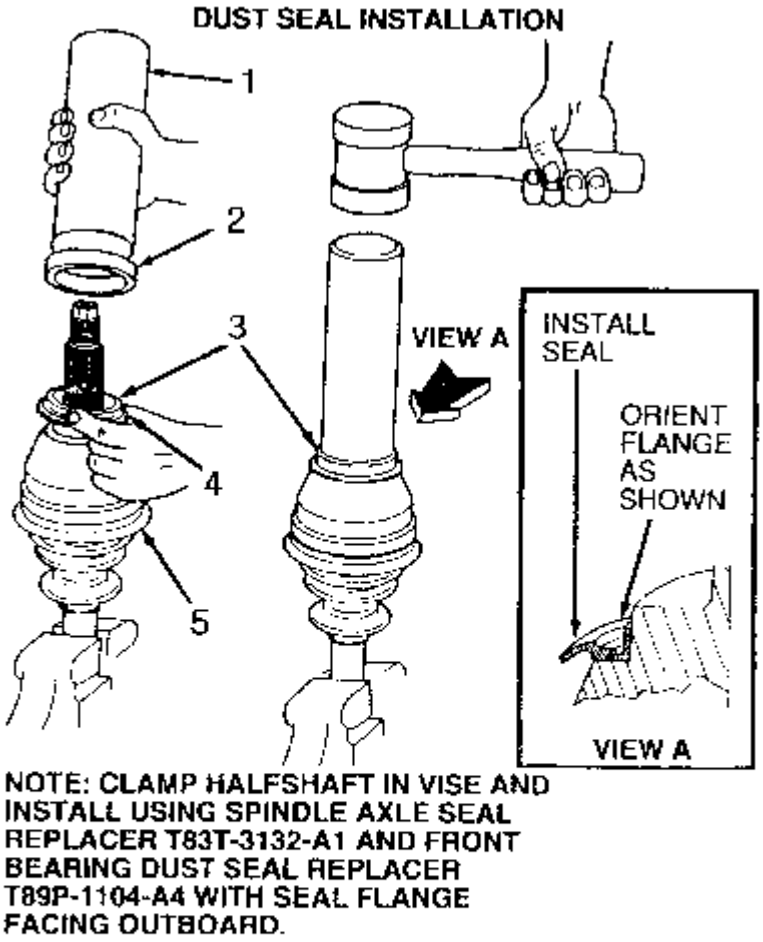
Seating the bearing in the hub

Click to enlarge

18. **Prior to hub/bearing/knuckle installation, replace the bearing dust seal on the outboard CV-joint with a new seal from the bearing kit. Make sure the seal flange faces outboard toward the bearing. Use Drive Tube T83T-3132-A1 and Front Bearing Dust Seal Installer T86P-1104-A4 or equivalent.**



Removing the bearing dust seal on the outboard CV-joint



Replacing the bearing dust seal using the correct installation tools

Click to enlarge

19. **Suspend the hub/bearing/knuckle assembly on the vehicle with wire, then attach the strut loosely to the knuckle. Lubricate the CV-joint stub shaft with SAE 30 weight motor oil, then using hand pressure only, insert the shaft into the hub splines as far as possible. Make sure the splines are properly engaged.**
20. **Temporarily secure the rotor to the hub with washers and two wheel lug nuts. Insert a steel rod into the rotor diameter, then rotate clockwise to contact the knuckle.**
21. **Install the hub nut washer and a new hub nut retainer. Rotate the nut clockwise to seat the CV-joint. Tighten the nut to 170-203 ft. lbs. (230-275 Nm). Remove the steel rod, washers and lug nuts.**

Do not use power or impact tools to tighten the hub nut.

22. **Install the remainder of the front suspension components.**
23. **Install the brake rotor splash shield.**

Apply a small amount of Disc Brake Caliper Slide Grease D7AZ-19590-A or equivalent, to the pilot diameter of the rotor.

24. **Install the disc brake rotor and caliper. Make sure the outer brake pad spring hook is seated under the upper arm of the knuckle.**
25. **Install the wheel and tire assembly, then finger-tighten the wheel nuts.**
26. **Carefully lower the vehicle, then block the wheels to prevent the car from rolling. Tighten the wheel lug nuts to 85-105 ft. lbs. (115-142 Nm). Install the wheel cover/hub cover, then remove the wheel blocks.**

Upper Mount and Bearing Assembly

REMOVAL & INSTALLATION

CAUTION

When servicing the front suspension, keep in mind that brake shoes maycontain asbestos which has been determined to be a cancer causing agent. Neverclean the brake surfaces with compressed air! Avoid inhaling any dust from anybrake surface! When cleaning brake surfaces, use a commercially available brakecleaning fluid.

1. **Place the ignition switch in the OFF position and the steering column in the unlocked position.**
2. **Remove the hub nut. Loosen, but do not remove, the strut-to-fender apron nuts.**
3. **Raise and safely support the front of the vehicle on jackstands. Remove the wheel and tire assembly.**

When raising the vehicle, do not lift it by the lower control arms.

4. **Remove the brake caliper (support it by a wire) and the rotor.**
5. **At the tie rod end, remove the cotter pin and the castle nut. Discard the cotter pin and replace it with a new one during installation.**
6. **Using Tie-Rod End Remover tool No. 3290-C and the Tie Rod Remover Adapter tool No. T81P-3504-W, or equivalent, separate the tie rod from the steering knuckle.**
7. **Remove the stabilizer bar link nut and the link from the strut.**
8. **Remove the lower arm-to-steering knuckle pinch bolt and nut; it may be necessary to use a drift punch to remove the bolt. Using a small prybar, slightly spread the knuckle-to-lower arm pinch joint and remove the lower arm from the steering knuckle.**
9. **Remove the halfshaft from the hub, then support it by a wire.**

When removing the halfshaft, DO NOT allow it to move outward, as thetripod CV-joint could separate from the internal parts, causing failure of thejoint.

10. **Remove the strut-to-steering knuckle pinch bolt. Using a small pry bar, spread the pinch bolt joint and separate the strut from the steering knuckle. Remove the steering knuckle/hub assembly from the strut assembly.**

11. **Remove the strut-to-fender apron nuts and the strut assembly from the vehicle.**

> **CAUTION**
>
> NEVER attempt to disassemble the spring or top mount without firstcompressing the spring using a Universal MacPherson Strut Spring CompressorD85P-7178-A or a Rotunda Spring Compressor 086-00029 or equivalent. Failure toproperly compress the spring before disassembly can result in serious injury ordeath.

12. **Place a 10mm box-end wrench on top of the shock strut shaft and hold while removing the top shaft mounting nut with a 21mm 6-point crow foot wrench and ratchet.**
13. **Loosen the MacPherson Strut Spring Compressor slowly. Remove the top mount bracket assembly, bearing plate and spring.**

When servicing the shock absorber strut, check the spring insulator fordamage before assembly. If the outer metal splash shield is bent or damaged, itmust be bent back carefully so that it does not touch the locator tabs on thebearing and seal assembly.

To install:

14. **Place the MacPherson Strut Spring Compressor on the base of the strut.**
15. **Install the upper mount and bearing assembly on top of the strut and tighten the spring compressor far enough to install the shaft mounting nut.**
16. **Install the washer and nut on the shock strut shaft, then tighten with the 10mm box-end and the 21mm 6-point crow's foot wrench and ratchet.**
17. **Install the "MacPherson Strut", as previously outlined.**

Front End Alignment

CASTER

Caster is a measurement of the angle between the steering axis and vertical, as viewed from the side of the vehicle when the wheels are in the straight ahead position. Stated another way, it is the tilting of the front steering axis either forward or backward from the vertical. A backward tilt is said to be positive (+) and a forward tilt is said to be negative (-).

Although it is measured using a special instrument, it can usually be seen by observing the location of the upper and lower control arm ball joints. A line drawn through the center of these two points represents the steering axis. When looking straight downward from the top of the upper control arm, you can see if the ball joints are not aligned, indicating that the caster angle is more or less than 0 degrees. If the vehicle has positive caster, the lower ball joint would be located behind the upper joint center line. If the vehicle has negative caster, the lower ball joint would be located in front of the upper joint center line.

CAMBER

Camber is a measurement of the wheel tilt from the vertical direction, when the wheel is viewed from the rear of the vehicle. Camber is negative when the top of

the wheel is inboard and positive when the top is outboard. Always check for bent, damaged or worn suspension components before determining that adjustment is necessary. The amount of tilt is measured in degrees from the vertical, and this measurement is called the camber angle.

TOE-IN

Toe is a measurement of how far a wheel is turned in or out from the straight ahead direction. When the front of the wheel is turned in, the toe is positive. When the front of the wheel is turned out, toe is negative. An incorrect toe setting can affect steering feel and cause excessive tire wear.

Stated another way, toe-in is the amount that the front of the wheels are closer together than the backs of the same wheels. The actual amount of toe-in is normally only a fraction of a degree.

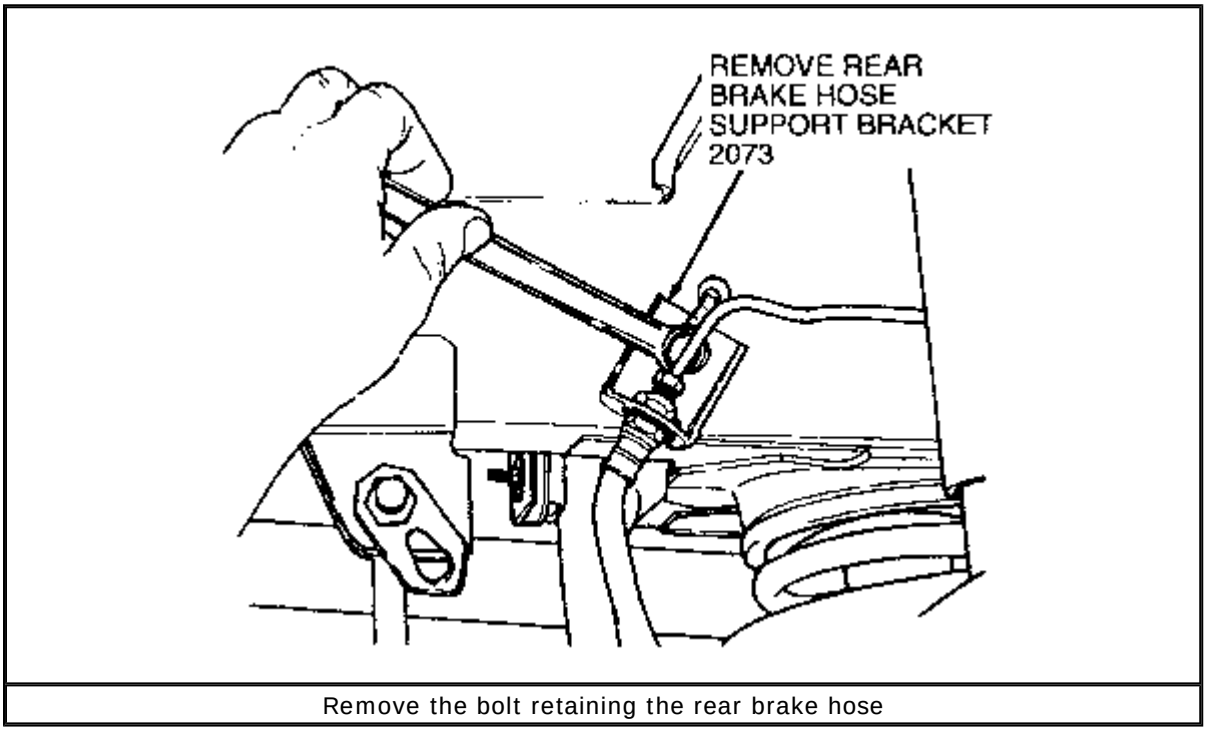
REAR SUSPENSION

Coil Springs

REMOVAL & INSTALLATION

Station Wagon Only

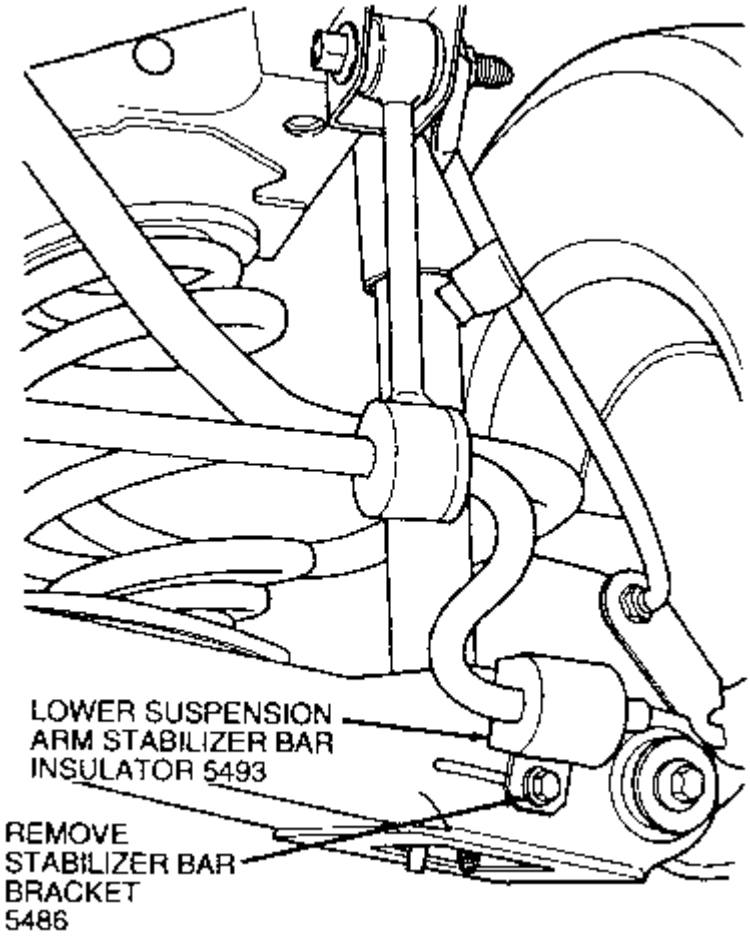
1. **Raise the rear of the vehicle and support safely on the pads of the underbody forward of the tension strut bracket. Position a floor jack under the lower suspension arm and raise the lower arm to normal curb height.**
2. **Remove the wheel and tire assembly.**
3. **Locate the bracket retaining the flexible brake hose to the body. Remove the bracket retaining bolt and bracket from the body.**



Remove the bolt retaining the rear brake hose

Click to enlarge

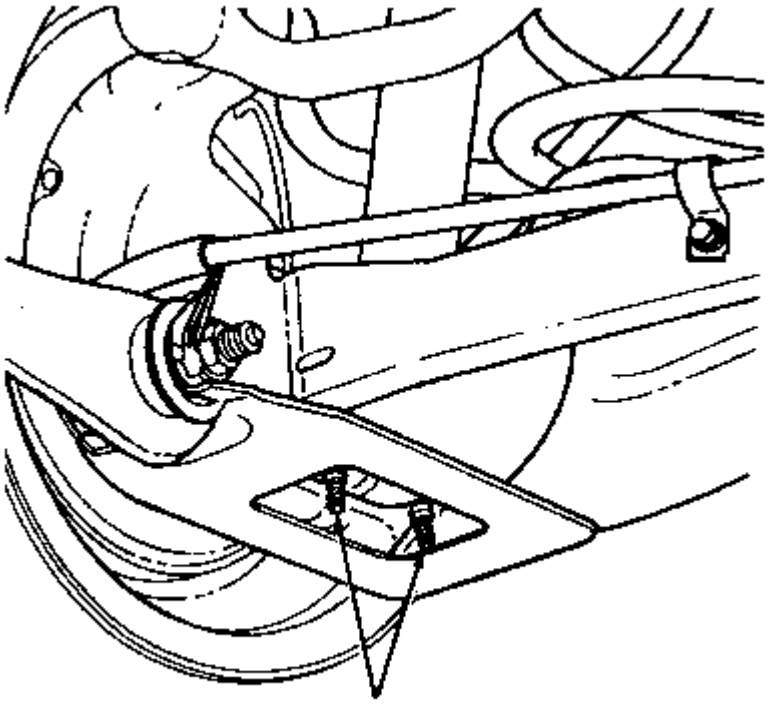
4. **Remove the stabilizer bar U-bracket from the lower suspension arm and bushing.**



Remove the stabilizer bar U-bracket from the lower suspension arm and bushing

Click to enlarge

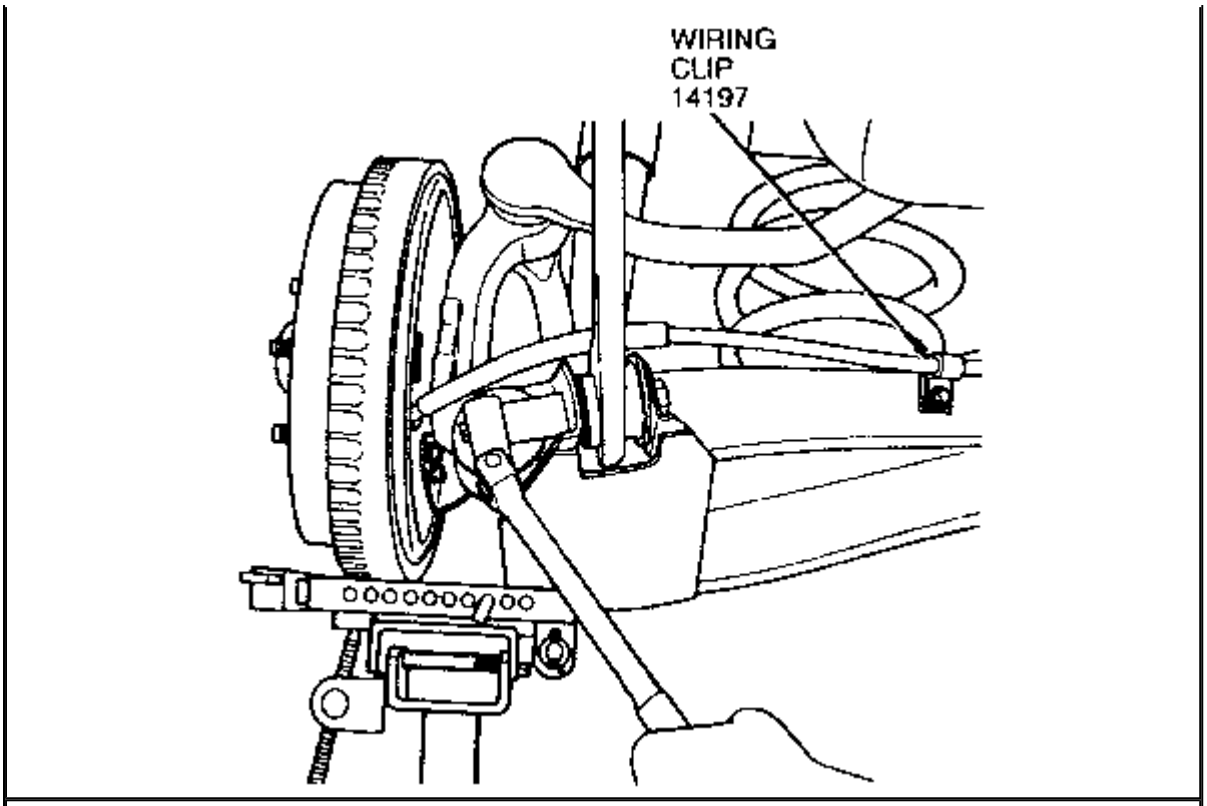
5. **Remove and discard the nuts attaching the shock absorber to the lower suspension arm and bushing.**



After removing the nuts attaching the shock absorber to the lower suspension arm and bushing, discard them and replace with new ones during installation

Click to enlarge

6. **Disconnect and remove the parking brake cable and clip from the lower suspension arm and bushing.**
7. **If equipped with rear disc brakes, remove the ABS cable from the clips on the lower suspension arm.**
8. **Remove and discard the bolt and nut attaching the tension strut and bushing to the lower suspension arm.**
9. **Suspend the spindle and upper suspension arms from the body with a piece of wire to prevent them from dropping down.**

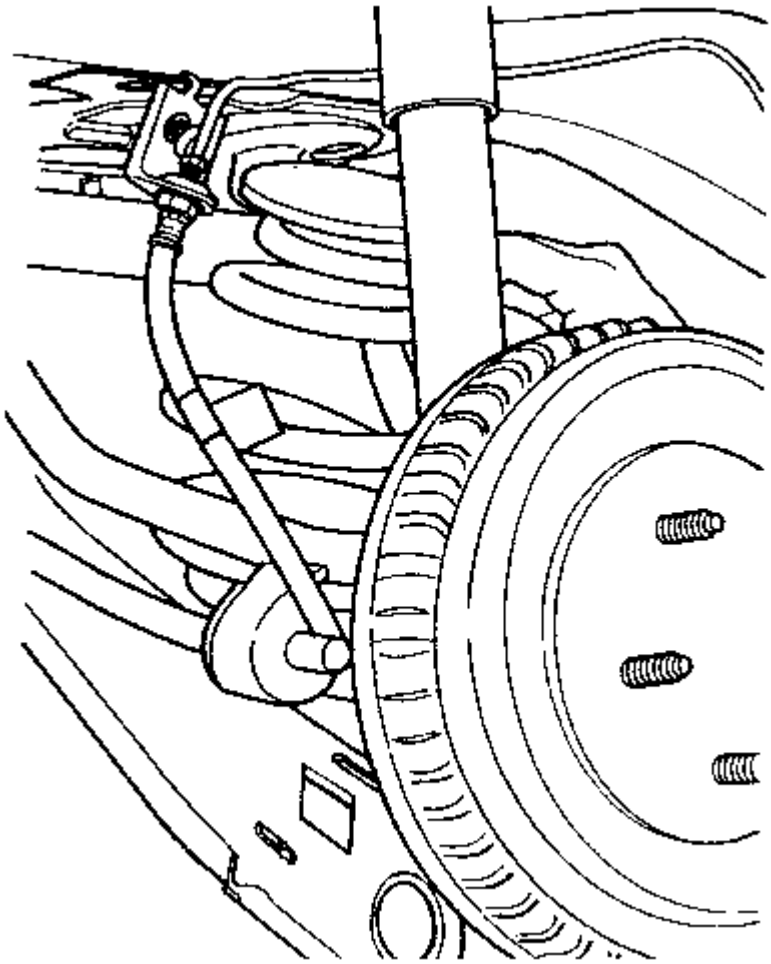


Suspend the spindle and upper suspension arms from the body with a piece of wire to prevent them from dropping down

Click to enlarge

10. **Remove the nut, bolt, washer and adjusting cam that retain the lower suspension arm to the spindle. Discard the nut, bolt and washer and replace with new ones during installation, then set the cam aside.**

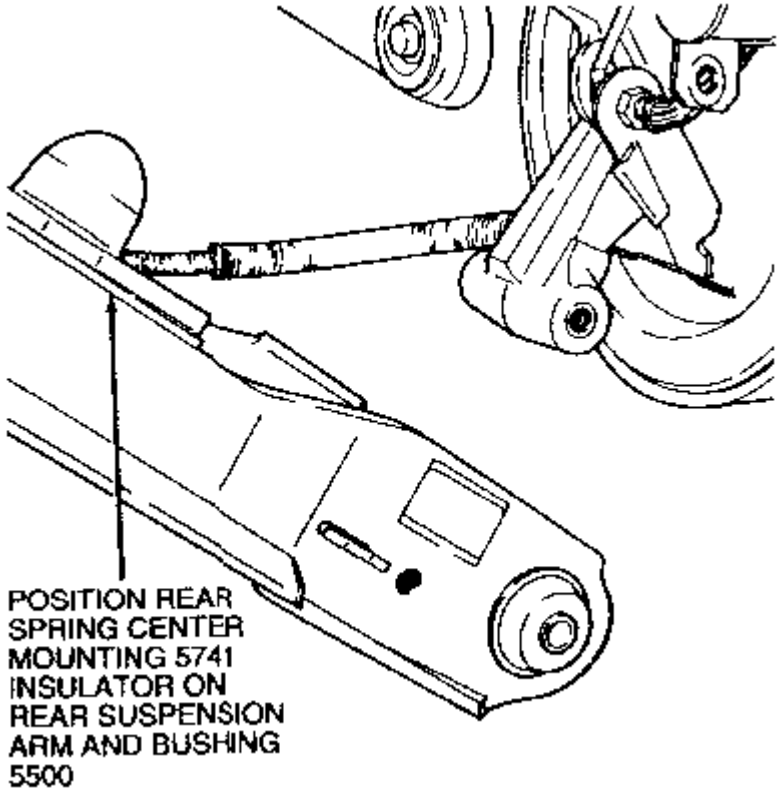
11. **With the floor jack, slowly lower the suspension arm until the spring, lower and upper insulators can be removed. Replace the spring and insulators as required.**



With the floor jack, slowly lower the suspension arm until the spring, lower and upper insulators can be removed. Replace the spring and insulators as required

To install:

12. **Position the spring center mounting insulator on the lower suspension arm, then press the insulator downward into place. Make certain the insulator is properly seated.**

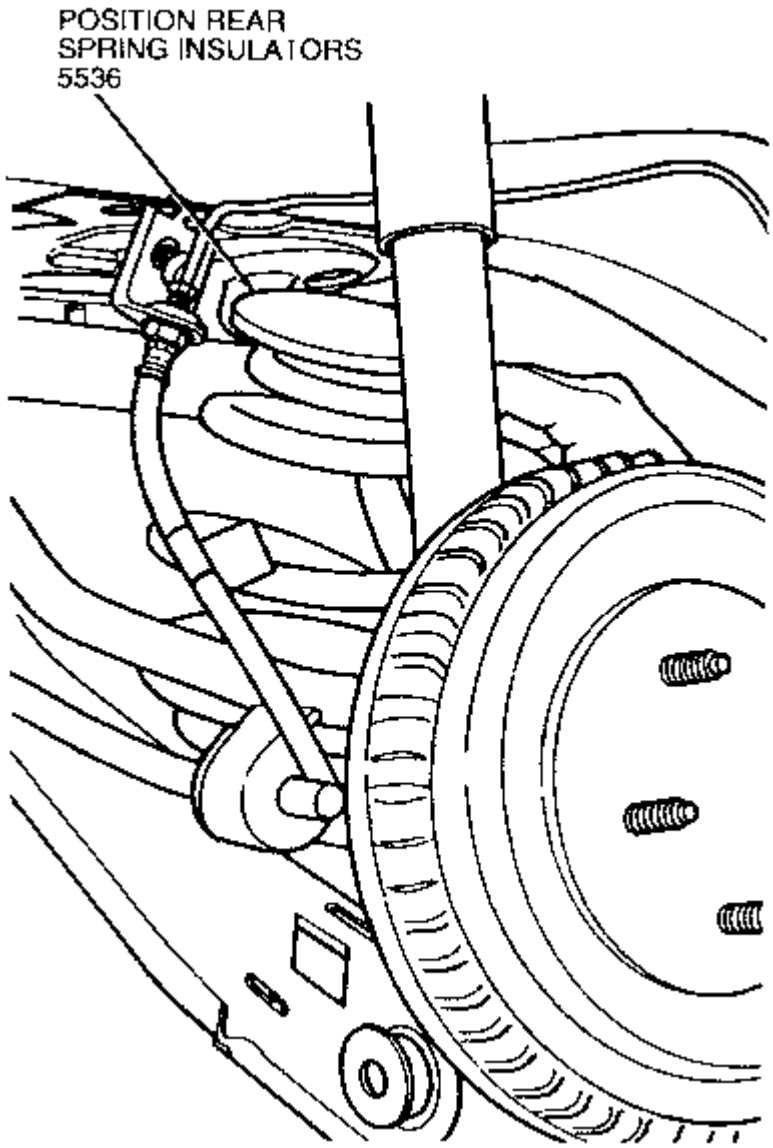


Installing the center mounting insulator on the lower suspension arm

Click to enlarge

13. **Position the upper insulator on top of the spring. Install the spring on the lower suspension arm. Make certain the spring is properly seated.**

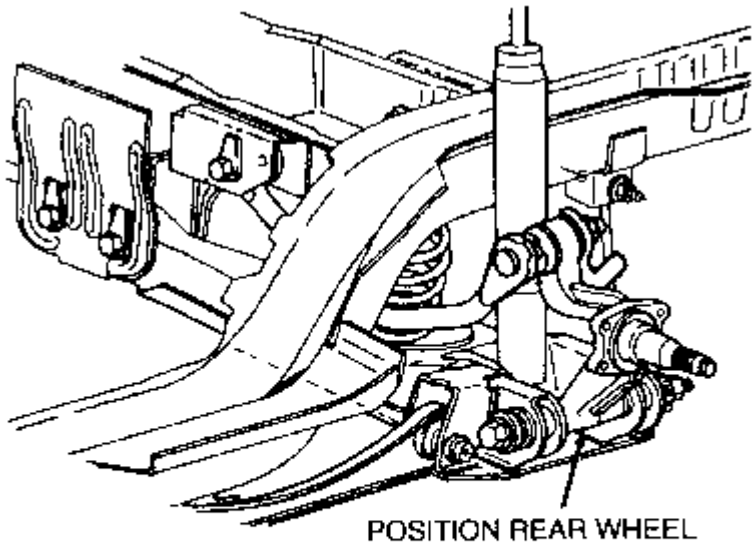
14. **With the floor jack, slowly raise the suspension arm. Guide the upper spring insulator onto the upper spring underbody seat.**



With the floor jack, slowly raise the suspension arm. Guide the upper spring insulator onto the upper spring underbody seat

Click to enlarge

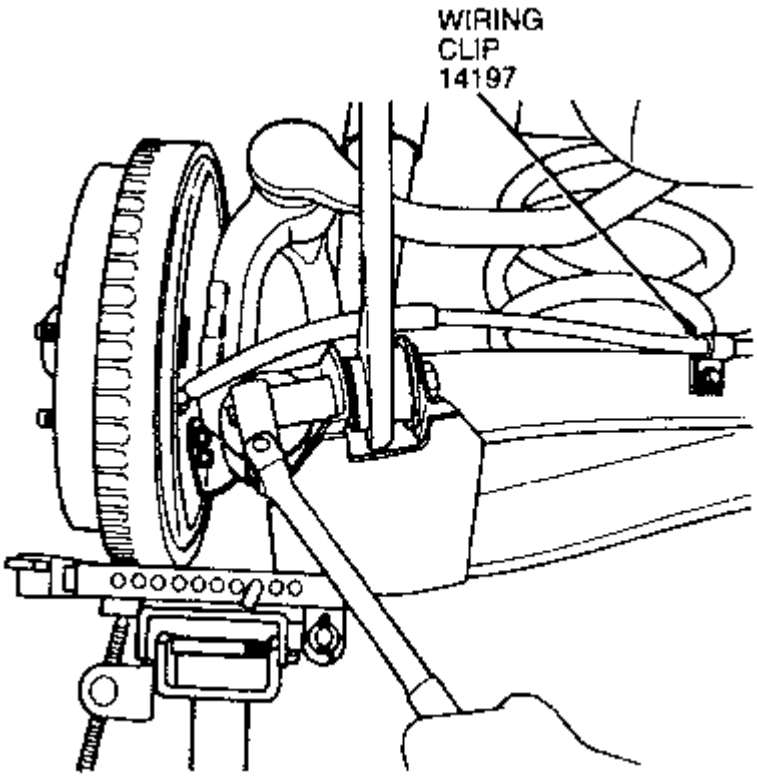
15. **Position the rear wheel spindle in the lower suspension arm and bushing, with a new bolt, washer, nut, and the existing cam. Install the bolt with its head toward the front of the vehicle, but do NOT tighten the bolt at this time.**



Position the rear wheel spindle in the lower suspension arm and bushing, using a new bolt, nut washer, and the existing cam. Install the bolt with the head of the bolt toward the front of the vehicle, but do NOT tighten the bolt at this time

Click to enlarge

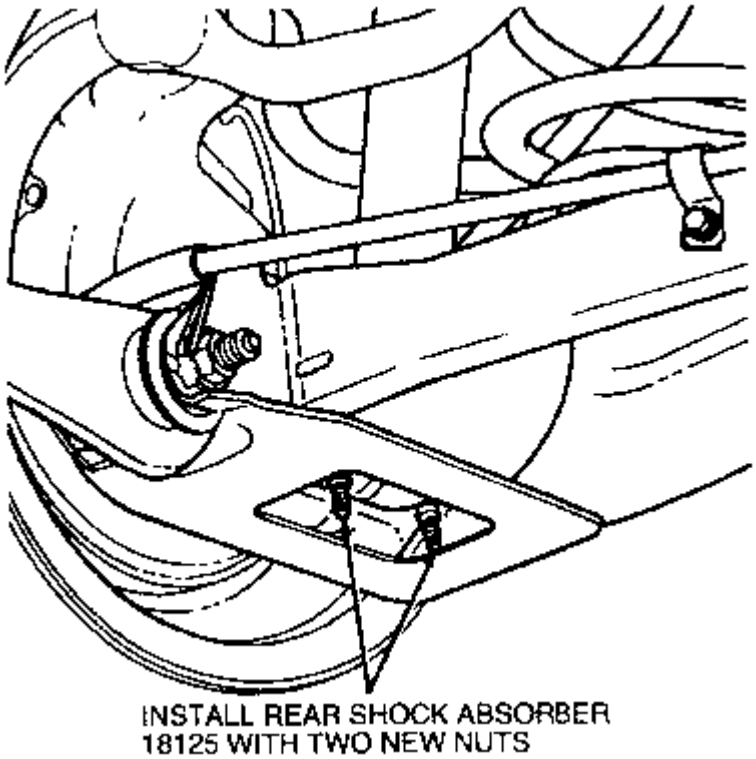
16. **Remove the wire supporting the spindle and suspension arms.**
17. **Install the tension strut and bushing in the lower suspension arm using a new nut and bolt; but do NOT tighten at this time.**
18. **Attach the parking brake cable and clip to the lower suspension arm.**
19. **If equipped with rear disc brakes, install the ABS cable into the clips on the lower suspension arm.**



If equipped with rear disc brakes, install the ABS cable into the clips on the lower suspension arm

Click to enlarge

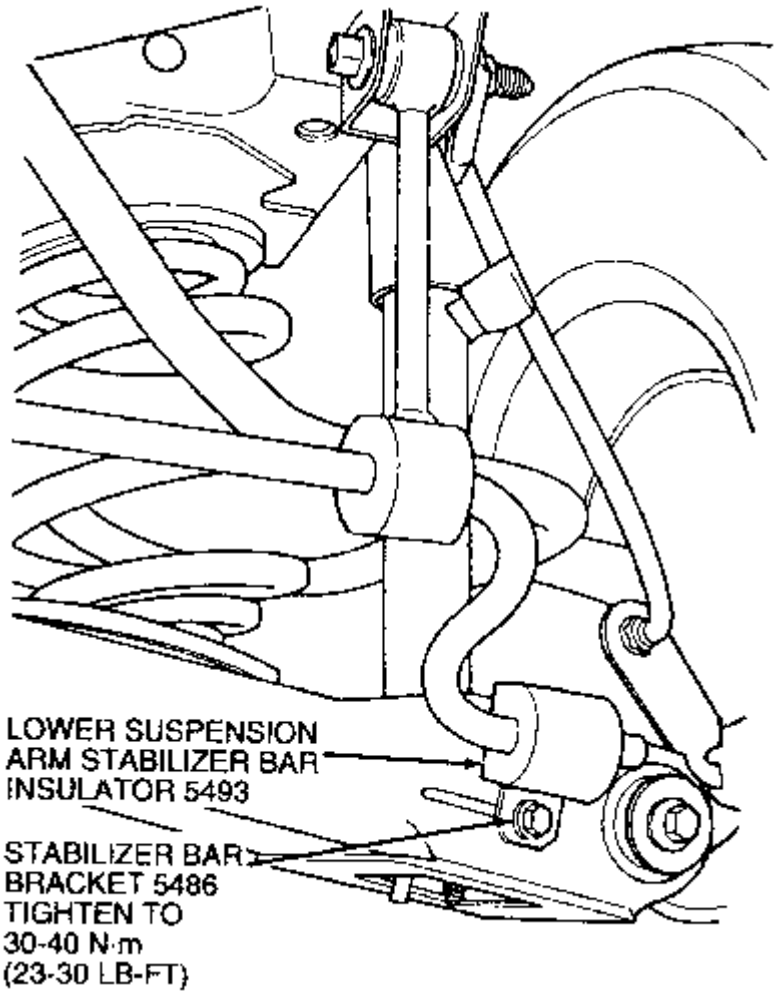
20. **Position the shock absorber on the lower suspension arm, then install two new nuts. Tighten the nuts to 15-19 ft. lbs. (20-26 Nm).**



When installing the shock absorber on the lower arm, install new retaining nuts

Click to enlarge

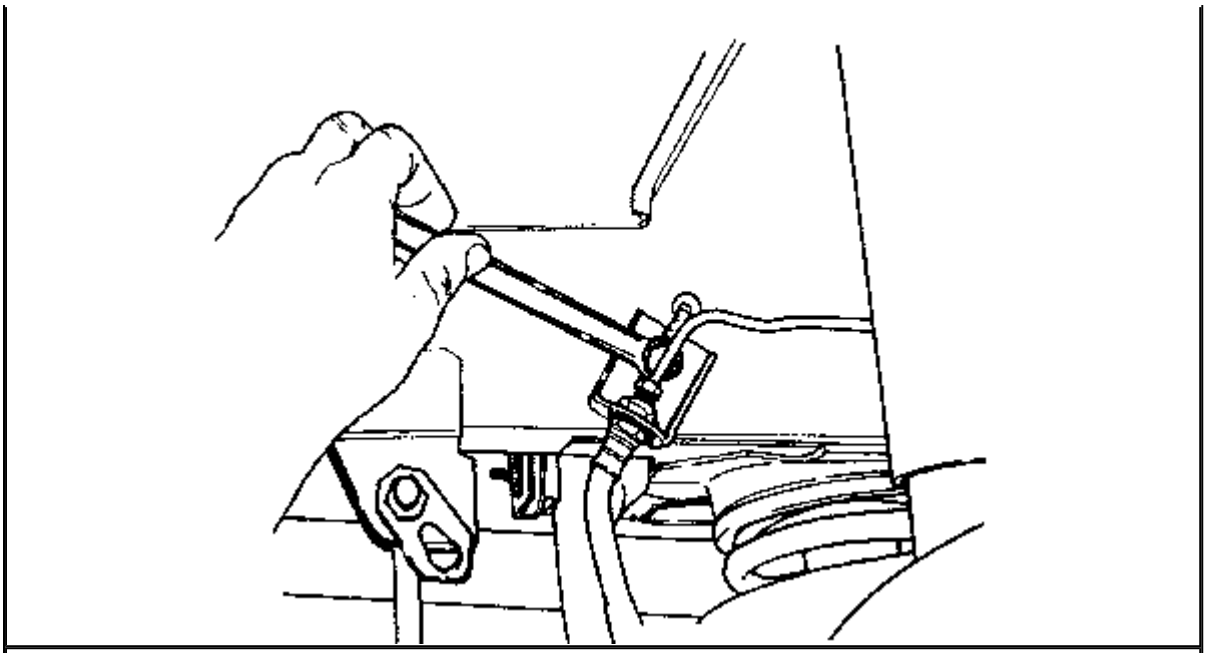
21. **Attach the stabilizer U-bracket to the lower suspension arm using a new bolt. Tighten the bolt to 23-30 ft. lbs. (31-40 Nm).**



Attach the stabilizer U-bracket to the lower suspension arm using a new bolt. Tighten the bolt to 23-30 ft. lbs. (31-40 Nm)

Click to enlarge

22. **Attach the flexible brake hose bracket to the body, then tighten the retaining bolt to 8-12 ft. lbs. (11-16 Nm).**



Attach the flexible brake hose bracket to the body, then tighten the retaining bolt to 8-12 ft. lbs. (11-16 Nm)

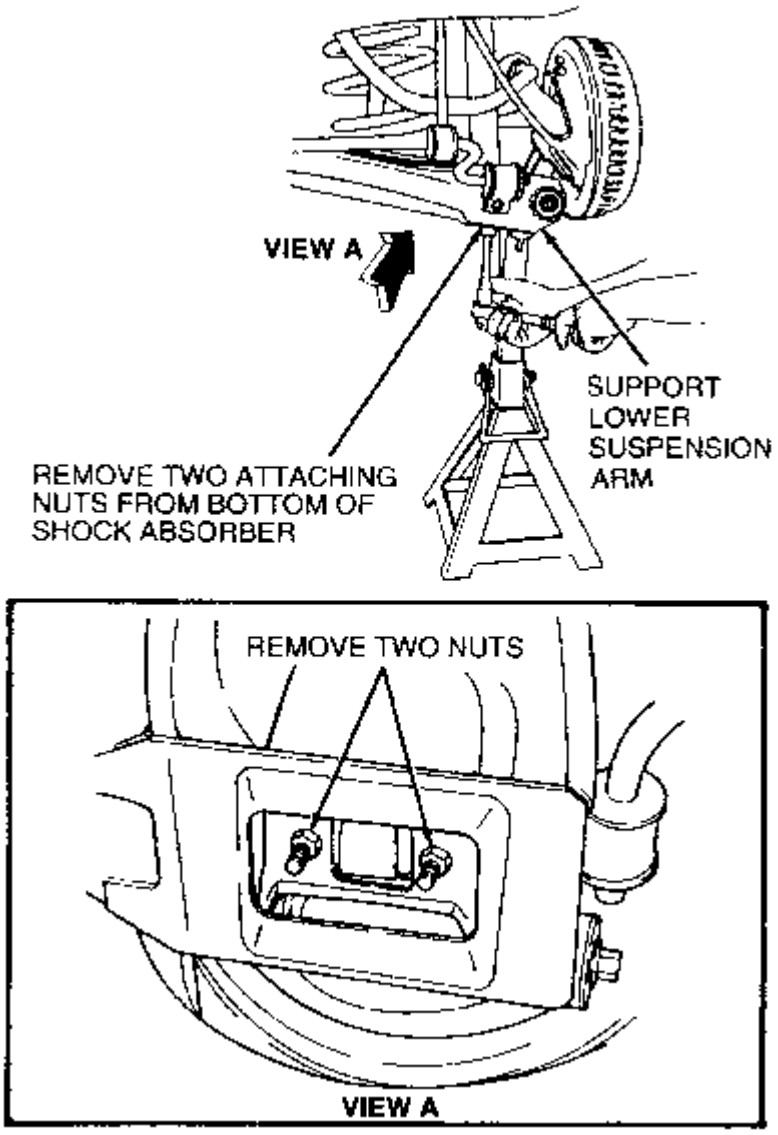
23. **With the floor jack, raise the lower suspension to normal curb height. Tighten the lower suspension arm to 40-52 ft. lbs. (54-71 Nm). Tighten the bolt that attaches the tension strut to the body bracket to 40-52 ft. lbs. (54-71 Nm).**
24. **Install the wheel and tire assembly. Remove the floor jack, then carefully lower the vehicle.**

Shock Absorbers

REMOVAL & INSTALLATION

Station Wagon Only

1. **Raise and safely support the vehicle.**
2. **Remove the wheel and tire assembly.**
3. **Position a jackstand under the lower suspension arm.**
4. **Slightly lower the vehicle to put the suspension at the normal position, then remove the two nuts retaining the shock absorber to the lower suspension arm.**



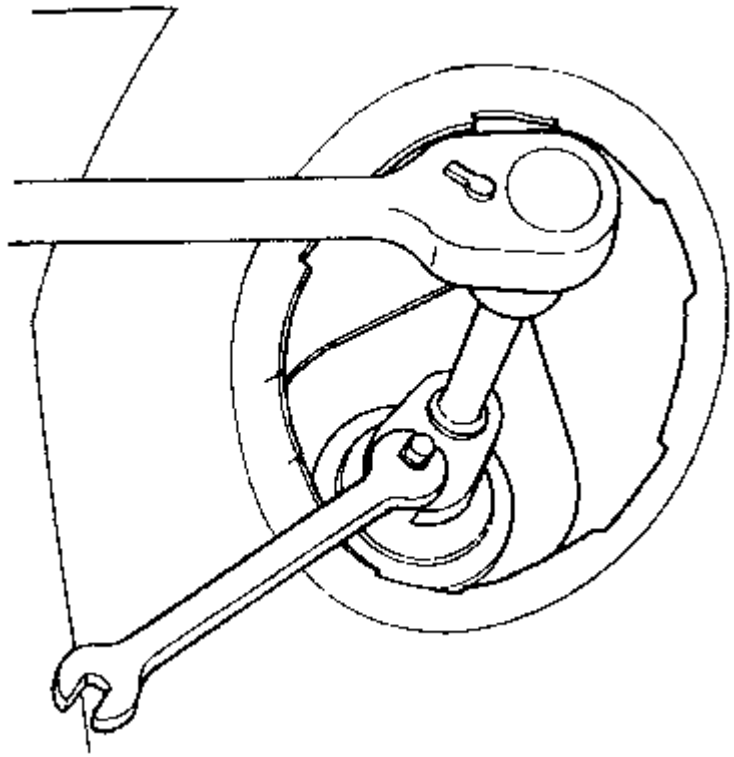
Removing the two shock absorber-to-lower suspension arm retaining nuts

Click to enlarge

5. From inside the vehicle, remove the rear compartment access panels.

If the shock absorber is to be reused, do not grip the shaft with pliers or vise grips. Gripping the shaft in this manner will damage the shaft surface finish and will result in severe oil leakage.

6. Remove and discard the top shock absorber attaching nut using a crow's foot wrench and ratchet, while holding the shock absorber shaft stationary with an open-end wrench.



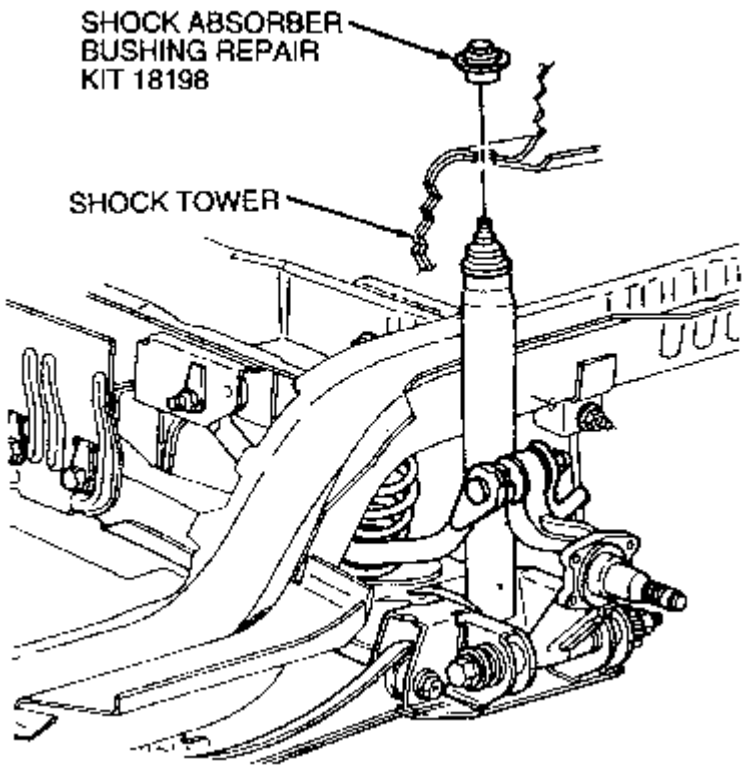
Remove and discard the top shock absorber attaching nut using a crow's foot wrench and ratchet, while holding the shock absorber shaft stationary with an open end wrench

7. **Remove the rubber insulator from the shock, then remove the shock from the vehicle.**

The shock absorbers are gas filled. It may require extra effort to remove the shock from the lower arm.

To install:

8. **Install a new washer and insulator assembly on the upper shock absorber rod.**
9. **Maneuver the upper part of the shock absorber into the shock tower opening in the body. Push slowly on the lower part of the shock absorber until the mounting studs are aligned with the mounting holes in the lower suspension arm.**
10. **Install new lower attaching nuts, but do not tighten at this time.**
11. **Install a new shock absorber bushing repair kit, washer and nut on top of the shock absorber. Tighten the nut to 19-25 ft. lbs. (26-34 Nm).**

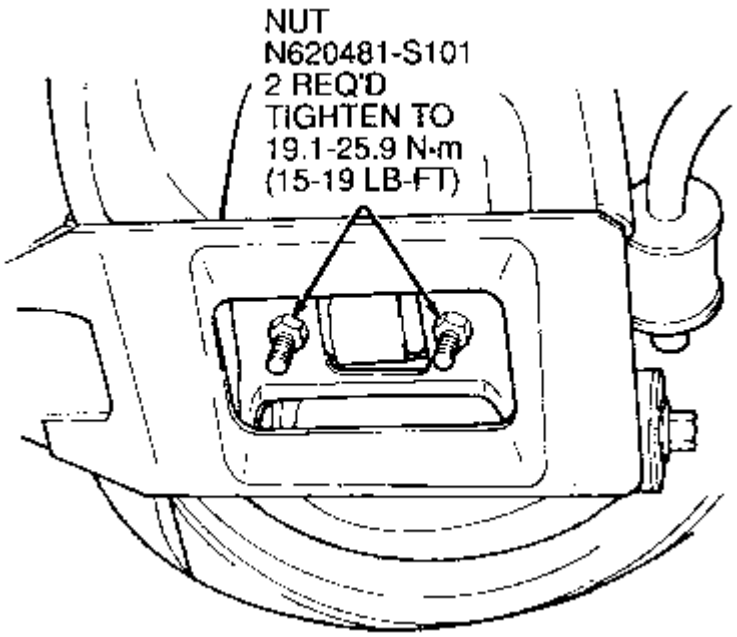


Install a new shock absorber bushing repair kit, washer and nut on top of the shock absorber. Tighten the nut to 19-25 ft. lbs. (26-34 Nm)

Click to enlarge

12. **Install the rear compartment access panel.**

13. **Tighten the two lower attaching nuts to 15-19 ft. lbs. (19-30 Nm).**



Tighten the two lower attaching nuts to 15-19 ft. lbs. (19-30 Nm)

Click to enlarge

14. **Install the wheel and tire assembly. Remove the safety stand supporting the lower**

suspension arm, then carefully lower the vehicle.

TESTING

1. Visually inspect the shock absorber for signs of leakage.
2. If one shock absorber is leaking, replace both shock absorbers.
3. Stand back and look at the vehicle. If it sags on one end check the shocks; if defective replace them.
4. Bounce the vehicle up and down a few times; if the vehicle bounces more that twice, the shocks could be defective and require replacement.

MacPherson Struts

REMOVAL & INSTALLATION

Sedan

1. Position a jack under the vehicle, then raise it only enough to contact the vehicle.
2. Open the trunk, then loosen, but do not remove, the three nuts retaining the shock absorber bracket to the car's body.

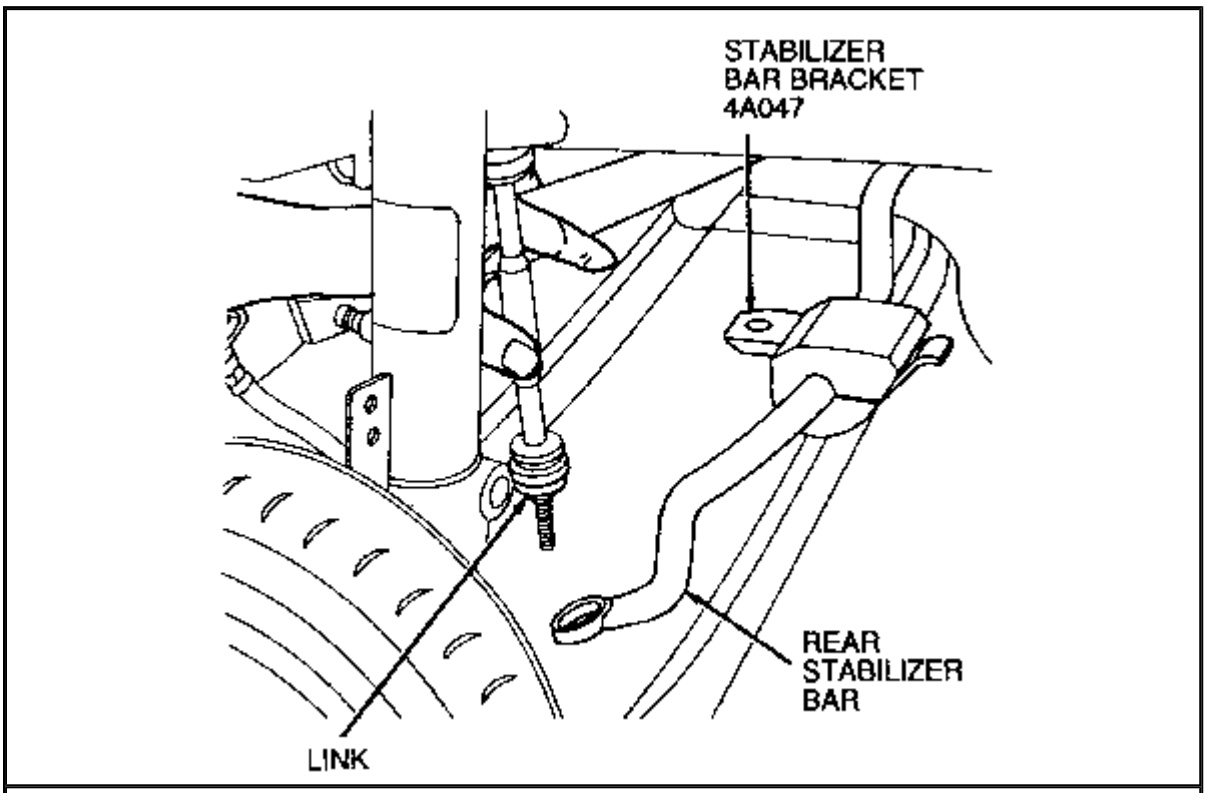
Open the trunk, then loosen, but do not remove, the three shock retaining nuts

3. Raise and safely support the vehicle. Remove the wheel and tire assembly.

Do not raise or support the vehicle using the tensionstruts.

4. Remove the bolt retaining the brake differential control valve/brake load sensor proportioning valve to the control arm. Using a wire, secure the control arm to the body to ensure proper support, leaving at least 6 in. (152mm) clearance to assist in the strut removal.
5. Remove the brake hose-to-strut bracket clip, then carefully move the hose aside.
6. If equipped, remove the stabilizer bar U-bracket from the vehicle.

7. **If equipped, remove the stabilizer bar-to-stabilizer link nut, washer and insulator, then separate the stabilizer bar from the link.**



If equipped, remove the stabilizer bar-to-stabilizer link nut, washer and insulator, then separate the stabilizer bar from the link

Click to enlarge

8. **Remove the nut, washer and rear strut body end-bushing holding the tension strut and the bushing to the rear wheel spindle. Move the spindle rearward enough to separate it from the tension strut.**

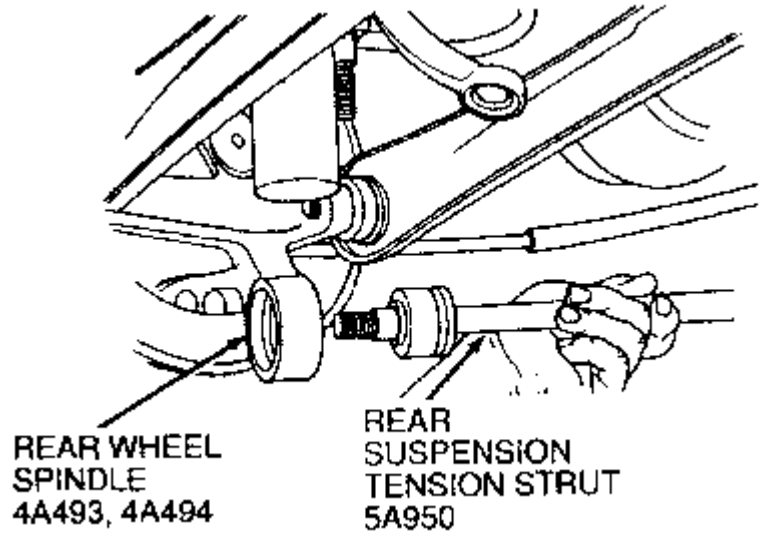
When removing the strut, be sure the rear brake flex hoseis not stretched or the steel brake tube is not bent.

9. **Remove the shock strut-to-spindle pinch bolt. If necessary, use a medium prybar, slightly spread the strut-to-spindle pinch joint to remove the strut. Discard the bolt and replace it during installation.**
10. **Lower the jackstand, then separate the shock strut from the spindle.**
11. **Remove the nut, washer and lower suspension arm stabilizer bar insulator attaching the link to the rear shock absorber, then remove the stabilizer bar link.**
12. **From inside the trunk, remove and discard the three upper mount-to-body nuts. Be careful that the shock absorber does not drop when removing the three nuts, then remove the shock absorber from the vehicle.**

To install:

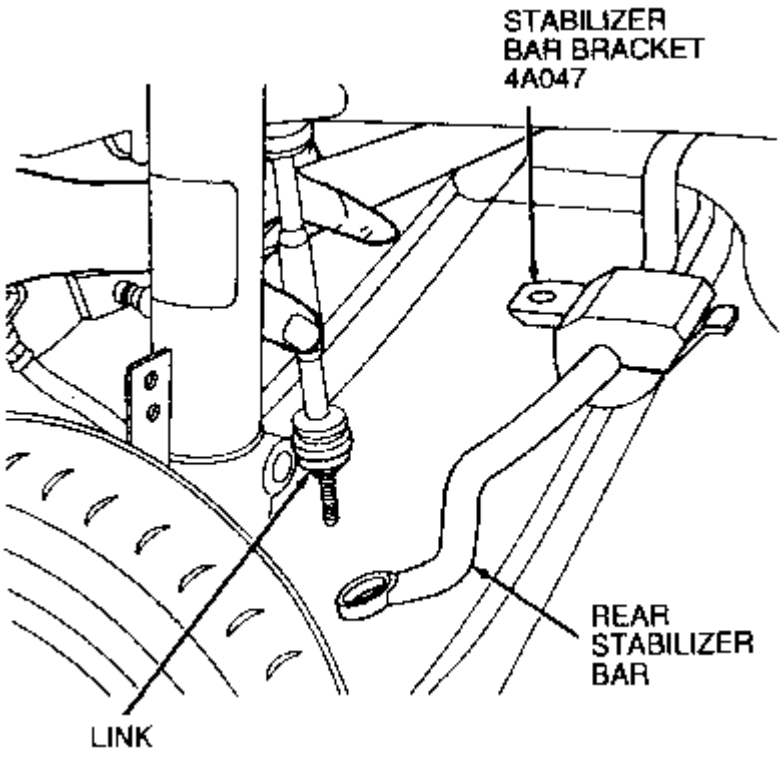
13. **Position the stabilizer bar link in the strut bracket. Install the insulator, washer and nut, then tighten to 5-7 ft. lbs. (7-9.5 Nm).**
14. **Insert the three upper mount studs into the strut tower in the apron, then hand-start three new nuts. Do not tighten the nuts at this time.**

15. **Partially raise the vehicle.**
16. **Install the strut into the spindle pinch joint. Install a new pinch bolt into the spindle and through the strut bracket. Tighten the bolt to 50-68 ft. lbs. (68-92 Nm).**
17. **Move the spindle rearward, then install the tension strut and bushing into the spindle. Install the insulator, washer and nut on the tension strut. Tighten the nut to 35-46 ft. lbs. (47-63 Nm).**



Move the spindle rearward, then install the tension strut and bushing into the spindle. Install the insulator, washer and nut on the tension strut

18. **Position the link into the stabilizer bar. Install the insulator, washer and nut on the link. Tighten to 5-7 ft. lbs. (7-9.5 Nm).**



Position the link into the stabilizer bar, then install the insulator, washer and nut on the link

Click to enlarge

19. **Position the stabilizer bar U-bracket on the body. Install the bolt, then tighten to 25-33 ft. lbs. (34-46 Nm).**
20. **Install the brake hose to the strut bracket.**
21. **Install the brake control differential valve/brake load sensor proportioning valve on the control arm, then remove the retaining wire.**
22. **In the trunk, tighten the top mount-to-body nuts to 19-25 ft. lbs. (25-34 Nm).**
23. **Install the wheel and tire assembly, then carefully lower the vehicle.**

OVERHAUL

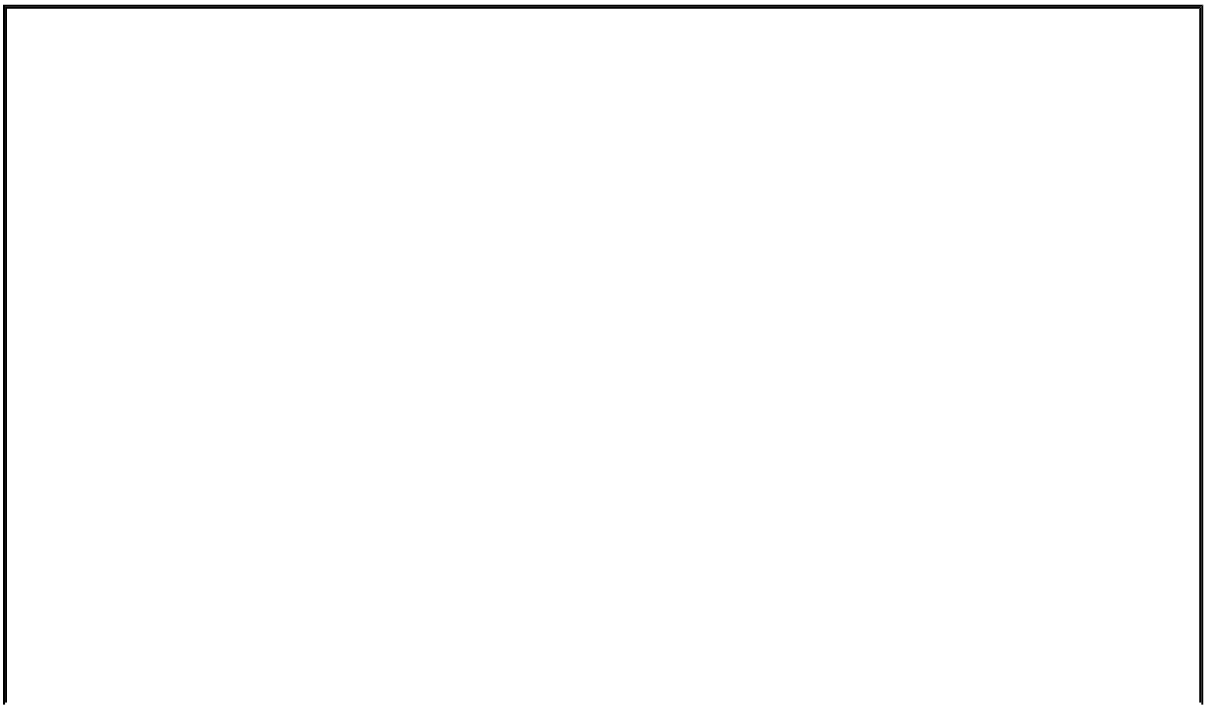
The following procedure is performed with the strut assembly removed from the car. A MacPherson Strut compression tool is required for the disassembly of the strut; use a cage type tool such as the No. D85P-7181-A, Rotunda Spring Compressor 086-0029B, or equivalent is required.

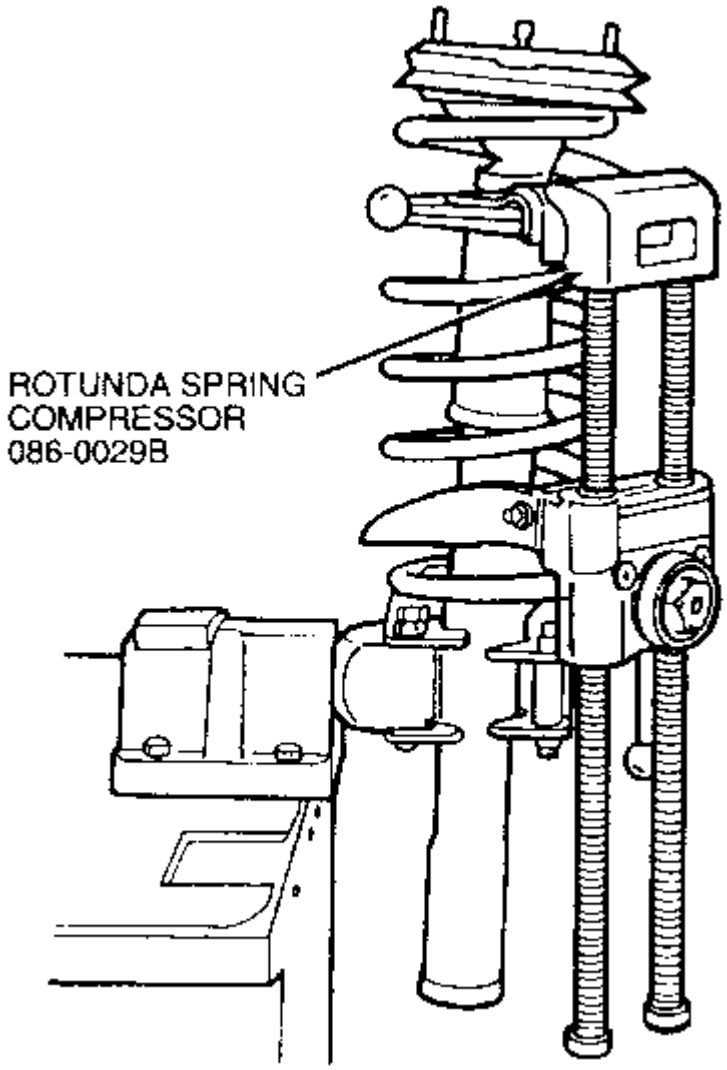
CAUTION

NEVER attempt to disassemble the spring or top mount without firstcompressing the spring using the strut compressor tool No. D85P-7178-A orequivalent. If a strut spring compressor is not used, the assembly could flyapart by the force of the spring tension, resulting in serious injury or death.

Before compressing the spring, mark the location of the insulator to thetop mount using a grease pencil.

1. **Remove the rear shock and spring assembly, as outlined in the procedure located earlier in this section.**
2. **Compress the spring with the coil spring compressor D85P-7178-A, 086-0029B or equivalent.**



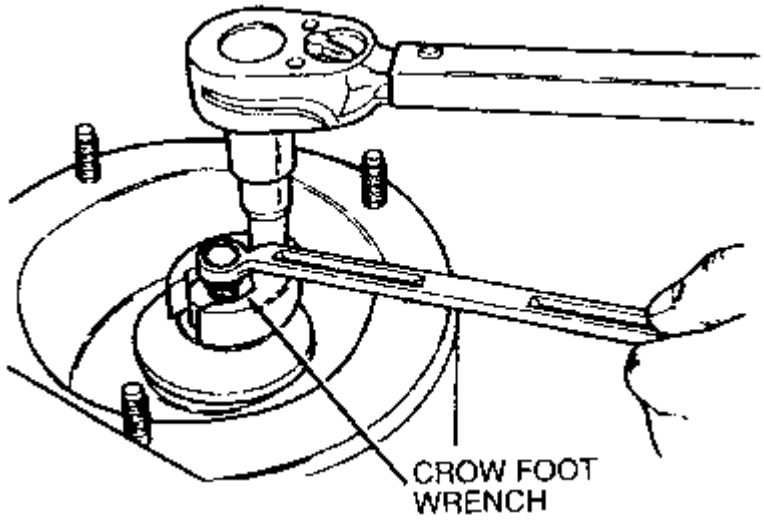


Compressing the spring using the appropriate tool

Click to enlarge

3. **Place a 10mm box wrench on top of the shock strut shaft, and hold while removing the top shaft mounting nut with a 21mm 6-point crow's foot wrench and ratchet.**

It is important that the mounting nut be turned and therod held still to prevent fracture of the rod at the base of the hex.



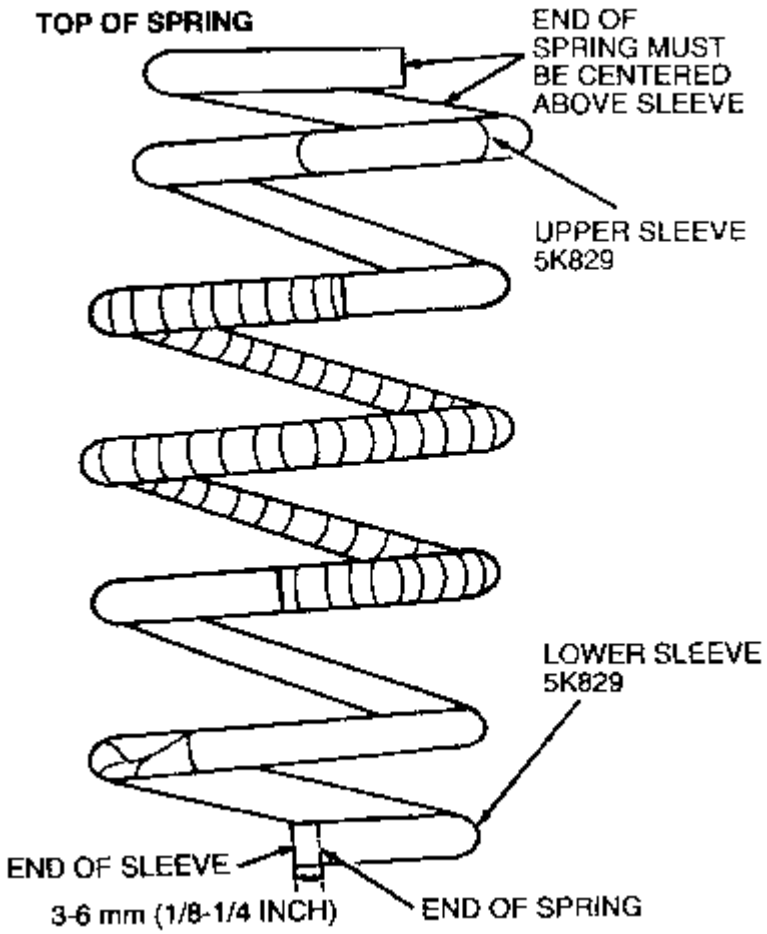
Place a 10mm box wrench on top of the shock strut shaft, and hold while removing the top shaft mounting nut with a 21mm 6-point crow's foot wrench and ratchet

4. **Loosen the spring compressor tool, then remove the top mounting bracket assembly, bearing plate assembly and spring.**

To assemble:

Ensure that the correct assembly sequence and proper positioning of thebearing and seat assembly are followed. The bearing and seat assembly ispress-fit onto the upper mount. The mount washers must be installed with theproper orientation.

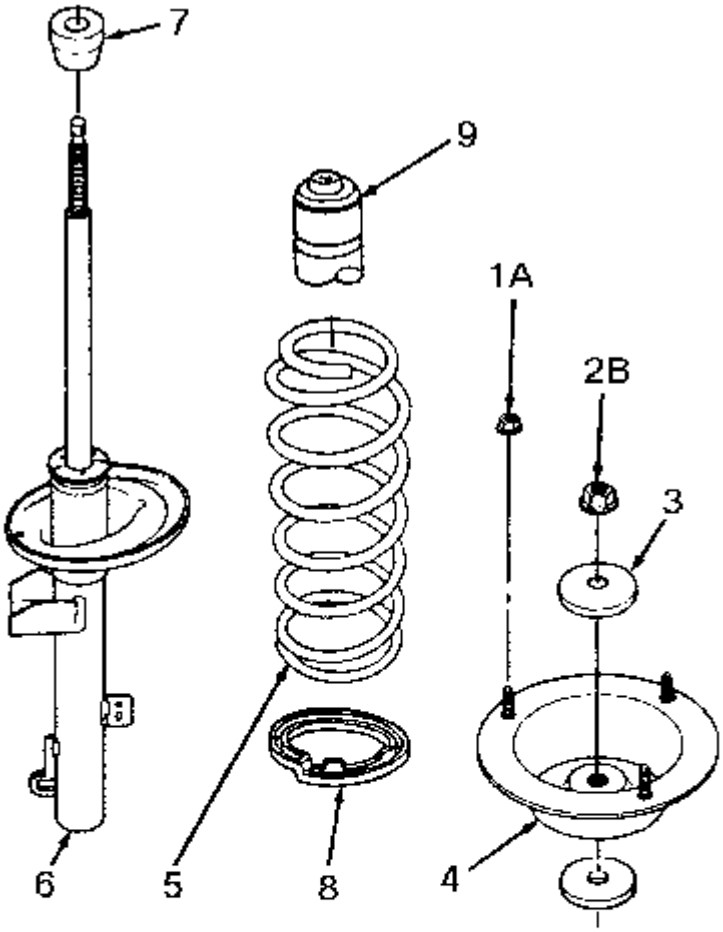
5. **Inspect the spring to ensure that the dampers, sleeves and clips are properly positioned.**



Before installation, check the spring to make sure the dampers, sleeves and clips are positioned correctly

Click to enlarge

6. **Install the spring compressor tool No. D85P-7178-A, 086-0029B or equivalent.**
7. **Install the spring, insulator, bottom washer (if equipped), top mount bracket assembly, upper washer and nut.**

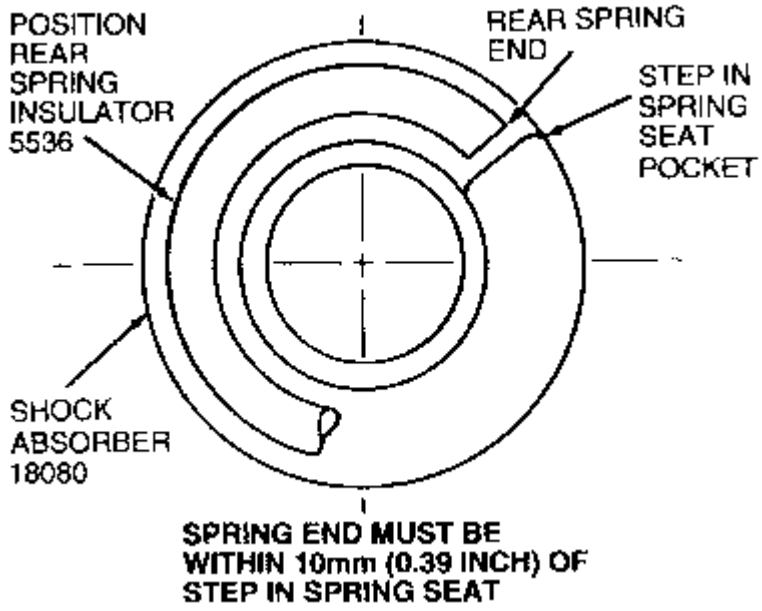


1 Nut (3 req'd)
2 Nut
3 Washer (6 req'd)
4 Rear shock absorber bracket
5 Rear spring
6 Rear shock absorber
7 Rear shock absorber jounce bumper
8 Rear spring center mounting insulator
9 Dust boot
A Tighten to 25-34 Nm (19-25 lb.ft.)
B Tighten to 53-72 Nm (40-53 lb.ft.)

Exploded view of the rear shock and spring assembly

Click to enlarge

8. **Compress the spring with the coil spring compressor tool. Be certain that the spring is properly located in the upper and lower spring seats and that the mount washers are oriented correctly.**



Make sure the spring is correctly located in the upper mount and lower spring seat, and that the mount washers are properly positioned

Click to enlarge

9. Place a 10mm box-end wrench on the top of the shock strut shaft and hold while tightening the top shaft mounting nut with a 21mm 6-point crow's foot wrench and a ratchet. Tighten the nut to 40-53 ft. lbs. (53-72 Nm).
10. The strut assembly may now be installed in the vehicle.

Control Arms

REMOVAL & INSTALLATION

Sedan

1. Raise and safely support the vehicle.

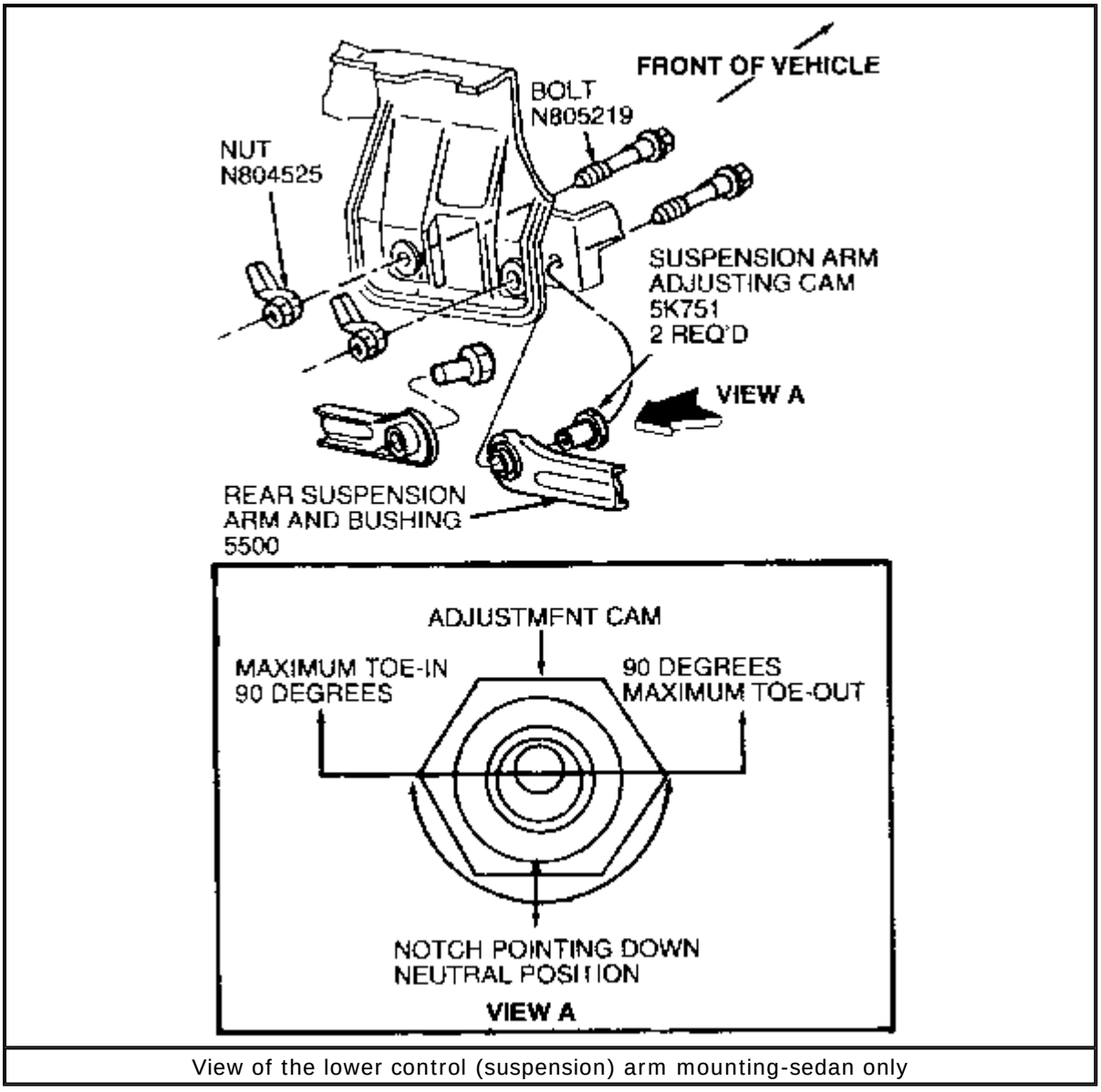
Do not raise the vehicle by the tension strut.

2. For vehicles through 1993, disconnect the brake load sensor proportioning valve (s) from the left side front control arm. For 1994-95 vehicles, disconnect the brake load sensor proportioning valve(s) from the rear arm and bushing.
3. Disconnect the parking brake cable from the front control arms on vehicles through 1993. For 1994-95 vehicles, disconnect the parking brake cable from the rear arm and bushings.
4. Remove and discard the arm-to-spindle bolt, washer and nut.
5. Remove and discard the arm-to-body bolt and nut.
6. Remove the lower control arm from the vehicle.

To install:

When installing new control arms, the offset on all arms must face up. The arms are stamped "bottom" on the lower edge. The flange edge of

the right side rear arm stamping must face the front of the vehicle. The other 3 must face the rear of the vehicle. The rear control arms have two adjustment cams that fit inside the bushings at the arm-to-body attachment. The cam is installed from the rear on the left arm and from the front on the right arm.



