STEERING

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POWER STEERING PUMP

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SERVICE PROCEDURES

POWER STEERING SYSTEM FLUID LEVEL CHECK

WARNING: FLUID LEVEL SHOULD BE CHECKED WITH ENGINE OFF TO PREVENT INJURY FROM MOVING PARTS. DO NOT USE AUTOMATIC TRANSMISSION FLUID IN THE POWER STEERING SYSTEM. DO NOT OVERFILL THE POWER STEERING SYSTEM.

Wipe reservoir filler cap free of dirt (Fig. 1). Then check fluid level. The dipstick should indicate COLD when fluid is at normal ambient temperature, approximately 21°C to 27°C (70°F to 80°F). In all pumps add fluid as necessary, use only **Mopar Power Steering Fluid, or equivalent. DO NOT USE ANY TYPE OF AUTOMATIC TRANSMISSION FLUID.**

REMOVAL AND INSTALLATION

POWER STEERING PRESSURE SWITCH

A power steering fluid pressure switch is used to improve the vehicle's idle quality. The power steering fluid pressure switch improves vehicle idle quality, by controlling engine idle speed when required.

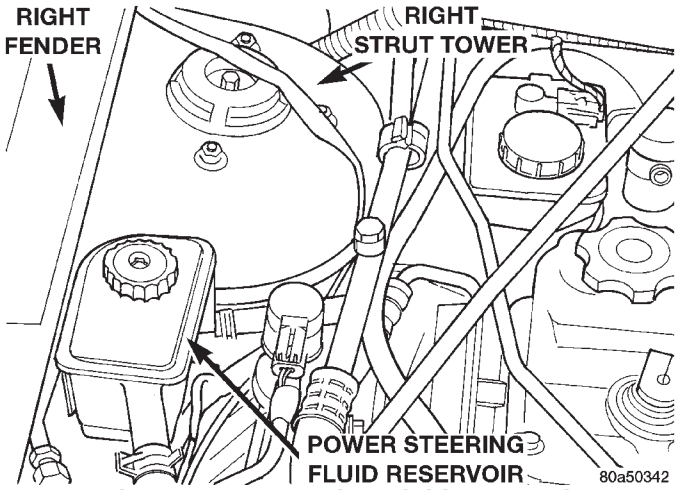


Fig. 1 Power Steering Fluid Reservoir

The pressure switch functions by signaling the power train control module, that the power steering system is putting additional load on the engine. This type of condition exists when turning the front tires of the vehicle when the vehicle is stationary and the engine is at idle speed. When this condition is sensed by the power train control module, through a signal from the power steering pressure switch, engine idle speed is increased. This increase in engine idle speed compensates for the additional load, thus maintaining the require engine idle speed and idle quality.

REMOVAL AND INSTALLATION (Continued)

The pressure switch (Fig. 2) is mounted directly to the power steering gear on vehicle's requiring its usage.

REMOVE

CAUTION: When removing and installing the power steering pressure switch, the use of a 7/8 inch deep well socket is required. The deep well socket will prevent damage to the plastic, electrical connector area, of the power steering pressure switch.

(1) Disconnect negative battery cable from the negative post of the battery. Be sure cable is isolated from negative post on battery.
(2) Raise vehicle.
(3) Locate power steering pressure switch (Fig. 2) on back of power steering gear.

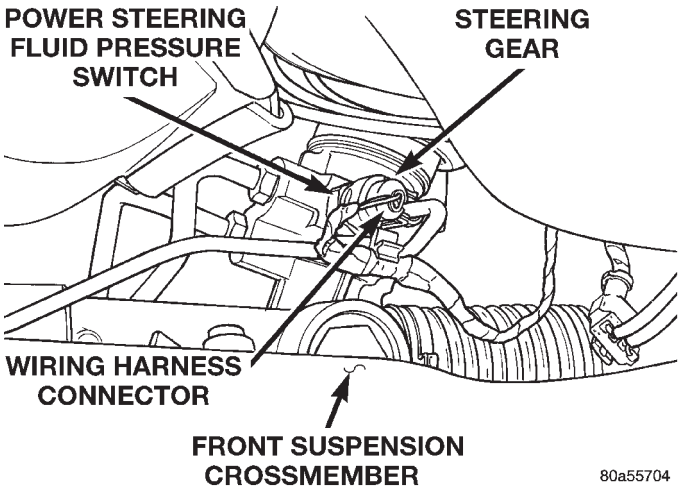


Fig. 2 Power Steering Pressure Switch Location On Steering Gear

(4) Remove wiring harness connector (Fig. 2), from power steering pressure switch.
(5) Remove power steering pressure switch, from power steering gear.

INSTALL

CAUTION: When tightening the power steering pressure switch after installation in steering gear, do not exceed the torque specification shown in step 1 below. Over-tightening may result in stripping the threads out of the pressure switch port on the steering gear.

(1) Install power steering pressure switch into power steering gear by hand until fully seated. Then torque power steering pressure switch to 8 N·m (70 in. lbs.).
(2) Install vehicle wiring harness connector (Fig. 2) onto power steering pressure switch. Be sure latch on wiring harness connector is fully engaged with locking tab on power steering pressure switch.

