GROUP

STEERING 13

(3000)

SECTION 13-01 Steering—Service

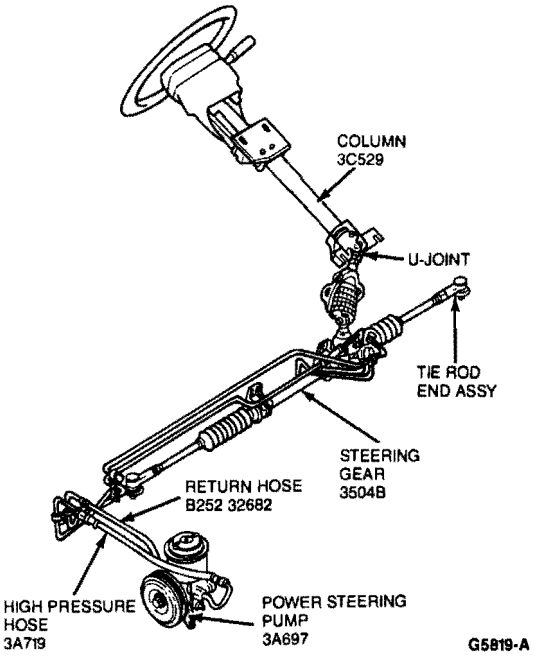
VEHICLE APPLICATION

Capri.

TESTING

Steering system complaints usually fall into one of four categories: leaks, noise, excessive steering effort, or handling problems. Handling problems include conditions such as wandering, loose feel, pulling to one side, or not returning freely to the straight ahead position when the wheel is released. Causes of steering system problems can be found in any or all of four areas: Steering column, steering gear, power steering pump, or front suspension components, including wheels and tires.

NOTE: For diagnosis of handling problems not related to the steering gear, linkage, or power steering pump, refer to Section 14-01.



TESTING (Continued)

CONDITION	POSSIBLE CAUSE	CORRECTIVE ACTION
Steering wheel movement is "heavy"	Loose or damaged belt	Adjust or replace
	Low fluid level, or air in fluid	Supply fluid, or bleed air
	Crimped or twisted hose	Replace
	Crimped pipe	Replace
	Leakage of fluid	Repair or replace
	Low hydraulic pressure. (Check pressures using procedures in this section.)	Repair or replace power steering pump or steering gear
	Insufficient tire pressure	Adjust
	Improperly adjusted wheel alignment	Adjust
	Linkage ball-joint does not operate smoothly	Repair
	Steering shaft is contacting something	Repair or replace
Poor steering wheel return	Incorrect tire pressure	Adjust
	Improperly adjusted wheel alignment	Adjust
	Linkage ball-joint does not operate smoothly	Repair or replace
	Steering shaft is over tight or restricted or bent	Replace
Required steering effort is uneven	Loose belt	Adjust
	Steering shaft is restricted; loose installation bolt(s)	Repair or tighten
	Steering linkage does not operate smoothly	Repair or replace
	Malfunction of steering gear	Replace
Steering wheel pulls to one side	Incorrect tire pressure	Adjust
	Improper preload adjustment, or wear of wheel bearing	Adjust or replace
	Improperly adjusted wheel alignment	Adjust
	Malfunction of steering gear	Replace
Fluid leakage	Problem at hose coupling	Repair or replace
	Damaged or clogged hose	Replace
	Damaged reserve tank	Replace
	Overflow	Bleed air, or adjust fluid level
	Malfunction of oil pump	Replace
	Malfunction of steering gear	Replace
Abnormal noise	Loose oil pump	Tighten
	Loose steering gear	Tighten
	Loose oil pump bracket	Tighten
	Loose oil pump pulley nut	Tighten
	Belt either loose or too tight	Adjust
	Air intake	Bleed air
	Malfunction of steering gear	Replace
	Malfunction of oil pump	Replace
	Obstruction near steering column or pressure hose	Repair or replace
	Play or looseness of steering linkage	Tighten, adjust, or replace

CG6006-A

TESTING (Continued)

Excessive Noise

A high-pitched sound may be heard from the steering gear valve and/or oil pump when the steering wheel is turned to the left or right full lock position. The noise may also be heard when the steering wheel is turned slowly. This is caused by the flow of the power steering fluid, and in no way affects the performance or service of components within the system.

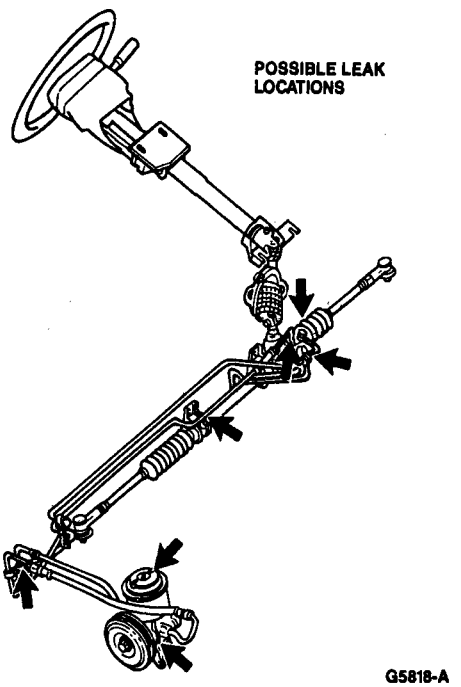
A slight rattling sound and vibration may occur when the steering wheel is turned slowly from or to the full lock position. This is caused by the contact of the control valve stopper and in no way affects the performance or service of components within the system.

Fluid Leaks

The illustration shows the most common areas where leaks will occur. Perform the following checks to help isolate the leak:

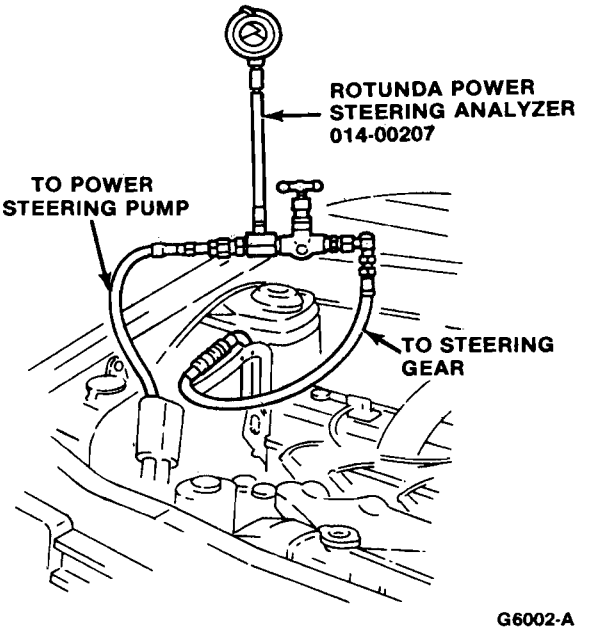
1. Check for an overfilled power steering pump reservoir. Siphon off excess fluid if required.
2. Check for power steering pump overflow or aeration.
3. Wipe suspected area dry and check for exact source of leak. Oil may be running down from another area (such as the valve cover) and causing an oil drip.

   CAUTION: Do not hold the steering wheel against a stop for more than 10 seconds at a time.
4. Some leaks are high pressure leaks and may require holding the steering wheel against the stop to permit oil to seep out. Cycle the steering wheel from stop to stop 10 times to check for leaks. The bellows may have to be moved away from the steering gear housing to detect the leak.



Pump Flow and Pressure Tests

1. Disconnect the pressure hose from the power steering pump where it connects to the tubing. Attach Rotunda Power Steering System Analyzer 014-00207 and Adapter 014-00454 or equivalent as shown. Tighten fittings to 39-49 N·m (29-36 lb-ft).



TESTING (Continued)

2. Place a thermometer in the power steering pump reservoir.

   CAUTION: Make sure valve on gauge set is OPEN to allow the system to function normally.

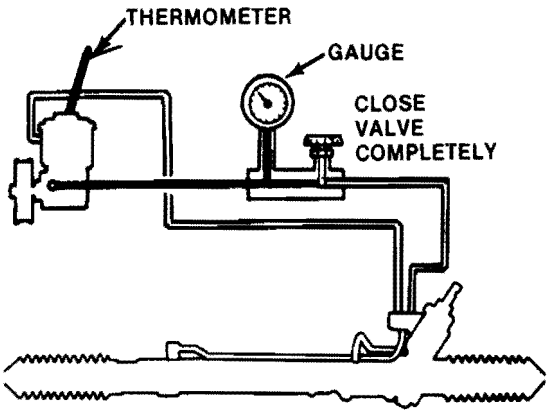
   CAUTION: Do not hold the steering wheel against a stop for more than 10 seconds at a time.

3. Bleed the system by starting the engine and slowly turning the steering wheel back and forth, lock to lock, 10 times.

4. If necessary, turn the steering wheel fully left and right several times to raise the fluid temperature to 50-60°C (122-140°F).

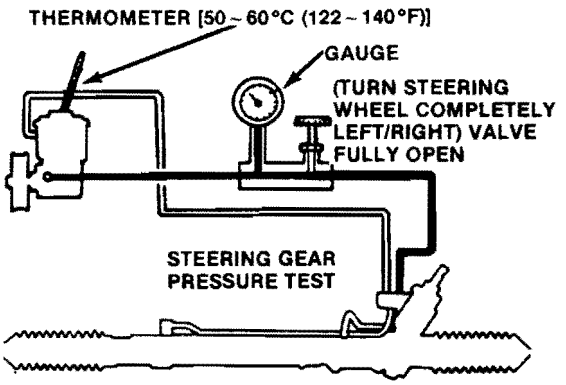
   CAUTION: The valve on the gauge set must be briefly closed to read operating pressures. Do not leave the valve closed for more than 15 seconds.

5. To measure the pump output pressure, close the valve on the gauge set and increase the engine rpm to 1000-1500 rpm. Read the pressure and open the valve. The correct pressure is 6,370 kPa (924 psi). If pressure is low, service or replace the power steering pump.



PUMP OUTPUT PRESSURE TEST G6003-A

6. To measure the pressure at the steering gear, open the valve on the gauge set and increase engine rpm to 1000-1500 rpm. Turn the steering wheel all the way to the left or right and read the pressure. The correct pressure is 6,370 kPa (924 psi). If pressure is low, service or replace the steering gear.



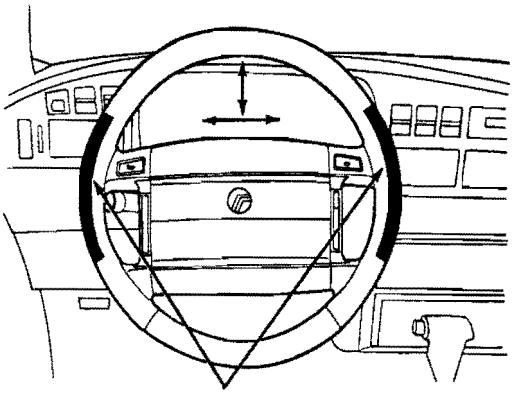
G6004-A

7. Remove the gauge set and adapter. Connect the high pressure hose and tighten.

8. Bleed the system by starting the engine and slowly turning the steering wheel back and forth, lock to lock, 10 times.

Steering Wheel Free Play

With the wheels in the straight ahead position, gently turn the steering wheel to the left and right to check free play. Free play should be between 0 and 30mm (0 and 1.18 inch). If the free play exceeds this limit either the steering joints are worn or the backlash of the steering gear is excessive. Backlash can be adjusted after removing the steering gear. Refer to Section 13-46. Grasp the steering wheel firmly and move it up and down and to the left and right as shown, to check for column bearing wear, steering shaft joint play, steering wheel looseness, or column looseness.



G5312-A

TESTING (Continued)

Power Steering Effort Check

1. With the vehicle on a hard level surface, move the steering wheel to set the wheels in a straight-ahead position.
2. Place a thermometer in the power steering pump reservoir.

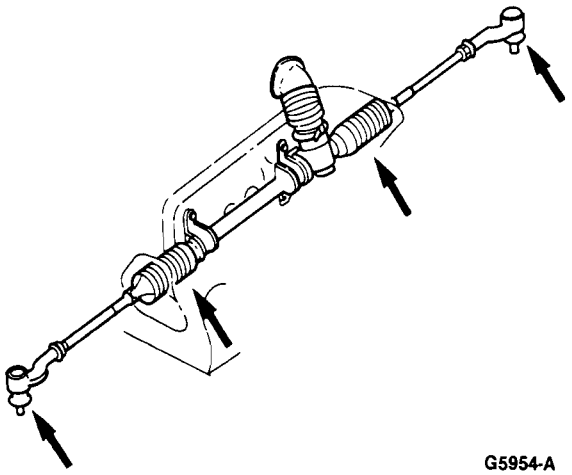
   CAUTION: Do not hold the steering wheel against a stop for more than 10 seconds at a time.
3. Turn the steering wheel fully left and right several times to raise the fluid temperature to 50-60°C (122-140°F).
4. Using Spring Scale T74P-3504-Y or equivalent, turn steering wheel. Starting with the wheels in the straight ahead position, check the steering wheel effort required to turn the steering wheel one full turn to the left or right. The steering wheel effort should be 40N (9 lbs) or less in either direction.
5. If the effort is greater than the specification, check for low fluid level, air in the system or fluid leakage. If necessary, check the power steering pump and gear pressures as outlined.

Steering Linkage Check

Entry of water or dust into the rubber boots will seriously affect the operation and durability of the steering gear, including the tie rod ends.

CAUTION: Rubber boots must be handled carefully to avoid damage. Use new clamps when installing boots.

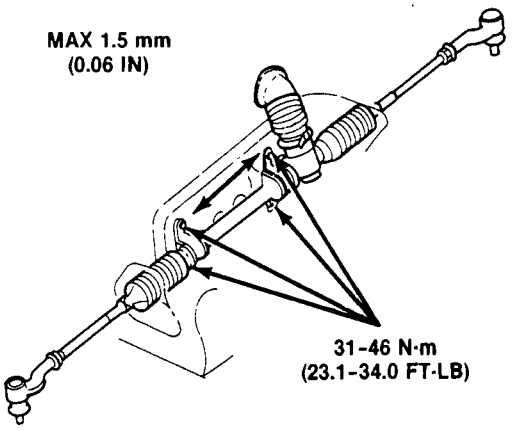
Inspect boots for cracks, cuts, deterioration, twisting, or distortion. Check boot clamps to make sure they are tight. Replace boot and/or clamps as needed.



G5954-A

Steering Gear Mount Check

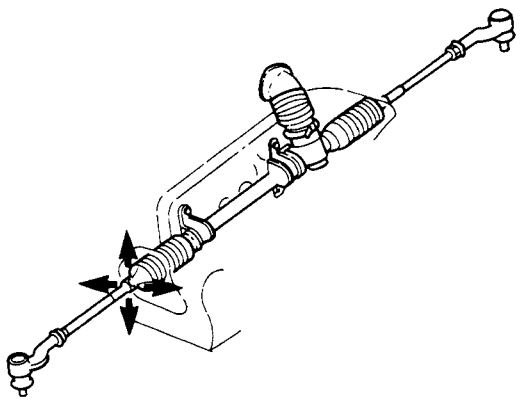
The steering gear housing is installed onto the dash panel with rubber insulators. The housing may move slightly when the steering wheel is turned. If movement is more than 1.5mm (0.06 inch) replace the rubber insulators. If movement of the mounting bracket is evident check the torque of the retaining bolts. Bolts should be tightened to 32-47 N·m (23.1-34.0 lb-ft).



G5955-A

Steering Gear Bushing/Preload Check

Raise the vehicle and support on safety stands. Check for looseness (clatter) in the steering gear by moving the rack up and down and left to right as shown. If the gear side is excessively loose, adjust the preload. Refer to Section 13-46. If the rack side is loose, disassemble the steering gear and service the bushing in the housing assembly. Refer to Section 13-46.



G5953-A

Power Steering Drive Belt Adjustment

Refer to Section 27-02.

TESTING (Continued)

Power Steering Fluid Level Check

Power steering fluid does not require changing, however it should be checked regularly. If fluid must be added regularly, refer to Power Steering Fluid Leaks in this Section. For power steering fluid level check, refer to Section 13-51.

Power Steering Pressure Switch Check—Idle-Up System

Perform the following steps to check the power steering pressure switch located in the power steering pump reservoir.

1. Unplug the connector at the pressure switch.
2. Connect the positive lead of a circuit tester to the switch terminal and connect the negative lead to ground. There should be no continuity between the switch and ground with the engine not running.

   CAUTION: Do not hold the steering wheel against a stop for more than 10 seconds at a time.
3. Start the engine and cycle the steering wheel from lock to lock. The switch should close under pressure and indicate continuity to ground.
4. Replace switch if it fails the above tests. Refer to Section 13-51.

SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	Nom	Lb-Ft
Front Knuckle to Shock Absorber	93-117	69-86
Front Knuckle to Lower Arm Ball Joint	43-54	32-40
Front Lower Arm to Lower Arm Ball Joint	93-117	69-86
Front Knuckle to Brake Assembly	39-49	29-36
Front Knuckle to Tie Rod End	29-44	22-35
Front Disk Plate to Wheel Hub	44-54	33-40
Rear Hub Spindle to Shock Absorber	93-117	69-86
Rear Lateral Link Through Bolt	93-117	69-86
Rear Hub Spindle to Back Plate	45-67	33-49
Steering Gear to Dash Panel	32-47	23-34

Gear Ratio	17.6:1
Backlash Between Rack and Pinion	0
Steering Effort	40 N (9 Lb)
Lubricant	Motorcraft ATF Dexron II (ESW-M2C-138-CJ)
Lubricant Capacity	0.6L (0.63 U.S. Quart)

CF6307-A

SPECIAL SERVICE TOOLS

Tool Number	Description
T74P-3504-Y	Spring Scale

ROTUNDA EQUIPMENT

Model	Description
014-00207	Power Steering System Analyzer
014-00454	Adapter

SECTION 13-04 Steering Column

VEHICLE APPLICATION

Capri.

DESCRIPTION

The steering column is of a modular construction. Column mounted switches are of an easily removable design. A clockspring-type slip ring is used for the air bag module electrical connections between the steering wheel and the column.