View of the lower control (suspension) arm mounting-sedan only

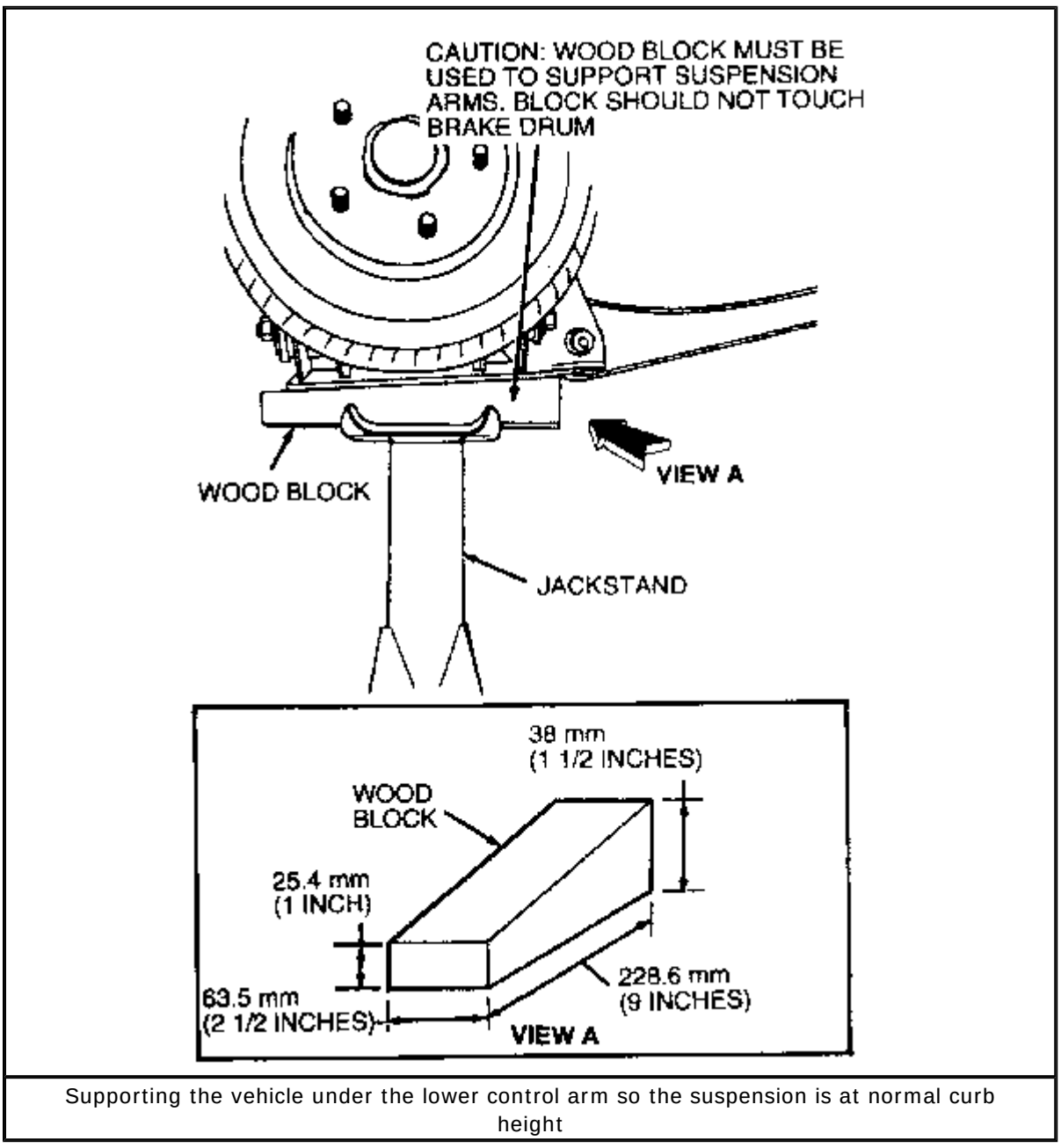
Click to enlarge

7. **Position the arm and cam where required, at the center of the vehicle. Insert a new bolt and nut, but do not tighten at this time.**
8. **Move the arm end up to the spindle, then insert a new bolt, washer and nut. Tighten the nut to 44-59 ft. lbs. (59-81 Nm).**
9. **Tighten the arm-to-body nut to 50-68 ft. lbs. (68-92 Nm).**
10. **Attach the parking brake cable to the front arms or rear arm, as applicable.**
11. **Connect the brake load sensor proportioning valve to the left side front arm or rear arm as applicable.**
12. **Carefully lower the vehicle, then have the alignment checked by a reputable repair shop.**

Wagon

UPPER ARM

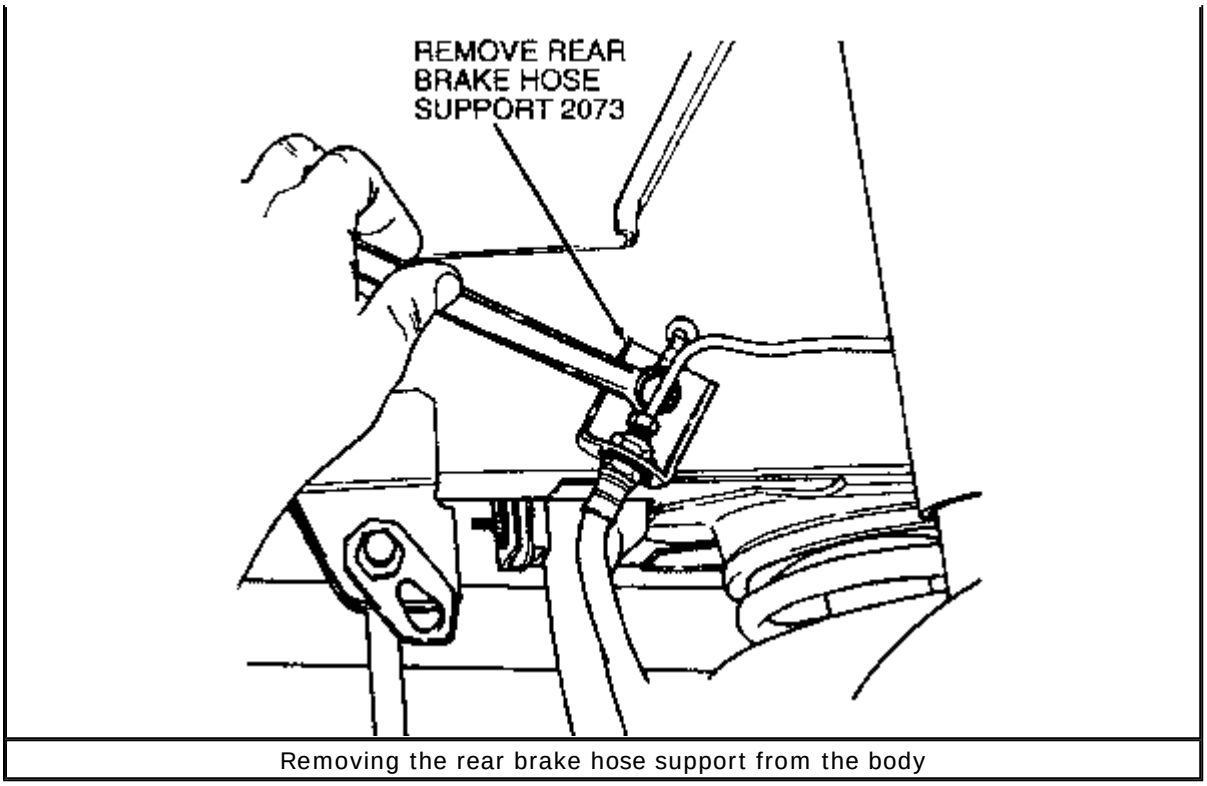
1. **Raise and safely support the vehicle, then place a jackstand and wood block under the rear lower control arm to support it so the suspension is at normal curb height, as shown in the accompanying figure.**



Supporting the vehicle under the lower control arm so the suspension is at normal curb height

Click to enlarge

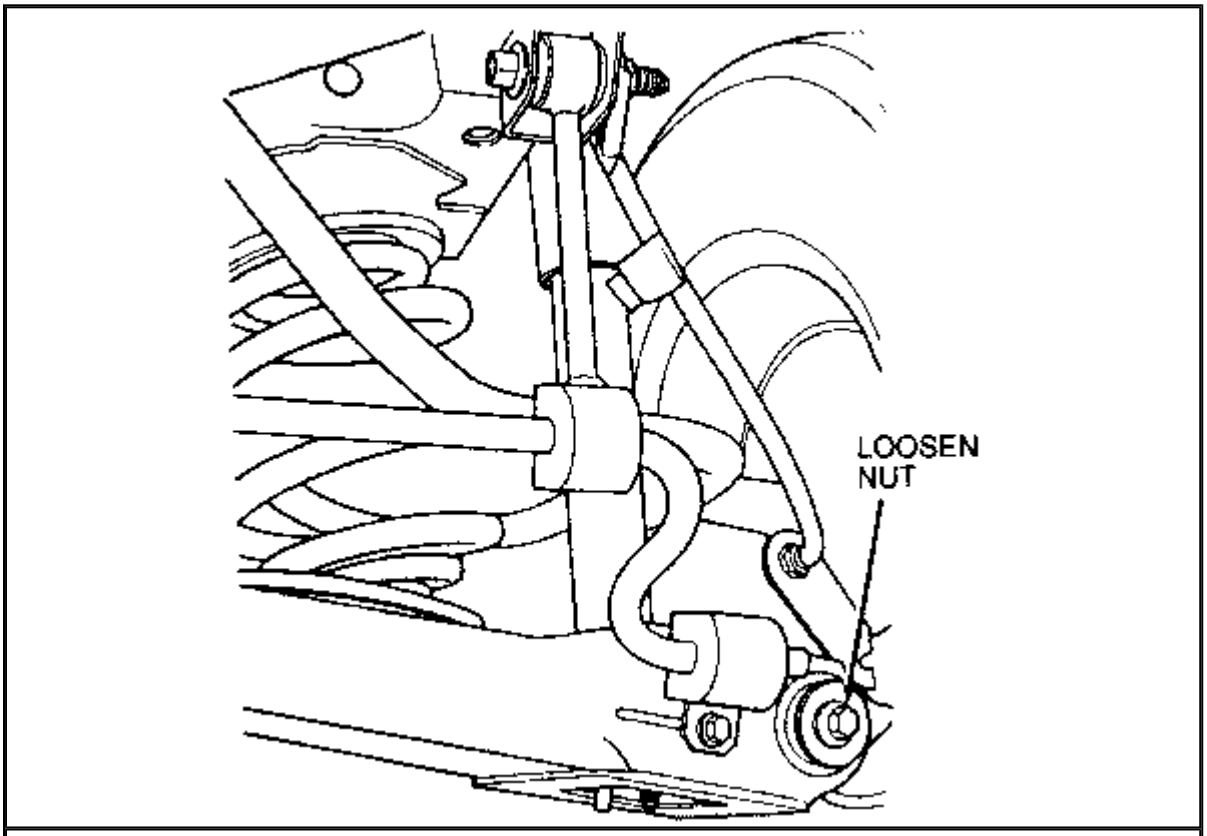
2. **Remove the wheel and tire assembly.**
3. **Remove the brake line flexible hose bracket from the body.**



Removing the rear brake hose support from the body

Click to enlarge

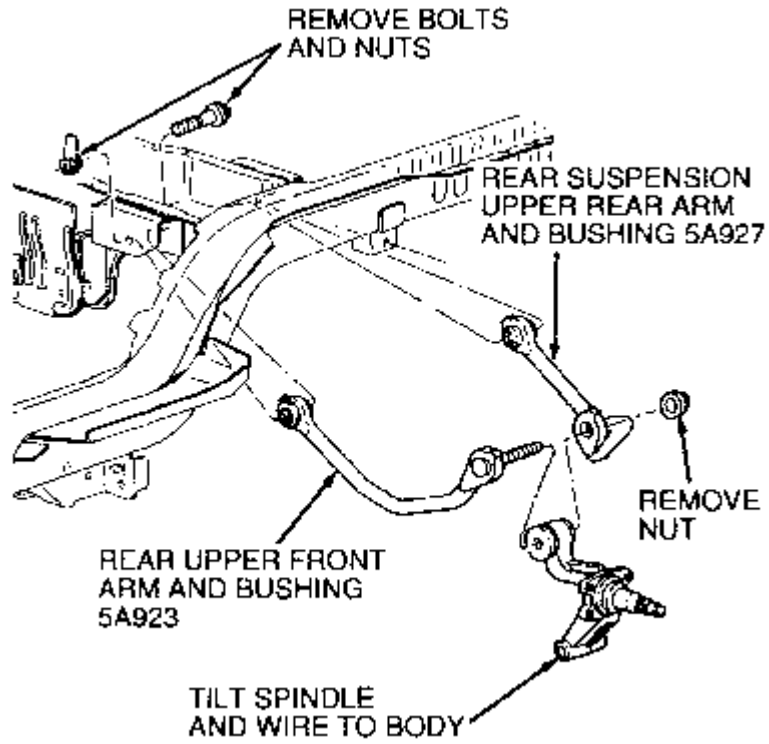
4. **Loosen, but do not remove, the nut attaching the rear wheel spindle to the front and rear upper control arms.**
5. **Loosen, but do not remove, the nut attaching the rear wheel spindle to the rear lower control arm.**



Loosen, but do not remove the nut attaching the rear wheel spindle to the rear lower

control arm

6. **Remove and discard the nuts and bolts attaching the front and rear upper suspension arms to the body brackets. Make sure the spindle does not fall outward.**
7. **Carefully tilt the top of the spindle outward, letting it pivot on the lower suspension arm attaching bolt until the ends of the upper suspension arms are clear of the body bracket. Support the spindle with wire in this position.**
8. **Remove and discard the nut attaching the rear suspension front and rear upper suspension arms to the spindle, then remove the arm from the vehicle.**

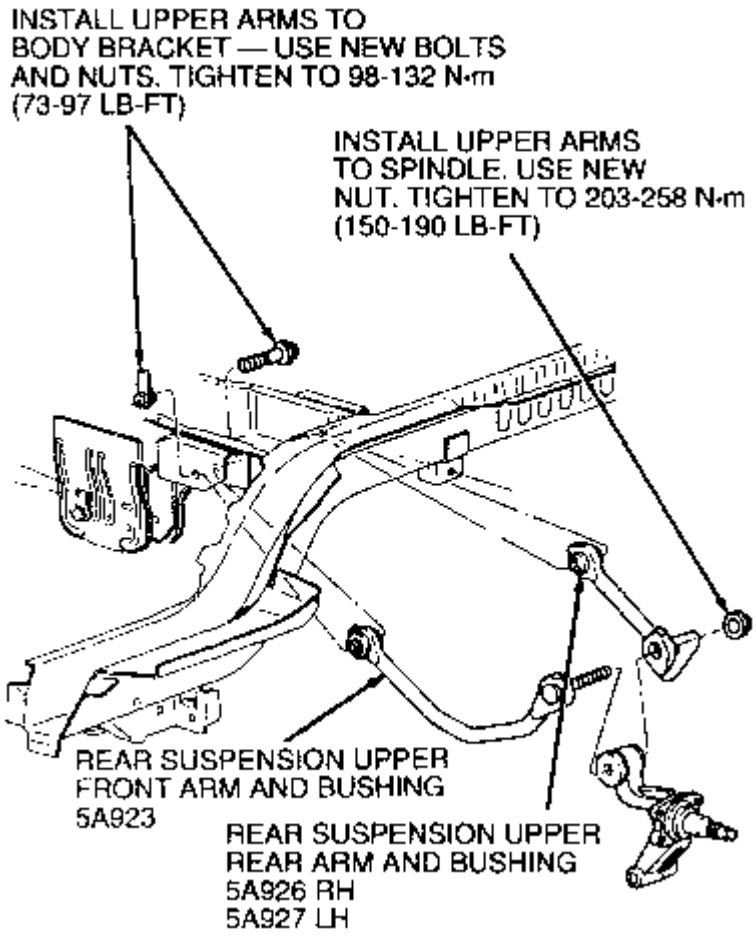


Remove and discard the nut attaching the front and rear upper suspension arms to the spindle, then remove the arm from the vehicle

Click to enlarge

To install:

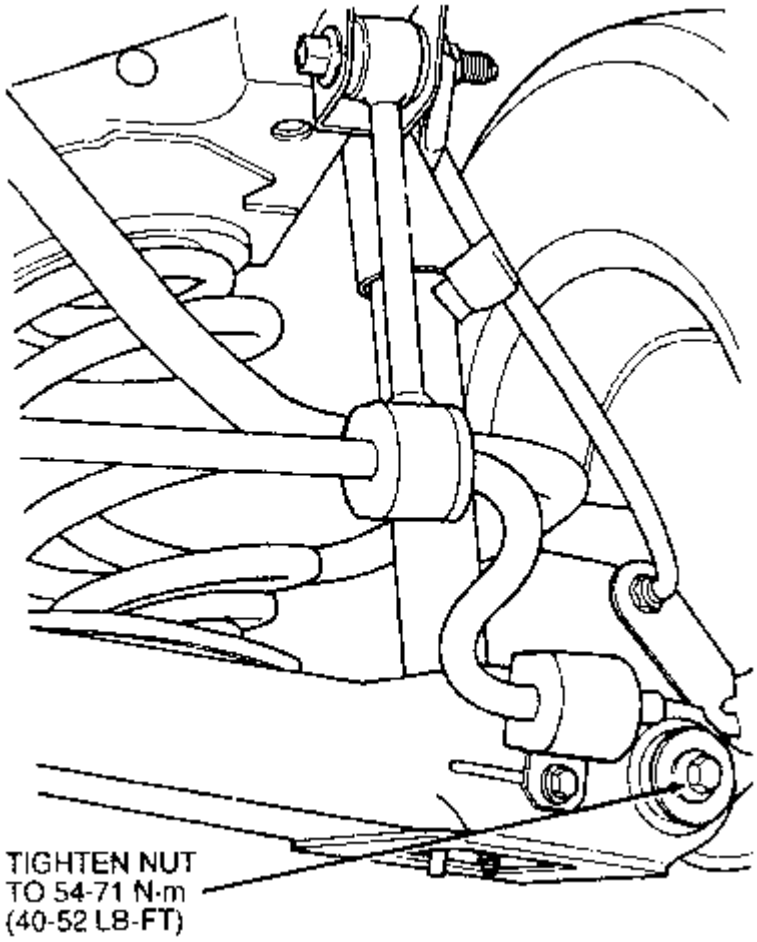
9. **Install the rear suspension front and rear upper control arms on the spindle, then install a new nut, but do not tighten the nut yet.**



Installing the rear upper control arm-station wagon only

Click to enlarge

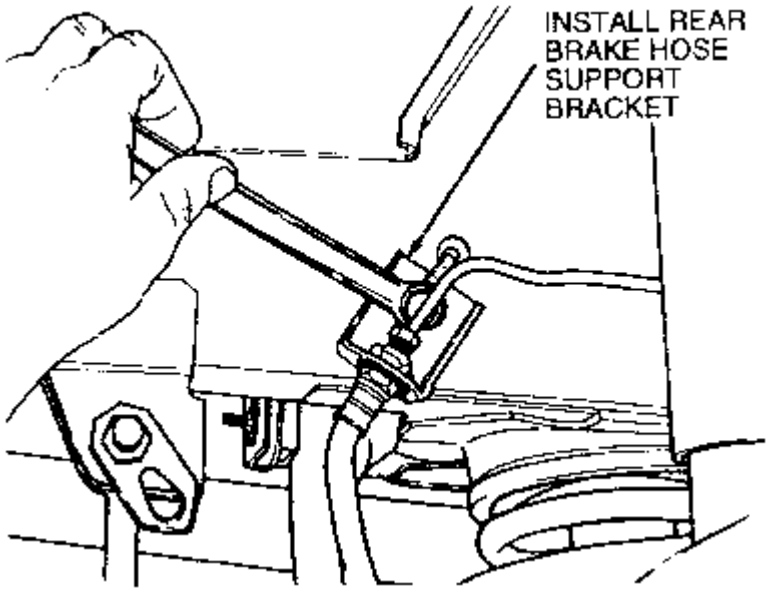
10. **Position the upper control arm ends to the body bracket, then install new nuts and bolts. Tighten to 73-97 ft. lbs. (98-132 Nm). Remove the wire from the rear wheel spindle.**
11. **Tighten the nut attaching the upper suspension arms to the spindle to 150-190 ft. lbs. (203-258 Nm).**
12. **Tighten the nut attaching the lower suspension arm to the spindle to 40-52 ft. lbs. (54-71 Nm).**



Tighten the nut attaching the lower suspension arm to the spindle to 40-52 ft. lbs. (54-71 Nm)

Click to enlarge

13. **Install the rear brake hose support bracket to the body, then tighten to 8-12 ft. lbs. (11-16 Nm).**



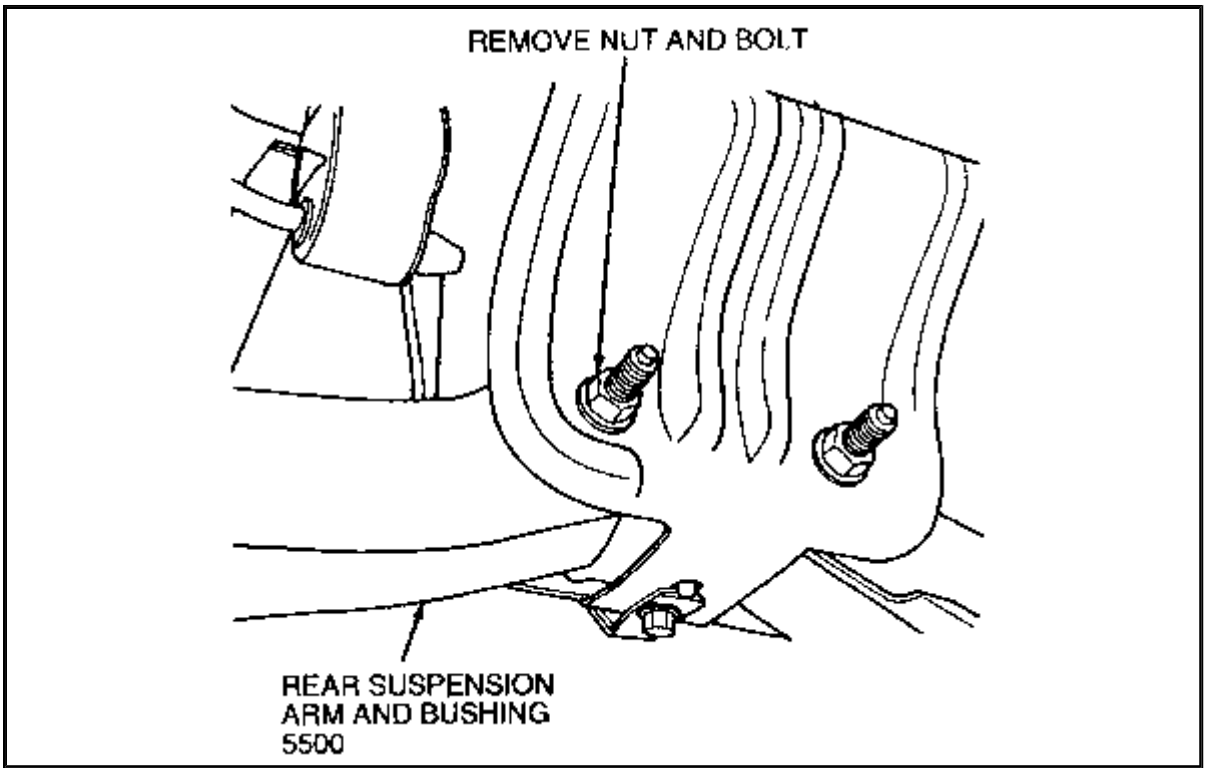
Install the rear brake hose support bracket to the body, then tighten to 8-12 ft. lbs. (11-16 Nm)

Click to enlarge

14. **Install the wheel and tire assembly, remove the jackstand and wood block, then lower the vehicle.**
15. **Check the rear wheel alignment.**

LOWER ARM

1. **Raise and safely support the vehicle, on the lifting pads on the underbody forward of the tension strut body bracket.**
2. **Remove the wheel and tire assembly.**
3. **Remove the rear spring assembly. For details, please refer to the procedure located earlier in this section.**
4. **Remove and discard the bolt and nut retaining the lower rear control arm and bushing to the center body bracket, then remove the lower control arm and bushing assembly.**



Remove and discard the nut and bolt securing the lower rear control arm and bushing to the center body bracket, then remove the lower control arm and bushing assembly

Click to enlarge

To install:

5. **Position the rear lower control arm and bushing to the center body bracket, then install a new bolt and nut. Install the bolt with the bolt head toward the front of the vehicle, but do not tighten the bolt at this time.**
6. **Install the rear spring assembly. For details, please refer to the procedure located earlier in this section.**
7. **Support the control arm and bushing in the normal position when the vehicle is at curb height. Tighten the nut securing the arm to the body bracket to 40-52 ft. lbs. (54-71 Nm).**

After rear control arm and bushing replacement, it is necessary to have the vehicle's rear alignment checked and/or adjusted by a reputable repair shop.

8. Tighten the nut securing the lower control arm to the wheel spindle to 40-52 ft. lbs. (54-71 Nm).
9. Remove the jackstands, then carefully lower the vehicle.

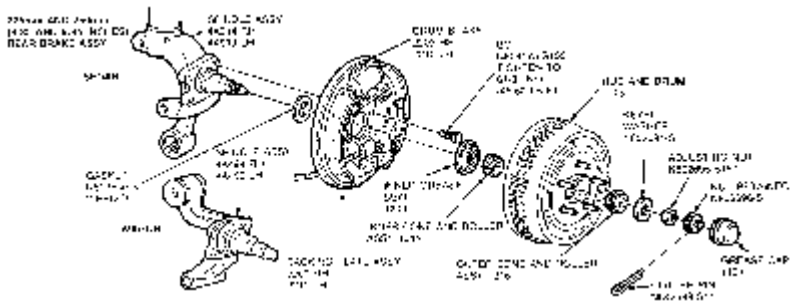
Rear Wheel Bearings

REPLACEMENT

Drum Brakes

1986-89 VEHICLES

1. Raise the vehicle and support it safely. Remove the wheel from the hub and drum.



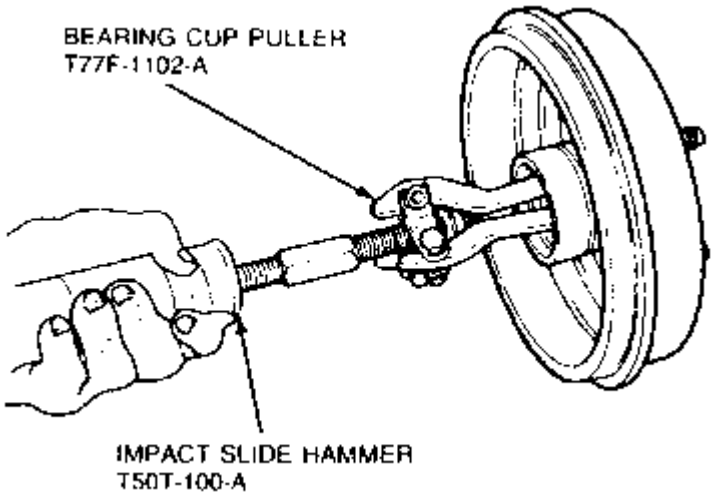
Rear wheel hub and bearing assembly-1986-89 vehicles with drum brakes

Click to enlarge

2. Remove the grease cap from the hub, being careful not to damage the cap. Remove the cotter pin, nut retainer, adjusting nut and keyed flat washer from the spindle. Discard the cotter pin.

Styled steel wheels and aluminum wheels require theremoval of the wheel and tire assembly to remove the dust cover.

3. Being careful not to drop the outer bearing assembly, pull the hub and drum assembly off of the spindle. Remove the outer bearing assembly.
4. Using Seal Remover tool 1175-AC or equivalent, remove and discard the grease seal. Remove the inner bearing assembly from the hub.
5. Wipe all lubricant from the spindle and inside of the hub. Cover the spindle with a clean cloth and vacuum all loose dust and dirt from the brake assembly. Carefully remove the cloth to prevent dirt from falling on the spindle.
6. Clean both bearing assemblies and cups using a suitable solvent. Inspect the bearing assemblies and cups for excessive wear, scratches, pits or other damage, then replace as necessary.
7. If the cups are to be replaced, remove them with Impact Slide Hammer T50T-100-A and Bearing Cup Puller T77F-1102-A or equivalents.



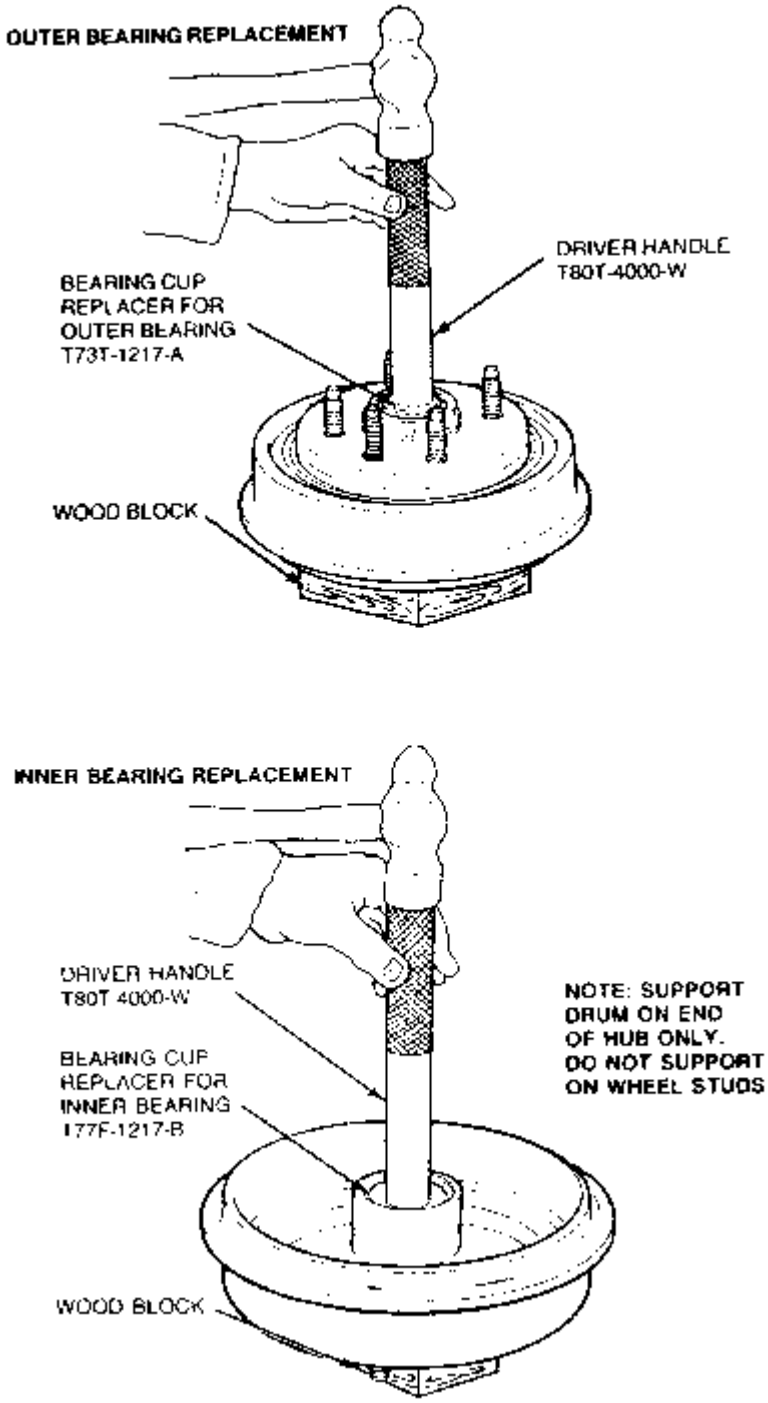
Removing the cups, if necessary, with the correct tools

Click to enlarge

To install:

8. **If the inner and outer bearing cups were removed, install the replacement cups using Driver Handle T80T-4000-W and Bearing Cup Replacers T73T-1217-A and T77F-1217-A or equivalents. Support the drum hub on a block of wood to prevent damage. Make sure the cups are properly seated in the hub.**

Do NOT use the cone and roller assembly to install thecups. This will result in damage to the bearing cup and the cone and roller assembly.



Installing the inner and outer bearing cups-1986-89 vehicles equipped with drum brakes

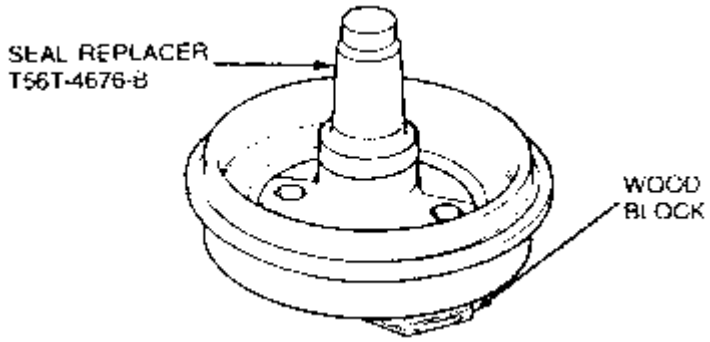
Click to enlarge

9. **Make sure all of the spindle and bearing surfaces are clean.**

Allow the cleaning solvent to dry before repacking thebearings. Do NOT spin the bearings dry with compressed air!

10. **Using a bearing packer, pack the bearing assemblies with Long-Life Lubricant C1AZ-19590-BA or equivalent suitable wheel bearing grease. If a packer is not available, work in as much grease as possible between the rollers and cages. Grease the cup surfaces.**
11. **Position the inner bearing cone and roller assembly in the inner cup. Apply a light**

film of grease to the lips of a new grease seal and install the seal with Rear Hub Seal Replacer T56T-4676-B or equivalent. Make sure the retainer flange is seated all around.



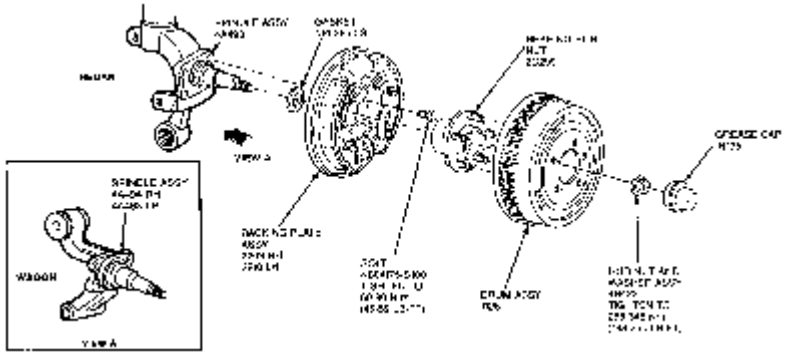
Installing the grease seal in the rear hub-1986-89 vehicles equipped with drum brakes

Click to enlarge

12. **Apply a light film of grease on the spindle shaft bearing surfaces. Install the hub and drum assembly on the spindle. Keep the hub centered on the spindle to prevent damage to the grease seal and spindle threads.**
13. **Install the outer bearing assembly and the keyed flat washer on the spindle. Install the adjusting nut, then adjust the wheel bearings as outlined later in this section.**
14. **Install a new cotter pin, then install the grease cap. Replace with a new grease cap if there is any corrosion on the inner surfaces of the cap.**
15. **Place the wheel and tire assembly on the drum. Install the lug nuts, then hand-tighten alternately to seal the wheel evenly against the hub and drum.**
16. **Carefully lower the vehicle, then tighten the lug nuts to 85-105 ft. lbs. (115-142 Nm) using a torque wrench.**

1990-95 VEHICLES

1. **Raise and safely support the vehicle.**
2. **Remove the wheel and tire assembly.**
3. **Remove the two pushnuts retaining the drum to the hub, then remove the drum.**
4. **Remove the rear hub cap grease seal from the hub assembly, then discard it.**
5. **Remove and discard the hub retainer, then remove the bearing and hub assembly from the spindle.**



Rear wheel hub and bearing assembly-1990-95 vehicles equipped with drum brakes

Click to enlarge

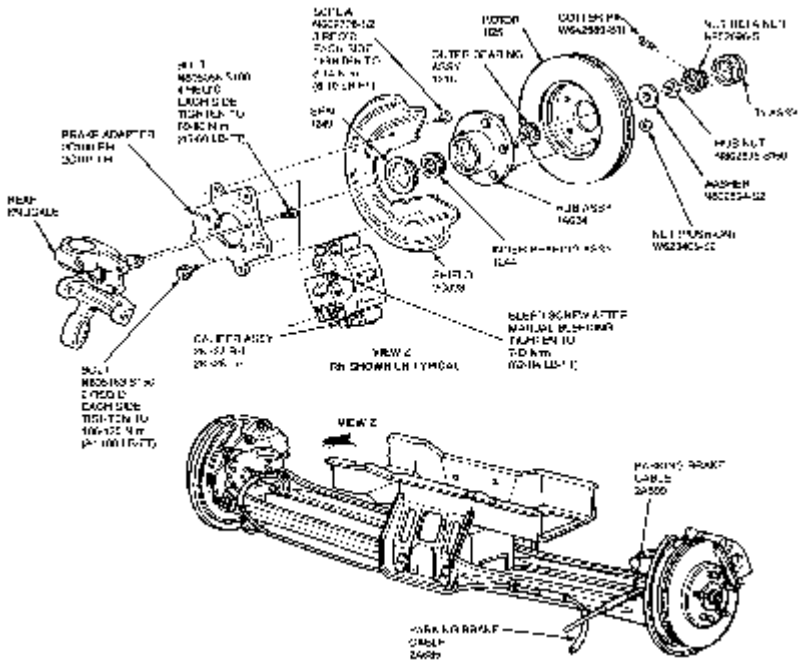
To install:

6. Position the hub on the spindle.
7. Install a new wheel hub retainer, then tighten to 188-254 ft. lbs. (255-345 Nm).
8. Install the new hub cap grease seal using Shaft Protector for Coil Removal T89P-19623-FH. Tap on the tool to make sure the grease cap is fully seated.
9. Install the brake drum on the hub, then install the two pushnuts that retain the brake drum.
10. Install the wheel and tire assembly, then carefully lower the vehicle.

Disc Brakes

1986-89 VEHICLES

1. Raise and safely support the vehicle. Remove the tire and wheel assembly from the hub.
2. Remove the brake caliper by removing the two bolts that attach the caliper support to the cast iron brake adapter. Do not remove the caliper pins from the caliper assembly. Lift the caliper off of the rotor, then support it with a length of wire. Do not allow the caliper assembly to hang from the brake hose.
3. Remove the rotor from the hub by pulling it off the hub bolts. If the rotor is difficult to remove, strike the rotor sharply between the studs with a rubber or plastic hammer.
4. Remove the grease cap from the hub. Remove the cotter pin, nut retainer, adjusting nut and keyed flat washer from the spindle. Discard the cotter pin.
5. Pull the hub assembly off of the spindle. Remove the outer bearing assembly.
6. Using Seal Remover Tool 1175-AC or equivalent, remove and discard the grease seal. Remove the inner bearing assembly from the hub.
7. Wipe all of the lubricant from the spindle and inside of the hub. Cover the spindle with a clean cloth and vacuum all of the loose dust and dirt from the brake assembly. Carefully remove the cloth to prevent dirt from falling on the spindle.
8. Clean both bearing assemblies and cups using a suitable solvent. Inspect the bearing assemblies and cups for excessive wear, scratches, pits or other damage and replace as necessary.
9. If the cups are being replaced, remove them with Impact Slide Hammer Tool T50T-100-A and Bearing Cup Puller Tool T77F-1102-A or equivalents.



Rear hub and bearing assembly-1986-89 vehicles with disc brakes

Click to enlarge

To install:

10. **If the inner and outer bearing cups were removed, install the replacement cups using Driver Handle Tool T80T-4000-W and Bearing Cup Replacer Tools T73F-1217-A and T77F-1217-B or equivalents. Support the hub on a block of wood to prevent damage. Make sure the cups are properly seated in the hub.**

Do not use the cone and roller assembly to install thecups. This will result in damage to the bearing cup as well as the cone androller assembly.

11. **Make sure all of the spindle and bearing surfaces are clean.**
12. **Pack the bearing assemblies with a suitable wheel bearing grease using a bearing packer. If a packer is not available, work in as much grease as possible between the rollers and the cages. Grease the cup surfaces.**

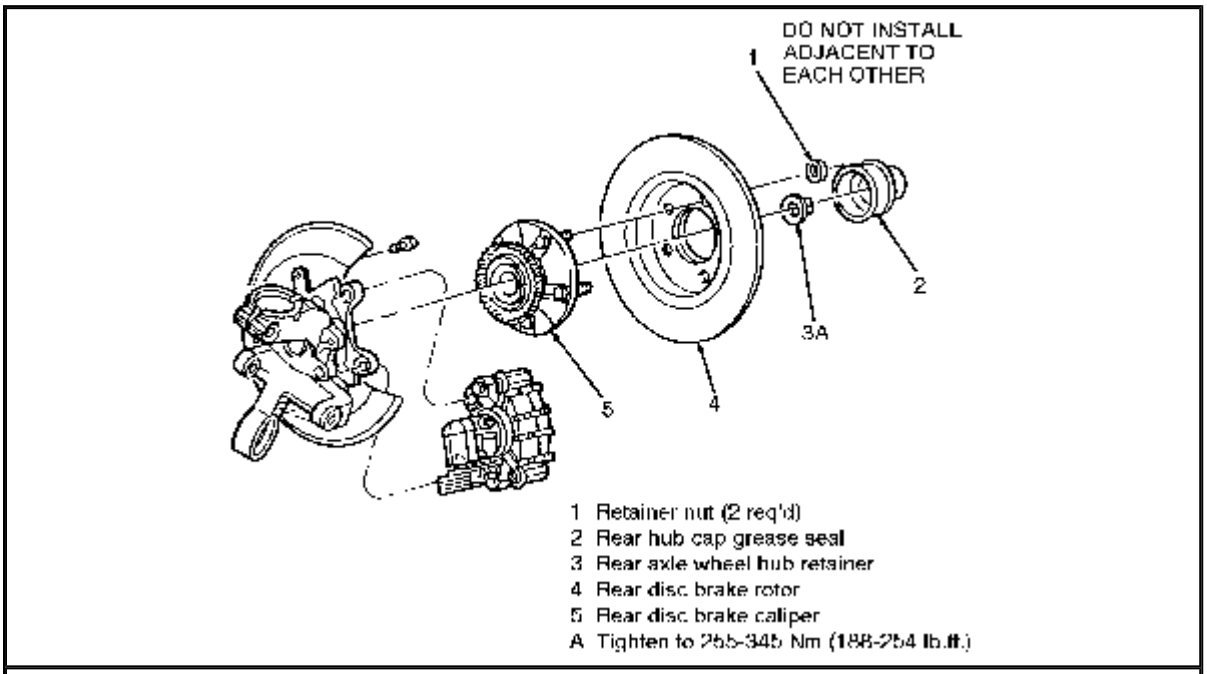
Allow all of the cleaning solvent to dry before repackingthe bearings. Do not spin-dry the bearings with air pressure.

13. **Place the inner bearing cone and roller assembly in the inner cup. Apply a light film of grease to the lips of a new grease seal and install the seal with Rear Hub Seal Replacer Tool T56T-4676-B or equivalent. Make sure the retainer flange is seated all around.**
14. **Apply a light film of grease on the spindle shaft bearing surfaces. Install the hub assembly on the spindle. Keep the hub centered on the spindle to prevent damage to the grease seal and spindle threads.**
15. **Install the outer bearing assembly and keyed flat washer on the spindle. Install the adjusting nut and adjust the wheel bearings. Install a new cotter pin and the grease cap.**
16. **Install the disc brake rotor to the hub assembly. Install the disc brake caliper over the rotor.**

17. **Install the wheel and tire assembly, then carefully lower the vehicle.**

1990-95 VEHICLES

1. **Raise and safely support the vehicle.**
2. **Remove the wheel and tire assembly.**
3. **Remove the caliper assembly from the brake adapter. Support the caliper assembly with a piece of wire.**
4. **Remove the push-on nuts that retain the rotor to the hub, then remove the rotor.**
5. **Remove the hub cap grease seal from the bearing and hub assembly, then discard the seal.**
6. **Remove the bearing and hub assembly retainer, then remove the bearing and hub assembly from the spindle.**



Rear hub and bearing assembly-1990-95 vehicles with disc brakes

Click to enlarge

To install:

7. **Position the hub on the wheel spindle.**
8. **Install a new wheel hub retainer, then tighten to 188-254 ft. lbs. (255-345 Nm).**
9. **Using Coil Remover T89P-19623-FH or equivalent, install a new grease seal. Tap on the tool until the grease seal is completely seated.**
10. **Install the rotor on the hub. Install the two retaining push-on nuts that hold the rotor on the hub.**
11. **Install the brake caliper to the brake adapter.**
12. **Install the wheel and tire assembly, then carefully lower the vehicle.**

ADJUSTMENT

1986-89 Vehicles

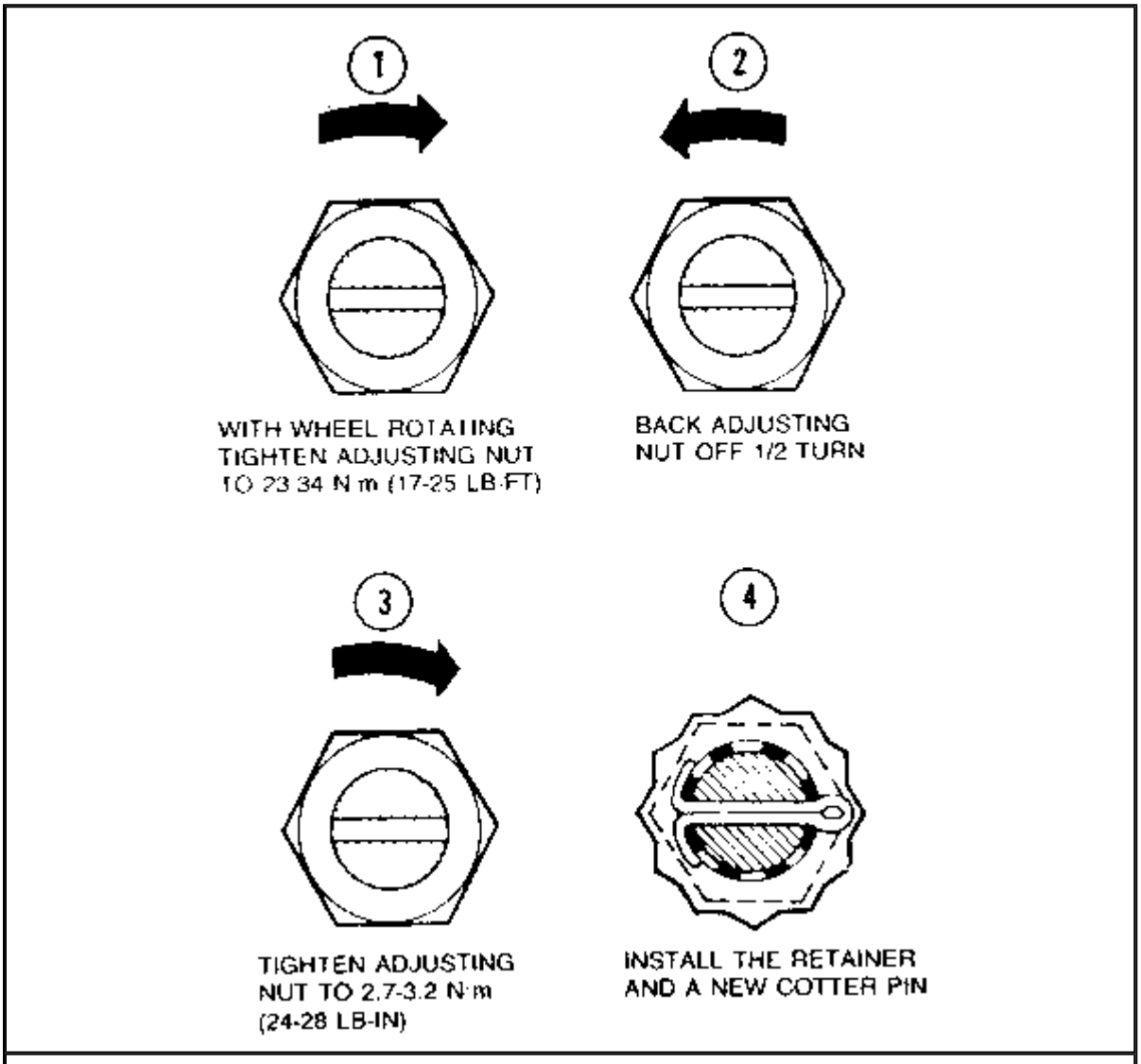
The following procedure applies only to 1986-89 vehicles. Adjustment is not possible on 1990-95 vehicles. This procedure should be performed whenever the wheel is excessively loose on the spindle or it does not rotate freely.

The rear wheel uses a tapered roller bearing which may feel loose whenproperly adjusted; this condition should be considered normal.

1. **Raise and safely support the vehicle until tires clear the floor.**
2. **Remove the wheel cover or the ornament and nut cover. Remove the hub grease cap, being careful not the damage the cap.**

If the vehicle is equipped with styled steel or aluminumwheels, the wheel/tire assembly must be removed to access the dust cover.

3. **Remove the cotter pin and the nut retainer. Discard the cotter pin.**
4. **Back off the adjusting nut one full turn.**
5. **While rotating the hub/drum assembly to seat the bearings, tighten the adjusting nut to 17-25 ft. lbs. (23-24 Nm). Back off the adjusting nut $^{1}/_{2}$ turn, then retighten it to 24-28 inch lbs. (2.7-3.2 Nm).**



Rear wheel bearing adjustment is possible only on 1986-89 vehicles

Click to enlarge

6. **Position the nut retainer over the adjusting nut so the slots are in line with the cotter pin hole, without rotating the adjusting nut.**
7. **Install a new cotter pin, then bend the ends around the retainer flange.**
8. **Check the hub rotation. If the hub rotates freely, install the grease cap. If not, check the bearings for damage and replace, as necessary.**
9. **Install the wheel and tire assembly. If applicable, install the wheel cover or ornament and nut cover. Carefully lower the vehicle.**

Rear Wheel Alignment

CAMBER

Camber is the measure of the wheel tilt from the vertical direction, when the wheel is viewed from the rear of the vehicle. Camber is negative when the top of the wheel is inboard and positive when the top is outboard. Always check for bent, damaged or worn suspension components before determining that adjustment is necessary. The amount of tilt is measured in degrees from the vertical and this measurement is called the camber angle.

Camber is not adjustable on the Sedan. On the Wagon camber is adjustable, but requires special equipment and procedures. If you suspect an alignment problem, have it checked by a qualified repair shop.

TOE-IN

Toe is a measurement of how far a wheel is turned in or out from the straight ahead direction. When the front of the wheel is turned in, the toe is positive. When the front of the wheel is turned out, toe is negative. An incorrect toe setting can affect steering feel and cause excessive tire wear.

Stated another way, toe-in is the amount that the front of the wheels are closer together than the backs of the same wheels. The actual amount of toe-in is normally only a fraction of a degree.

Rear toe is adjustable, but requires special equipment and procedures. If you suspect an alignment problem, have it checked by a qualified repair shop.

STEERING

Steering Wheel

REMOVAL & INSTALLATION

CAUTION

If equipped with an air bag, the negative battery cable must be disconnected before working on the system. On 1990-95 vehicles, the backup power supply must also be disconnected. Failure to do so may result in deployment of the air bag and possible personal injury. Always wear safety glasses when servicing an air bag vehicle and when handling an air bag.

1986-89 Vehicles

1. **Disconnect the negative battery cable.**

Steering wheel assembly-1986 Taurus shown

2. **Unfasten the two screws from the back of the steering wheel, then remove the steering wheel horn pad cover. Disengage the electrical connector. If equipped with cruise control, disengage the connector from the slip ring terminal.**

Remove the two steering wheel horn pad cover retaining screws from the back of the steering wheel, then ...

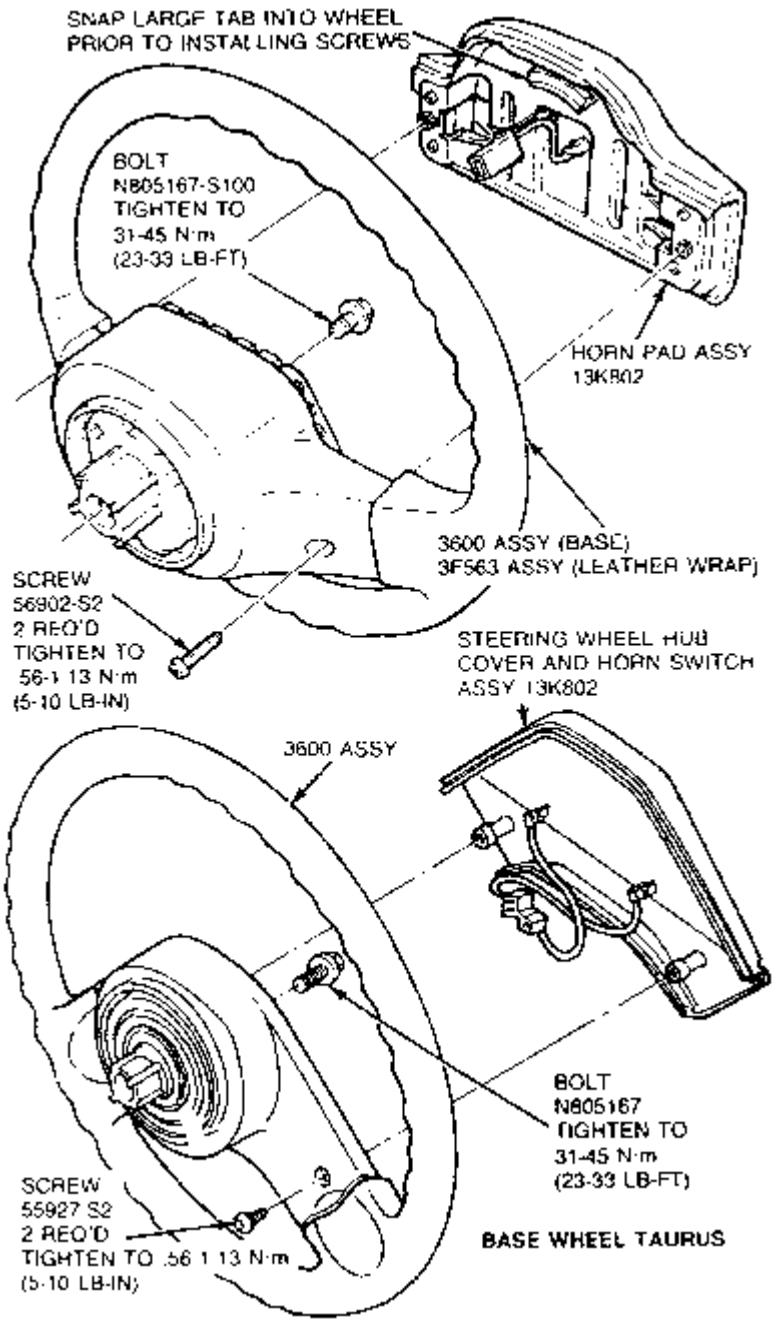
... disengage the electrical connector and remove the steering wheel horn pad cover

3. **Remove and discard the steering wheel retaining bolt/nut.**

Unfasten the wheel retaining nut, then ...

... remove the steering wheel by grasping the rim and pulling it off

4. **Remove the steering wheel from the upper shaft by grasping the rim of the steering wheel and pulling it off. A steering wheel puller is not required.**



Exploded view of the steering wheel assembly-1986-89 vehicles

Click to enlarge

To install:

5. **Position the steering wheel on the end of the shaft. Align the mark on the steering wheel with the mark on the shaft to ensure that the straight-ahead steering wheel position corresponds to the straight-ahead position of the front wheels.**

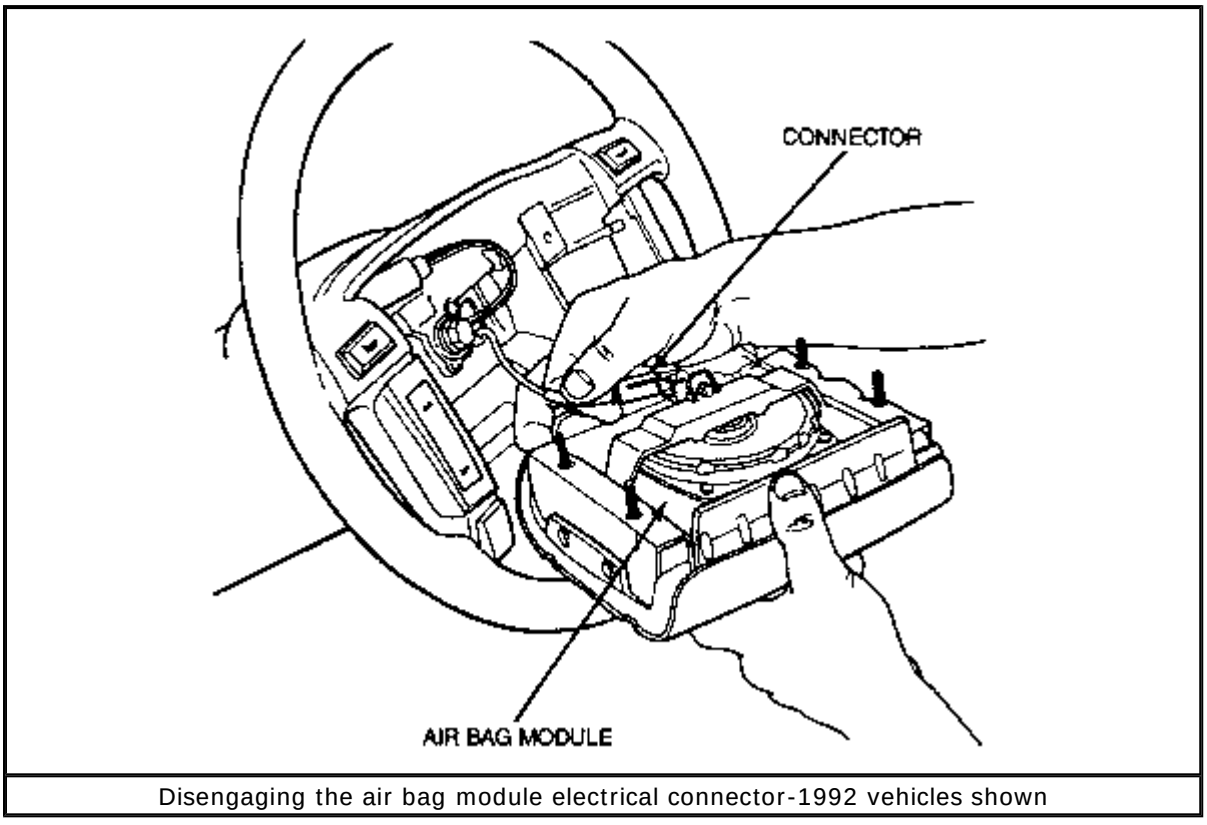
The combination switch lever must be in the middle (neutral) position before installing the steering wheel or damage to the switch cam may result.

6. **Install a new steering wheel retaining bolt, then tighten it to 23-33 ft. lbs. (31-45 Nm).**

7. **If equipped with cruise control, engage the connector to the slip ring terminal.**
8. **Install the steering wheel horn pad cover with the two retaining screws. Tighten to 5-10 inch lbs. (0.5-1.1 Nm).**
9. **Connect the negative battery cable, then check the steering wheel for proper operation.**

1990-95 Vehicles

1. **Center the front wheels in the straight-ahead position.**
2. **Disconnect the negative battery cable. Lower the glove compartment past its stops, then disconnect the air bag backup power supply.**
3. **For 1990-93 vehicles except SHO, remove the four air bag module retaining nuts and lift the module from the wheel. Disconnect the air bag wire harness from the air bag module, then remove the module from the steering wheel.**



Disengaging the air bag module electrical connector-1992 vehicles shown

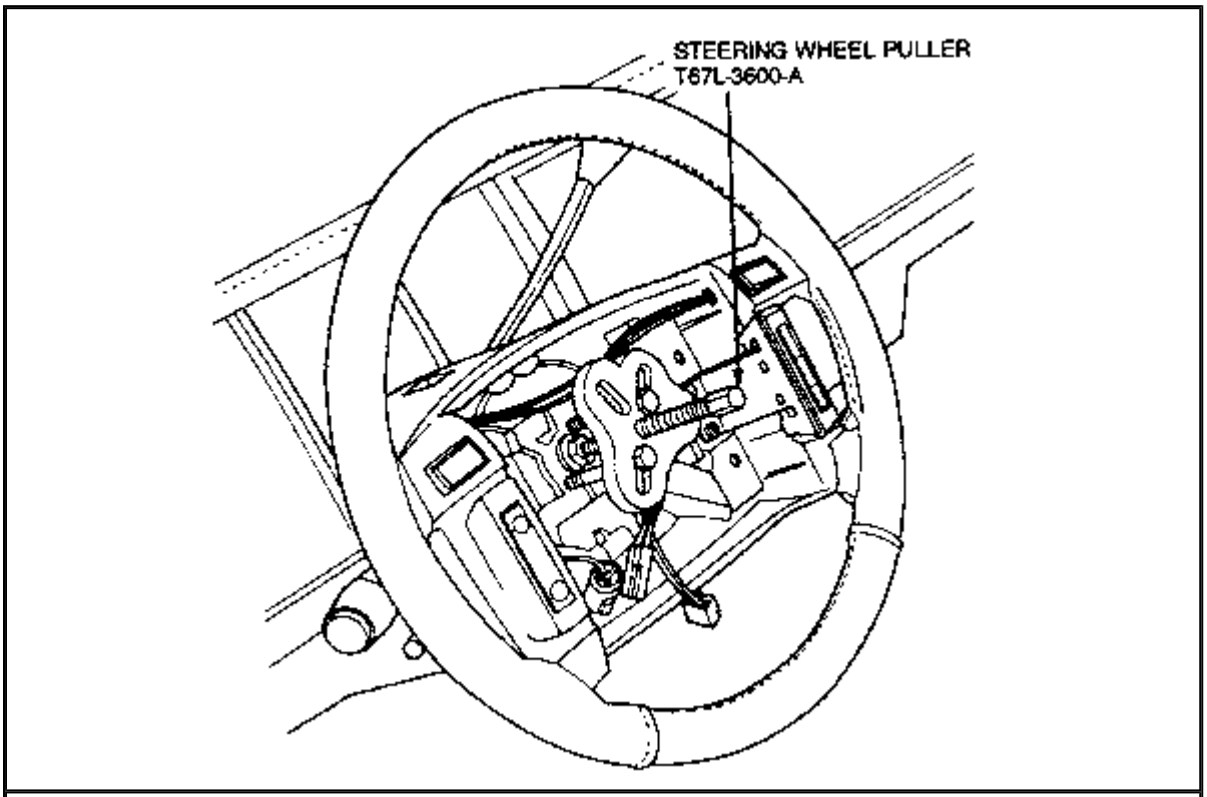
Click to enlarge

4. **For 1994-95 vehicles and SHO vehicles only, remove the two steering wheel back cover plugs. Remove the two air bag module retaining bolts, then lift the module off of the steering wheel. Disconnect the air bag wire harness from the air bag module, then remove the module from the steering wheel.**

CAUTION

When carrying a live air bag, make sure the bag and trim cover are pointed away from the body. In the unlikely event of an accidental deployment, the bag will then deploy with minimal chance of injury. In addition, when placing a live air bag on a bench or other surface, always face the bag and trim cover up, away from the surface. This will reduce the chance of personal injury if it is accidentally deployed.

5. **Disconnect the cruise control wire harness from the steering wheel. Remove and discard the steering wheel retaining bolt.**
6. **Install Steering Wheel Puller T67L-3600-A or equivalent, and remove the steering wheel. Route the contact assembly wire harness through the steering wheel as the wheel is lifted off the shaft.**



Installation of a suitable steering wheel puller

Click to enlarge

To install:

7. **Make sure the vehicle's front wheels are in the straight-ahead position.**
8. **Route the contact assembly wire harness through the steering wheel opening at the 3 o'clock position and install the steering wheel on the shaft. The steering wheel and shaft alignment marks should be aligned. Make sure the air bag contact wire is not pinched.**
9. **Install a new steering wheel retaining bolt, then tighten to 23-33 ft. lbs. (31-45 Nm).**

Be sure the wiring does not get trapped between the steering wheel and the contact assembly.

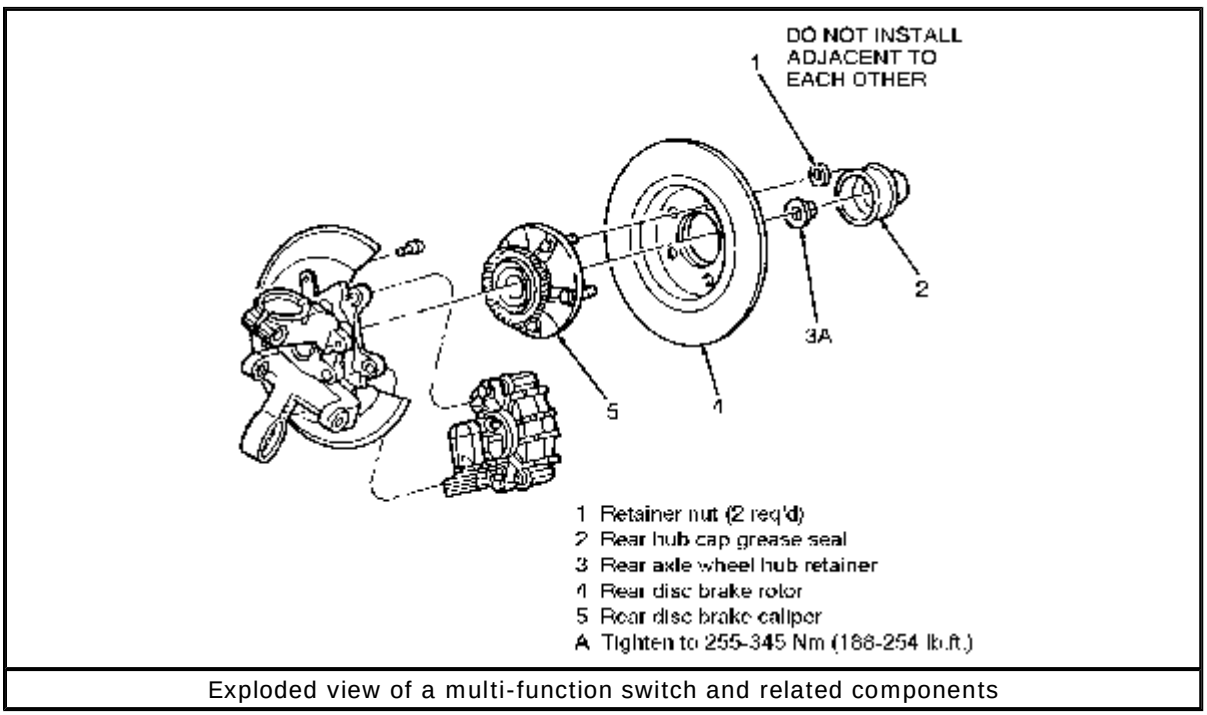
10. **Connect the cruise control wire harness to the wheel, then snap the connector assembly into the steering wheel clip.**
11. **Connect the air bag wire harness to the air bag module, then install the module to the steering wheel. For 1990-93 vehicles except SHO, tighten the module retaining nuts to 36-47 inch lbs. (4-5.4 Nm). For 1994 vehicles and 1990-94 SHO vehicles, tighten the retaining screws to 7.5-10 ft. lbs. (10-14 Nm), then install the back cover plugs. For 1995 vehicles, tighten the retaining screws to 36-47 inch lbs. (4-5 Nm).**
12. **Connect the air bag backup power supply and the negative battery cable. Check the air bag warning indicator.**

Multi-Function Switch

The multi-function switch incorporates the turn signal, headlight dimmer, headlight flash-to-pass, hazard warning, cornering lights and windshield washer/wiper functions.

REMOVAL & INSTALLATION

1. **Disconnect the negative battery cable.**
2. **If equipped with a tilt steering column, set the tilt column to its lowest position, then remove the tilt lever by removing the Allen® head retaining screw.**
3. **Remove the ignition lock cylinder.**
4. **Remove the steering column shroud screws, then remove the upper and lower shrouds.**
5. **For vehicles through 1989, unfasten the wiring harness retainer, then disengage the three electrical connectors.**
6. **Remove the self-tapping screws attaching the switch to the steering column, then disengage the switch from the steering column casting.**
7. **For 1990-95 vehicles, disengage the two or three electrical connectors, depending upon vehicle application.**



Exploded view of a multi-function switch and related components

Click to enlarge

To install:

8. **For 1990-95 vehicles, engage the electrical connectors.**
9. **Align the turn signal switch mounting holes with the corresponding holes in the steering column and install self-tapping screws. Tighten the screws to 17-26 inch lbs. (2-3 Nm).**
10. **For vehicles through 1989, engage the electrical connectors, then install the wiring**

harness retainer.

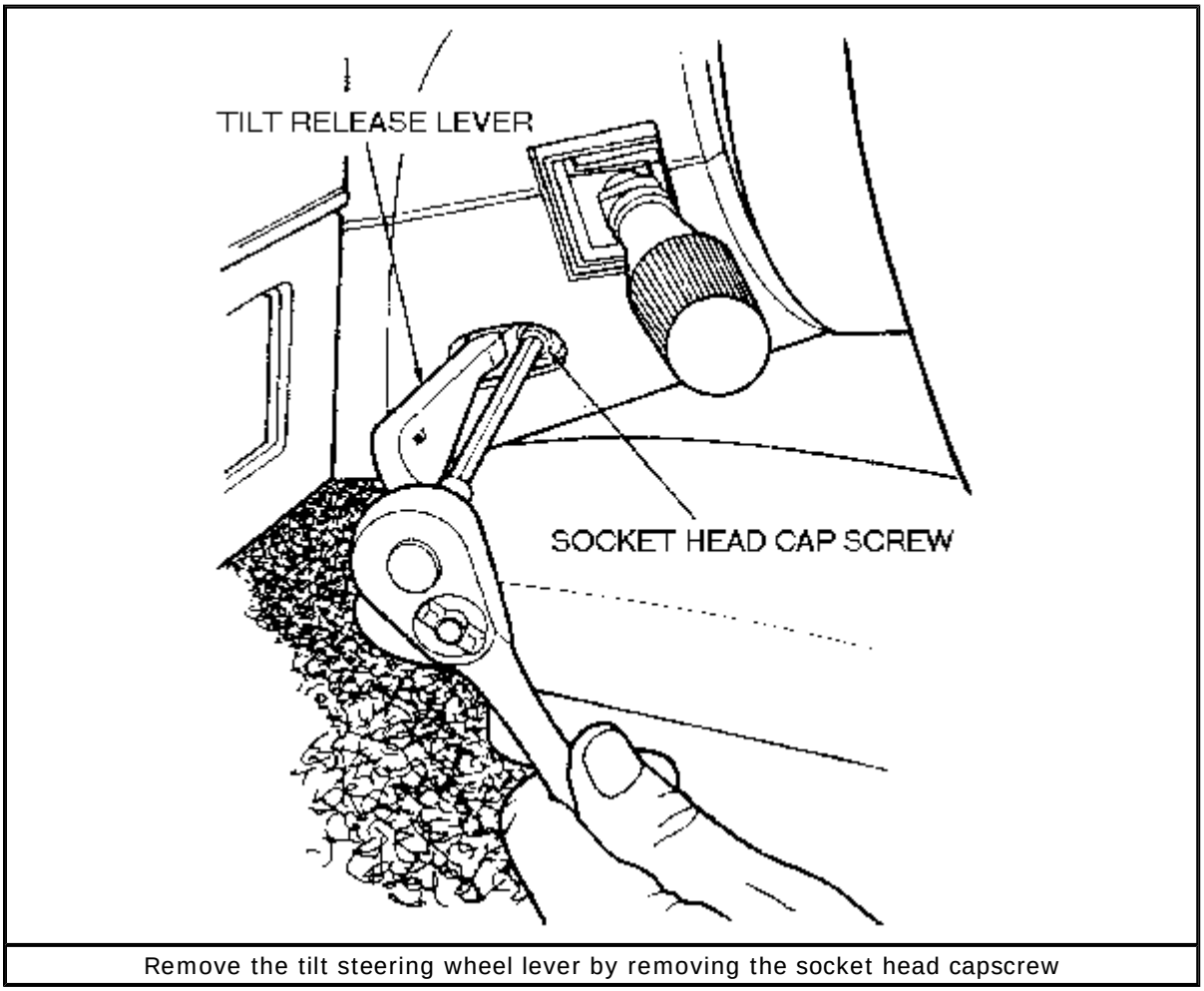
11. Install the upper and lower steering column shroud and shroud retaining screws; tighten the screws to 6-10 inch lbs. (0.7-1.1 Nm).
12. Install the ignition lock cylinder.
13. Attach the tilt lever, if removed, then tighten the tilt lever Allen® head retaining screw to 6-9 inch lbs. (0.7-1.0 Nm).
14. Connect the negative battery cable. Check the switch and the steering column for proper operation.

Ignition Switch

REMOVAL & INSTALLATION

1986-89 Vehicles

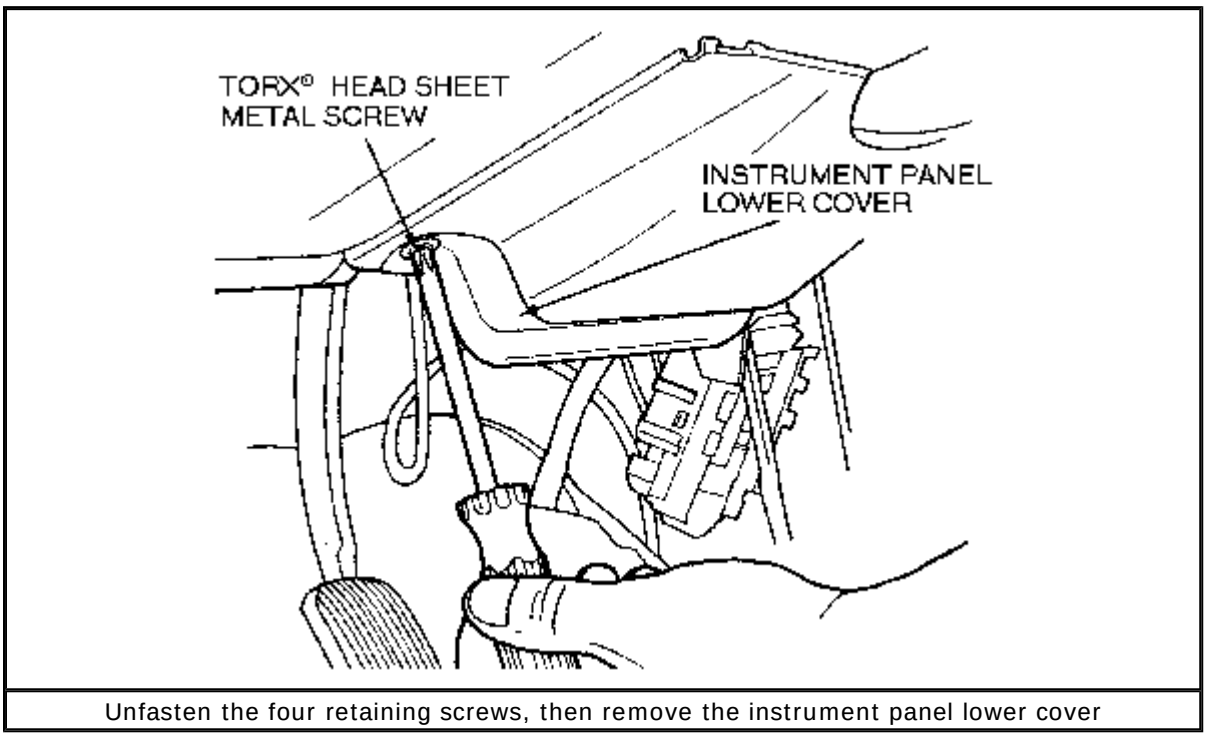
1. Disconnect the negative battery cable.
2. Turn the ignition lock cylinder to the RUN position. Depress the lock cylinder retaining pin through the access hole in the shroud with a $^{1}/_{8}$ diameter punch, then remove the lock cylinder.
3. If equipped with tilt columns, remove the tilt release lever after unfastening the retaining screw.