CAUTION: Do not use automatic transmission fluid in power steering system. Only use Mopar®, Power Steering Fluid, or equivalent.

(3) Fill power steering reservoir to correct fluid level.
(4) Connect negative cable back on negative post of battery.
(5) Start engine and turn steering wheel several times from stop to stop to bleed air from fluid in system. Stop engine, check fluid level, and inspect system for leaks. See Checking Fluid Level.

POWER STEERING FLUID PRESSURE HOSE

CAUTION: Cap all open ends of hoses, power steering pump fittings and steering gear ports to prevent entry of foreign material into the components.

WARNING: POWER STEERING OIL, ENGINE PARTS AND EXHAUST SYSTEM MAY BE EXTREMELY HOT IF ENGINE HAS BEEN RUNNING. DO NOT START ENGINE WITH ANY LOOSE OR DISCONNECTED HOSES. DO NOT ALLOW HOSES TO TOUCH HOT EXHAUST MANIFOLD OR CATALYST.

For part reference and part location on the vehicle being serviced, refer to the following figure numbers. These figures show the hose bracket locations, hose routings and fitting locations. Use these figure numbers when referring to the removal or installation procedures for the power steering hoses listed below.

REMOVE

(1) Raise vehicle.
(2) Disconnect power steering pressure hose (Fig. 3) at power steering gear. Drain power steering fluid from power steering pump and hose through open end of hose.

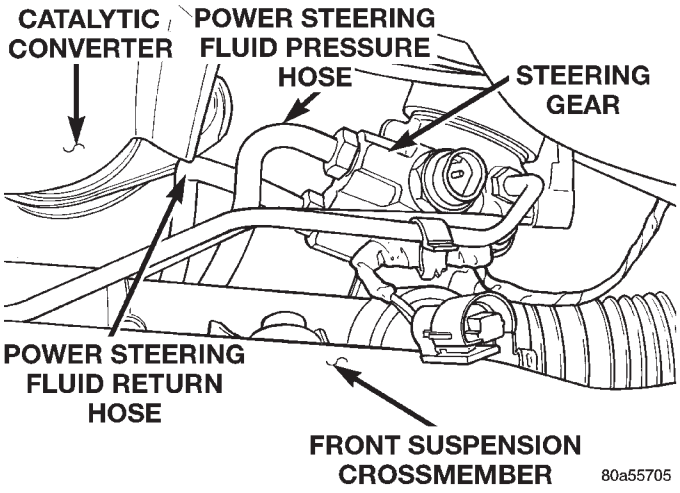


Fig. 3 Power Steering Pressure Hose At Steering Gear

REMOVAL AND INSTALLATION (Continued)

(3) Remove power steering pressure hose from routing clip on generator shield (Fig. 4).

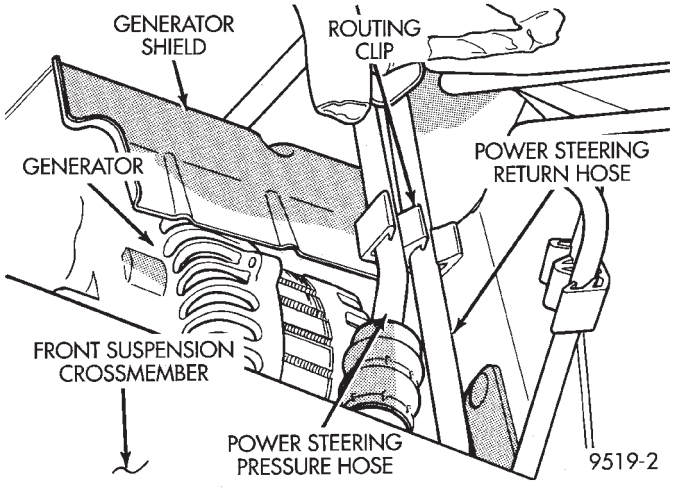


Fig. 4 Power Steering Pressure Hose Routing

(4) Lower vehicle.

(5) Remove bolt, attaching power steering pressure hose routing clip, to generator shield (Fig. 5).

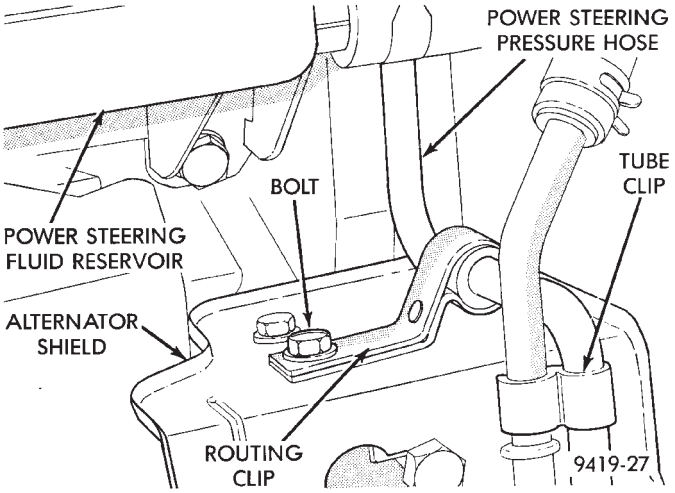


Fig. 5 Power Steering Hose Attachment To Generator Shield

(6) Remove Banjo bolt, and power steering pressure hose from pressure fitting on power steering pump (Fig. 6).