The combination switch mounted on the steering column contains switches for the turn signals, high and low beam, flash-to-pass feature, windshield wipers, windshield washers, and emergency flashers. The ignition switch/steering column lock and lock shield assembly is mounted to the column with provisions for servicing the ignition switch and lock shield separately from the column lock assembly.

CAUTION: Whenever the steering column is separated from the steering gear for any reason, the steering column must be locked to prevent the steering wheel from being rotated, which in turn will prevent damage to the air bag clockspring.

DESCRIPTION (Continued)

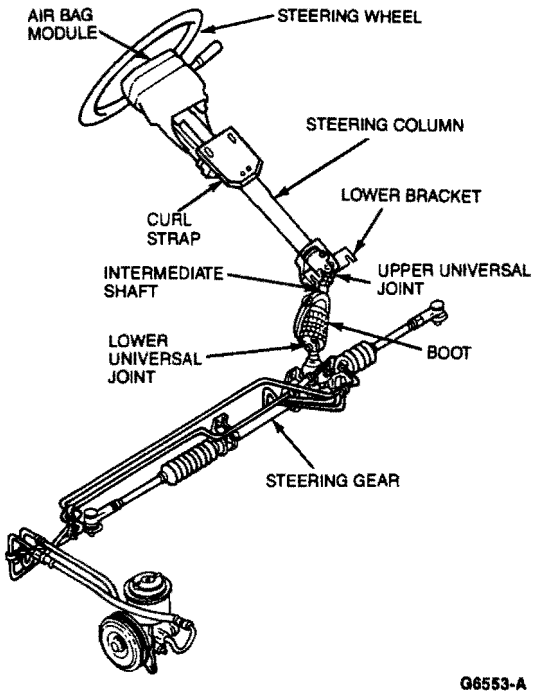
Air Bag Module

The steering wheel incorporates a driver's side air bag module. For information, refer to Section 41-58.

Component Fasteners

CAUTION: All fasteners are important parts in that they affect the performance of vital parts and systems, and/or could result in major service expenses. They must be replaced with fasteners of the same part number if replacement becomes necessary. Do not use a replacement part of lesser quality or substitute design. Torque values must be used as specified during assembly to ensure proper function of these parts.

The steering column connects the steering wheel to the steering gear through an intermediate shaft.



G6553-A

The steering column is linked to the intermediate shaft by a universal joint assembly. A boot is used to seal the intermediate shaft where it passes into the engine compartment. The lower end of the intermediate shaft fits onto the steering gear using a universal joint. A clamp bolt is used to secure the joint.

The steering shaft is supported in the steering tube by a bearing in the column lock assembly, and by a bearing at the lower end. The lower bearing is not serviceable.

The steering column and shaft are designed to collapse under a heavy load, minimizing the risk of driver injury in an accident.

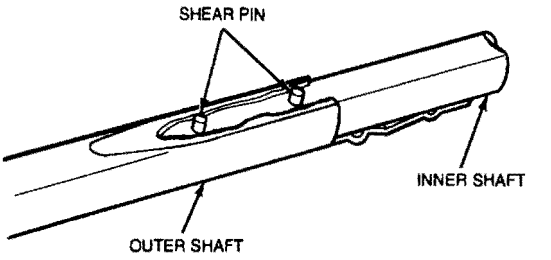
CAUTION: Once the steering column has been collapsed, a complete new steering column assembly must be installed.

The steering column is made up of the inner and outer tubes. The outer tube is sleeved over the inner tube by means of a ball cage assembly. This allows for a progressive collapsing action upon impact.

CAUTION: Care should be taken when handling the column assembly to ensure the inner and outer tubes do not rotate on each other. This will damage the telescopic action and the column may not collapse on impact as it is designed to do.

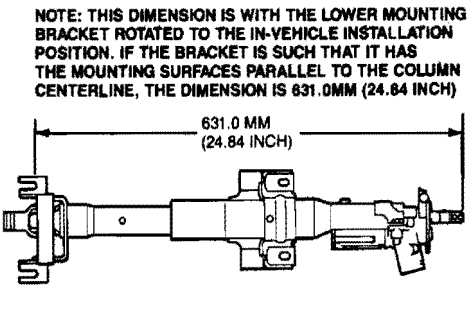
The upper column mounting also contributes to the collapsible design of the column by shear pins and a curl strap assembly. Upon impact, the shear pins release from the upper column mounting bracket. The curl strap unfolds to absorb driver impact.

The steering shaft, located inside the column, consists of a lower outer shaft sleeved over the inner shaft. The steering shaft uses shear pins to allow the assembly to telescope on impact.



G6554-A

The steering shaft should measure 631mm ± 1mm (24.84 inches ±0.039 inch) as shown.



G5841-A

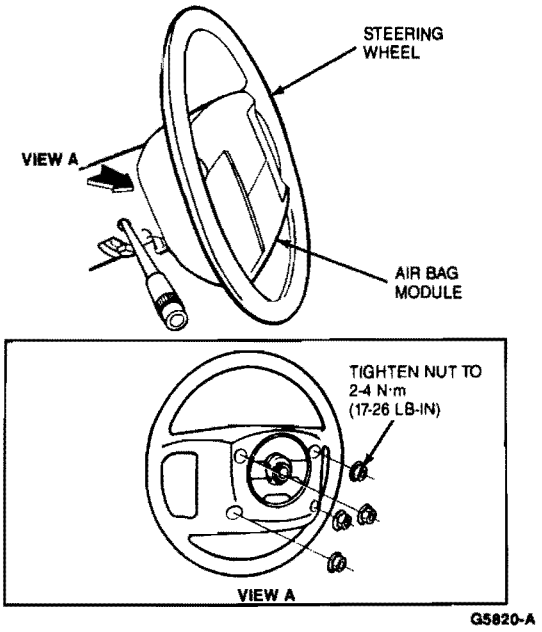
REMOVAL AND INSTALLATION

Steering Wheel

Removal

NOTE: If the steering wheel is not centered, check the toe adjustment. Refer to Section 14-01. Do not attempt to center the steering wheel by removing it and changing its position on the steering shaft.

1. Disconnect negative battery cable and air bag backup power supply. Refer to Section 41-58.
2. Remove four nuts from back of steering wheel and remove air bag module.
3. Disconnect air bag module connector.

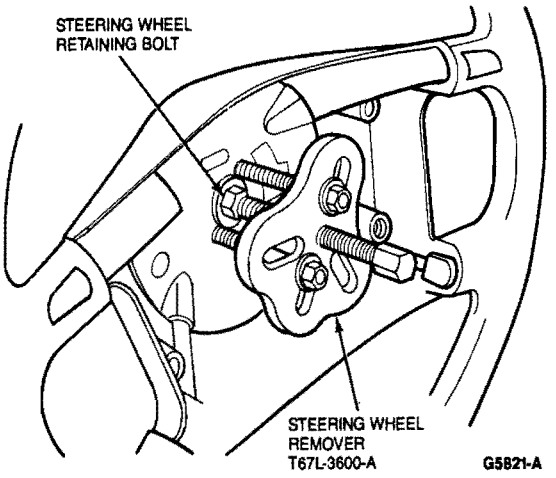


4. Loosen steering wheel retaining bolt four to six turns.

   CAUTION: Do not use a knock-off type steering wheel puller or strike the steering wheel or shaft with a hammer. A sudden impact could damage the bearing or start to collapse the steering column.

5. Position Steering Wheel Remover T67L-3600-A or equivalent on steering wheel. Tighten bolt on remover until steering wheel is loose.
6. Remove steering wheel puller, steering wheel retaining bolt, and steering wheel.

   CAUTION: Use care when removing steering wheel so as not to damage clockspring or air bag module connector.



Installation

1. Install the steering wheel onto the shaft making sure to line index marks on wheel and shaft end.
2. Install a new steering wheel retaining bolt. Tighten to 31-45 N·m (23-33 lb-ft).
3. Connect air bag module connector and install air bag module. Tighten four retaining nuts to 2-4 N·m (17-26 lb-in).
4. Connect negative battery terminal and air bag backup power supply.
5. Check steering column for proper operation.

Turn Signal, High Beam and Hazard Flasher Switch

Refer to Section 32-40.

Steering Column Shroud

Refer to Section 32-40.

Ignition Switch/Steering Column Lock

Refer to Section 31-20.

Steering Column

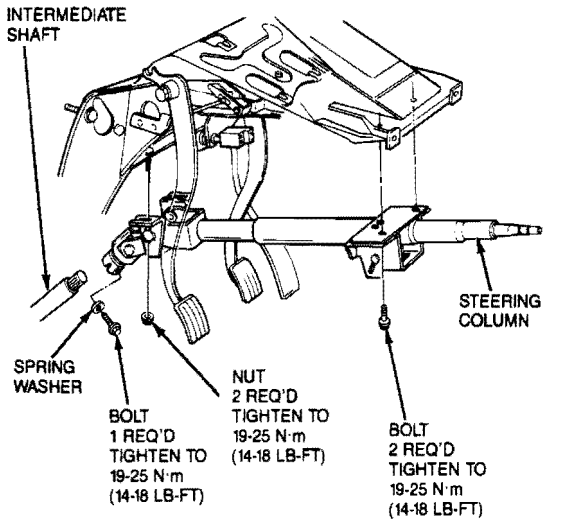
Removal

1. Position steering wheel in the straight ahead position.
2. Remove ignition key and rotate steering wheel slightly until it locks.

REMOVAL AND INSTALLATION (Continued)

3. Disconnect negative battery terminal and air bag backup power supply. Refer to Section 41-58.
4. Remove air bag module. Refer to Section 41-58.
5. Remove steering column access panel and trim cover.
6. Remove defroster duct connecting hose.
7. Remove steering column lower shroud.
8. Loosen steering column lower retaining nuts.
9. Remove steering column upper retaining bolts.
10. With steering column resting on instrument panel brace, remove ignition lock shield and ignition switch retaining screw.

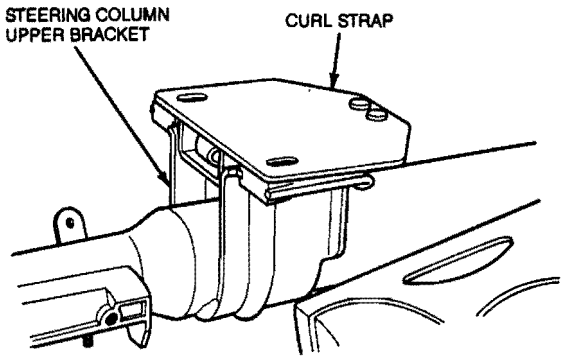
    NOTE: Ignition switch will remove with shield.
11. Disconnect electrical connectors from turn signal and hazard switch.
12. Disconnect harness connectors from the air bag module, key warning, windshield wiper switch and slip ring assembly.
13. Remove steering shaft universal joint pinch bolt.
14. Carefully pull steering column out of instrument panel to avoid damage to any wiring or components.



G6563-A

Installation

1. Carefully guide column assembly into instrument panel. Ensure curl strap is installed correctly and retaining clips are tight.



G5831-A

2. Connect harness connectors for the air bag module, key warning, wiper switch and slip ring assembly.
3. Connect connectors to turn signal switch and hazard switch.
4. Install ignition switch and lock shield. Tighten retaining bolts and nut to 15-19 N·m (11-14 lb-ft).
5. Connect steering shaft universal joint and install pinch bolt. Do not tighten pinch bolt.
6. Ensure curl strap is in place with retaining clips and install upper column retaining bolts. Do not tighten bolts.
7. Tighten lower column retaining nuts to 19-25 N·m (14-18 lb-ft). Tighten upper bolts to 19-25 N·m (14-18 lb-ft). Tighten universal joint pinch bolt to 19-25 N·m (14-18 lb-ft).
8. Install defroster duct connecting hose.
9. Install lower column shroud.
10. Install access panel and trim cover.
11. Install air bag module. Refer to Section 41-58.
12. Connect negative battery terminal and air bag backup power supply.
13. Check column components for proper operation.

Intermediate Shaft

Removal

1. Place front wheels in the straight ahead position and lock steering wheel in position.
2. Lower steering column assembly. Refer to Steering Column, Removal, Steps 1 through 9. Let column rest on instrument panel brace.
3. Working from inside the vehicle, remove universal joint bolt and washer from steering shaft.
4. Pry universal joint clamp apart and remove universal joint from steering shaft.

REMOVAL AND INSTALLATION (Continued)

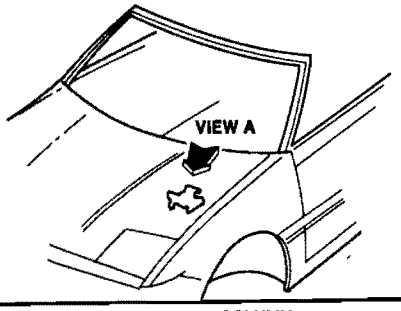
5. Roll back carpet and remove five dust boot retaining nuts.
6. Working from the engine compartment side, remove dust boot retaining clip. Remove dust boot from inside the vehicle.
7. Remove universal joint bolt and washer from universal joint located at steering gear.
8. Pry universal joint clamp apart and remove intermediate shaft with universal joint from steering gear.

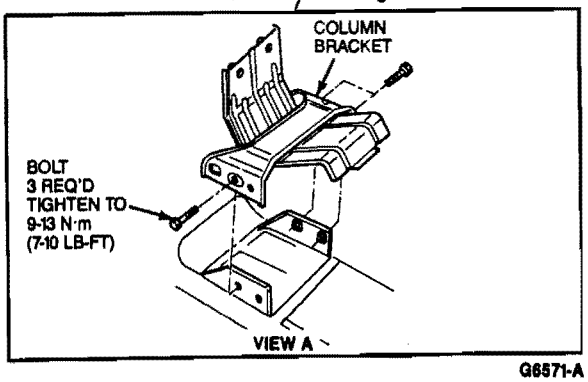
Installation

1. Place universal joint onto steering gear. Install washer and bolt. Tighten bolt to 19-25 N·m (14-18 lb-ft).
2. Install boot and five retaining nuts.
3. Install steering column assembly. Refer to Steering Column, Installation, Steps 5 through 12.

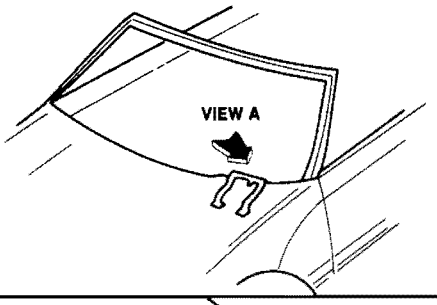
Steering Column Support Brackets

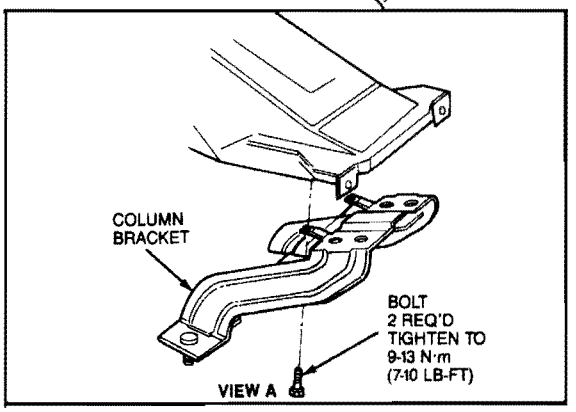
Steering column support brackets are shown in the following illustrations. To service them, the instrument panel must be removed. Refer to Section 45-61. Use the specifications shown to tighten fasteners.



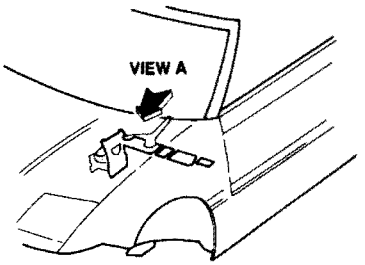


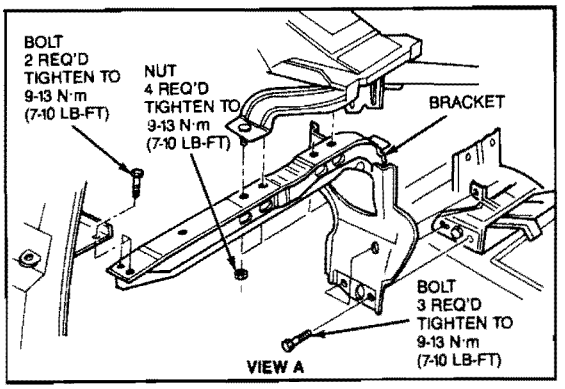
G6571-A





G6570-A





G6569-A

DISASSEMBLY AND ASSEMBLY

Steering Column

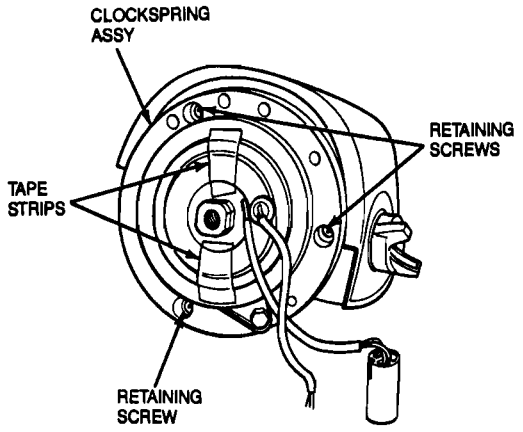
Disassembly

1. Remove steering column as outlined.

DISASSEMBLY AND ASSEMBLY (Continued)

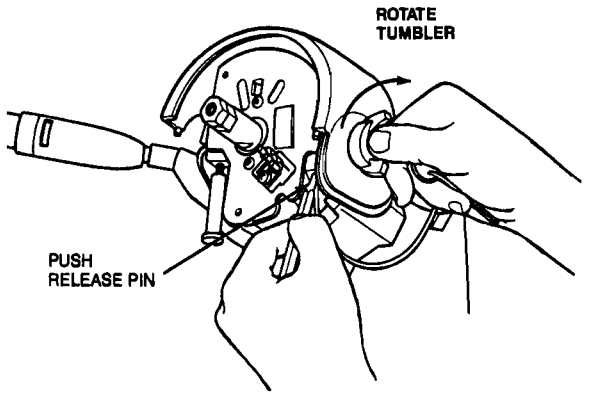
2. Position column assembly in soft-jawed vise.
3. Remove steering wheel using Steering Wheel Remover T67L-3600-A or equivalent.