Remove the tilt steering wheel lever by removing the socket head capscrew

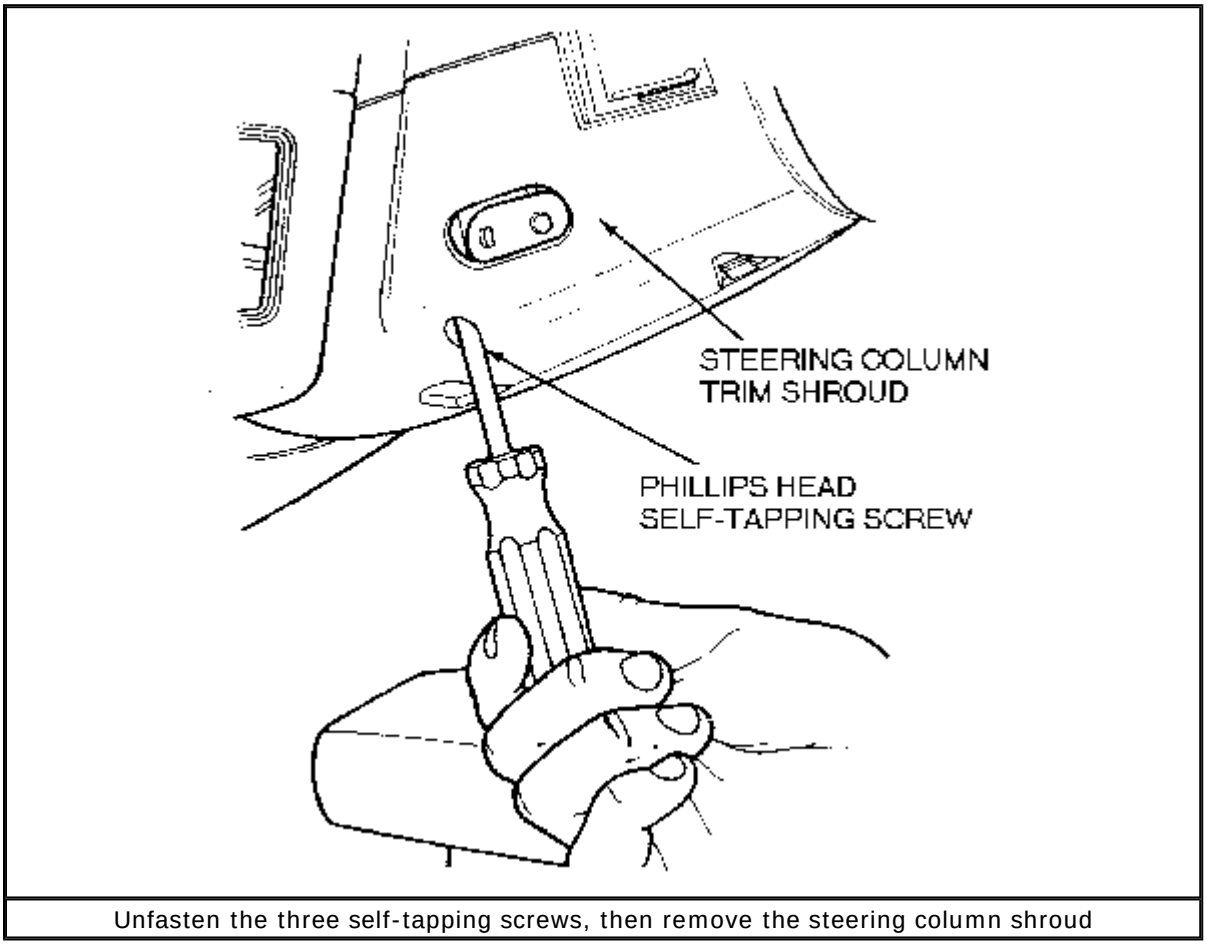
Click to enlarge

4. **Remove the instrument panel lower cover and the steering column shroud after removing the retaining screws.**



Unfasten the four retaining screws, then remove the instrument panel lower cover

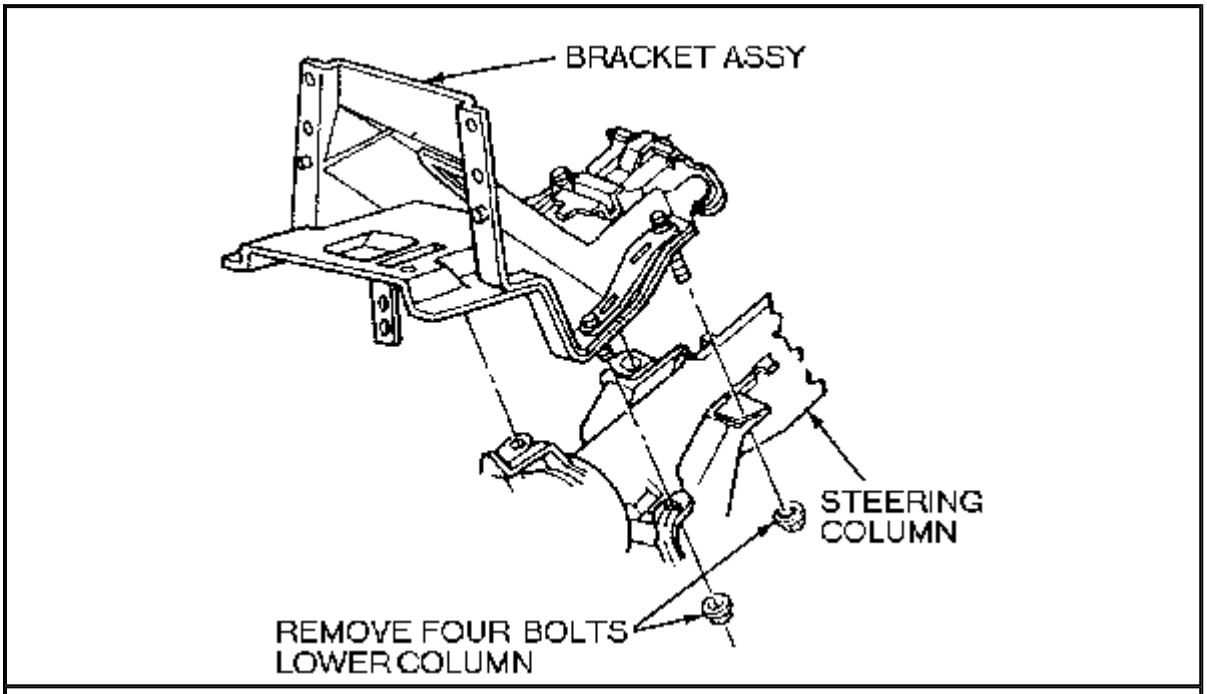
Click to enlarge



Unfasten the three self-tapping screws, then remove the steering column shroud

Click to enlarge

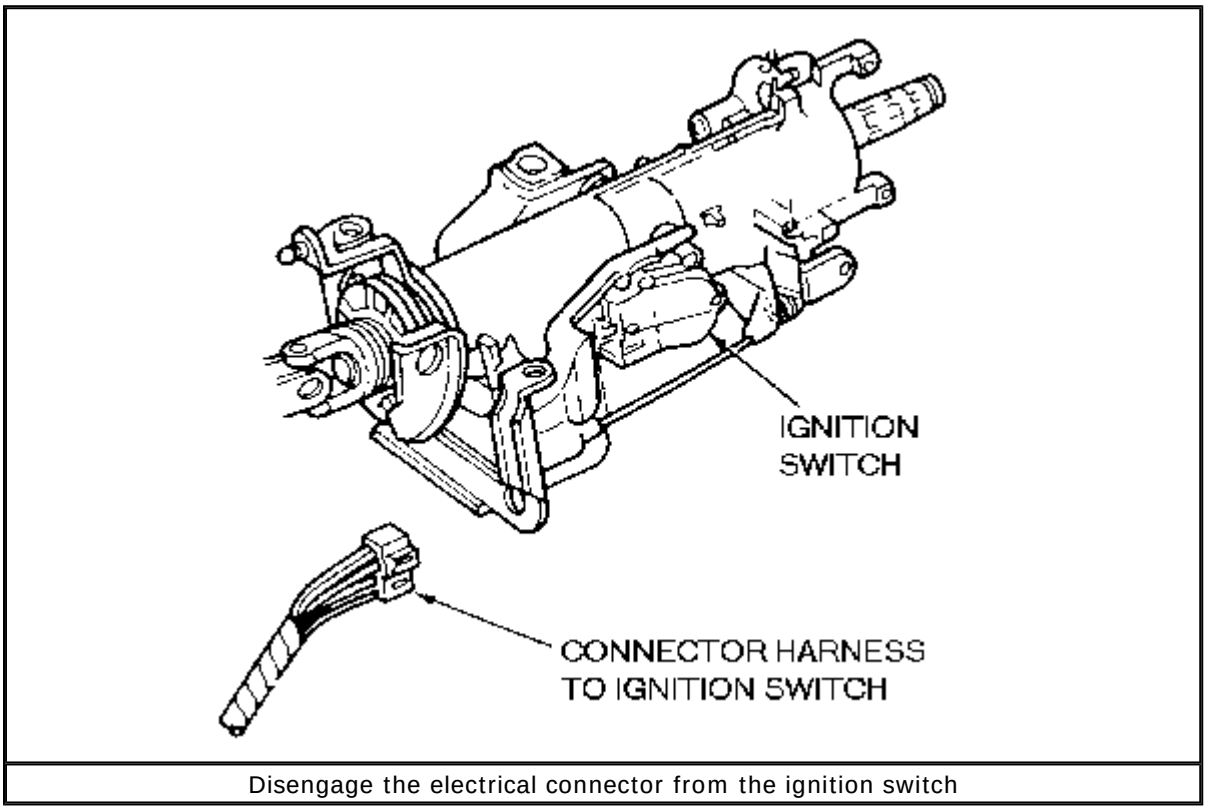
5. **Remove the four nuts attaching the steering column to the support bracket, then lower the column.**



Lower the steering column by removing the four nuts attaching the column to the support bracket

Click to enlarge

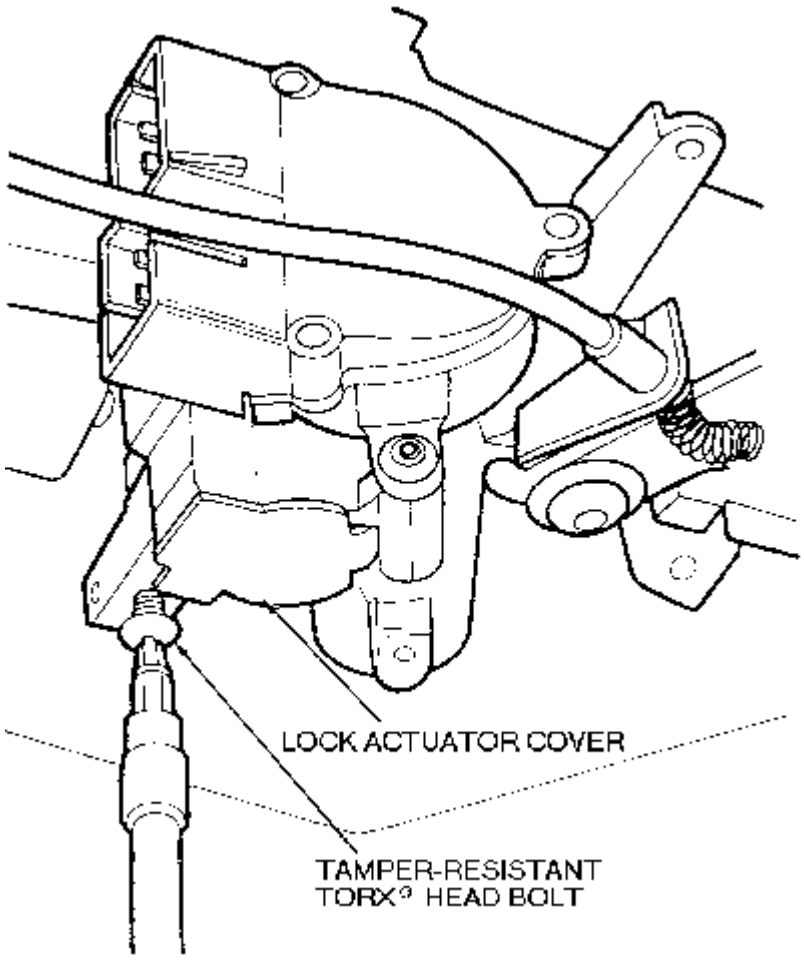
6. **Disengage the ignition switch electrical connector.**



Disengage the electrical connector from the ignition switch

Click to enlarge

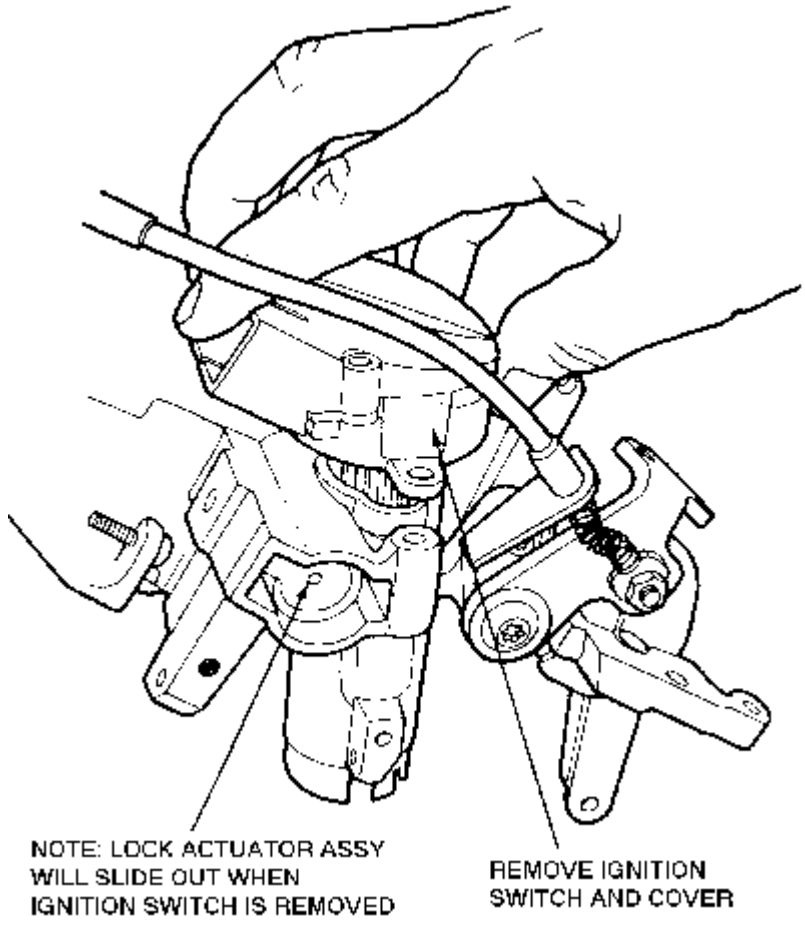
7. **Remove the lock actuator cover plate by removing the Torx® head bolt. The lock actuator assembly will slide freely out of the lock cylinder housing when the ignition switch is removed.**



Remove the lock actuator cover plate by removing the Torx® head bolt. The lock actuator assembly will slide freely out of the lock cylinder housing when the ignition switch is removed

Click to enlarge

8. **Remove the ignition switch and cover after unfastening the two bolts with Torx® Driver D83L-2100-A or equivalent.**

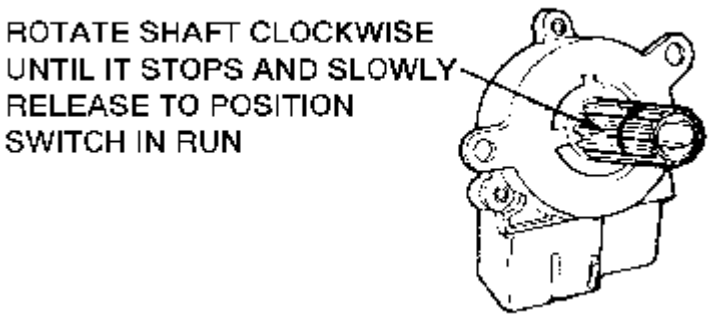


Remove the ignition switch and cover by removing the two bolts with Torx® Driver D83L-2100-A or equivalent

Click to enlarge

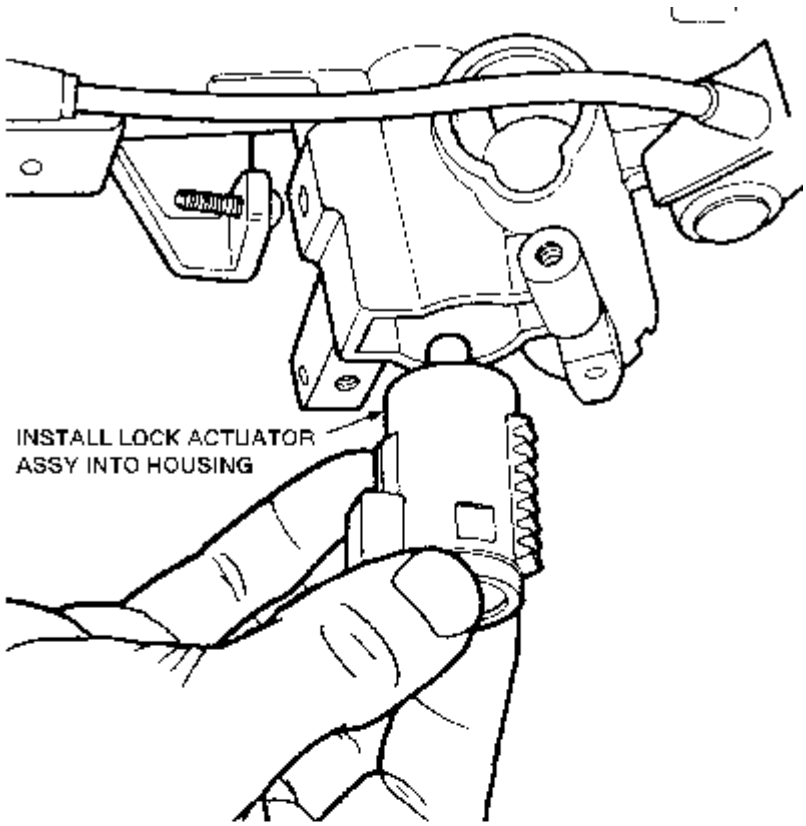
To install:

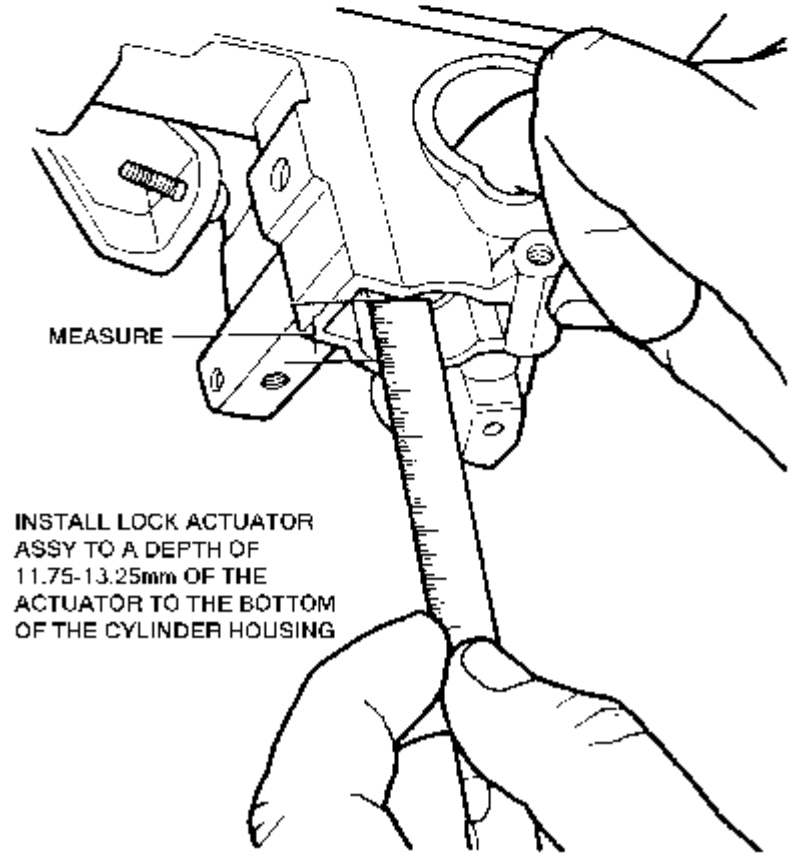
9. **Make sure the ignition switch is in the RUN position by rotating the driveshaft fully clockwise to the START position and releasing.**



Make sure the ignition switch is in the "RUN'' position by rotating the driveshaft fully clockwise to the "START'' position and releasing

10. **Install the lock actuator assembly at a depth of 0.46-0.52 in. (11.75-13.25mm) from the bottom of the actuator assembly to the bottom of the lock cylinder housing.**

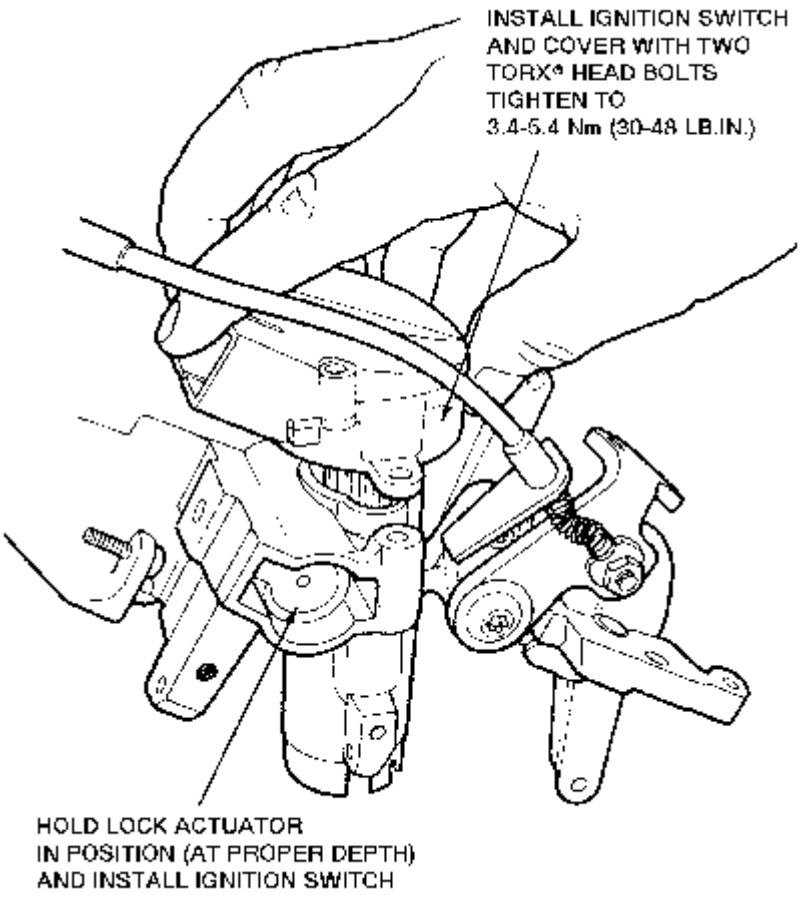




Installing and measuring the depth of the lock actuator assembly

Click to enlarge

11. **While holding the actuator assembly at the proper depth, install the ignition switch. Install the ignition switch cover and tighten the retaining bolts to 30-48 inch lbs. (3.4-5.4 Nm).**

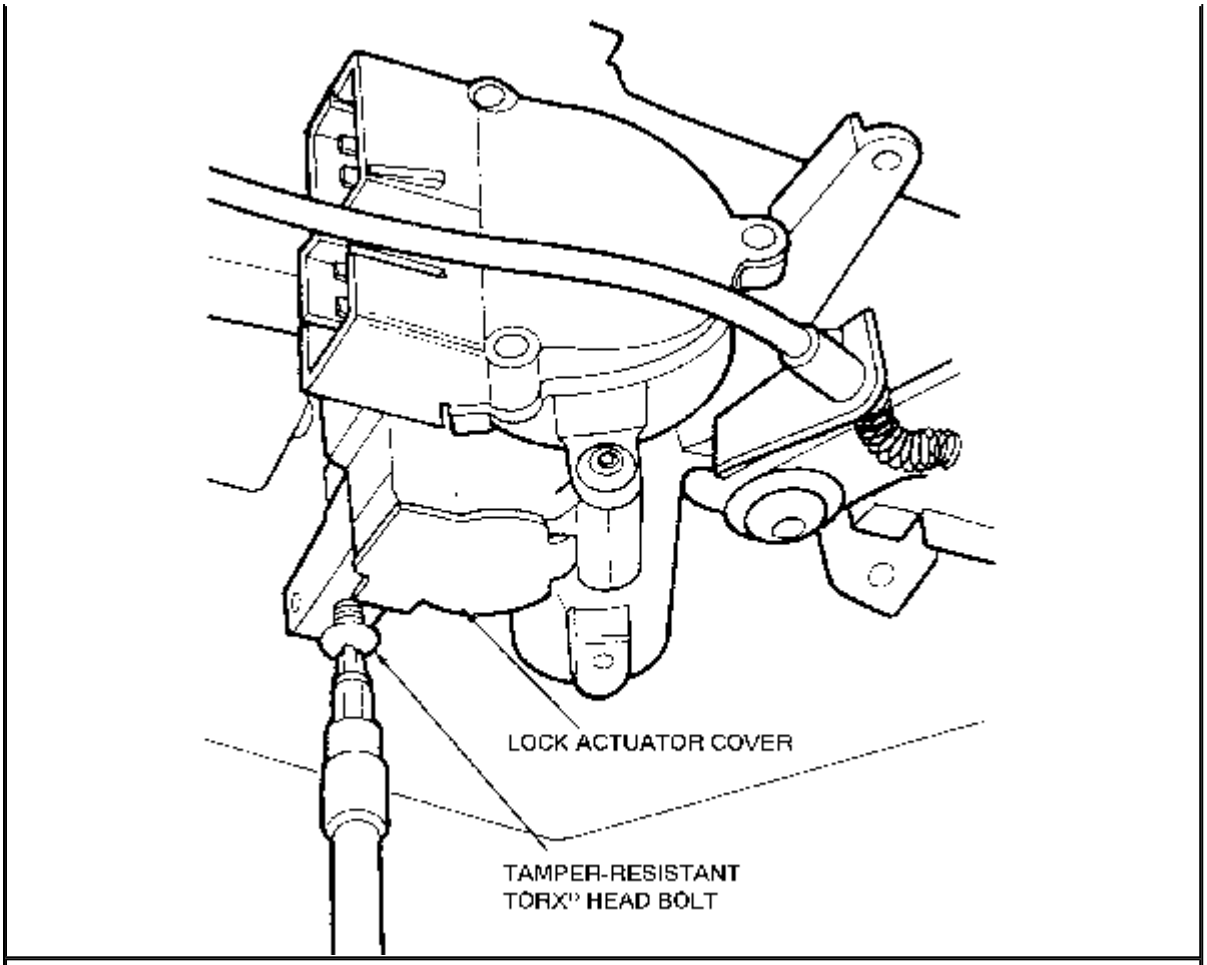


Hold the actuator assembly in place, then install the ignition switch and secure using the retaining bolts

Click to enlarge

12. **Install the lock cylinder. Rotate the ignition lock cylinder to the LOCK position and measure the depth of the actuator assembly as in Step 10. The actuator assembly must be 0.92-1.00 in. (23.5-25.5mm) inside the lock cylinder housing. If the depth measured does not meet specification, the actuator assembly must be removed and installed again.**

13. **Install the lock actuator cover plate, then tighten the bolt to 30-48 inch lbs. (3.4-5.4 Nm).**

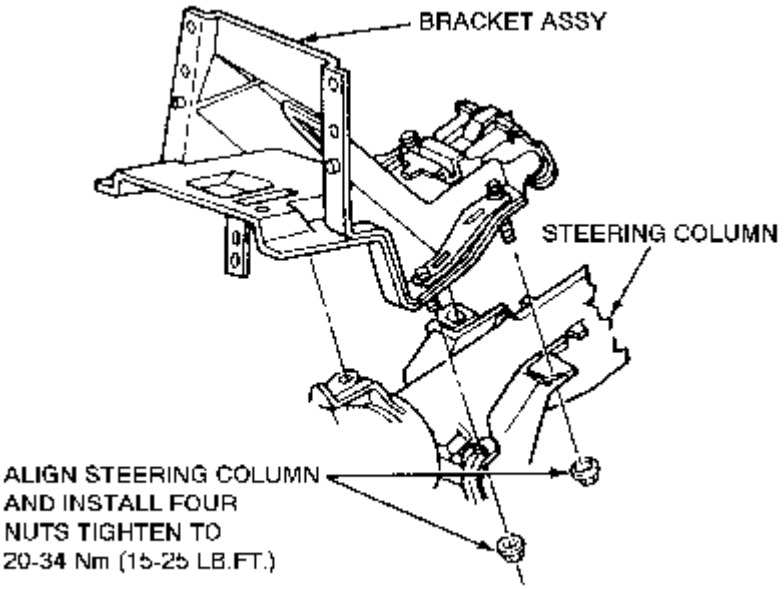


Install the lock actuator cover plate, securing it with the Torx® head bolt

Click to enlarge

14. **Engage the ignition switch electrical connector.**
15. **Connect the negative battery cable. Check the ignition switch for proper function in all positions, including START and ACC.**
16. **Check the column function as follows:**
    1. **With the column shift lever in the P position or with the floor shift key release button depressed, and with the ignition lock cylinder in the LOCK position, make certain the steering column locks.**
    2. **Position the column shift lever in the D position or the floor shift key release button fully extended, and rotate the cylinder lock to the RUN position. Continue to rotate the cylinder toward the LOCK position until it stops. In this position, make certain the engine and all electrical accessories are OFF and that the steering shaft does not lock.**
    3. **Turn the radio power button ON. Rotate the cylinder counterclockwise to the ACC position to verify that the radio is energized.**
    4. **Place the shift lever in P and rotate the cylinder clockwise to the START position to verify that the starter energizes.**
17. **Remove the ignition lock cylinder.**

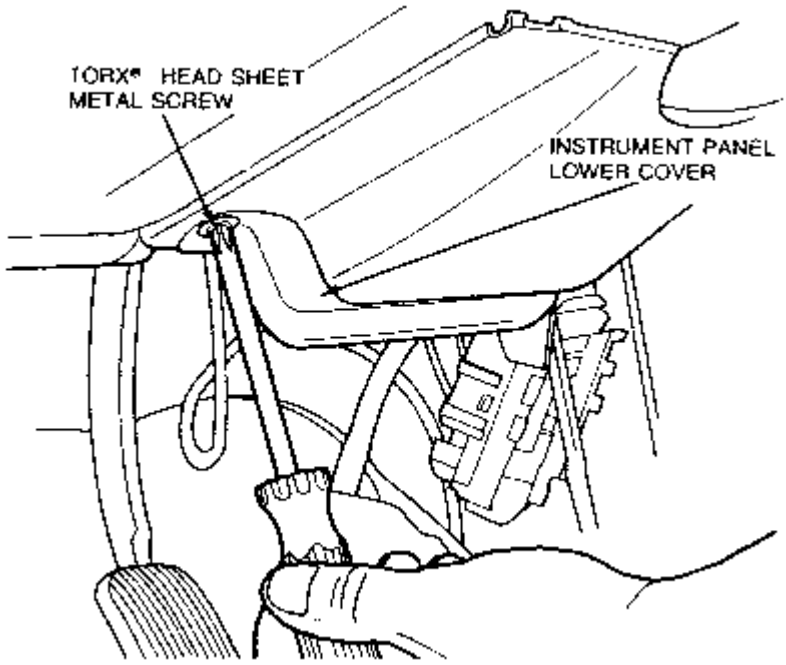
18. **Align the steering column mounting holes with the support bracket, center the steering column in the instrument panel opening, then install the four nuts. Tighten the nuts to 15-25 ft. lbs. (20-34 Nm).**



Align the steering column mounting holes with the support bracket, center the steering column in the instrument panel opening, then install the four retaining nuts

Click to enlarge

19. **Install the column trim shrouds and the instrument panel lower cover. Install the tilt release lever, if equipped.**



Install the instrument panel lower cover, then secure using the four retaining screws

Click to enlarge

20. Install the ignition lock cylinder.
21. For vehicle equipped with tilt columns, check the tilt travel to be sure there is no interference between the column and the instrument panel.

1990-95 Vehicles

1. Disconnect the negative battery cable.
2. Remove the upper steering column shroud after removing the four or five self-tapping screws.
3. If equipped, remove the tilt lever.
4. Remove the instrument panel lower steering column cover.
5. Disengage the ignition switch electrical connector.
6. Turn the ignition key lock cylinder to the RUN position.
7. Remove the two screws attaching the ignition switch, then disengage the switch from the actuator pin.

To install:

8. Adjust the ignition switch by sliding the carrier to the RUN position. A new replacement switch assembly will already be set in the RUN position.
9. Make sure the ignition key lock cylinder is in the RUN position. The RUN position is achieved by rotating the key lock cylinder approximately 90 degrees from the lock position.
10. Install the ignition switch into the actuator pin. It may be necessary to move the switch slightly back and forth to align the switch mounting holes with the column lock housing threaded holes.
11. Install the attaching screws and tighten to 50-69 inch lbs. (5.6-7.9 Nm).
12. Engage the ignition switch electrical connector.
13. Connect the negative battery cable.
14. Check the ignition switch for proper function, including START and ACC positions. Make sure the column is locked with the switch in the LOCK position.
15. Install the instrument panel lower steering column cover, the steering column trim shrouds and, if applicable, the tilt lever.

Ignition Lock Cylinder

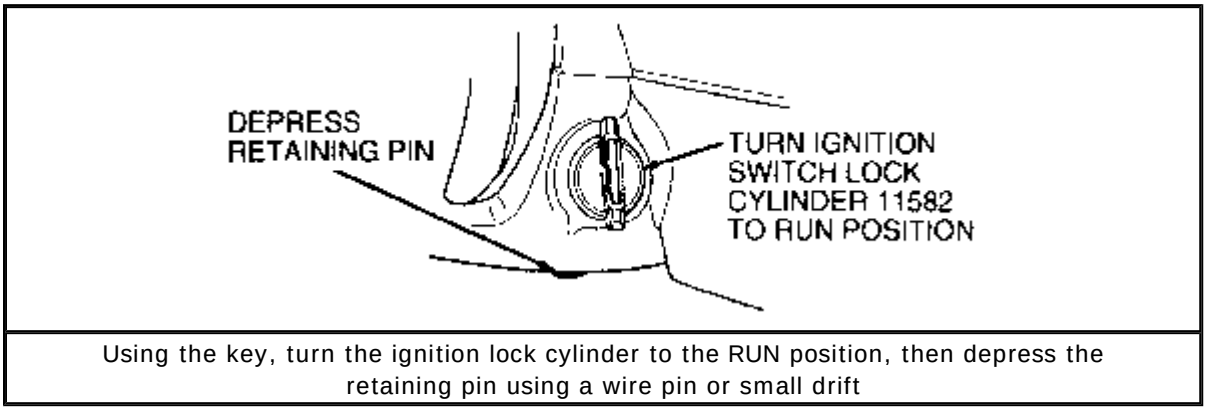
REMOVAL & INSTALLATION

Functional Lock

The following procedure applies to vehicles that have functional lock cylinders. Such cylinders either have a key available or known key numbers from which a key can be made.

1. Disconnect the negative battery cable.
2. Turn the lock cylinder key to the RUN position.
3. Using a $^{1}/_{8}$ in. (3mm) diameter wire pin or a small drift, depress the lock cylinder retaining pin through the access hole in the upper steering column shroud (under

the ignition lock cylinder) while pulling out on the lock cylinder. Remove the lock cylinder from the column.



Using the key, turn the ignition lock cylinder to the RUN position, then depress the retaining pin using a wire pin or small drift

Click to enlarge

To install:

4. **Install the lock cylinder by turning it to the RUN position and depressing the retaining pin. Insert the lock cylinder into its housing. Make sure the cylinder is fully seated and aligned in the interlocking washer before turning the key to the OFF position. This will permit the cylinder retaining pin to extend into the cylinder housing.**
5. **Rotate the lock cylinder using the lock cylinder key, to ensure correct mechanical operation in all positions.**
6. **Connect the negative battery cable.**

Non-Functional Lock

The following procedure applies to vehicles in which the ignition lock is inoperative and the lock cylinder cannot be rotated due to a lost or broken key, unknown key number or a lock cylinder cap that has been damaged and/or broken to the extent that the lock cylinder cannot be rotated.

1986-90 VEHICLES

1. **Disconnect the negative battery cable.**
2. **Remove the steering wheel. For details, please refer to the procedure located earlier in this section.**
3. **Remove the two trim shroud halves after removing the three attaching screws.**
4. **Disengage the electrical connector from the key warning switch.**
5. **Using a $^{1}/_{8}$ in. (3mm) diameter drill, carefully drill out the retaining pin, being careful not to drill deeper than $^{1}/_{2}$ in. (13mm).**
6. **Place a suitable chisel at the base of the ignition lock cylinder cap, then, using a suitable hammer, strike the chisel with sharp blows to break the cap away from the lock cylinder.**
7. **Using a $^{3}/_{8}$ in. (10mm) diameter drill, carefully drill down the middle of the ignition key slot approximately $1^{3}/_{4}$ in. (44mm) until the lock cylinder breaks loose from its breakaway base. Remove the lock cylinder and drill shavings from the lock cylinder housing.**
8. **Remove the retainer, washer, ignition switch and actuator. Thoroughly clean all**

the drill shavings from the casting.

9. Inspect the lock cylinder housing for damage from the removal operation.

To install:

10. Replace the lock cylinder housing if it was damaged.
11. Install the actuator and ignition switch.
12. Install the trim and electrical parts.
13. Install a new ignition lock cylinder.
14. Install the steering wheel. For details, please refer to the procedure located earlier in this section.
15. Connect the negative battery cable.
16. Check the lock cylinder operation.

1991-95 VEHICLES

1. Disconnect the negative battery cable.
2. Remove the steering wheel.
3. Using locking pliers, twist the cylinder cap until it separates from the lock cylinder.
4. Using a $^{3}/_{8}$ in. (10mm) diameter drill bit, drill down the middle of the ignition lock key slot approximately $1^{3}/_{4}$ in. (44mm) until the lock cylinder releases from its breakaway base. Remove the lock cylinder and drill shavings from the lock cylinder housing.
5. Remove the retainer, washer, ignition switch and actuator. Thoroughly clean all drill shavings and other foreign materials from the casting.
6. Inspect the lock cylinder housing for damage from the removal operation. If the housing is damaged, it must be replaced.

To install:

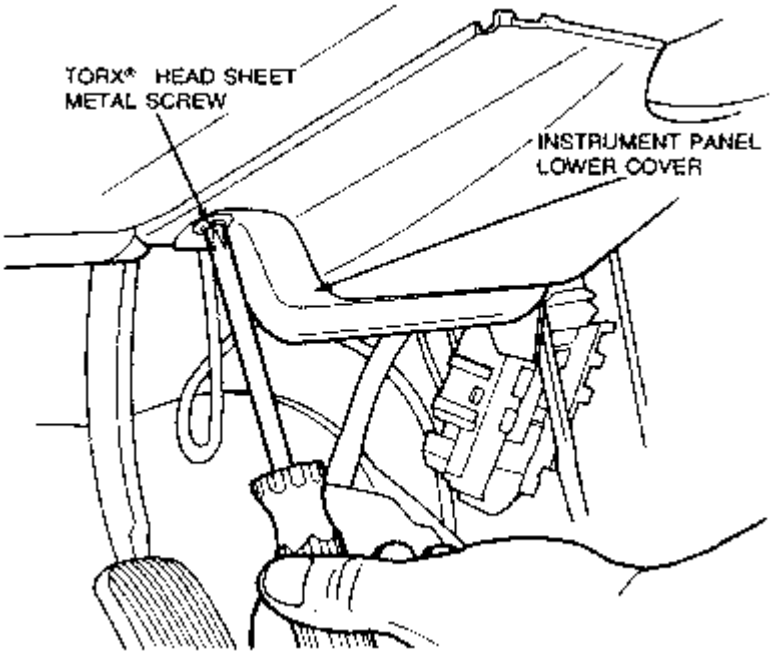
7. Replace the lock cylinder housing, if damaged.
8. Install the actuator and ignition switch.
9. Install the trim and electrical parts.
10. Install the ignition lock cylinder.
11. Install the steering wheel.
12. Connect the negative battery cable, then check the lock cylinder operation.

Steering Column

REMOVAL & INSTALLATION

1986-89 Vehicles

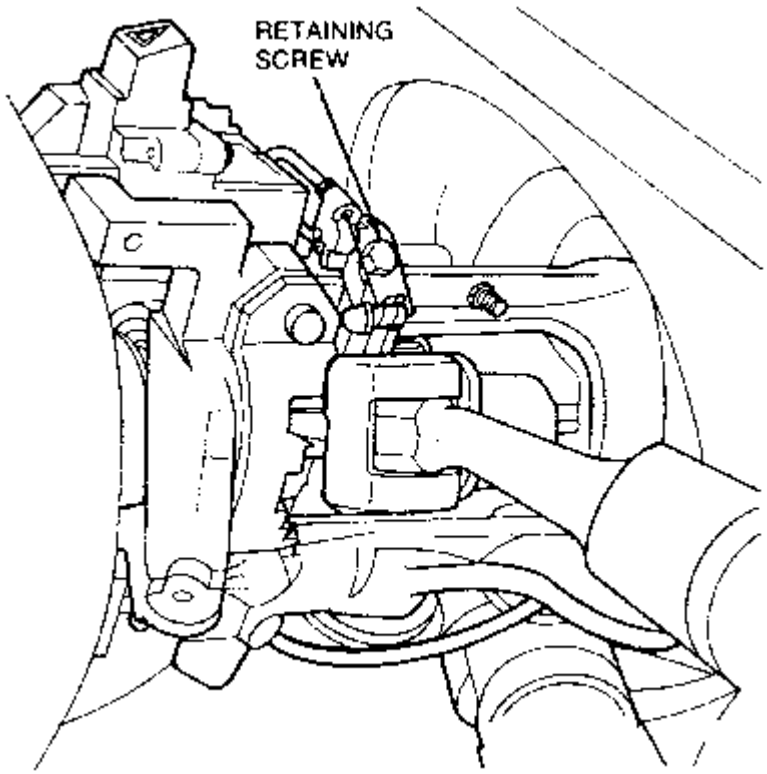
1. Disconnect the negative battery cable.
2. Remove the four self-tapping screws, then remove the steering column cover from the lower portion of the instrument panel.



Remove the four self-tapping screws, then remove the steering column cover from the lower portion of the instrument panel

Click to enlarge

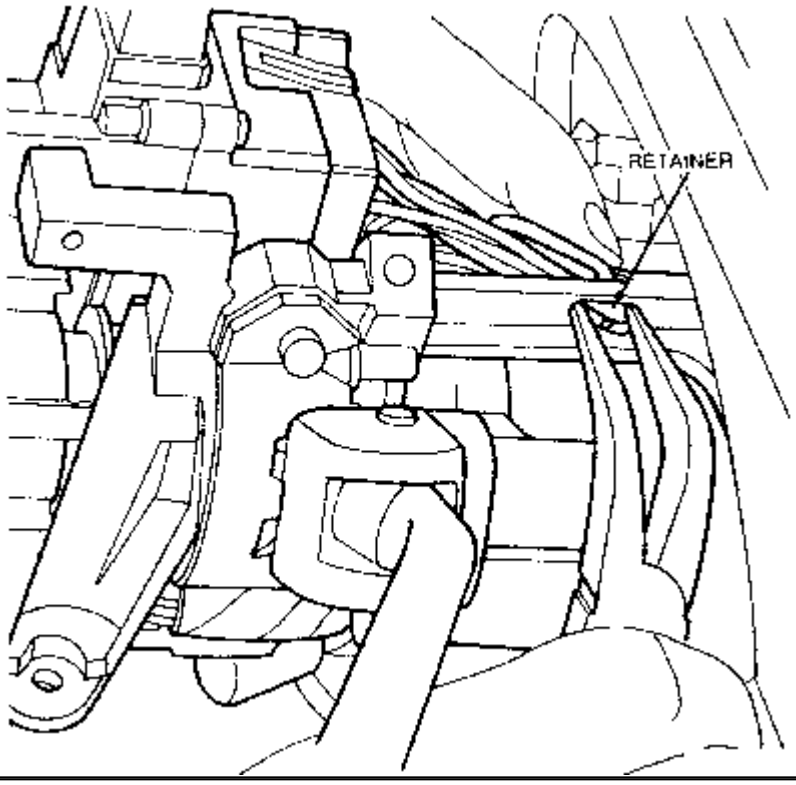
3. **Unfasten the retaining screw, then remove the tilt release lever.**
4. **Remove the ignition lock cylinder.**
5. **Remove the 3 self-tapping screws from the bottom of the lower shroud, then remove the steering column trim shrouds. Remove the horn pad and steering wheel assembly.**
6. **If equipped with column shift, perform the following:**
    1. **Disconnect the shift position indicator cable from the lock cylinder housing by removing the retaining screw.**
    2. **Disconnect the shift position indicator cable from the shift socket.**
    3. **Remove the shift position indicator cable from the retaining hook on the bottom of the lock cylinder housing.**



If equipped with column shift, disconnect the shift position indicator cable from the lock cylinder housing by removing the retaining screw

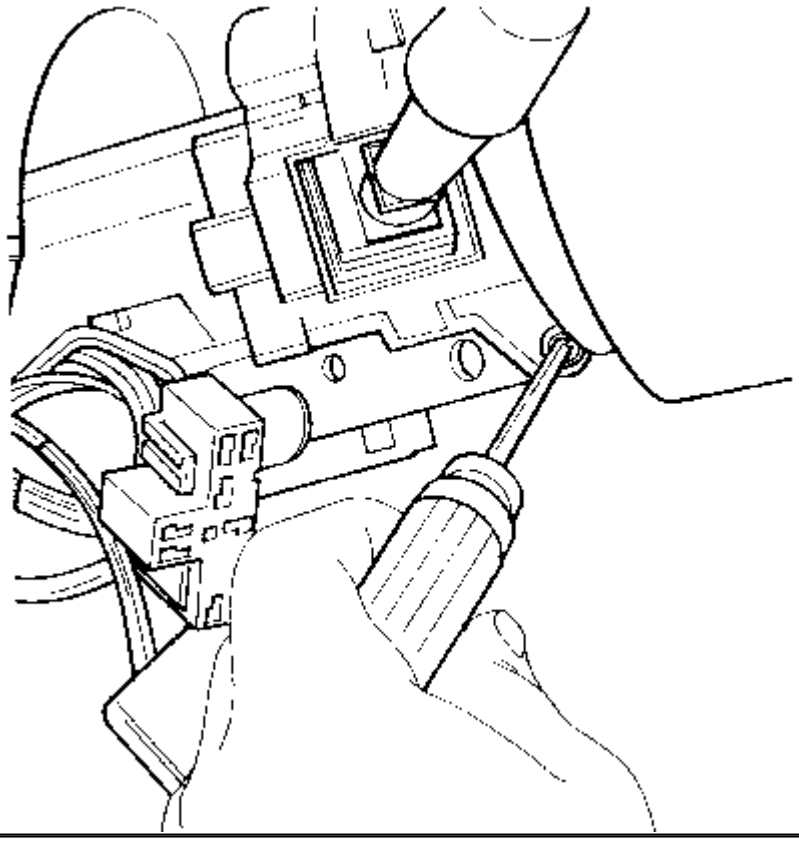
Click to enlarge

7. **Using a punch, remove the shift lever-to-shift socket retaining pin, then remove the shift lever.**
8. **Disengage the cruise control/horn brush wiring connector from the main wiring harness.**
9. **Remove the multi-function/combination switch wiring harness retainer from the lock cylinder housing by squeezing the end of the retainer and pushing out. Disengage the multi-function/combination switch connector, then unfasten the two self-tapping retaining screws and remove the multi-function/combination switch.**



Remove the multi-function/combination switch wiring harness retainer from the lock cylinder housing by squeezing the end of the retainer and pushing out

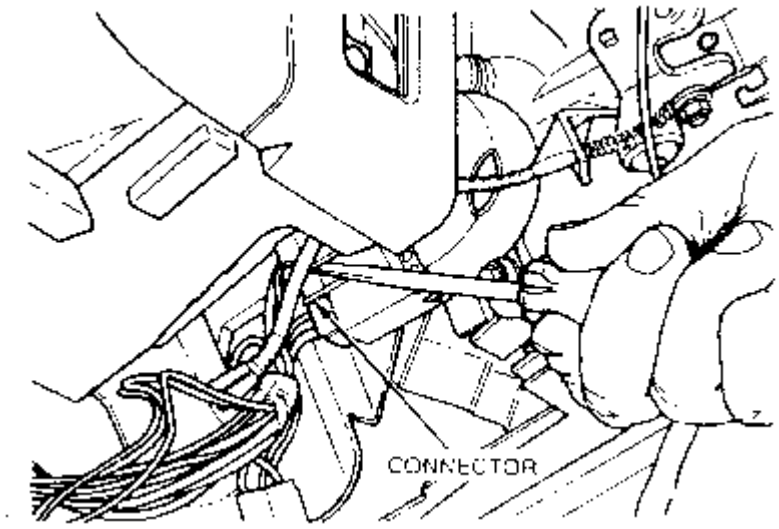
Click to enlarge



Disengage the multi-function/combination switch connector, remove the two self-tapping retaining screws, then remove the multi-function/combination switch

10. Disengage the key warning buzzer switch wiring connector from the main wiring

harness and the wiring connector from the ignition switch.



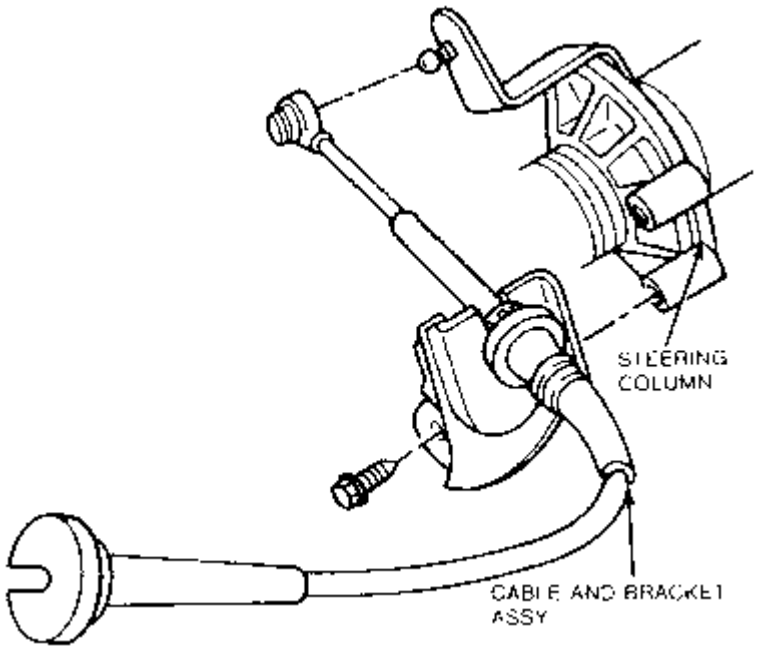
Location of the ignition switch wiring connector

Click to enlarge

11. **Disconnect the steering shaft from the intermediate shaft after removing the two nuts and U-clamp. If equipped with an air bag, wire the lower end of the steering shaft to the column housing to prevent rotation of the steering shaft.**

Rotating the steering shaft could damage the air bag contact clockspring if the steering wheel is attached to the column.

12. **If equipped with column shift, perform the following:**
    1. **Remove the shift cable plastic terminal from the column selector lever pivot ball using a small prybar and prying between the plastic terminal and the selector lever. Be careful not to damage the cable during or after assembly.**
    2. **Remove the shift cable bracket, with shift cable still attached, from the lock cylinder housing by removing the two retaining screws.**

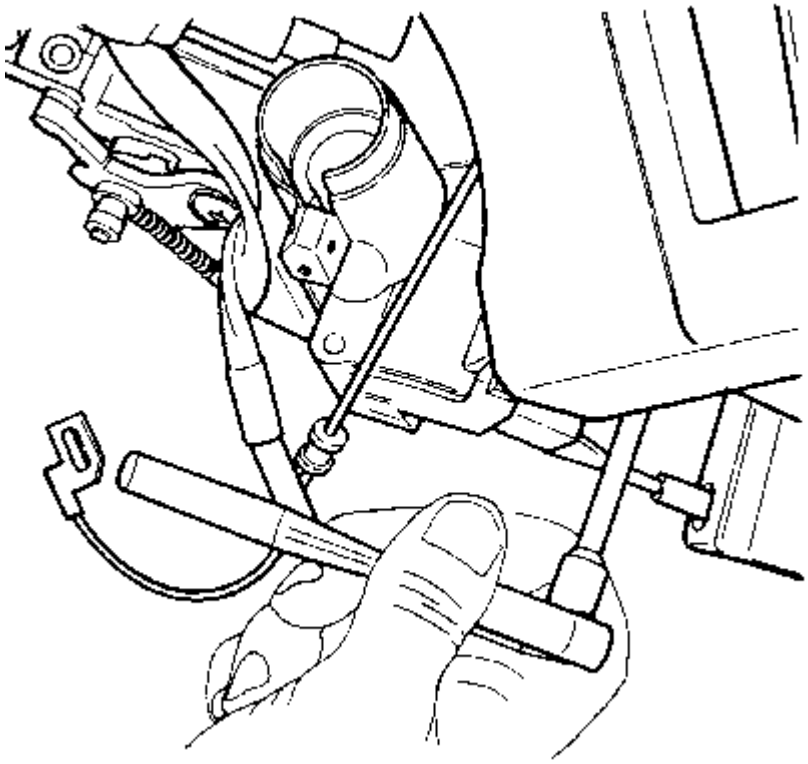


Remove the shift cable plastic terminal from the column selector lever pivot ball using a small prybar between the plastic terminal and the selector lever. Be careful not to damage the cable during or after assembly

Click to enlarge

13. **If equipped with an automatic parking brake release mechanism, remove the vacuum hoses from the parking brake release switch.**
14. **Remove the two nuts retaining the rear column assembly. Loosen the two nuts retaining the front column assembly to the end of the studs, but do not remove them at this time.**
15. **Use a downward force to disengage the column assembly push-on clips from the rear attachments, then remove the two remaining nuts.**

When forcing downward, be careful to avoid damaging the safety slip-clips on the steering column.



Use a downward force to disengage the column assembly push-on clips from the rear attachments, then remove the two remaining nuts

16. **Carefully lower the steering column assembly, then remove it from the vehicle.**

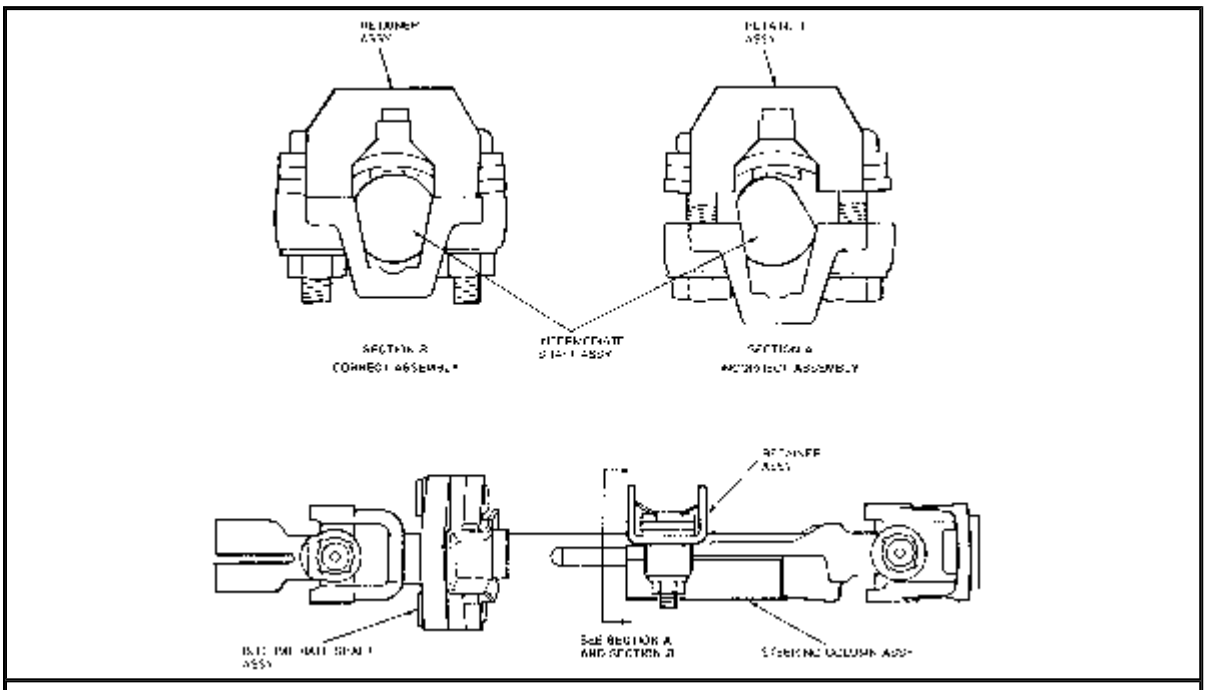
To install:

17. **Raise the steering column assembly into position, and align the four mounting holes over the four support bracket studs. Hand-start the 4 retaining nuts.**
18. **Center the column assembly in the instrument panel opening, then tighten the four nuts to 15-25 ft. lbs. (21-33 Nm).**
19. **If equipped with an automatic parking brake release mechanism, install the vacuum hoses on the parking brake release switch.**
20. **If equipped with column shift, perform the following:**
    1. **Attach the cable shift bracket, with the shift cable attached, to the lock cylinder housing, then tighten the retaining screws to 5-7 ft. lbs. (7-9 Nm).**
    2. **Snap the transaxle shift cable terminal to the selector lever pivot ball on the steering column.**
21. **Apply a generous amount of grease to the V-shaped steering shaft yoke. Connect the steering shaft to the intermediate shaft with the U-clamp and the two hex nuts. When installing the steering column to the intermediate shaft, connect the intermediate shaft to the steering column with the retainer assembly and two nuts.**

Make sure the V-angle of the intermediate shaft fits correctly into the V-angle of the mating steering column yoke. If the V-angle is misaligned and the retainer is tightened, the retainer plate will be bent, necessitating replacement.

22. **After correctly installing the steering column to the intermediate shaft, tighten the**

nuts to 15-25 ft. lbs. (21-33 Nm).



Correct and incorrect installation of the intermediate shaft

Click to enlarge

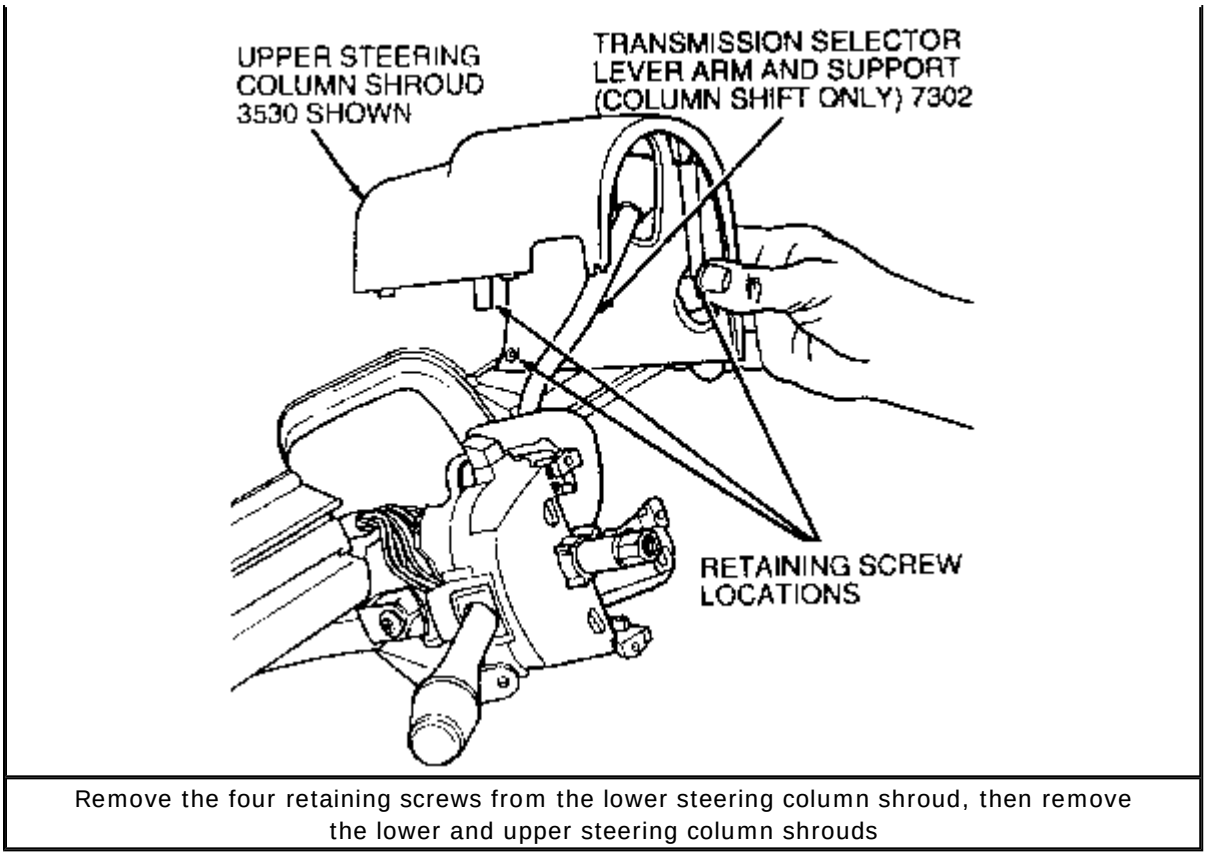
Tilt columns must be in the middle tilt position before the nuts are tightened.

23. **Engage the main wiring harness connector to the ignition switch, and the key warning buzzer switch wiring connector to the main harness. Attach the steering sensor wire connector to the sensor lead connector.**
24. **Install the combination switch, then tighten the two self-tapping screws to 18-26 inch lbs. (2.0-2.9 Nm). Install the combination switch wiring harness retainer over the shroud mounting boss, and snap it into the slot in the lock cylinder housing.**
25. **Engage the cruise control/horn brush wiring connector to the main wiring harness.**
26. **If equipped with column shift, install the shift position indicator cable into the retaining hook on the lock cylinder housing, connect the cable to the shift socket and loosely install the cable onto the lock cylinder housing with the screw. Adjust the shift position indicator cable as follows:**
    1. **Place the shift lever in D on Taurus equipped with the 2.5L engine. On all others, place the shift lever in OD. A weight of 8 lbs. (4 kg) should be hung on the shift selector lever to make sure the lever is firmly against the D or OD drive detent.**
    2. **Adjust the cable until the indicator pointer completely covers the D or OD, then tighten the screw to 18-30 inch lbs. (2.0-3.4 Nm).**
    3. **Cycle the shift lever through all positions and check that the shift position indicator completely covers the proper letter or number in each position.**
27. **Install the shift lever into the shift lever socket, then insert a new shift lever retaining pin. Use care to avoid damaging the shift position indicator post on the shift socket.**

28. Place the combination switch in the middle position, then install the steering wheel and horn pad assembly.
29. Install the shrouds with the retaining screws. Tighten to 6-10 inch lbs. (0.7-1.1 Nm). If equipped with a tilt column, install the tilt release lever and tighten the screw to 6.5-9.0 ft. lbs. (8.8-12 Nm).
30. Install the ignition lock cylinder. Install the steering column cover on the lower portion of the instrument panel with 4 self-tapping screws.
31. Connect the negative battery cable. Check the column function as follows:
    1. With the column shift lever in P position or the floor shift key release button depressed, and with the ignition switch in the LOCK position, make sure the steering column locks.
    2. With the column shift lever in D or with the floor shift key release button extended, and with the ignition switch in the RUN position, rotate the ignition switch toward the LOCK position until it stops. In this position, make sure that there is no power to the engine and/or accessories and that the steering shaft does not lock.
    3. On tilt columns, check column tilt travel through its entire range to make sure there is no interference between the column and instrument panel.
    4. Cycle the combination switch through all of its functions.

1990-95 Vehicles

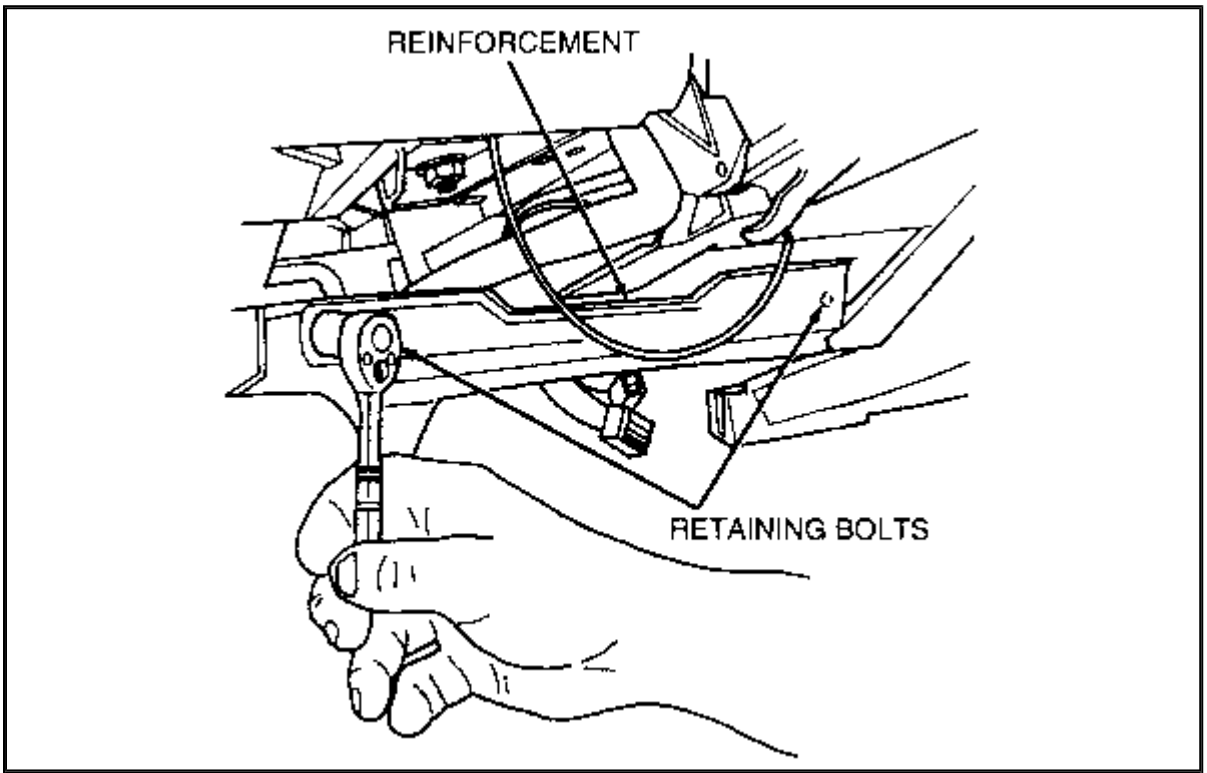
1. Disconnect the negative battery cable. Lower the glove compartment past its stops and disconnect the air bag backup power supply.
2. Make sure the vehicle's front wheels are in the straight-ahead position. Remove the steering wheel.
3. Remove the left and right lower mouldings from the instrument panel by pulling up and snapping out of the retainers.
4. Remove the instrument panel lower trim cover and the lower steering column shroud.
5. Disconnect the air bag clockspring contact assembly wire harness. Apply two strips of tape across the contact assembly stator and rotor to prevent accidental rotation. Remove the three contact assembly retaining screws, then pull the contact assembly off the steering column shaft.
6. Remove the tilt lever by unscrewing it from the column, then remove the four screws.
7. Rotate the ignition lock cylinder to the RUN position. Using a $^{1}/_{8}$ in. (3mm) drift, depress the lock cylinder retaining pin through the access hole, then remove the lock cylinder.
8. Remove the four retaining screws from the lower steering column shroud, then remove the lower and upper steering column shrouds.



Remove the four retaining screws from the lower steering column shroud, then remove the lower and upper steering column shrouds

Click to enlarge

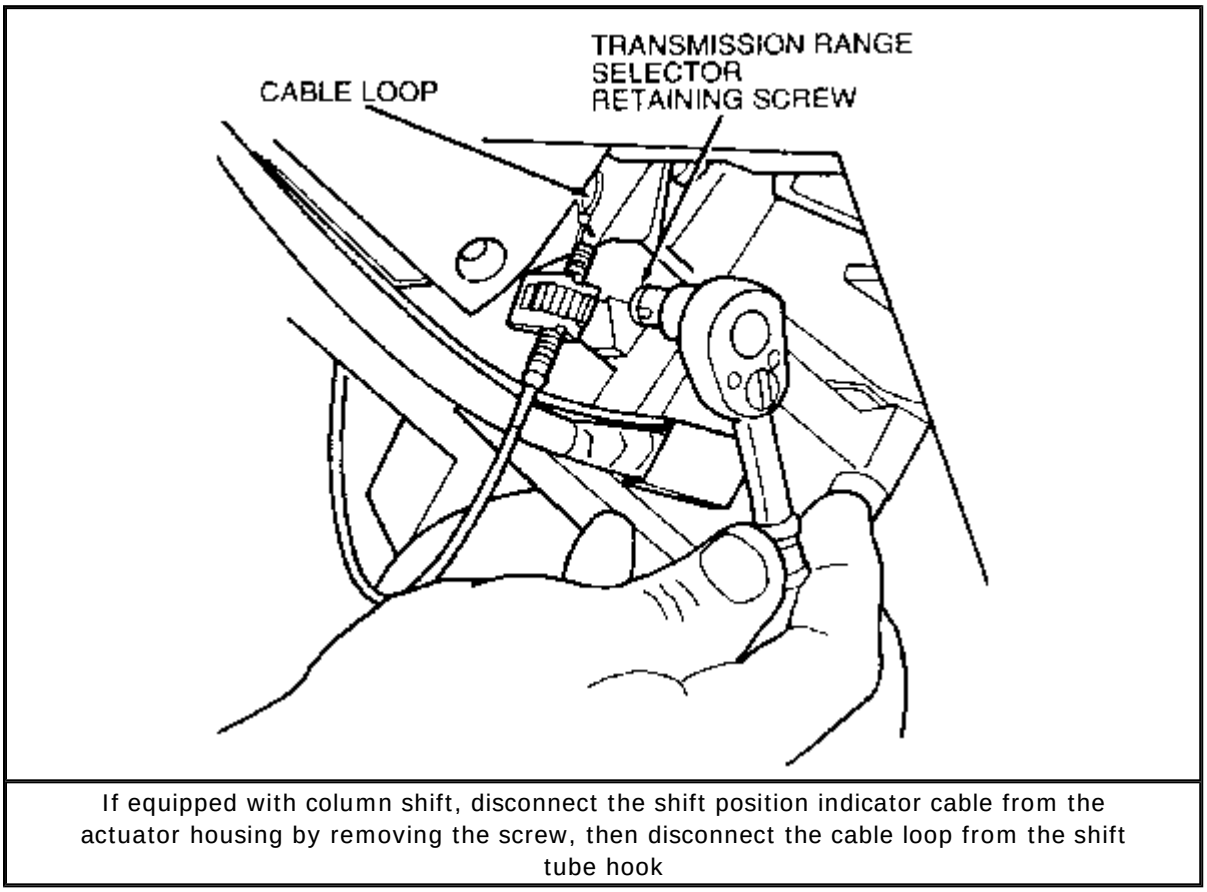
9. **Remove the two instrument panel reinforcement brace retaining bolts, then remove the reinforcement.**



Unfasten the two retaining bolts, then remove the instrument panel reinforcement brace

Click to enlarge

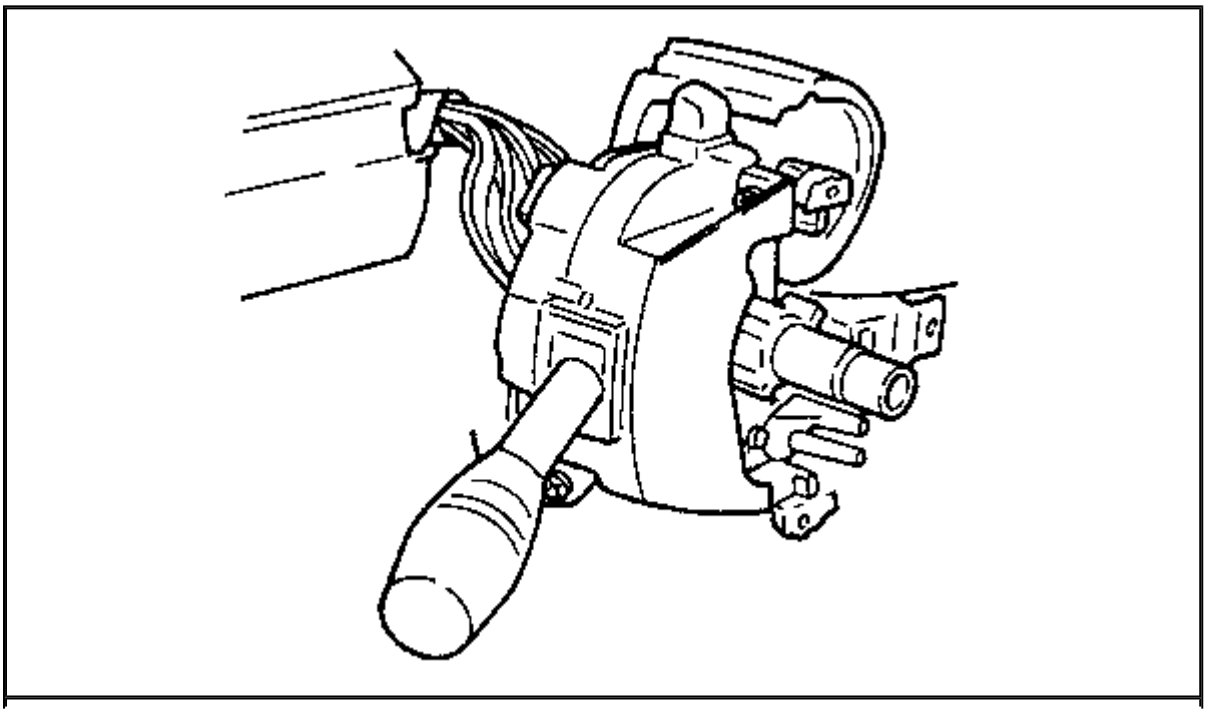
10. **If equipped with column shift, disconnect the shift position indicator cable from the actuator housing by removing the screw, then disconnect the cable loop from the shift tube hook. If equipped with console shift, remove the interlock cable retaining screws, then remove the cable.**



If equipped with column shift, disconnect the shift position indicator cable from the actuator housing by removing the screw, then disconnect the cable loop from the shift tube hook

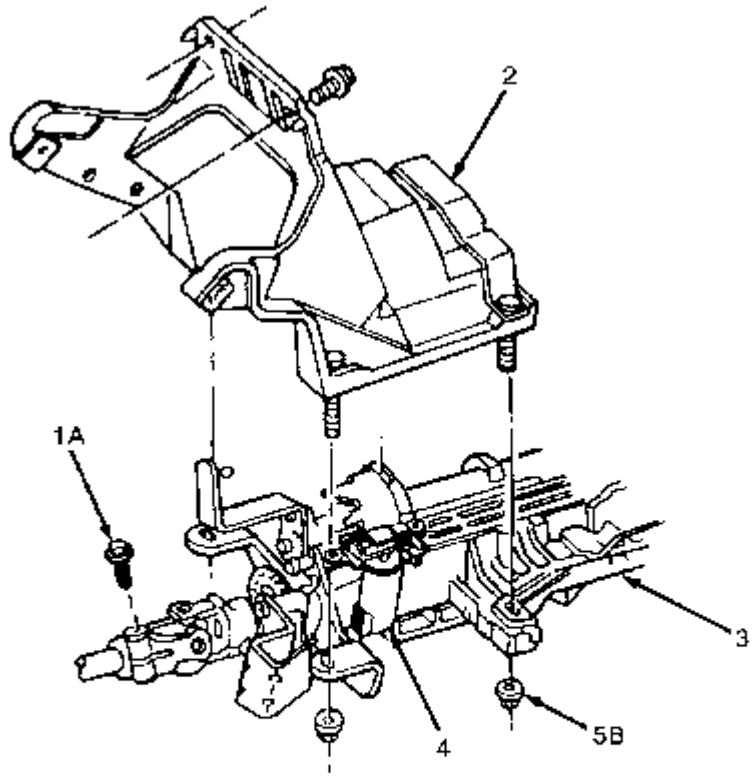
Click to enlarge

11. **Remove the two multi-function/combination switch retaining screws, then set the switch aside.**



Remove the two multi-function/combination switch retaining screws, then set the switch aside

12. **Disengage the wiring connector from the ignition switch.**
13. **Remove the four nuts securing the column skid plate, then remove the plate.**
14. **Remove the pinch bolt from the steering column lower yoke.**
15. **While supporting the steering column, remove the four steering column tube retaining nuts. Lower the steering column, then disconnect hoses at the parking brake release switch or remove the vacuum release assembly.**
16. **Disconnect the shift cable and bracket from the transmission column shift selector tube lever pivot.**
17. **For vehicles equipped with console shift, remove the two shift lock actuator cable retaining screws, then remove the actuator.**
18. **Remove the column from the vehicle.**



1 Screw
2 Steering column support bracket
3 Steering column tube flange assy
4 Shift lock actuator solenoid
5 Nut (4 req'd)
A Tighten to 41-56 Nm (31-41 lb.ft.)
B Tighten to 13-19 Nm (9-14 lb.ft.)

Exploded view of the steering column mounting-1990-95 vehicles

Click to enlarge

To install:

19. **Place the steering column in the vehicle, then align the column lower yoke to the**

lower steering column shaft. Install the bolt, then tighten to 31-41 ft. lbs. (41- 56 Nm).

20. Connect the parking brake release vacuum hoses.
21. For console shift, position the shift lock actuator, then install the two retaining screws.
22. Position the steering column assembly to the column support bracket. Install the four retaining nuts, then tighten to 9-13 ft. lbs. (13-17 Nm).
23. Position the shift cable bracket, with the shift cable attached, to the lower two screws of the column. Tighten to 5-8 ft. lbs. (7-11 Nm). Snap the shift cable onto the shift selector pivot ball.
24. Position the multi-function/combination switch, then install the two retaining screws. Tighten to 18-26 inch lbs. (2-3 Nm). Engage all electrical connectors.
25. Fasten the transmission shift cable and bracket loop on the shift selector hook, then install the transmission range selector cable bracket to the steering actuator housing. Install the retaining screw and tighten to 5-8 ft. lbs. (7-11 Nm).
26. Connect the steering column-to-parking brake control shake brace.
27. Install the instrument panel reinforcement brace, then secure with the two retaining bolts.
28. Attach the upper and lower steering column shrouds.
29. Install the ignition switch lock cylinder.
30. Connect the tilt steering column lock lever onto the steering column flange tube.
31. Attach the air bag sliding contact with the three retaining screws, then tighten the screws to 18-26 inch lbs. (2-3 Nm).

If a new contact assembly is being installed, remove the plastic lock mechanism after the contact assembly is secured to the column.

32. Install the steering wheel onto the steering gear input worm gear and rack, using a new bolt. Tighten the new bolt to 22-33 ft. lbs. (31-48 Nm).
33. Position the drivers side air bag module to the steering wheel. Install the two retaining screws, then tighten to 36-47 inch lbs. (4-5 Nm).
34. Connect the air bag backup power supply and the negative battery cable. Verify the air bag warning indicator.

Steering Linkage

REMOVAL & INSTALLATION

Tie Rod Ends

1. Remove and discard the cotter pin and nut from the worn tie rod end ball stud.
2. Disconnect the tie rod end from the steering knuckle, using Tie Rod End Remover tool 3290-D or equivalent.
3. Hold the tie rod end with a wrench, then loosen the tie rod jam nut.
4. Note the depth to which the tie rod is located by using the jam nut as a marker, then grip the tie rod with a pair of suitable pliers and remove the tie rod end assembly from the tie rod.

To install:

5. Clean the tie rod threads. Thread the new tie rod end onto the tie rod to the same depth as the removed tie rod end.
6. Make sure the front wheels are pointed straight-ahead, then place the tie rod end stud into the steering spindle.
7. Install a new nut on the tie rod end stud. Tighten the nut to 35 ft. lbs. (48 Nm), then continue tightening until the next castellation on the nut is aligned with the cotter pin hole in the stud. Install a new cotter pin.
8. Set the toe to specification. Tighten the jam nut to 35-50 ft. lbs. (47-68 Nm).

Power Steering Rack

ADJUSTMENTS

Except 1990-92 Taurus and Sable LX with 3.8L Engine, 1993-95 Taurus GL (high series only), LX and SHO models, and Sables

RACK YOKE PLUG CLEARANCE

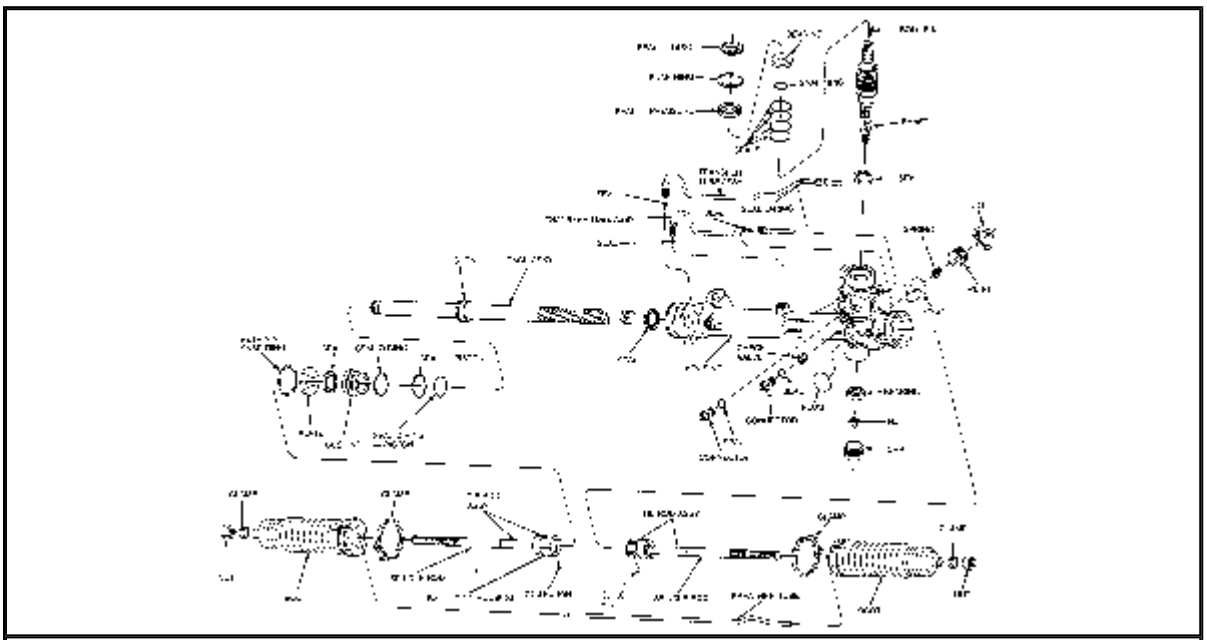
The rack yolk clearance adjustment is not a normal service adjustment. It is only required when the input shaft and valve assembly is removed.

1. Remove the steering gear from the vehicle. Clean the exterior of the steering gear thoroughly.
2. Install the steering gear in a suitable holding fixture. Do not remove the external transfer tubes unless they are leaking or damaged. If these lines are removed, they must be replaced with new ones.
3. Drain the power steering fluid by rotating the input shaft lock-to-lock twice, using a suitable tool. Cover the ports on the valve housing with a shop cloth while draining the gear to avoid possible oil spray.
4. Insert an inch pound torque wrench with a maximum capacity of 60 inch lbs. (6.77 Nm) into the Pinion Shaft Torque Adapter T74P-3504-R or equivalent. Position the adapter and wrench on the input shaft splines.
5. Loosen the yoke plug locknut and then the yoke plug.
6. Clean the threads of the yoke plug before tightening, to prevent a false reading. With the rack at the center of travel, tighten the yoke plug to 45-50 inch lbs. (5.0-5.6 Nm).
7. Back off the yoke plug approximately $^{1}/_{8}$ turn (44-54 degrees) until the torque required to initiate and sustain rotation of the input shaft is 7-18 inch lbs. (0.78-2.03 Nm).
8. Place a suitable wrench on the yoke plug locknut. While holding the yoke plug, tighten the locknut to 44-66 ft. lbs. (60-89 Nm). Do not allow the yoke plug to move while tightening or preload will be affected. Check the input shaft torque as in step 7 after tightening the locknut.
9. Install the steering gear.

REMOVAL & INSTALLATION

Except 1990-92 Taurus and Sable LX with 3.8L Engine, 1993-95 Taurus GL (high series only), LX and SHO models, and Sables

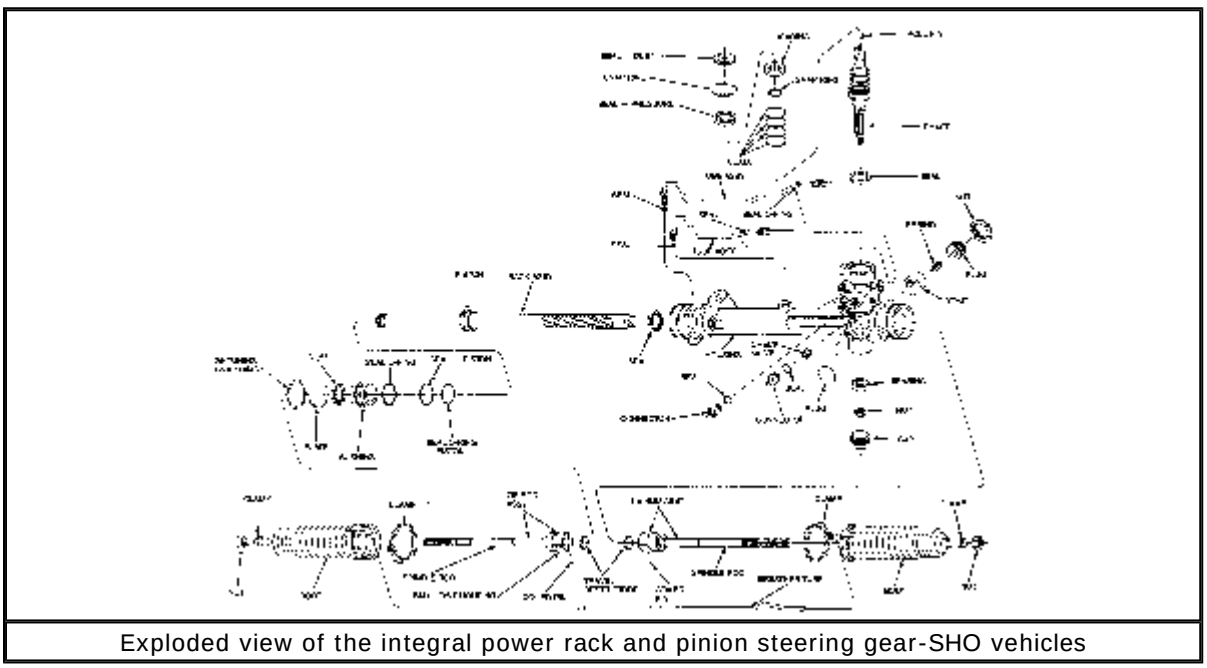
1. **Disconnect the negative battery cable. Working from inside the vehicle, remove the nuts retaining the steering shaft weather boot to the dash panel.**
2. **Remove the bolts retaining the intermediate shaft to the steering column shaft. Set the weather boot aside.**
3. **Remove the pinch bolt at the steering gear input shaft, then remove the intermediate shaft. Raise the vehicle and support safely.**



Exploded view of the integral power rack and pinion steering gear-except SHO vehicles

Click to enlarge

4. **Remove the left front wheel and tire assembly. Remove the steering shaft U-joint/heat shield. Cut the bundling strap retaining the lines to the gear.**



Exploded view of the integral power rack and pinion steering gear-SHO vehicles

Click to enlarge

5. **Remove the tie rod ends from the spindles. Place a drain pan under the vehicle,**

then remove the hydraulic pressure and return lines from the steering gear.

The pressure and return lines are on the front of the housing. Do not confuse them with the transfer lines on the side of the valve.

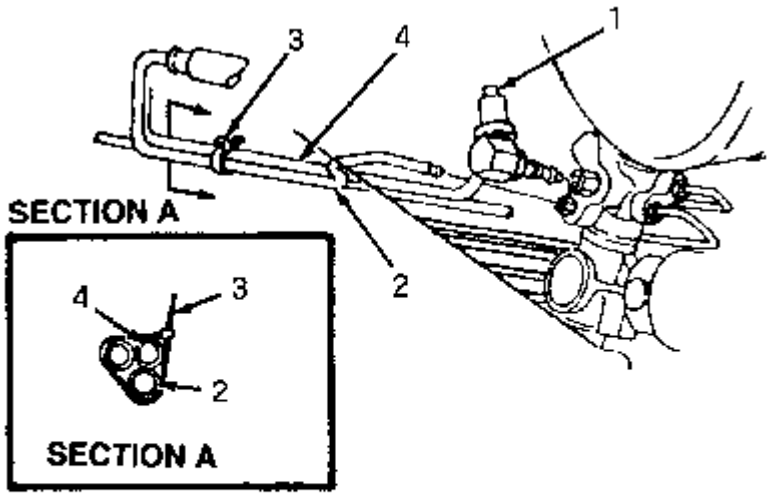
6. Remove the nuts from the gear mounting bolts. The bolts are pressed into the gear housing and should not be removed during gear removal.
7. Push the weather boot end into the vehicle and lift the gear out of the mounting holes. Rotate the gear so the input shaft will pass between the brake booster and the floor pan. Carefully start working the steering gear out through the left fender apron opening.
8. Rotate the input shaft so it clears the left fender apron opening, then complete removal of the steering gear. If the steering gear seems to be stuck, check the right tie rod to ensure the stud is not caught on anything.

To install:

9. Install new plastic seals on the hydraulic line fittings.
10. Insert the steering gear through the left fender apron. Rotate the input shaft forward to completely clear the fender apron opening.
11. To allow the gear to pass between the brake booster and the floorpan, rotate the input shaft rearward. Align the steering gear bolts to the bolt holes. Install the mounting nuts and tighten them to 85-100 ft. lbs. (115-135 Nm). Lower the vehicle.
12. From inside the engine compartment, install the hydraulic pressure and return lines. Tighten the power steering pressure line to 15-25 ft. lbs. (20-35 Nm) and the return line to 15-25 ft. lbs. (20-35 Nm).

Swivel movement of the lines is normal when the fittings are properly tightened.

13. Raise and safely support the vehicle. Secure the power steering pressure and return lines to the transfer tube with the bundle strap. Install the steering shaft U-joint/heat shield.



1 Power steering pressure switch
2 Power steering return hose
3 Strap
4 Power steering left turn pressure hose

Secure the power steering pressure and return lines to the transfer tube with the bundle strap

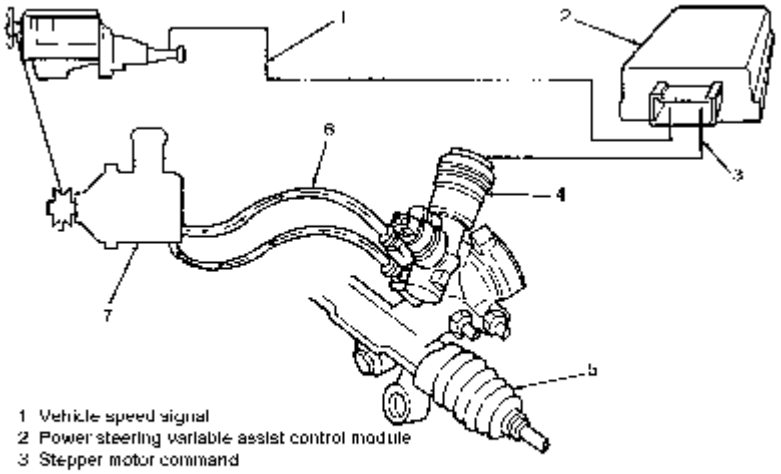
Click to enlarge

14. **Install the tie rod ends to spindles. Tighten the castle nuts to 35 ft. lbs. (48 Nm) and, if necessary, tighten the nuts a little bit more to align the slot in the nut for the cotter pin. Install the cotter pin.**
15. **Install the left front wheel and tire assembly, then carefully lower the vehicle. Working from inside the vehicle, pull the weather boot end out of the vehicle and install it over the valve housing. Install the intermediate shaft to the steering gear input shaft. Install the inner weather boot to the floor pan.**
16. **Install the intermediate shaft to the steering column shaft. Fill the power steering system.**
17. **Connect the negative battery cable. Check the system for leaks and proper operation. Adjust the toe setting as necessary.**

1990-92 Taurus LX and Sable with 3.8L Engine, 1993-95 Taurus GL (high series only), LX and SHO models, and Sables

The Variable Assist Power Steering (VAPS) system used on these vehicles consists of a micro-processor based module, a power rack and pinion steering gear, an actuator valve assembly, hose assemblies and a high efficiency power steering pump.