(7) Power steering fluid pressure hose is removed from the vehicle from the top of the engine compartment.

(8) Discard all used O-rings located at ends of power steering pressure hose and Banjo bolt.

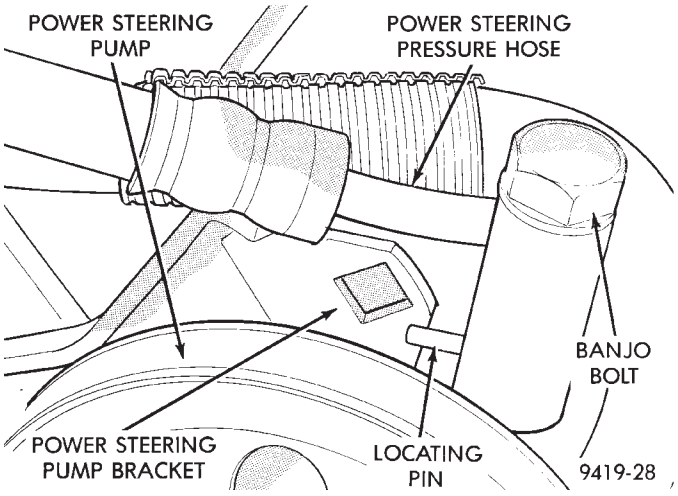


Fig. 6 Pressure Hose Attachment To Power Steering Pump

INSTALL

(1) Install power steering pressure hose in vehicle from top of engine compartment.

(2) Using a lint free towel, wipe clean all open power steering hose ends, and the power steering pump and steering gear ports.

(3) Install new O-ring on end of power steering pressure hose banjo fitting (Fig. 7).

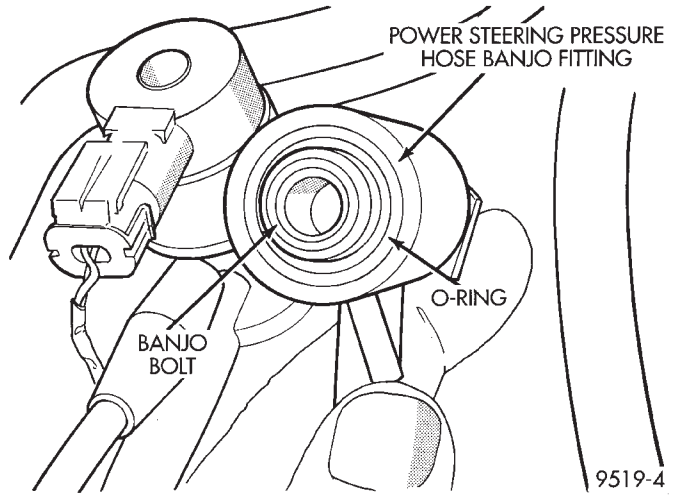


Fig. 7 O-ring Installed On Power Steering Hose Banjo Fitting

REMOVAL AND INSTALLATION (Continued)

(4) Install a new O-ring (Fig. 8) on power steering pressure hose banjo fitting bolt.

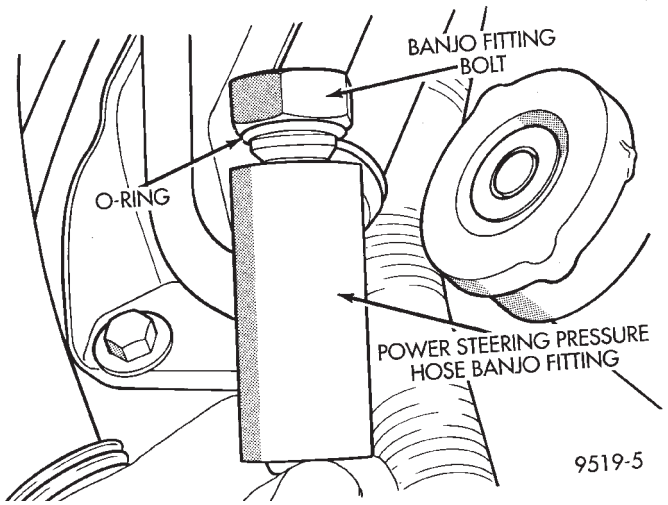


Fig. 8 O-ring Installed On Banjo Fitting Bolt

(5) Lubricate both O-rings using fresh clean power steering fluid.

(6) Install banjo bolt into the power steering pressure hose banjo fitting (Fig. 8).

(7) Attach power steering pressure hose to outlet fitting on power steering pump (Fig. 6). **Do not tighten or torque pressure fitting Banjo bolt at this time.**

(8) Correctly route power steering pressure hose avoiding tight bends or kinking of the hose. Install power steering pressure hose to generator shield routing clip attaching screw (Fig. 5) **but do not tighten at this time.**

(9) Raise vehicle.

CAUTION: Hoses must remain away from exhaust system, vehicle components and unfriendly surfaces causing possible damage to power steering hoses.