   CAUTION: Do not use a knock-off type steering wheel puller, or strike the retaining bolt. This could cause damage to steering shaft bearings or shear pins, or otherwise damage the collapsible design of steering column.
4. Place two strips of tape on clockspring as shown, to avoid rotation or damage to clockspring.
5. Remove clockspring.



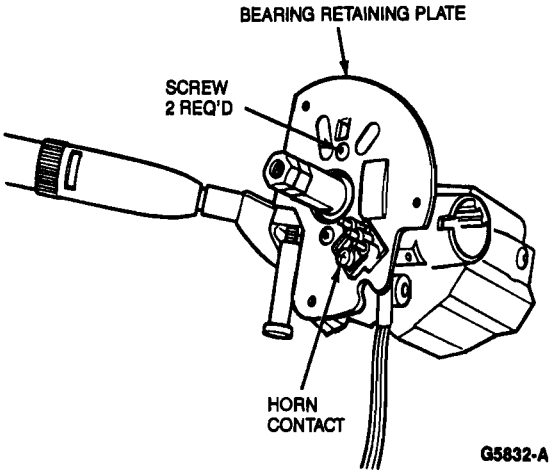
G5822-A

6. With ignition key installed, rotate tumbler assembly to the RUN position while pushing tumbler release pin using a 3.17mm (0.125 inch) drift. Remove tumbler assembly. Remove upper column shroud.



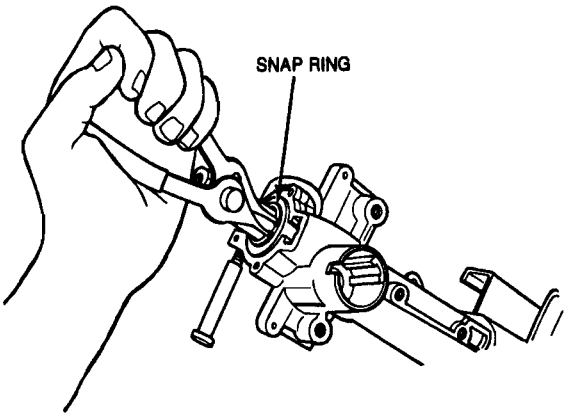
G5823-A

7. Remove key warning sensor.
8. Remove bearing retaining plate retaining screws and bearing plate.



G5832-A

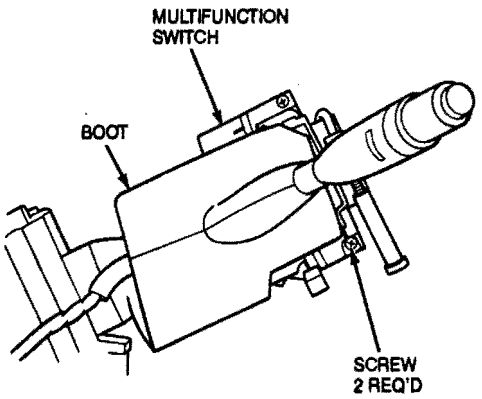
9. Remove snap ring and discard.



G5824-A

DISASSEMBLY AND ASSEMBLY (Continued)

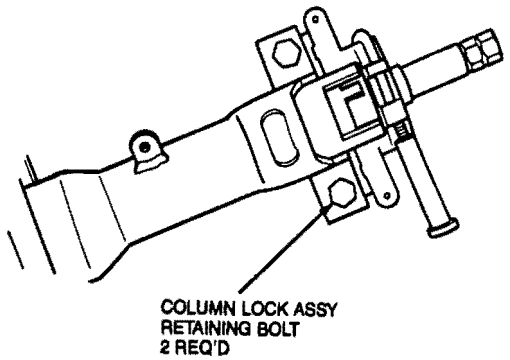
10. Remove multi-function switch retaining screws and switch.



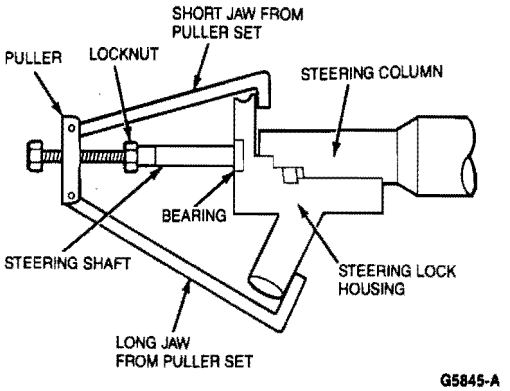
G5826-A

11. Remove column lock and upper bearing assembly using suitable puller as shown.

CAUTION: Should the steering shaft shear pins break during housing and bearing removal, the entire shaft and column must be replaced. To determine if the pins have sheared, measure steering shaft from top end of shaft to center of U-joint bearing. The dimension is 616.7mm ± 1mm (24.27 ± .039 inch). If less, the pins have sheared.



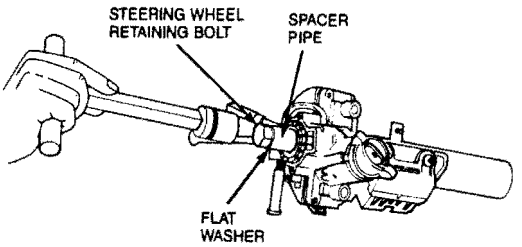
G5827-A



G5845-A

Assembly

1. Install steering column lock and upper bearing assembly. Tighten bolts to 16-28 N·m (12-21 lb-ft).
2. Prick punch steering column upper shaft serration diameter sufficiently to ensure an interference fit between bearing inner race and steering column upper shaft.
3. Position bearing and insulator on steering column upper shaft. Work bearing and insulator as far down steering column upper shaft as possible. Then, place a piece of pipe 19.05mm (0.75 inch) inside diameter x 38.1mm (1.5 inches) long over end of steering column upper shaft and install steering wheel attaching bolt with a flat washer.
4. Tighten steering wheel bolt until bearing is seated.
5. Remove bolt, washer and pipe.

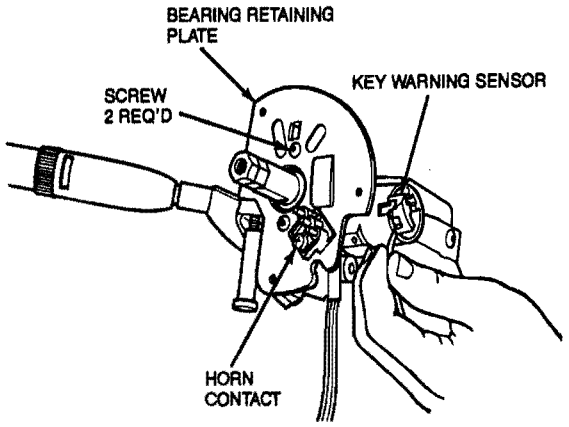


G5846-A

6. Install new snap ring.
7. Install multifunction switch and retaining screws.
8. Install bearing retaining plate and screws.

DISASSEMBLY AND ASSEMBLY (Continued)

9. Install key warning sensor.



10. Install upper column shroud.
11. Install tumbler assembly by turning tumbler and pressing retaining pin. Ensure tumbler operates properly.
12. Install clockspring assembly. Remove tape strips.
13. Install steering wheel. Tighten retaining bolt to 31-45 N·m (23-33 lb-ft).
14. Ensure curl strap is secured by retaining clips.
15. Install steering column assembly as outlined.

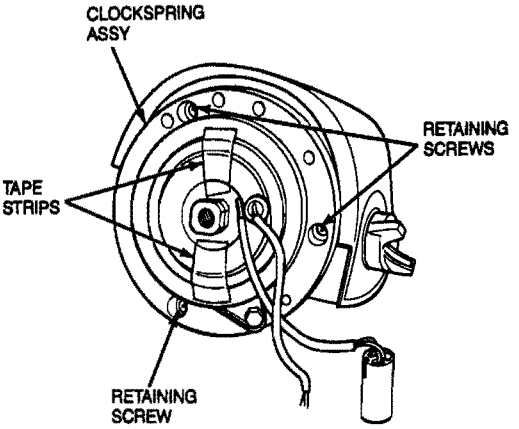
Turn Signal Cancel Cam Service

Removal and Installation

NOTE: Whenever a cracked turn signal cancel cam is encountered, it is not necessary to replace entire steering column assembly. Instead, a turn signal cancelling cam service sleeve, E1AC-13B368-AA is installed as follows:

1. Disconnect battery ground cable.
2. Remove steering column as outlined.
3. Remove steering wheel as outlined.

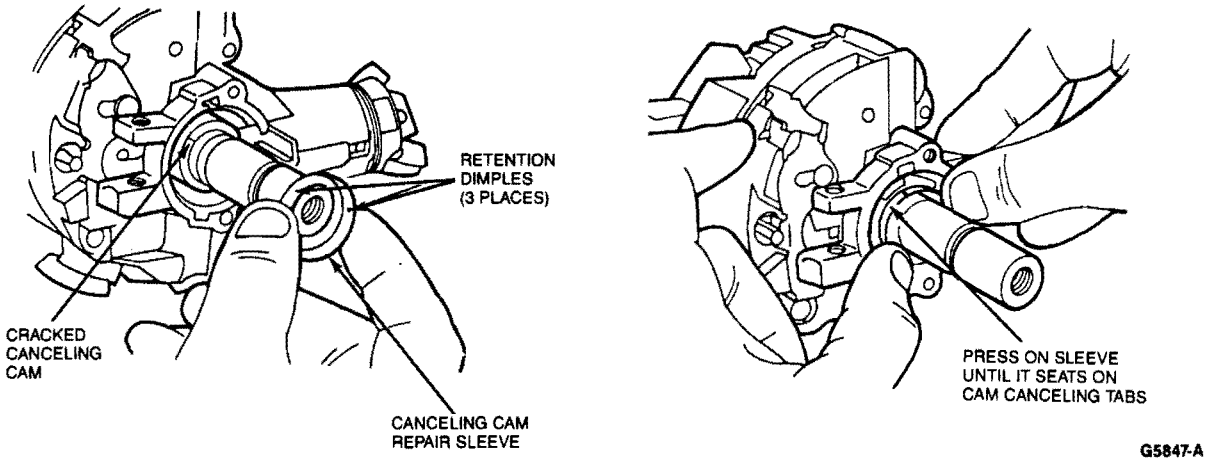
CAUTION: Before removing air bag clockspring from steering shaft, clockspring must be taped to prevent clockspring from being turned accidentally and damaging clockspring.



4. Remove clockspring.
5. Remove upper bearing retainer plate.
6. Remove upper bearing snap ring and discard.
7. Remove column lock and upper bearing assembly as outlined.
8. Place service sleeve over cracked canceling cam, and press on until sleeve bottoms on cam tabs.

   NOTE: The service sleeve has three retention dimples. Ensure sleeve is positioned on canceling cam, so a dimple is not directly over cam's crack.

DISASSEMBLY AND ASSEMBLY (Continued)



9. Install column lock, upper bearing and new snap ring as outlined in Steering Column Assembly.
10. Install bearing retainer plate.
11. Install clockspring assembly, remove tape.
12. Install steering wheel, steering column and air bag module, as outlined.
13. Connect battery ground cable.
14. Verify air bag warning lamp.

SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	Nem	Lb-Ft
Steering Wheel—Bolt	31-45	23-33
Air Bag Module—Nut	4-6	35-53 (Lb-In)
Steering Column—Nut	19-25	14-18
Steering Column—Bolt	23-31	17-23
Universal Joint—Bolt	19-25	14-18
Steering Column Bracket—Bolt	19-25	14-18
Steering Column Bracket—Nut	19-25	14-18
Ignition Switch—Screw	5.6-7.9	50-70 (Lb-In)
Shield—Nut	16-28	12-21
Ignition Lock Housing—Bolt	16-28	12-21

SPECIAL SERVICE TOOLS

Tool Number	Description
T67L-3600-A	Steering Wheel Remover

SECTION 13-46 Steering Gear, Power Rack-and-Pinion

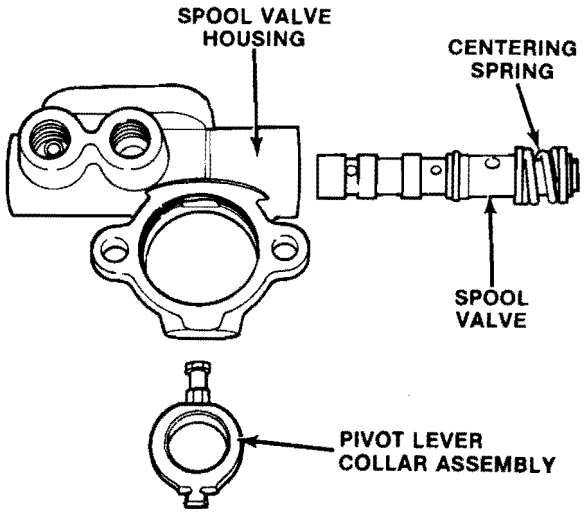
VEHICLE APPLICATION

Capri.

DESCRIPTION

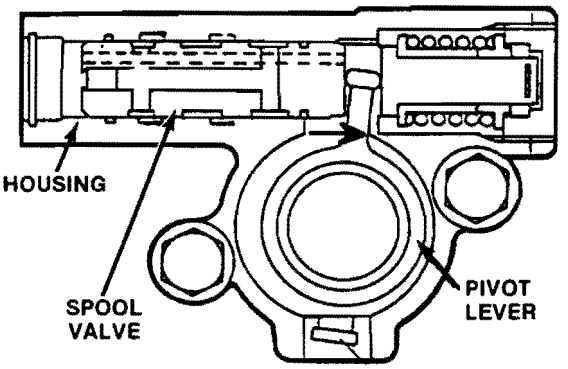
The power rack-and-pinion steering gear has an integral power assist system and valving.

The valve body bolts onto the rack housing at the upper pinion bearing. The pressure line and return line from the pump attach at the valve body. A sliding type spool valve directs high pressure hydraulic fluid through external oil lines to the correct side of the rack piston. The spool valve is moved by a pivot lever / collar assembly that fits over the upper pinion shaft.



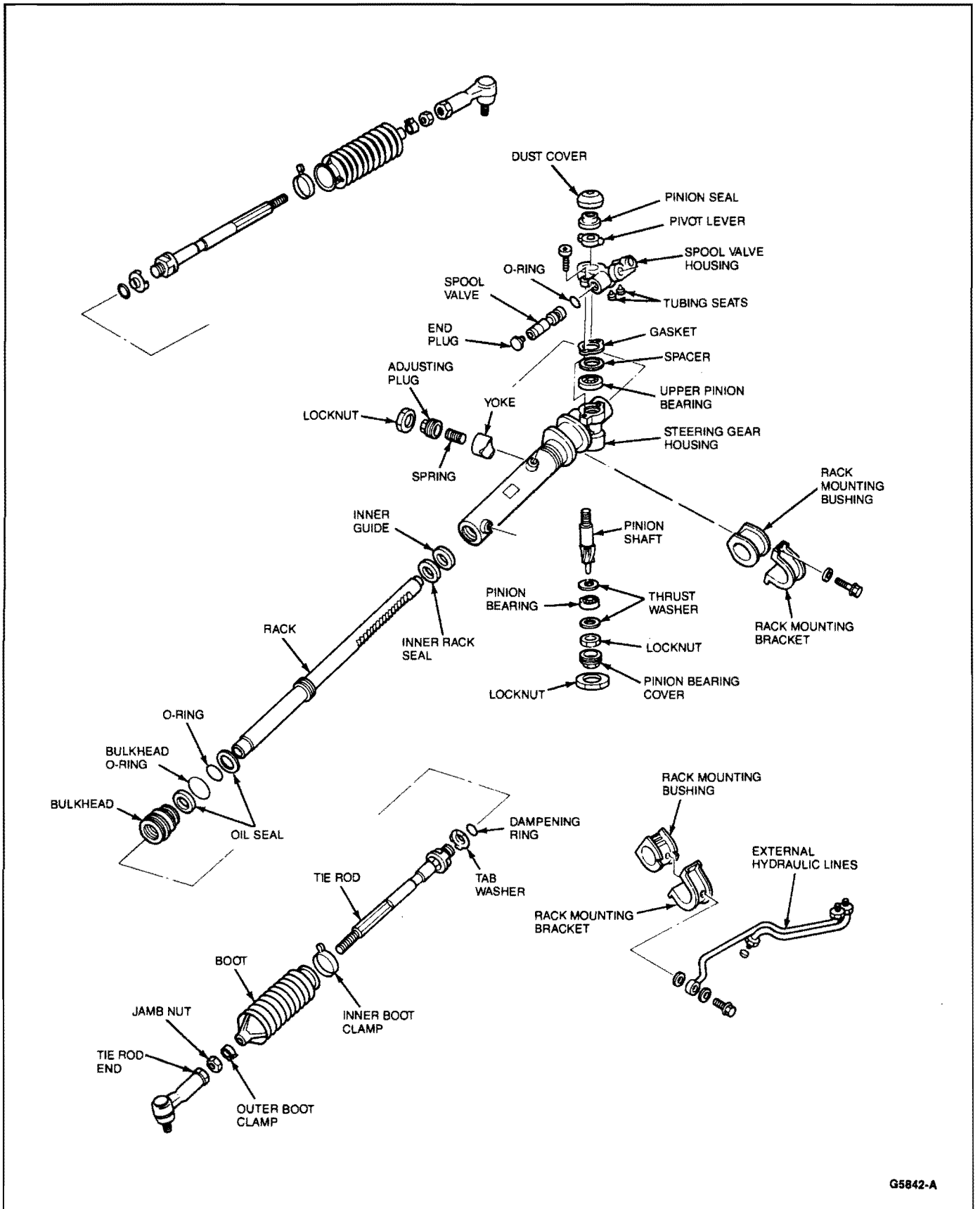
G5659-A

When the steering wheel is turned hard to the right or left, it causes the pinion to lean to the right or the left. This in turn causes the pivot lever / collar assembly to move the spool valve.