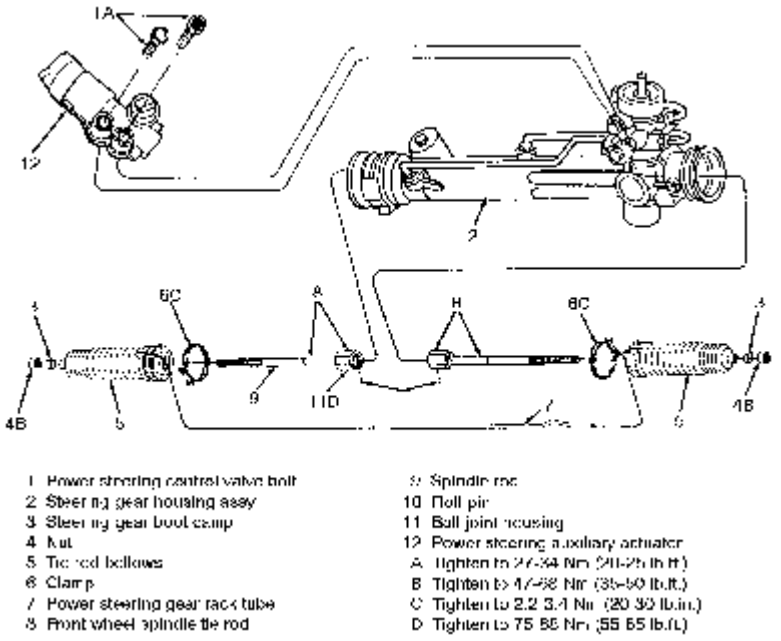
1. **Disconnect the negative battery cable.**



View of the Variable Assist Power Steering (VAPS) system components

Click to enlarge

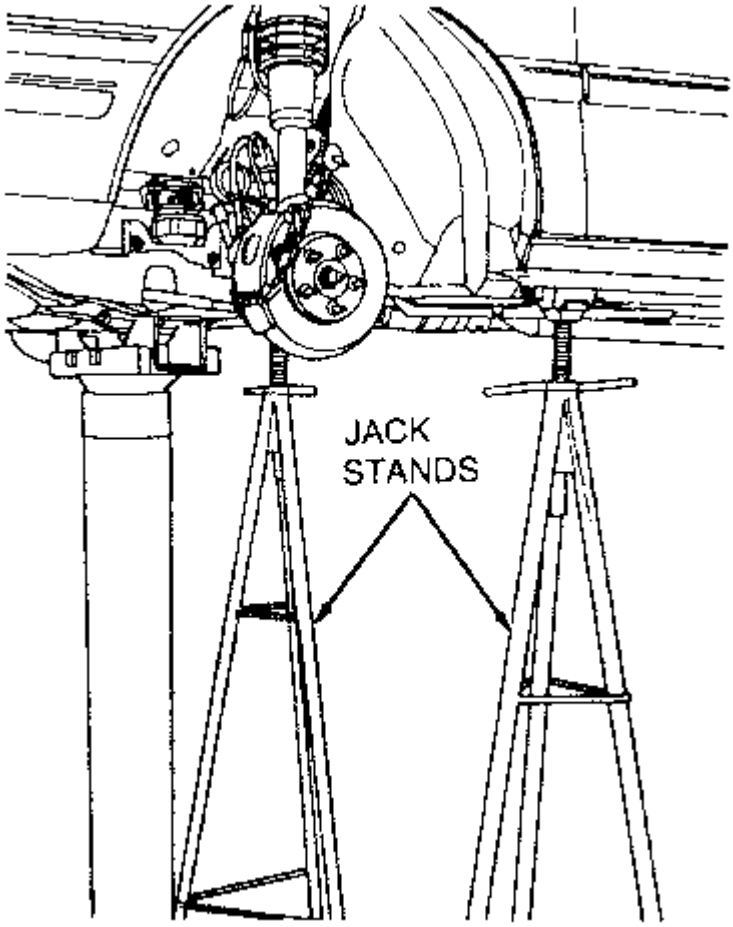
2. **From inside the vehicle, remove the nuts securing the steering column tube boot to the cowl panel.**



Exploded view of the Variable Assist Power Steering (VAPS) system

Click to enlarge

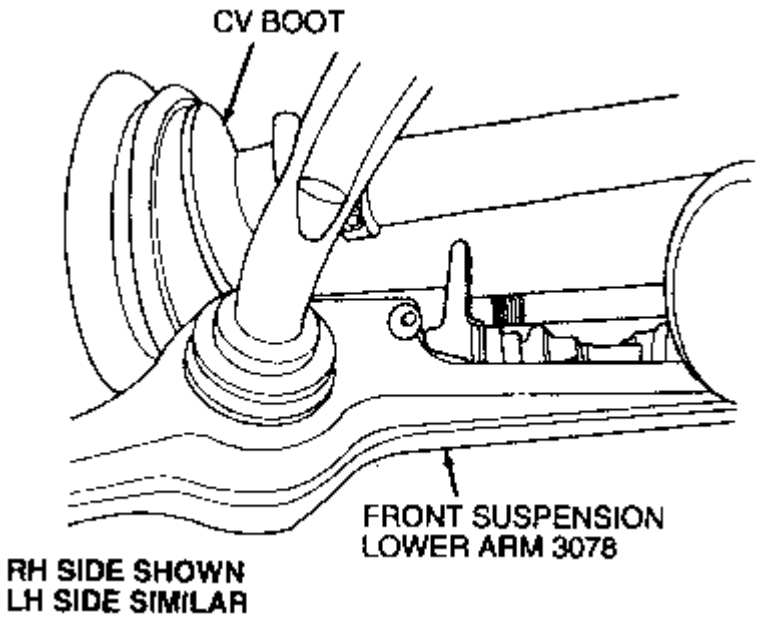
3. **Remove the two bolts retaining the steering column gear input shaft coupling to the power steering gear shaft and yoke assembly.**
4. **Set the steering column tube boot aside. Remove the pinch bolt at the power steering gear shaft and yoke assembly, then remove the steering column gear input shaft coupling.**
5. **Raise the vehicle and support safely. Remove the front wheel and tire assemblies. Support the vehicle under the rear edge of the subframe with jack stands.**



Support the vehicle under the rear edge of the subframe with jack stands

Click to enlarge

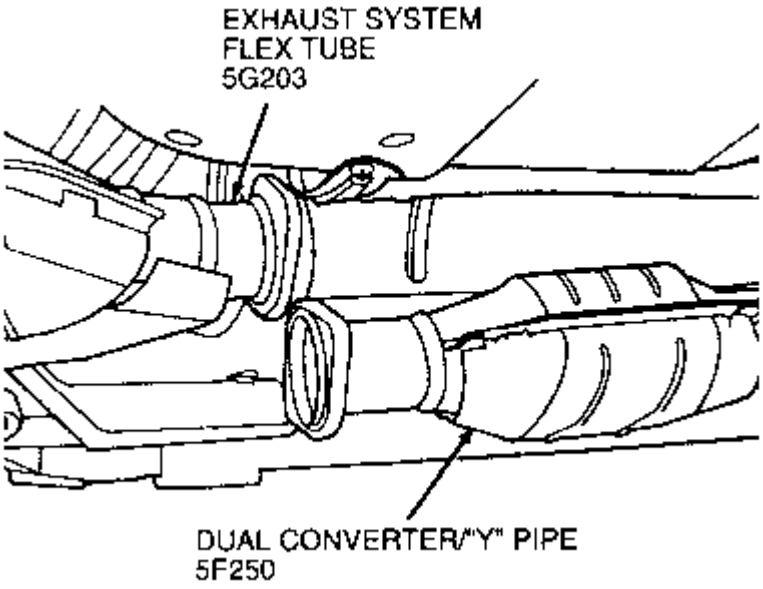
6. **Remove the tie rod cotter pins and nuts. Remove the left and right-side tie rod ends from the steering knuckle.**
7. **Mark the position of the jam nut (to maintain the alignment), then remove the tie rod ends from the spindle tie rod.**
8. **Remove the nuts from the gear-to-subframe attaching bolts.**



Remove the nuts from the gear-to-subframe attaching bolts

Click to enlarge

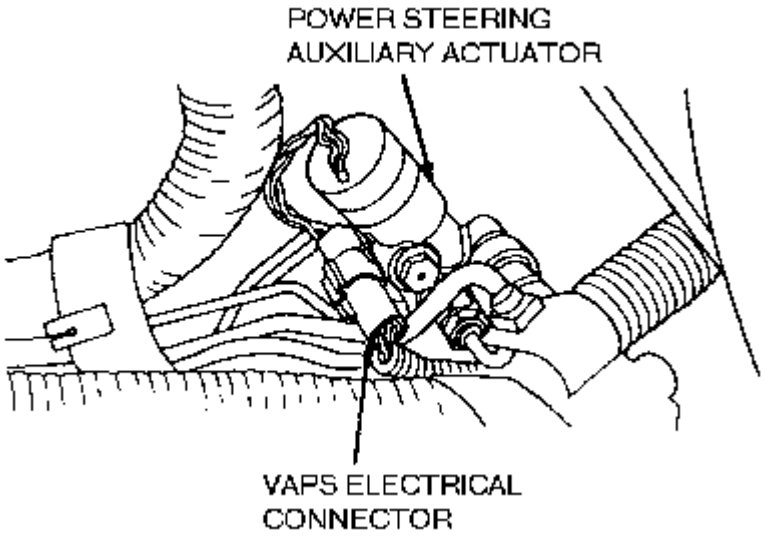
9. **Remove the rear subframe-to-body attaching bolts.**
10. **Remove the exhaust pipe-to-catalytic converter attachment.**



Remove the exhaust pipe-to-catalytic converter attachment

Click to enlarge

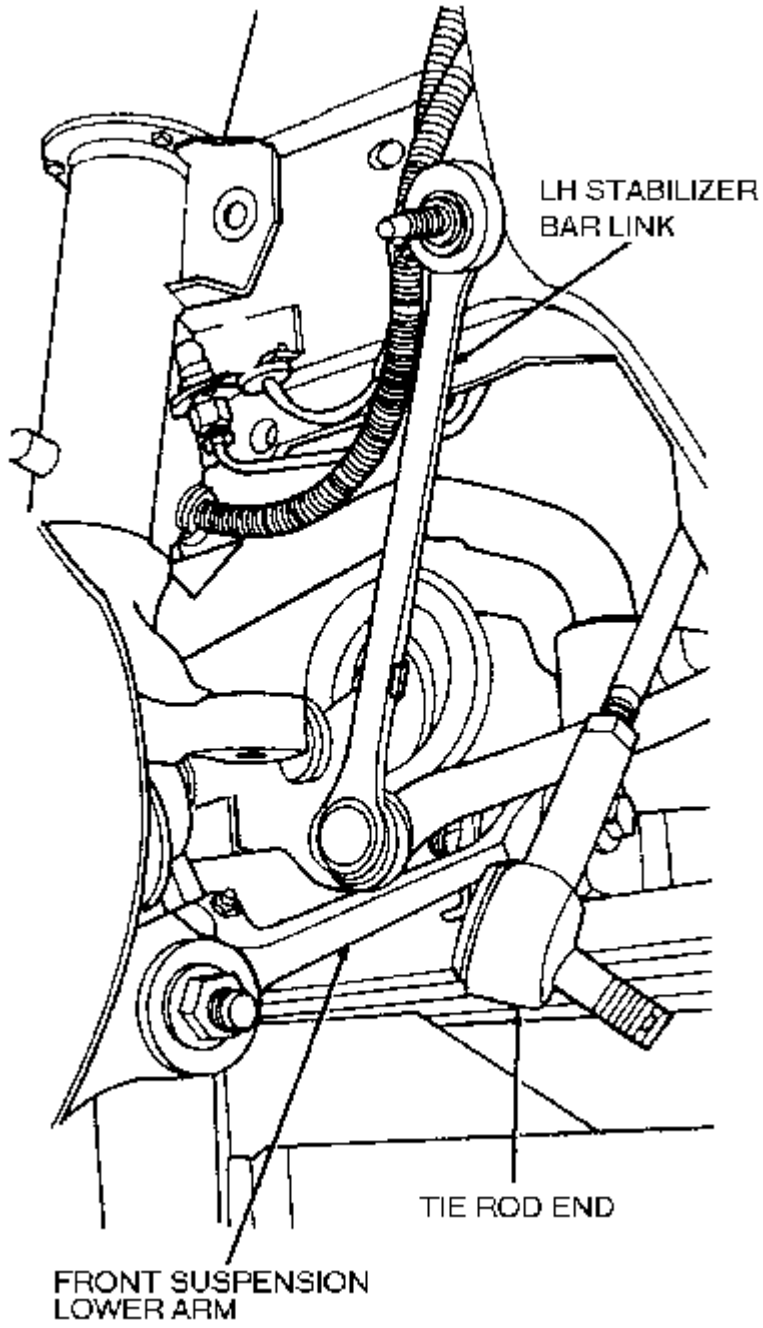
11. **Lower the vehicle carefully until the subframe separates from the body approximately 4 in. (102mm).**
12. **Remove the heat shield band, then fold the shield down.**
13. **Disengage the VAPS electrical connectors from the actuator assembly.**



Disengage the VAPS electrical connectors from the actuator assembly

Click to enlarge

14. **Rotate the gear to clear the bolts from the subframe and pull to the left to facilitate line fitting removal.**
15. **Position a suitable drain pan under the vehicle, then remove the line fittings. Remove the O-rings from the fitting connections, then replace with new ones during installation.**
16. **Remove the left-hand side sway/stabilizer bar link.**



Remove the left-side sway/stabilizer bar link

Click to enlarge

17. **Remove the steering gear assembly through the left wheel well.**

To install:

18. **Install new Teflon® O-rings into the line fittings.**
19. **Place the gear attachment bolts in the gear housing.**
20. **Install the steering gear assembly through the left wheel well.**
21. **Connect and tighten the line fittings to the steering gear assembly.**
22. **Engage the VAPS electrical connectors.**
23. **Position the steering gear into the subframe.**

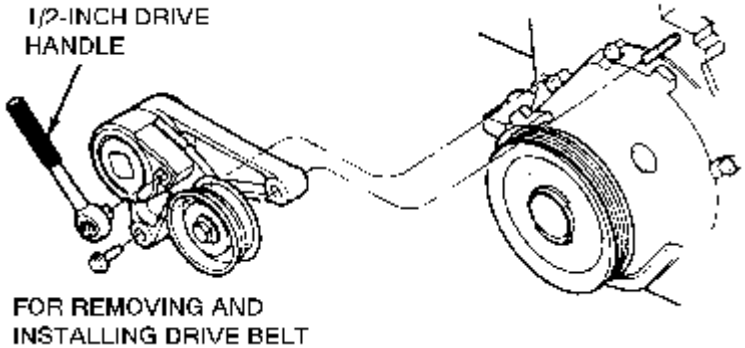
24. Install the tie rod ends onto the front wheel spindle tie rod.
25. Install the heat shield band.
26. Attach the tie rod ends onto the knuckle. Install the nuts and secure with new cotter pins.
27. Attach the sway/stabilizer bar link.
28. Raise the vehicle until the subframe contacts the body. Install the rear subframe attaching bolts.
29. Install the gear-to-front subframe nuts, then tighten to 85-100 ft. lbs. (115-135 Nm).
30. Attach the exhaust pipe to the catalytic converter.
31. Install the wheels, then remove the jackstands and carefully lower the vehicle. Tighten the lug nuts to 85-105 ft. lbs. (115-142 Nm).
32. From inside the vehicle, push the steering column tube boot end out of the vehicle, then install over the steering gear housing.
33. Install the steering column gear input shaft coupling to the power steering gear shaft and yoke assembly. Tighten the bolt to 30-38 ft. lbs. (41-51 Nm).
34. Install the inner steering column tube boot to the cowl panel.
35. Install the input shaft coupling to the steering gear shaft and yoke assembly.
36. Fill the power steering system with Premium Power Steering Fluid E6AZ-19582-AA or equivalent.
37. Bleed the power steering system. For details, please refer to the procedure located later in this section.
38. Connect the negative battery cable, then check the system for leaks and proper operation.
39. If necessary, have the alignment checked by a reputable repair shop.

Power Steering Pump

REMOVAL & INSTALLATION

2.5L Engines

1. Disconnect the negative battery cable.
2. Loosen the tensioner pulley attaching bolts. Using the $^{1}/_{2}$ in. drive hole provided in the tensioner pulley, rotate the tensioner clockwise, then remove the belt from the alternator and power steering pulley.



Remove the belt from the pulleys-2.5L engine only

Click to enlarge

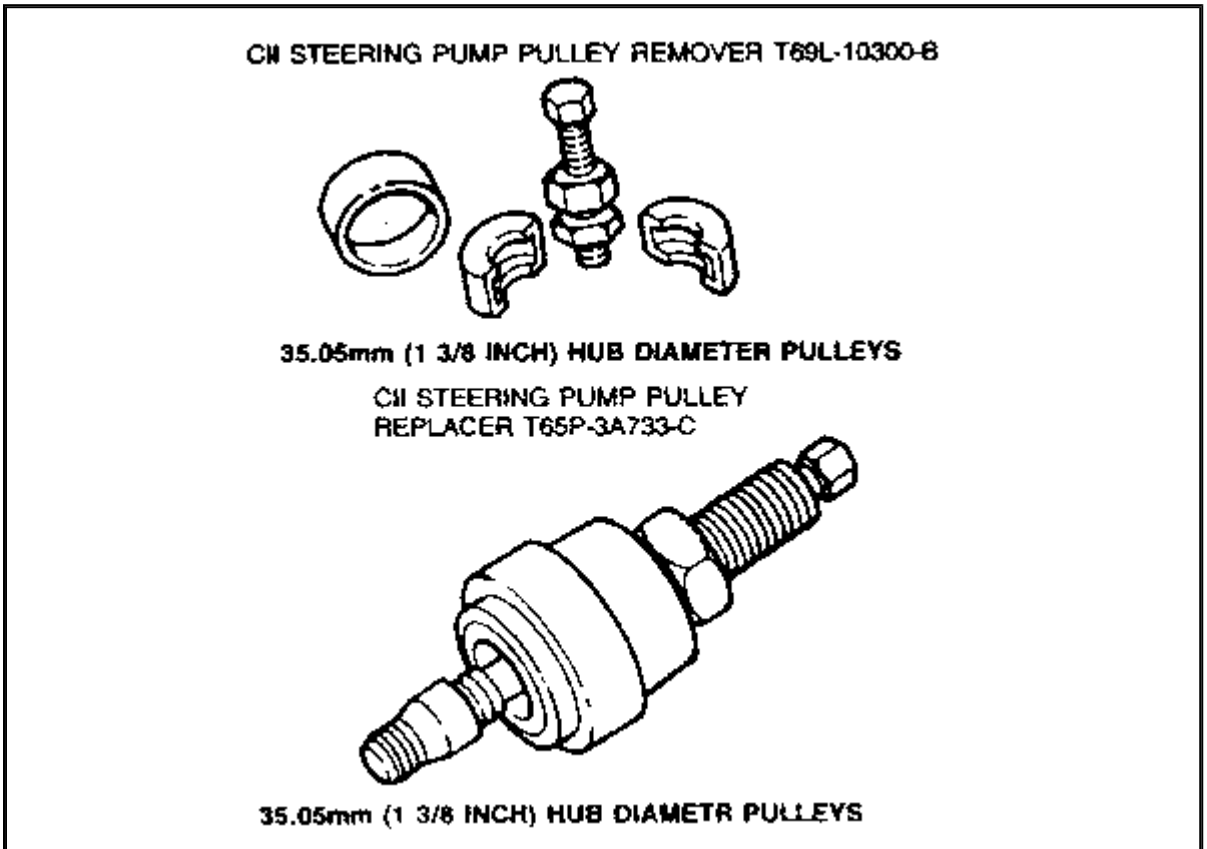
3. **Position a drain pan under the power steering pump beneath the vehicle. Disconnect the hydraulic pressure and return lines.**
4. **Remove the pulley from the pump shaft using Steering Pump Pulley Tool T69L-10300-B or equivalent.**
5. **Remove the three bolts retaining the pump to the bracket, then remove the power steering pump.**

To install:

6. **Install the pump on the mounting bracket, then install the three pump-to-bracket retaining bolts.**

To install the power steering pump pulley, use steering pump pulley replacer T65P-3A733-C or equivalent. When using this tool, the small diameter threads must be fully engaged in the pump shaft before pressing on the pulley. Hold the screw head and turn the nut to install the pulley. Install the pulley face flush with the pump shaft or within 0.100 in. (0.25mm).

7. **Install the pulley on the pump shaft using Steering Pump Pulley Replacer T65P-3A733-C or equivalent.**



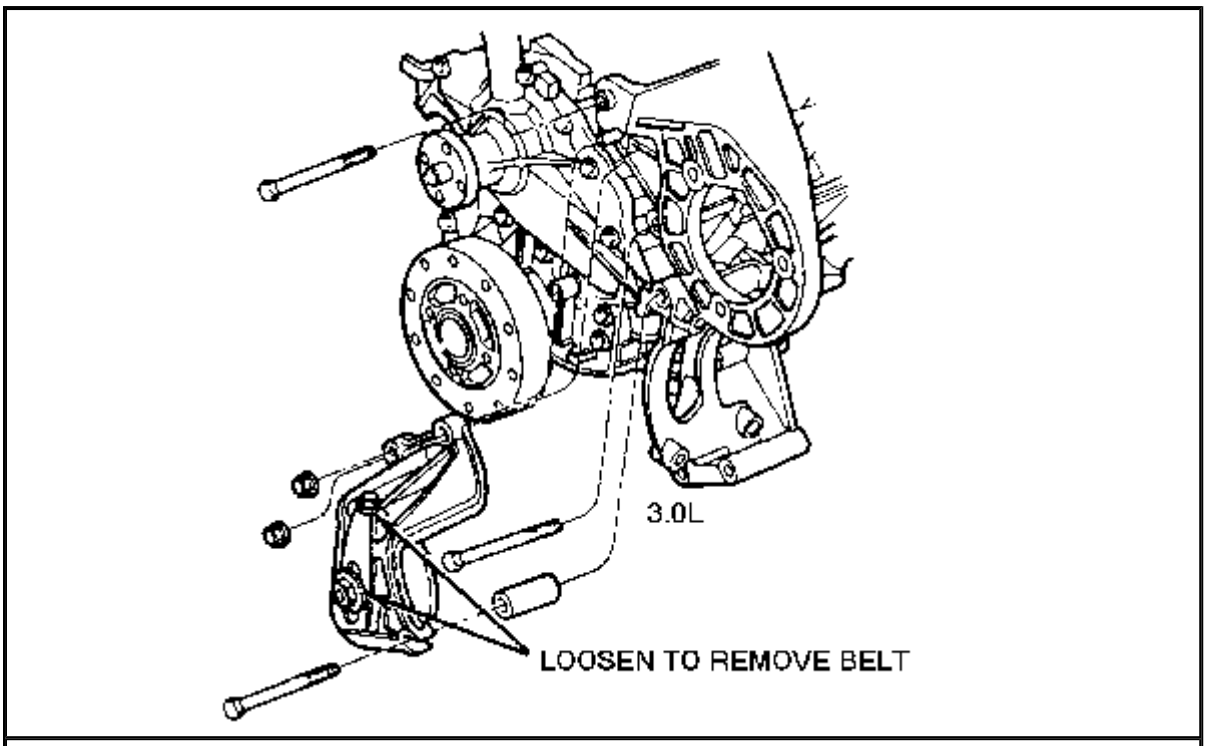
Steering pump pulley removal and installation tools

Click to enlarge

8. Connect the hydraulic pressure and return lines.
9. Position the belt over the alternator and power steering pulleys, then, using the $^{1}/_{2}$ in. drive hole in the tensioner pulley, rotate the tensioner counterclockwise to install the belt.
10. Connect the negative battery cable, then fill to the correct level with the proper type of fluid and check operation. Remove the drain pan.

3.0L Engine-Except SHO

1. Disconnect the negative battery cable.
2. Loosen the idler pulley, then remove the power steering belt.



Removing the power steering belt-3.0L engine except SHO

Click to enlarge

3. For vehicles through 1993 remove the pulleys from the hub as follows:
    1. Remove the radiator overflow bottle in order to gain access to the 3 screws/bolts attaching the pulleys to the pulley hub.
    2. Matchmark both pulley-to-hub positions with a grease pencil or dot of paint for installation purposes.
    3. Remove the bolts and pulleys from the pulley hub.
4. For 1994-95 vehicles remove the pulley from the hub using Steering Pump Pulley Remover T69L-10300-B or equivalent.
5. Position a drain pan under the pump, then remove the return line from the pump. Be prepared to catch any spilled fluid in a suitable container.
6. Back off the pressure line attaching nut completely. The line will separate from the pump connection when the pump is removed.
7. Remove the three pump mounting bolts, then remove the pump.

To install:

8. Install the pump on the mounting bracket. Guide the pressure hose into the pump outlet fitting while installing the pump.
9. Install the pressure and return lines to the pump.
10. For vehicles through 1993, install the pulley on the hub as follows:
    1. Install the pulleys on the hub, aligning the marks made during removal.
    2. Install the three bolts, then tighten to 15-24 ft. lbs. (21-32 Nm).
    3. Install the radiator overflow bottle.
11. For 1994-95 vehicles, install the pulley on the hub using Steering Pump Pulley Replacer T65P-3A733-C or equivalent. The small diameter threads must be fully engaged in the pump shaft before pressing on the pulley. Screw the tool into the threads in the end of the pump shaft. Hold the small nut on the end of the tool, then turn the large nut to install the pulley on the shaft. Install the pulley face flush with the pump shaft or within 0.010 in. (0.25mm).
12. Install the power steering belt.
13. Connect the negative battery cable. Fill with the proper type of fluid and check for proper operation.

3.0L and 3.2L SHO Engines

1. Disconnect the negative battery cable.
2. Remove the engine damper strut.
3. Remove the power steering belt.
4. Raise and safely support the vehicle.
5. Remove the front right-side wheel and tire assembly.
6. Position a suitable jack under the engine, then remove the right rear engine mount.
7. Remove the power steering pump pulley as follows:
    1. Loosen the idler pulley, then remove the drive belt.
    2. Remove the power steering pump pulley from the power steering pump shaft using Steering Pump Pulley Remover T69L-10300-B or equivalent.
8. Place a drain pan under the pump, then remove the pressure and return lines from the pump.
9. Remove the four pump retaining bolts (three in the front and one in the rear), then remove the pump.

To install:

10. Position the pump, then install the retaining bolts. Tighten to 15-24 ft. lbs. (20-33 Nm).
11. Install the power steering pressure and return hoses to the power steering pump, then remove the drain pan.
12. Install the power steering pump pulley as follows:
    1. Install the pulley to the pump using Steering Pump Pulley Replacer T65P-3A733-C or equivalent. The

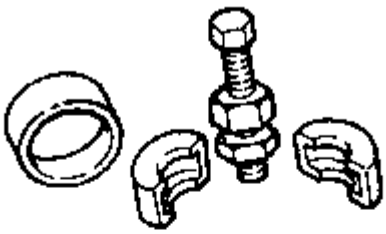
small diameter threads must be fully engaged in the pump shaft before pressing on the pulley. Screw the tool into the threads in the end of the pump shaft. Hold the small nut on the end of the tool, then turn the large nut to install the pulley on the shaft. Install the pulley face flush with the pump shaft or within 0.010 in. (0.25mm).

13. Install the right rear engine mount, then remove the jack.
14. Install the right front wheel and tire assembly. Lower the vehicle, then tighten the lug nuts to 85-105 ft. lbs. (115-142 Nm).
15. Install the drive belt to the power steering pump pulley.
16. Install the engine damper strut.
17. Connect the negative battery cable, then check the fluid and fill to the proper level.

3.8L Engine

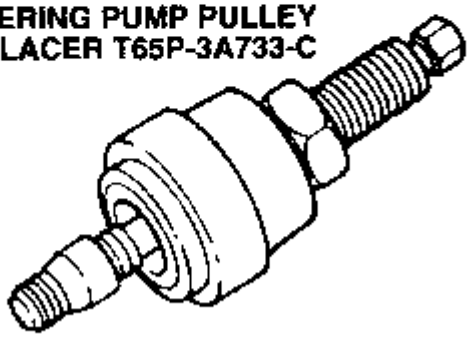
1. Disconnect the negative battery cable.
2. Remove the engine damper mounting body bracket.
3. Remove the power steering drive belt.
4. Raise and safely support the vehicle.
5. Remove the right-side wheel and tire assembly.
6. Position a suitable jack under the engine. Remove the right rear engine mount.
7. Remove the power steering pump pulley from the power steering pump shaft using Steering Pump Pulley Remover T69L-10300-B or equivalent.

STEERING PUMP PULLEY REMOVER T69L-10300-B



35.05 mm (1 3/8 INCHES) HUB DIAMETER PULLEYS

STEERING PUMP PULLEY REPLACER T65P-3A733-C



35.05 mm (1 3/8 INCHES) HUB DIAMETER PULLEYS

Power steering pump pulley removal and installation tools

Click to enlarge

8. **Position a suitable drain pan under the vehicle. Remove the pressure and return hoses from the pump, and allow it to drain into the pan.**
9. **Remove the four pump retaining bolts (three in front, one in rear), then remove the pump.**

To install:

10. **Position the power steering pump, then install the retaining bolts. Tighten the bolts to 15-24 ft. lbs. (20-33 Nm).**
11. **Install the pulley to the pump using Steering Pump Pulley Replacer T65P-3A733-C or equivalent. The small diameter threads must be fully engaged in the pump shaft before pressing on the pulley. Screw the tool into the threads in the end of the pump shaft. Hold the small nut on the end of the tool, then turn the large nut to install the pulley on the shaft. Install the pulley face flush with the pump shaft or within 0.010 in. (0.25mm).**
12. **Install the right rear engine mount, then remove the jack.**
13. **Install the right front wheel and tire assembly. Lower the vehicle, then tighten the lug nuts to 85-105 ft. lbs. (115-142 Nm).**
14. **Install the power steering pump belt to the pulley.**
15. **Install the engine damper mounting body bracket.**
16. **Connect the negative battery cable, then fill the power steering reservoir to the proper level with the correct type of fluid.**

BLEEDING

If air bubbles are present in the power steering fluid, bleed the system by performing the following:

1. **Fill the reservoir to the proper level.**
2. **Operate the engine until the fluid reaches normal operating temperature of 165-175°F (74-79°C).**
3. **Turn the steering wheel all the way to the left, then all the way to the right several times. Do not hold the steering wheel in the far left or far right position stops.**
4. **Check the fluid level and recheck the fluid for the presence of trapped air. If it is apparent that air is still in the system, fabricate or obtain a vacuum tester and purge the system as follows:**
    1. **Remove the pump dipstick cap assembly.**
    2. **Check and fill the pump reservoir with fluid to the COLD FULL mark on the dipstick.**
    3. **Disconnect the ignition wire, then raise the front of the vehicle and support safely.**
    4. **Crank the engine with the starter and check the fluid level. Do not turn the steering wheel at this time.**
    5. **Fill the pump reservoir to the COLD FULL mark on the dipstick. Crank the engine with the starter while cycling the steering wheel lock-to-lock. Check the**

fluid level.

6. Tightly insert a suitable size rubber stopper and air evacuator pump into the reservoir fill neck. Connect the ignition coil wire.
7. With the engine idling, apply a 15 in. Hg (51 kPa) vacuum to the reservoir for 3 minutes. As air is purged from the system, the vacuum will drop off. Maintain the vacuum on the system as required throughout the 3 minutes.
8. Remove the vacuum source. Fill the reservoir to the COLD FULL mark on the dipstick.
9. With the engine idling, reapply 15 in. Hg (51 kPa) vacuum source to the reservoir. Slowly cycle the steering wheel to lock-to-lock stops for approximately 5 minutes. Do not hold the steering wheel at the stops during cycling. Maintain the vacuum as required.
10. Release the vacuum and disconnect the vacuum source. Add fluid as required.
11. Start the engine and cycle the wheel slowly, then check for leaks at all connections.
12. Lower the front wheels.

5. In cases of severe aeration, repeat the procedure.

SPECIFICATION CHARTS

WHEEL ALIGNMENT

Year	Model		Caster Range (deg.)	Caster Preferred Setting (deg.)	Camber Range (deg.)	Camber Preferred Setting (deg.)	Toe-in (in.)	Steering Axis Inclination (deg.)
1986	Taurus	F	[illegible]	4P	[illegible]	1/2N	3/32N	15 3/8
		R	-	-	[illegible]	[illegible]	[illegible]	
	Sable	F	[illegible]	4P	[illegible]	1/2N	3/32N	15 3/8
		R	-	-	[illegible]	[illegible]	[illegible]	
	Sable	F	[illegible]	4P	[illegible]	1/2N	3/32N	15 3/8
		R	-	-	[illegible]	5/8N	[illegible]	
1987	Taurus	F	[illegible]	4P	[illegible]	1/2N	[illegible]	15 3/8
		R	-	-	[illegible]	[illegible]	[illegible]	-
	Taurus	R	-	-	[illegible]	5/8N	[illegible]	
	Sable	F	[illegible]	4P	[illegible]	1/2N	[illegible]	15 3/8
		R	-	-	[illegible]	[illegible]	[illegible]	-
	Sable	F	[illegible]	4P	[illegible]	1/2N	[illegible]	15 3/8
		R	-	-	[illegible]	[illegible]	[illegible]	-
1988	Taurus	F	[illegible]	4P	[illegible]	1/2N	[illegible]	15 3/8
		R		-	[illegible]	[illegible]	[illegible]	-
	Taurus	R		-	[illegible]	5/8N	[illegible]	-
	Sable	F	[illegible]	4P	[illegible]	1/2N	[illegible]	15 3/8
		R			[illegible]	[illegible]	[illegible]	-
	Sable	F	[illegible]	4P	[illegible]	1/2N	[illegible]	15 3/8
		R			[illegible]	5/8N	[illegible]	-
1989	Taurus	F	2 13/16P-5 13/16P	3 13/16P	[illegible]	1/2N	[illegible]	[illegible]
		F	2 11/16P-5 11/16P	3 11/16P	[illegible]	[illegible]	[illegible]	[illegible]
	Taurus	R			1 5/8N-7/32N	[illegible]	[illegible]	-
	Sable	F	2 13/16P-5 13/16P	3 13/16P	[illegible]	1/2N	[illegible]	[illegible]
		R	-		1 5/8N-7/32N	[illegible]	[illegible]	-
	Sable	F	2 13/16P-5 13/16P	3 13/16P	[illegible]	[illegible]	[illegible]	-
		R	-		1 5/8N-7/32N	[illegible]	[illegible]	-
1990	Taurus	F	2 13/16P-5 13/16P	3 13/16P	[illegible]	1/2N	3/32N	[illegible]
		F	2 5/8P-4 5/8P	3 5/8P	[illegible]	7/16N	3/32N	[illegible]
	Taurus	R	-	-	1 5/8N-7/32N	[illegible]	[illegible]	
	Sable	F	2 13/16P-5 13/16P	3 13/16P	[illegible]	1/2N	3/32N	15 1/2
		R	-	-	1 5/8N-7/32N	[illegible]	[illegible]	
	Sable	F	2 5/8P-4 5/8P	3 5/8P	[illegible]	7/16N	3/32N	15 1/2
		R	-	-	1 5/8N-7/32N	[illegible]	[illegible]	
1991	Taurus	F	[illegible]	[illegible]	[illegible]	1/2N	3/32N	15 1/2
		F	[illegible]	[illegible]	[illegible]	7/16N	3/32N	15 1/2
	Taurus	R	-	-	[illegible]	[illegible]	[illegible]	-
	Sable	F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15 1/2
		R	-	-	[illegible]	[illegible]	[illegible]	-
	Sable	F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		R			[illegible]	[illegible]	[illegible]	-
1992	Taurus	F	[illegible]	[illegible]	[illegible]	1/2N	[illegible]	[illegible]
		F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Taurus	R			[illegible]	[illegible]	[illegible]	-
	Sable	F	2 13/16P-5 13/16P	2 13/16P	[illegible]	1/2N	[illegible]	15 1/2
		R			[illegible]	[illegible]	[illegible]	

Wheel Alignment Specifications

Click to enlarge

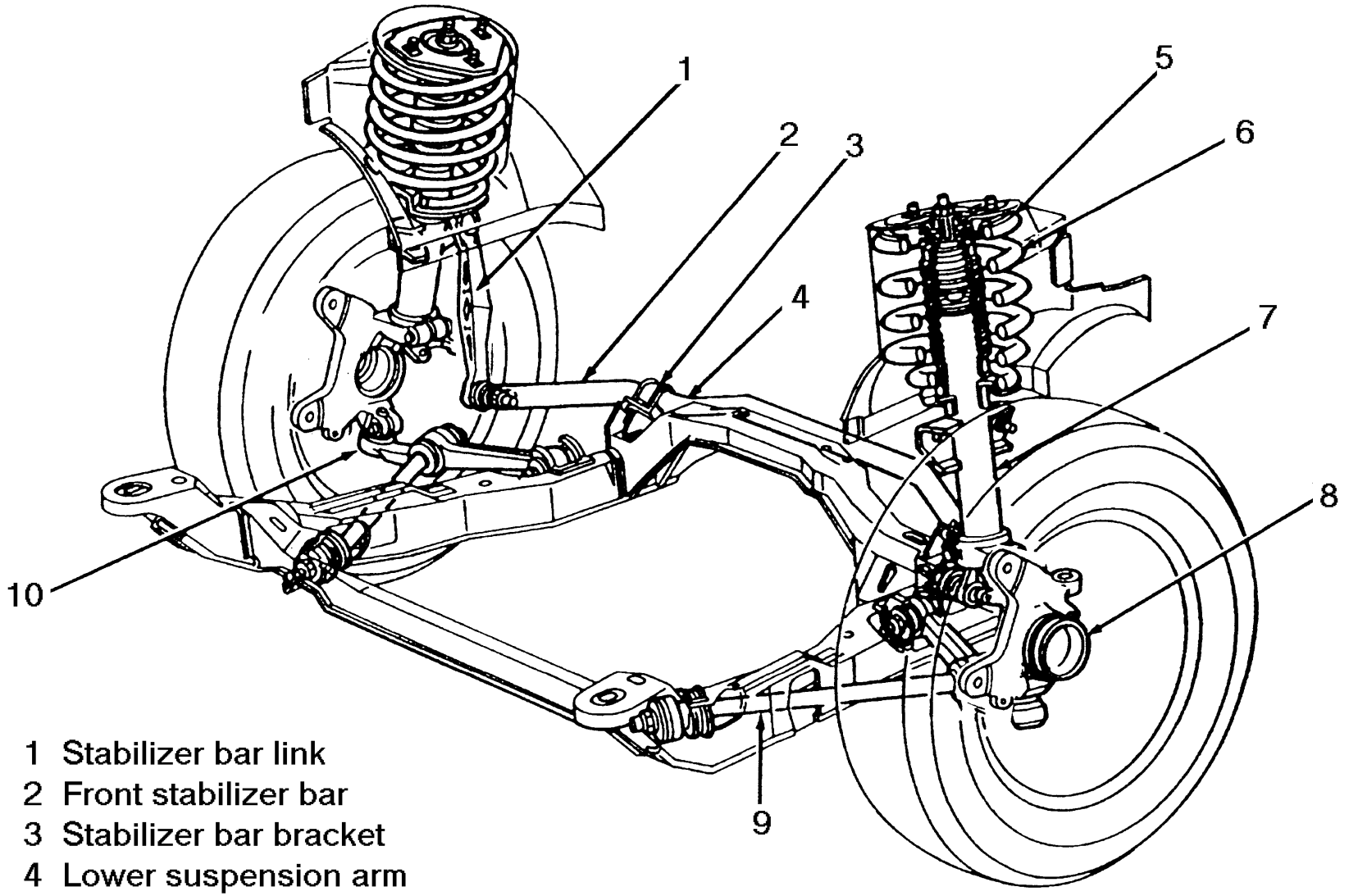
WHEEL ALIGNMENT

Year	Model			Caster Range (deg.)	Caster Preferred Setting (deg.)	Camber Range (deg.)	Camber Preferred Setting (deg.)	Toe-in (in.)	Steering Axis Inclination (deg.)
1992	Sable	F	2	2 11/16P-4 11/16P	3 11/16P	1N-1/4P	3/8N	3/32N	15 1/2
(cont.)		R	2	-		1 5/8N-7/32N	15/16N	1/16P	-
1993	Taurus	F	1	2 5/16P-5 13/16P	2 13/16P	1 1/8N-1/8P	1/2N	3/32N	15 1/2
		F	2	2 11/16P-4 11/16P	3 11/16P	1N-1/4P	3/8N	3/32N	15 1/2
	Taurus	R		-	-	1 5/8N-7/32N	15/16N	1/16P	
	Sable	F	1	2 5/16P-5 13/16P	2 13/16P	1 1/8N-1/8P	1/2N	3/32N	15 1/2
		R	1	-	-	1 5/8-7/32N	15/16N	1/16P	
	Sable	F	2	2 11/16P-4 11/16P	3 11/16P	1N-1/4P	3/8N	3/32N	15 1/2
		R	2	-	-	1 5/8N-7/32N	15/16N	1/16P	-
1994	Taurus	F	1	2.81P-4.81P	3.81P	1.13N-0.13P	0.50N	0.09N	15.50
		R	1	-	-	1.60N-0.20N	0.90N	0.06P	
	Taurus	F	2	2.70P-4.70P	3.70P	1.00N-0.20N	0.40N	0.20N	15.50
		R	2	-	-	1.80N-0.10P	0.50N	0.06P	
	Sable	F	1	2.30P-4.30P	3.30P	1.10N-0.10P	0.50N	0.20N	15.50
		R	1	-	-	1.60N-0.20N	0.90N	0.06P	-
	Sable	F	2	2.70P-4.70P	3.70P	1.00N-0.20N	0.40N	0.20N	15.50
		R	2		-	1.80N-0.10P	0.50N	0.06P	-
1995	Taurus	F	1	2.80P-4.80P	3.80P	1.10N-0.10P	0.50N	0.40N	15.50
		R				1.60N-0.20N	0.90N	0.06P	-
	Taurus	F	2	2.70P-4.70P	3.70P	1.00N-0.20N	0.40N	0.40N	15.50
		R				1.60N-0.10P	0.90N	0.06P	-
	Sable	F	1	2.80P-4.80P	3.80P	1.10N-0.10P	0.20N	0.20N	15.50
		R				1.60N-0.20N	0.90N	0.04P	-
	Sable	F	2	2.70P-4.70P	3.70P	1.00N-0.20N	0.10N	0.20N	15.50
		R				1.50N-0.10P	0.90N	0.06P	-

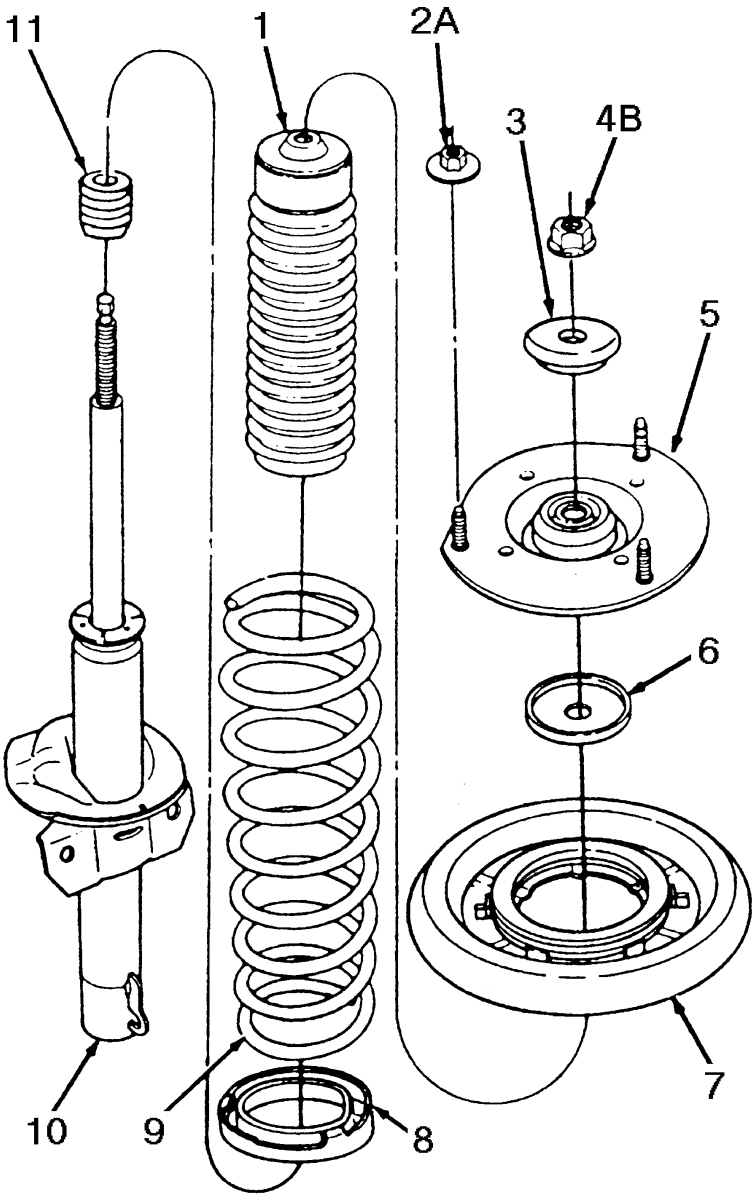
P - Positive
N - Negative
F - Front
R - Rear
1 Sedan
2 Wagon

Wheel Alignment Specifications

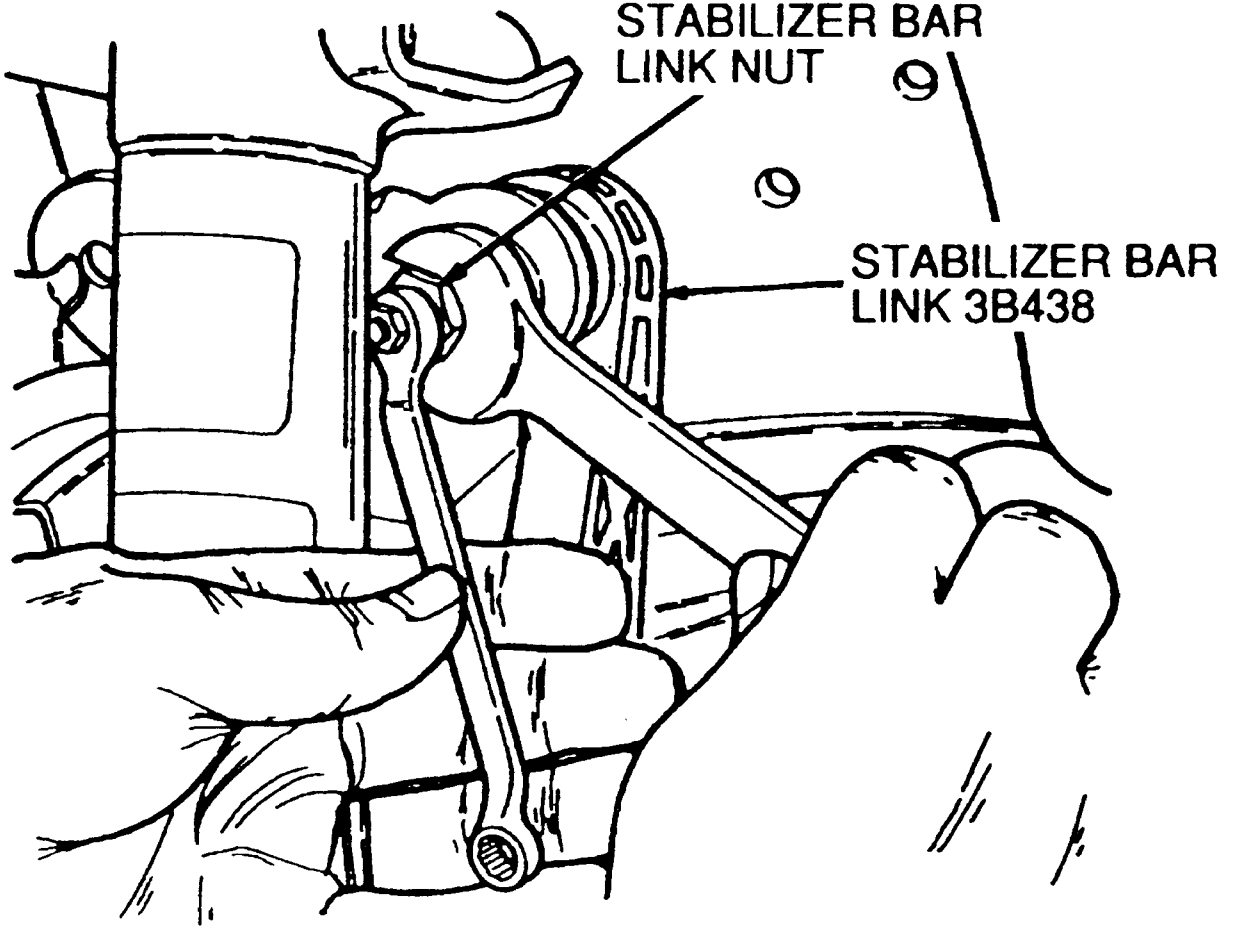
Click to enlarge

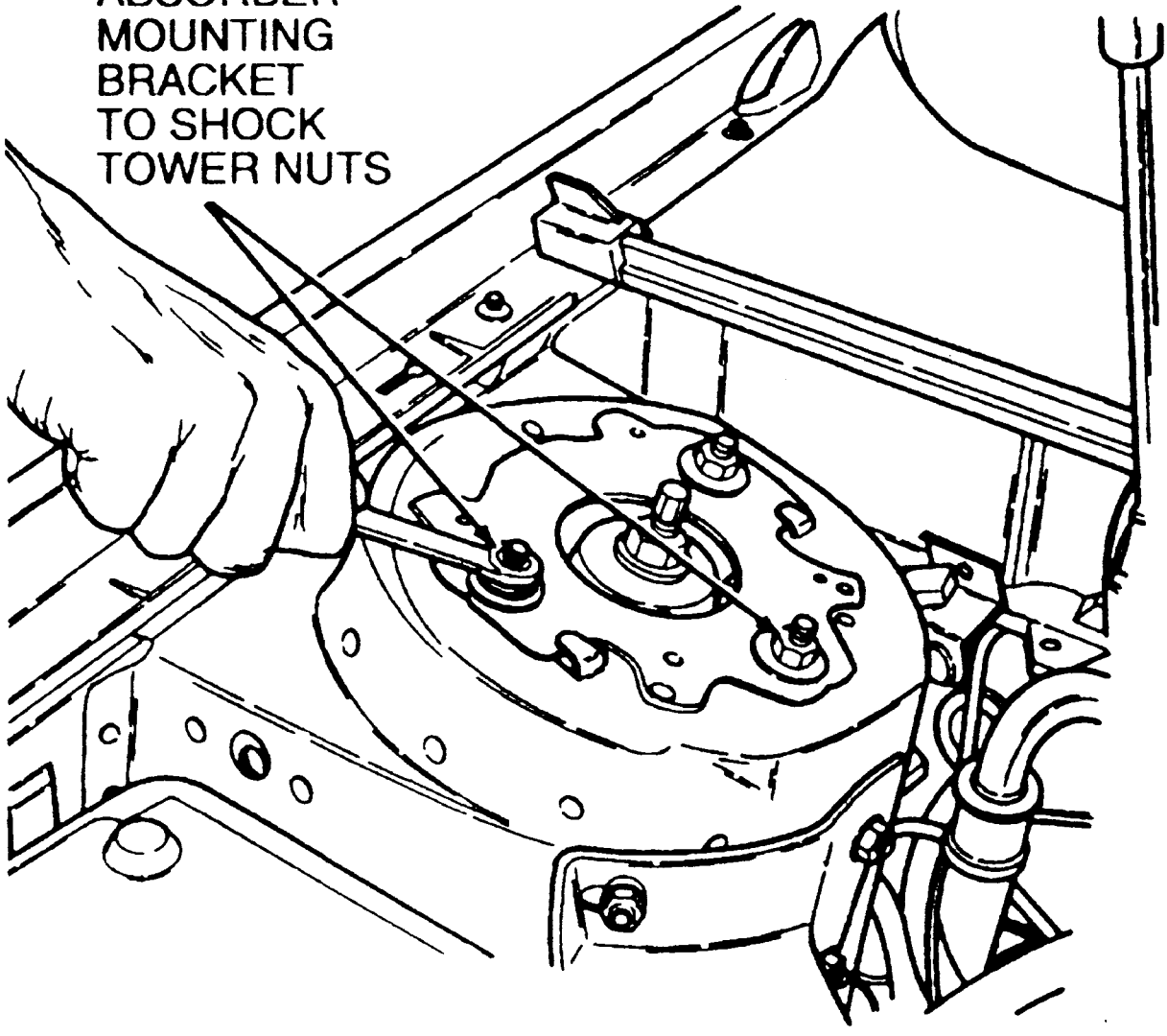


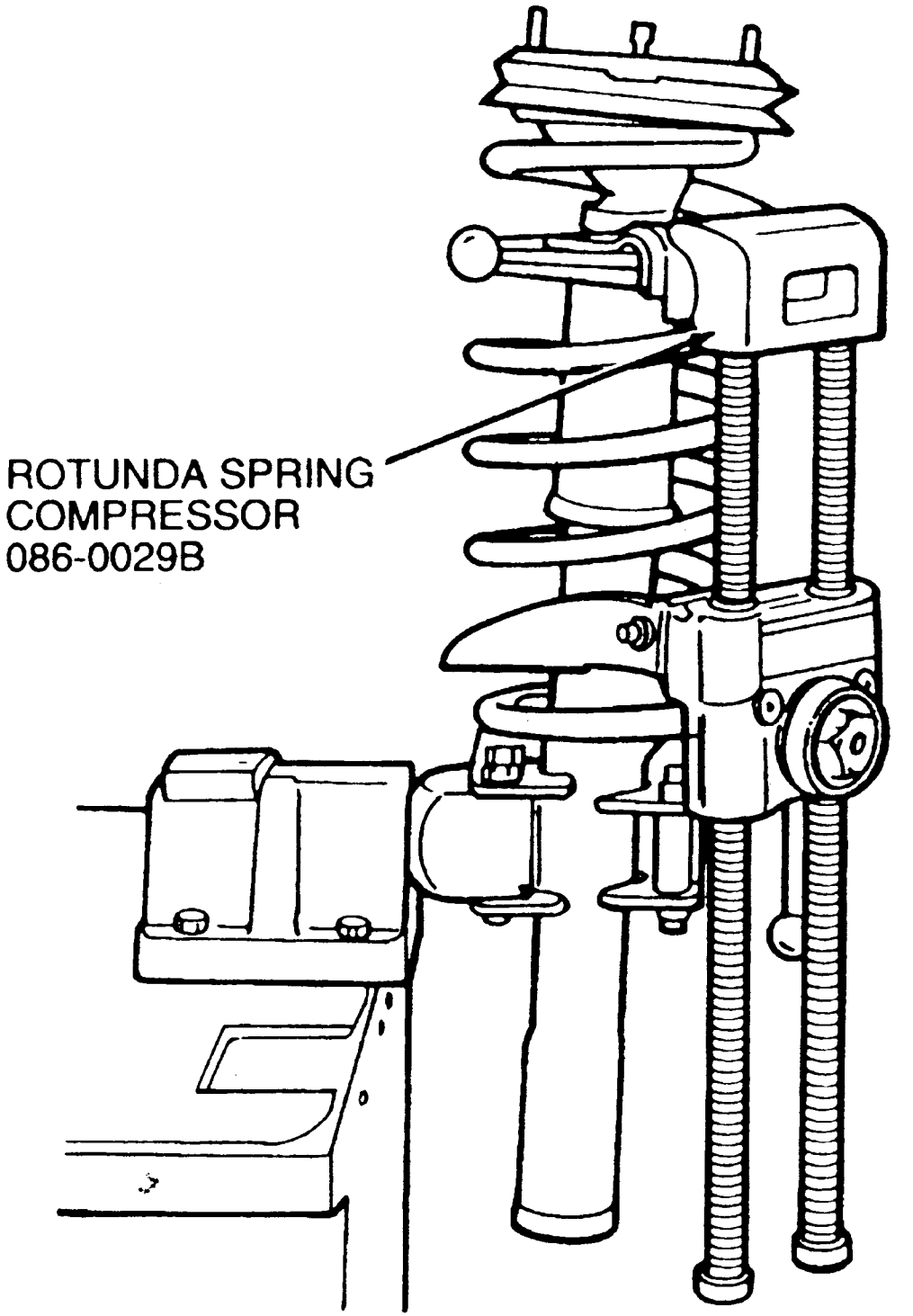
1 Stabilizer bar link
2 Front stabilizer bar
3 Stabilizer bar bracket
4 Lower suspension arm stabilizer bar insulators
5 Front shock absorber mounting bracket
6 Front coil spring
7 Front spring and shock
8 Front wheel knuckle
9 Front suspension lower arm strut
10 Front suspension lower arm (R)
Front suspension lower arm (L)

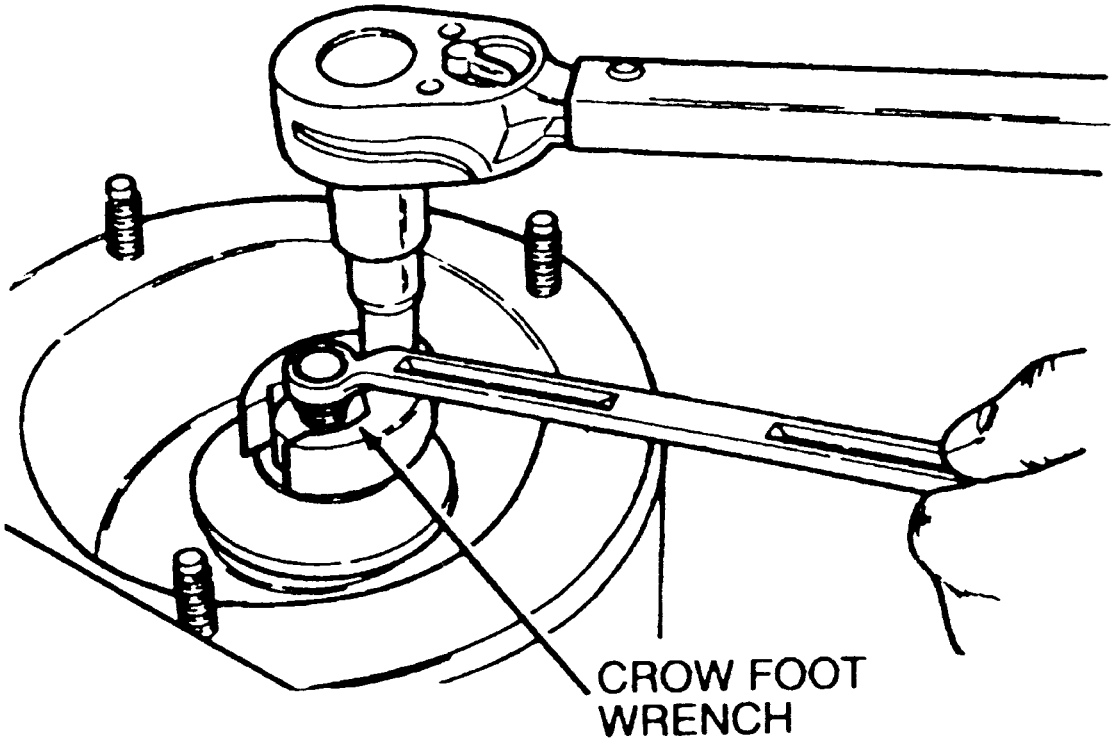


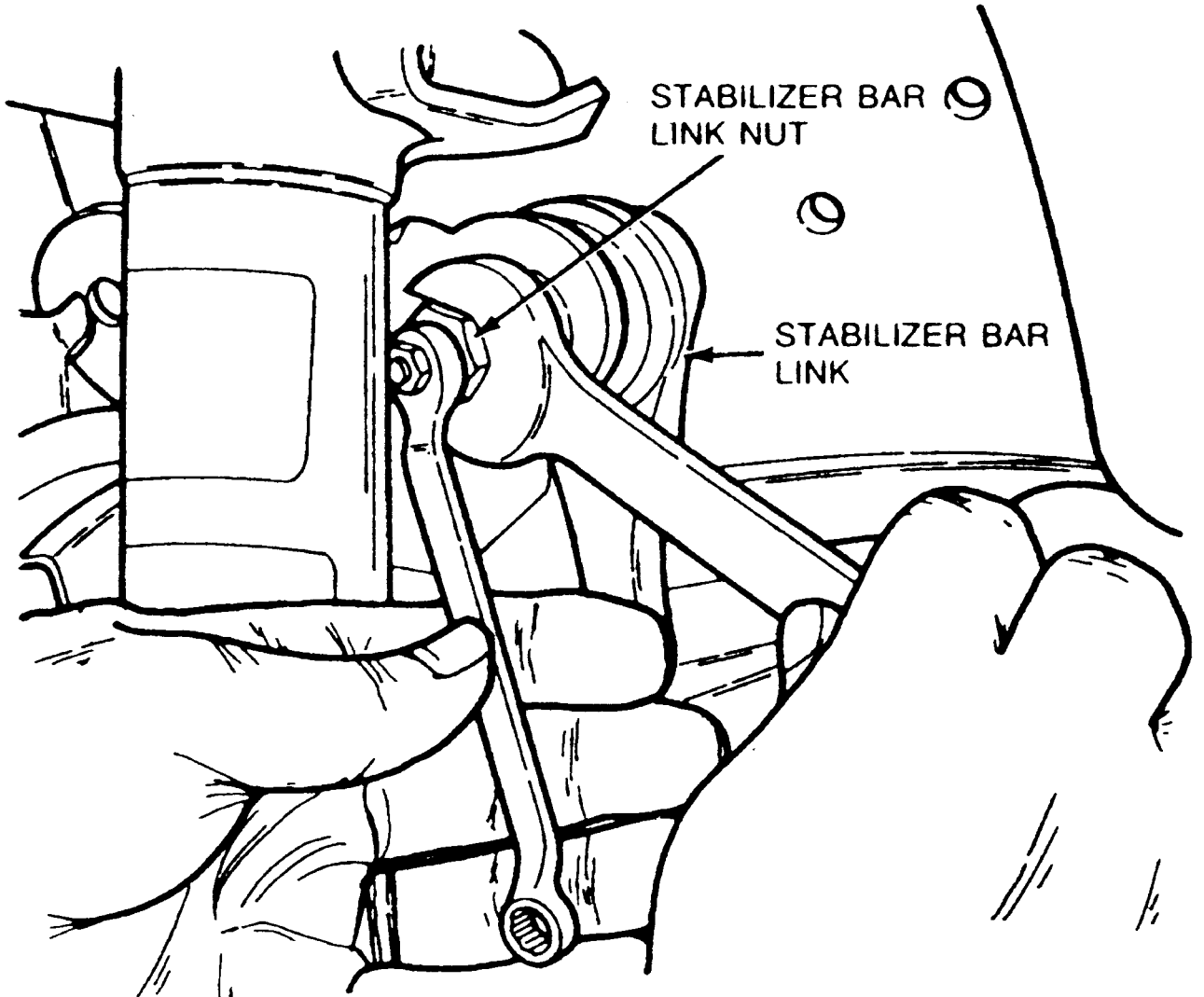
1 Dust boot
2 Nut (3 req'd)
3 Washer
4 Nut
5 Front shock absorber mounting bracket
6 Washer
7 Front suspension bearing and seal
8 Front spring insulator
9 Front coil spring
10 Front spring and shock
11 Jounce bumper
A Tighten to 30-40 Nm (23-29 lb.ft.)
B Tighten to 53-72 Nm (40-53 lb.ft.)

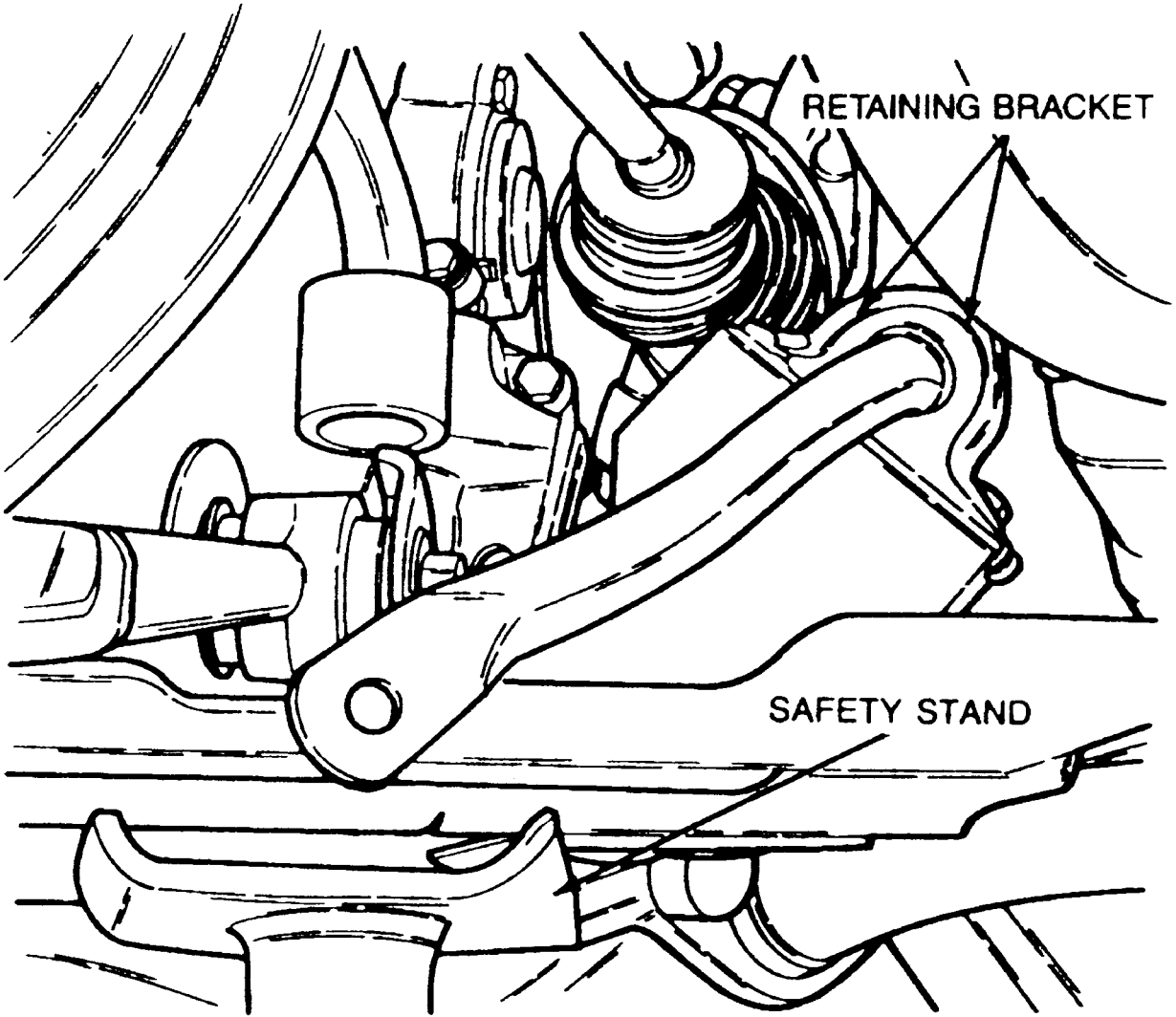

STABILIZER BAR
LINK NUT
STABILIZER BAR
LINK 3B438

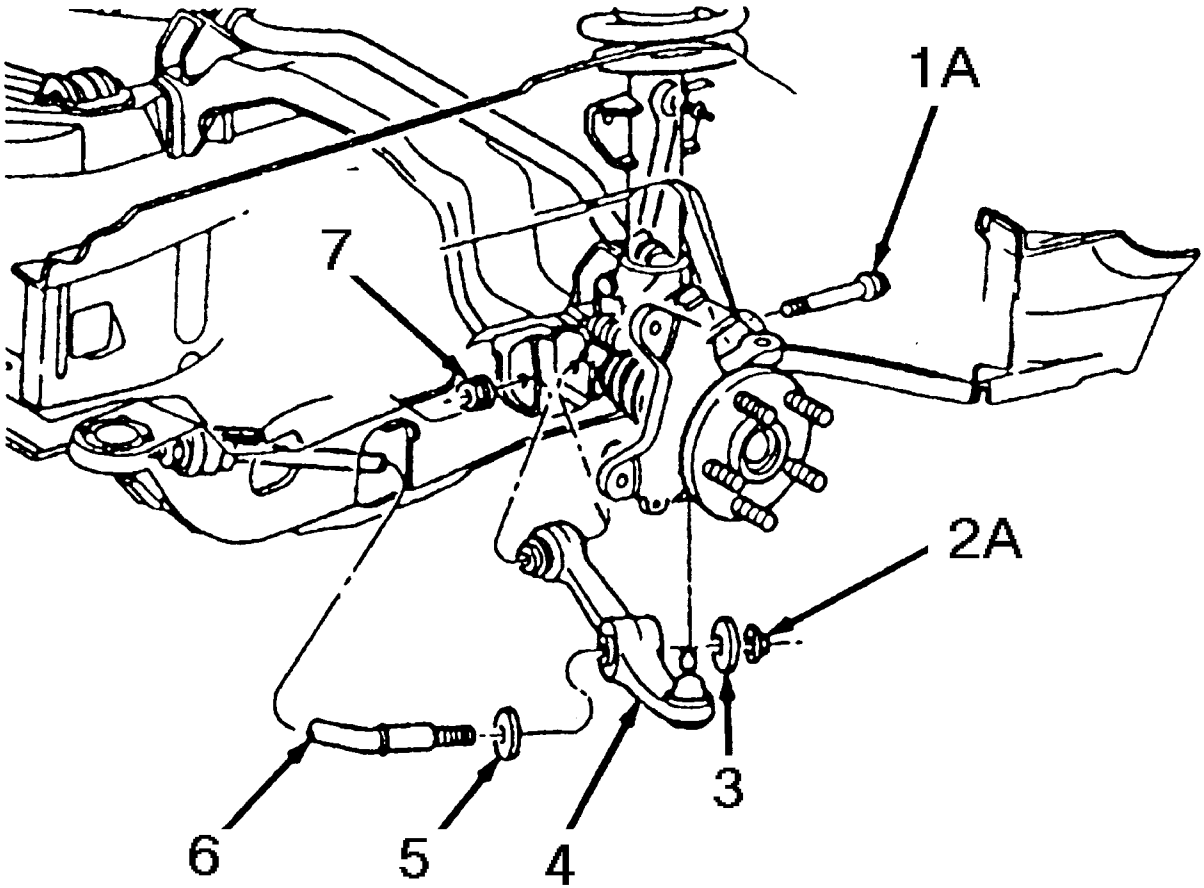

FRONT SHOCK
ABSORBER
MOUNTING
BRACKET
TO SHOCK
TOWER NUTS


ROTUNDA SPRING
COMPRESSOR
086-0029B

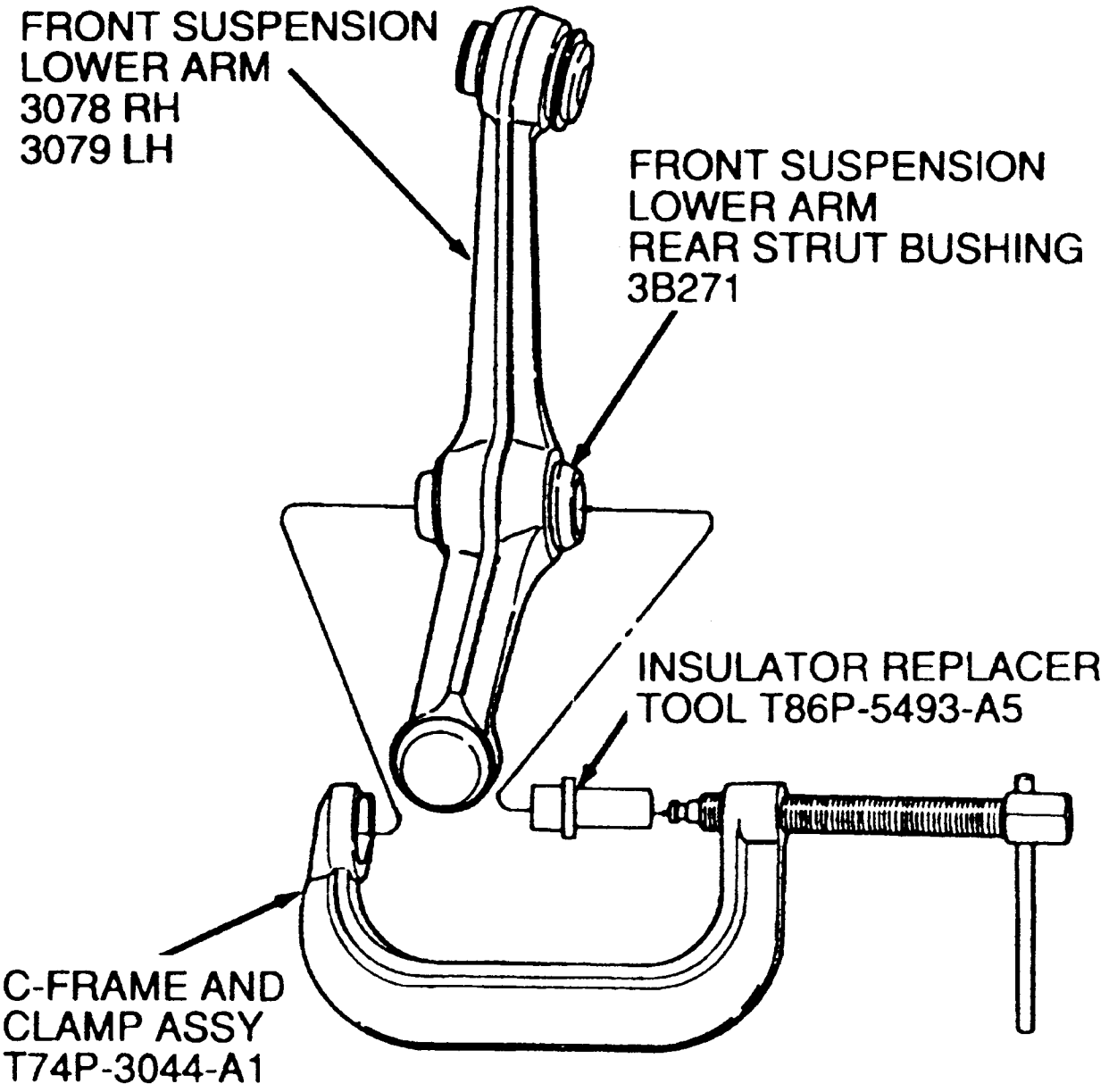

CROW FOOT
WRENCH

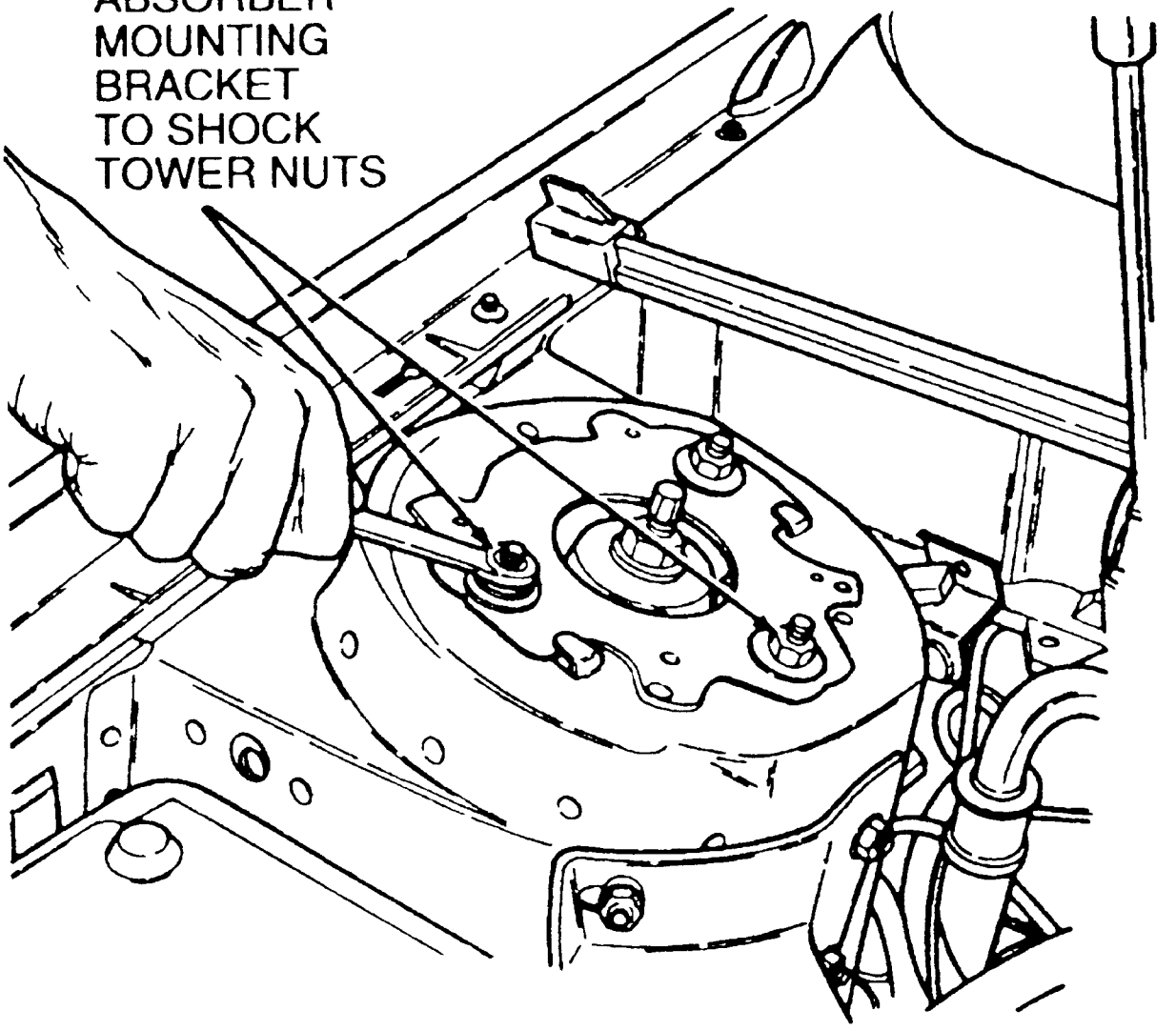

STABILIZER BAR
LINK NUT
STABILIZER BAR
LINK

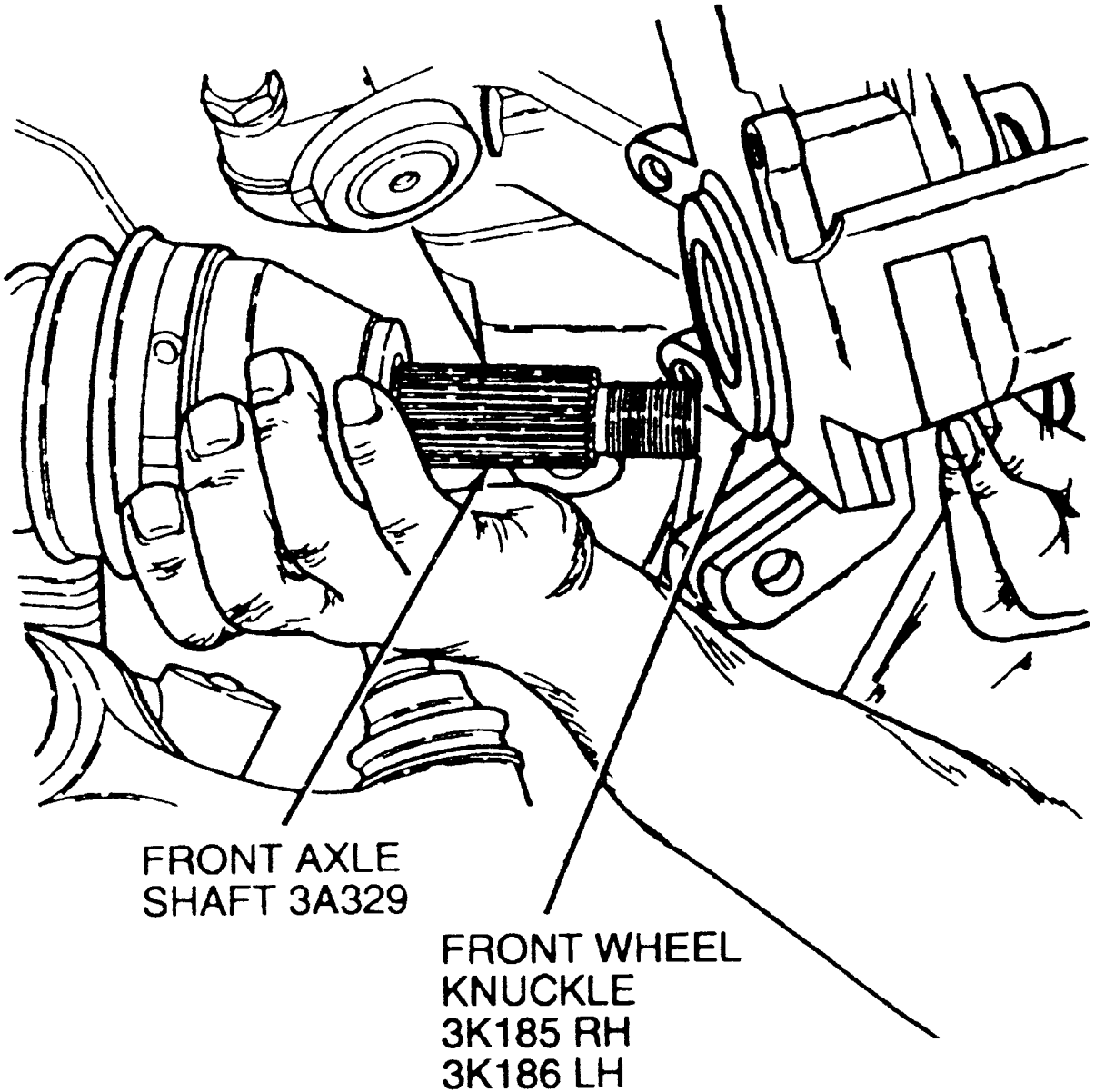

RETAINING BRACKET
SAFETY STAND



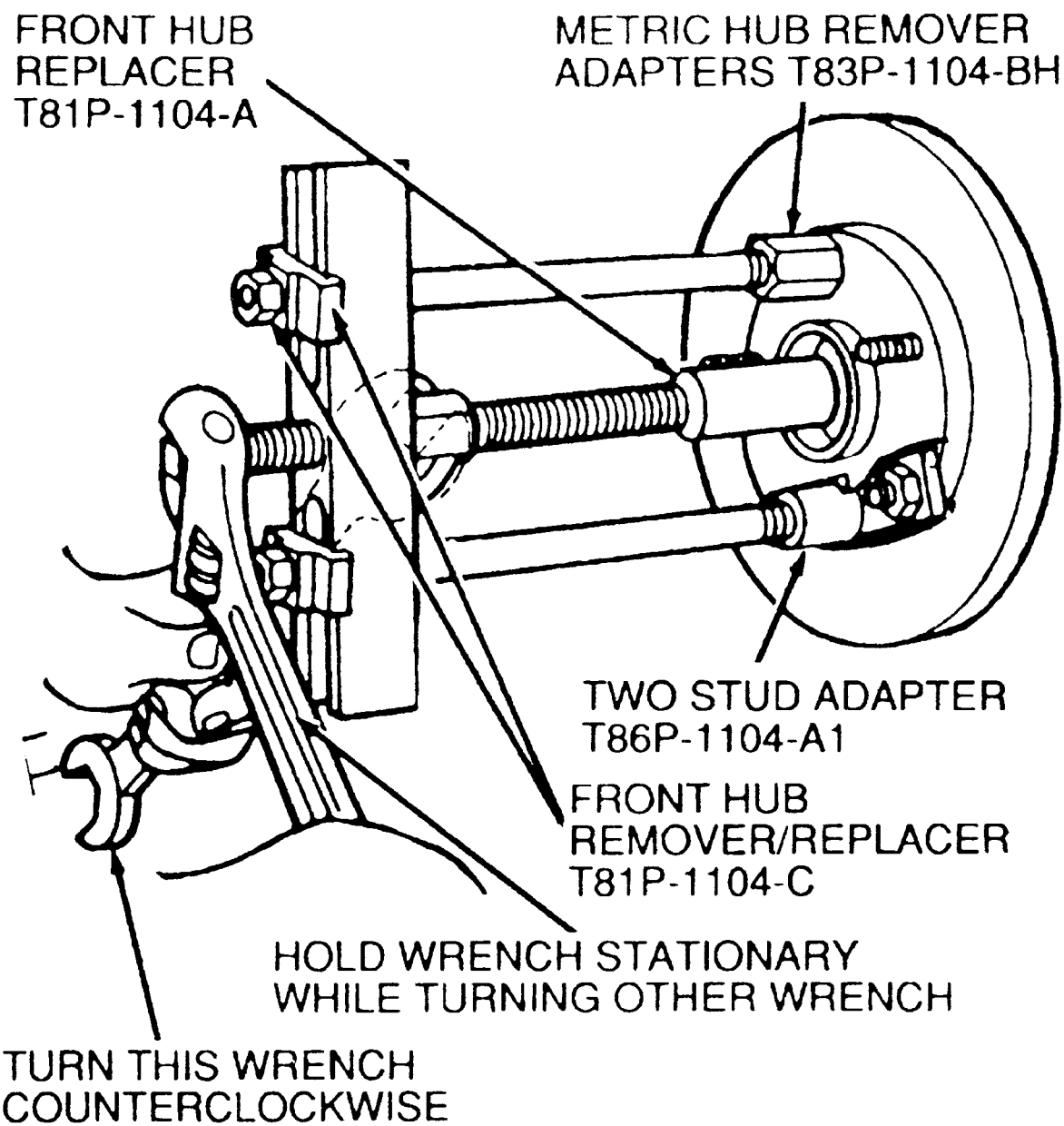
1 Bolt (2 req'd)
2 Nut (2 req'd)
3 Washer (2 req'd)
4 Front suspension lower arm
5 Washer (2 req'd)
6 Front suspension lower arm strut
7 Nut (2 req'd)
A Tighten to 53-72 Nm (40-53 lb.ft.)