(10) Route power steering pressure hose to pressure port on power steering gear. Install power steering pressure hose, on steering gear and loosely install tube nut into steering gear (Fig. 3). **Tighten and torque tube nut after routing bracket is installed, correctly positioning hoses in vehicle.**

(11) Install power steering pressure hose in routing clip on generator shield (Fig. 4).

(12) Torque power steering pressure hose to steering gear tube nut to 34 N·m (25 ft. lbs.).

(13) Lower Vehicle.

(14) Position locating pin on power steering pressure hose banjo fitting so it is against power steering pump mounting bracket (Fig. 6). While holding locating pin against power steering pump bracket, torque pump end Banjo bolt to 34 N·m (25 ft. lbs.).

(15) Securely tighten bolt attaching power steering pressure hose bracket to generator shield.

(16) Start the engine and let run for a few seconds. Then turn the engine off.

(17) Add fluid if necessary. Repeat the above procedure until the fluid level remains constant after running the engine.

(18) Raise front wheels of vehicle off the ground.

(19) Start the engine. Slowly turn the steering wheel right and left, lightly contacting the wheel stops. Then turn the engine off.

(20) Add power steering fluid if necessary.

(21) Lower the vehicle and turn the steering wheel slowly from lock to lock.

(22) Stop the engine. Check the fluid level and refill as required.

(23) If the fluid is extremely foamy, allow the vehicle to stand a few minutes and repeat the above procedure.

(24) After hose is installed, check for leaks at all hose connections.

POWER STEERING FLUID RETURN HOSE

CAUTION: Cap all open ends of hoses, power steering pump fittings and steering gear ports to prevent entry of foreign material into the components.

WARNING: POWER STEERING OIL, ENGINE PARTS AND EXHAUST SYSTEM MAY BE EXTREMELY HOT IF ENGINE HAS BEEN RUNNING. DO NOT START ENGINE WITH ANY LOOSE OR DISCONNECTED HOSES. DO NOT ALLOW HOSES TO TOUCH HOT EXHAUST MANIFOLD OR CATALYST.

REMOVE

(1) Remove fill cap from power steering fluid reservoir.

(2) Raise vehicle.

(3) Remove hose clamp, attaching return hose to steel tube at power steering gear (Fig. 9). Let power steering fluid, drain from return hose and power steering fluid reservoir, until reservoir is empty.

(4) Remove power steering return hose from routing clip on generator shield (Fig. 10).

(5) Lower vehicle.

CAUTION: Care must be used when removing power steering fluid return hose from power steering fluid reservoir. If excessive force is used when trying to remove hose from nipple on power steering fluid reservoir, nipple can break off the reservoir.

REMOVAL AND INSTALLATION (Continued)

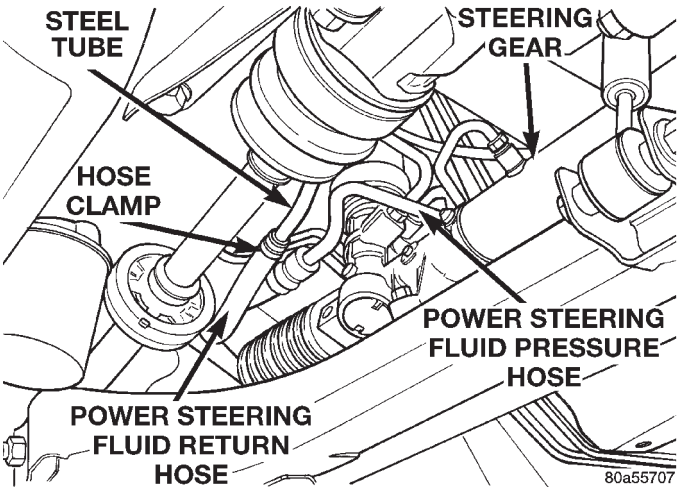


Fig. 9 Power Steering Return Hose At Steering Gear

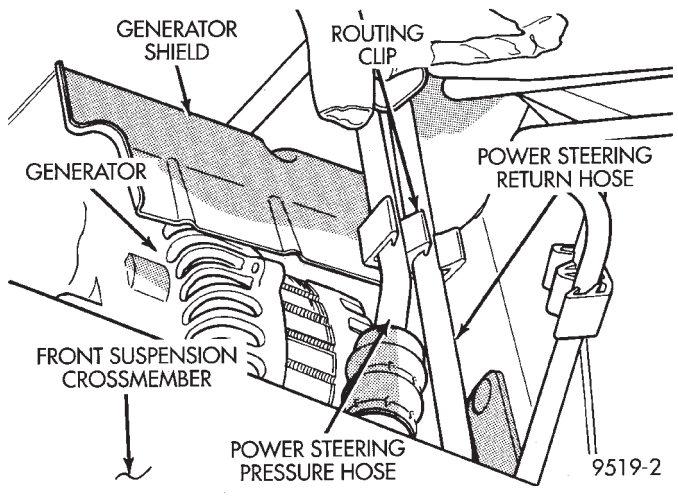


Fig. 10 Power Steering Hose Routing Clip At Generator Shield

(6) Remove hose clamp, attaching power steering return hose to power steering fluid reservoir (Fig. 11). Then remove power steering return hose from power steering fluid reservoir.