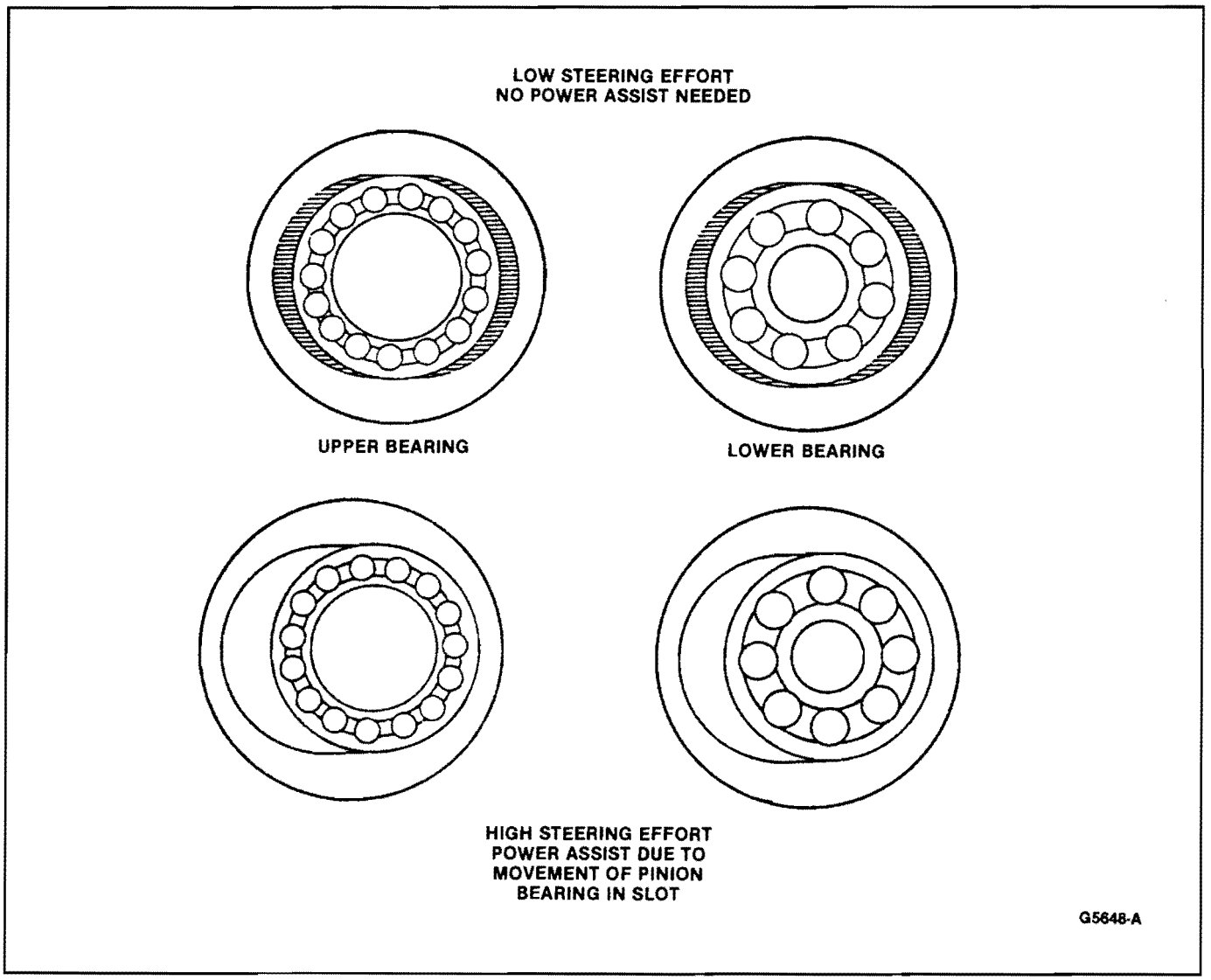
G5675-A

DESCRIPTION (Continued)



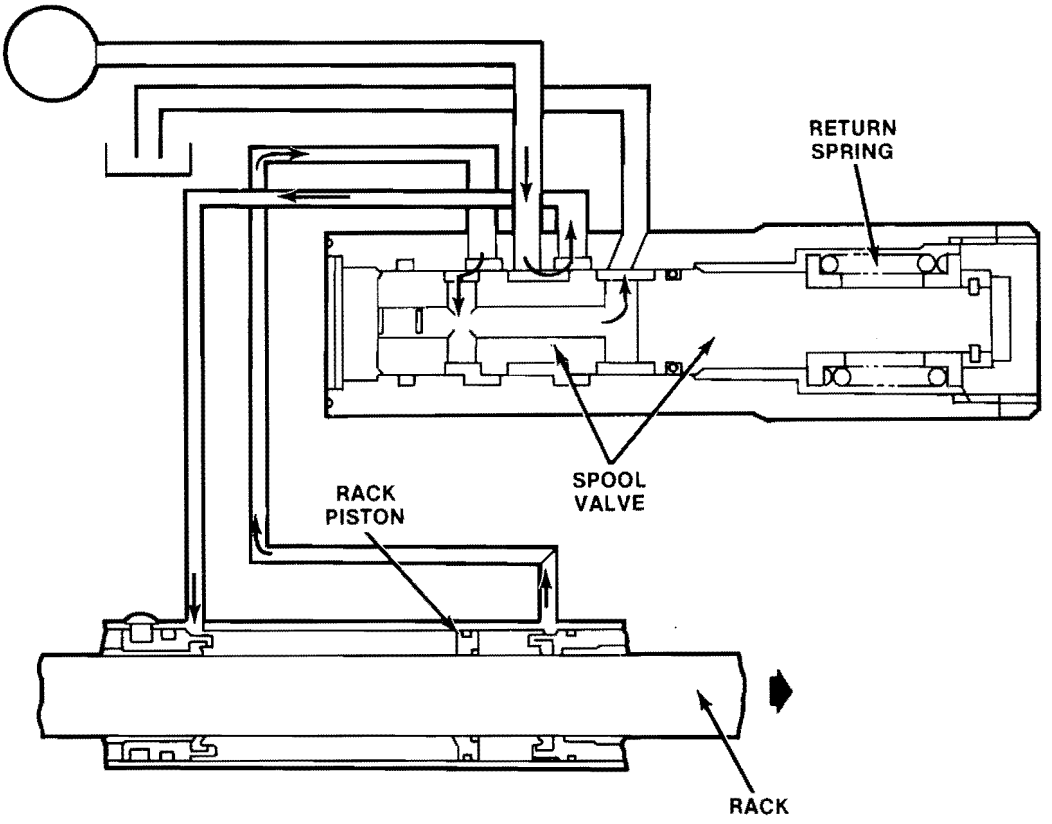
DESCRIPTION (Continued)

The pinion bearings ride in slightly oval shaped bores.



The spool valve then directs high pressure hydraulic fluid to one side of the rack piston while allowing fluid on the other side to return to the reservoir.

DESCRIPTION (Continued)

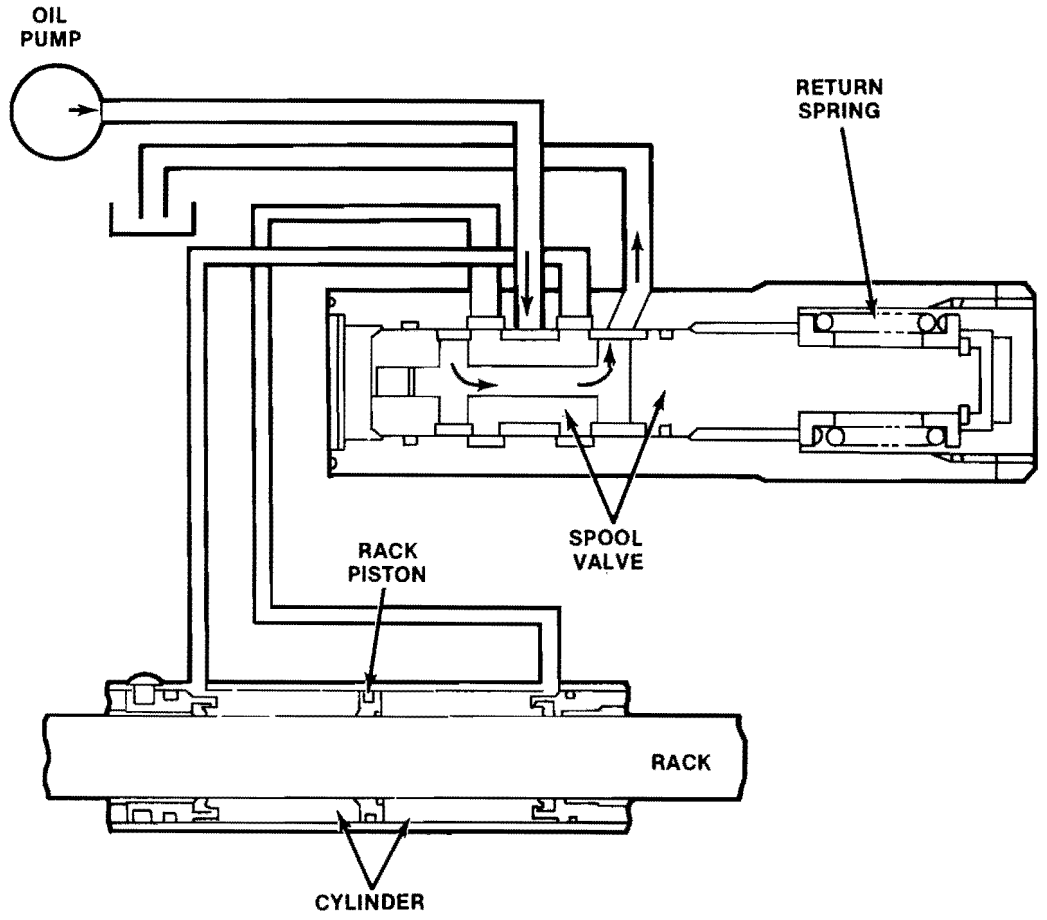


SCHEMATIC SHOWING RIGHT TURN POSITION

G5650-A

Under driving conditions where only very light steering effort is required, the spring pin on the bottom of the pinion and the return spring mounted on the spool valve keep the spool valve in the neutral position. High pressure hydraulic fluid from the pump flows through the spool valve and directly back to the reservoir through the return line.

DESCRIPTION (Continued)



SCHEMATIC SHOWING NO LOAD POSITION

G5649-A

A spring loaded plastic yoke assembly is used to keep the rack in constant contact with the pinion.

Rubber boots at each end of the rack seal out dust, dirt and contaminants. Since the rack is rifle drilled, no external breather tube connecting the boots is required.

The steering gear housing is mounted on the dash panel with a rubber bushing and mounting bracket at each end. The mounting brackets are attached to the dash panel with two bolts at each bracket.

ADJUSTMENTS

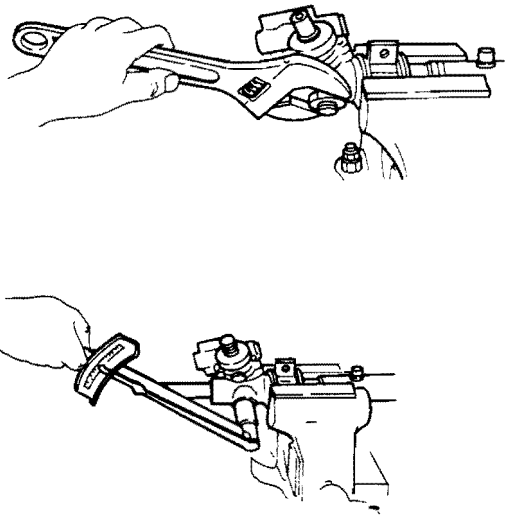
Rack Yoke Preload

NOTE: Readjusting the rack yoke preload will seldom cure hard steering or poor steering wheel return following a turn. First, check for damage that would be caused by an impact with a curb. Then, check for tight universal joints in the steering column and for tight or binding suspension parts.

1. Remove the steering gear from the vehicle as outlined.
2. Measure the pinion torque using a lb-in torque wrench and Pinion Adapter T87C-3504-C or equivalent. The torque should be 0.6-1.5 N·m (5.3-13.3 lb-in).

ADJUSTMENTS (Continued)

3. If the pinion torque is not within specification, readjust the pinion torque by tightening or loosening the adjusting plug.



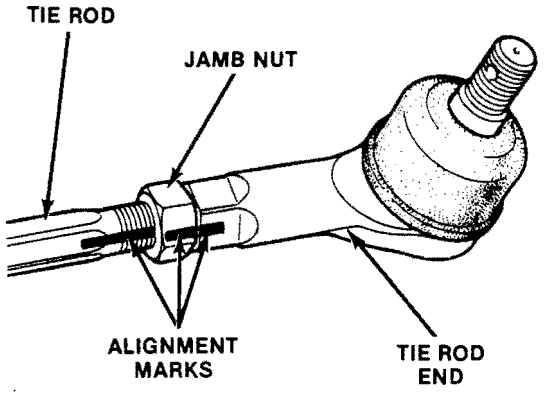
G5669-A

REMOVAL AND INSTALLATION

Tie Rod End

Removal

1. Raise vehicle on hoist. Refer to Section 10-04.
2. Remove the tire and wheel assembly.
3. Remove the cotter pin and tie rod end attaching nut.
4. Separate the tie rod end from the steering knuckle using Tie Rod End Separator T85M-3395-A or equivalent. If the tie rod end does not separate easily, give the steering knuckle a sharp blow with a brass hammer or drift.
5. Paint or mark an aligning stripe on the tie rod end, jamb nut, and tie rod.



G5685-A

6. Loosen the jamb nut on the tie rod.
7. Remove the tie rod end.

Installation

1. Thread the jamb nut and tie rod end onto the tie rod.
2. Align the index mark on the tie rod end, jamb nut and tie rod. Tighten the jamb nut.
3. Install the tie rod end in the steering knuckle. Tighten the attaching nut to 35-40 N·m (26-29 lb-ft).

   NOTE: If the slots in the nut do not align with the hole in the ball joint stud, tighten the nut for proper alignment. Never loosen the nut.
4. Install cotter key.
5. Install the tire and wheel assembly. Tighten lug nuts to 90-120 N·m (67-88 lb-ft).

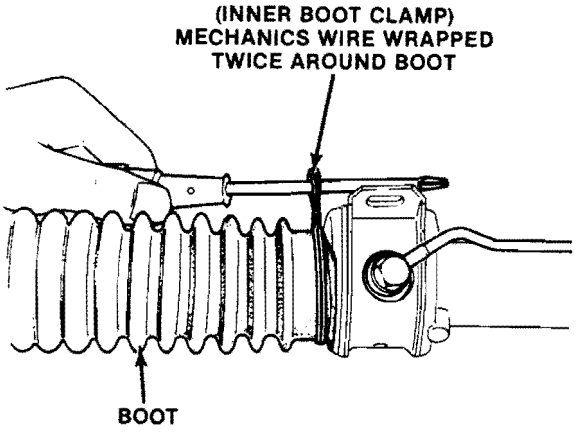
Dust Boot

Removal

1. Remove the tie rod end from the tie rod as outlined.
2. Using a pair of pliers, remove the outer boot clamp from the dust boot and tie rod.
3. Cut the boot clamping wire from the dust boot with a pair of diagonal cutters.
4. Slide the dust boot off the tie rod.

Installation

1. Slide a new boot over the tie rod and onto the housing.
2. Install a plastic fastener around the boot end.



G5681-A

3. Install the outer boot clamp.
4. Install the tie rod end as outlined.

REMOVAL AND INSTALLATION (Continued)

Steering Gear

Removal

1. Position the vehicle on a hoist. Refer to Section 10-04.
2. Remove the battery. Refer to Section 31-02.
3. Raise the vehicle and remove both front tire and wheel assemblies.
4. Separate both tie rod ends from their steering knuckles as outlined.
5. Remove the plastic dust shield from the right side lower inner fender.
6. Lower the vehicle but do not allow anything but the rear wheels to touch the ground.
7. Using a pair of diagonal cutters, cut the plastic wire tie clamping the steering column dust boot to the steering gear.
8. Pull back the dust boot and have an assistant turn the steering column shaft until clamp bolt is accessible, then lock steering column.
9. Pull back the steering column dust boot and paint an aligning mark on the steering column pinion shaft and the intermediate shaft lower universal joint.
10. Remove the clamp bolt from the intermediate shaft lower universal joint.
11. Using a 17mm crowfoot line wrench, loosen and remove the power steering gear return hose.
12. Using a 14mm socket, loosen and remove the banjo bolt from the power steering gear pressure hose. Discard the two copper washers removed from the return line banjo fitting.
13. Position the hoses so they are out of the way.
14. Remove the steering gear attaching bolts.
15. Lower the steering gear until the steering shaft is clear of the intermediate shaft universal joint.
16. Carefully slide the steering gear out of the right side fender well through the tie rod opening.

Installation

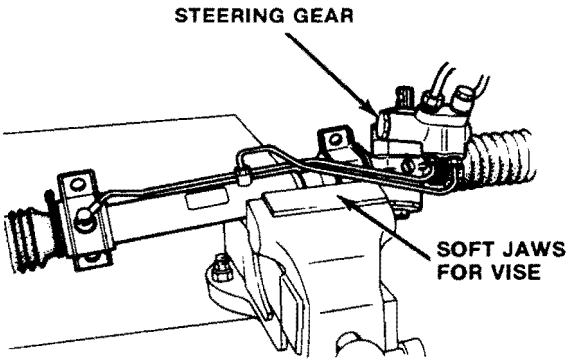
1. Raise the vehicle on a hoist. Refer to Section 10-04. Slide steering gear into position through the right side lower inner fender well opening. Position the pinion shaft so it is just below the intermediate shaft universal joint.
2. Lower the vehicle enough to allow access beneath it. Raise the steering gear from under the vehicle and slide it into position.
3. Have an assistant guide the pinion shaft into the intermediate shaft lower universal joint while at the same time making sure the alignment marks line up.
4. Install the attaching bolts through the steering gear mounting bracket and into the dash panel.
5. Install the clamp bolt in the intermediate shaft lower universal joint. Tighten securely.
6. Attach the hoses from the power steering pump to the steering gear. Install new copper washers at the return line banjo fitting. Tighten the pressure hose fitting with a 17mm crowfoot line wrench.
7. Connect the tie rod ends to the steering knuckle arms as outlined.
8. Fill the reservoir with fluid.
9. Install the battery. Refer to Section 31-02.
10. Install both tire and wheel assemblies.
11. Bleed the hydraulic lines by starting the vehicle and slowly turning the steering wheel back and forth, lock to lock. Check the fluid level often.
12. Carefully check for leaks and add fluid if needed.
13. Install the plastic dust shield on the right side lower inner fender.