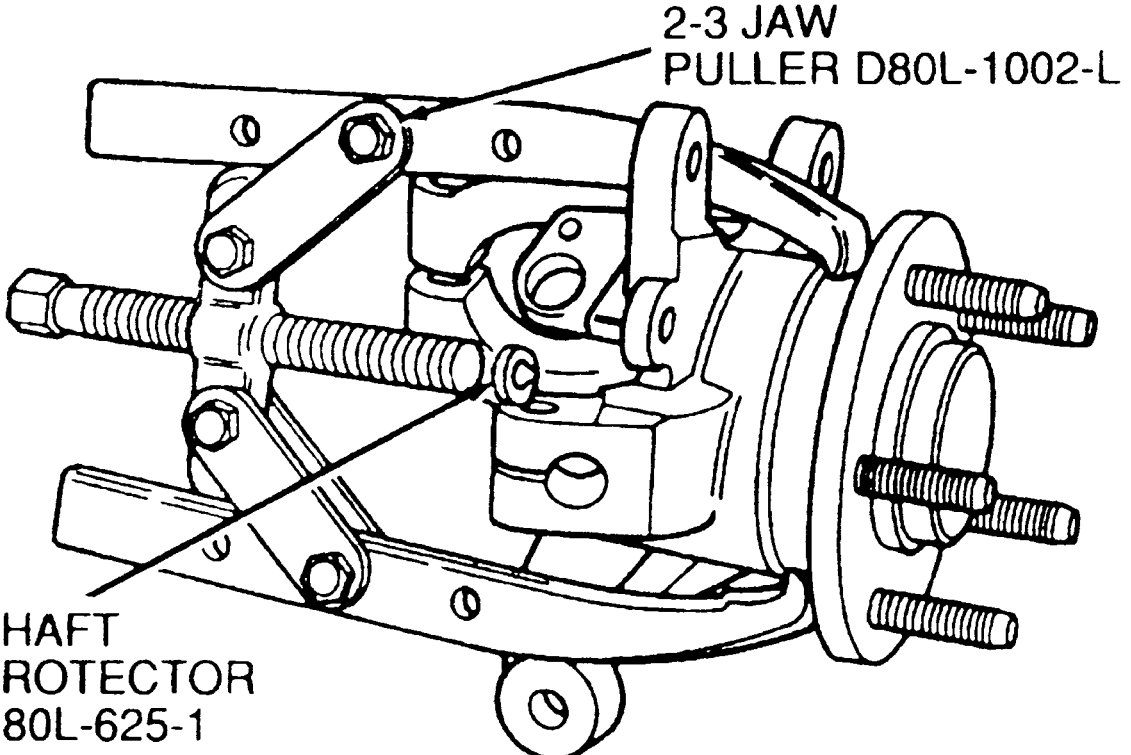

FRONT SUSPENSION
LOWER ARM
3078 RH
3079 LH
FRONT SUSPENSION
LOWER ARM
REAR STRUT BUSHING
3B271
INSULATOR REPLACER
TOOL T86P-5493-A5
C-FRAME AND
CLAMP ASSY
T74P-3044-A1

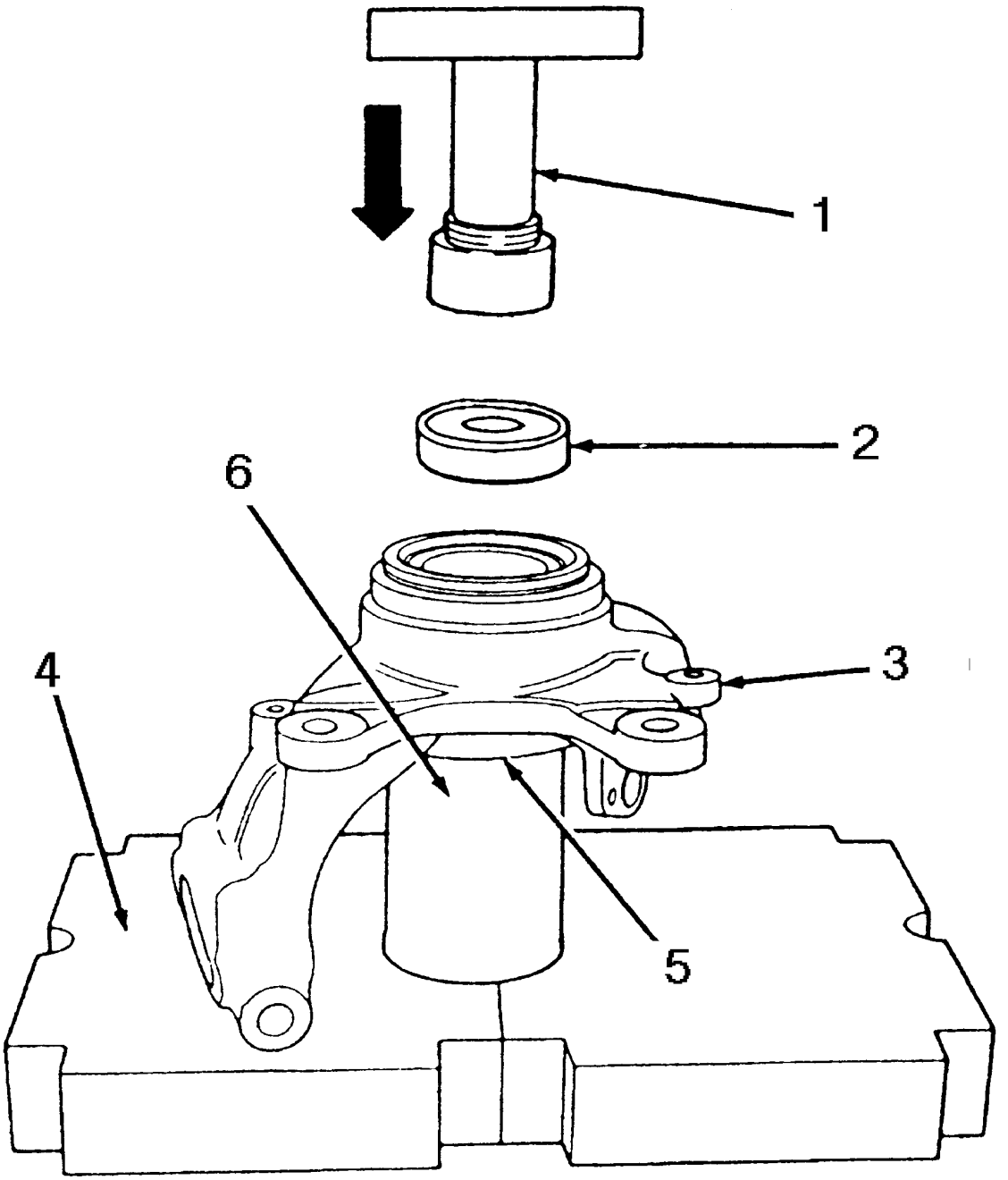

FRONT SHOCK
ABSORBER
MOUNTING
BRACKET
TO SHOCK
TOWER NUTS


FRONT AXLE
SHAFT 3A329
FRONT WHEEL
KNUCKLE
3K185 RH
3K186 LH

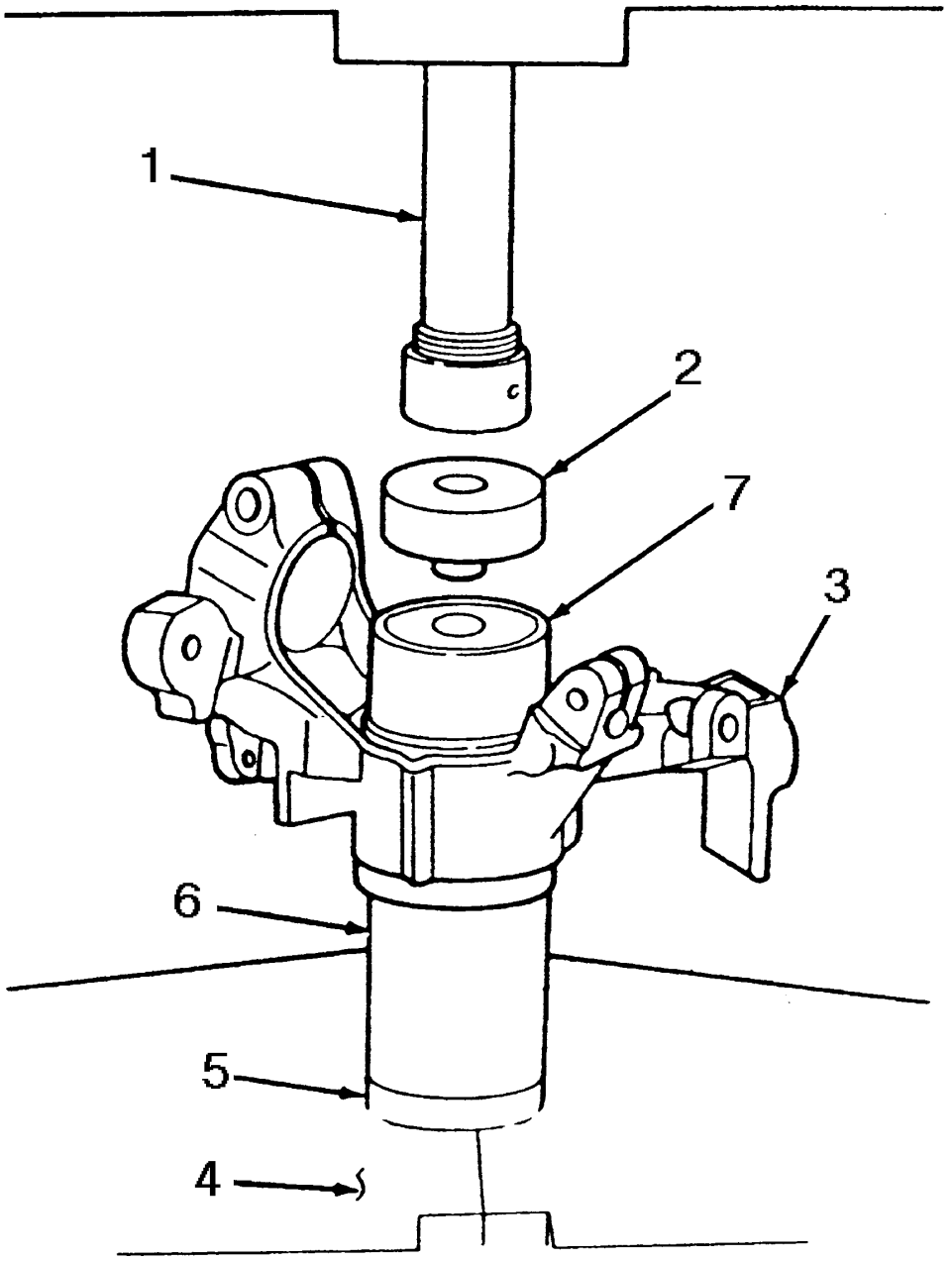
MAKE SURE THE HUB REMOVER ADAPTER IS FULLY THREADED ONTO THE HUB STUD AND IS POSITIONED OPPOSITE THE TWO STUD ADAPTER



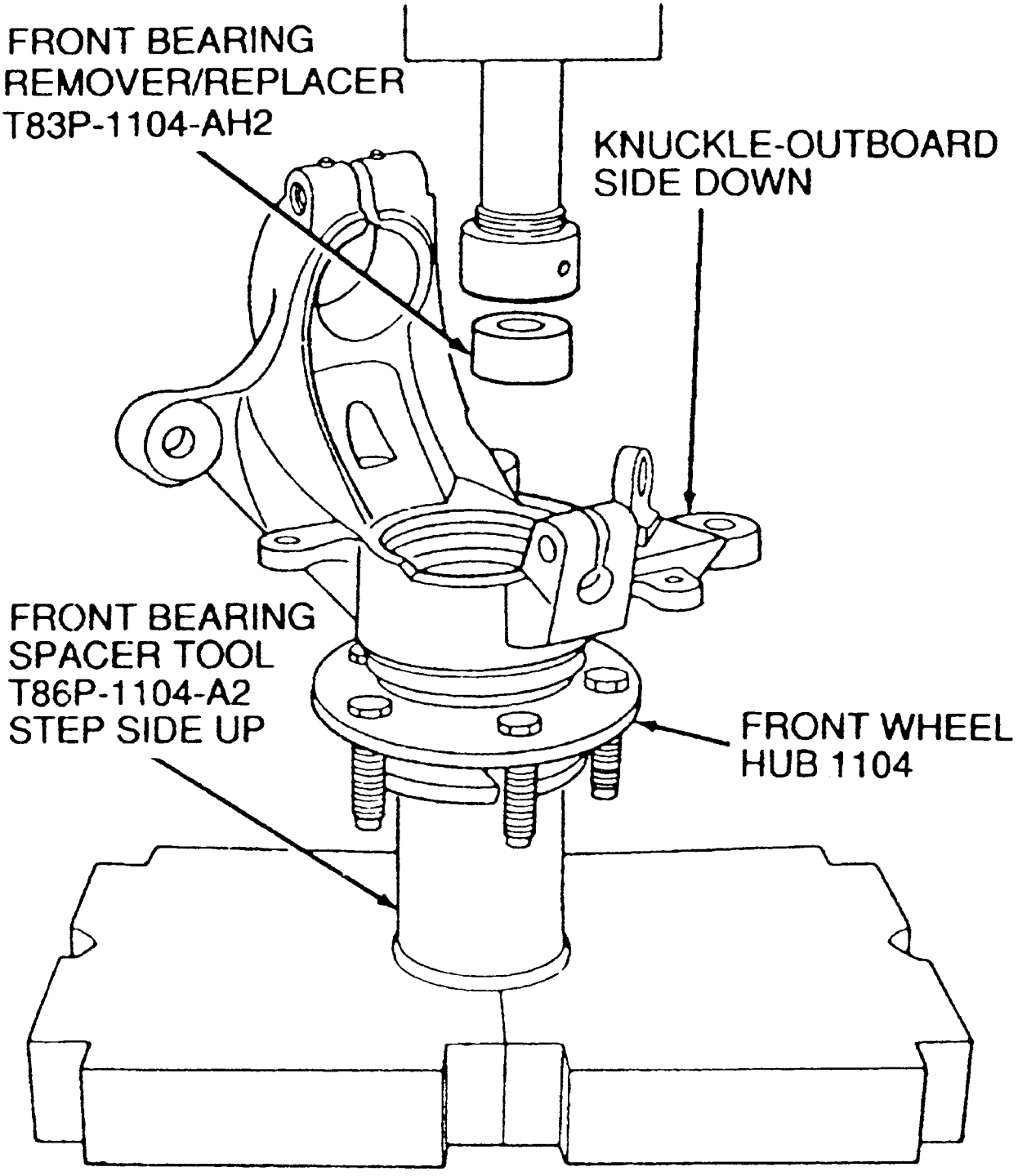

2-3 JAW
PULLER D80L-1002-L
SHAFT
PROTECTOR
D80L-625-1

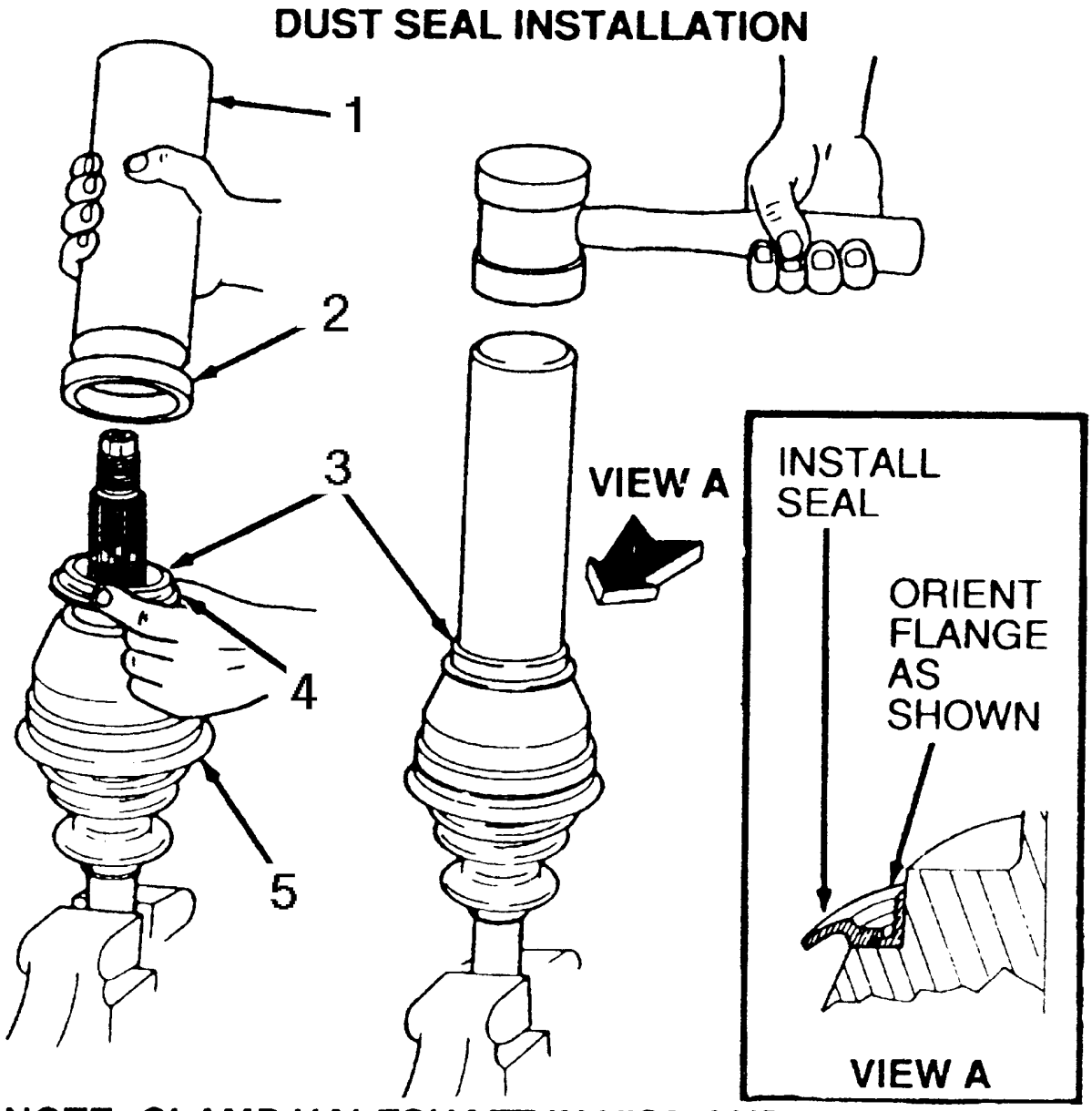


1 Arbor press
2 Front bearing remover/replacer
3 Front wheel knuckle and bearing assembly
4 Face plate
5 Step side up
6 Front bearing spacer



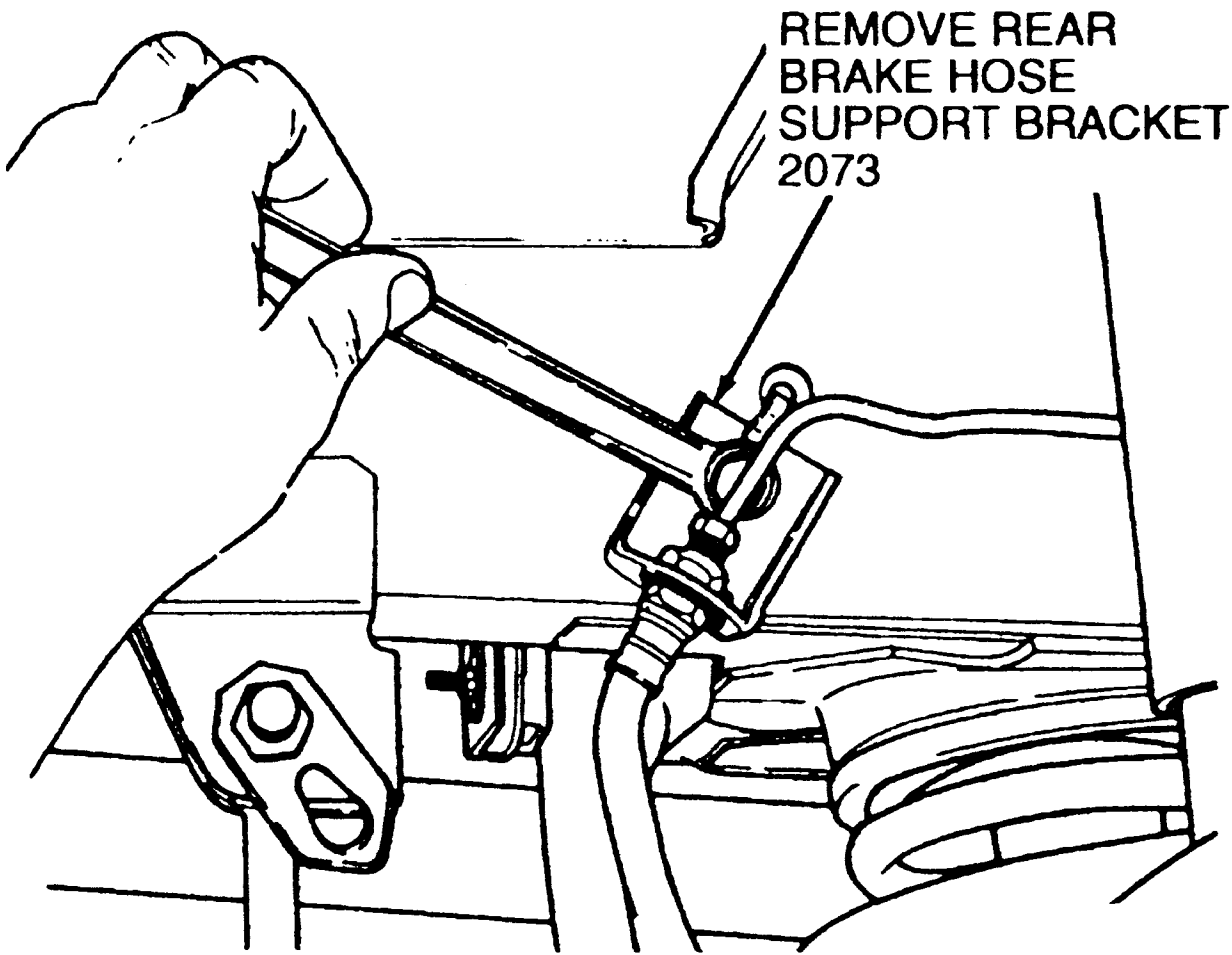
1 Arbor press
2 Bearing replacer (must be positioned with undercut side facing bearing)
3 Front wheel knuckle - outboard side
4 Face plate
5 Step side down
6 Front bearing spacer
7 Front wheel bearing

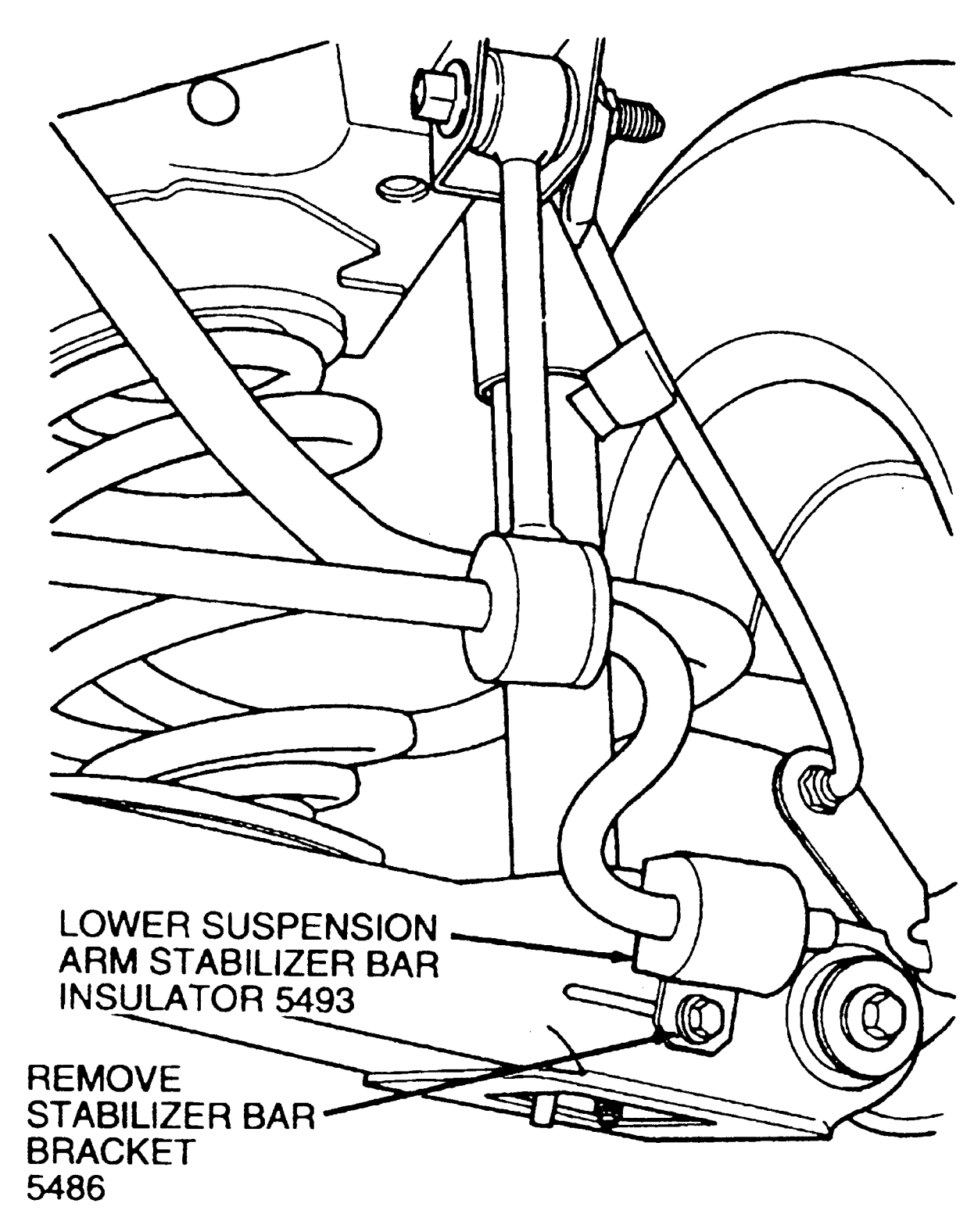

FRONT BEARING
REMOVER/REPLACER
T83P-1104-AH2
KNUCKLE-OUTBOARD
SIDE DOWN
FRONT BEARING
SPACER TOOL
T86P-1104-A2
STEP SIDE UP
FRONT WHEEL
HUB 1104

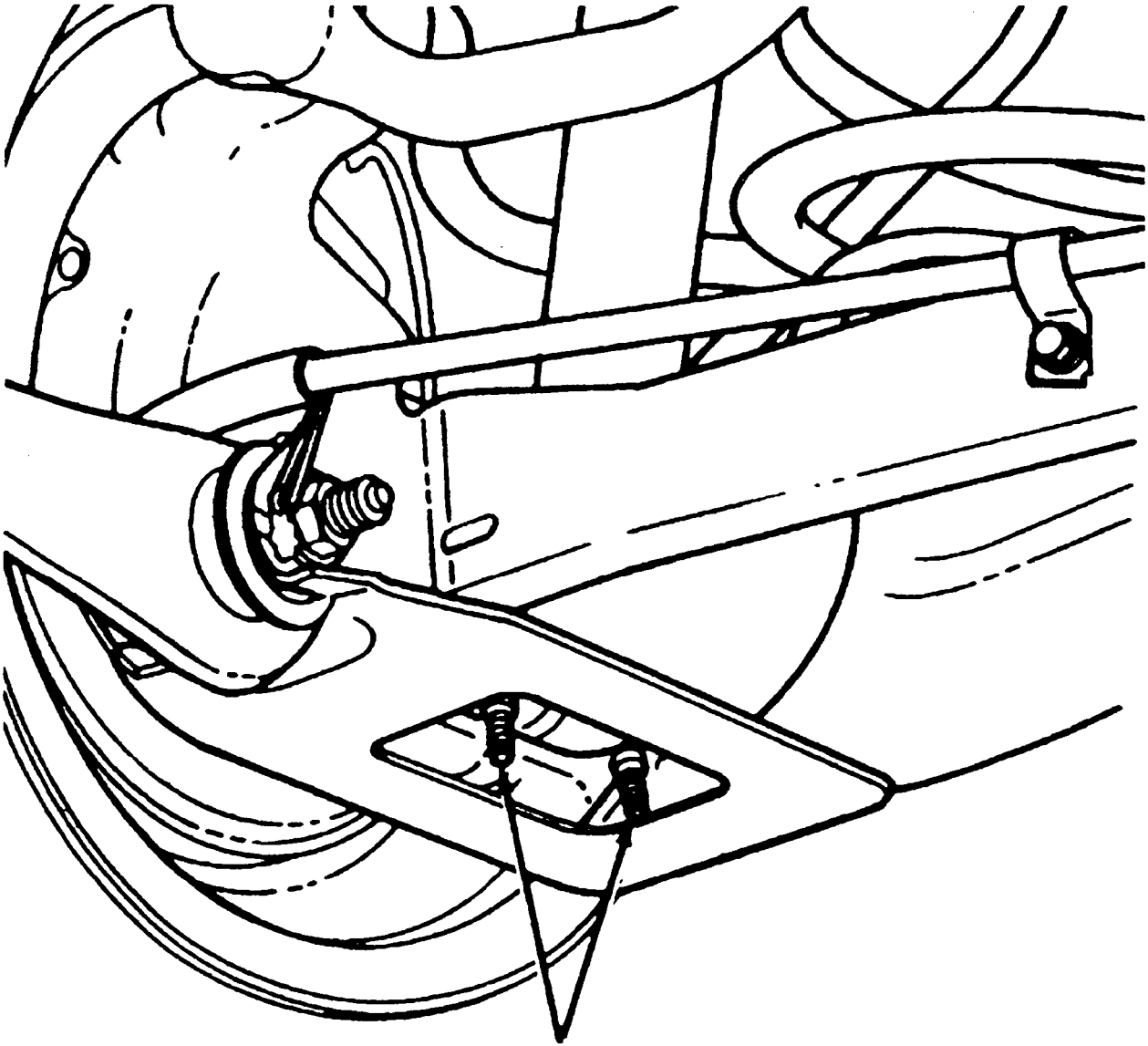


NOTE: CLAMP HALFSHAFT IN VISE AND INSTALL USING SPINDLE AXLE SEAL REPLACER T83T-3132-A1 AND FRONT BEARING DUST SEAL REPLACER T89P-1104-A4 WITH SEAL FLANGE FACING OUTBOARD.

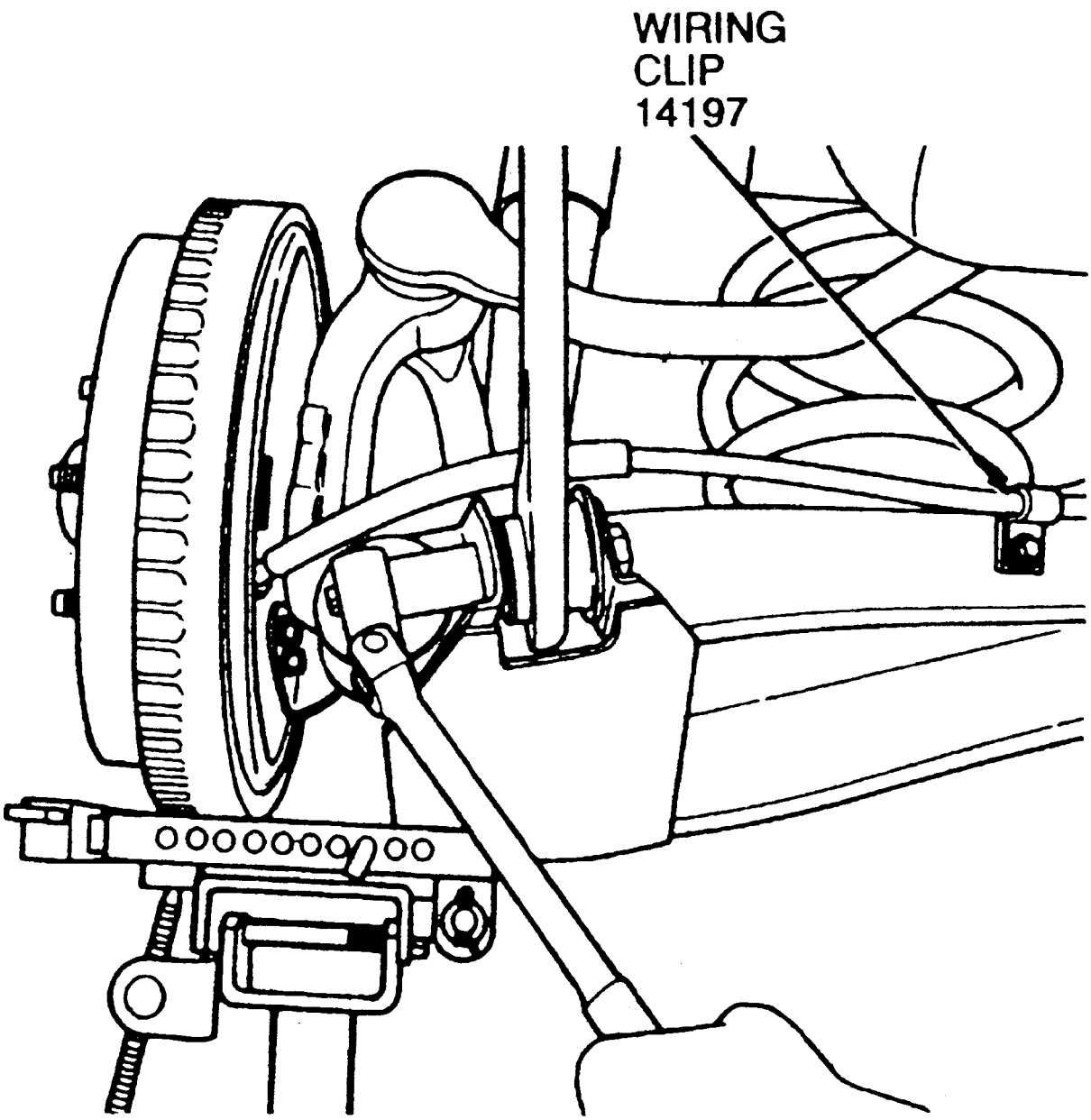
1 Spindle axle seal replacer
2 Front bearing dust seal replacer
3 Front bearing dust seal
4 Front bearing dust seal flange
5 Front wheel driveshaft joint

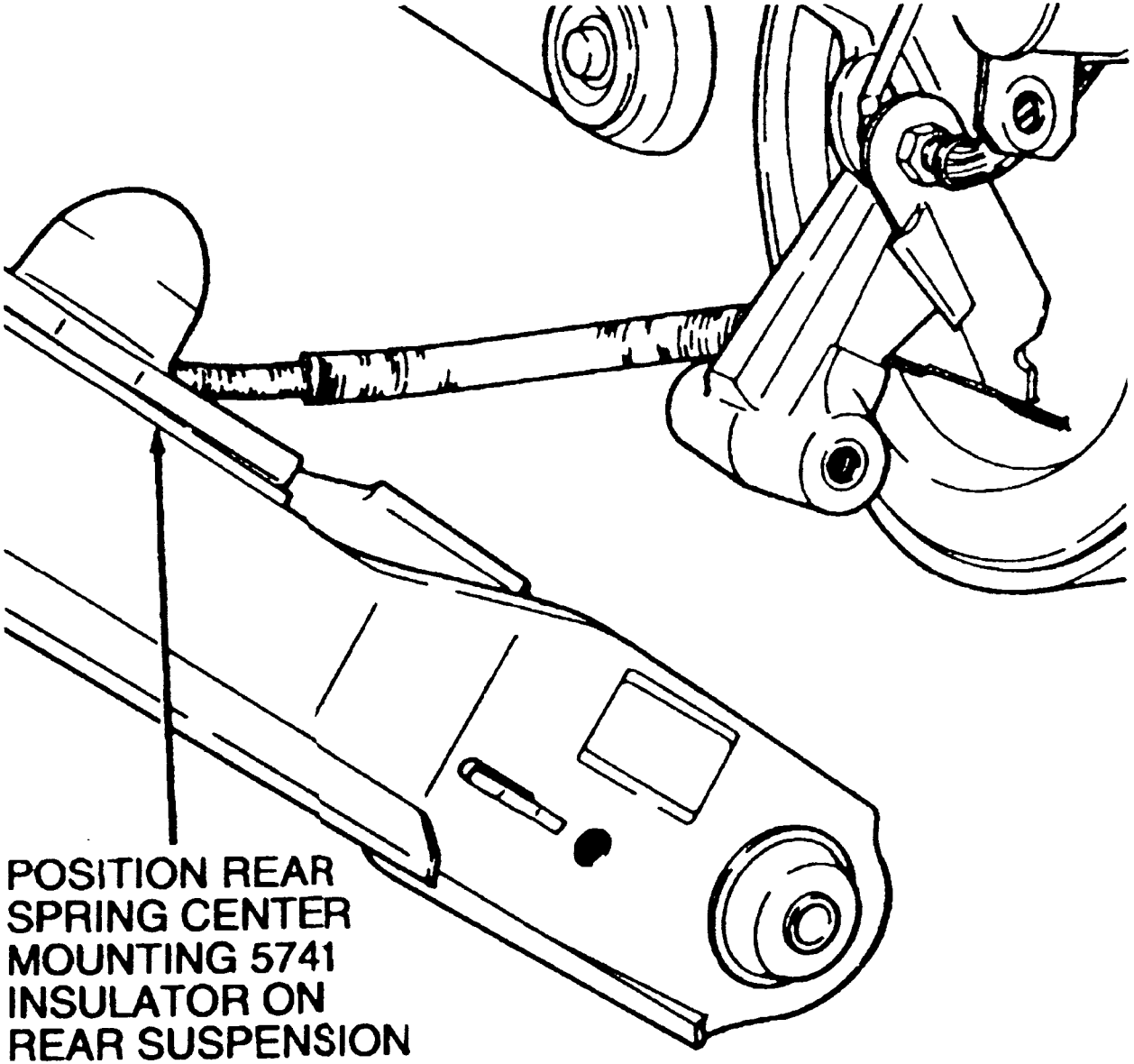

REMOVE REAR
BRAKE HOSE
SUPPORT BRACKET
2073

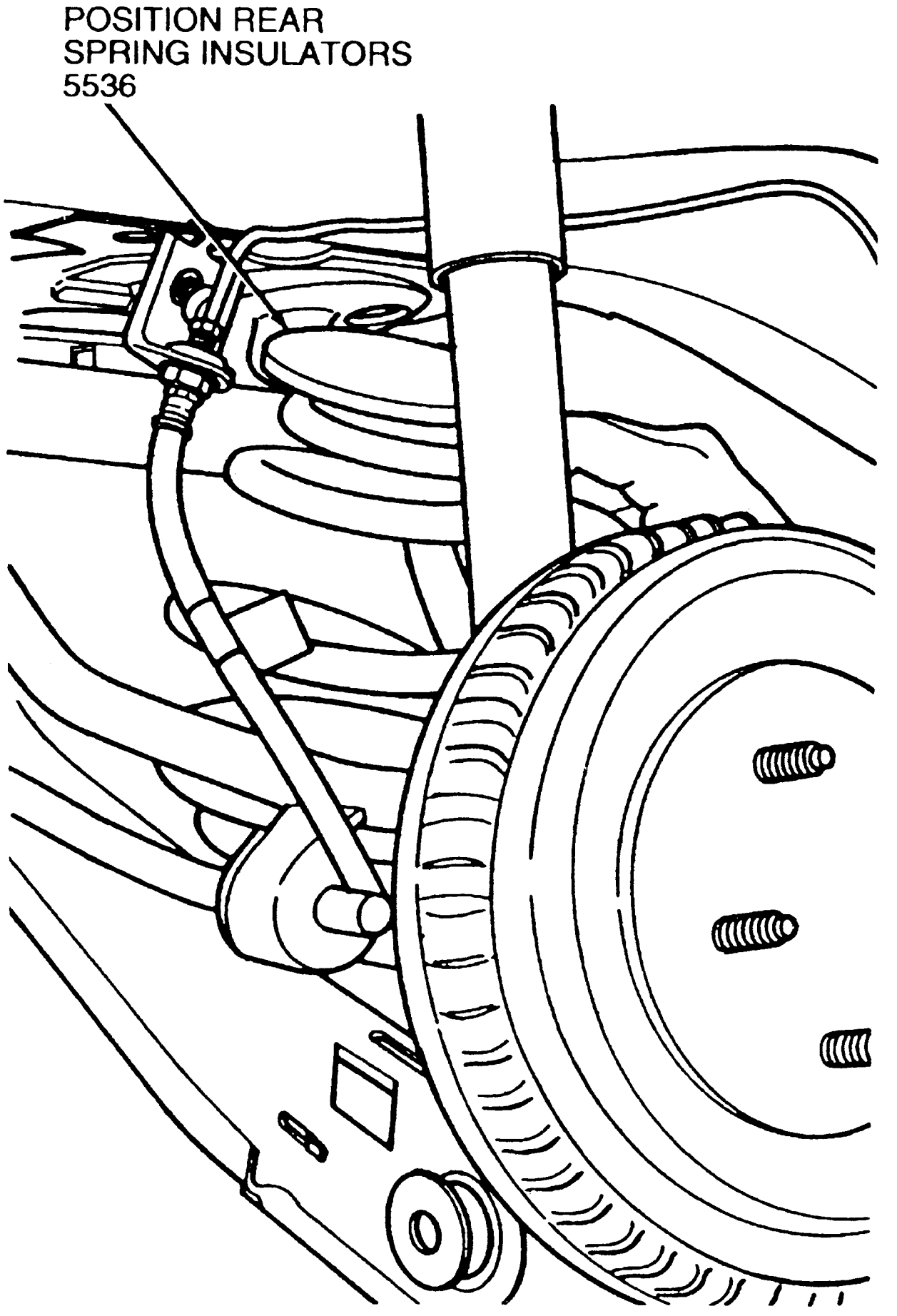

LOWER SUSPENSION
ARM STABILIZER BAR
INSULATOR 5493
REMOVE
STABILIZER BAR
BRACKET
5486

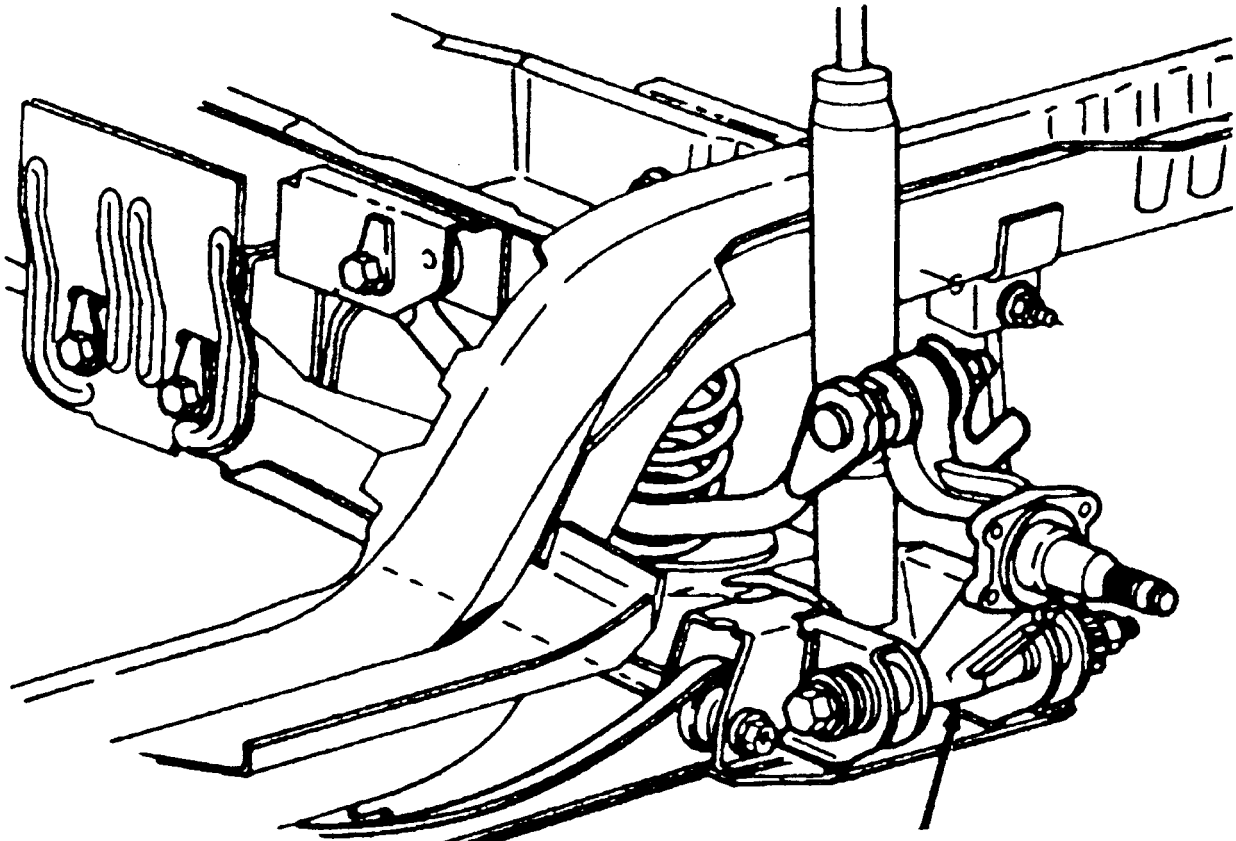


REMOVE REAR SHOCK
ABSORBER RETAINING NUTS

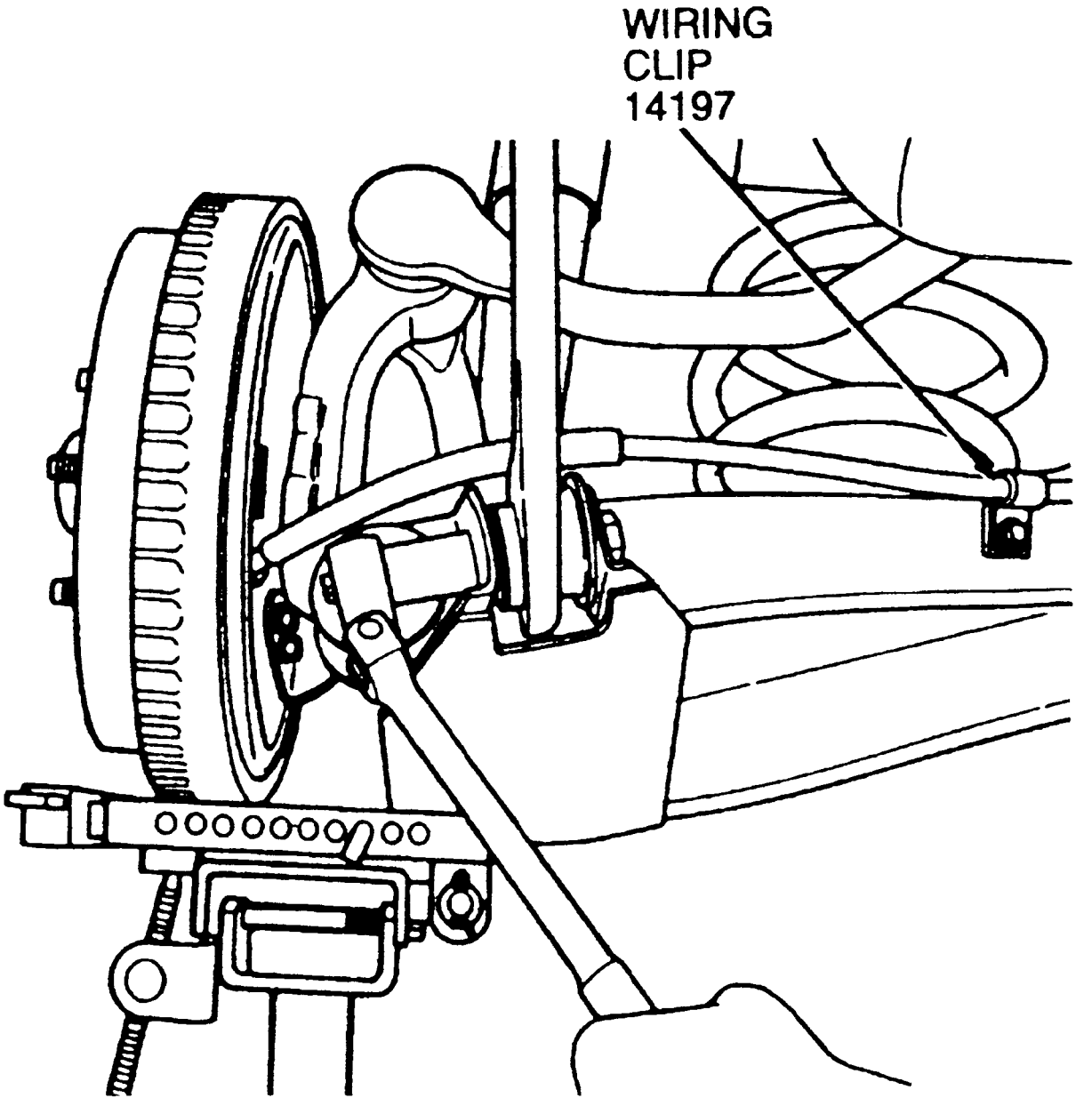

WIRING
CLIP
14197

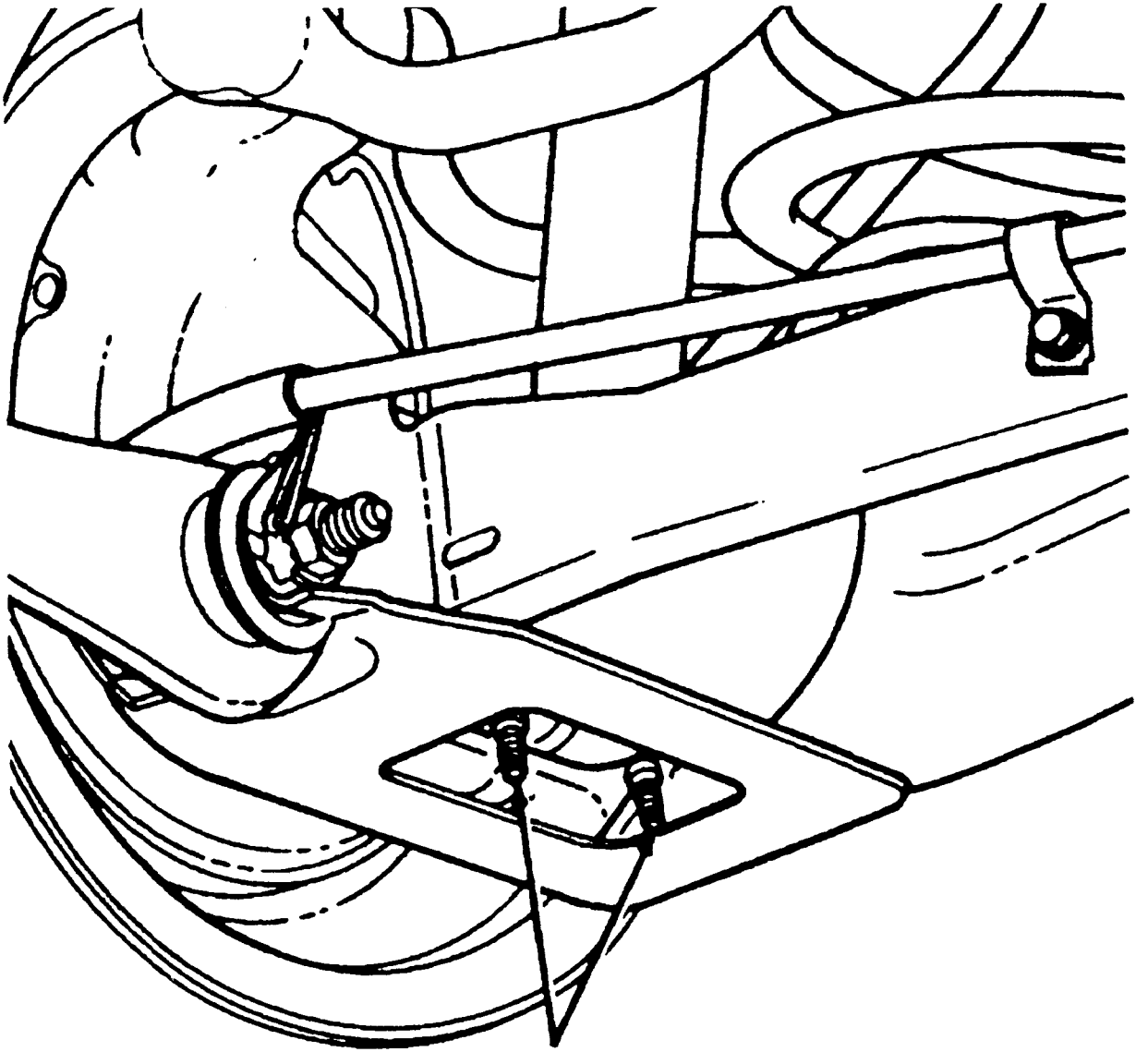

POSITION REAR
SPRING CENTER
MOUNTING 5741
INSULATOR ON
REAR SUSPENSION
ARM AND BUSHING
5500


POSITION REAR
SPRING INSULATORS
5536

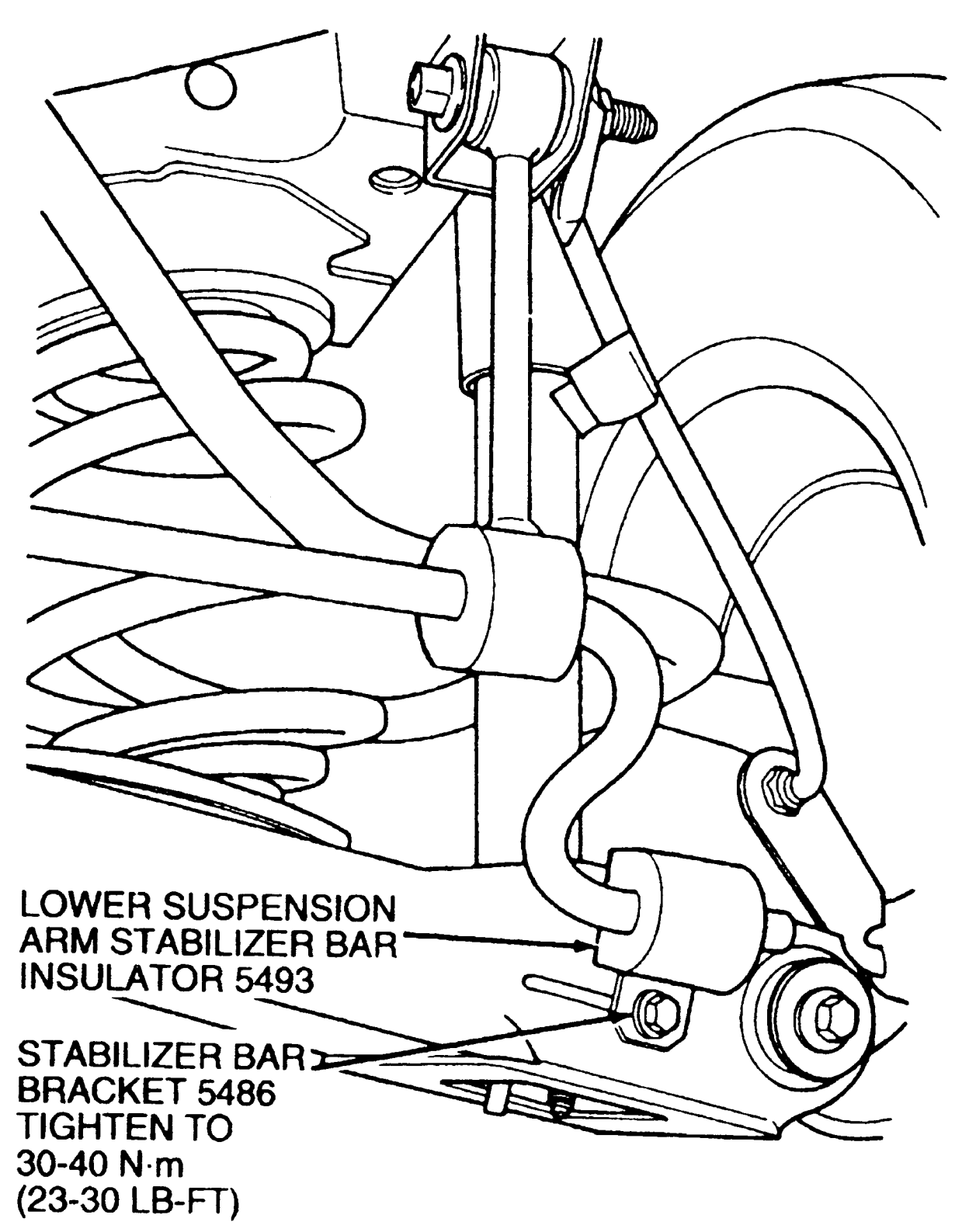


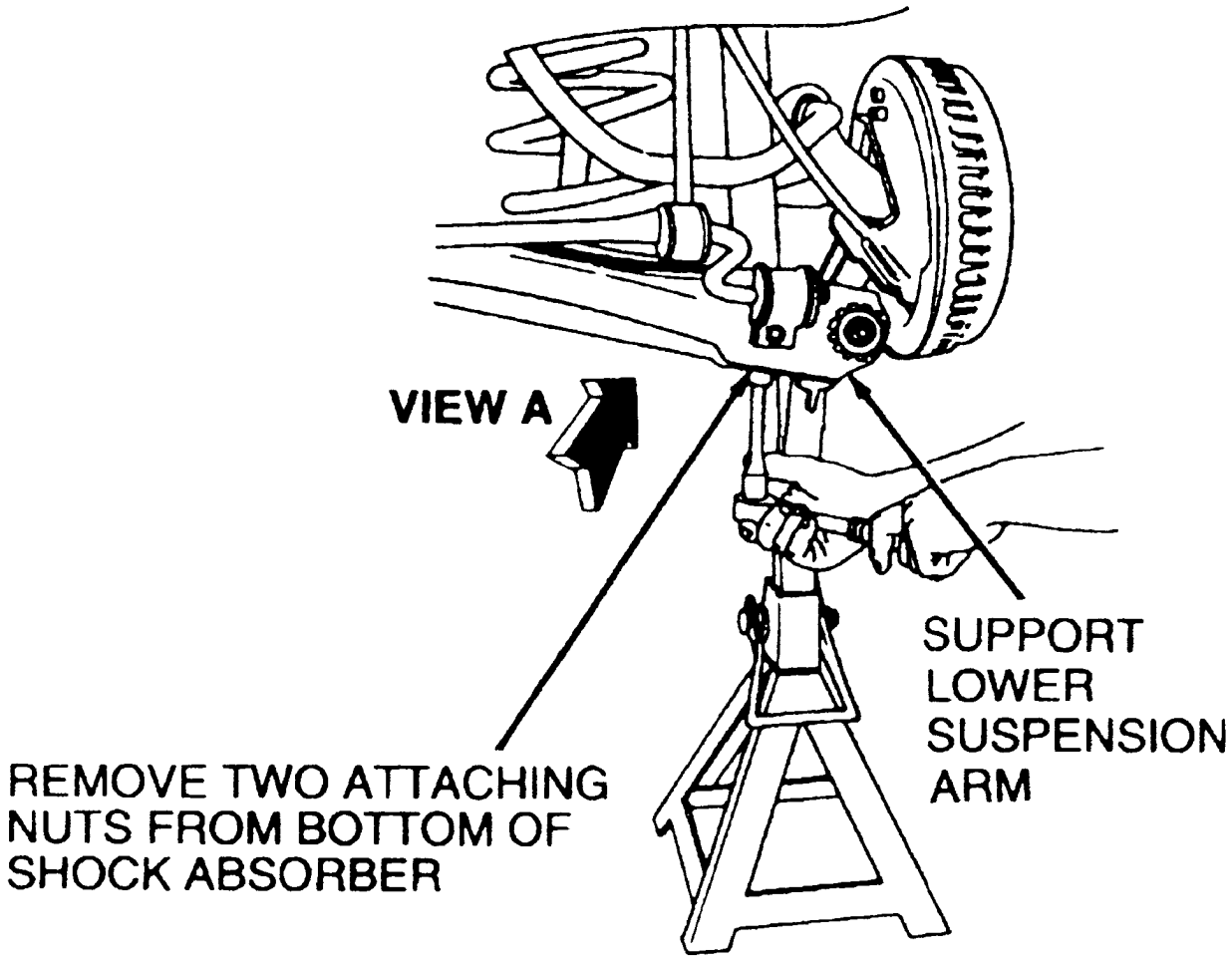
POSITION REAR WHEEL SPINDLE 4A013 IN REAR SUSPENSION ARM AND BUSHING 5500. INSTALL NEW BOLT, WASHER, NUT AND ADJUSTING CAM. TIGHTEN NUT TO 54-71 N·m (40-52 LB-FT)

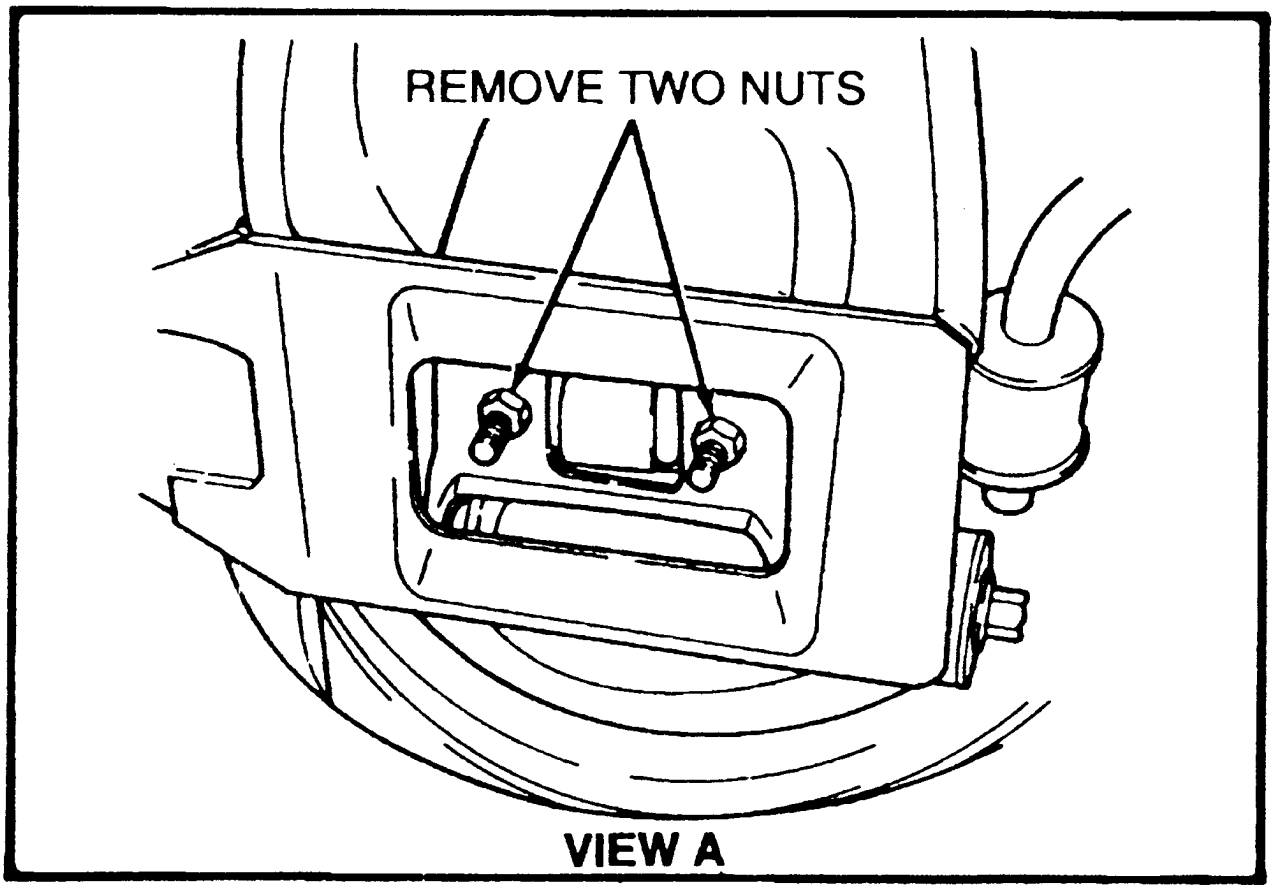

WIRING
CLIP
14197

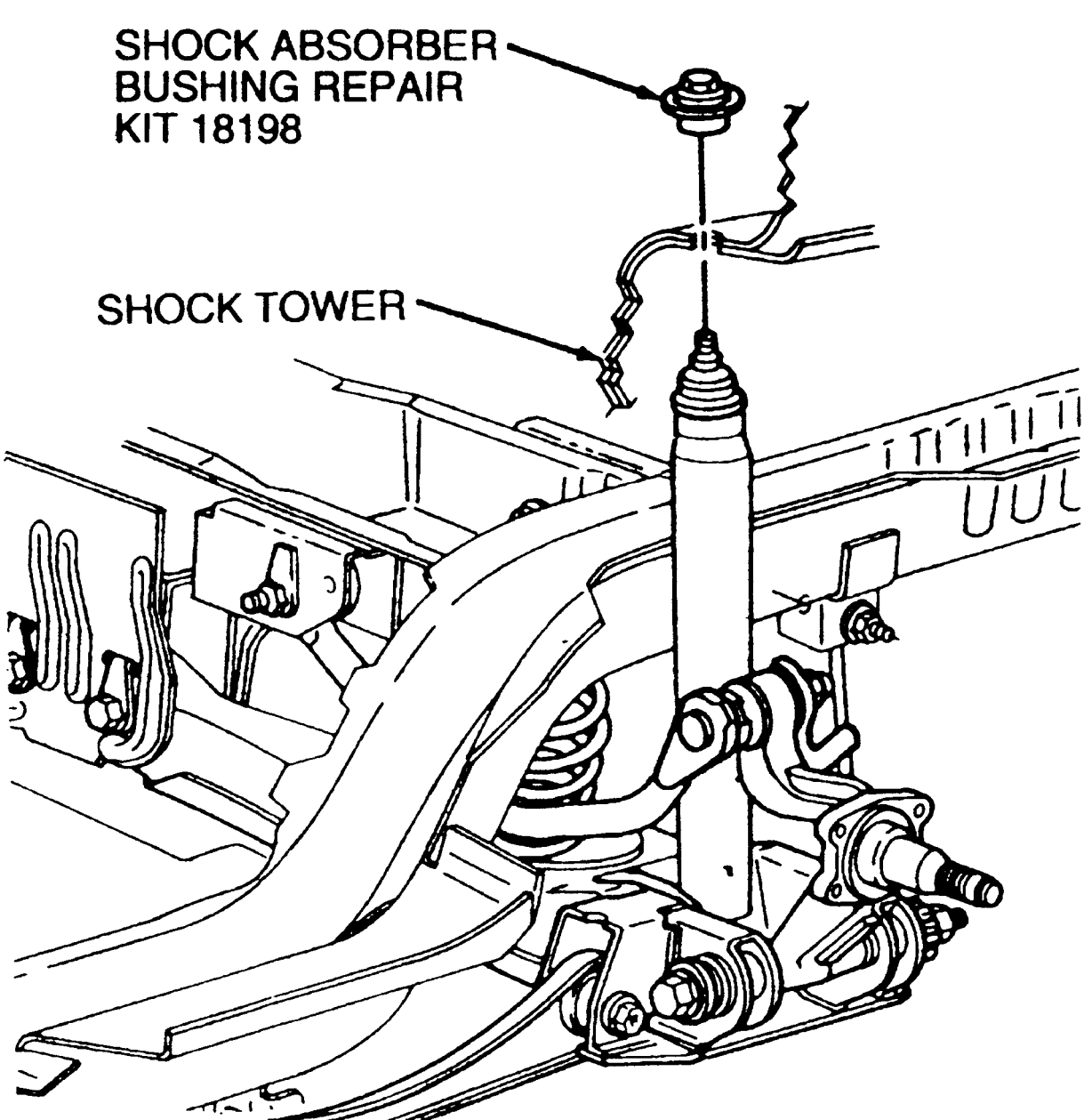


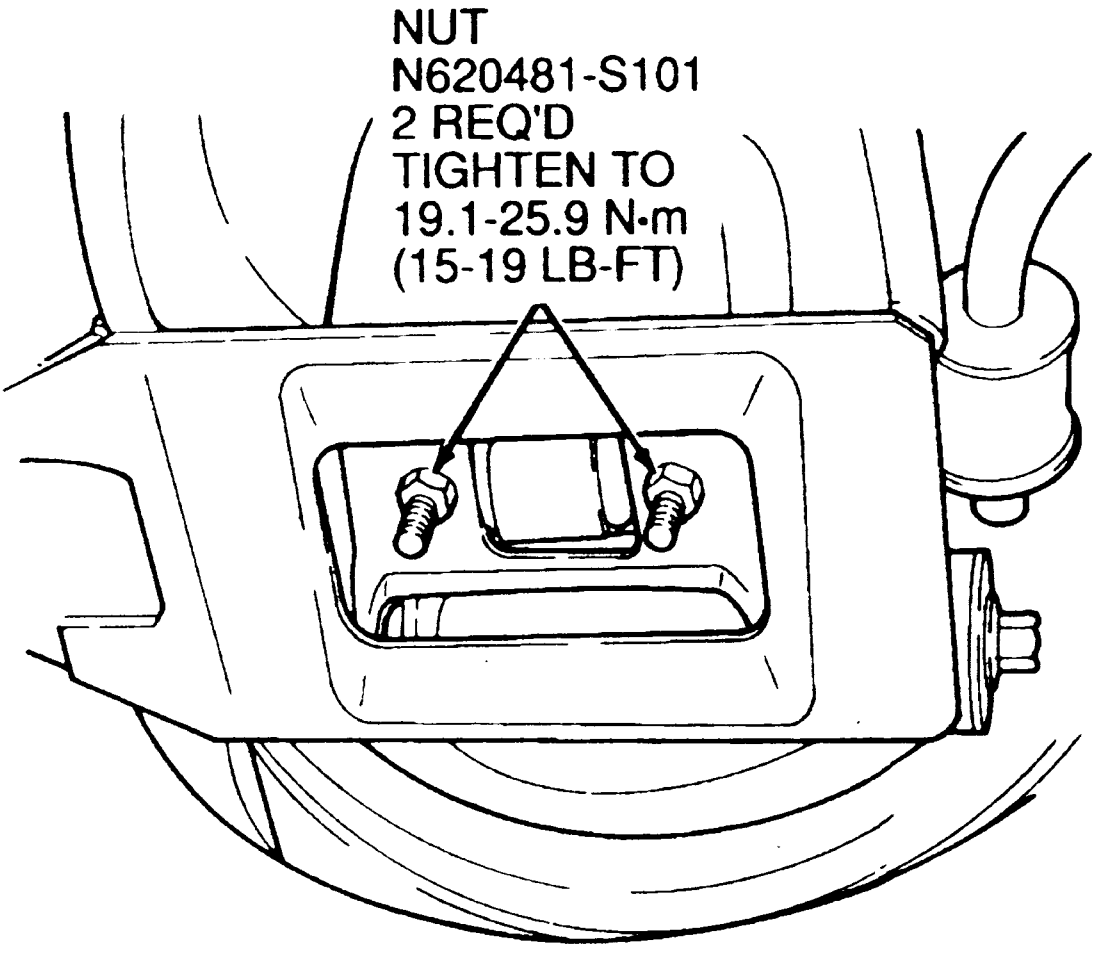
INSTALL REAR SHOCK ABSORBER
18125 WITH TWO NEW NUTS

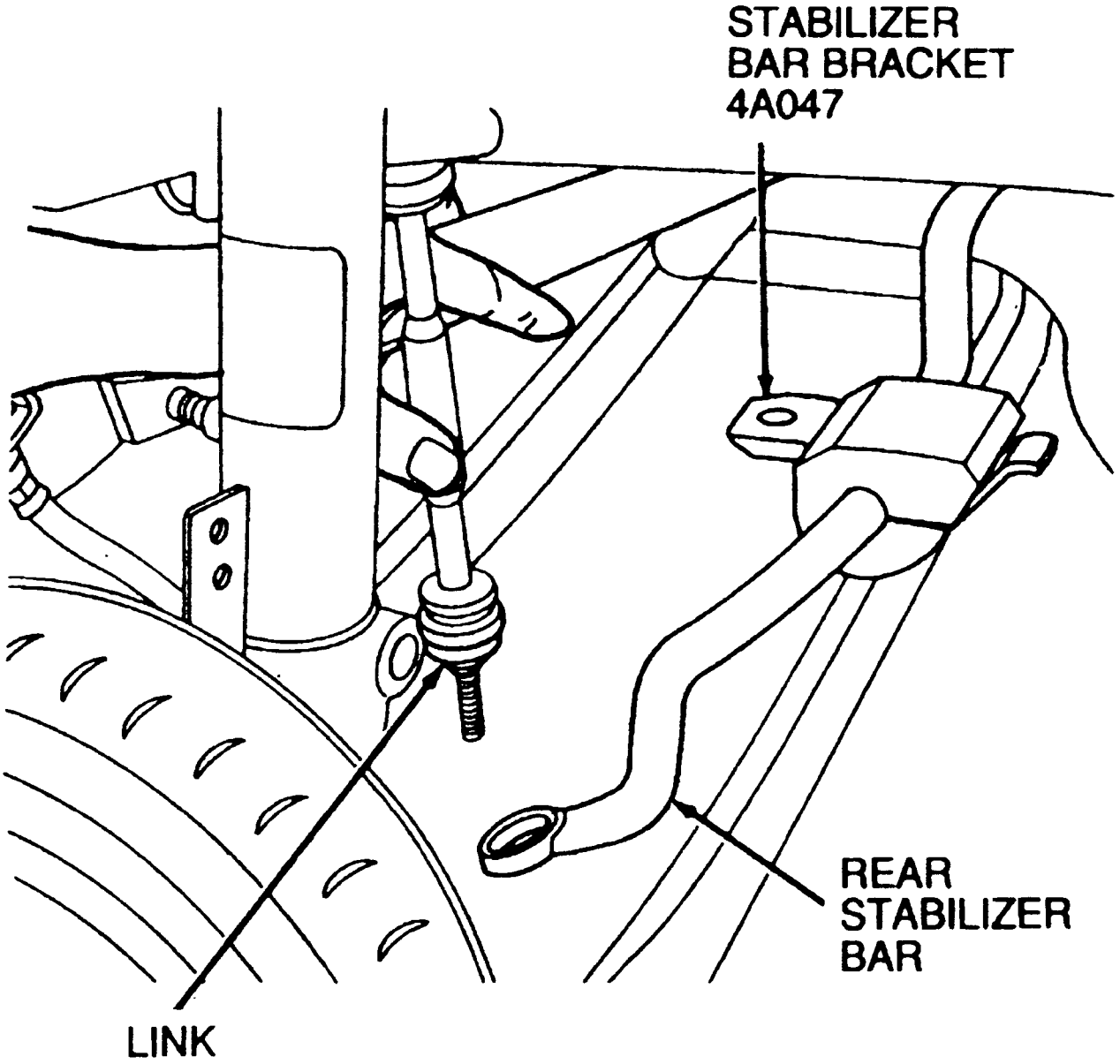

LOWER SUSPENSION
ARM STABILIZER BAR
INSULATOR 5493
STABILIZER BAR
BRACKET 5486
TIGHTEN TO
30-40 N·m
(23-30 LB-FT)