(7) Remove the power steering return hose from the vehicle. The power steering return hose is removed from the top of the engine compartment.

INSTALL

(1) Install power steering return hose on vehicle. Power steering return hose is installed from the top of the vehicles engine compartment.

CAUTION: Care must be used when installing power steering fluid return hose on power steering fluid reservoir. If excessive force is used when trying to install hose on nipple of power steering fluid reservoir, nipple can be broken off the reservoir.

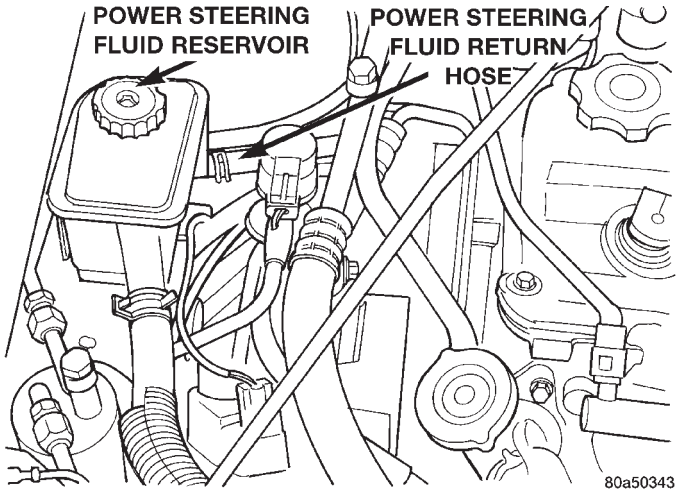


Fig. 11 Power Steering Return Hose At Reservoir

(2) Install power steering return hose on power steering fluid reservoir fitting. Install hose clamp on power steering return hose at power steering fluid reservoir (Fig. 11). **Be sure hose clamp is installed on return hose past upset bead on power steering fluid reservoir.**

(3) Raise vehicle.

(4) Install power steering return hose in routing clip on rear of generator shield (Fig. 10).

(5) Install power steering return hose on steel tube at power steering gear (Fig. 9). Install hose clamp on power steering return hose at power steering gear (Fig. 9). **Be sure hose clamp is installed on return hose past upset bead on steel tube at power gear.**

(6) Lower vehicle.

(7) Add power steering fluid to the reservoir until the fluid level is at the full cold mark on the dipstick.

(8) Start the engine and let run for a few seconds. Then turn the engine off.

(9) Add fluid if necessary. Repeat the above procedure until the fluid level remains constant after running the engine.

(10) Raise front wheels of vehicle off the ground.

(11) Start the engine. Slowly turn the steering wheel right and left, until lightly contacting the wheel stops several times. Then turn the engine off.

(12) Add power steering fluid if necessary.

(13) Lower the vehicle and turn the steering wheel slowly from lock to lock.

(14) Stop the engine. Check the fluid level and refill as required.

(15) If the fluid is extremely foamy, allow the vehicle to stand a few minutes and repeat the above procedure.

(16) Check for leaks at all hose connections.

REMOVAL AND INSTALLATION (Continued)

POWER STEERING FLUID SUPPLY HOSE RESERVOIR TO POWER STEERING PUMP

WARNING: POWER STEERING OIL, ENGINE PARTS AND EXHAUST SYSTEM MAY BE EXTREMELY HOT IF ENGINE HAS BEEN RUNNING. DO NOT START ENGINE WITH ANY LOOSE OR DISCONNECTED HOSES. DO NOT ALLOW HOSES TO TOUCH HOT EXHAUST MANIFOLD OR CATALYST.

REMOVE

CAUTION: Care must be used when removing the power steering fluid supply hose from power steering fluid reservoir. If excessive force is used when trying to remove hose from nipple on power steering fluid reservoir, nipple can break off of the reservoir.

(1) Remove fill cap from power steering fluid reservoir.

(2) Raise vehicle.

(3) Remove hose clamp, attaching return hose to steel tube at power steering gear (Fig. 12). Let power steering fluid, drain from return hose and power steering fluid reservoir, until reservoir is empty.

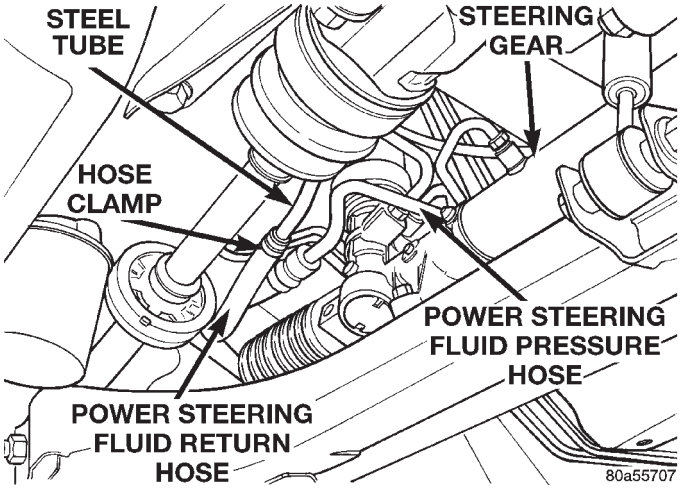


Fig. 12 Power Steering Return Hose At Steering Gear

(4) Install power steering return hose on steel tube at power steering gear (Fig. 12). Install hose clamp on power steering return hose at power steering gear (Fig. 12). **Be sure hose clamp is installed on return hose past upset bead on steel tube at power gear.**

(5) Lower vehicle.