DISASSEMBLY AND ASSEMBLY

Steering Gear

Disassembly

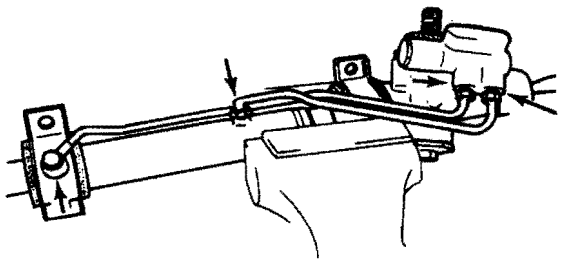
1. Remove the steering gear from the vehicle as outlined.
2. Mount the steering gear in a soft-jawed vise.



G5676-A

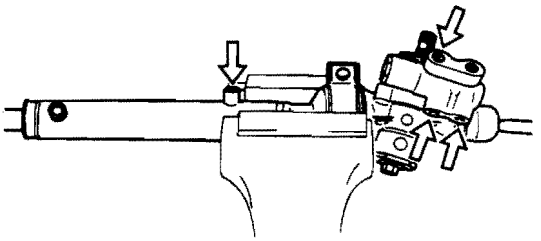
DISASSEMBLY AND ASSEMBLY (Continued)

3. Remove the external hydraulic lines connecting the valve body to the steering gear housing. Store in a safe place.



G5684-A

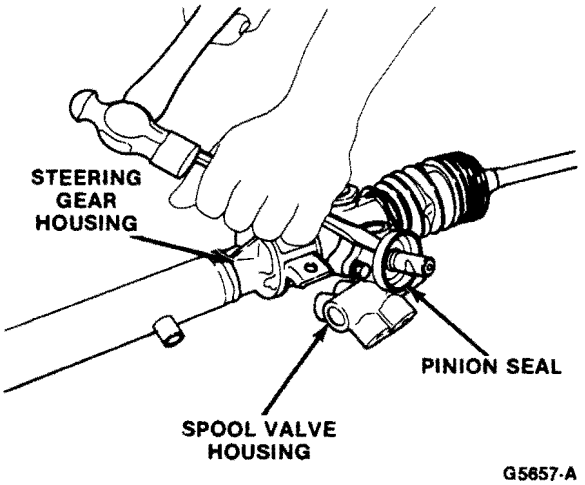
4. Remove the mounting brackets and rubber mounting bushings from the steering gear.
5. Remove the brass tubing seats from the steering gear using a self-tapping screw and two screwdrivers.



REMOVE TUBING SEATS WHERE INDICATED BY ARROWS

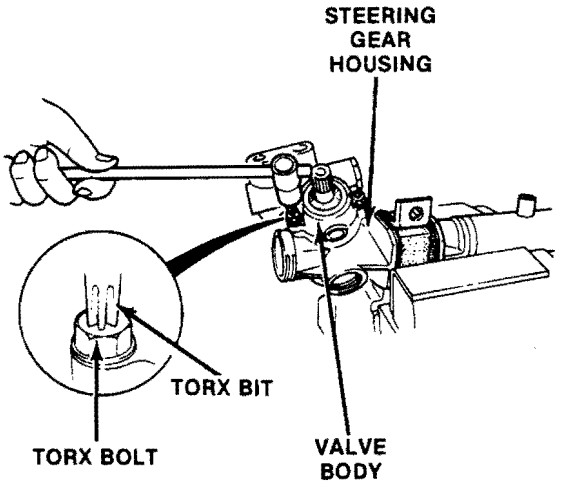
G5655-A

6. Using a cold chisel, remove the pinion shaft dust boot.



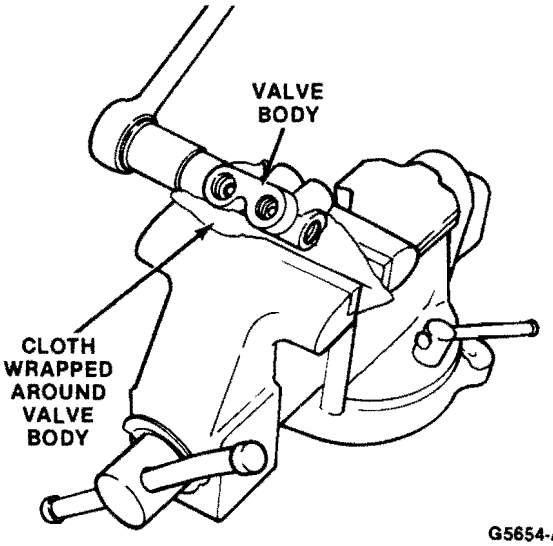
G5657-A

7. Using a No. 40 Torx® bit, remove the valve body attaching bolts.



G5677-A

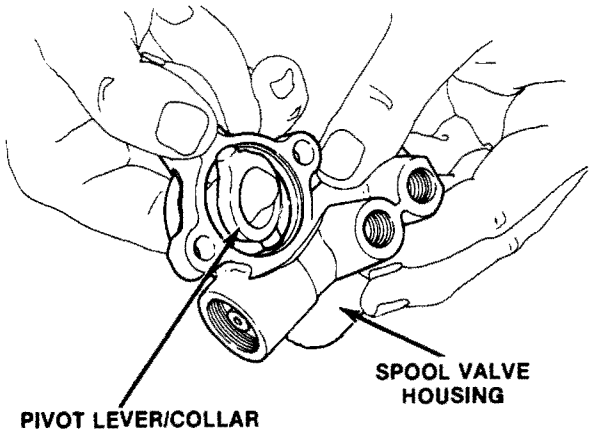
8. Wrap the valve body in a cloth to protect it and mount it in a vise. Remove the end plug from the valve body.



G5654-A

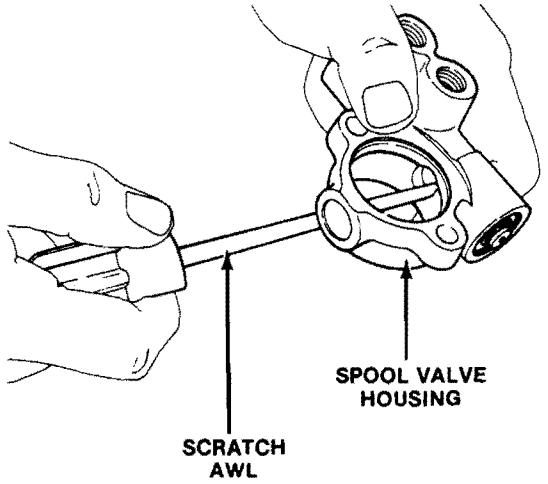
DISASSEMBLY AND ASSEMBLY (Continued)

9. Remove the pivot lever / collar from the valve body.



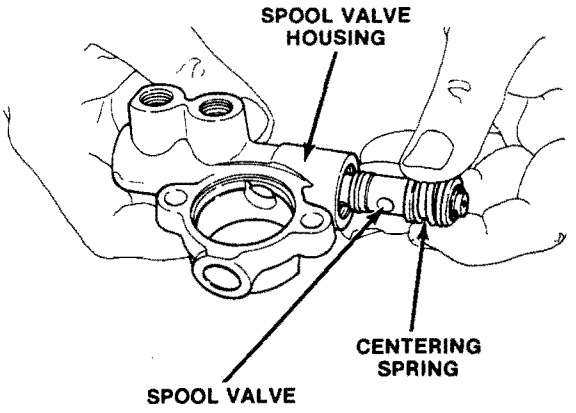
G5656-A

10. Carefully insert an awl or punch in the pivot lever hole of the spool valve and slide the spool valve partially out of the valve body.



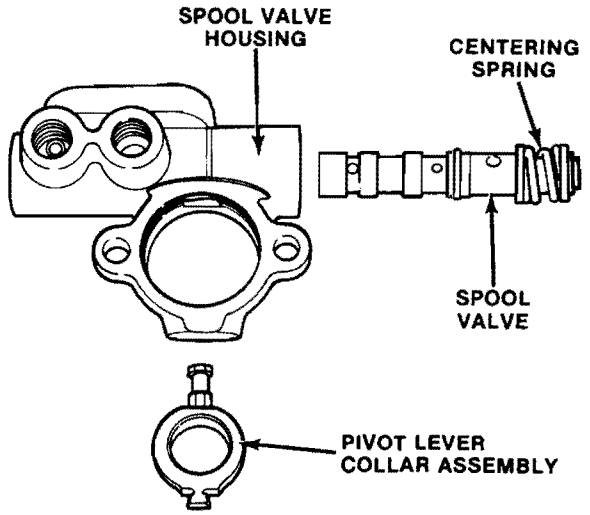
G5658-A

11. Remove the spool valve from the valve body.



G5660-A

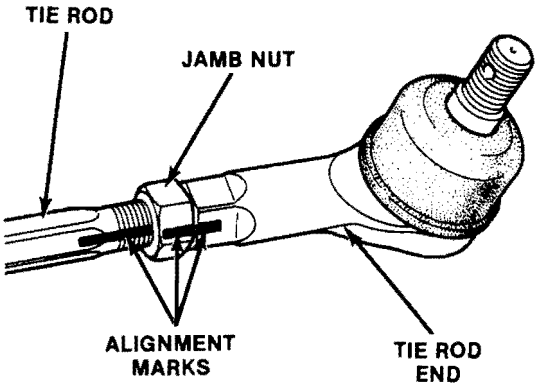
12. Carefully remove the spool valve O-ring.
13. Carefully clean the spool valve body and parts in solvent. Inspect all parts for wear. Check the spherical ends and the pinion shaft bushing on the pivot lever / collar for wear. Check the spool valve for burrs, scratches and wear. If necessary, polish the spool valve with crocus cloth.



G5659-A

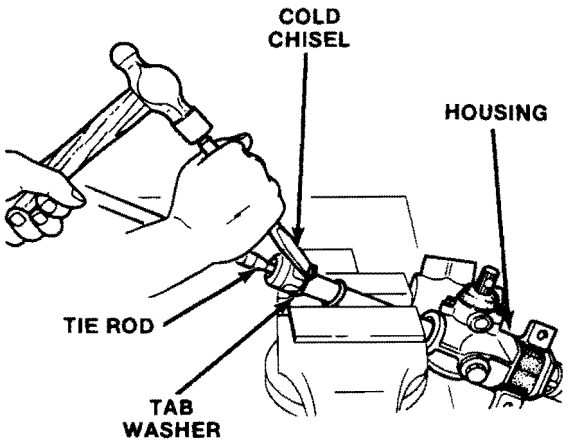
DISASSEMBLY AND ASSEMBLY (Continued)

14. Mark or paint aligning marks on the tie rod, jamb nut and tie rod end so they can be installed in the same position.



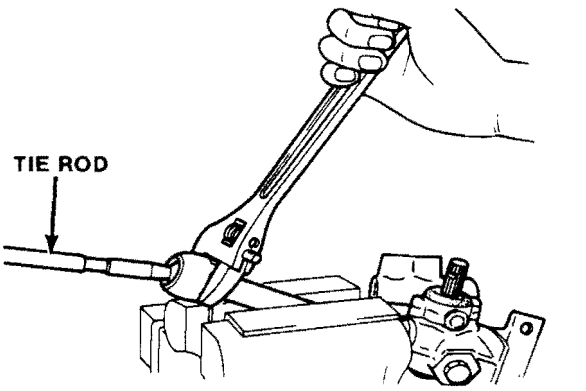
G5685-A

15. Remove the tie rod ends and jamb nuts.
16. Remove the tie rod dust boots from the steering gear housing.
17. Using a dull cold chisel, uncrimp the tie rod tab washers.



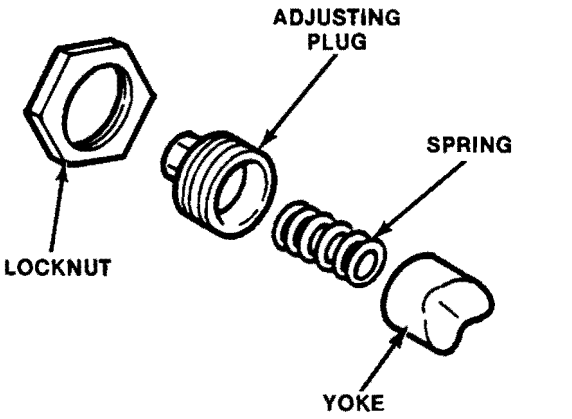
G5680-A

18. Remove the tie rod from the rack. Be sure to use a back-up wrench on the rack so the rack teeth and pinion are not damaged.



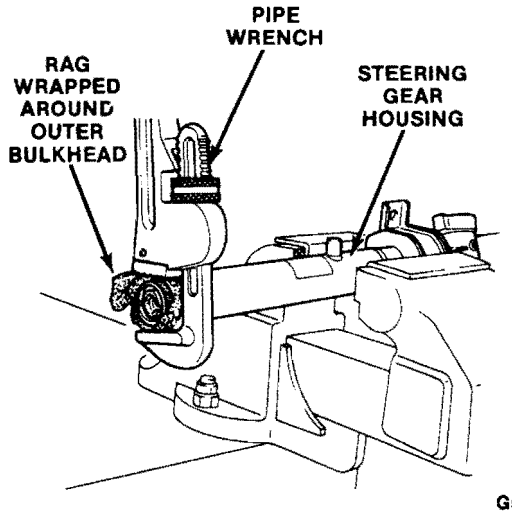
G5683-A

19. Loosen the locknut and remove the adjusting plug, spring and yoke from the steering gear housing.



G5647-A

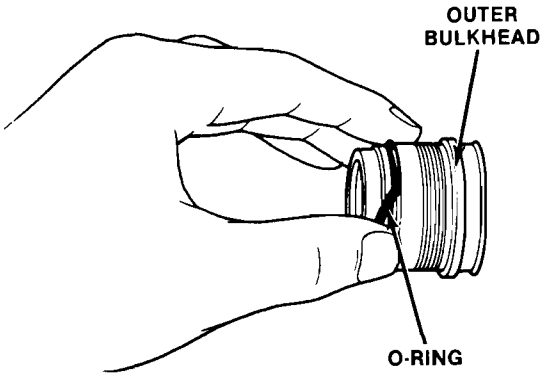
20. Protect the outer dash panel with a cloth and remove with a pipe wrench.



G5679-A

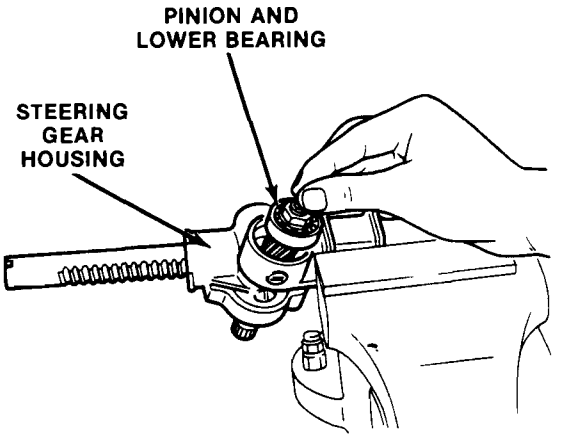
DISASSEMBLY AND ASSEMBLY (Continued)

21. Remove the old O-ring from the outer dash panel and discard.



G5696-A

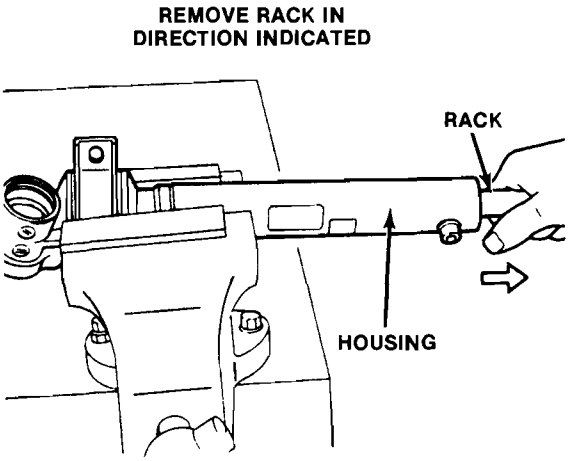
22. Pull the pinion shaft assembly out from the lower bearing side.



G5678-A

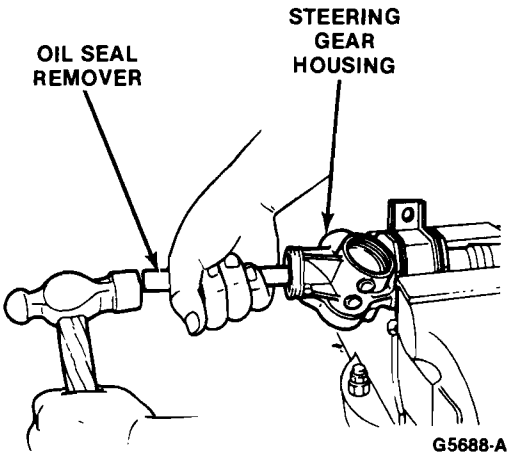
23. Remove the upper pinion bearing by driving it out of the housing with a wooden dowel.
24. Remove the rack by taking it out in the direction indicated.

CAUTION: If the rack is taken out opposite the direction indicated, the inside surface of the rack bushing may be damaged by the rack teeth.