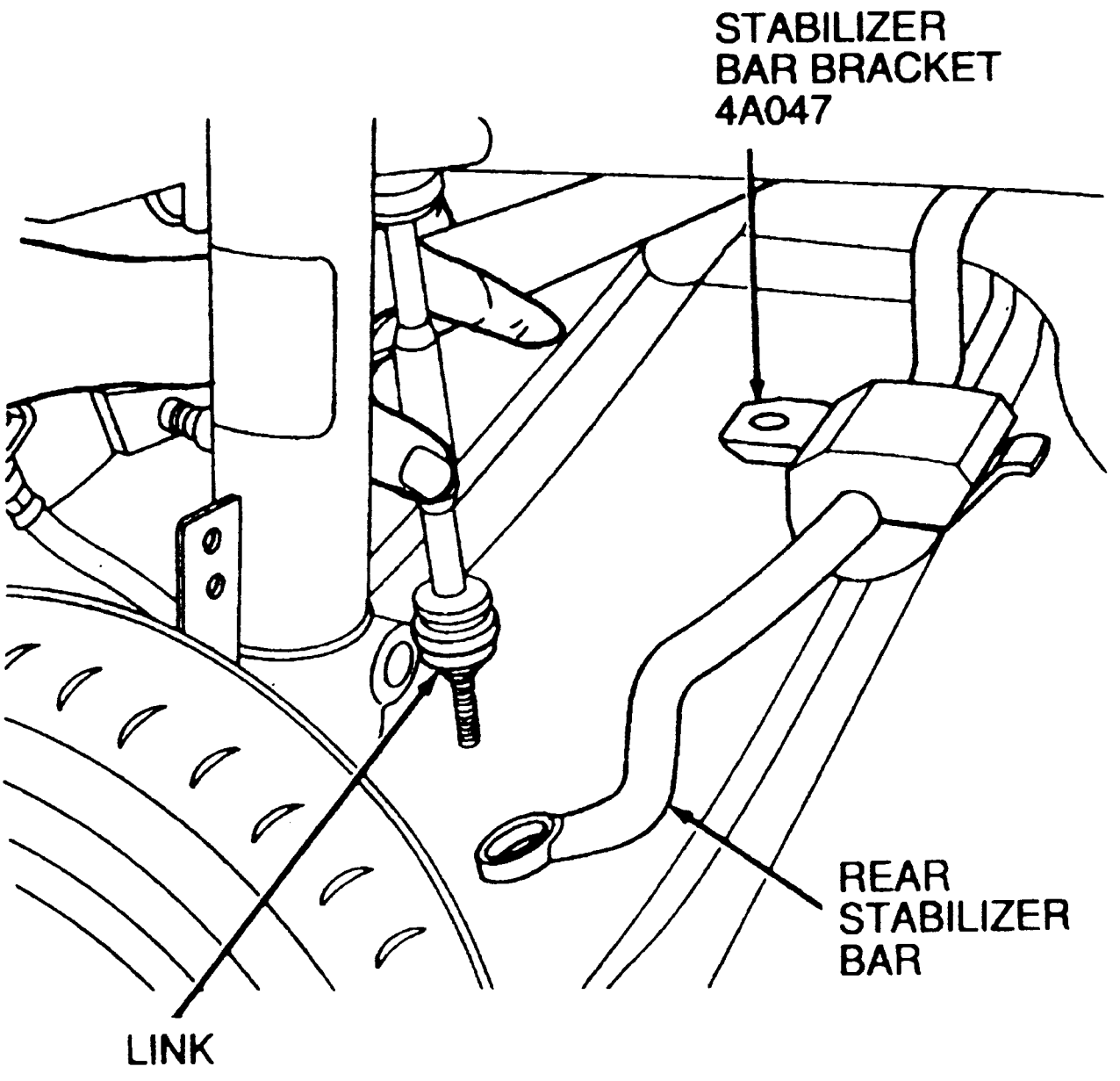

VIEW A
SUPPORT LOWER SUSPENSION ARM
REMOVE TWO ATTACHING NUTS FROM BOTTOM OF SHOCK ABSORBER

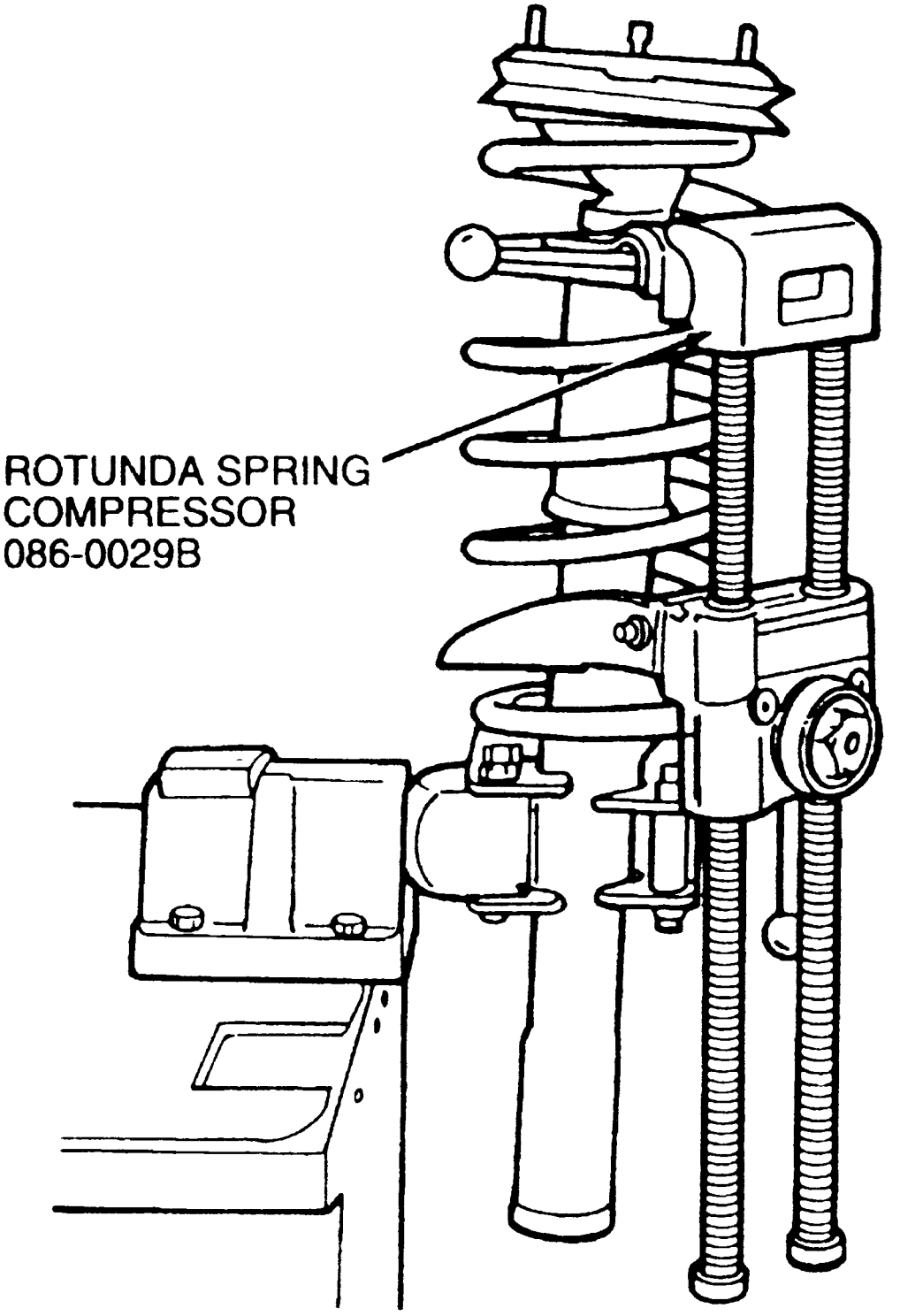

REMOVE TWO NUTS
VIEW A

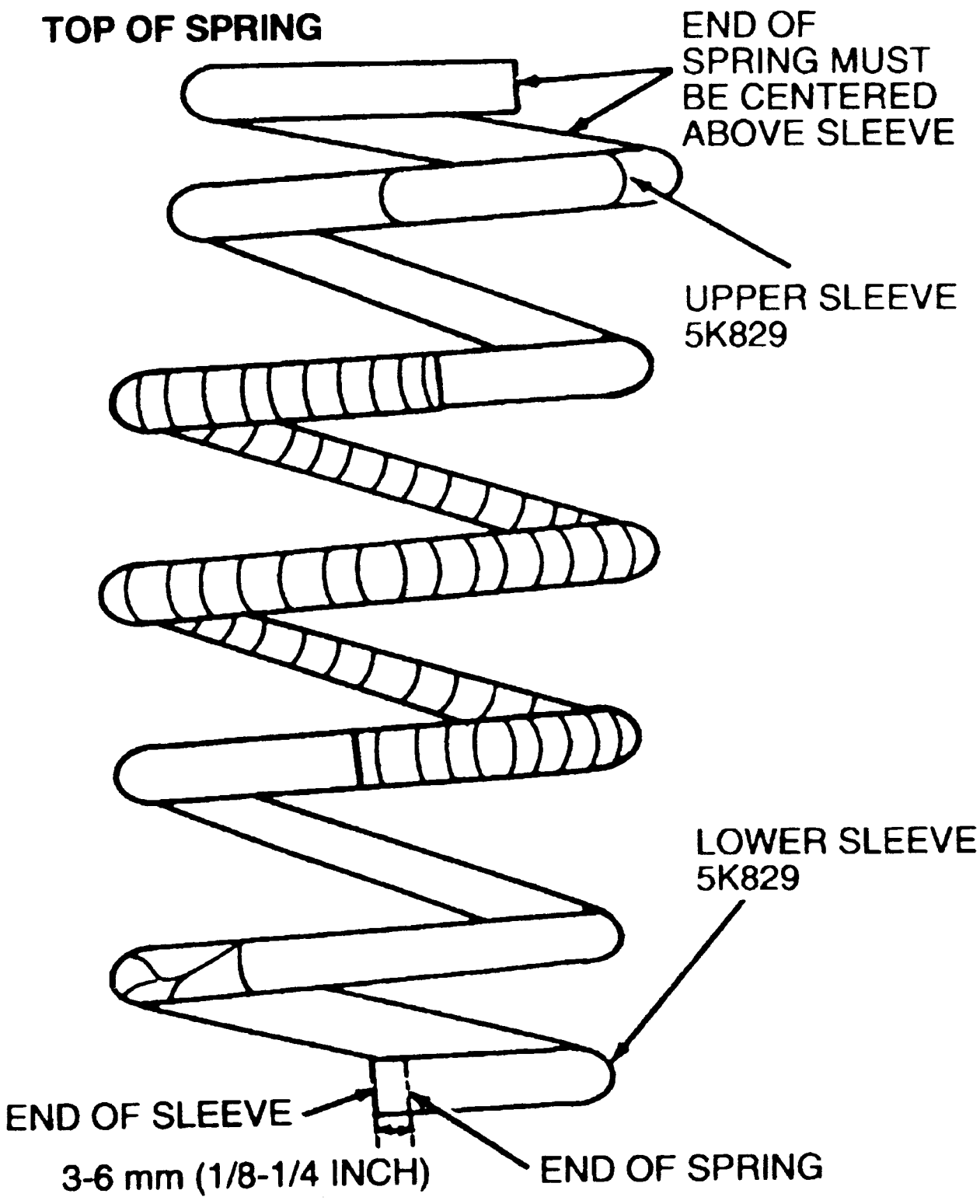

SHOCK ABSORBER
BUSHING REPAIR
KIT 18198
SHOCK TOWER

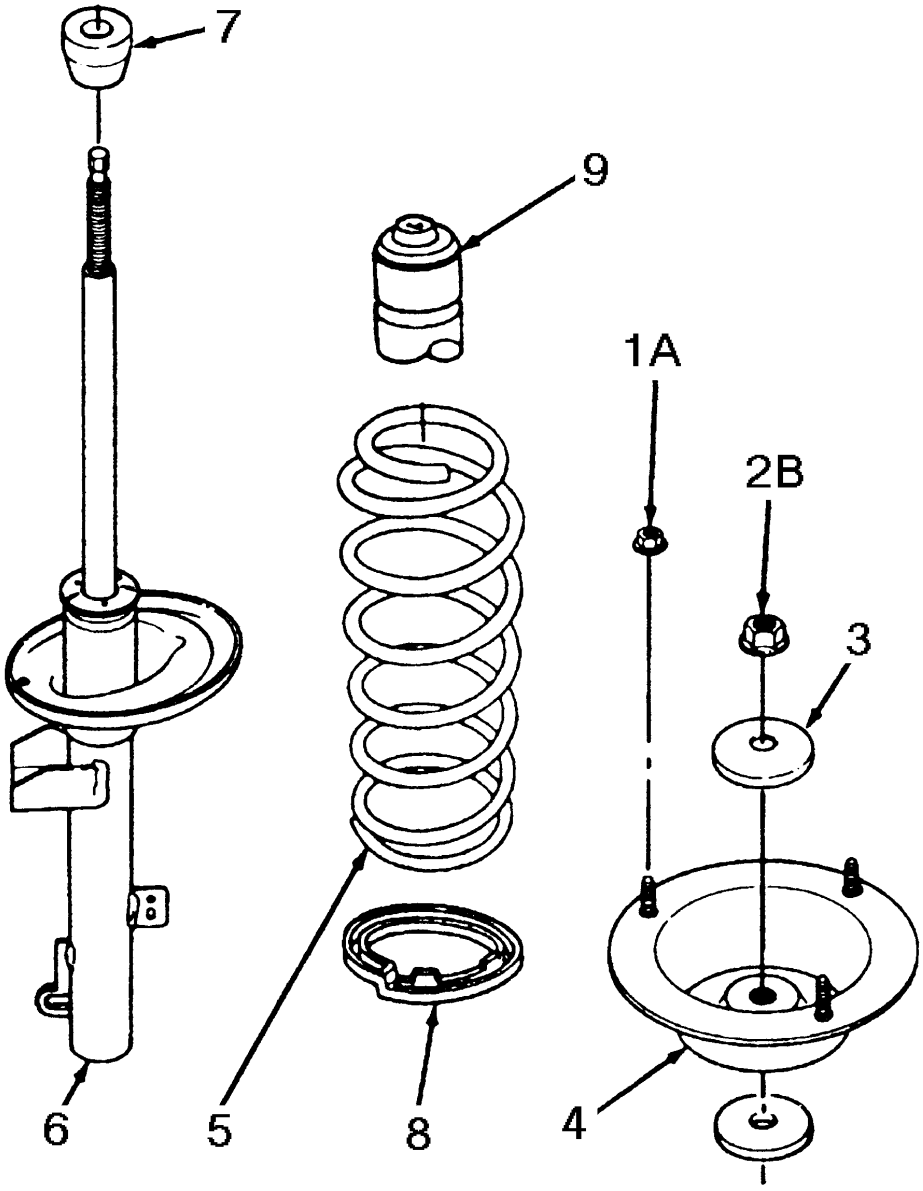

NUT
N620481-S101
2 REQ'D
TIGHTEN TO
19.1-25.9 N•m
(15-19 LB-FT)


STABILIZER
BAR BRACKET
4A047
REAR
STABILIZER
BAR
LINK

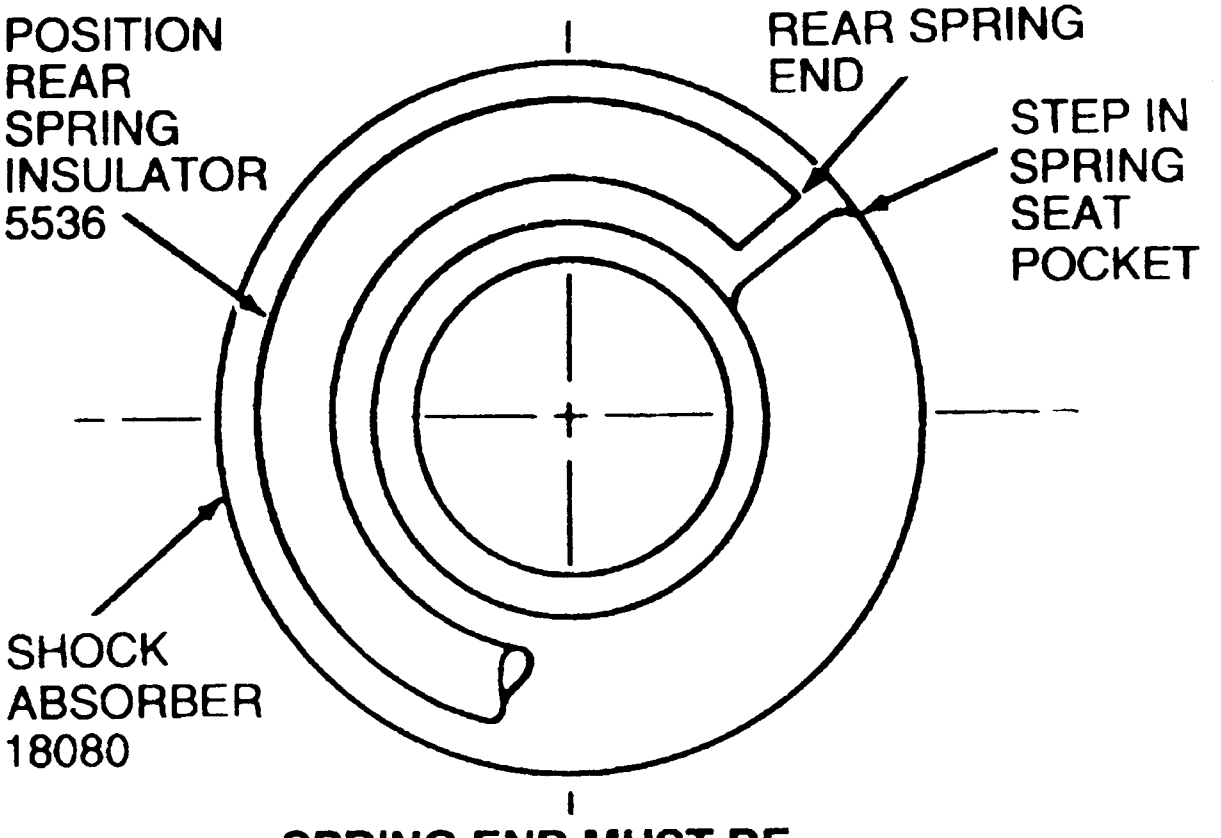

STABILIZER
BAR BRACKET
4A047
REAR
STABILIZER
BAR
LINK

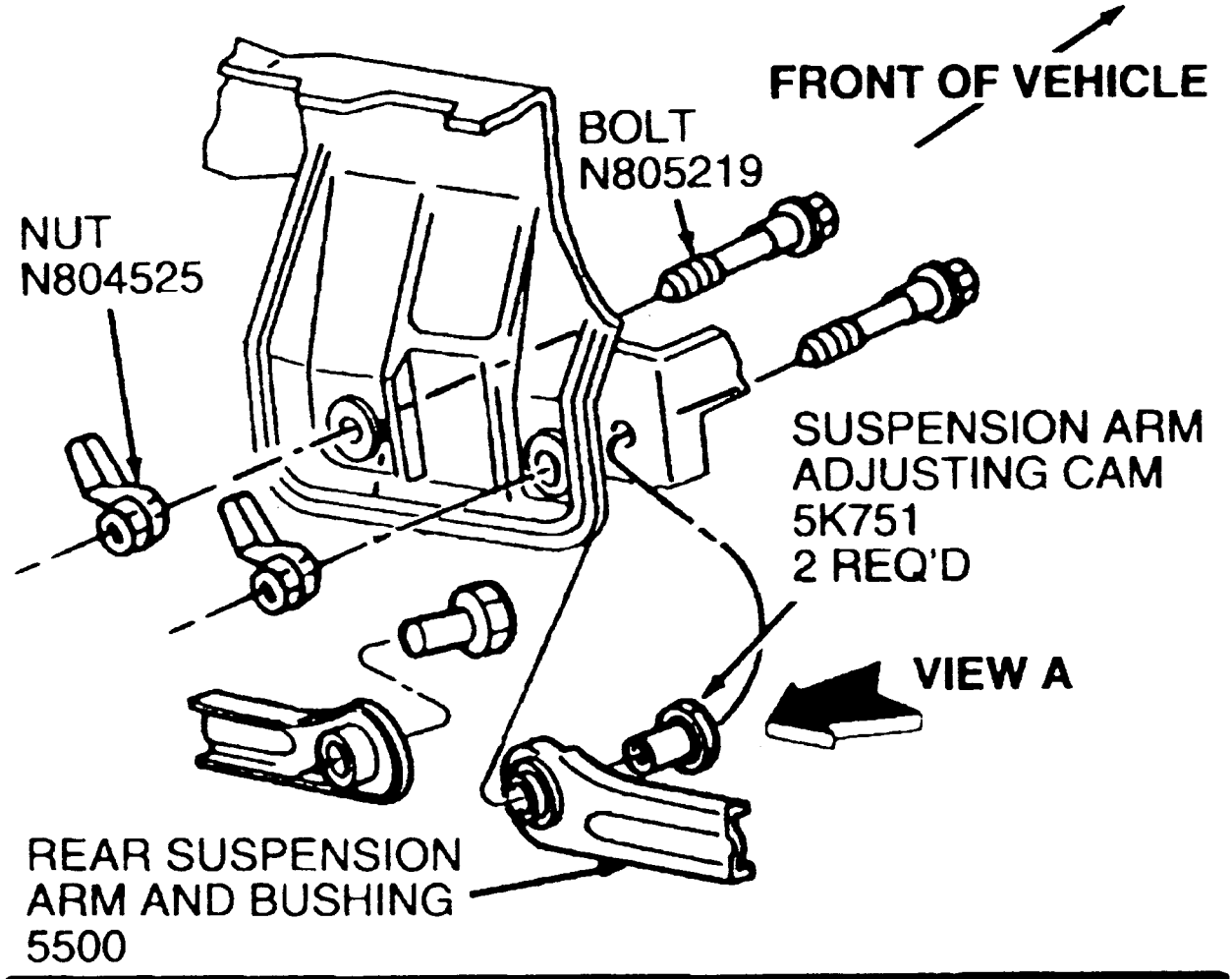

ROTUNDA SPRING
COMPRESSOR
086-0029B

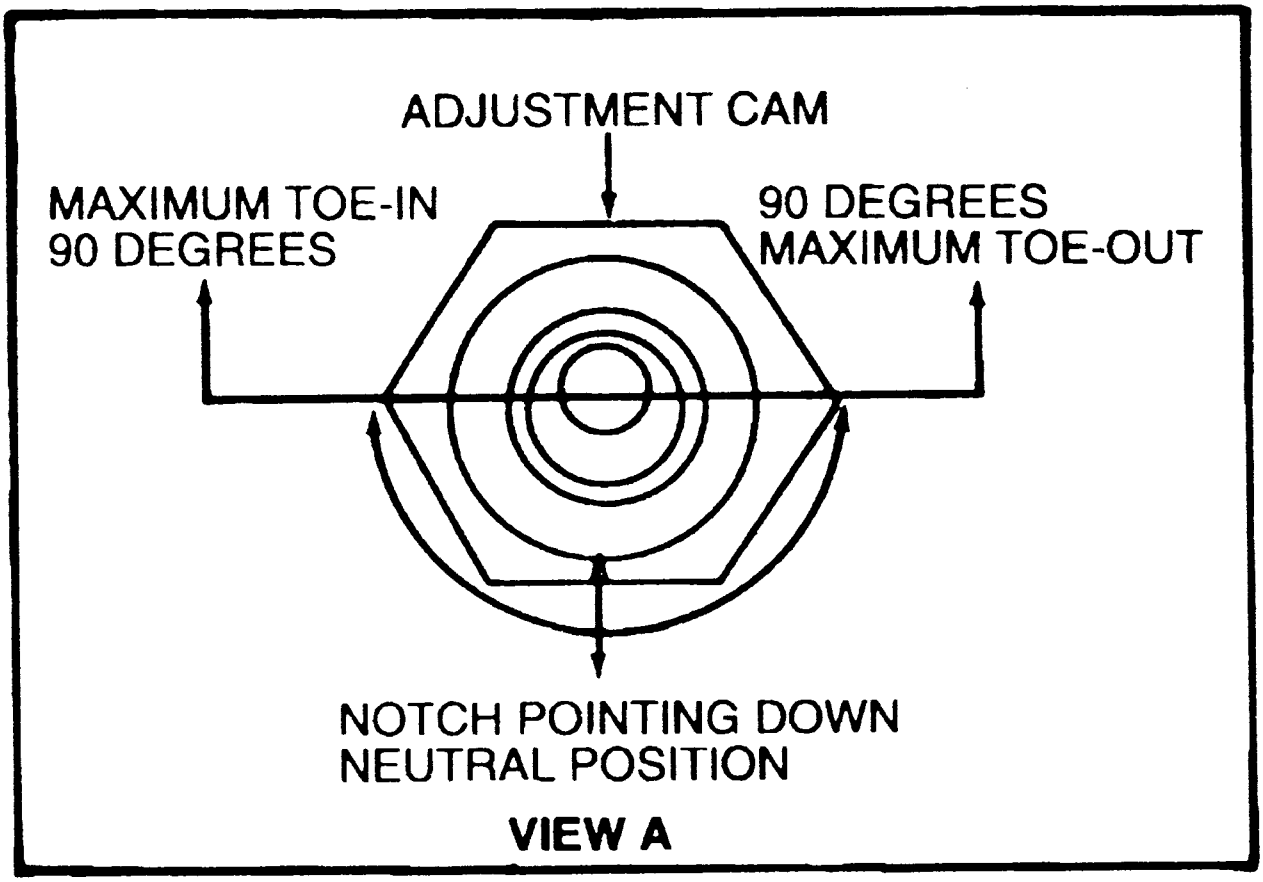

TOP OF SPRING
END OF SPRING MUST BE CENTERED ABOVE SLEEVE
UPPER SLEEVE 5K829
LOWER SLEEVE 5K829
END OF SLEEVE
3-6 mm (1/8-1/4 INCH)
END OF SPRING

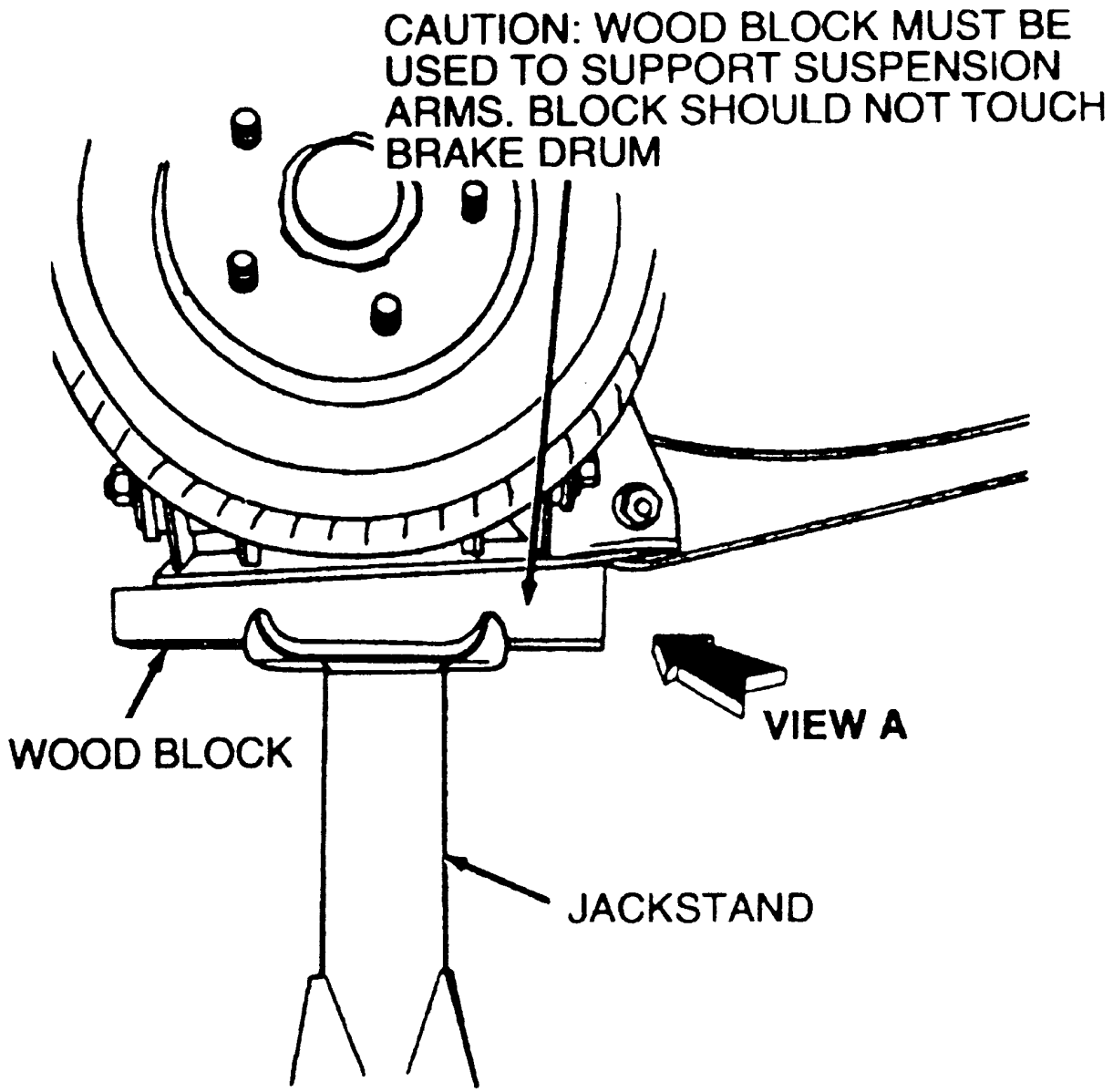


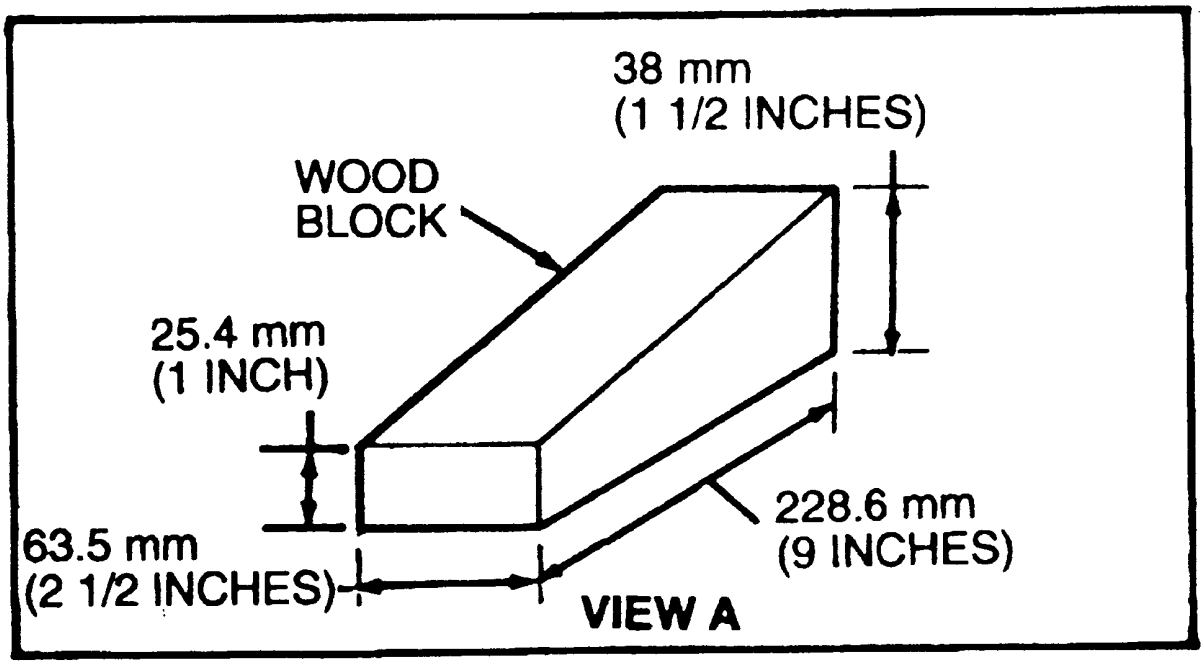
1 Nut (3 req'd)
2 Nut
3 Washer (6 req'd)
4 Rear shock absorber bracket
5 Rear spring
6 Rear shock absorber
7 Rear shock absorber jounce bumper
8 Rear spring center mounting insulator
9 Dust boot
A Tighten to 25-34 Nm (19-25 lb.ft.)
B Tighten to 53-72 Nm (40-53 lb.ft.)

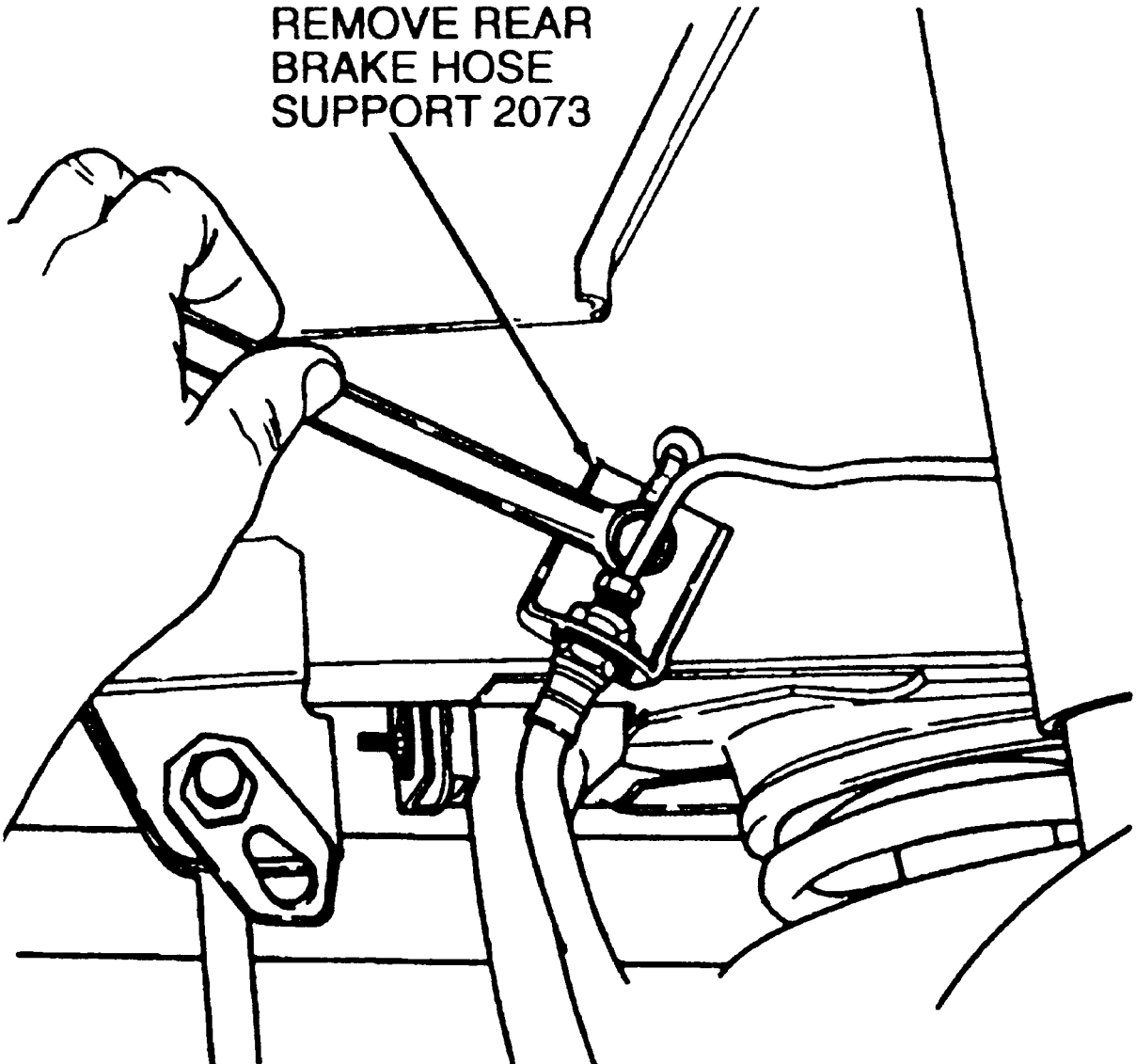

POSITION REAR SPRING INSULATOR 5536
REAR SPRING END
STEP IN SPRING SEAT POCKET
SHOCK ABSORBER 18080
SPRING END MUST BE WITHIN 10mm (0.39 INCH) OF STEP IN SPRING SEAT

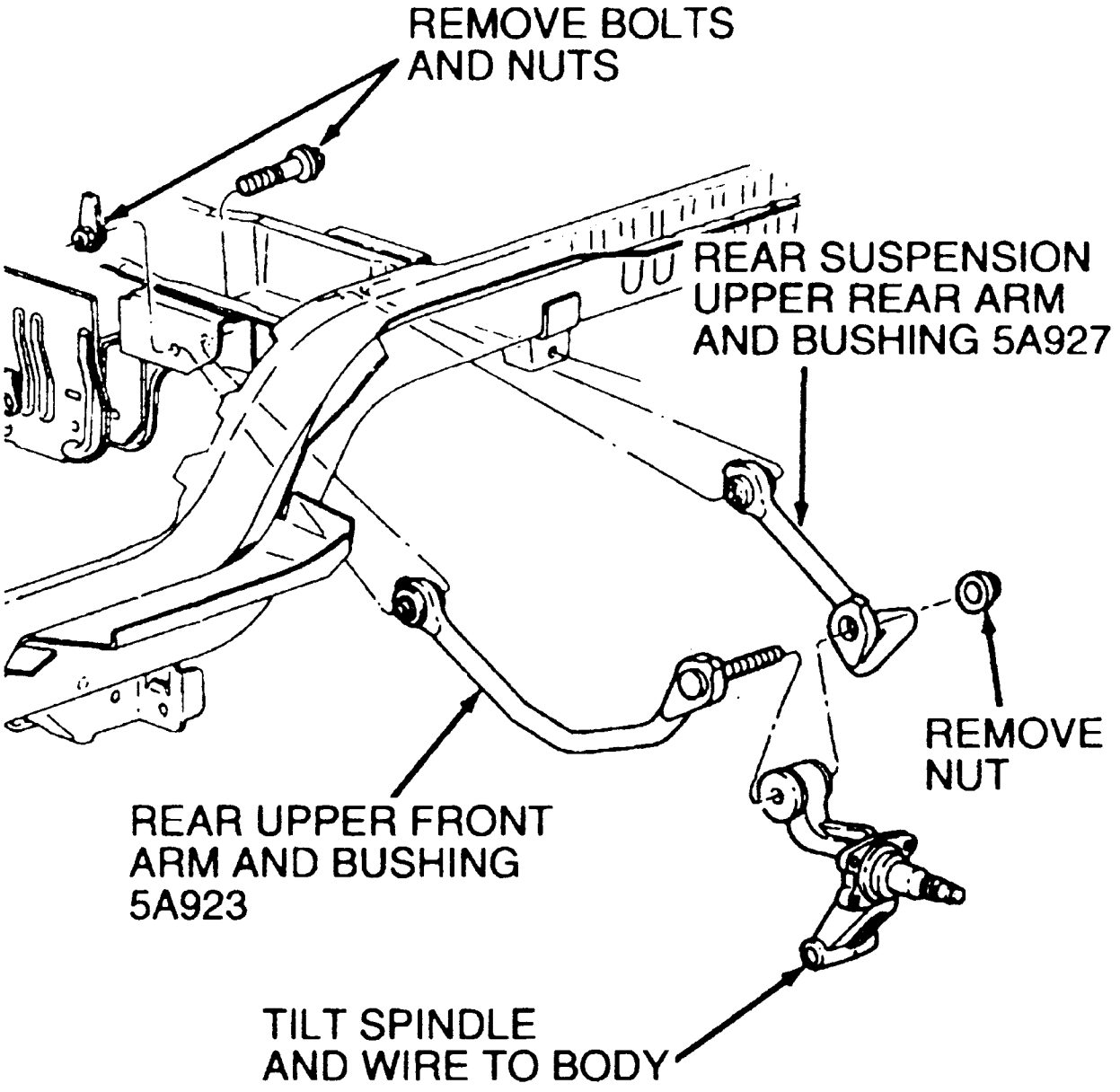

FRONT OF VEHICLE
BOLT
N805219
NUT
N804525
SUSPENSION ARM
ADJUSTING CAM
5K751
2 REQ'D
VIEW A
REAR SUSPENSION
ARM AND BUSHING
5500

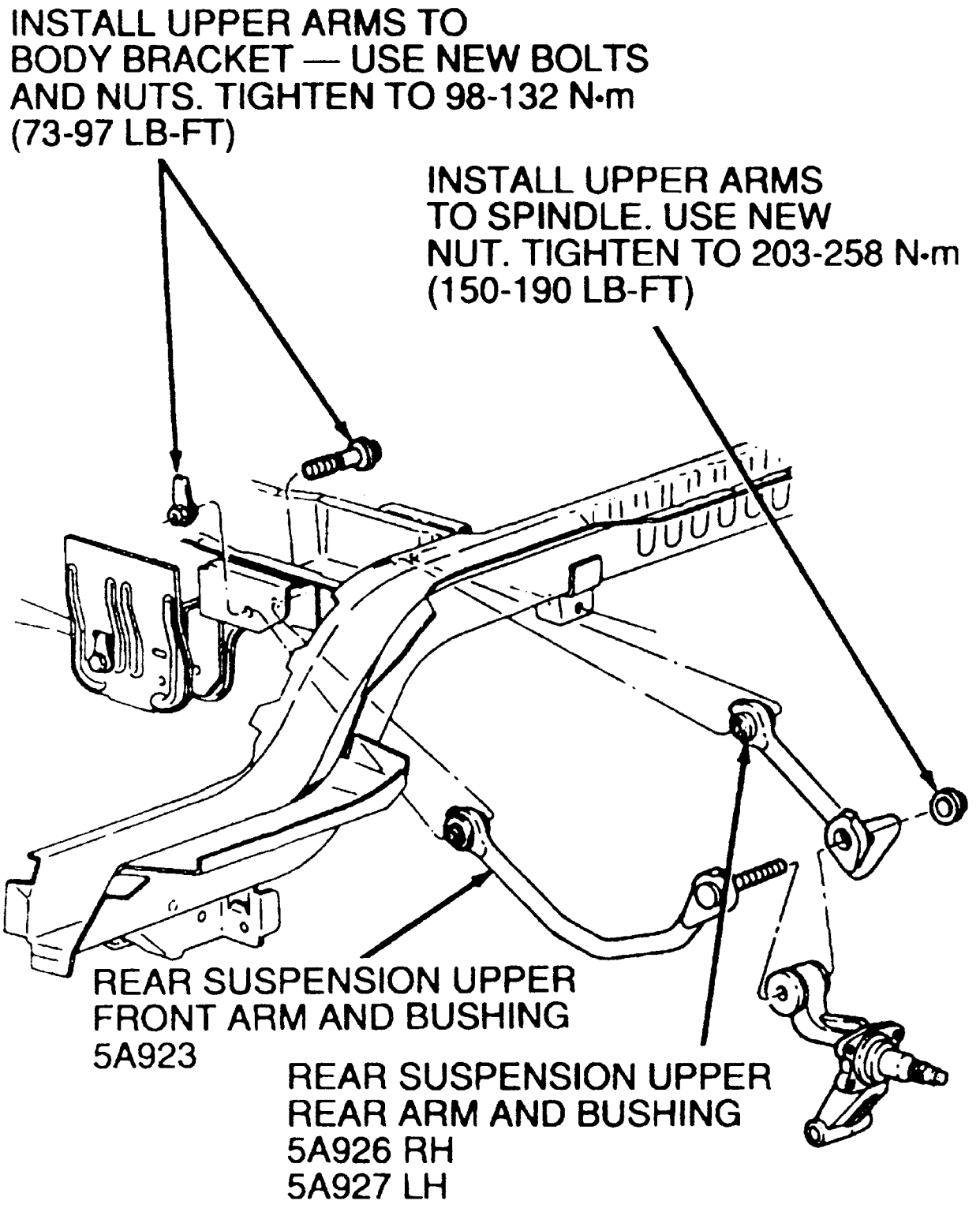

ADJUSTMENT CAM
MAXIMUM TOE-IN
90 DEGREES
90 DEGREES
MAXIMUM TOE-OUT
NOTCH POINTING DOWN
NEUTRAL POSITION
VIEW A

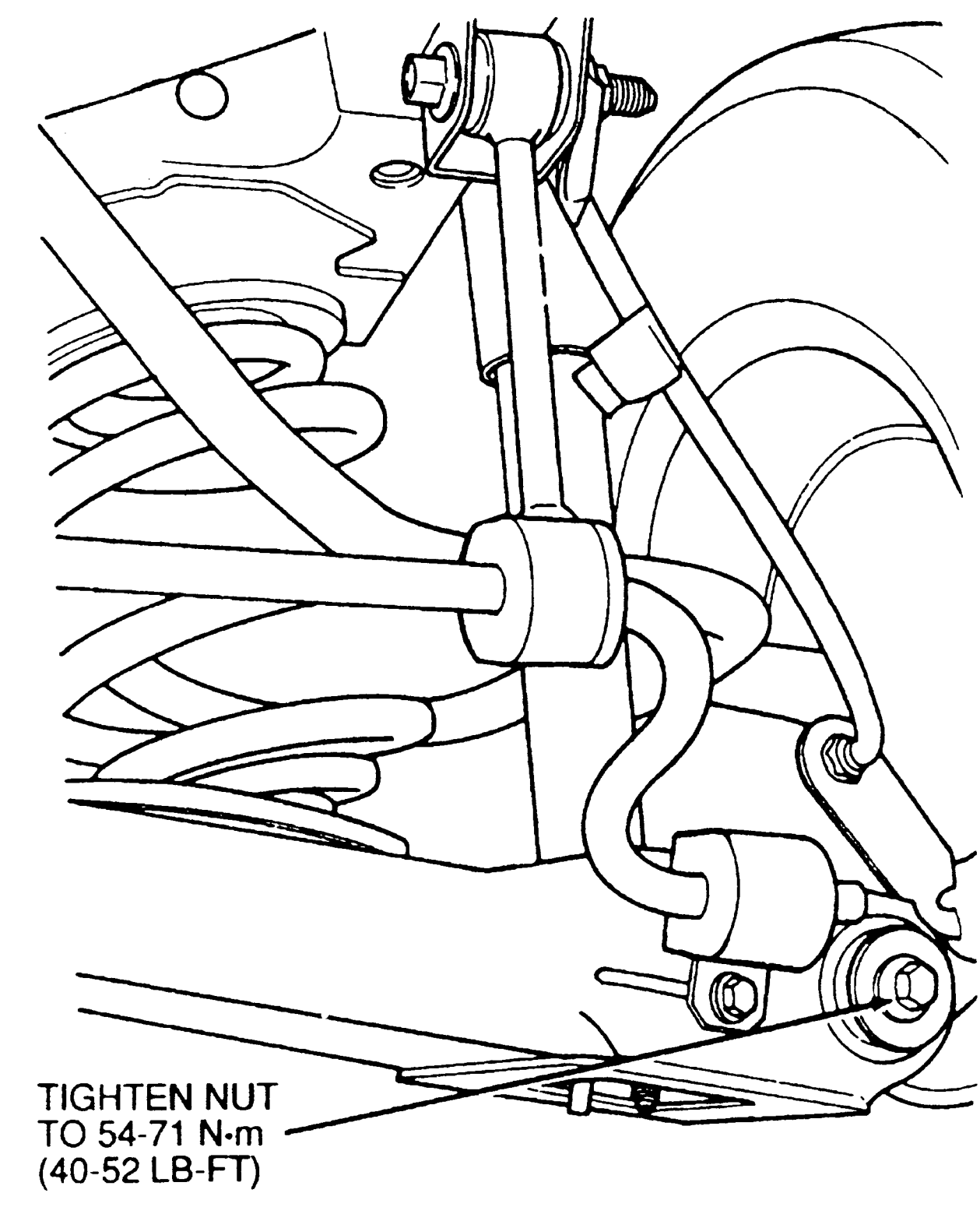

CAUTION: WOOD BLOCK MUST BE USED TO SUPPORT SUSPENSION ARMS. BLOCK SHOULD NOT TOUCH BRAKE DRUM
WOOD BLOCK
VIEW A
JACKSTAND

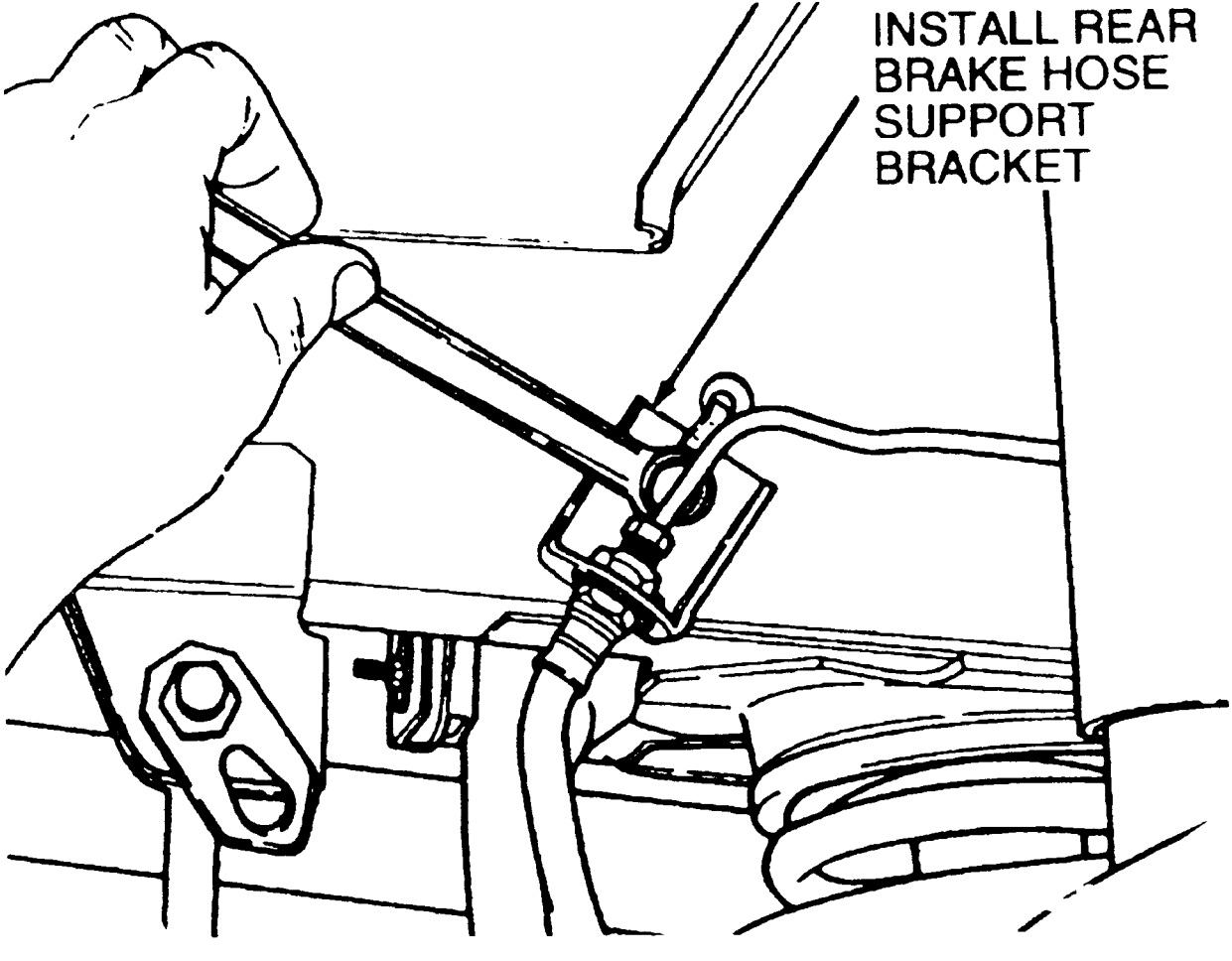

38 mm
(1 1/2 INCHES)
WOOD BLOCK
25.4 mm
(1 INCH)
63.5 mm
(2 1/2 INCHES)
228.6 mm
(9 INCHES)
VIEW A

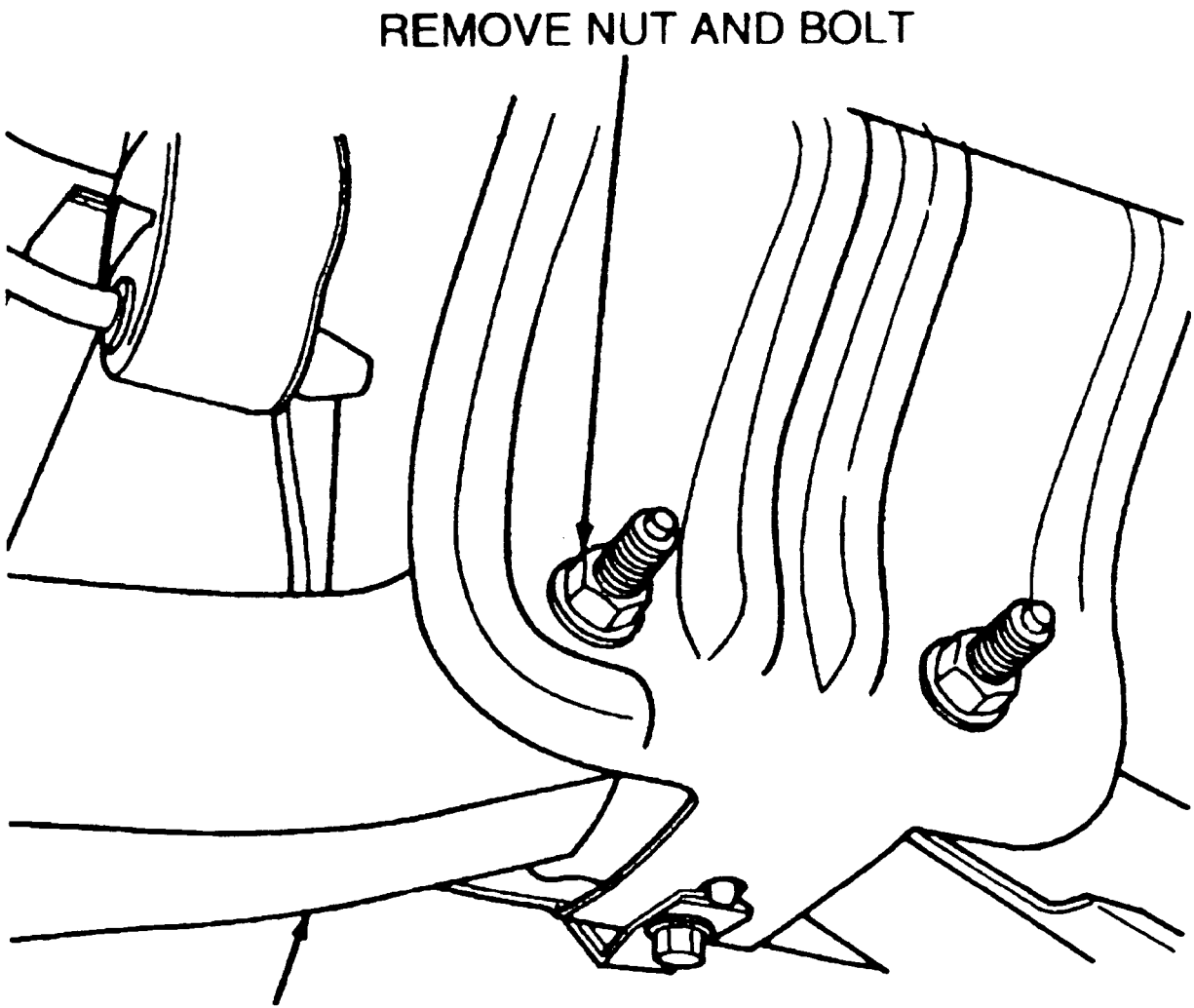

REMOVE REAR
BRAKE HOSE
SUPPORT 2073

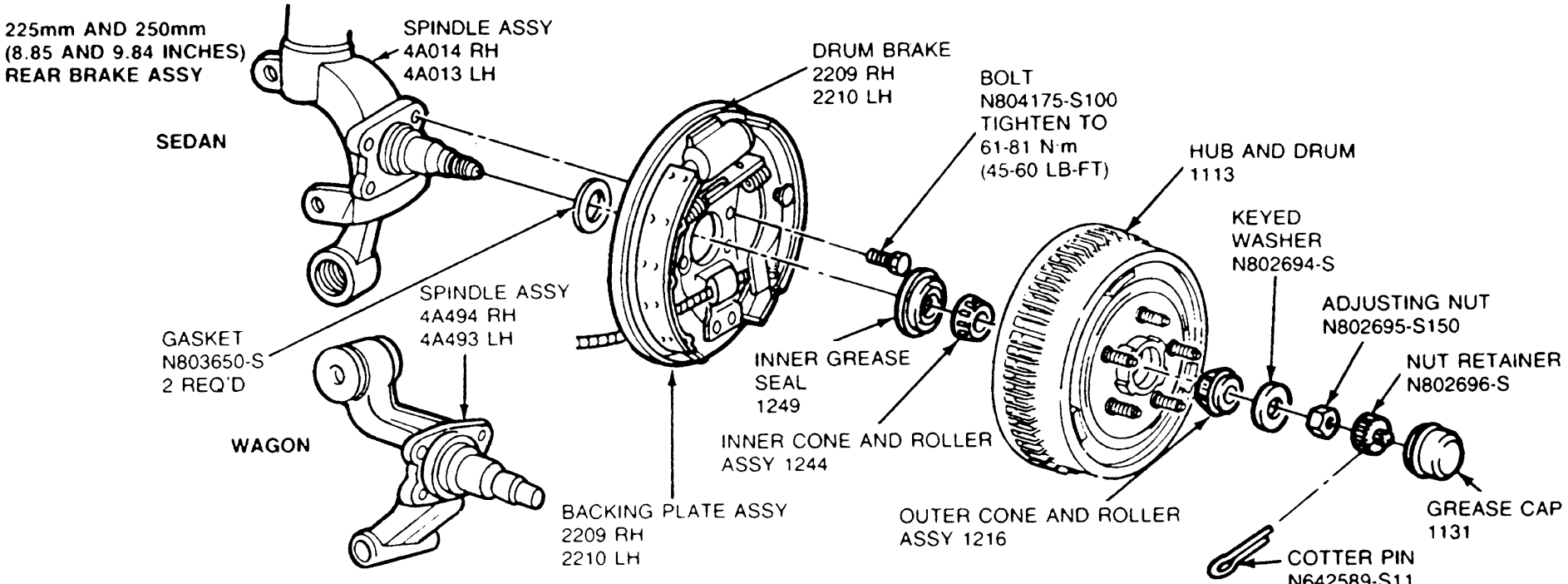

REMOVE BOLTS
AND NUTS
REAR SUSPENSION
UPPER REAR ARM
AND BUSHING 5A927
REMOVE
NUT
REAR UPPER FRONT
ARM AND BUSHING
5A923
TILT SPINDLE
AND WIRE TO BODY

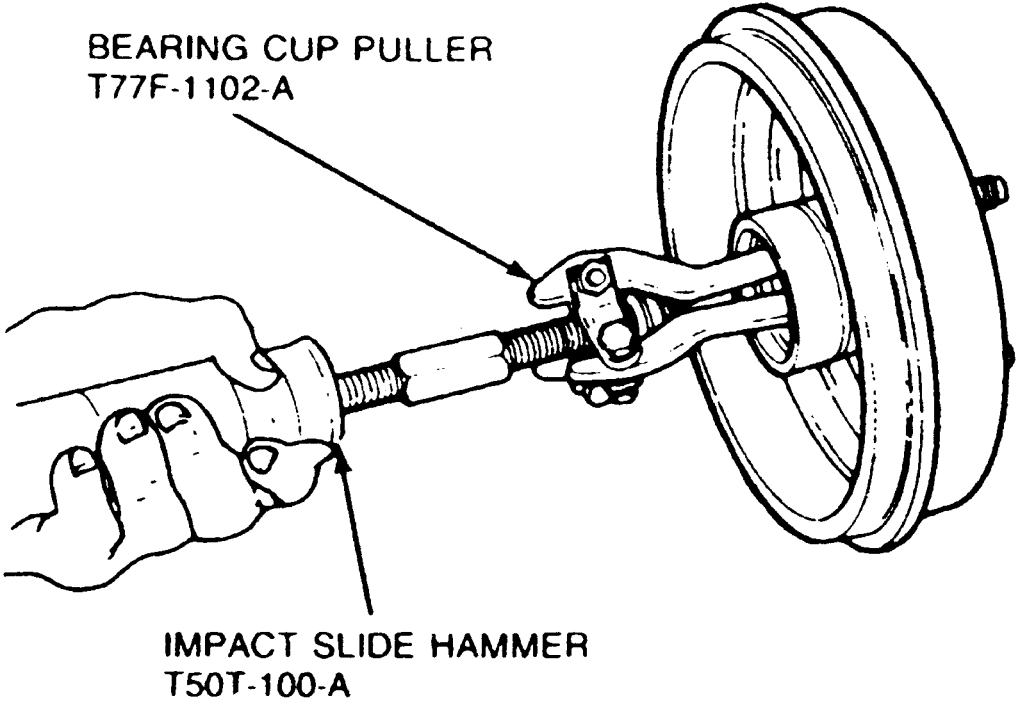

INSTALL UPPER ARMS TO BODY BRACKET — USE NEW BOLTS AND NUTS. TIGHTEN TO 98-132 N·m (73-97 LB-FT)
INSTALL UPPER ARMS TO SPINDLE. USE NEW NUT. TIGHTEN TO 203-258 N·m (150-190 LB-FT)
REAR SUSPENSION UPPER FRONT ARM AND BUSHING 5A923
REAR SUSPENSION UPPER REAR ARM AND BUSHING 5A926 RH 5A927 LH


TIGHTEN NUT
TO 54-71 N·m
(40-52 LB-FT)

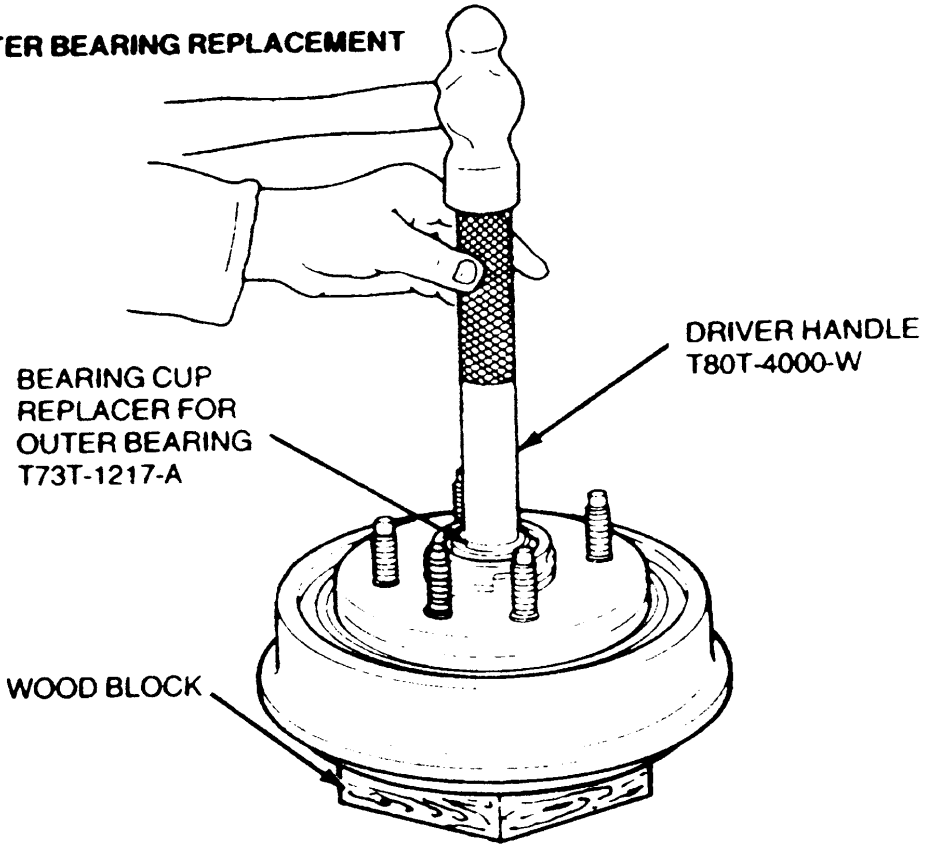

INSTALL REAR
BRAKE HOSE
SUPPORT
BRACKET


REMOVE NUT AND BOLT
REAR SUSPENSION
ARM AND BUSHING
5500

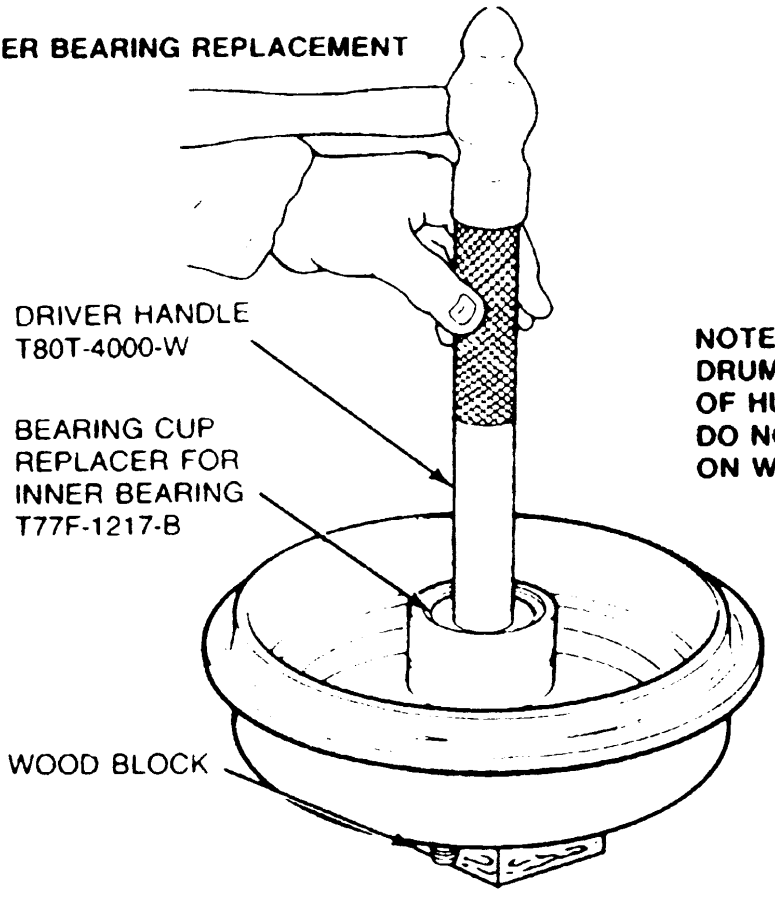

225mm AND 250mm
(8.85 AND 9.84 INCHES)
REAR BRAKE ASSY
SEDAN
SPINDLE ASSY
4A014 RH
4A013 LH
DRUM BRAKE
2209 RH
2210 LH
BOLT
N804175-S100
TIGHTEN TO
61-81 N·m
(45-60 LB-FT)
HUB AND DRUM
1113
KEYED
WASHER
N802694-S
ADJUSTING NUT
N802695-S150
NUT RETAINER
N802696-S
GREASE CAP
1131
COTTER PIN
N642589-S11
GASKET
N803650-S
2 REQ'D
SPINDLE ASSY
4A494 RH
4A493 LH
WAGON
INNER GREASE
SEAL
1249
INNER CONE AND ROLLER
ASSY 1244
OUTER CONE AND ROLLER
ASSY 1216
BACKING PLATE ASSY
2209 RH
2210 LH


BEARING CUP PULLER
T77F-1102-A
IMPACT SLIDE HAMMER
T50T-100-A

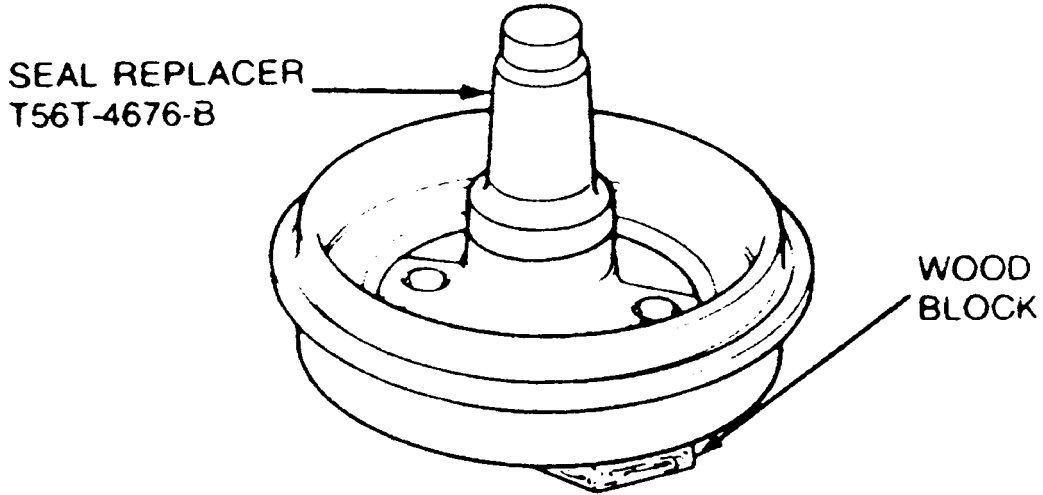
OUTER BEARING REPLACEMENT

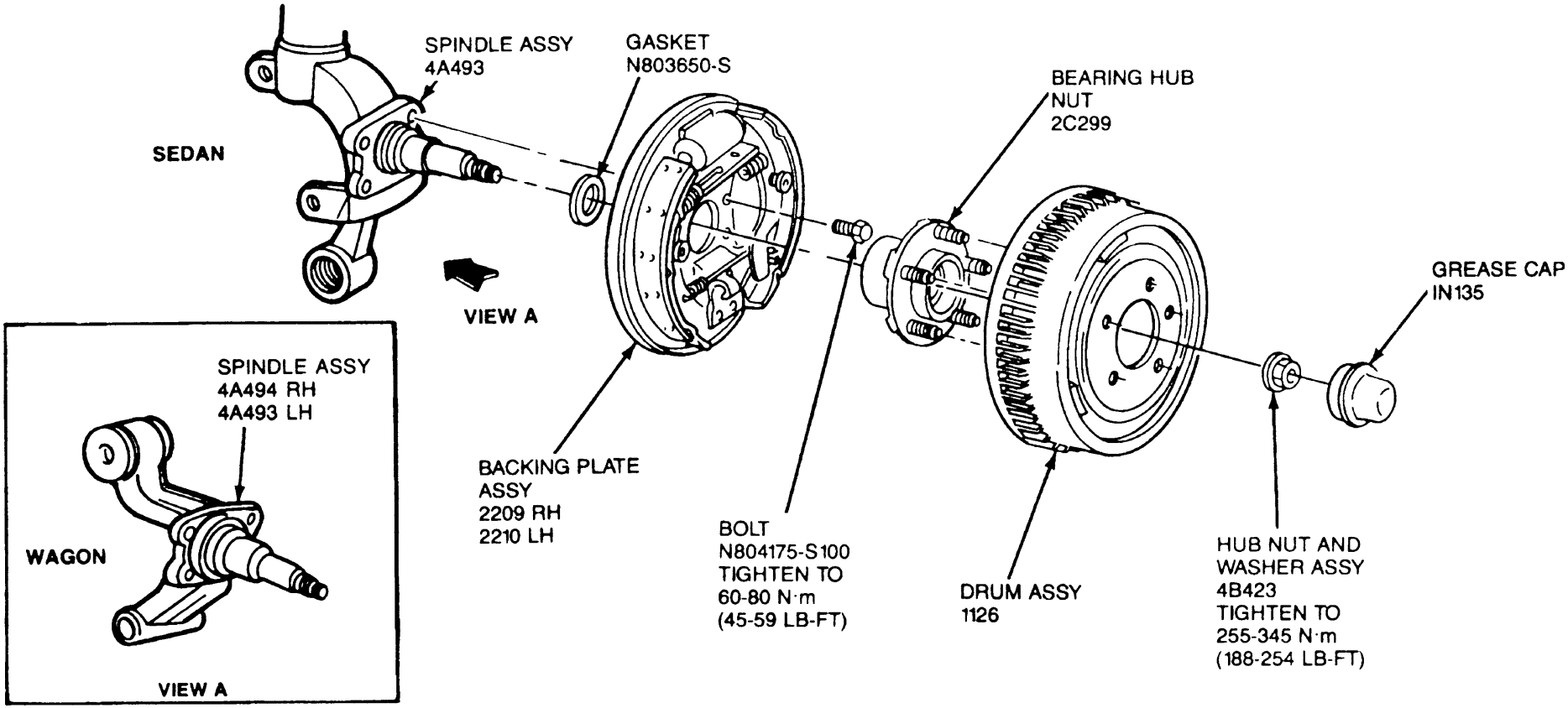


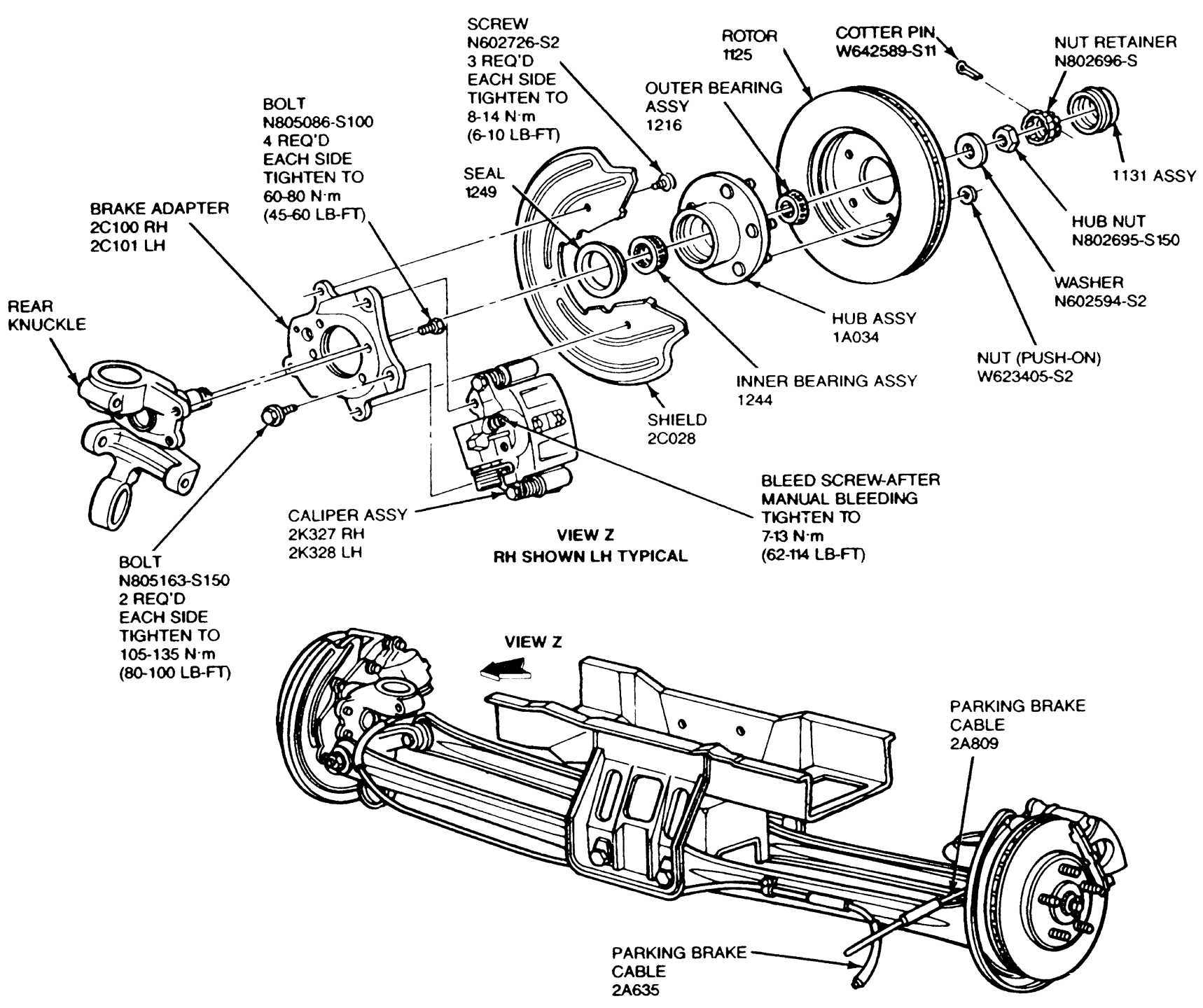
INNER BEARING REPLACEMENT

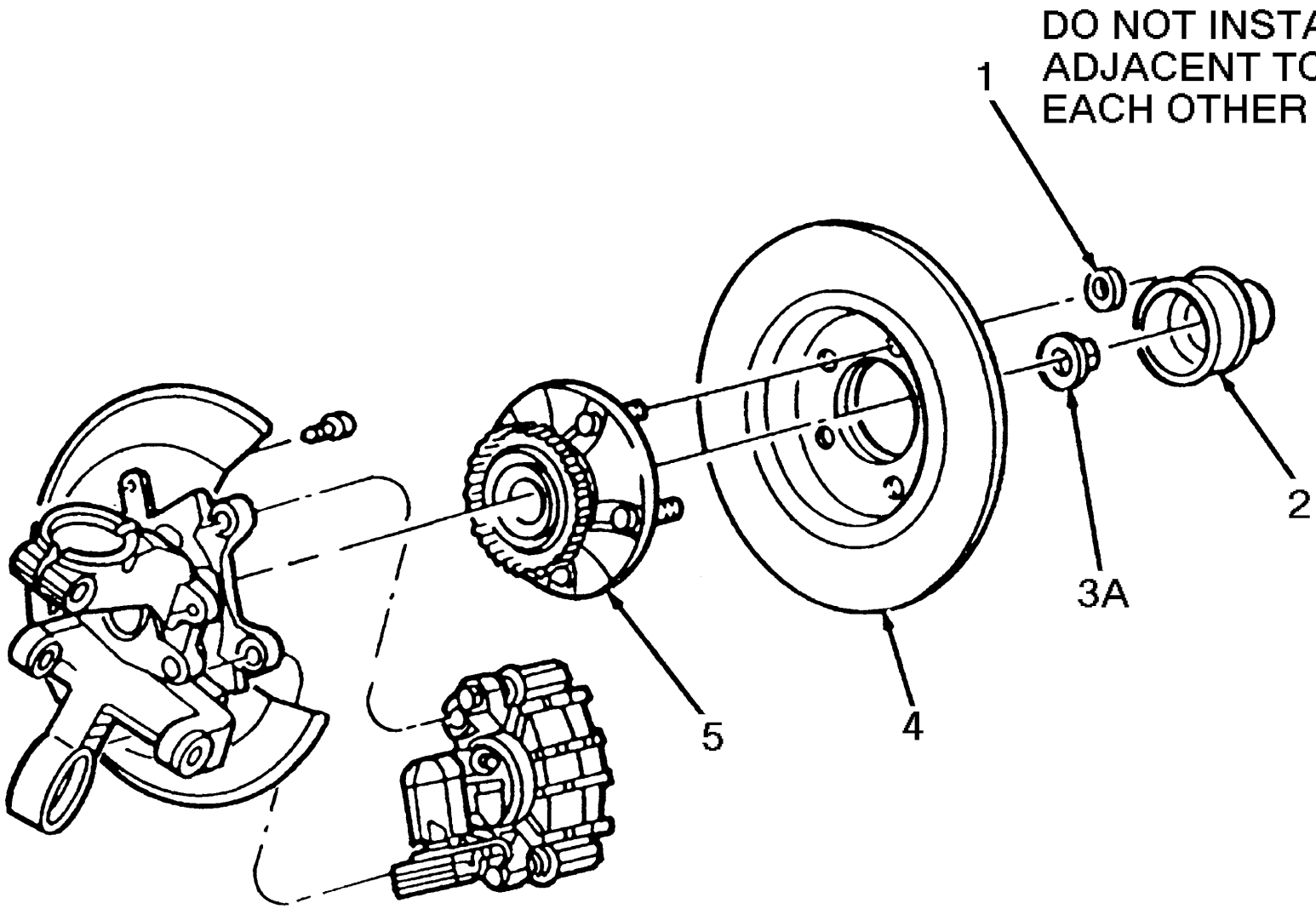


NOTE: SUPPORT DRUM ON END OF HUB ONLY. DO NOT SUPPORT ON WHEEL STUDS

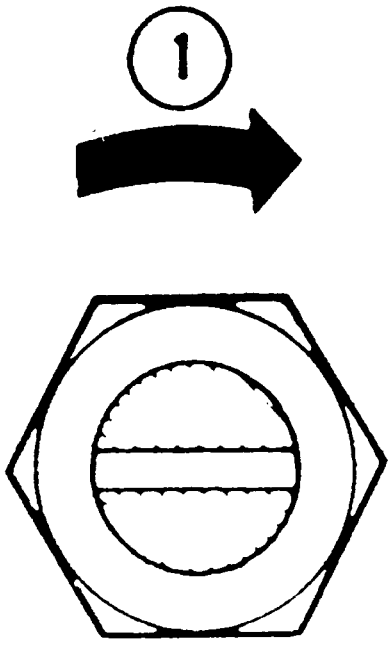

SEAL REPLACER
T56T-4676-B
WOOD
BLOCK


SEDAN
SPINDLE ASSY
4A493
GASKET
N803650-S
BEARING HUB
NUT
2C299
GREASE CAP
IN135
VIEW A
BACKING PLATE
ASSY
2209 RH
2210 LH
BOLT
N804175-S100
TIGHTEN TO
60-80 N·m
(45-59 LB-FT)
DRUM ASSY
1126
HUB NUT AND
WASHER ASSY
4B423
TIGHTEN TO
255-345 N·m
(188-254 LB-FT)
SPINDLE ASSY
4A494 RH
4A493 LH
WAGON
VIEW A

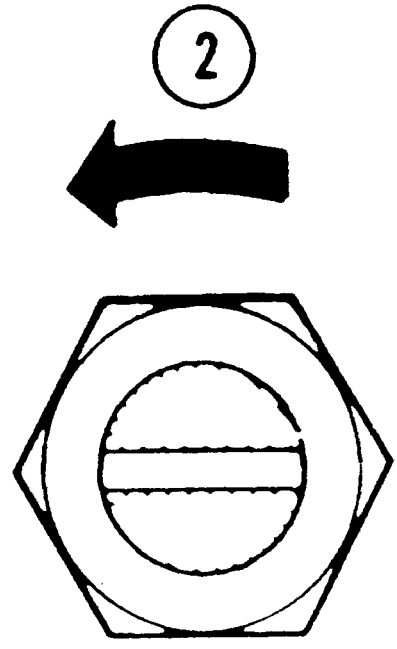

SCREW
N602726-S2
3 REQ'D
EACH SIDE
TIGHTEN TO
8-14 N·m
(6-10 LB-FT)
ROTOR
1125
COTTER PIN
W642589-S11
NUT RETAINER
N802696-S
OUTER BEARING
ASSY
1216
BOLT
N805086-S100
4 REQ'D
EACH SIDE
TIGHTEN TO
60-80 N·m
(45-60 LB-FT)
SEAL
1249
1131 ASSY
BRAKE ADAPTER
2C100 RH
2C101 LH
HUB NUT
N802695-S150
WASHER
N602594-S2
REAR
KNUCKLE
HUB ASSY
1A034
NUT (PUSH-ON)
W623405-S2
INNER BEARING ASSY
1244
SHIELD
2C028
BLEED SCREW-AFTER
MANUAL BLEEDING
TIGHTEN TO
7-13 N·m
(62-114 LB-FT)
CALIPER ASSY
2K327 RH
2K328 LH
VIEW Z
RH SHOWN LH TYPICAL
BOLT
N805163-S150
2 REQ'D
EACH SIDE
TIGHTEN TO
105-135 N·m
(80-100 LB-FT)
VIEW Z
PARKING BRAKE
CABLE
2A809
PARKING BRAKE
CABLE
2A635



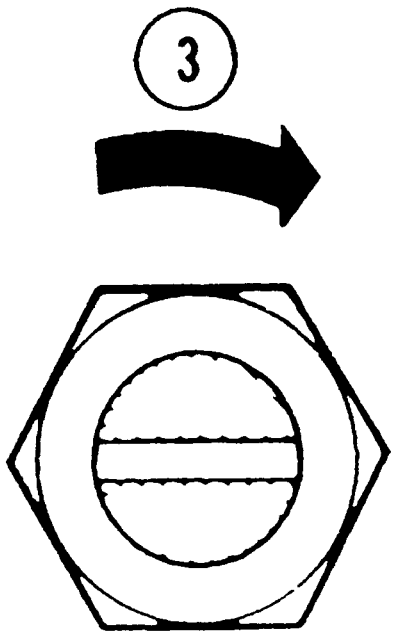
1 Retainer nut (2 req'd)
2 Rear hub cap grease seal
3 Rear axle wheel hub retainer
4 Rear disc brake rotor
5 Rear disc brake caliper
A Tighten to 255-345 Nm (188-254 lb.ft.)