(6) Remove hose clamp, attaching power steering fluid supply hose to power steering fluid reservoir (Fig. 13). Then remove power steering fluid supply hose from power steering fluid reservoir.

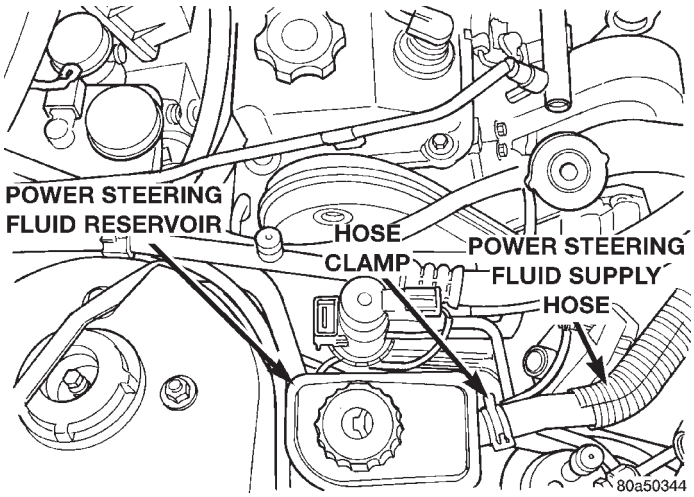


Fig. 13 Power Steering Fluid Supply Hose At Reservoir

(7) Remove hose clamp, attaching power steering fluid supply hose to power steering pump (Fig. 14). Then remove power steering fluid supply hose from power steering pump fitting.

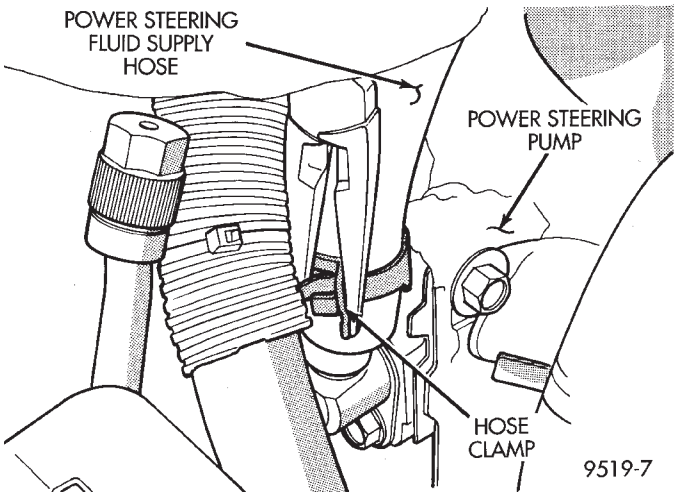


Fig. 14 Power Steering Fluid Supply Hose At Power Steering Pump

(8) Remove power steering fluid supply hose from vehicle.

INSTALL

(1) Install power steering fluid supply hose on power steering pump fitting. Install hose clamp on power steering fluid supply hose at power steering pump fitting (Fig. 14). **Be sure hose clamp is installed on power steering fluid supply hose past upset bead on power steering pump fitting.**

(2) Correctly route the power steering fluid supply hose from the power steering pump to power steering fluid reservoir.

REMOVAL AND INSTALLATION (Continued)

CAUTION: Care must be used when installing power steering fluid supply hose on power steering fluid reservoir. If excessive force is used when trying to install hose on nipple of power steering fluid reservoir, nipple can be broken off the reservoir.

(3) Install the power steering fluid supply hose on power steering fluid reservoir fitting. Install hose clamp on power steering fluid supply hose at power steering fluid reservoir (Fig. 13). **Be sure hose clamp is installed on return hose past upset bead on power steering fluid reservoir.**

(4) Add power steering fluid to the reservoir until the fluid level is at the "Full Cold" mark on the dipstick.

(5) Start the engine and let run for a few seconds. Then turn the engine off.

(6) If necessary, add power steering fluid to the reservoir. Repeat the above procedure until the fluid level in the reservoir remains constant after running the engine.

(7) Raise front wheels of vehicle off the ground.

(8) Start the engine. Slowly turn the steering wheel right and left several times, lightly contacting the wheel stops. Then turn the engine off.

(9) If necessary, add power steering fluid to the reservoir.

(10) Lower the vehicle and turn the steering wheel one time, slowly, from lock to lock.

(11) Stop the engine. Check the fluid level in the reservoir and refill as required.

(12) If the fluid is extremely foamy, allow the vehicle to stand a few minutes and repeat the above procedure.

(13) Check all hose connections for leaks.