G5689-A

25. Remove the inner guide and inner rack seal using Rack Inner Seal Remover T87C-3504-A or equivalent.



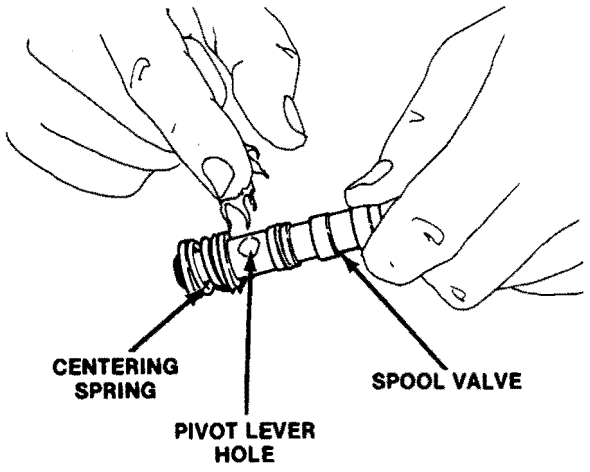
G5688-A

Assembly

1. Inspect all parts.

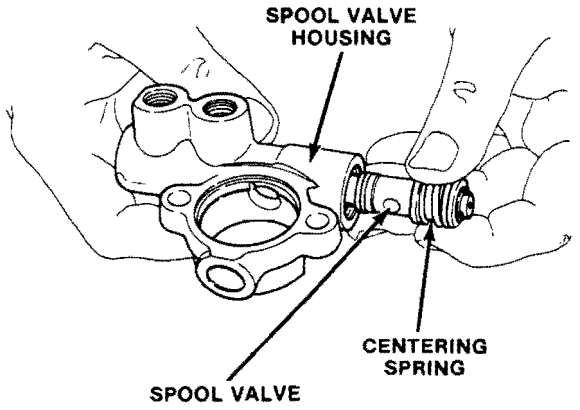
DISASSEMBLY AND ASSEMBLY (Continued)

2. Install a new O-ring on the spool valve. Then apply Long-Life Lubricant C1AZ-19590-BA or equivalent to the spool valve pivot lever hole and automatic transaxle fluid (ATF) to the rest of the spool valve.



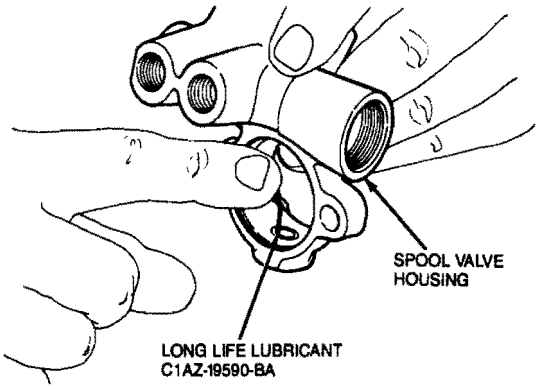
G5661-A

3. Install the spool valve in the valve body.



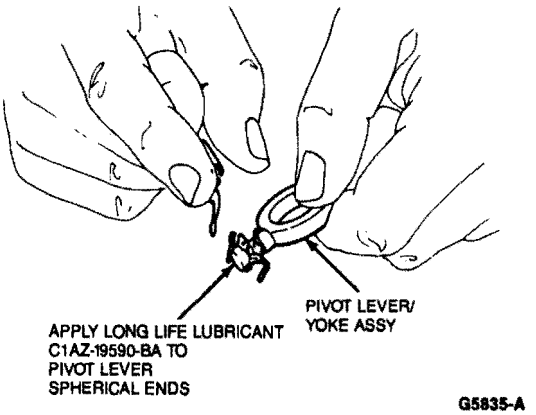
G5660-A

4. Apply Long-Life Lubricant C1AZ-19590-BA or equivalent to the pivot lever hole in the valve body.



G5834-A

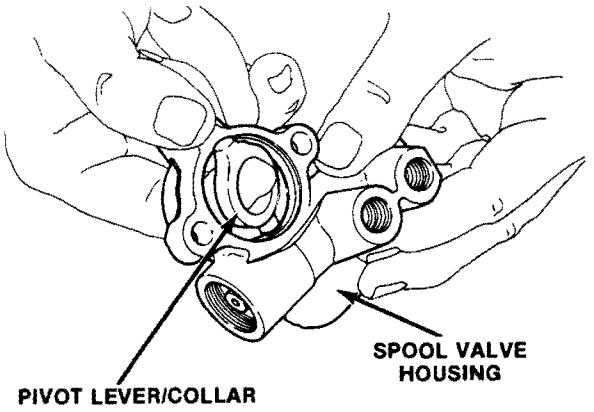
5. Apply Long-Life Lubricant C1AZ-19590-BA or equivalent to the spherical ends of the pivot lever / collar and to the bushing.



G5835-A

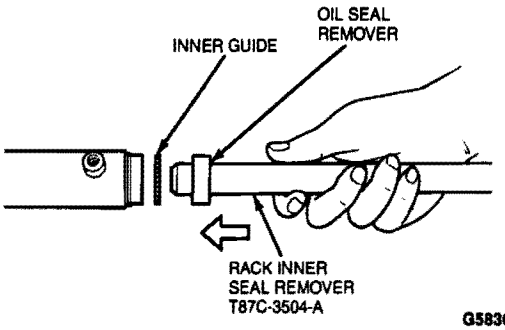
DISASSEMBLY AND ASSEMBLY (Continued)

6. Install the pivot lever in the spool valve housing making sure that the spherical end of the pivot lever is seated in the spool valve.



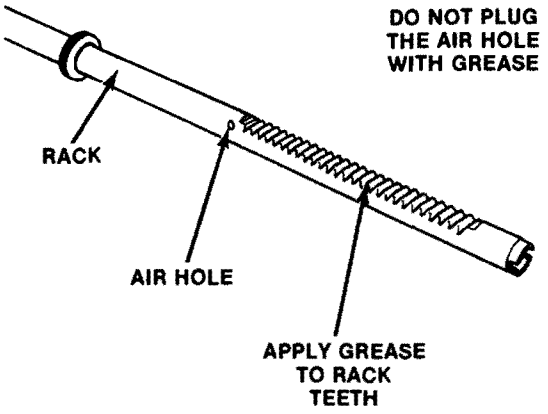
7. Install the end plug in the spool valve housing.
8. Apply ATF to the inner guide.
9. Push the inner guide and the inner rack seal into the rack housing with Rack Inner Seal Remover T87C-3504-A or equivalent.

   CAUTION: Do not damage the inner surface of the rack housing.

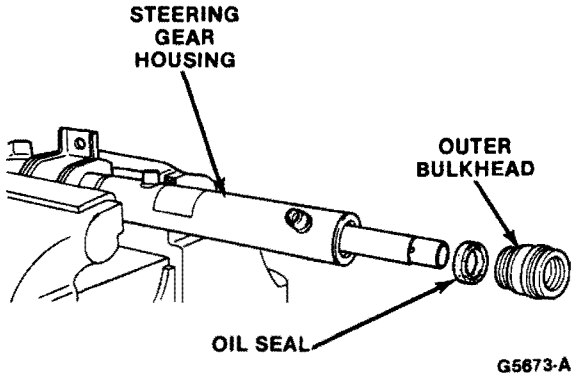


10. Apply Long-Life Lubricant C1AZ-19590-BA or equivalent to the rack teeth. Install Rack Oil Seal Protector D83P-3504-K or equivalent.

    CAUTION: Do not plug the air hole of the rack with grease.

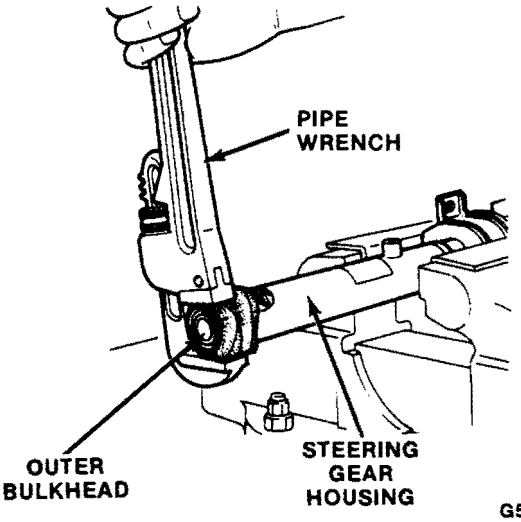


11. Install a new rack piston seal on the rack, using Piston Seal Replacer T81P-3504-L with Pusher T75L-3517-A2 and Sizer T81P-3504-K or equivalent, and apply ATF to the rack piston and the electrical tape covering the rack.
12. Coat the housing cylinder bore with ATF and carefully slide the rack into the housing.
13. Slide the rack as far as it will go into the housing. Remove rack seal protector tool.
14. Install a new bushing into the outer dash panel using Pinion Cover Centering Tool T81P-3504-Y or equivalent. Install a new sealing ring, oil seal, and new O-rings at the outer dash panel and install the outer dash panel. Be sure to liberally lubricate all parts with ATF before installation.



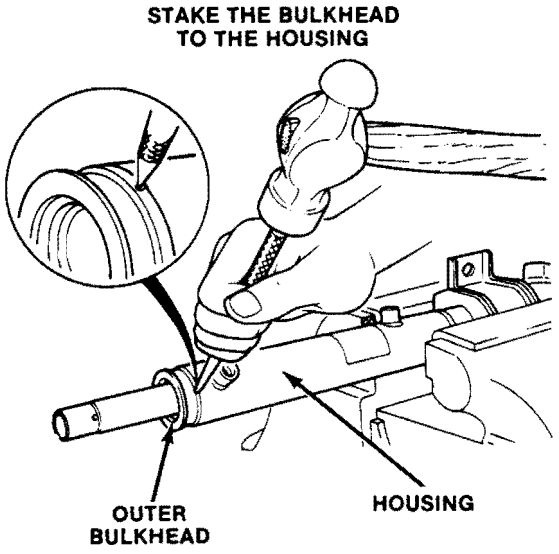
DISASSEMBLY AND ASSEMBLY (Continued)

15. Wrap a cloth around the outer dash panel and install it with a pipe wrench.



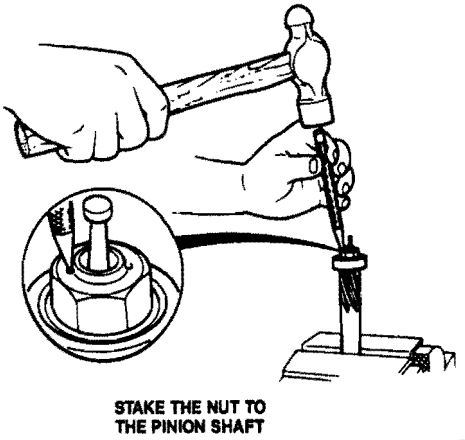
G5672-A

16. Stake the outer dash panel to the rack housing by using a punch.



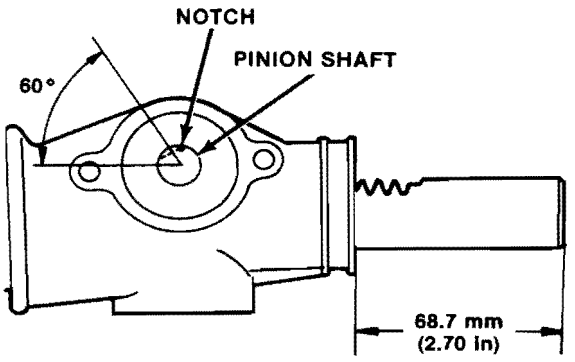
G5668-A

17. Install the lower bearing on the pinion shaft. Install the retaining nut, and tighten nut to 40-50 N·m (28.9-36.2 lb-ft). After tightening, stake the nut to the pinion shaft.



G5840-A

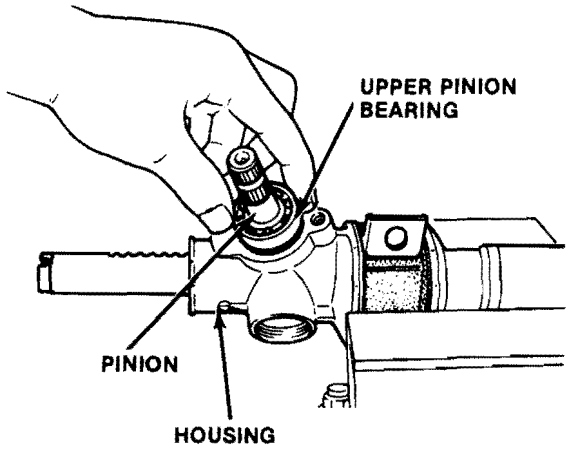
18. Install the pinion shaft with the notch on the spline positioned as shown when the rack is positioned in the center of the rack housing (or with the rack protruding beyond the housing as specified).



G5663-A

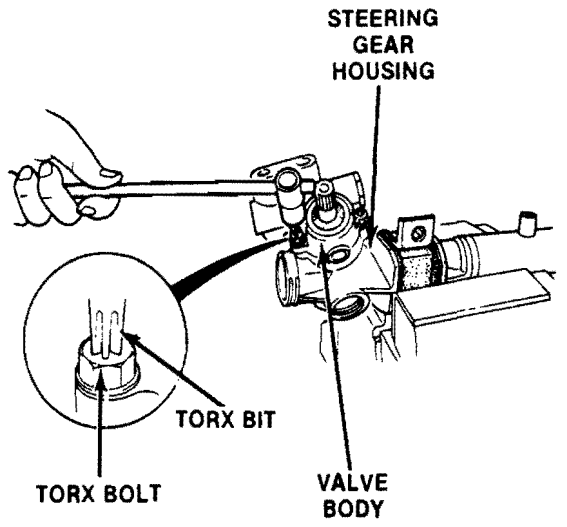
DISASSEMBLY AND ASSEMBLY (Continued)

19. Grease the upper pinion bearing and install it in the housing using Upper Pinion Seal Replacer T78P-3504-D or equivalent.



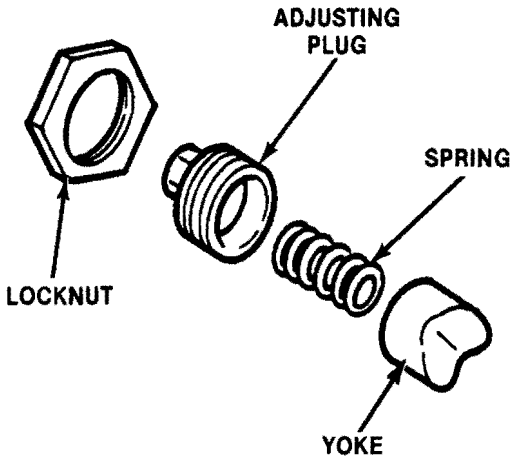
G5697-A

20. Tighten the pinion bearing cover to 5-9 N·m (3.7-6.6 lb-ft). Then loosen it 10-20 degrees.
21. Lock the housing cover by tightening the locknut to 40-50 N·m (28.9-36.2 lb-ft).
22. Using a new gasket, position the valve body on the housing. Install the Torx® drive attaching bolts.



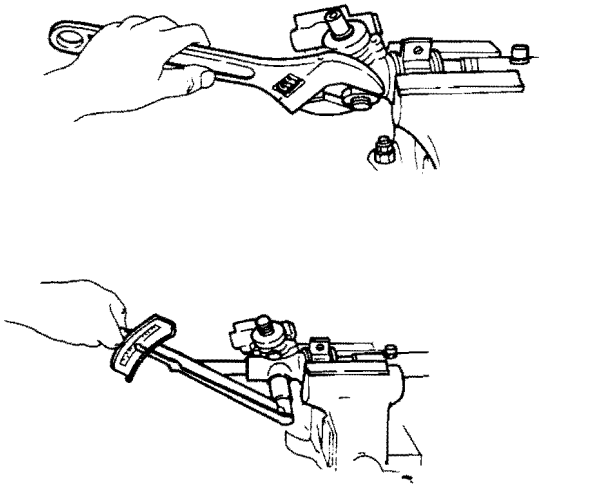
G5677-A

23. Install the yoke, spring, adjusting plug, and locknut. Tighten cover to 4.5-5.5 N·m (39.1-47.7 lb-in) and then loosen it 45 degrees.



G5647-A

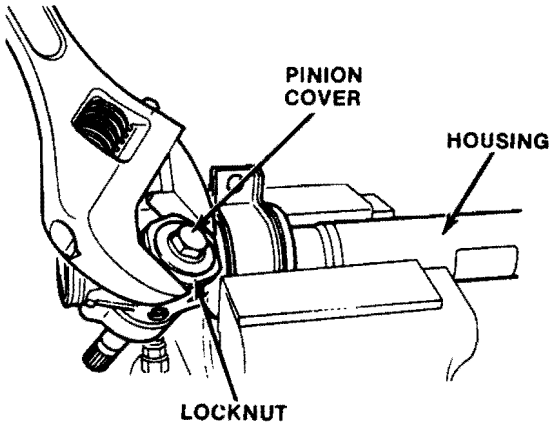
24. Measure the pinion torque using a lb-in torque wrench and Pinion Adapter T87C-3504-C or equivalent. Tighten to 0.6-1.5 N·m (.52-1.3 lb-in).
25. If the pinion torque is not within specification, readjust by tightening or loosening the adjusting plug.



G5669-A

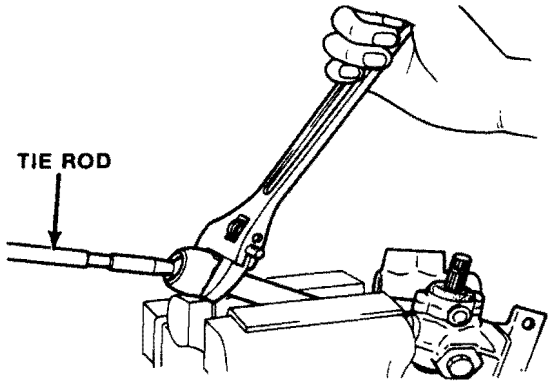
DISASSEMBLY AND ASSEMBLY (Continued)

26. Lock the cover by tightening locknut to 40-50 N·m (28.9-36.2 lb-ft).



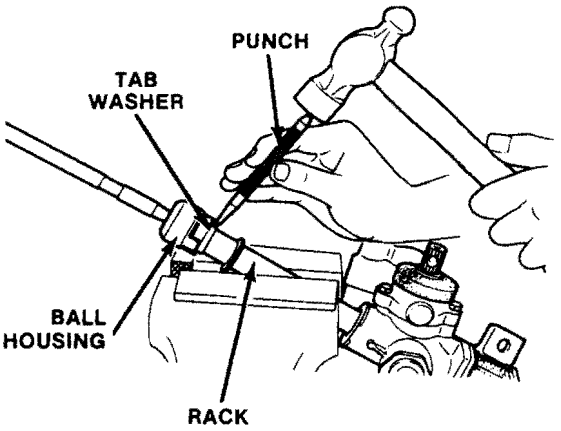
G5651-A

27. Mount the rack in a soft-jawed vise and install the damper ring, washer, and tie rod. Tighten tie rod to 60-80 N·m (43.4-57.9 lb-ft).