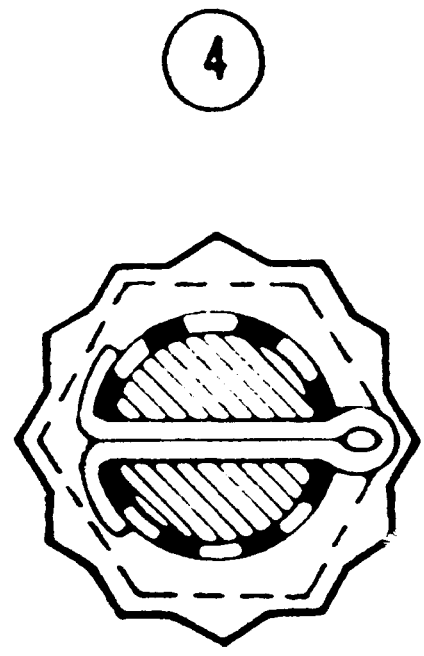
WITH WHEEL ROTATING
TIGHTEN ADJUSTING NUT
TO 23-34 N·m (17-25 LB-FT)



BACK ADJUSTING
NUT OFF 1/2 TURN



TIGHTEN ADJUSTING
NUT TO 2.7-3.2 N·m
(24-28 LB-IN)



INSTALL THE RETAINER
AND A NEW COTTER PIN

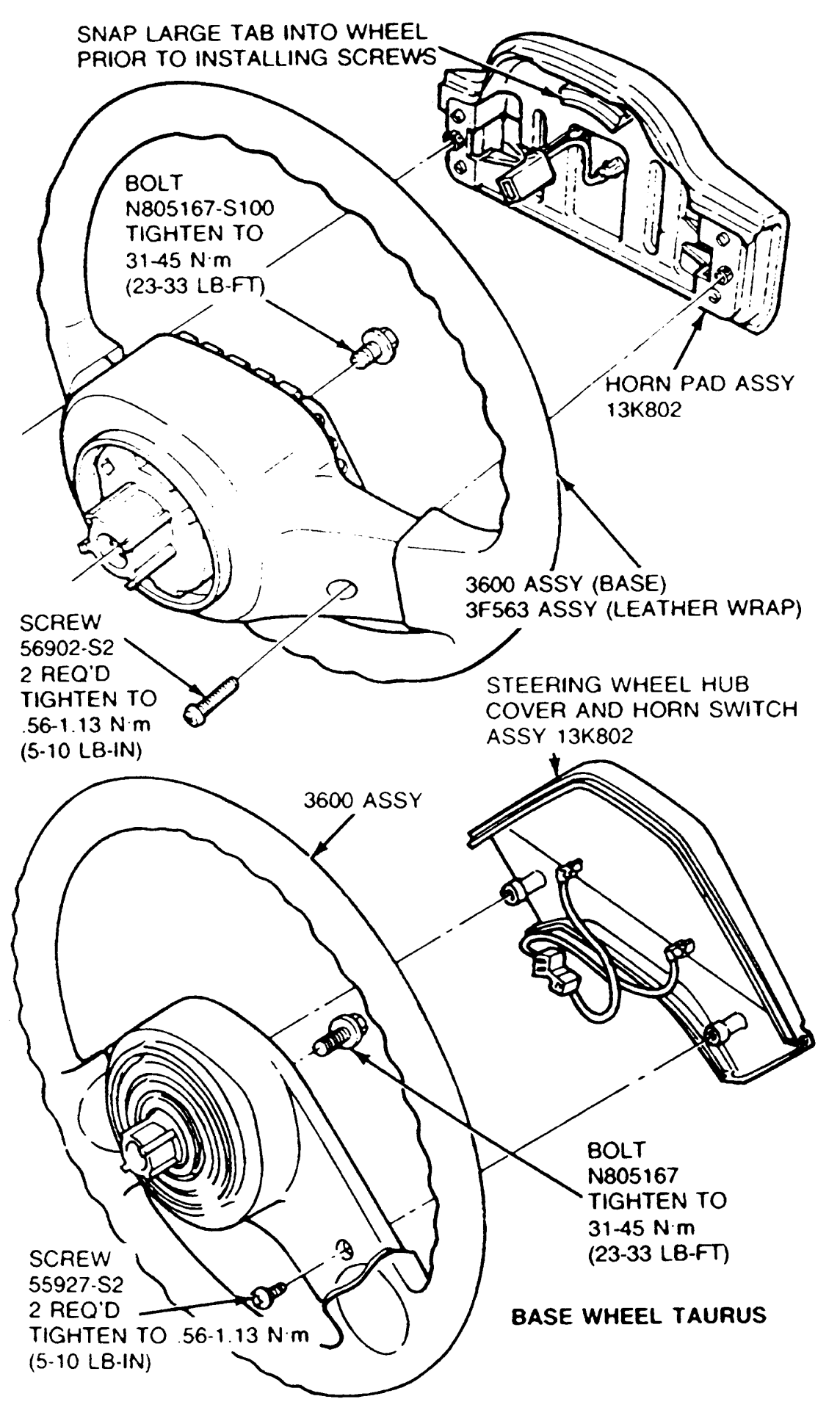
WHEEL ALIGNMENT

Year	Model		Caster		Camber			Steering Axis Inclination (deg.)
			Range (deg.)	Preferred Setting (deg.)	Range (deg.)	Preferred Setting (deg.)	Toe-in (in.)	
1986	Taurus	F	3P-6P	4P	1 3/32N-3/32P	1/2N	3/32N	15 3/8
		R	-	-	1 5/8N-1/4N	15/16N	1/16P	-
	Sable	F 1	3P-6P	4P	1 3/32N-3/32P	1/2N	3/32N	15 3/8
		R 1	-	-	1 5/8-1/4N	15/16N	1/16N	-
	Sable	F 2	3P-6P	4P	1 3/32N-3/32P	12N	3/32N	15 3/8
		R 2	-	-	1 5/16-1/16N	5/8N	1/16N	-
1987	Taurus	F	3P-6P	4P	1 3/32N-3/32P	1/2N	3/32N	15 3/8
		R 1	-	-	1 5/8N-1/4N	15/16N	1/16P	-
	Taurus	R 2	-	-	1 5/16N-1/16N	5/8N	1/16P	-
	Sable	F 1	3P-6P	4P	1 1/32-3/32P	1/2N	1/16N	15 3/8
		R 1	-	-	1 5/8-1/4N	15/16N	3/32N	-
	Sable	F 2	3P-6P	4P	1 3/32N-3/32P	1/2N	1/16N	15 3/8
		R 2	-	-	1 5/16-1/16N	5/8N	3/32N	-
1988	Taurus	F	3P-6P	4P	1 3/32P-3/32P	1/2N	3/32N	15 3/8
		R 1	-	-	1 5/8N-1.4N	15/16N	1/16P	-
	Taurus	R 2	-	-	1 5/16N-1/16N	5/8N	1/16P	-
	Sable	F 1	3P-6P	4P	1 1/32-3/32P	1/2N	1/16N	15 3/8
		R 1	-	-	1 5/8-1/4N	15/16N	3/32N	-
	Sable	F 2	3P-6P	4P	1 3/32N-3/32P	1/2N	1/16N	15 3/8
		R 2	-	-	1 5/16-1/16N	5/8N	3/32N	-
1989	Taurus	F 1	2 13/16P-5 131/6P	3 13/16P	1/18N-1/8P	1/2N	3/16N	15 1/2
		F 2	2 11/16P-5 11/16P	3 11/16P	1 7/8P-1/8N	7/8N	3/16N	15 1/2
	Taurus	R	-	-	1 5/8N-7/32N	15/16N	1/16P	-
	Sable	F 1	2 13/16P-5 131/6P	3 13/16P	1/18N-1/8P	1/2N	3/16N	15 1/2
		R 1	-	-	1 5/8N-7/32N	15/16N	1/16P	-
	Sable	F 2	2 13/16P-5 131/6P	3 13/16P	1 7/8N-1/8N	7/8N	3/32N	-
		R 2	-	-	1 5/8N-7/32N	15/16N	1/16P	-
1990	Taurus	F 1	2 13/16P-5 13/16P	2 13/16P	1 1/8N-1/8P	1/2N	3/32N	15 1/2
		F 2	2 5/8P-4 5/8P	3 5/8P	1 1/16N-3/16P	7/16N	3/32N	15 1/2
	Taurus	R	-	-	1 5/8N-7/32N	15/16N	1/16P	-
	Sable	F	2 13/16P-5 13/16 P	2 13/16P	1 1/8N-1/8P	1/2N	3/32N	15 1/2
		R	-	-	1 5/8N-7/32N	15/16N	1/16P	-
	Sable	F	2 5/8P- 4 5/8P	3 5/8P	1 1/6N-3/16P	7/16N	3/32N	15 1/2
		R	-	-	1 5/8N-7/32N	15/16N	1/16P	-
1991	Taurus	F 1	2 13/16P-5 13/16P	2 13/16P	1/18N-1/8P	1/2N	3/32N	15 1/2
		F 2	2 5/8P-4 5/8P	3 5/8P	1 1/16N-3/16P	7/16N	3/32N	15 1/2
	Taurus	R	-	-	1 5/8N-7/32N	15/16N	1/16P	-
	Sable	F 1	2 13/16P-5 13/16 P	2 13/16P	1 1/8N-1/8P	1/2N	3/32N	15 1/2
		R 1	-	-	1 5/8N-7/32N	15/16N	1/16P	-
	Sable	F 2	2 5/8P- 4 5/8P	3 5/8P	1 1/6N-3/16P	7/16N	3/32N	15 1/2
		R 2	-	-	1 5/8N-7/32N	15/16N	1/16P	-
1992	Taurus	F 1	2 31/6P-5 13/16P	2 13/16P	1 1/8N-1/8P	1/2N	3/32N	15 1/2
		F 2	2 11/16P-4 11/16P	3 11/16P	1N-1/4P	3/8N	3/32N	15 1/2
	Taurus	R	-	-	1 5/8N-7/32N	15/16N	1/16P	-
	Sable	F 1	2 13/16P-5 13/16 P	2 13/16P	1 1/8N-1/8P	1/2N	3/32N	15 1/2
		R 1	-	-	1 5/8N-7/32N	15/16N	1/16P	-

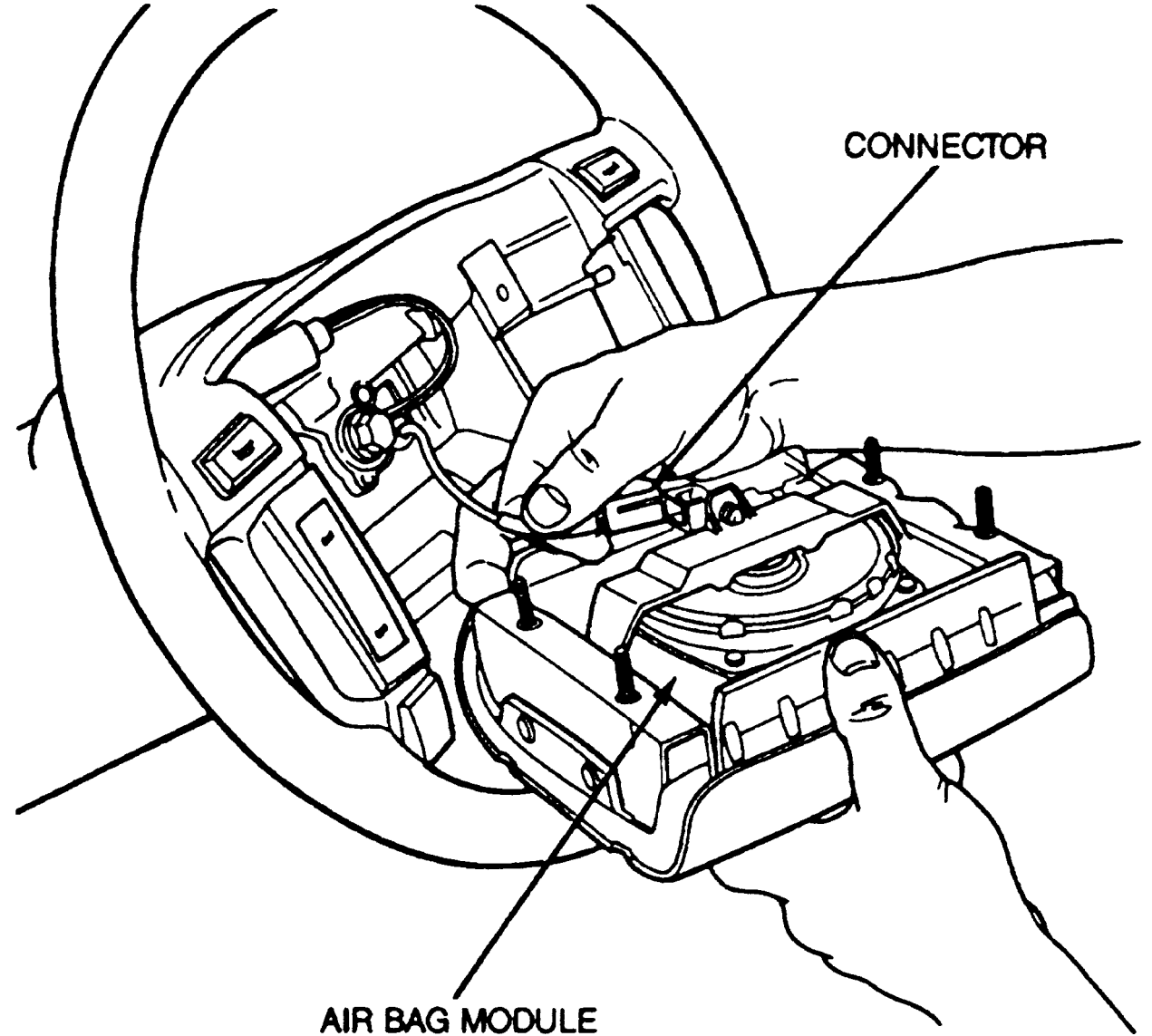
WHEEL ALIGNMENT

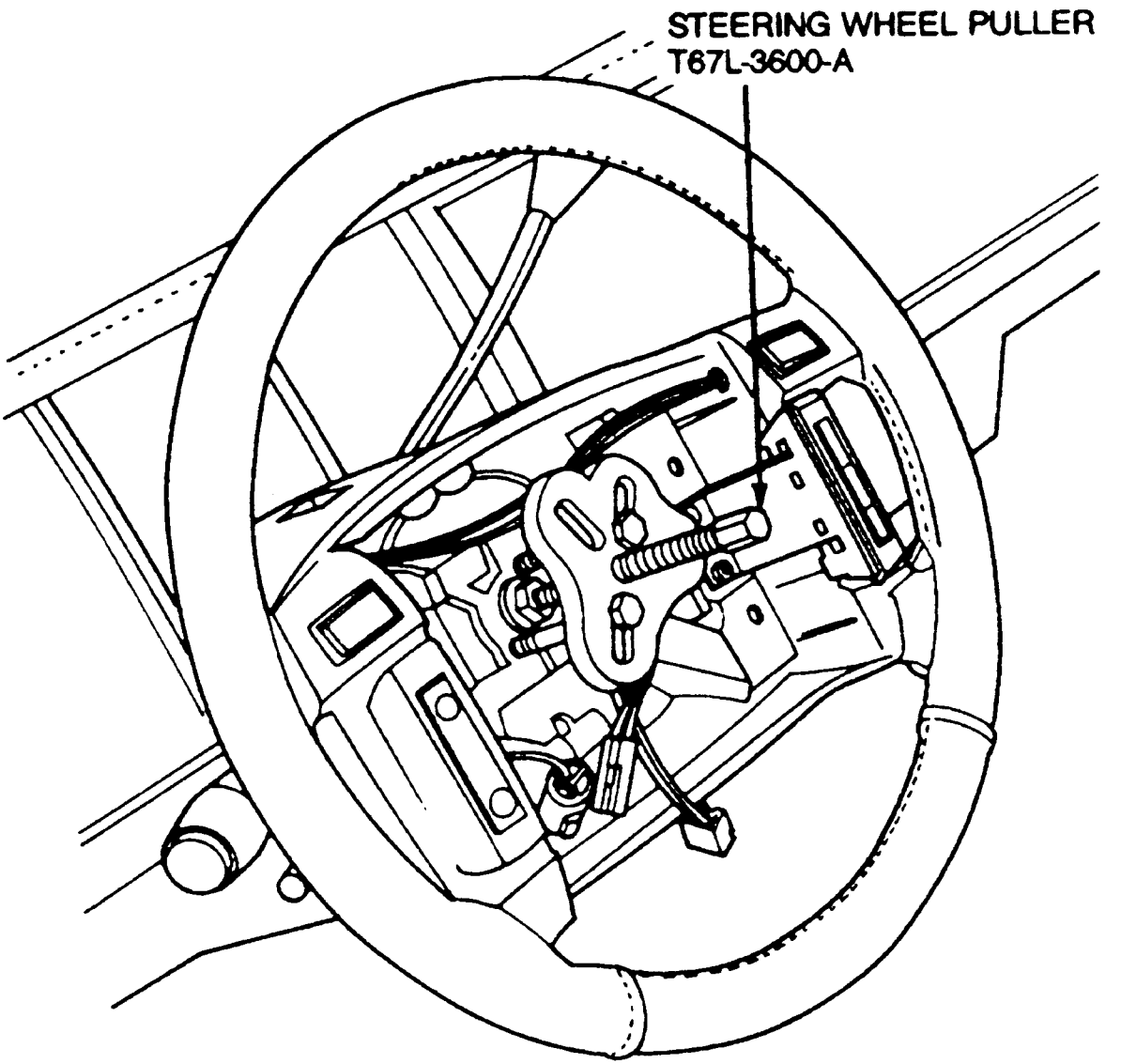
Year	Model		Caster		Camber		Toe-in	Steering Axis Inclination
			Range (deg.)	Preferred Setting (deg.)	Range (deg.)	Preferred Setting (deg.)	(in.)	(deg.)
1992 (cont.)	Sable	F 2	2 11/16P-4 11/16P	3 11/16P	1N-1/4P	3/8N	3/32N	15 1/2
		R 2	-	-	1 5/8N-7/32N	15/16N	1/16P	-
1993	Taurus	F 1	2 13/16P-5 13/16P	2 13/16P	1 1/8N-1/8P	1/2N	3/32N	15 1/2
		F 2	2 11/16P-4 11/16P	3 11/16P	1N-1/4P	3/8N	3/32N	15 1/2
	Taurus	R	-	-	1 5/8N-7/32N	15/16N	1/16P	-
	Sable	F 1	2 13/16P-5 13/16P	2 13/16P	1 1/8N-1/8P	1/2N	3/32N	15 1/2
		R 1	-	-	1 5/8-7/32N	15/16N	1/16P	-
	Sable	F 2	2 11/16P-4 11/16P	3 11/16P	1N-1/4P	3/8N	3/32N	15 1/2
		R 2	-	-	1 5/8N-7/32N	15/16N	1/16P	-
1994	Taurus	F 1	2.81P-4.81P	3.81P	1.13N-0.13P	0.50N	0.09N	15.50
		R 2	-	-	1.60N-0.20N	0.90N	0.06P	-
	Taurus	F 1	2.70P-4.70P	3.70P	1.00N-0.20N	0.40N	0.20N	15.50
		R 2	-	-	1.90N-0.10P	0.90N	0.06P	-
	Sable	F 1	2.80P-4.80P	3.80P	1.10N-0.010P	0.50N	0.20N	15.50
		R 1	-	-	1.60N-0.20N	0.90N	0.06P	-
	Sable	F 2	2.70P-4.70P	3.70P	1.00N-0.20N	0.40N	0.20N	15.50
		R 2	-	-	1.90N-0.10P	0.90N	0.06P	-
1995	Taurus	F 1	2.80P-4.80P	3.80P	1.10N-0.10P	0.50N	0.20N	15.50
		R	-	-	1.60N-0.20N	0.90N	0.06P	-
	Taurus	F 2	2.70P-4.70P	3.70P	1.00N-0.20N	0.40N	0.20N	15.50
		R	-	-	1.90N-0.10P	0.90N	0.06P	-
	Sable	F 1	2.80P-4.80P	3.80P	1.10N-0.10P	0.50N	0.20N	15.50
		R	-	-	1.60N-0.20N	0.90N	0.06P	-
	Sable	F 2	2.70P-4.70P	3.70P	1.00N-0.20N	0.40N	0.20N	15.50
		R	-	-	1.90N-0.10P	0.90N	0.06P	-

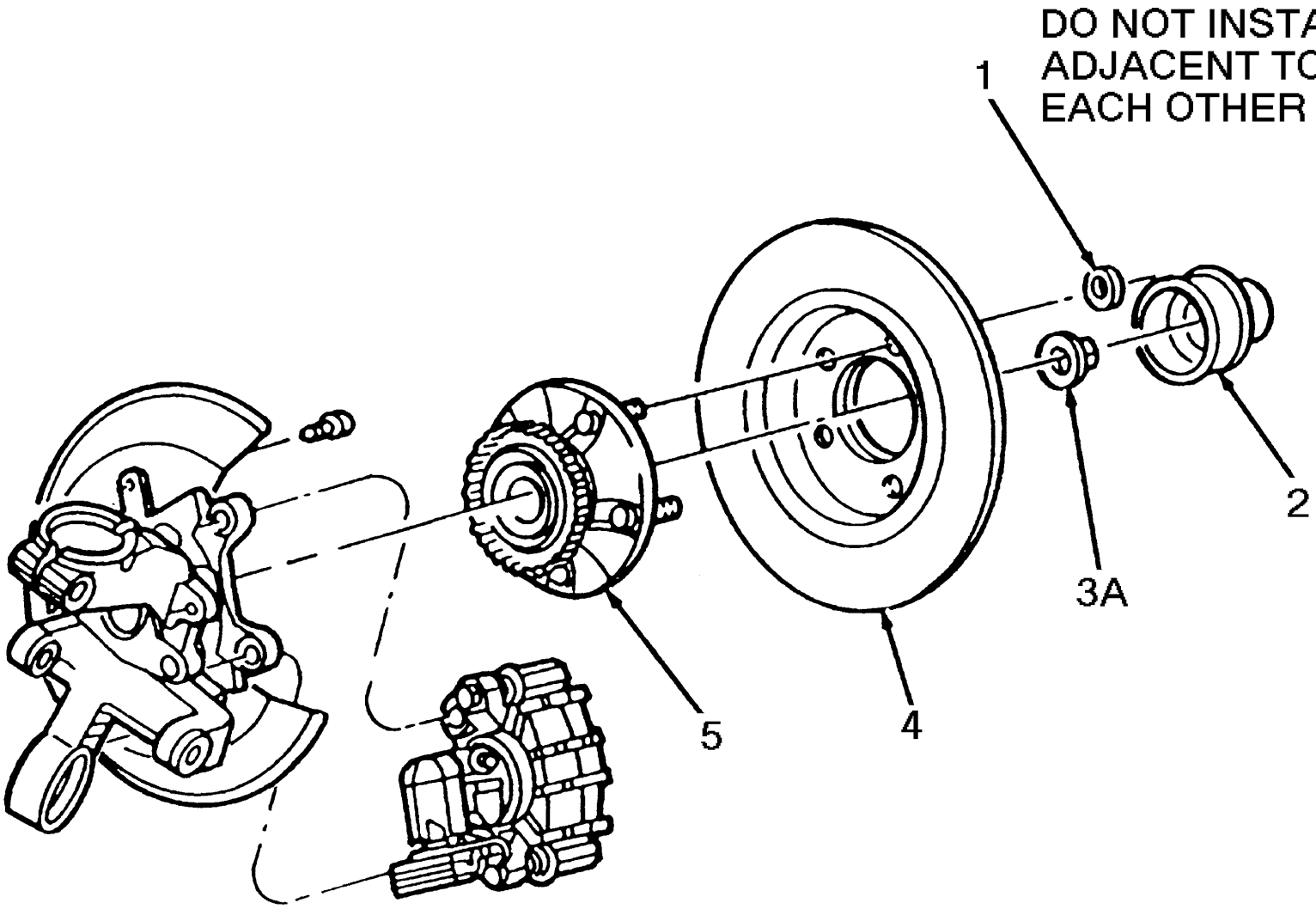
P - Positive
N - Negative
F - Front
R - Rear
1 Sedan
2 Wagon



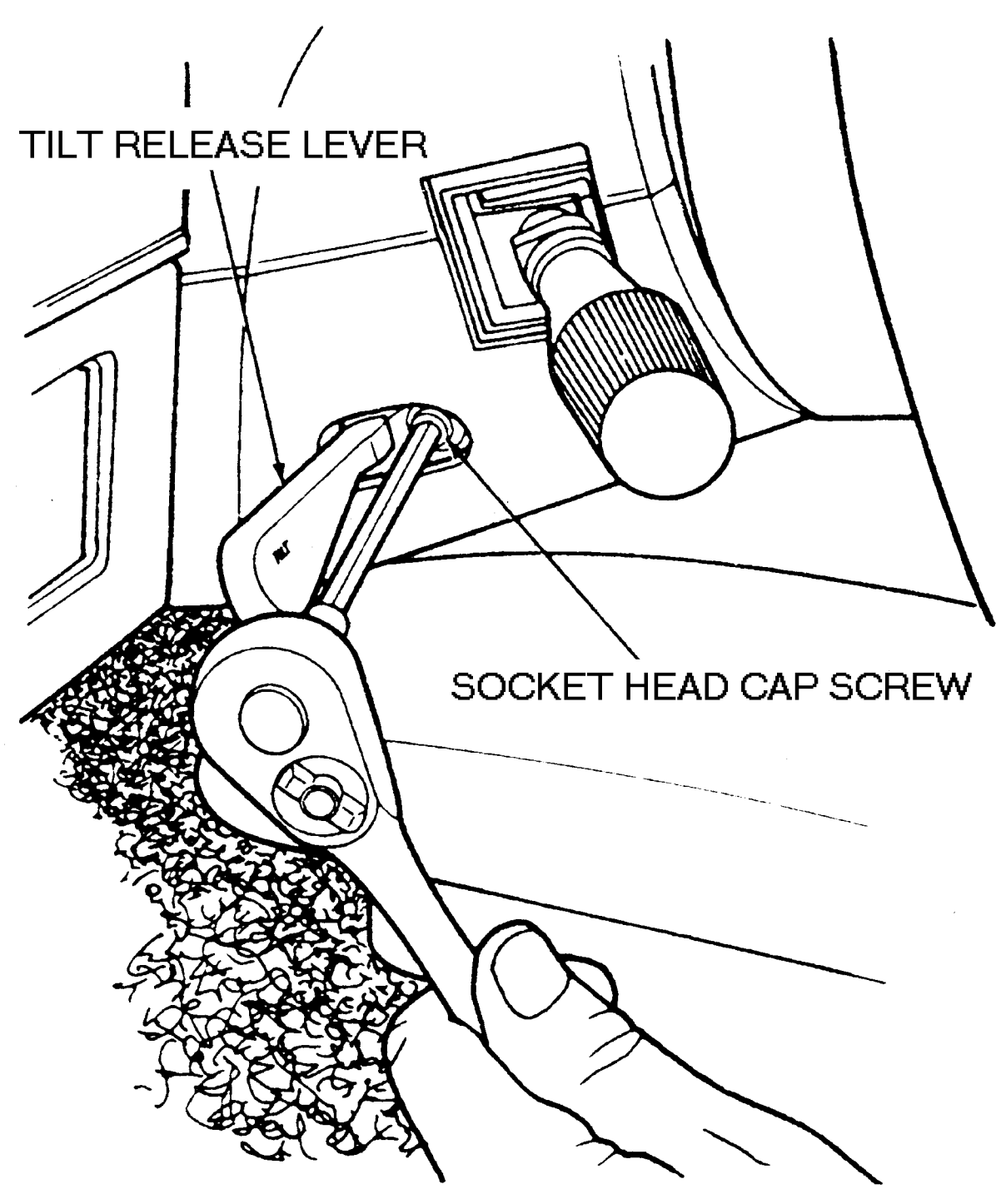
BASE WHEEL TAURUS

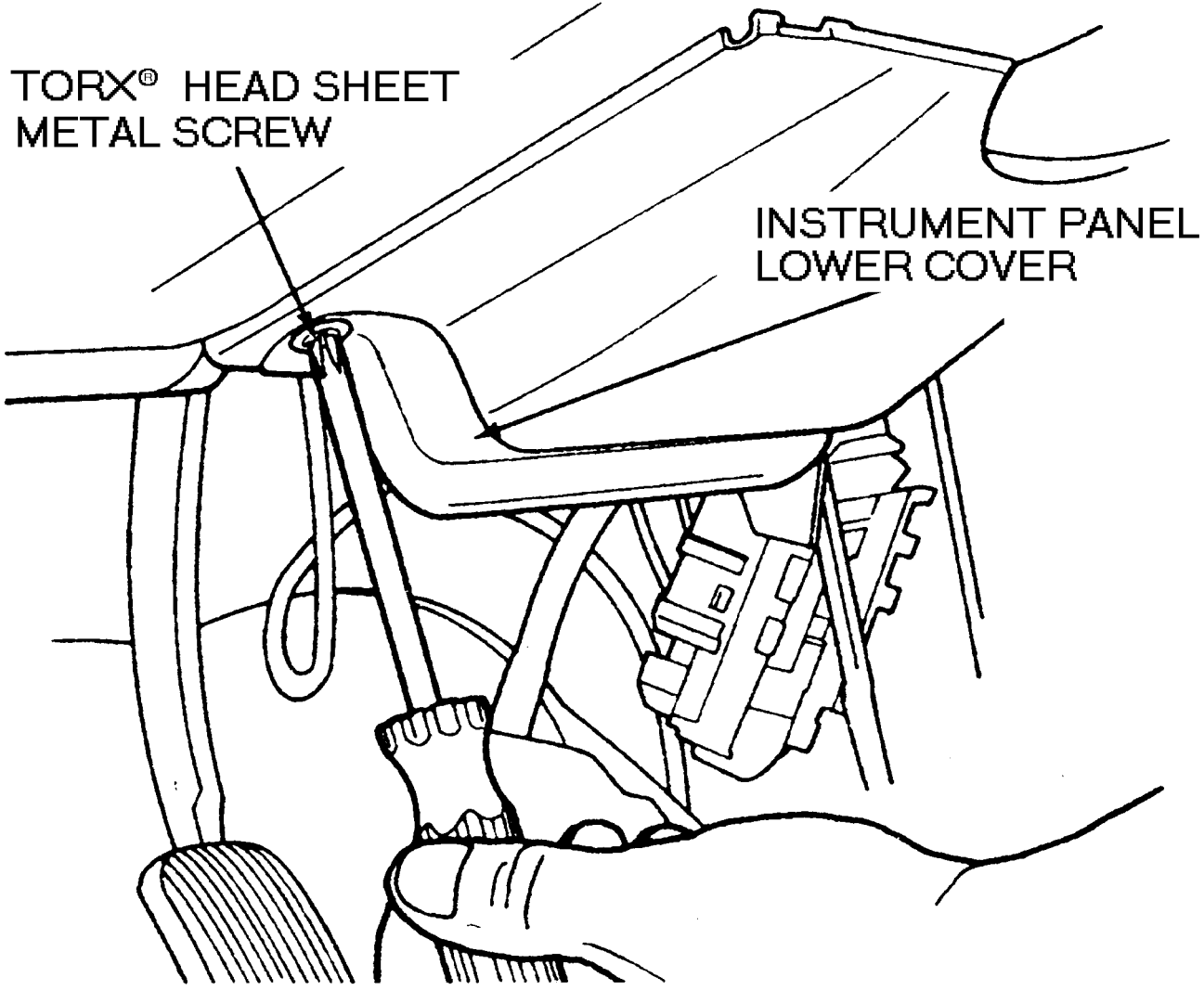

CONNECTOR
AIR BAG MODULE

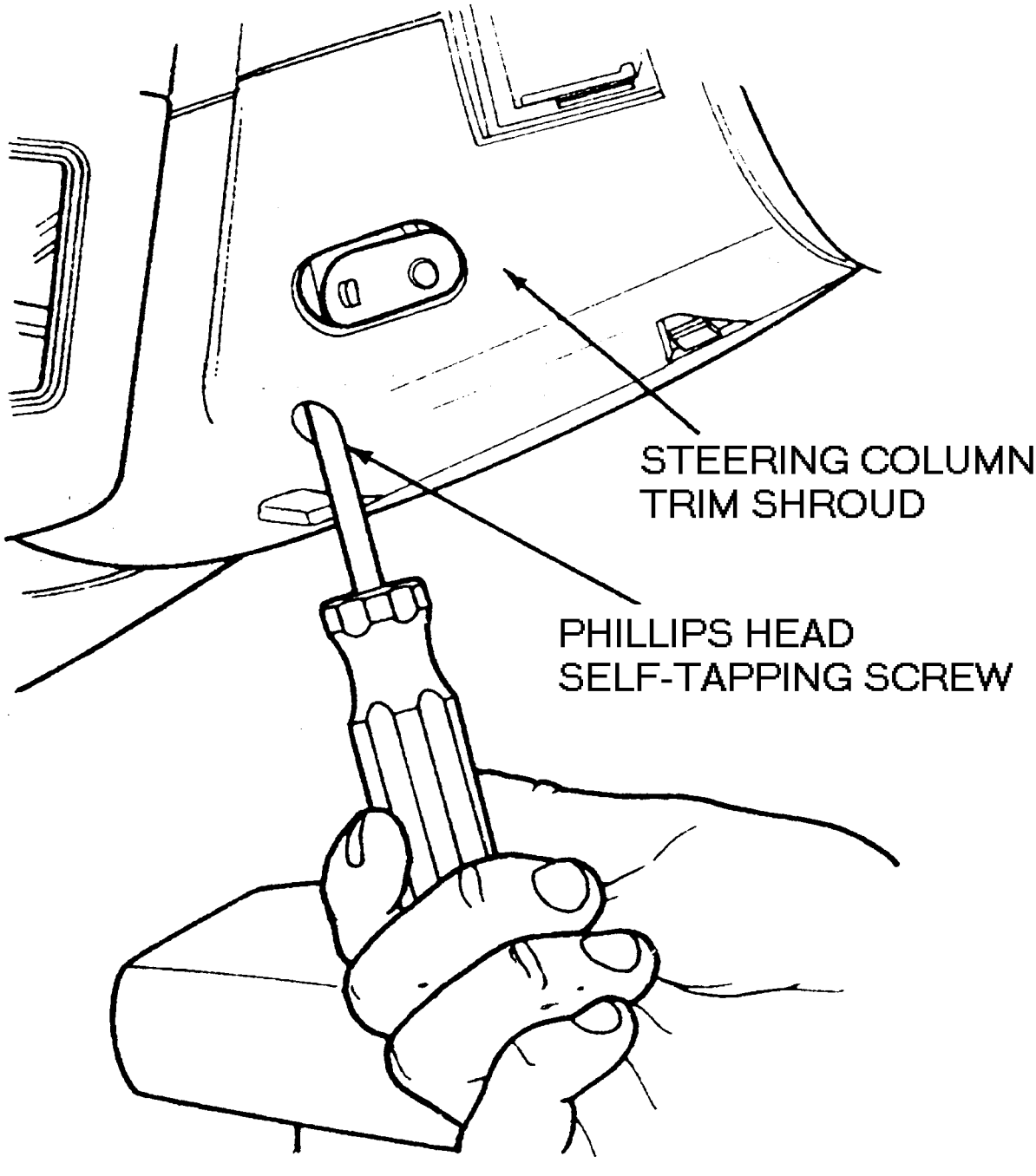

STEERING WHEEL PULLER
T67L-3600-A

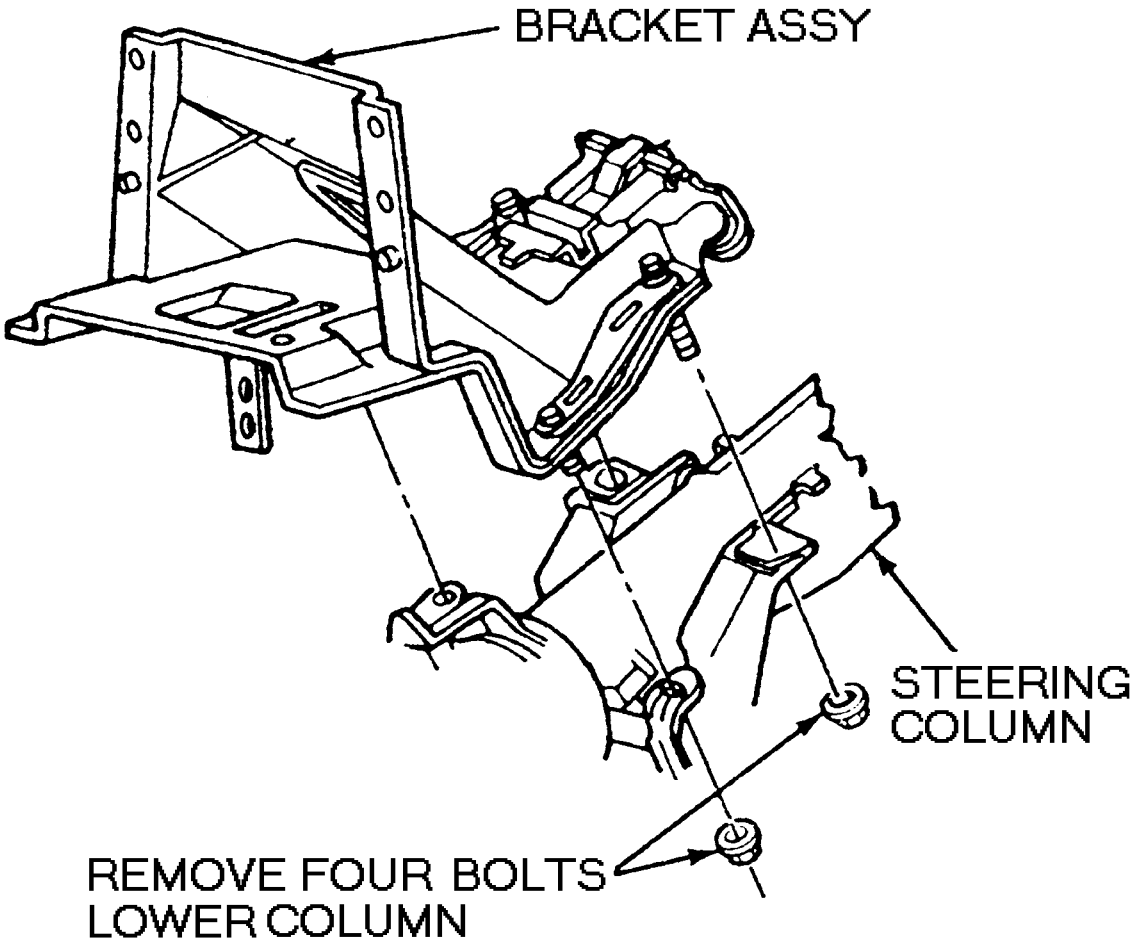


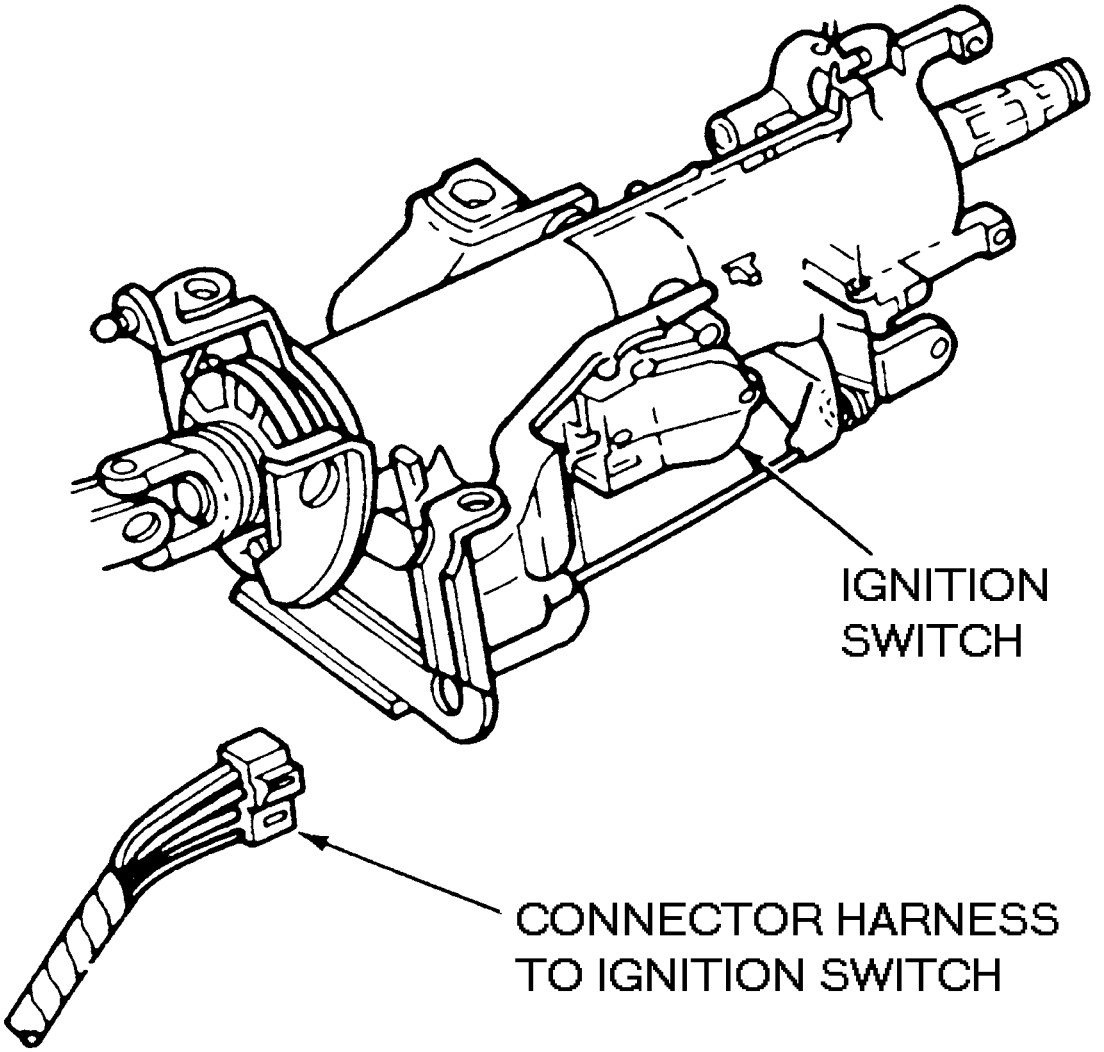
1 Retainer nut (2 req'd)
2 Rear hub cap grease seal
3 Rear axle wheel hub retainer
4 Rear disc brake rotor
5 Rear disc brake caliper
A Tighten to 255-345 Nm (188-254 lb.ft.)

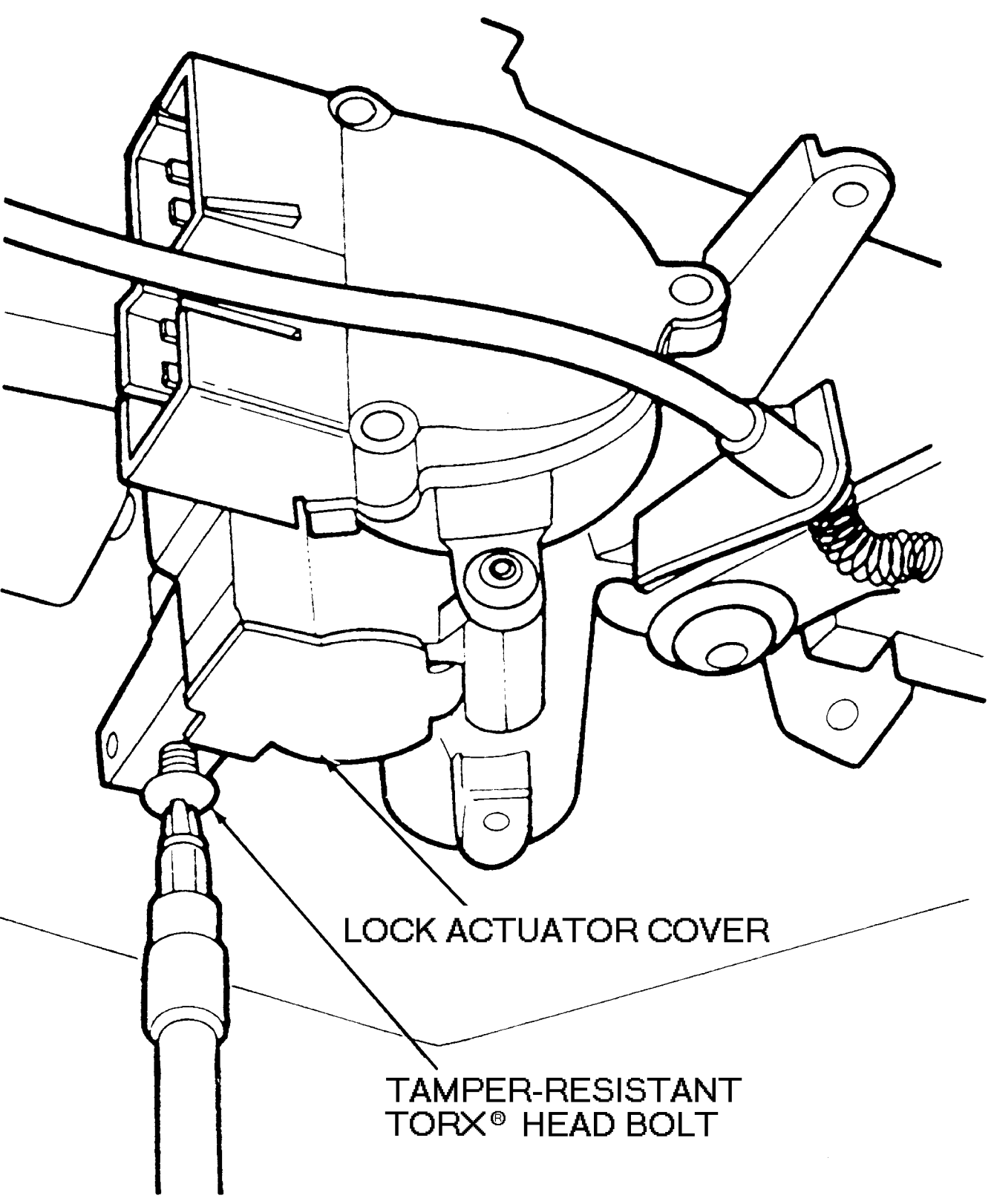

TILT RELEASE LEVER
SOCKET HEAD CAP SCREW

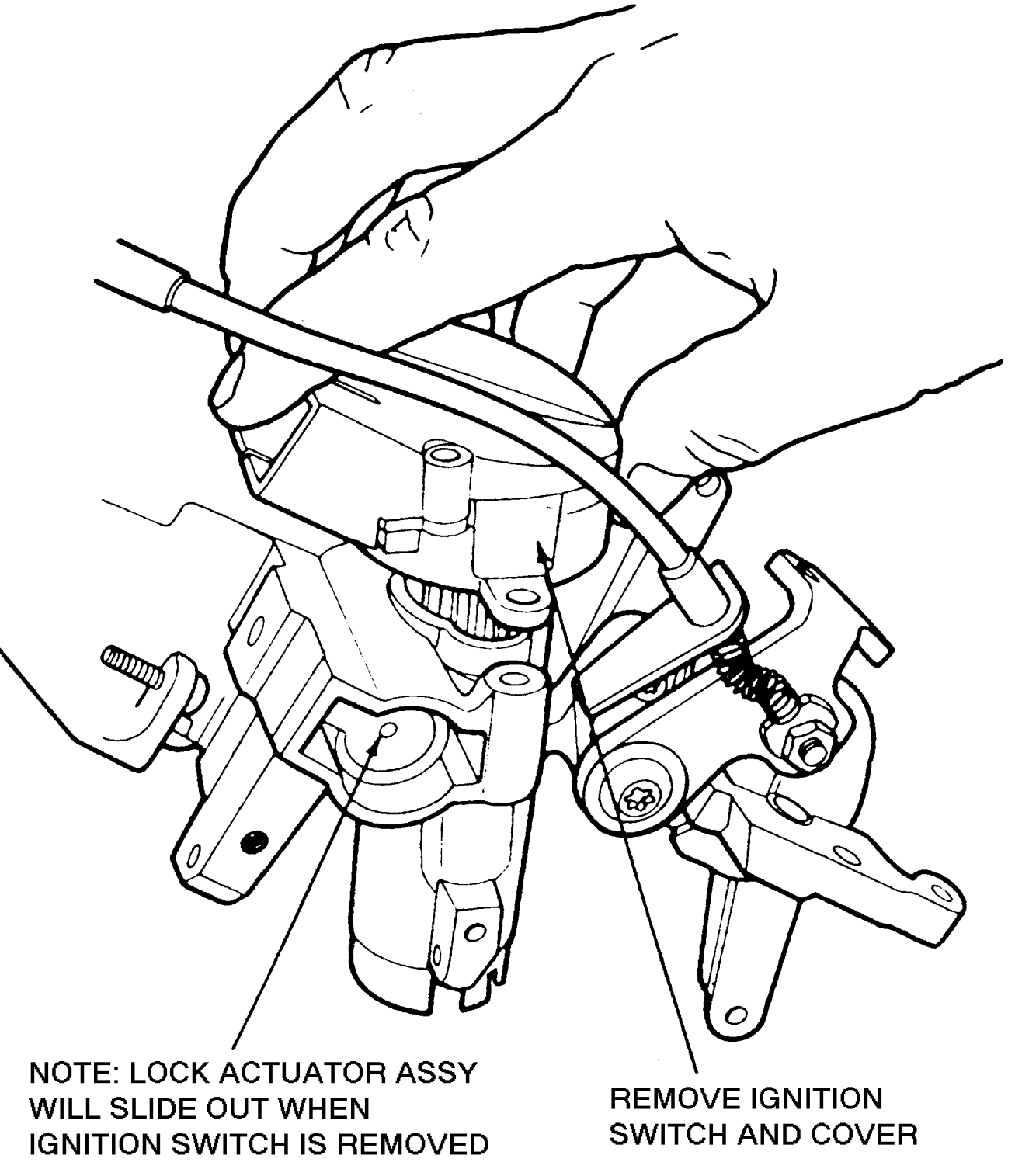

TORX® HEAD SHEET
METAL SCREW
INSTRUMENT PANEL
LOWER COVER

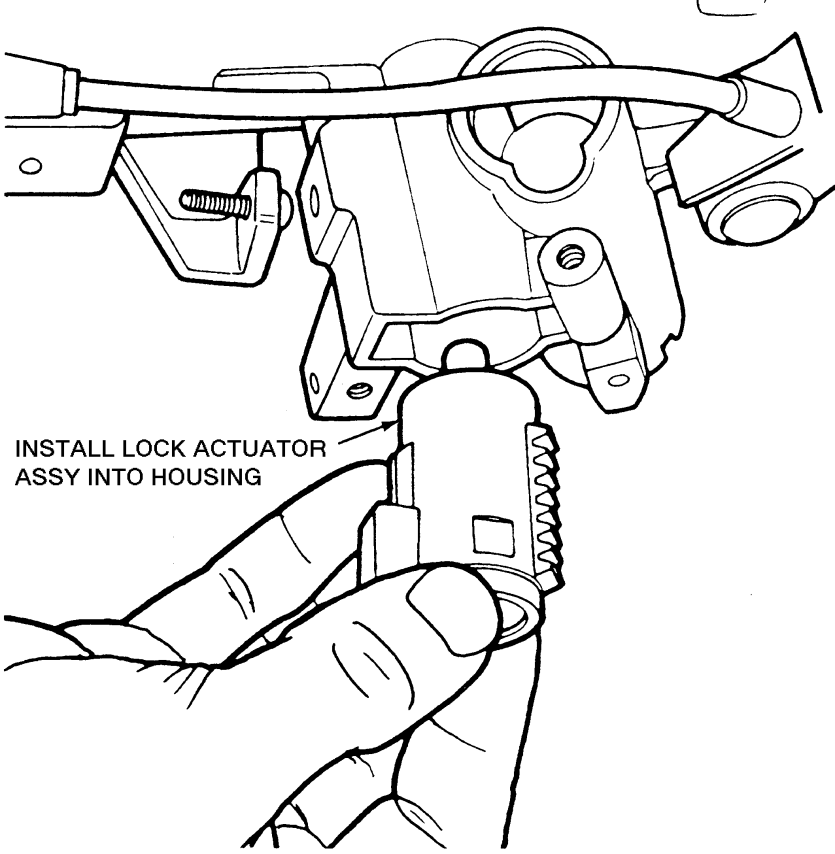

STEERING COLUMN
TRIM SHROUD
PHILLIPS HEAD
SELF-TAPPING SCREW

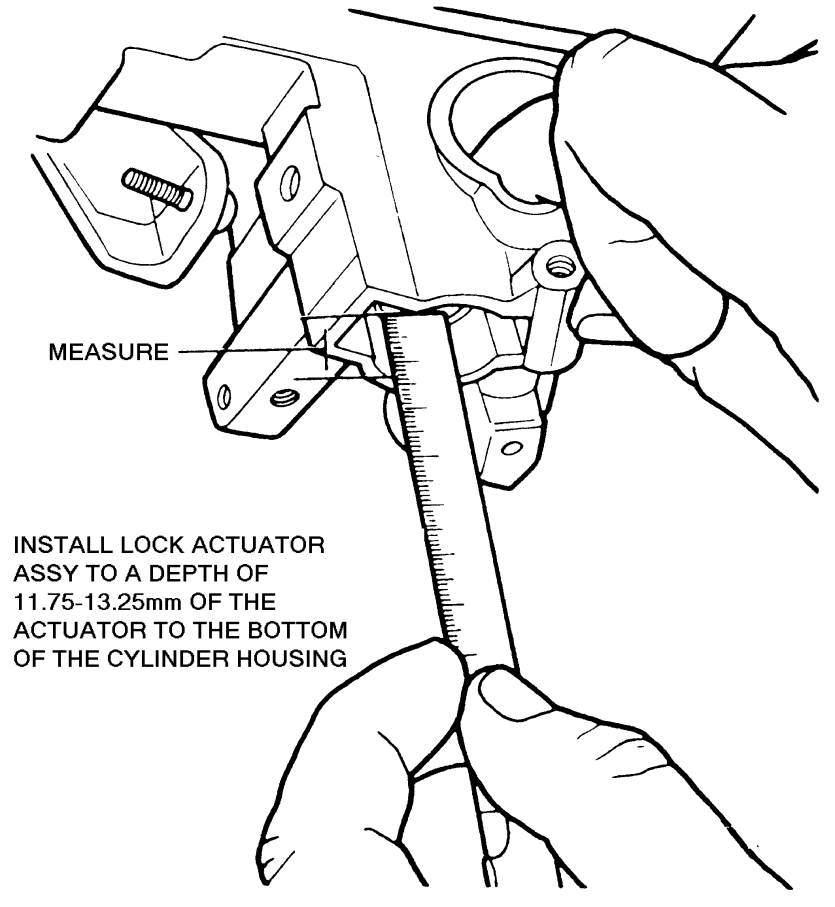

BRACKET ASSY
STEERING COLUMN
REMOVE FOUR BOLTS LOWER COLUMN

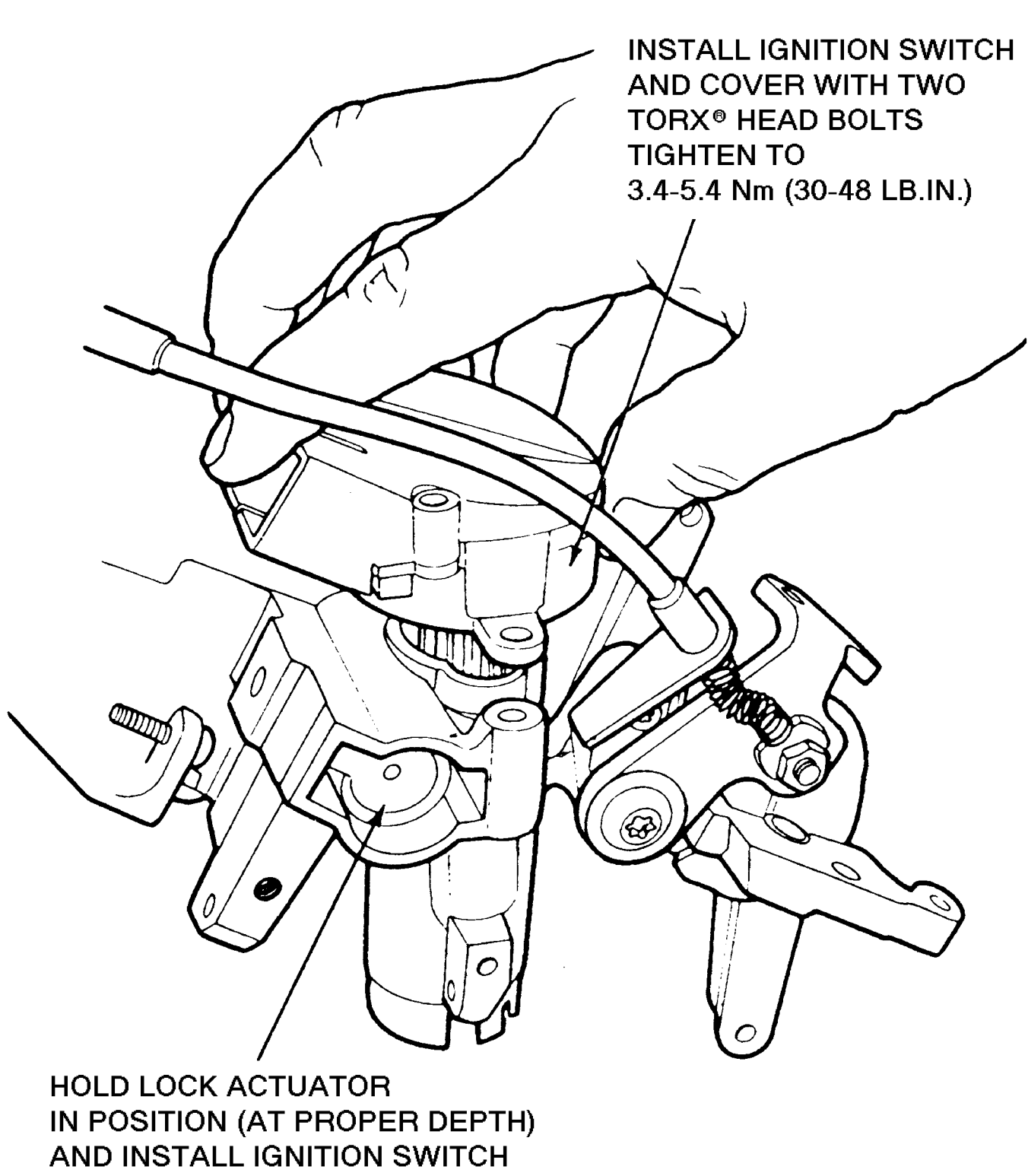

IGNITION
SWITCH
CONNECTOR HARNESS
TO IGNITION SWITCH

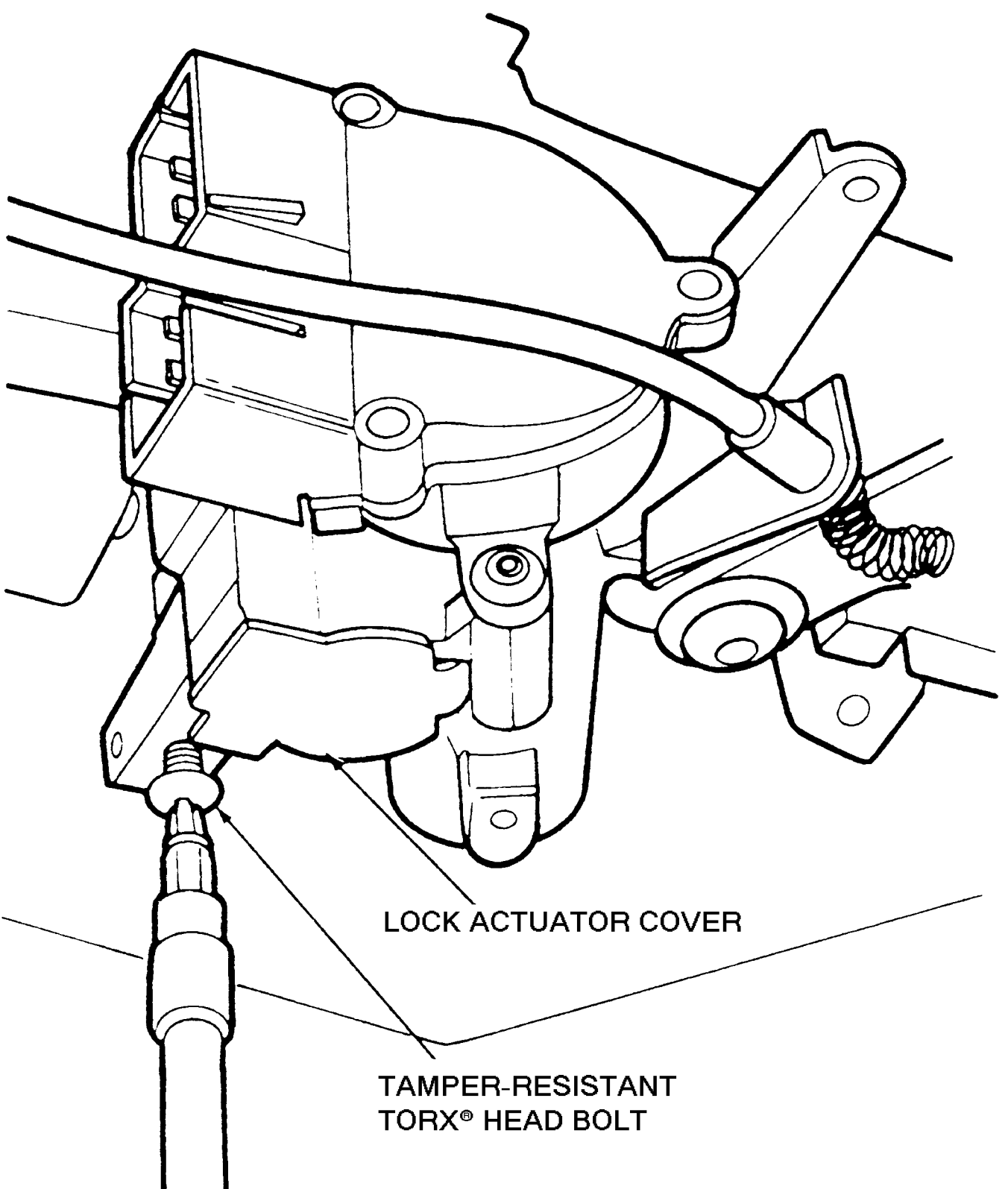

LOCK ACTUATOR COVER
TAMPER-RESISTANT
TORX® HEAD BOLT

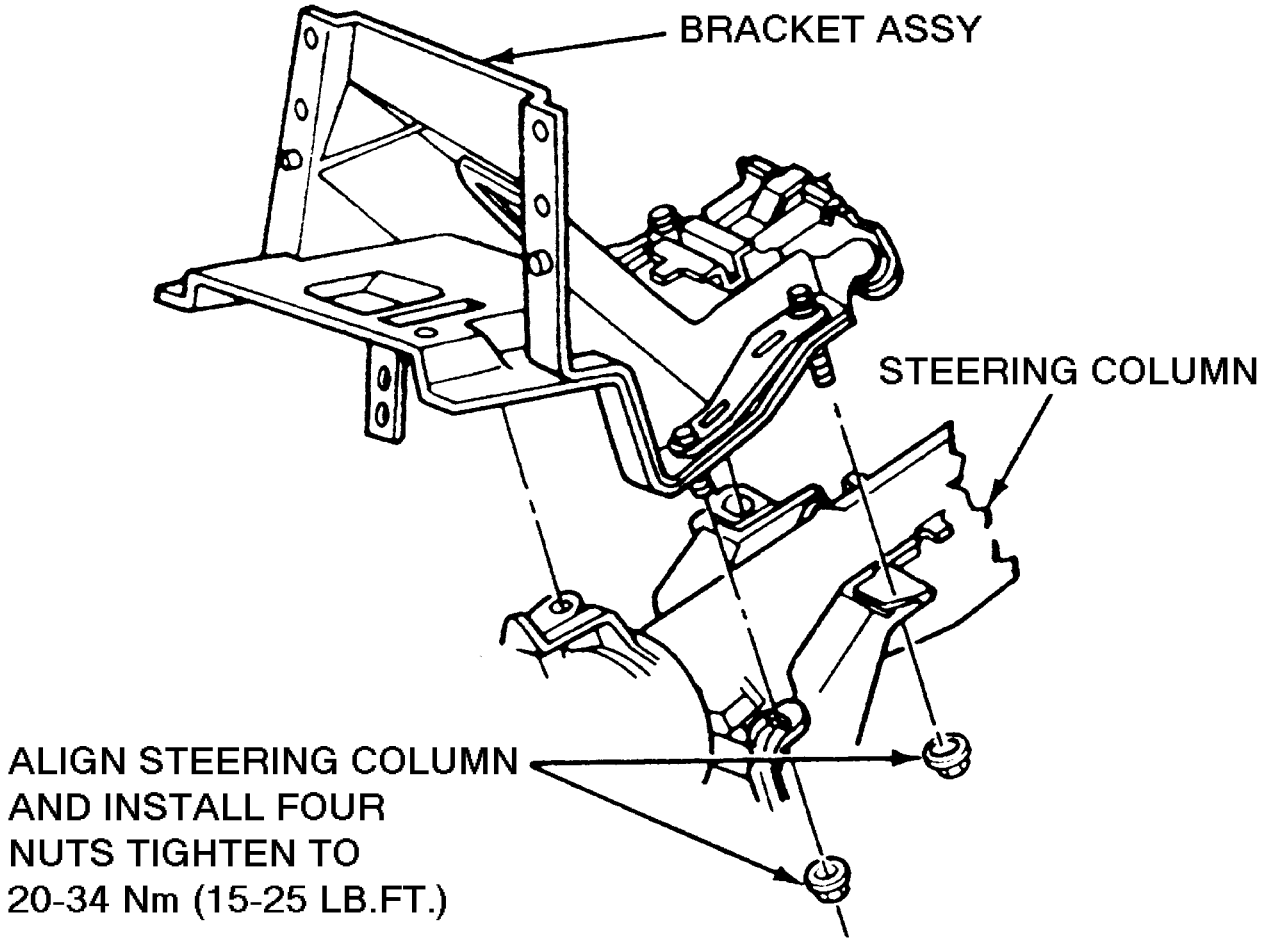

NOTE: LOCK ACTUATOR ASSY
WILL SLIDE OUT WHEN
IGNITION SWITCH IS REMOVED
REMOVE IGNITION
SWITCH AND COVER

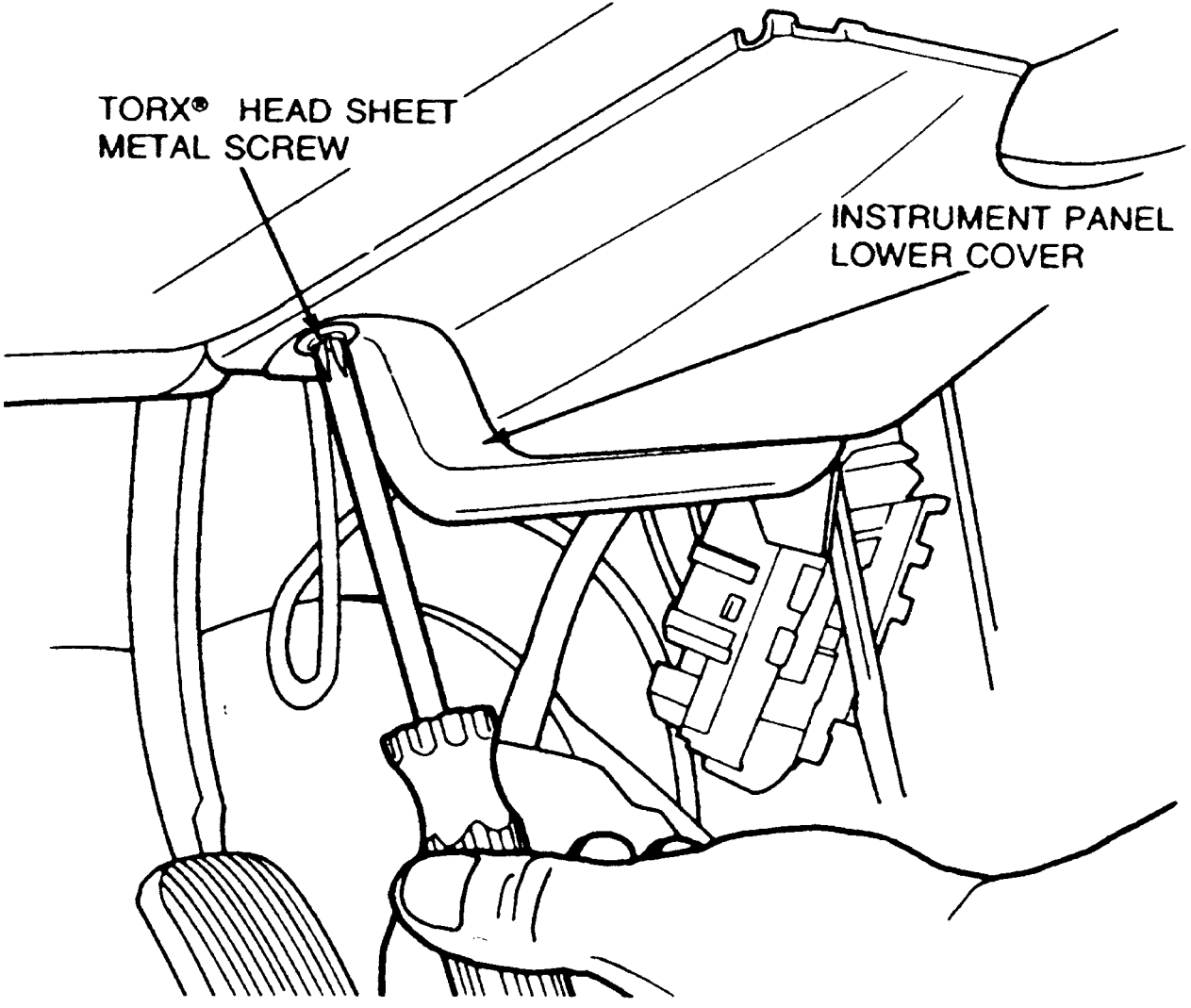

INSTALL LOCK ACTUATOR
ASSY INTO HOUSING

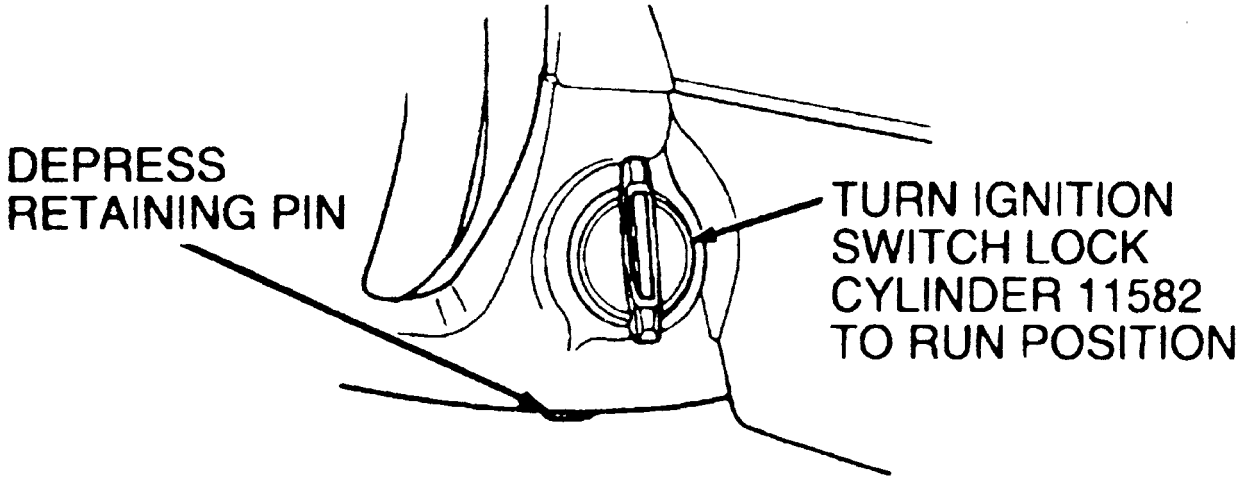

MEASURE
INSTALL LOCK ACTUATOR
ASSY TO A DEPTH OF
11.75-13.25mm OF THE
ACTUATOR TO THE BOTTOM
OF THE CYLINDER HOUSING

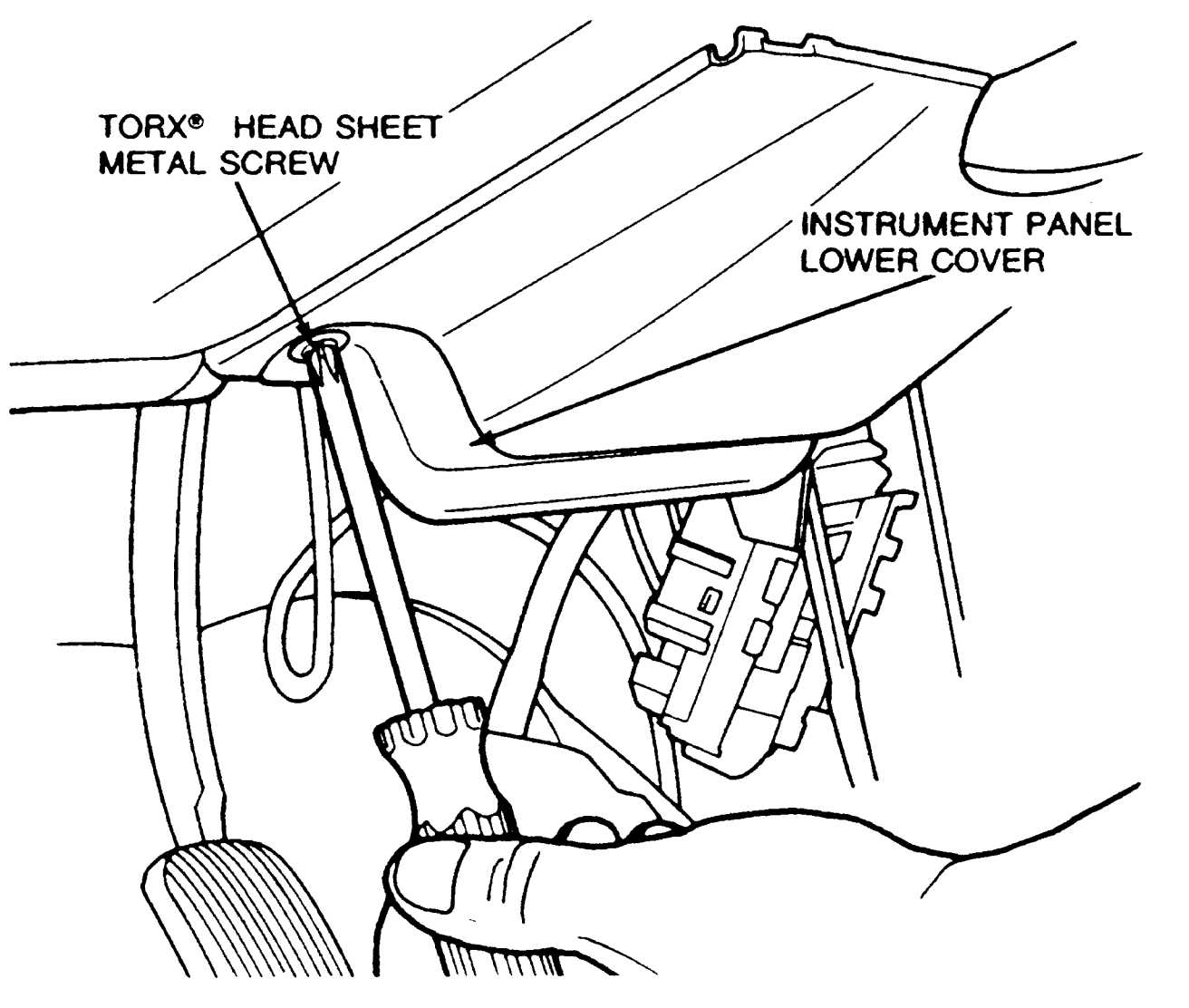

INSTALL IGNITION SWITCH
AND COVER WITH TWO
TORX® HEAD BOLTS
TIGHTEN TO
3.4-5.4 Nm (30-48 LB.IN.)
HOLD LOCK ACTUATOR
IN POSITION (AT PROPER DEPTH)
AND INSTALL IGNITION SWITCH

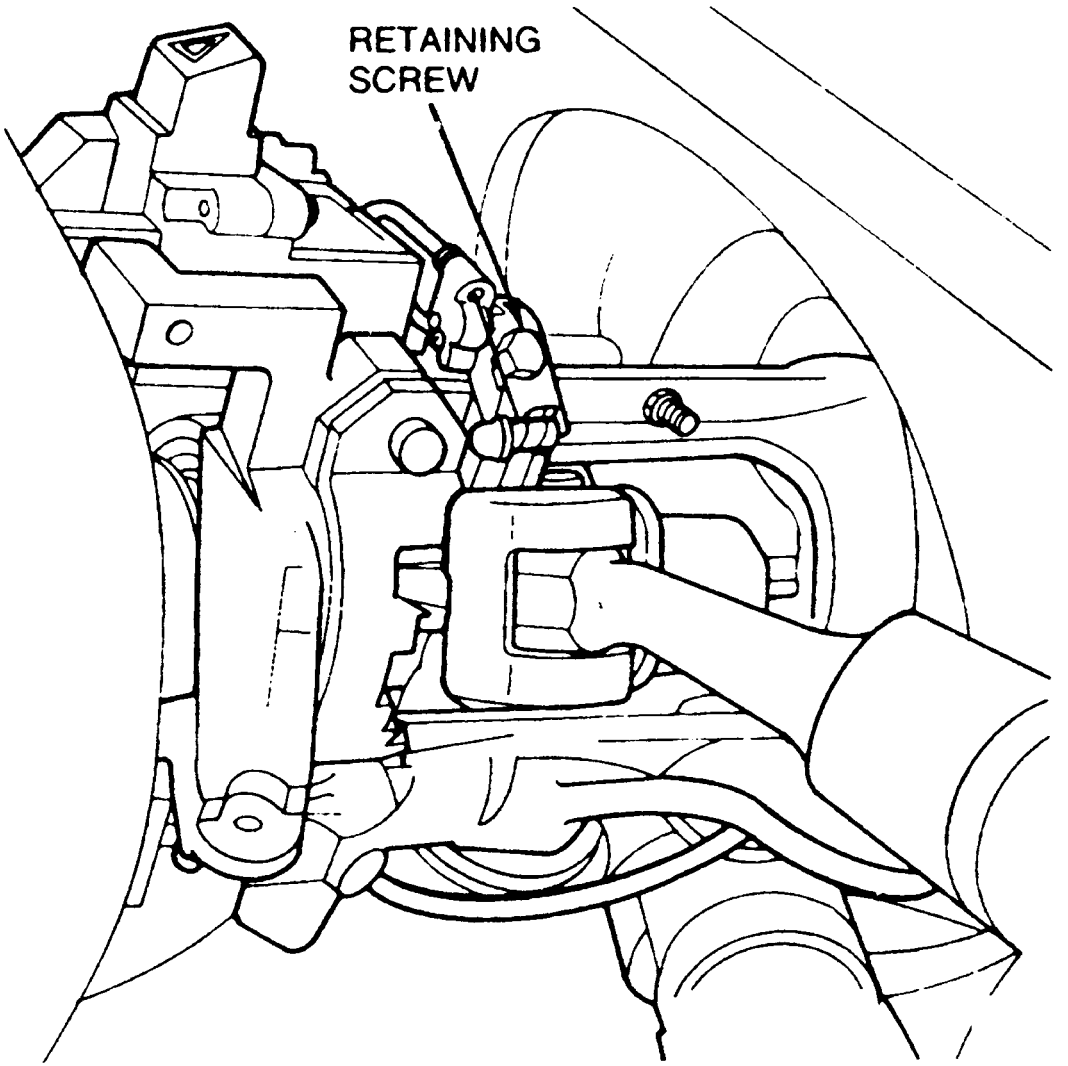

LOCK ACTUATOR COVER
TAMPER-RESISTANT
TORX® HEAD BOLT

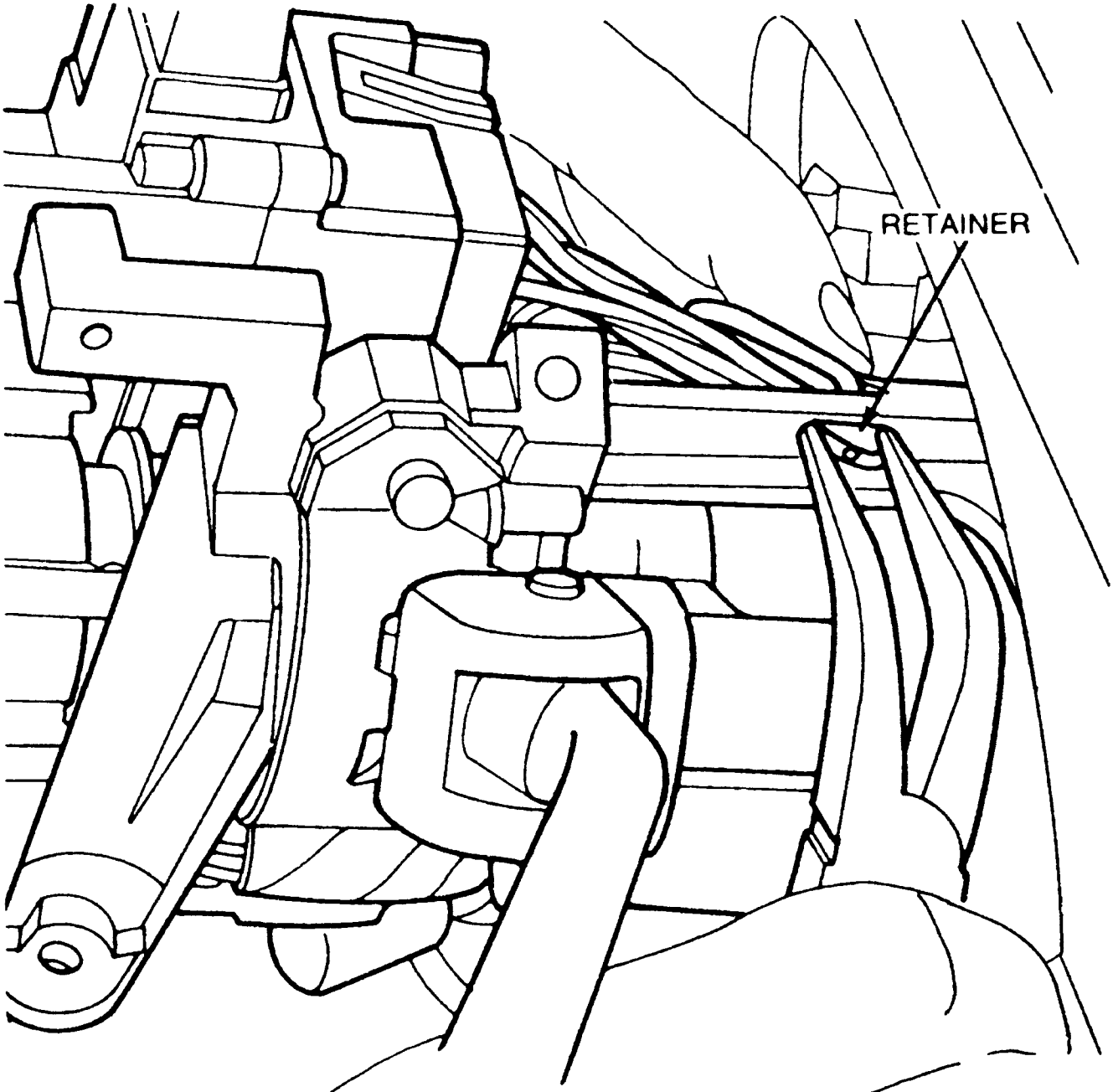

BRACKET ASSY
STEERING COLUMN
ALIGN STEERING COLUMN
AND INSTALL FOUR
NUTS TIGHTEN TO
20-34 Nm (15-25 LB.FT.)