POWER STEERING PUMP

WARNING: POWER STEERING OIL, ENGINE COMPONENTS AND EXHAUST SYSTEM MAY BE EXTREMELY HOT IF ENGINE HAS BEEN RUNNING. DO NOT START ENGINE WITH ANY LOOSE OR DISCONNECTED HOSES, OR ALLOW HOSES TO TOUCH HOT EXHAUST MANIFOLD OR CATALYST.

The front mounting bracket for the power steering pump must be removed with the power steering pump and then removed from the power steering pump after removing the pulley.

REMOVE

(1) Remove battery cable from (-) negative post on battery.

(2) Remove fill cap from power steering fluid reservoir.

(3) Raise vehicle.

(4) Remove hose clamp, attaching power steering fluid return hose to steel tube at power steering gear (Fig. 15). Let power steering fluid, drain from power steering fluid reservoir, until reservoir is empty.

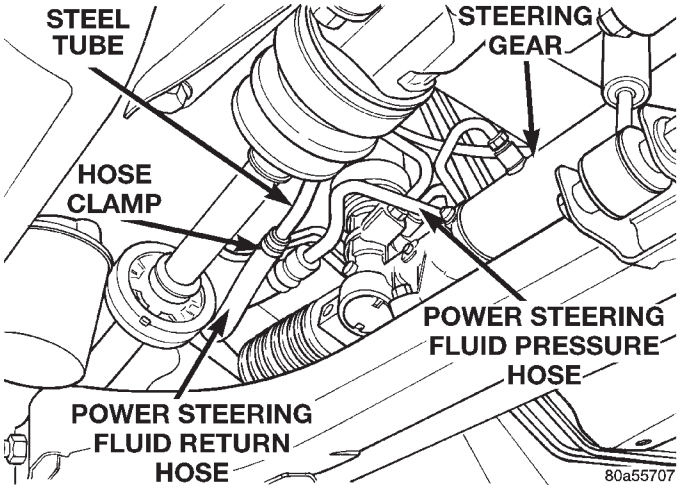


Fig. 15 Power Steering Return Hose At Steering Gear

(5) Install power steering return hose on steel tube at power steering gear (Fig. 15). Install hose clamp on power steering return hose at power steering gear (Fig. 15). **Be sure hose clamp is installed on return hose past the upset bead on steel tube.**

(6) Lower vehicle.

(7) Remove Banjo Bolt and power steering fluid pressure hose from power steering pump (Fig. 16).

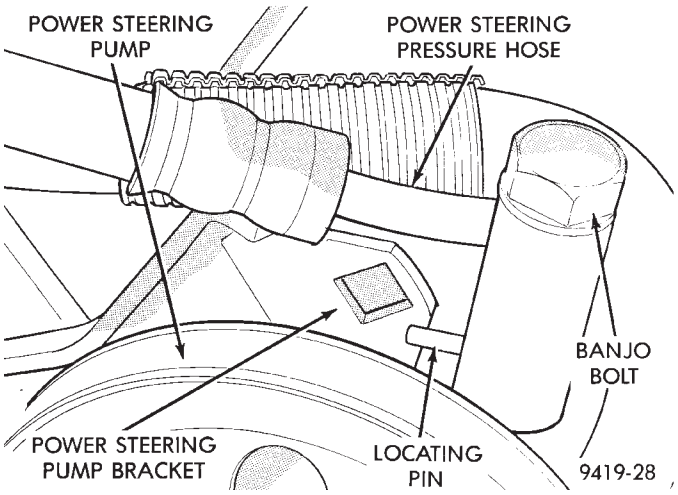


Fig. 16 Power Steering Hose Attachment To Power Steering Pump

(8) Discard the used O-rings on the power steering pressure hose Banjo fitting and Banjo bolt.

REMOVAL AND INSTALLATION (Continued)

(9) Remove clamp attaching the power steering fluid supply hose to the suction fitting on the power steering pump (Fig. 17). Remove the power steering fluid supply hose from the power steering pump fitting.

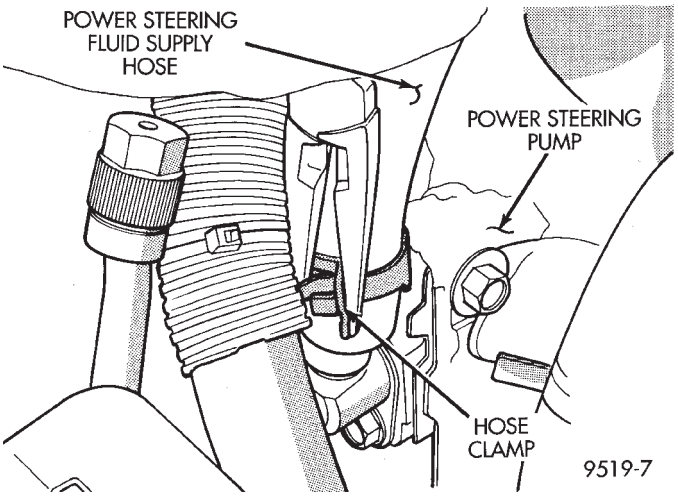


Fig. 17 Power Steering Fluid Supply Hose At Power Steering Pump

(10) Remove the 2 bolts mounting the back of the power steering pump to the cast bracket (Fig. 18).