G5683-A

28. Stake the tab washer in two places using a punch. Position the damper ring in the washer. Install the other damper ring, washer, and tie rod.

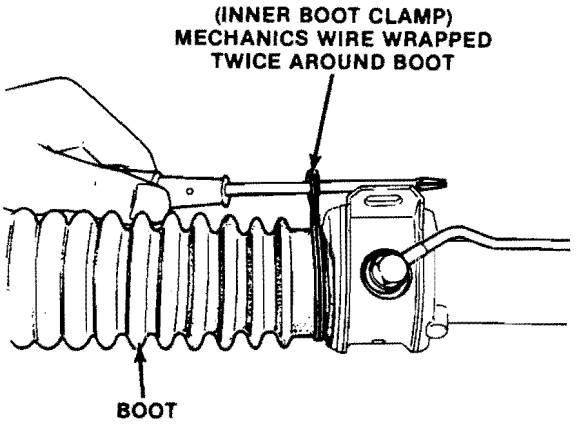


G5682-A

29. Slide a tie rod boot over the tie rod and position it on the steering gear. Wrap a new piece of mechanics wire twice around the boot and then around a Phillips screwdriver. Twist the wire four or five times with the screwdriver.

CAUTION: Be sure the boot is not twisted or dented.

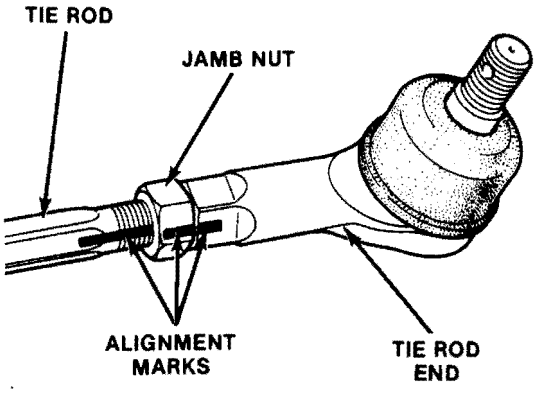
Install the other boot and then the outer boot clamps.



G5681-A

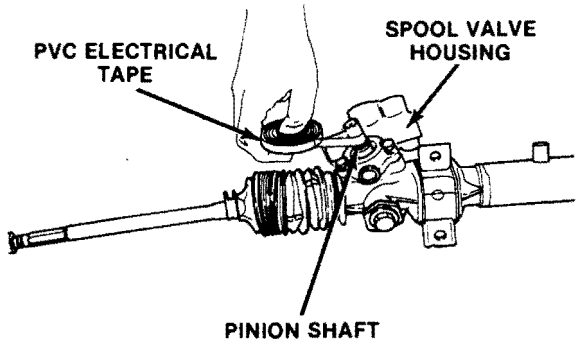
DISASSEMBLY AND ASSEMBLY (Continued)

30. Install the tie rod ends and jamb nuts making sure the index marks align.



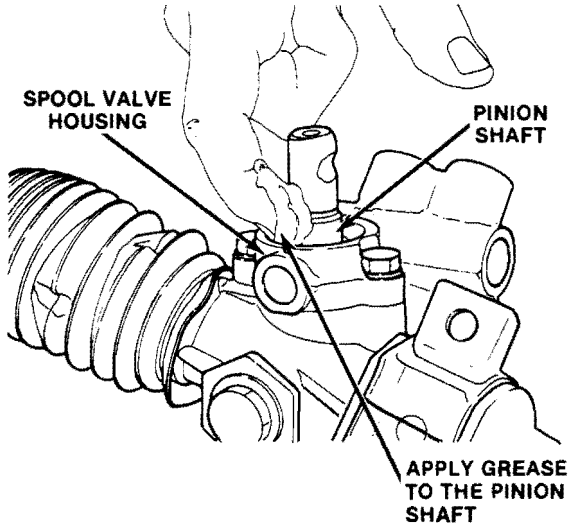
G5685-A

31. Wrap PVC electrical tape around the pinion shaft.



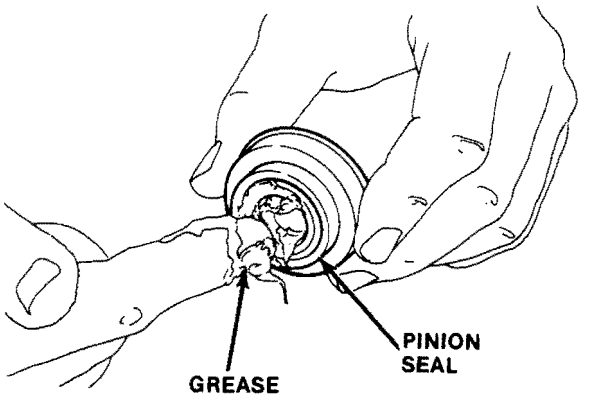
G5670-A

32. Apply grease to the pinion shaft.



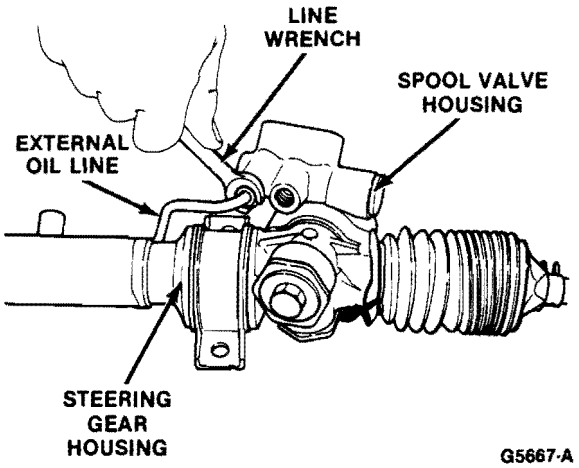
G5664-A

33. Apply grease to the sealing lips of the pinion shaft seal.



G5665-A

34. Install the pinion shaft seal with Pinion Bearing Replacer T78P-3504-D or equivalent.
35. Remove the PVC electrical tape from the pinion shaft.
36. Install the rubber rack support bushings on the housing and tap the rack support brackets in position over the bushings.
37. Install the two external oil lines connecting the valve body to the housing. Be sure to install two new copper sealing rings at each banjo fitting.
38. Be sure to use a tubing wrench on the flare nut fittings.



G5667-A

Inspection

1. Inspect the rack teeth and the pinion gear for any signs of chipping, scoring or unusual wear. Replace the pinion gear and the rack as a set if any damage is found.
2. Mount the rack on V-blocks and check for runout with a dial indicator. Runout should be no more than 0.03mm (0.012 inch).

DISASSEMBLY AND ASSEMBLY (Continued)

3. Check the bearings for looseness, abnormal noise, or poor operation. If the pinion bearing needs replacing, replace as an assembly.
4. Check the rack bushing inside the housing for wear. If replacement is necessary, replace the entire gear housing as an assembly.
5. Check the sliding surface of the yoke for abnormal wear.
6. Check for looseness or roughness in the tie rod ball housings.
7. Check for bent tie rods or tie rod ends.
8. Check the outer dash panel bushing for wear.
9. Check the pivot lever / collar for wear or damage. Be sure to check the spherical faces of the lever and the collar bushing for wear or damage.
10. Check the spool valve for cuts, nicks, burrs, and wear.
11. Check the tie rod boot for cracking, damage and deterioration.

SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	Nem	Lb-Ft
Tie Rod End Retaining Nut	35-40	26-29
Pinion Shaft Nut	40-50	28.9-36.2
Pinion Bearing Cover	4.5-5.5	39.1-47.7 (Lb-In)
Tie Rod-to-Rack	60-80	43.4-57.9
Wheel Lug Nuts	90-120	67-88

SPECIAL SERVICE TOOLS

Tool Number	Description
T78P-3504-D	Upper Pinion Bearing / Seal Replacer
T81P-3504-Y	Pinion Cover Centering Tool
T87C-3504-A	Rack Inner Seal Remover
T87C-3504-C	Pinion Seal Replacer / Torque Adapter
T81P-3504-K	Rack Piston Seal Sizer
T81P-3504-L	Piston Seal Replacer
D83P-3504-K	Rack Oil Seal Protector
T85M-3395-A	Tie Rod End Separator
T75L-3517-A2	Seal Installer

SECTION 13-51 Steering Pump, Power

VEHICLE APPLICATION

Capri.

DESCRIPTION

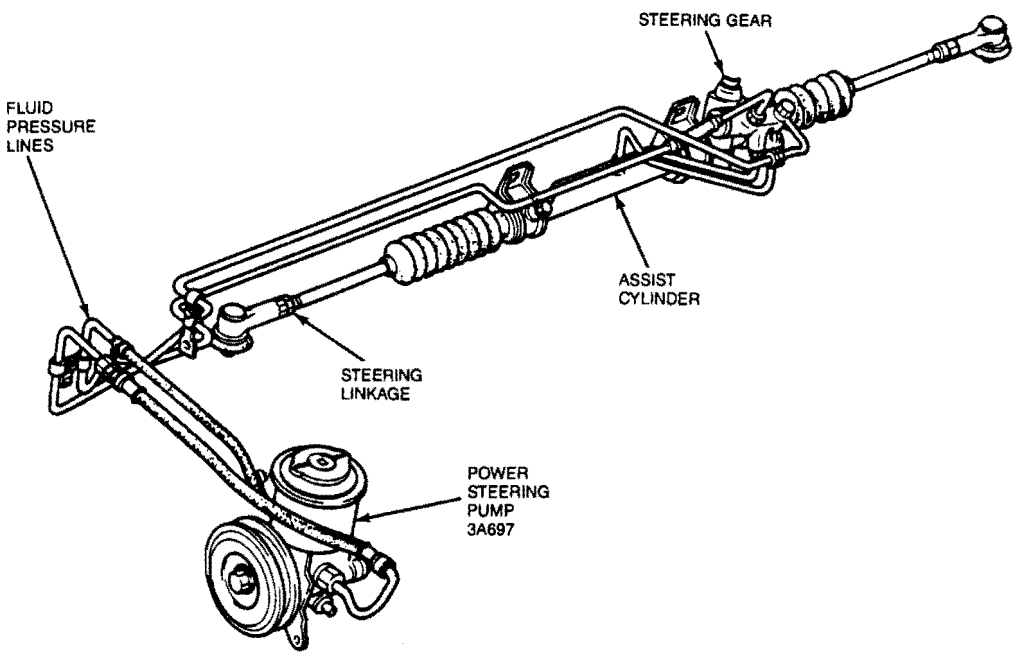
Power steering is a hydraulic-assisted system that greatly reduces the amount of effort required to turn the steering wheel. The system consists of a rack-and-pinion steering gear, a belt-driven pump and the necessary interconnecting hydraulic lines.

The power steering pump, which is driven by the engine crankshaft through a belt and pulleys, develops the hydraulic fluid flow necessary to operate the system. When the steering wheel is turned, the steering gear converts this hydraulic flow into mechanical motion. Fluid is drawn into the vane-type pump from the reservoir when the engine is running.

The fluid is pressurized by the power steering pump and forced into the steering gear. If pump pressure exceeds the limits of the system, a pressure regulator valve lifts and returns part of the fluid to the inlet side of the pump.

A pressure sensitive switch is located on the pump. It sends a signal to the engine idle speed solenoid to increase idle speed when pump pressure is too low for steering assist.

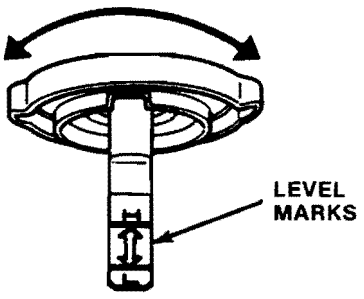
DESCRIPTION (Continued)



ADJUSTMENTS

Fluid Level Check

1. Fill the fluid reservoir to the "L" mark on the fill cap indicator rod with Motorcraft DEXRON ® II transmisssion fluid (ESW-M2C-138-CJ) or equivalent.
2. Run the engine until warm. Turn the steering wheel fully right and left about 10 times.
3. Shut the engine off with the wheels in the straight ahead position. Check the fluid level and fill to between the "L" and "H" marks on the dipstick.



Drive Belt Tension

Refer to Section 27-02 for adjustment procedures.

TESTING

Start-Up Procedure

After Power Steering Pump or Gear Overhaul

Before engine start-up, follow these steps to eliminate excessive steering system noise due to air trapped in the system during service:

1. Disconnect the coil wire.
2. Fill the pump reservoir to the specified level.
3. Crank the engine with the starter. Add fluid until the level remains constant.
4. While cranking the engine, rotate the steering wheel from stop-to-stop.

   CAUTION: Front wheels must be off the ground during stop-to-stop rotation of the steering wheel.
5. Check the fluid level. Add fluid if necessary.
6. Connect the coil wire.
7. Start the engine and allow it to run for several minutes.
8. Rotate the steering wheel from far left to far right several times.
9. Turn off the engine and check fluid level. Add fluid if necessary.

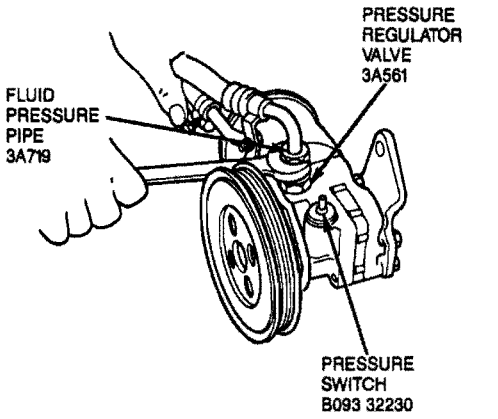
REMOVAL AND INSTALLATION

Pressure Regulator Valve

Control Valve

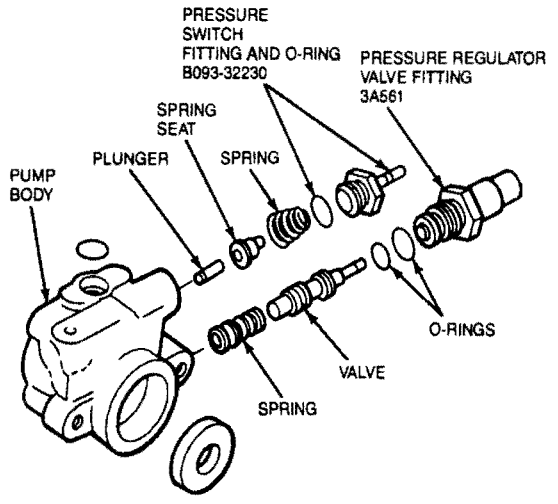
Removal

1. Remove RH radiator support and brace, if required.
2. Disconnect intercooler outlet hose at throttle inlet (if equipped), and position out of the way.
3. Remove the pressure hose from the pump fitting.
4. Remove the hose connector adapter from the pump.



G5443-A

5. Remove the valve, spring and O-rings as necessary from the pump housing.
6. Clean and inspect all parts for wear, corrosion and damage.



G5844-A

Installation

1. Install the spring, valve and two O-rings on the fitting (hose connector adapter).
2. Screw the adapter into the pump body and tighten securely.
3. Install the outlet pressure hose and tighten.
4. Connect intercooler hose (if equipped).
5. Install RH radiator support and brace, if removed.

Pressure Switch

Removal

1. Remove RH radiator support and brace, if required.
2. Disconnect intercooler outlet hose at throttle inlet (if equipped), and position out of the way.
3. Remove the wire connector from the pressure switch.
4. Remove the pressure switch fitting from the pump body.
5. Remove the O-ring from the fitting.
6. Remove the spring and spring seat.
7. Remove the plunger rod from the pump body.
8. Inspect all parts for wear, corrosion or damage.

Installation

1. Install the plunger rod into the pump body with the rubber tip entering the body hole.
2. Install the spring seat over the plunger rod.
3. Install the spring onto the spring seat with the large end of the spring facing out.
4. Install a new O-ring onto the switch fitting and install the fitting.
5. Install the switch wire onto the terminal.
6. Connect intercooler hose (if equipped).
7. Install RH radiator support and brace, if removed.

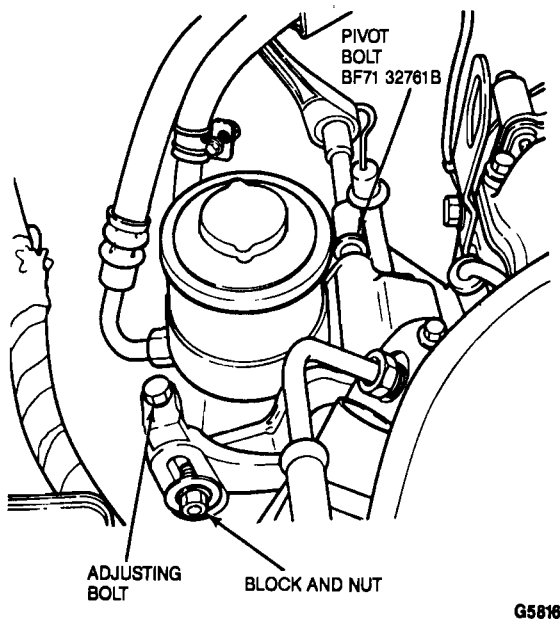
Pump Assembly

Removal

1. Remove RH radiator support and brace.
2. Remove the pump drive belt. Refer to Section 27-02.
3. Disconnect intercooler outlet hose at throttle inlet (if equipped) and position out of the way.
4. Remove the ground wire from the engine lifting eye.

REMOVAL AND INSTALLATION (Continued)

5. Position a drain pan below the power steering pump.
6. Remove the inlet and return hoses from the pump and plug.
7. Remove the wire from the pressure switch.
8. Remove the adjusting screw, nut and block from the bracket.