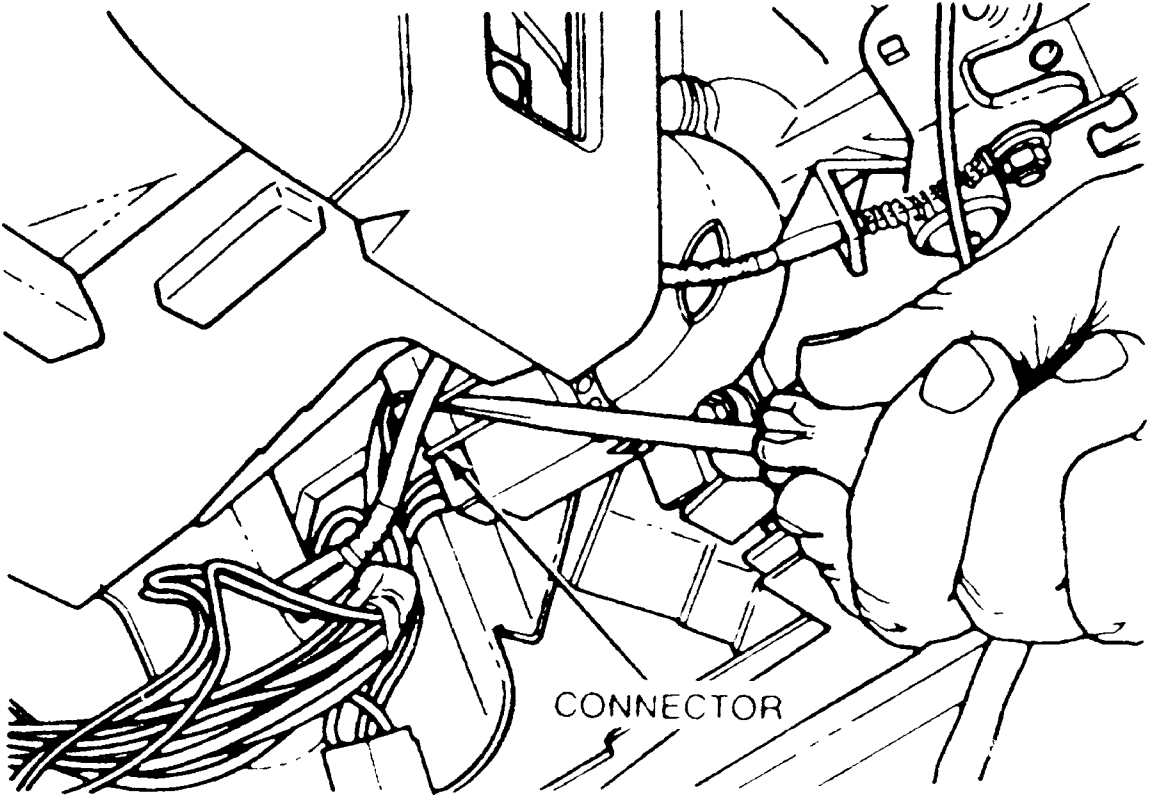

TORX® HEAD SHEET
METAL SCREW
INSTRUMENT PANEL
LOWER COVER

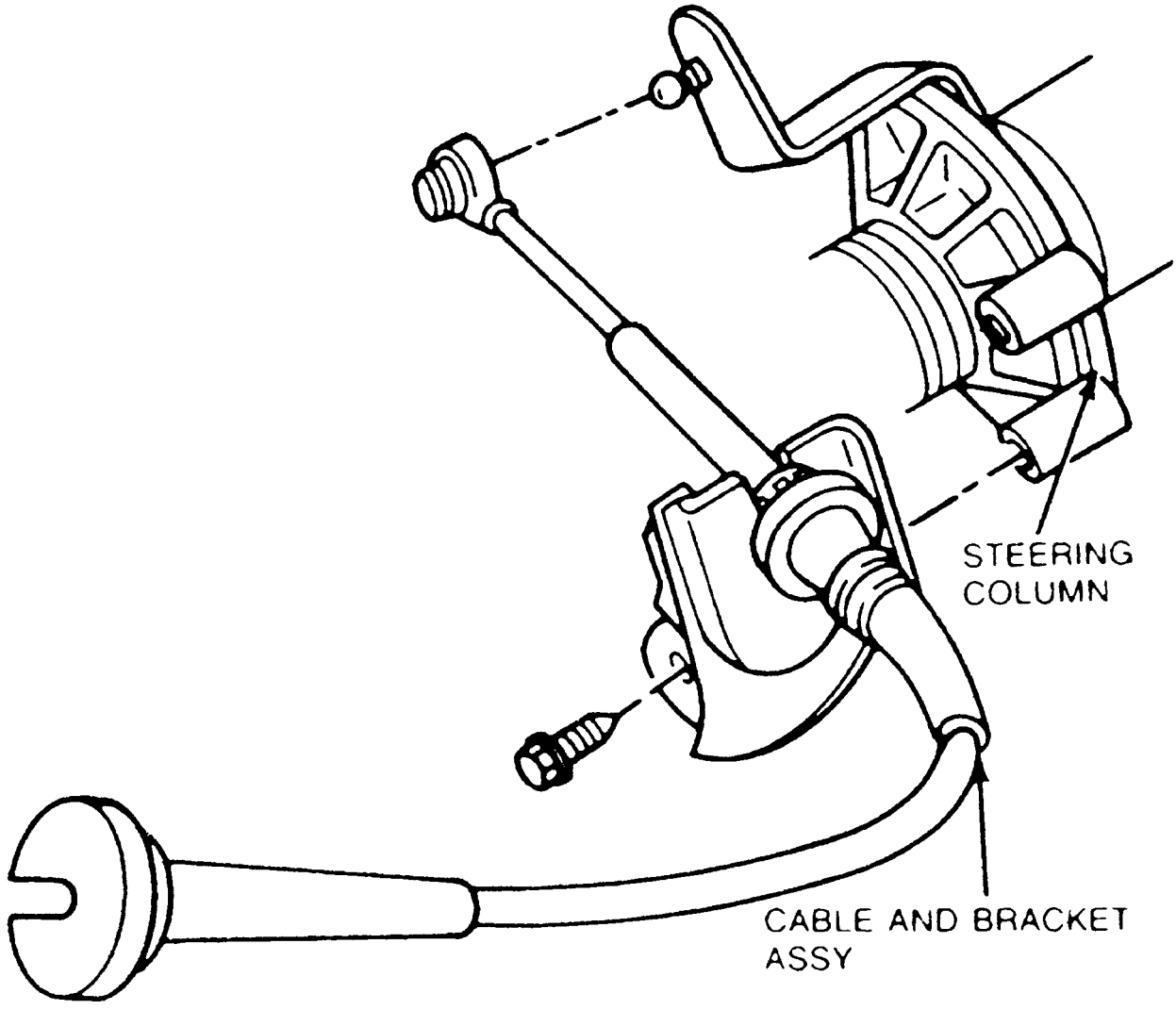

DEPRESS
RETAINING PIN
TURN IGNITION
SWITCH LOCK
CYLINDER 11582
TO RUN POSITION

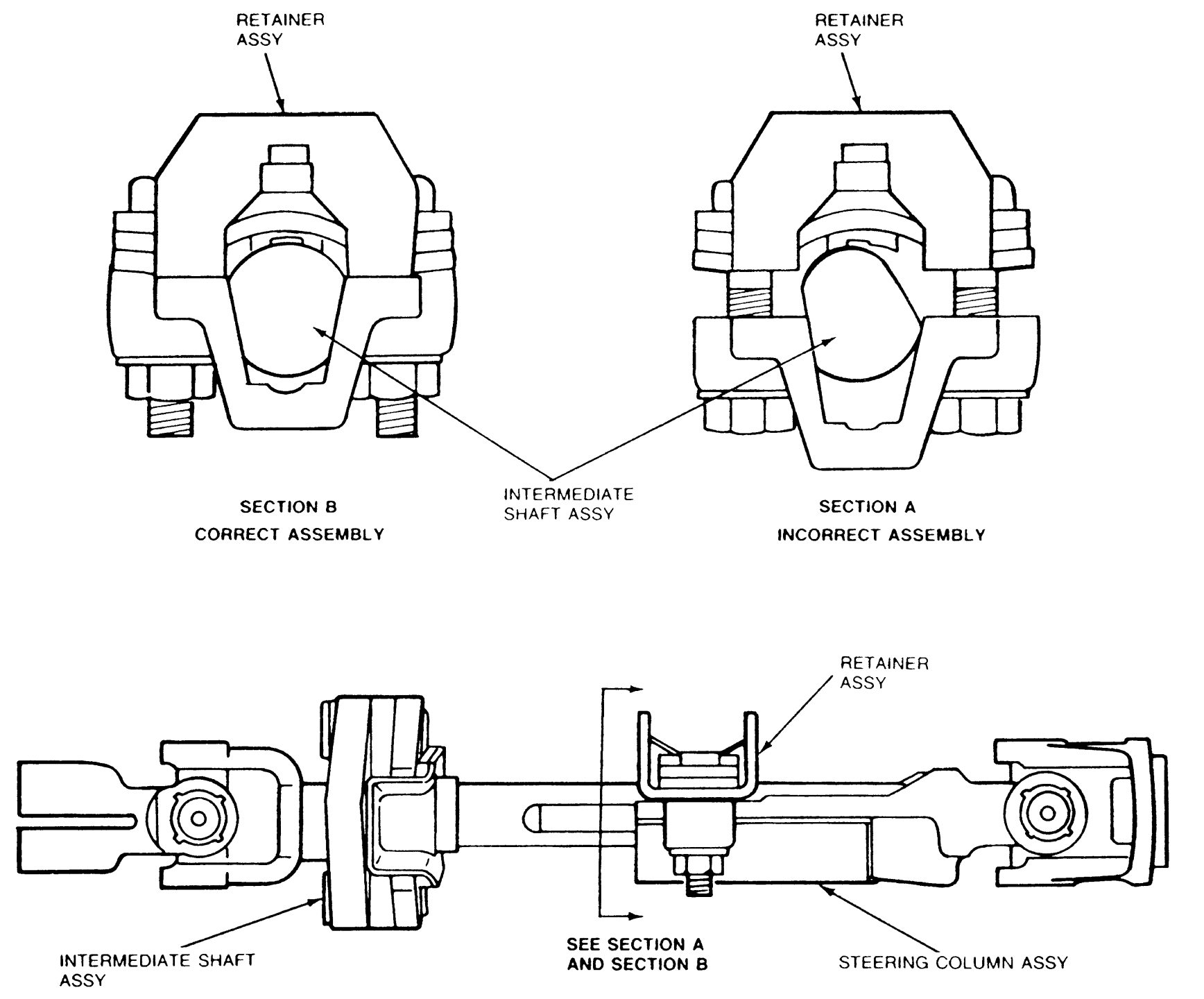

TORX® HEAD SHEET
METAL SCREW
INSTRUMENT PANEL
LOWER COVER

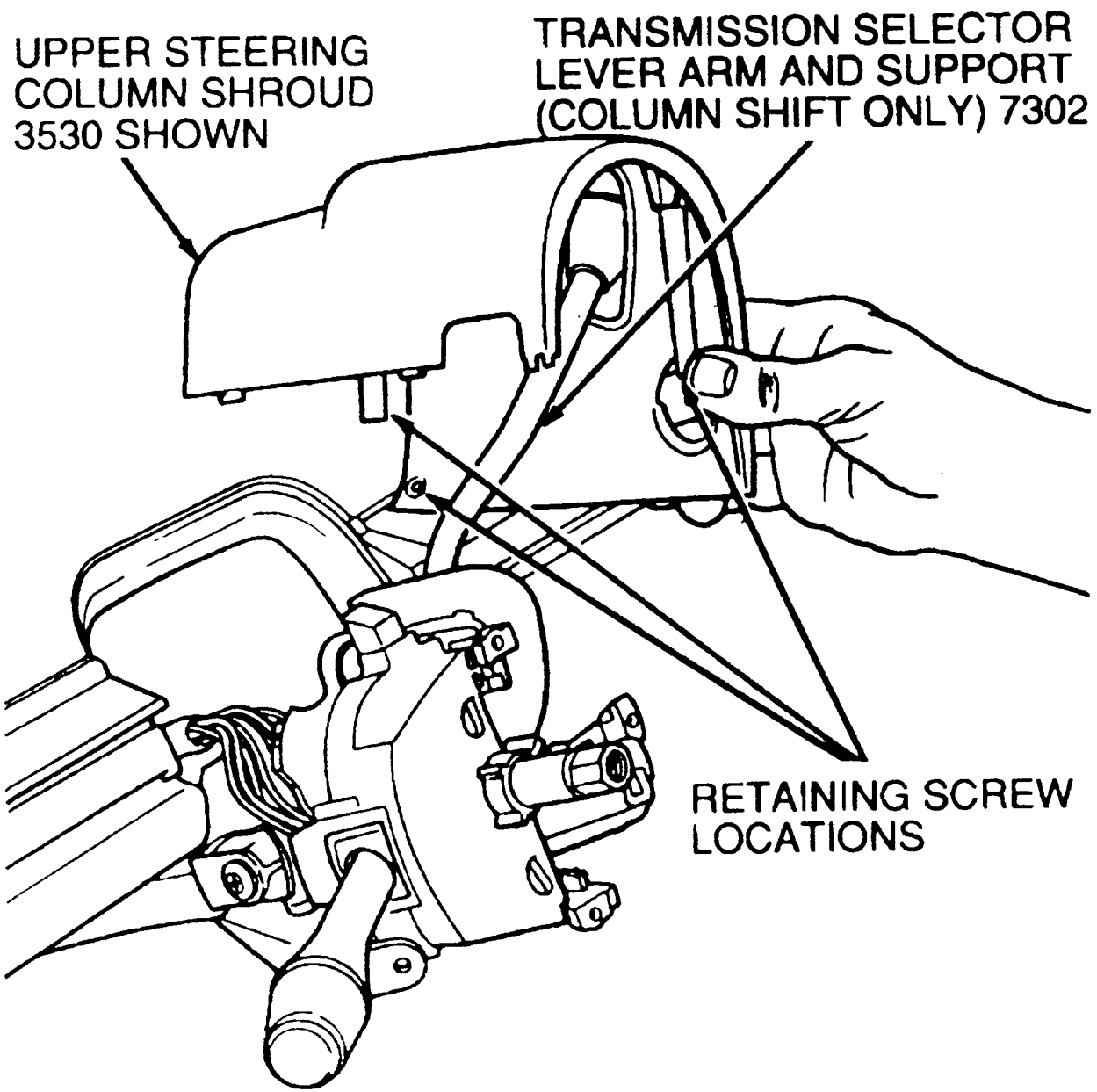

RETAINING
SCREW

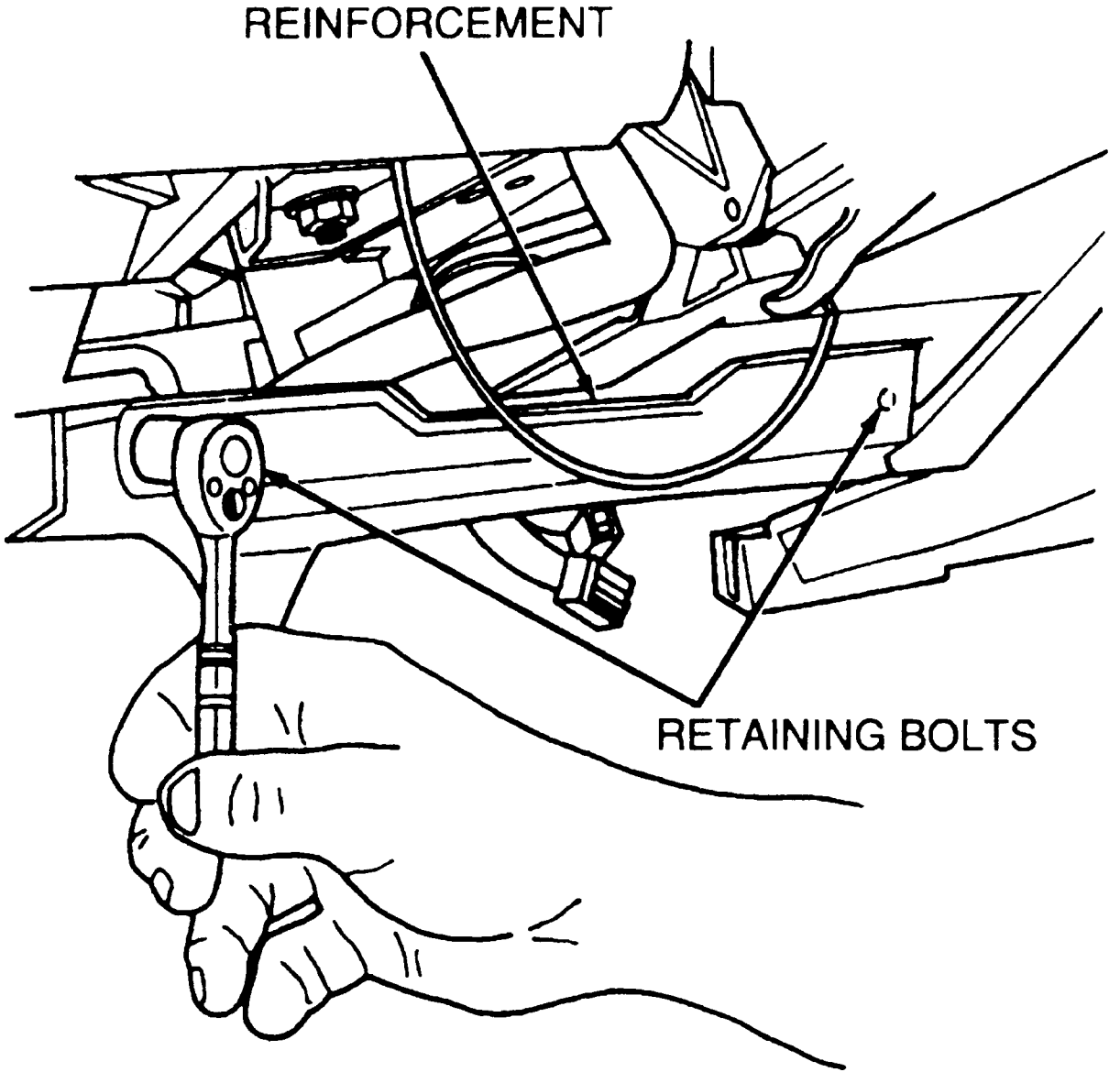

RETAINER

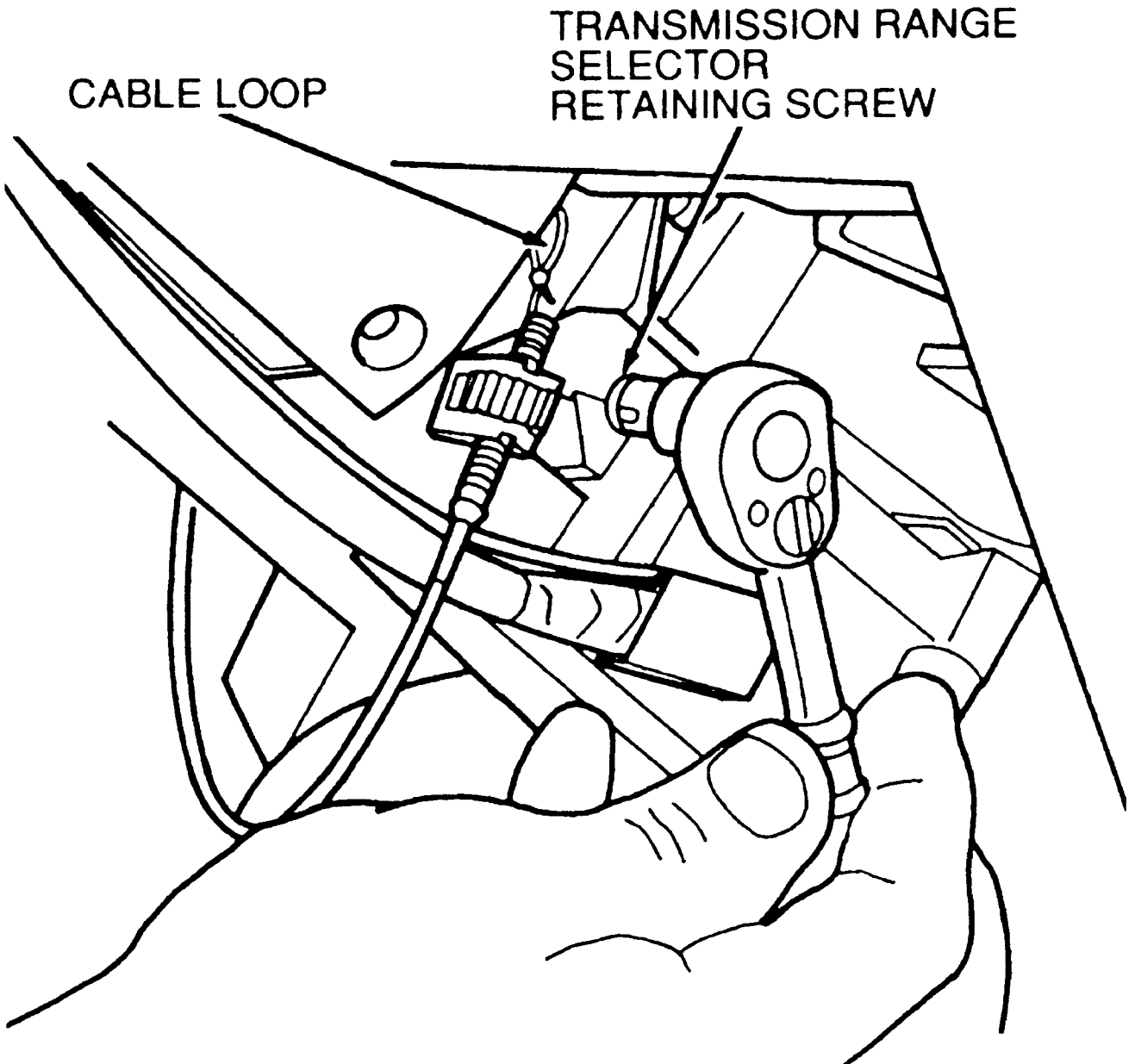

CONNECTOR

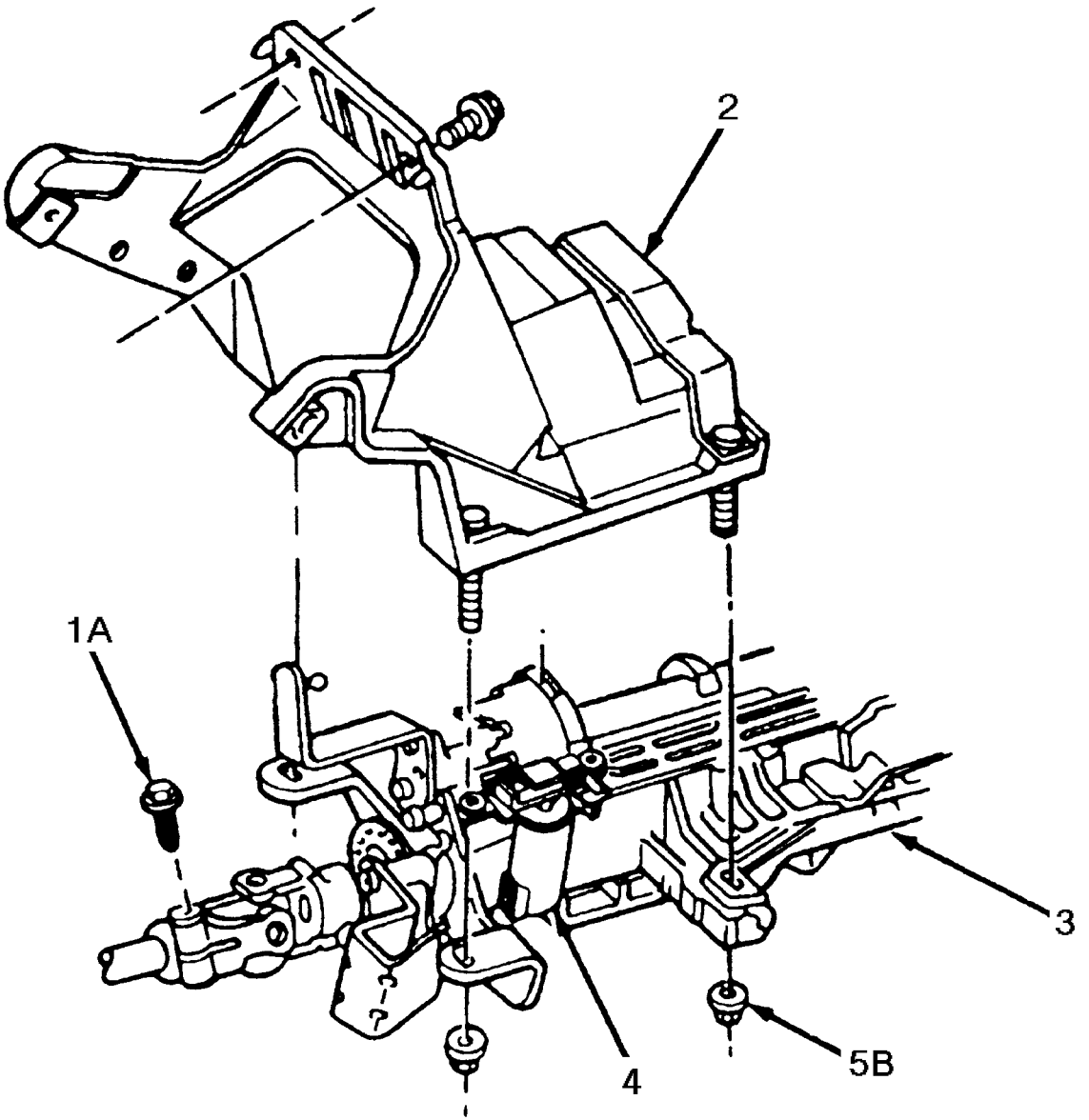

STEERING
COLUMN
CABLE AND BRACKET
ASSY


RETAINER ASSY
RETAINER ASSY
INTERMEDIATE SHAFT ASSY
SECTION B
CORRECT ASSEMBLY
SECTION A
INCORRECT ASSEMBLY
RETAINER ASSY
INTERMEDIATE SHAFT ASSY
SEE SECTION A AND SECTION B
STEERING COLUMN ASSY

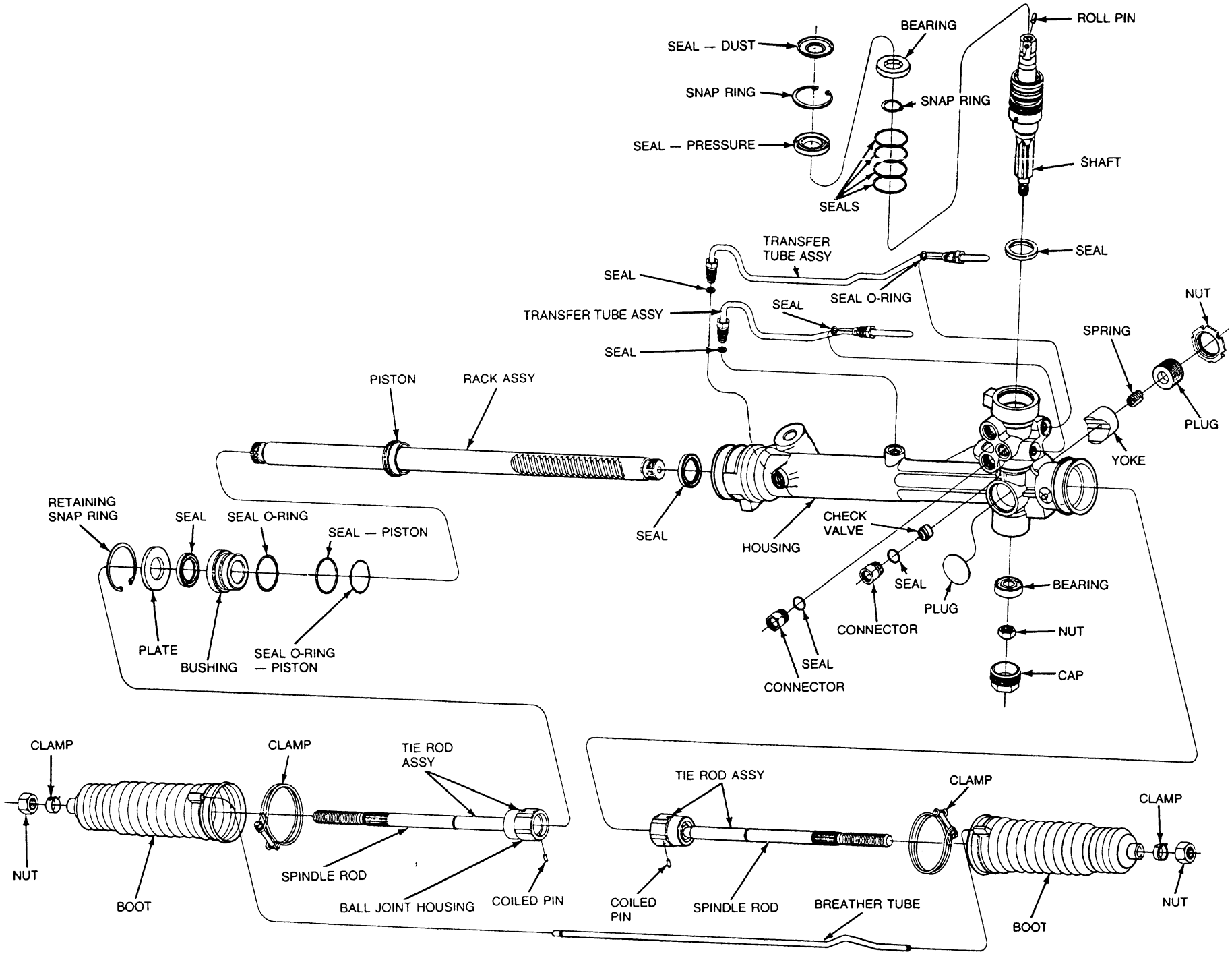

UPPER STEERING
COLUMN SHROUD
3530 SHOWN
TRANSMISSION SELECTOR
LEVER ARM AND SUPPORT
(COLUMN SHIFT ONLY) 7302
RETAINING SCREW
LOCATIONS

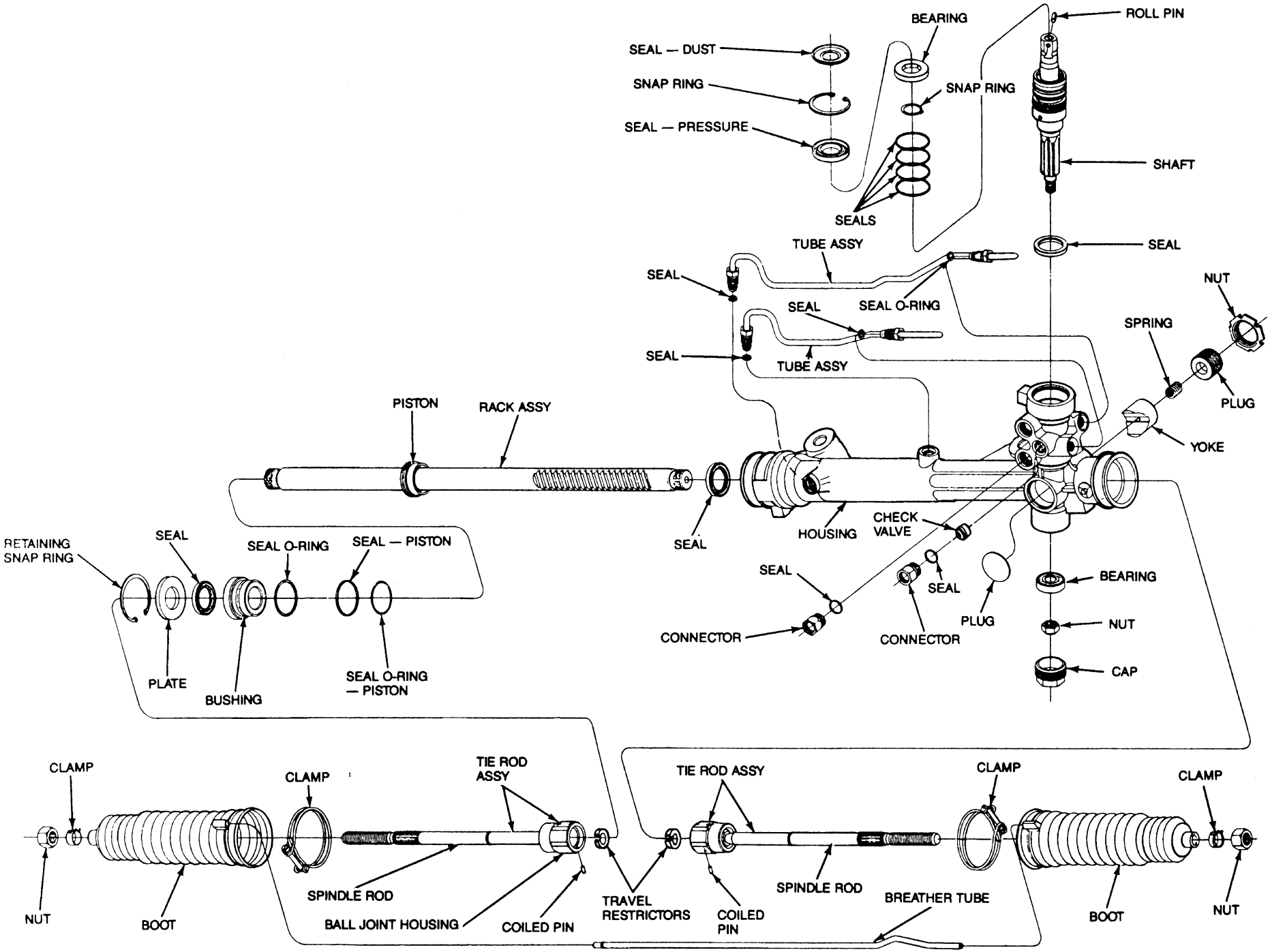

REINFORCEMENT
RETAINING BOLTS

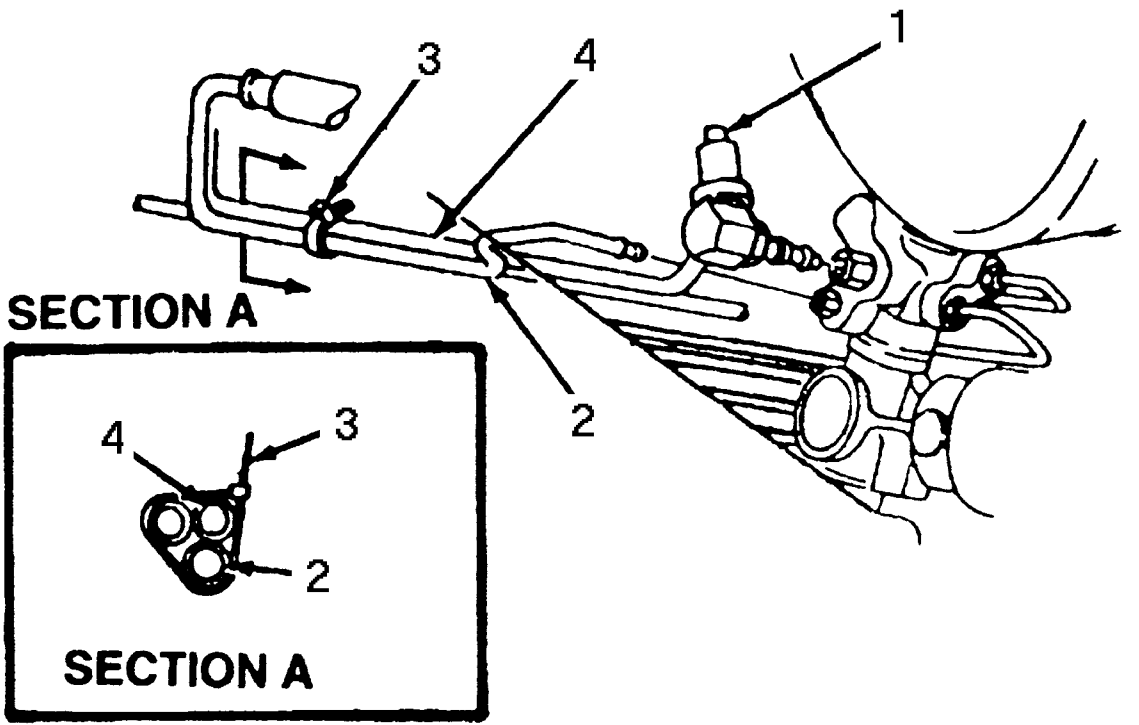

CABLE LOOP
TRANSMISSION RANGE
SELECTOR
RETAINING SCREW



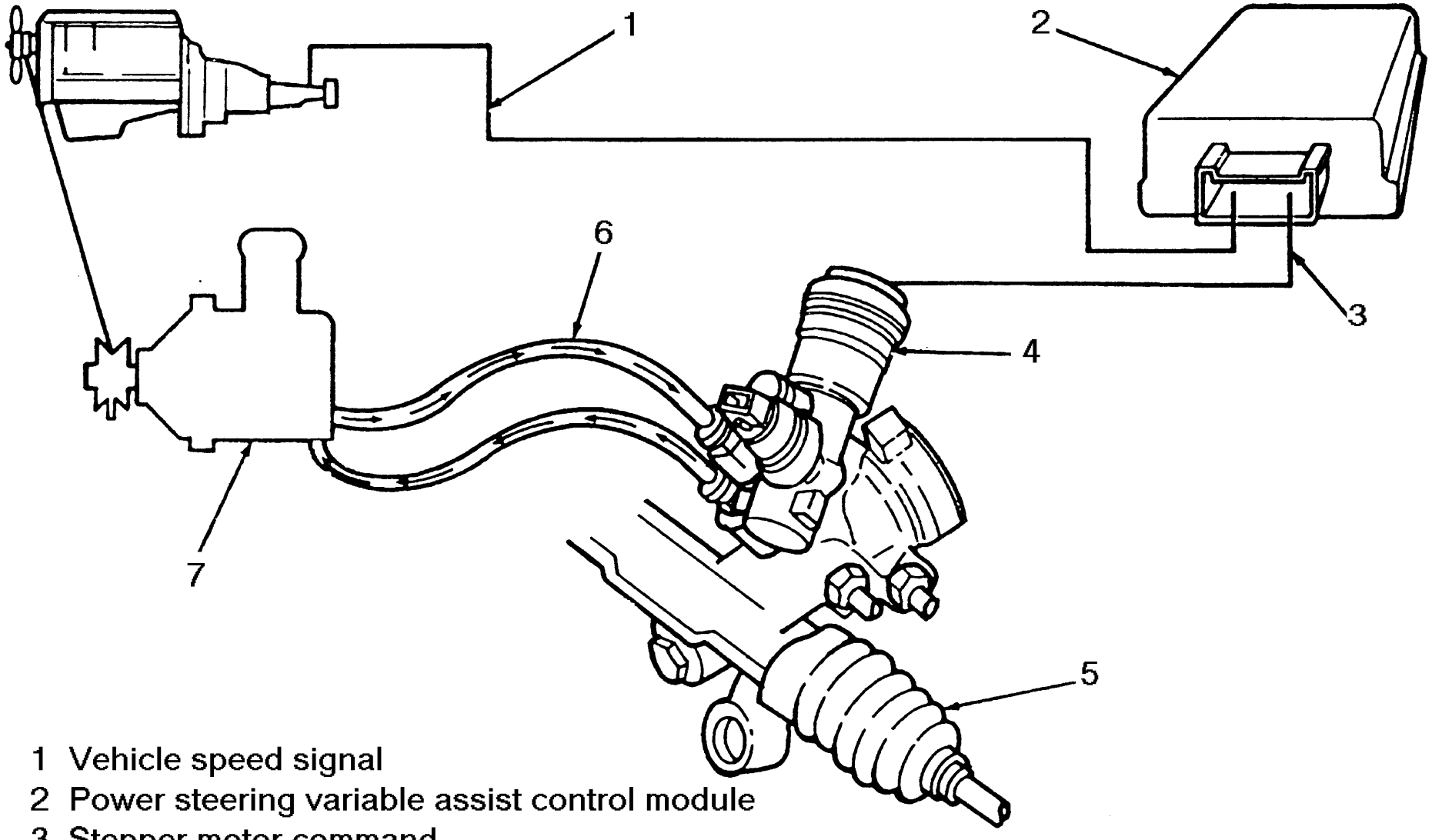
1 Screw
2 Steering column support bracket
3 Steering column tube flange assy
4 Shift lock actuator solenoid
5 Nut (4 req'd)
A Tighten to 41-56 Nm (31-41 lb.ft.)
B Tighten to 13-19 Nm (9-14 lb.ft.)


SEAL — DUST
SNAP RING
SEAL — PRESSURE
BEARING
SNAP RING
SEALS
ROLL PIN
SHAFT
SEAL
TRANSFER TUBE ASSY
SEAL
SEAL O-RING
TRANSFER TUBE ASSY
SEAL
SEAL
NUT
SPRING
PLUG
YOKE
PISTON
RACK ASSY
SEAL
HOUSING
CHECK VALVE
SEAL
CONNECTOR
PLUG
BEARING
NUT
CAP
SEAL
CONNECTOR
RETAINING SNAP RING
SEAL
SEAL O-RING
SEAL — PISTON
PLATE
BUSHING
SEAL O-RING — PISTON
CLAMP
NUT
BOOT
CLAMP
TIE ROD ASSY
SPINDLE ROD
BALL JOINT HOUSING
COILED PIN
TIE ROD ASSY
COILED PIN
SPINDLE ROD
CLAMP
BOOT
CLAMP
NUT
BREATHER TUBE

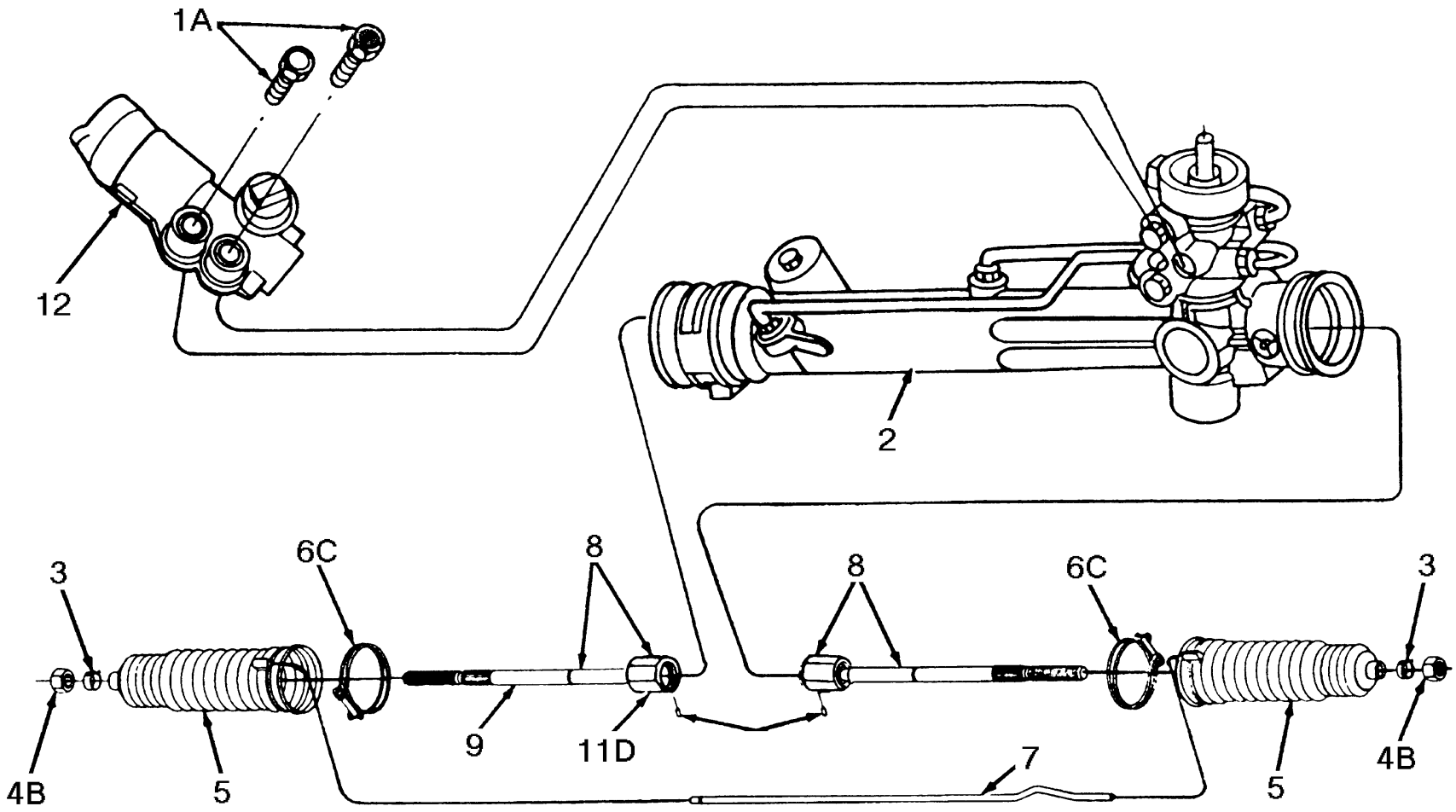

BEARING
ROLL PIN
SEAL — DUST
SNAP RING
SNAP RING
SEAL — PRESSURE
SHAFT
SEALS
TUBE ASSY
SEAL
SEAL
NUT
SEAL
SEAL O-RING
SPRING
SEAL
TUBE ASSY
PLUG
PISTON
RACK ASSY
YOKE
RETAINING SNAP RING
SEAL
SEAL O-RING
SEAL — PISTON
SEAL
HOUSING
CHECK VALVE
SEAL
BEARING
SEAL
PLUG
NUT
CONNECTOR
CONNECTOR
CAP
PLATE
BUSHING
SEAL O-RING — PISTON
CLAMP
CLAMP
TIE ROD ASSY
TIE ROD ASSY
CLAMP
CLAMP
SPINDLE ROD
SPINDLE ROD
NUT
BOOT
BALL JOINT HOUSING
COILED PIN
TRAVEL RESTRICTORS
COILED PIN
BREATHER TUBE
BOOT
NUT



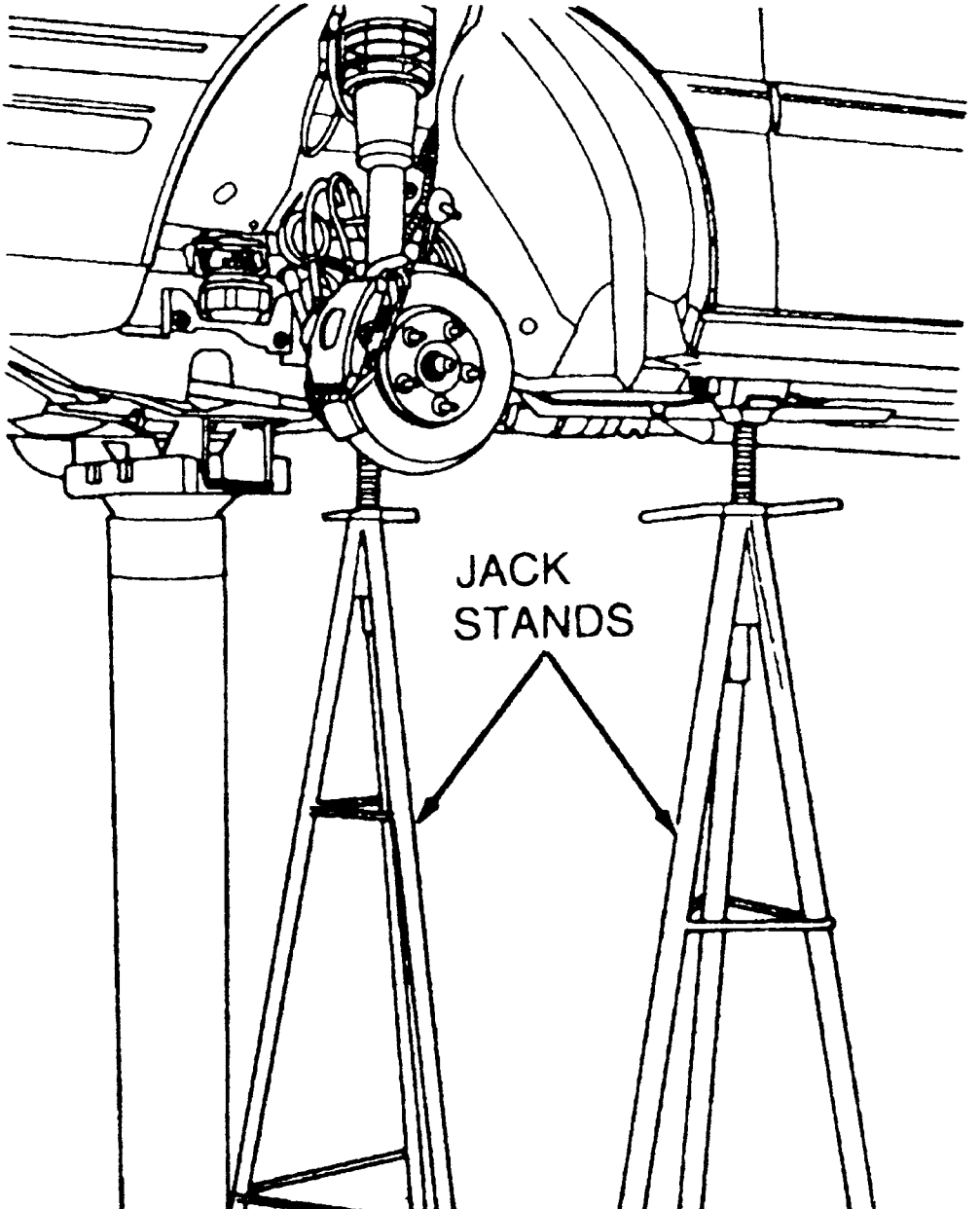
1 Power steering pressure switch
2 Power steering return hose
3 Strap
4 Power steering left turn pressure hose

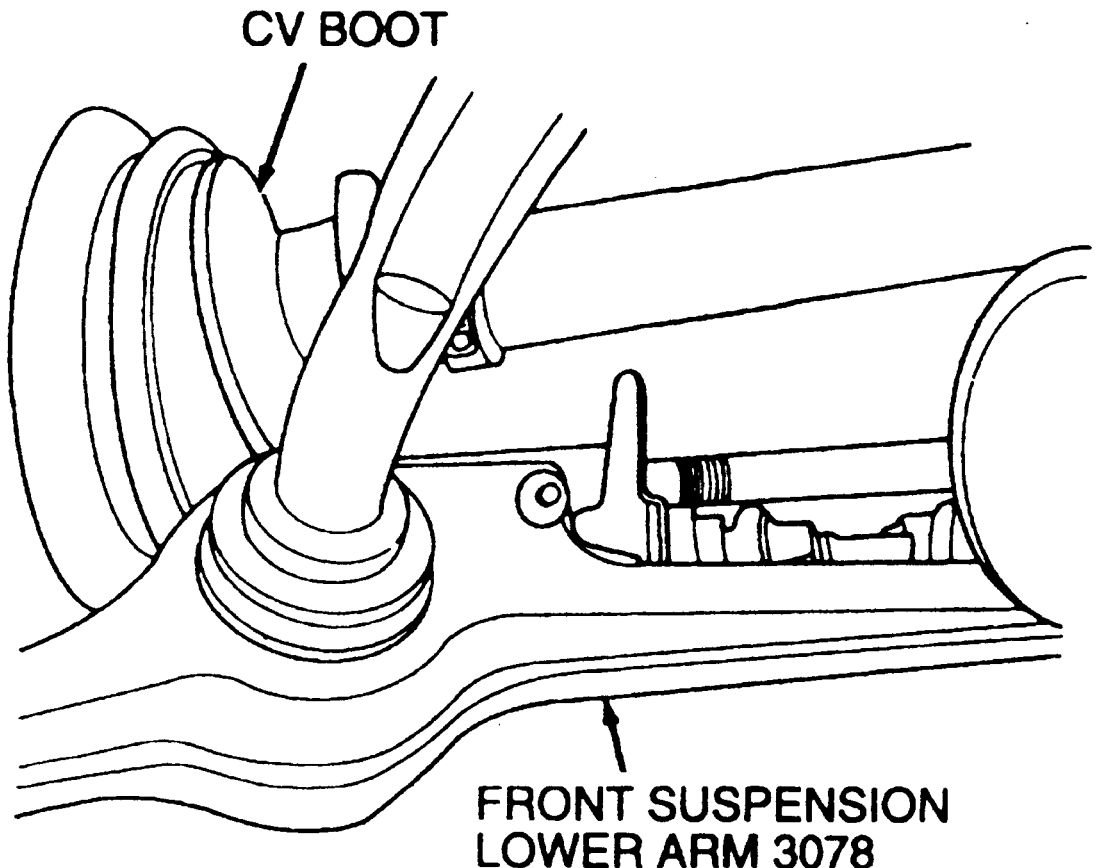


1 Vehicle speed signal
2 Power steering variable assist control module
3 Stepper motor command
4 Power steering auxiliary actuator
5 Power steering short rack
6 Power steering pressure hose
7 Power steering pump

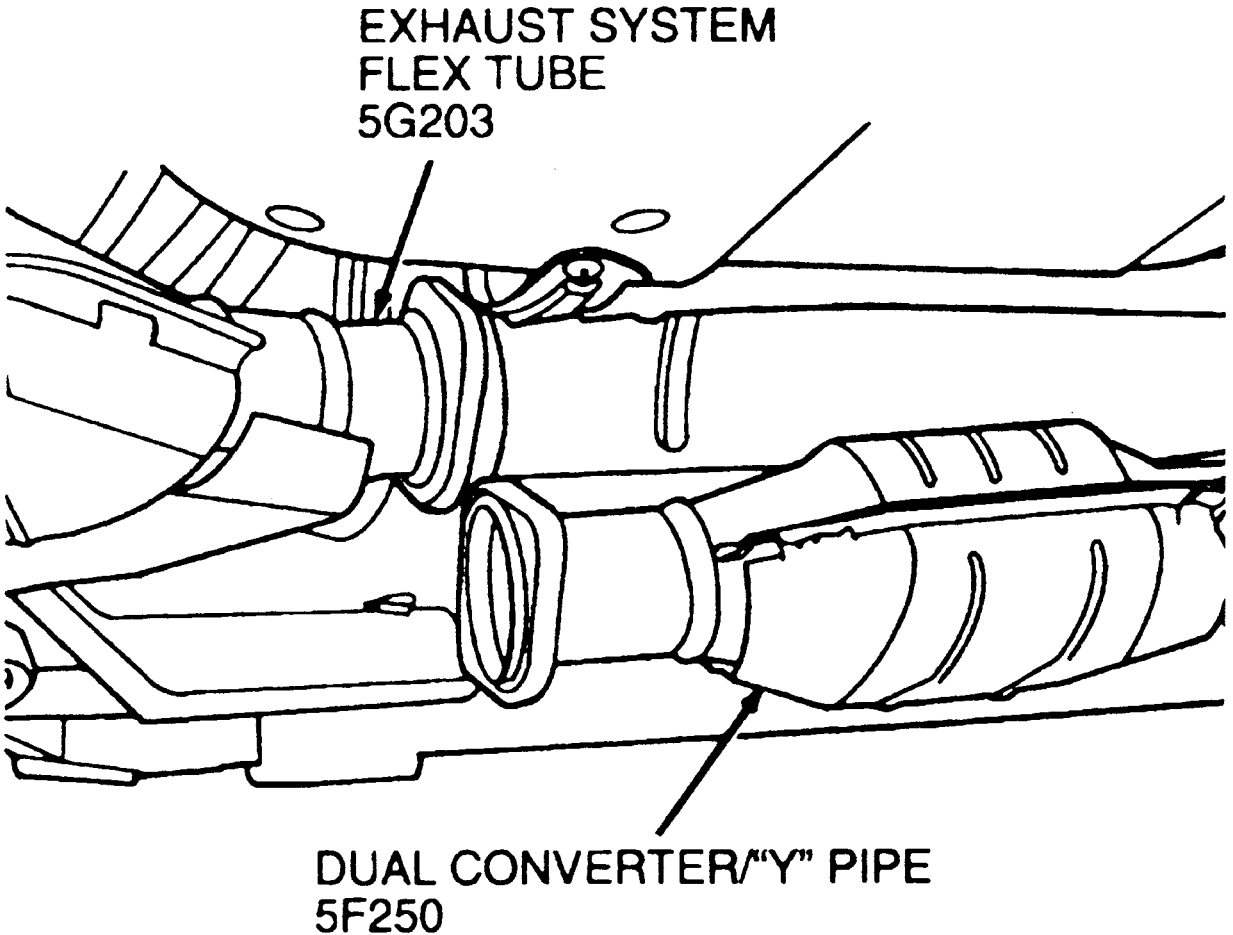


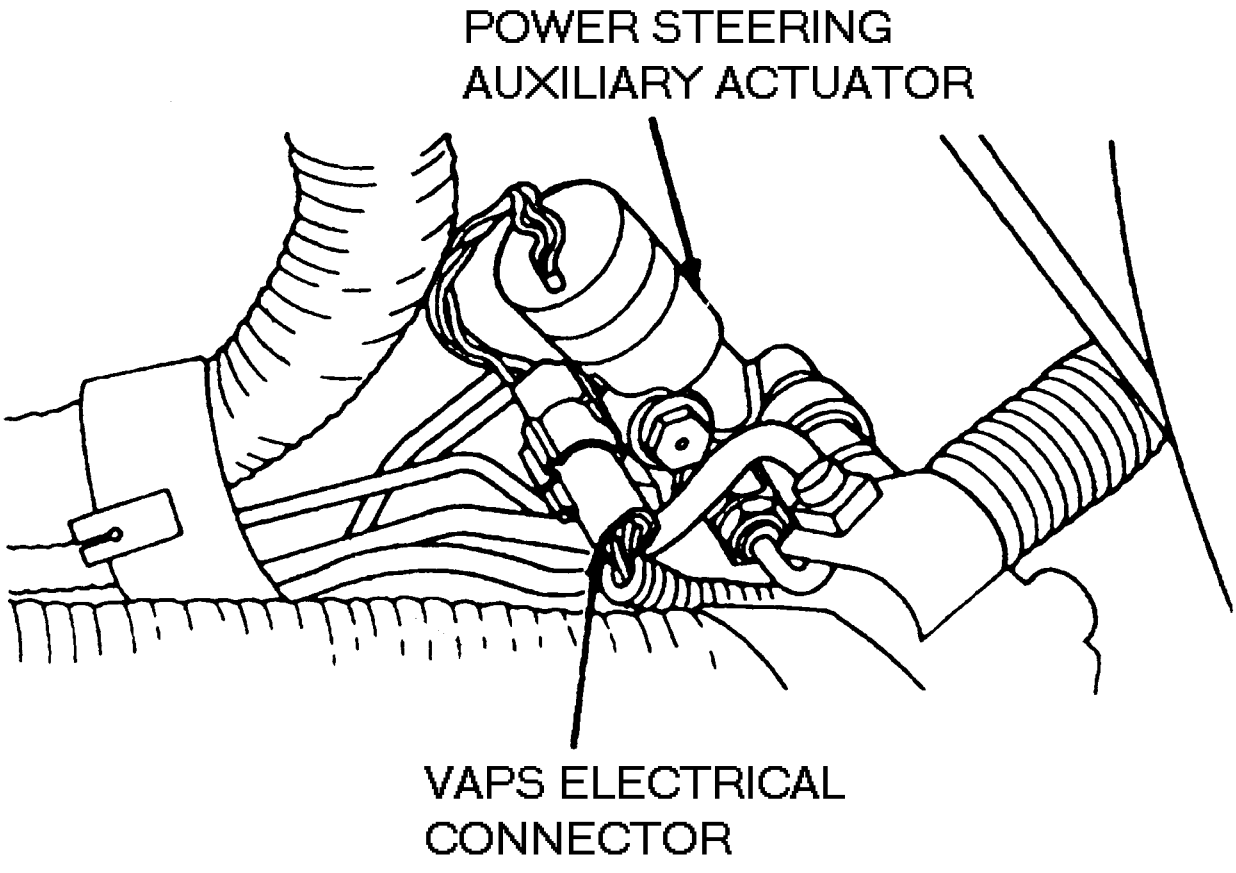
1 Power steering control valve bolt
2 Steering gear housing assy
3 Steering gear boot camp
4 Nut
5 Tie rod bellows
6 Clamp
7 Power steering gear rack tube
8 Front wheel spindle tie rod
9 Spindle rod
10 Roll pin
11 Ball joint housing
12 Power steering auxiliary actuator
A Tighten to 27-34 Nm (20-25 lb.ft.)
B Tighten to 47-68 Nm (35-50 lb.ft.)
C Tighten to 2.2-3.4 Nm (20-30 lb.in.)
D Tighten to 75-88 Nm (55-65 lb.ft.)

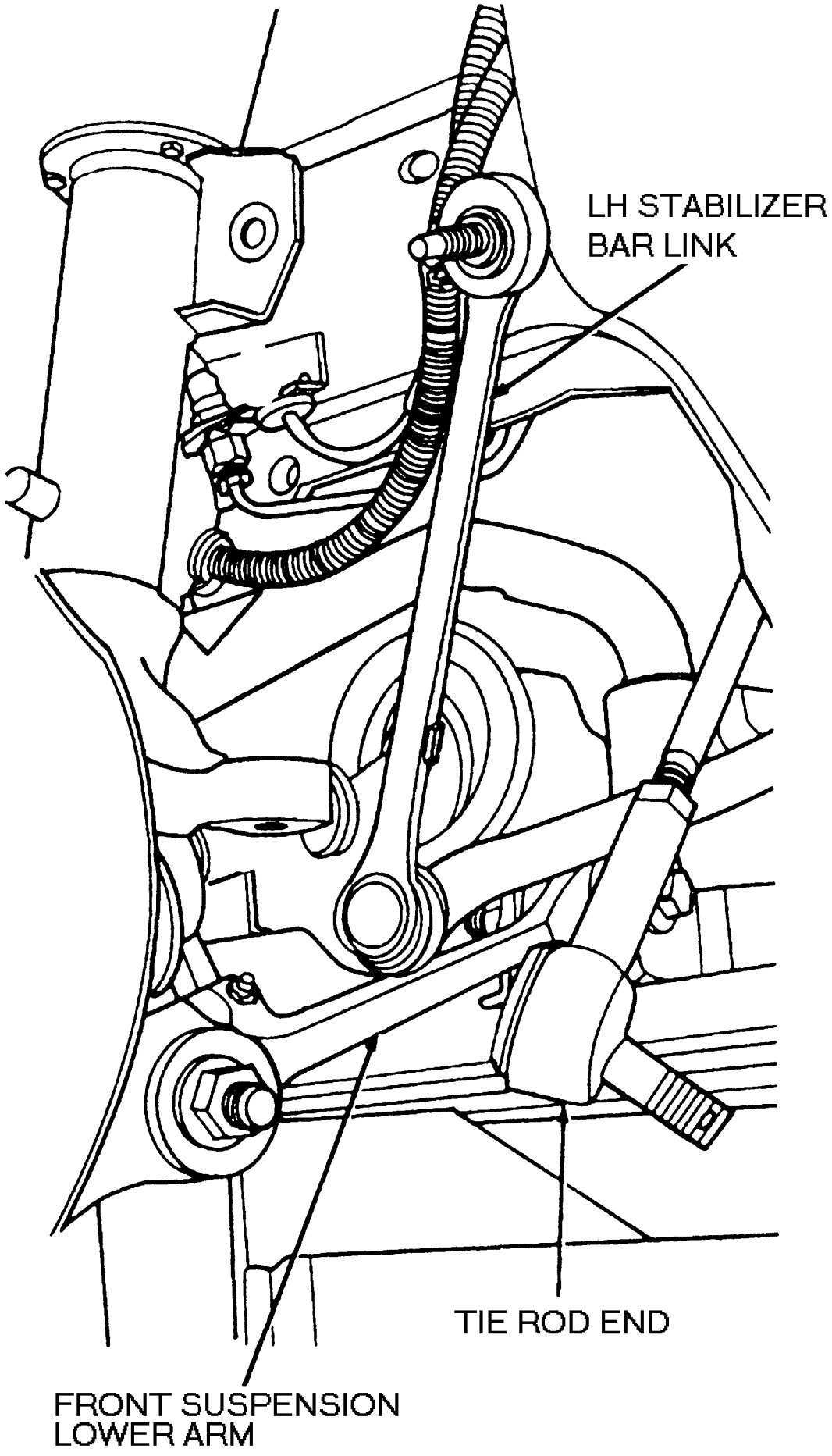

JACK
STANDS

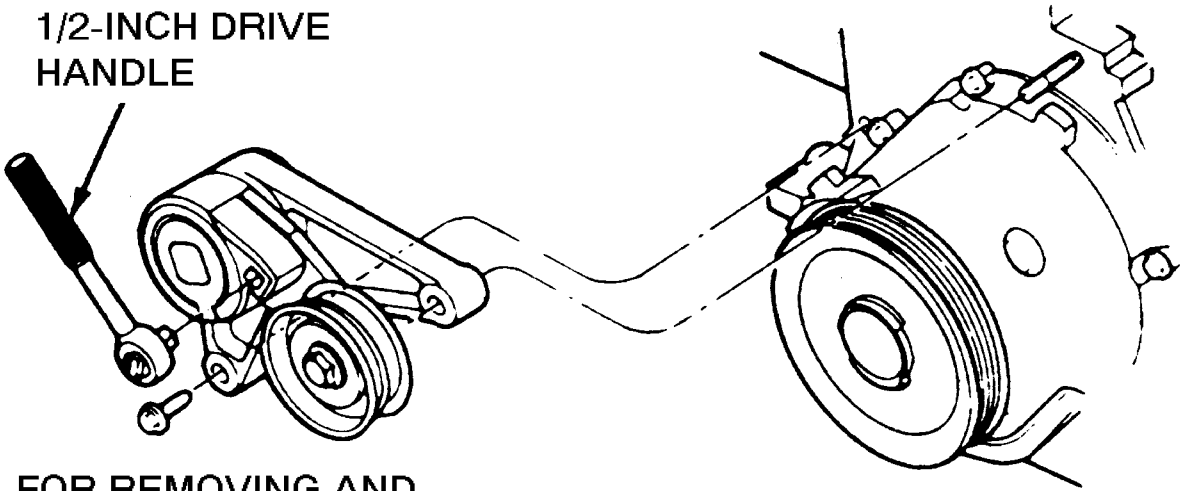


RH SIDE SHOWN
LH SIDE SIMILAR


EXHAUST SYSTEM
FLEX TUBE
5G203
DUAL CONVERTER/"Y" PIPE
5F250

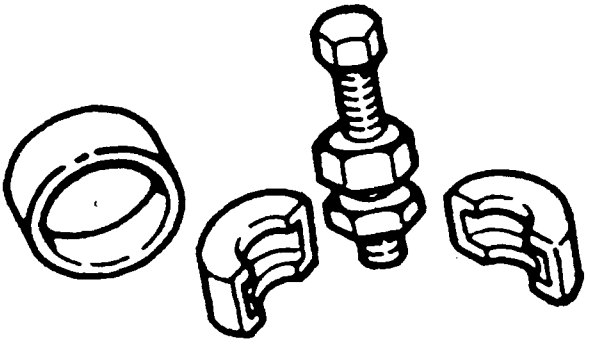

POWER STEERING
AUXILIARY ACTUATOR
VAPS ELECTRICAL
CONNECTOR


LH STABILIZER
BAR LINK
TIE ROD END
FRONT SUSPENSION
LOWER ARM



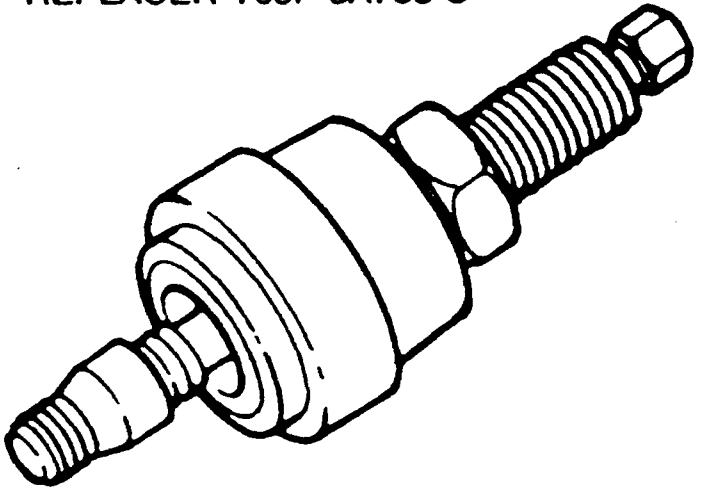
FOR REMOVING AND
INSTALLING DRIVE BELT

CII STEERING PUMP PULLEY REMOVER T69L-10300-B

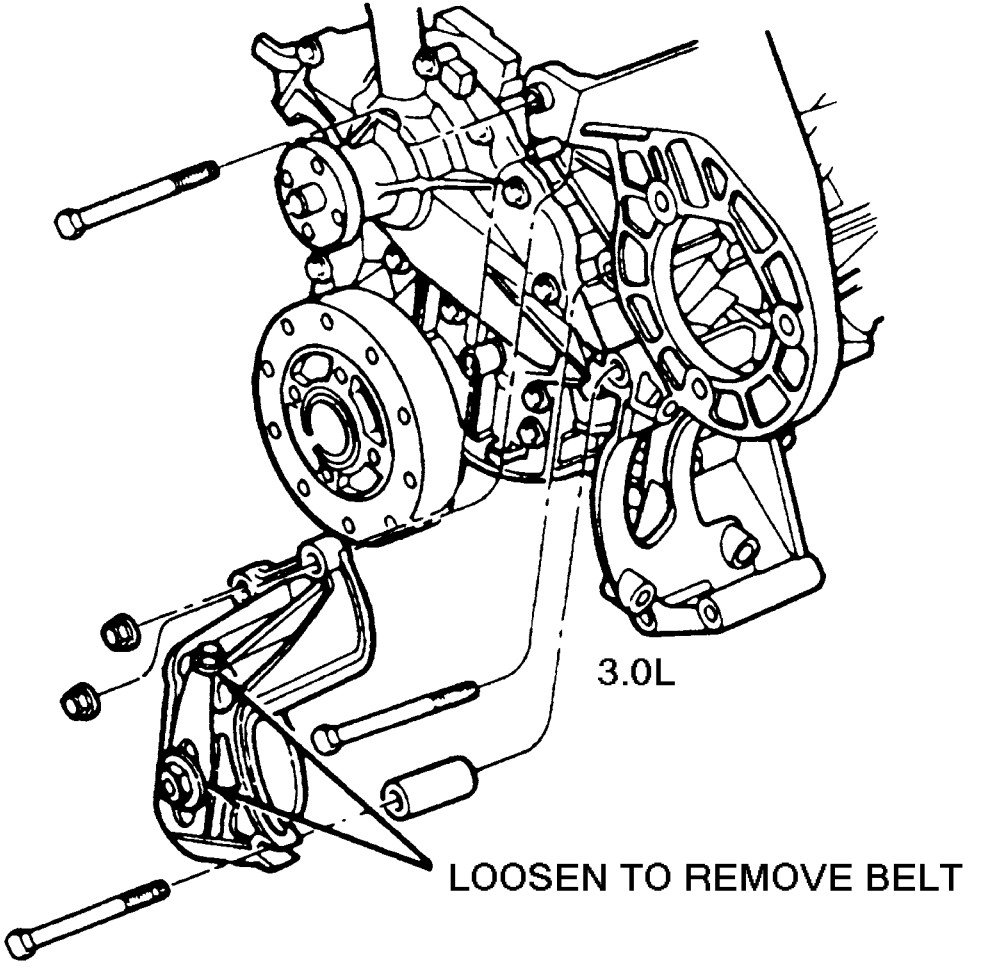


35.05mm (1 3/8 INCH) HUB DIAMETER PULLEYS

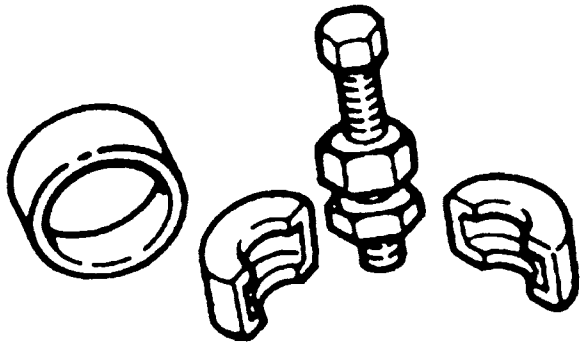
CII STEERING PUMP PULLEY
REPLACER T65P-3A733-C



35.05mm (1 3/8 INCH) HUB DIAMETR PULLEYS

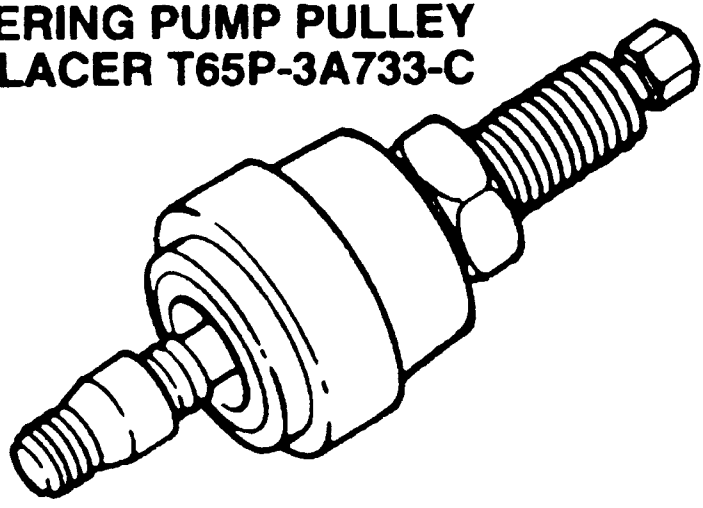

3.0L
LOOSEN TO REMOVE BELT

STEERING PUMP PULLEY REMOVER T69L-10300-B

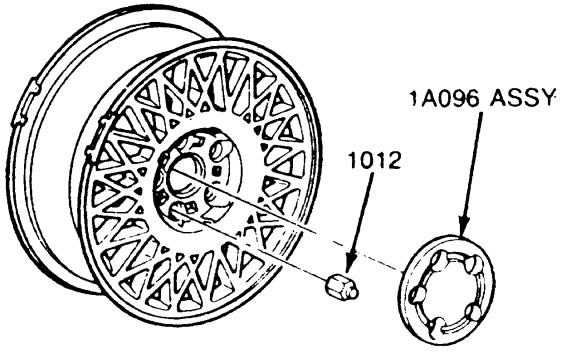


35.05 mm (1 3/8 INCHES) HUB DIAMETER PULLEYS

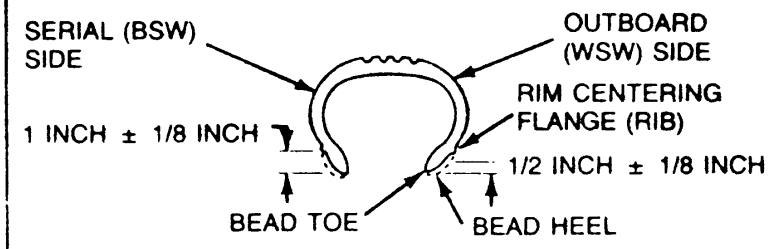
STEERING PUMP PULLEY REPLACER T65P-3A733-C



35.05 mm (1 3/8 INCHES) HUB DIAMETER PULLEYS

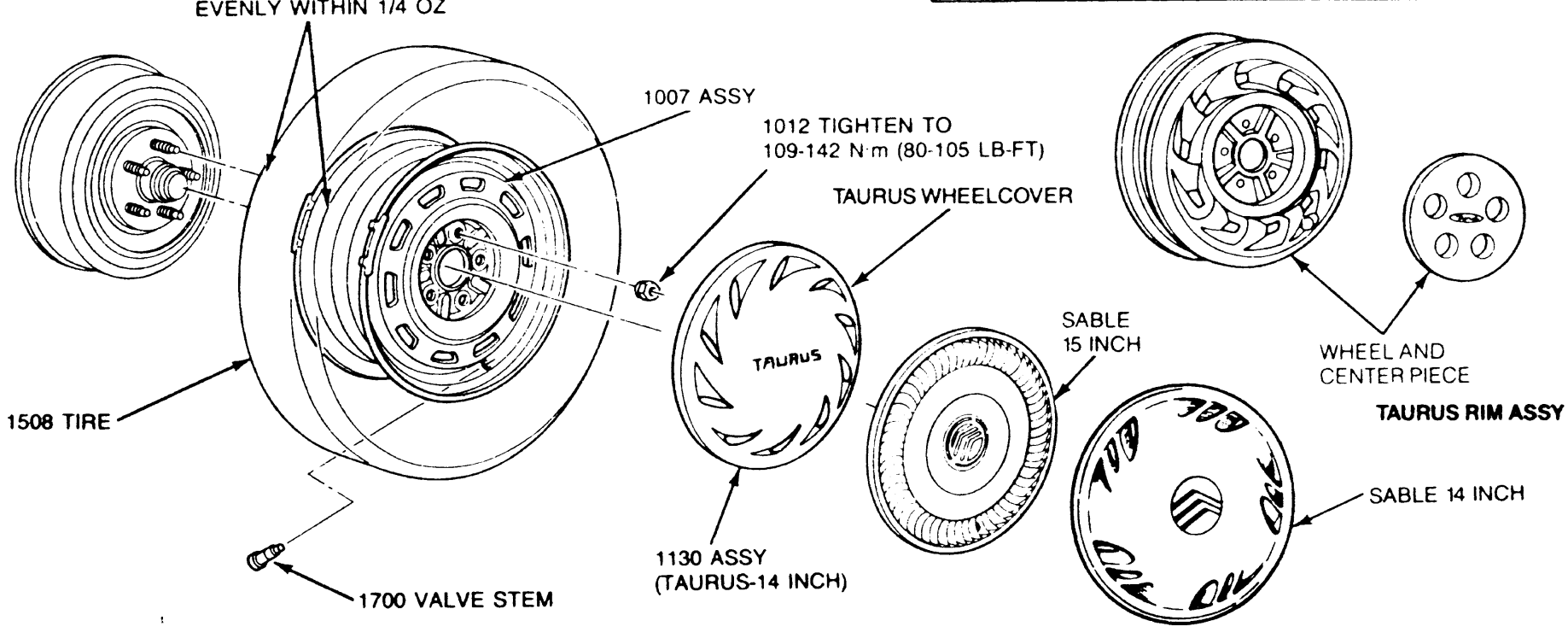


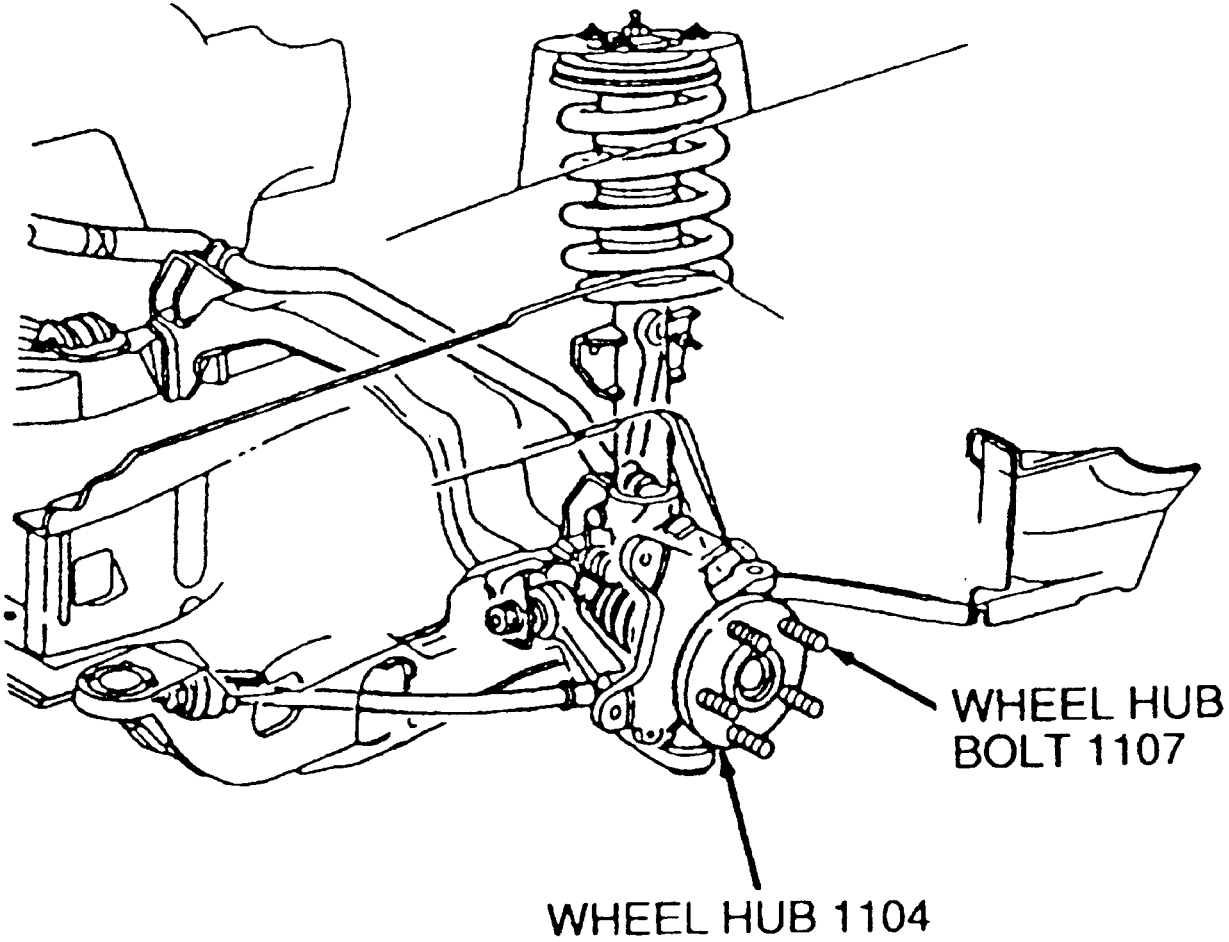
TIRE BEAD LUBRICANT REQUIREMENT



NOTE:

APPLY TIRE BEAD LUBRICANT CIRCUMFERENTIALLY 360 DEGREES TO TIRE BEAD MOUNTING SURFACE ON BOTH SIDES OF TIRE. LUBRICANT COVERAGE MUST EXTEND FROM BEAD TOE TO RIM CENTERING FLANGE (RIB) OR AT LEAST 1 INCH ± 1/8 INCH ABOVE HEEL OF BEAD ON BLACK SIDEWALL (SERIAL SIDE) AND FROM BEAD TOE TO AT LEAST 1/2 ± 1/8 INCH ABOVE HEEL OF BEAD ON WHITE SIDEWALL (OUTBOARD SIDE) OF TIRE.




WHEEL HUB
BOLT 1107
WHEEL HUB 1104