9. Remove the pivot bolt.
10. Position pump below pump bracket in engine compartment. Remove pump bracket retaining nut, bolts and pump bracket.
11. Remove the pump.

Installation

1. Position power steering pump in engine compartment below pump bracket mounting stud.
2. Install power steering pump bracket. Tighten retaining bolts and nut to 37-52 N·m (27-38 lb-ft).
3. Install the pump on pump bracket.
4. Install the pivot bolt finger-tight.
5. Install the adjusting screw block, nut and screw finger-tight.
6. Install the drive belt and tighten bolts to specification. Refer to Section 27-02.
7. Install the pressure switch wire.
8. Install the pressure and return hoses.
9. Install the ground wire onto the engine lifting eye bracket.
10. Connect intercooler outlet hose (if equipped).
11. Install RH radiator support and brace.
12. Fill the system with fluid as outlined. Check for leaks and proper operation.

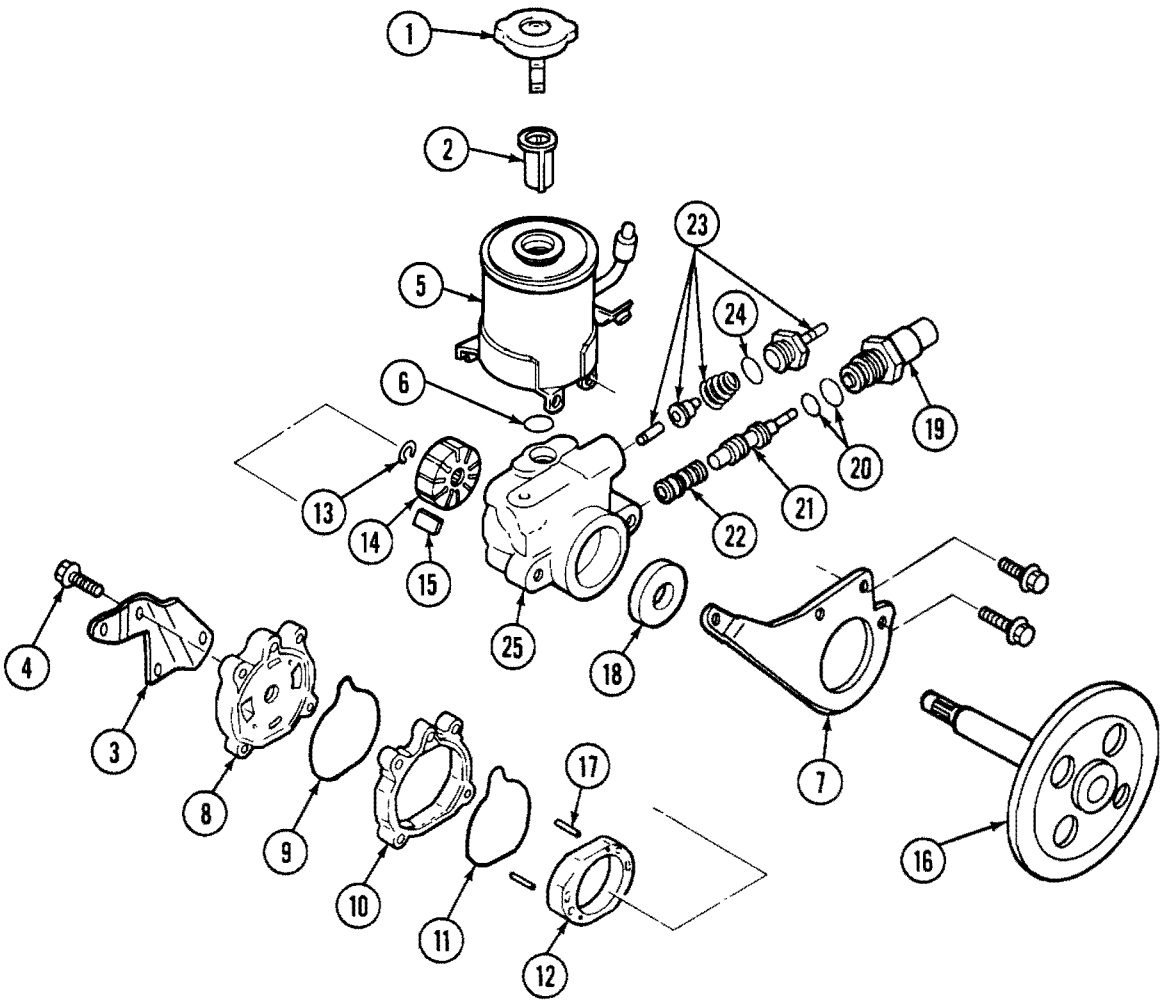
DISASSEMBLY AND ASSEMBLY

Power Steering Pump

Disassembly

1. Remove the cap and strainer and drain the pump.
2. Remove the rear bracket, retaining bolts and brackets.
3. Remove oil reservoir and O-ring.
4. Remove the rear pump body and O-ring.
5. Remove the pump center body and O-ring.
6. Remove dowel pins from pump body, if necessary.
7. Remove cam ring.
8. Remove pump shaft snap ring.
9. Remove the vanes from the rotor.
10. Remove the rotor from the shaft. Note the position of the rotor on the shaft.
11. Remove the pump shaft from the front of the pump.
12. Remove the front bracket retaining bolts and bracket.
13. Remove the shaft oil seal with a pry bar or similar tool. Do not damage the seal bore.
14. If necessary remove the pressure regulator valve as outlined.
15. If necessary remove the pressure switch as outlined.

DISASSEMBLY AND ASSEMBLY (Continued)



ITEM	DESCRIPTION	PART NUMBER	ITEM	DESCRIPTION	PART NUMBER
1.	OIL LEVEL GAUGE	3A006	14.	ROTOR	
2.	OIL STRAINER	3E550	15.	VANE	
3.	REAR BRACKET	3C511	16.	SHAFT AND PULLEY ASSY	
4.	BOLT		17.	DOWEL PIN	
5.	OIL TANK		18.	OIL SEAL	
6.	O-RING		19.	CONNECTOR	3A561
7.	FRONT BRACKET	3C511	20.	O-RINGS	
8.	PUMP BODY REAR		21.	CONTROL VALVE	
9.	O-RING		22.	SPRING	
10.	PUMP BODY CENTER		23.	OIL PRESSURE SWITCH	B093 32230
11.	O-RING		24.	O-RING	
12.	CAM RING		25.	PUMP BODY	
13.	SNAP RING				

G5444-A

DISASSEMBLY AND ASSEMBLY (Continued)

Cleaning and Inspection

Wash all parts except seals in a chlorinated solvent, and dry with compressed air or allow to drip dry. Do not use cloth for drying. To determine when to replace power steering pump components, follow these guidelines. Some components must be replaced regardless of condition.

1. Re-use rotor and vanes only if there are no visible signs of wear. Inspect vanes individually and check rotor faces and outer periphery for scored or chipped surfaces. If wear or burring has occurred on vanes or rotor, replace the assembly. If vanes have become dislodged they must be inserted in the rotor with the rounded end contacting the cam.
2. Check the clearance between vane and rotor groove. The clearance should be between 0.01 and 0.06mm (0.0004 and 0.0024 inch).
3. Re-use rotor shaft if thrust faces, bushing diameter and shaft seal diameter are not excessively worn or scored.
4. If bushing is scored or excessively worn, or O-ring grooves are damaged, replace the housing. The clearance between the bushing and shafts should be between 0.03 and 0.1mm (0.001 and 0.004 inch).

Assembly

1. If removed, install the pressure switch as outlined.
2. If removed, install the pressure regulator valve as outlined.
3. Install a new shaft oil seal with a suitable arbor or socket. Grease the seal lip with lithium base grease.
4. Install the dowel pins in the pump body, if removed.
5. Install front bracket and retaining bolts.
6. Install the pump shaft from the front of the body.
7. Install rotor onto rear of the shaft in the same position as removed.
8. Install the pump shaft snap ring. Tap the shaft on the rear end to seat the snap ring onto the rotor splined hole below the rotor rear face.
9. Install the vanes in the rotor with the rounded edges facing out.
10. Install the cam ring onto the dowel pins.
11. Install the center pump body and front O-ring.
12. Install the rear pump body and O-ring.
13. Install the reservoir and O-ring onto the pump body.
14. Install the short bolt into the hole used by the tank bracket and tighten.
15. Install the rear mounting bracket and tighten bolts.
16. Rotate the pulley to check for free operation. If pump does not rotate freely, disassemble and check for the cause. Check shaft to rotor slip spline beyond the rotor rear face.
17. Perform the operations described under Fluid Level Check / or Start-Up Procedure.

CLEANING AND INSPECTION

Flushing Power Steering System

If the power steering pump has been replaced or overhauled, it is recommended that the power steering gear and lines be flushed before the pump is put into service. To remove possible contamination from the gear and lines, perform the following procedure:

1. Remove and flush the power steering pressure hose. After flushing, install the hose.
2. Place the fluid return line from the gear in a container, and plug the reservoir return line fitting at the reservoir.
3. Fill the reservoir with Motorcraft DEXRON ® II automatic transmission fluid (ESW-M2C-138-CJ), or equivalent.
4. Disconnect the coil wire and raise the front wheels off the ground.
5. Add approximately 2 liters (2 quarts) of fluid while cranking the engine with the starter and turning the steering wheel from left to right.
6. When all the fluid has been added, stop cranking the engine.
7. Remove the plug from the reservoir return fitting and attach the line to the reservoir.
8. Fill the pump reservoir to the specified level as outlined.
9. Crank the engine with the starter, and add fluid until the level remains constant.
10. While cranking the engine, rotate the steering wheel from stop-to-stop.

    CAUTION: Front wheels must be off the ground during stop-to-stop rotation of the steering wheel.
11. Check the fluid level, and add fluid if necessary.
12. Connect the coil wire.
13. Start the engine, and allow it to run for several minutes.
14. Rotate the steering wheel from far left to far right several times.
15. Turn off the engine, and check the fluid level. Add fluid if necessary.

SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	Nm	Lb-Ft
Power Steering Pump Bracket—Nut	37-52	27-38
Power Steering Pump Bracket—Bolt	37-52	27-38

SECTION 13-55 Steering, Power—Hoses

VEHICLE APPLICATION

Capri.

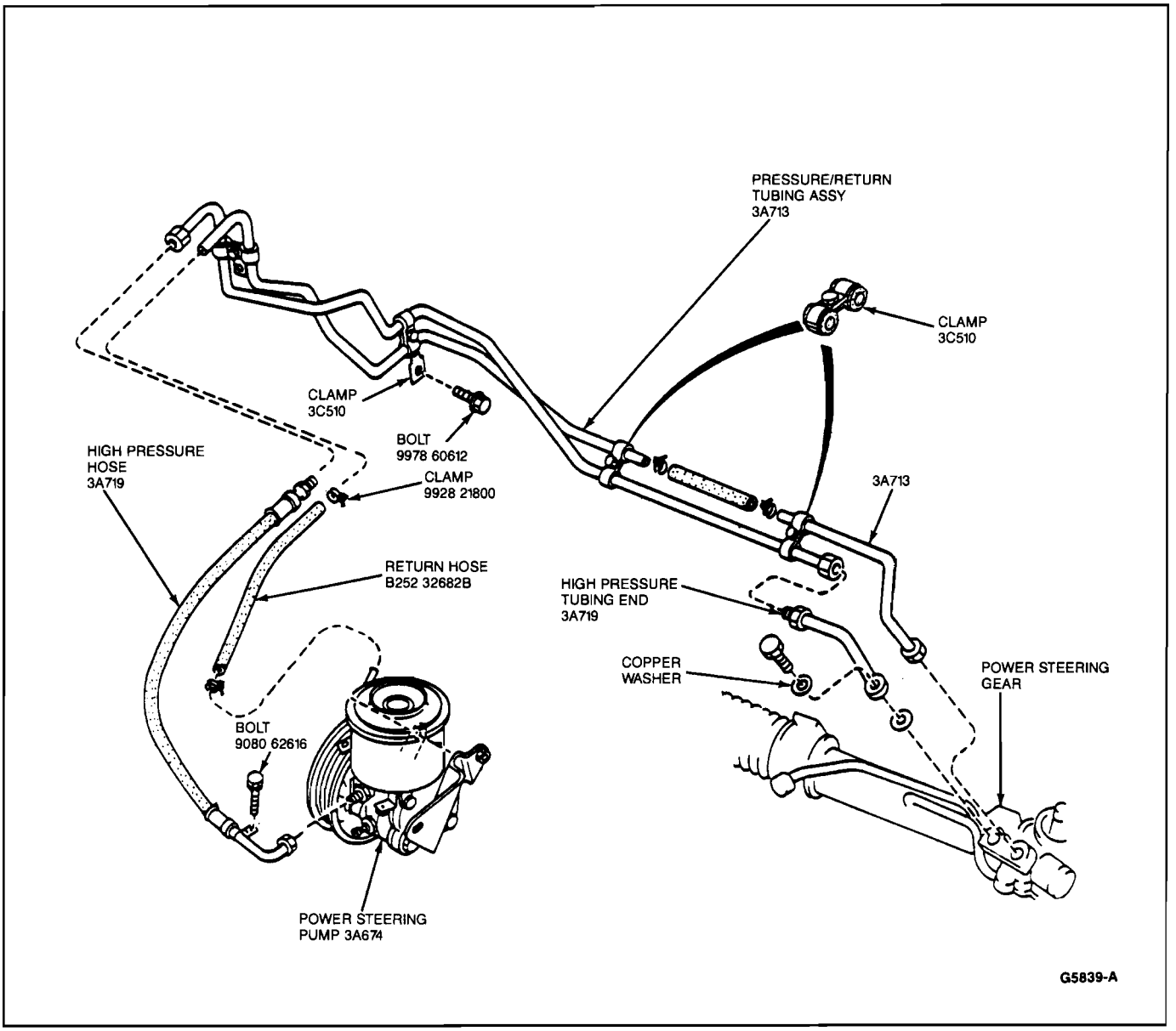
DESCRIPTION

The power steering system is equipped with two hoses; a pressure hose and a return hose. Both hoses are used in combination with tubing to connect the power steering pump to the power steering gear. The hoses and tubing are routed along the dash panel and secured with clamps to prevent noise or damage from vibration.

CAUTION: The following steps should be taken to prevent system contamination or damage:

1. Always plug hoses and fittings as they are disconected. This will prevent contaminants from entering the system.
2. Always use correct power steering fluid. Refer to Section 13-01.
3. Always maintain the fluid at the proper level. Refer to Section 13-01.
4. Do not hold the steering wheel on full lock for more than 10 seconds while the engine is running. If the steering wheel is on full lock in either direction, fluid is not circulating in the steering gear, only in the pump. This will cause overheating of the fluid and possible system damage.

DESCRIPTION (Continued)



REMOVAL AND INSTALLATION

High Pressure Hose

Removal

1. Position a drain pan below ends of hose to catch fluid.
2. Using two tubing wrenches, disconnect high pressure hose from tubing. Allow fluid to drain.
3. Remove bolt from high pressure hose clamp.
4. Remove high pressure hose from power steering pump.

Installation

1. Connect high pressure hose to power steering pump. Tighten securely.
2. Install bolt to locate and secure high pressure hose.
3. Using two tubing wrenches, connect high pressure hose to tubing. Tighten securely.
4. Disconnect ignition coil wire.
5. Fill reservoir and raise front wheels off floor.
6. Crank engine with starter, and add fluid until level remains constant.
7. While cranking the engine, rotate steering wheels from lock-to-lock. Front wheels must be off the floor during lock-to-lock rotation of steering wheel. Check the fluid level and add fluid if necessary.
8. Attach ignition coil wire and lower front wheels.

REMOVAL AND INSTALLATION (Continued)

9. Start the engine and allow it to run for several minutes.
10. Rotate steering wheel from lock-to-lock.
11. Turn engine OFF, check and add fluid if necessary.

Return Hose

Removal

1. Position a drain pan below ends of hose to catch fluid.
2. Remove clamps from return hose and remove hose.

Installation

1. Install hose with two clamps.
2. Disconnect ignition coil wire.
3. Fill reservoir and raise front wheels off floor.
4. Crank engine with starter and add fluid until level remains constant.
5. While cranking the engine, rotate steering wheel from lock-to-lock. Front wheels must be off the floor during lock-to-lock rotation of steering wheel. Check the fluid level and add fluid if necessary.
6. Attach ignition coil wire and lower front wheels.
7. Start the engine and allow it to run for several minutes.
8. Rotate steering wheel from lock-to-lock.
9. Turn engine OFF, check and add fluid if necessary.

Pressure/Return Tubing

Removal

1. Position the vehicle on hoist.
2. Position a drain pan below ends of tubing to catch fluid.
3. Disconnect the pressure and return hoses from the tubing.
4. Remove battery if necessary. Refer to Section 31-02.
5. Using a 17mm crowfoot line wrench, loosen and remove the return line from the power steering gear.
6. Using a 14mm socket, loosen and remove the banjo bolt from pressure line at the power steering gear. Remove and discard two copper washers.
7. Remove pressure/return tubing as an assembly.
8. Remove clamps to separate pressure/return tubing.
9. If necessary, remove high pressure tubing end from tubing.

Installation

1. If removed, install high pressure end onto tubing.
2. Position pressure/return tubing together and install clamps.
3. Install pressure/return tubing assembly onto dash panel.
4. Connect high pressure line to steering gear with banjo bolt and two new copper washers. Tighten securely.
5. Connect return line to steering gear. Tighten securely.
6. Install battery, if removed. Refer to Section 31-02.
7. Connect high pressure and return hoses to tubing.
8. Disconnect ignition coil wire.
9. Fill reservoir and raise front wheels off floor.
10. Crank engine with starter, and add fluid until level remains constant.
11. While cranking the engine, rotate steering wheel from lock-to-lock. Front wheels must be off the floor during lock-to-lock rotation of steering wheel. Check and add fluid if necessary.
12. Attach ignition coil wire and lower front wheels.
13. Start the engine and allow it to run for several minutes.
14. Rotate steering wheel from lock-to-lock.
15. Turn engine OFF, check and add fluid if necessary.