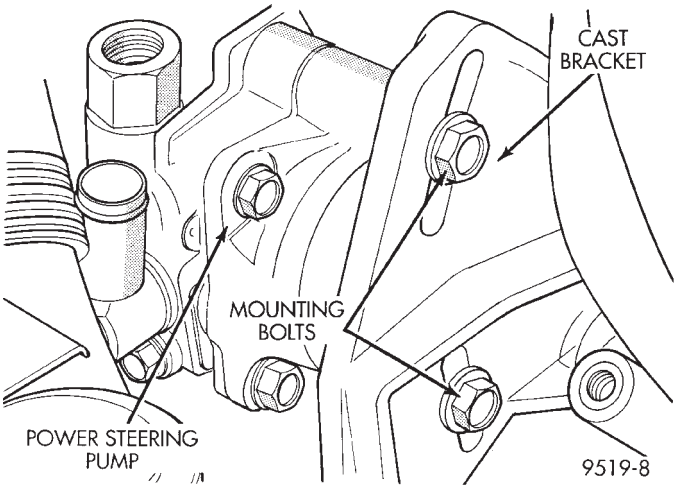


Fig. 18 Power Steering Pump Mounting Bolts (Rear)

NOTE: The power steering pump front mounting bracket is slotted at the bolt attaching it to the front engine mount (Fig. 19). This bolt only needs to be loosened to remove the mounting bracket from the engine.

(11) Loosen bolt (Fig. 19) attaching the power steering pump front mounting bracket to the front engine mount. The bolt only needs to be loosened far enough to slide the bracket out from under the bolt.

(12) Remove the drive belt from the power steering pump pulley.

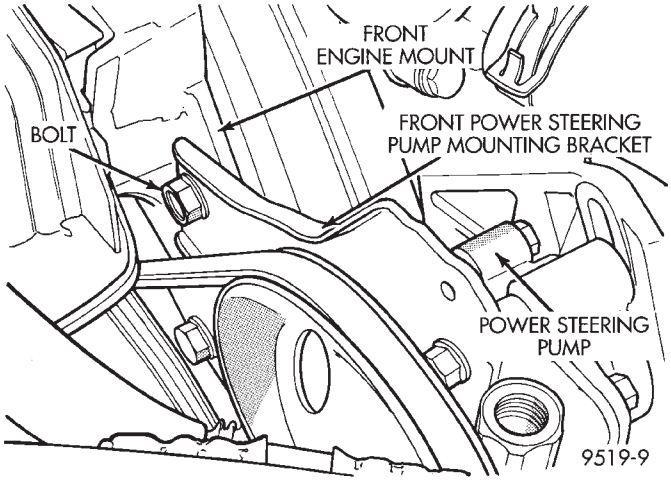


Fig. 19 Power Steering Pump Front Mounting Bracket Bolt

(13) Remove power steering pump and front mounting bracket as an assembly from the engine (Fig. 20).

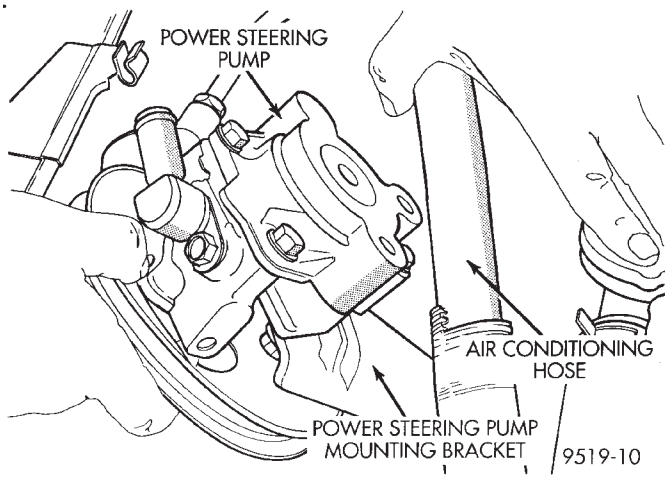


Fig. 20 Removing Power Steering Pump And Bracket

(14) Transfer required parts from removed power steering pump to replacement power steering pump.

INSTALL

(1) Install power steering pump and mounting bracket as an assembly (Fig. 20) back on the engine using reverse of removal procedure.

(2) Slide front power steering pump bracket between bracket mounting bolt and front engine mount (Fig. 19). **Be sure washer on bolt is between the head of the bolt and bracket and does not get trapped between bracket and engine mount.**

(3) Install the 2 bolts mounting the rear of the power steering pump to the cast mounting bracket (Fig. 18). **Do not tighten bolts at this time.**

REMOVAL AND INSTALLATION (Continued)

(4) Install drive belt on power steering pump pulley.

(5) Install a 1/2 in. breaker bar in the square hole in the front power steering pump mounting bracket (Fig. 21). Then rotate pump in to obtain the correct drive belt tension. See Accessory Drive Belts in Group 7 Cooling System of this service manual for the correct drive belt tension specification. When correct drive belt tension is obtained torque the 2 bolts at the power steering pump cast mounting bracket (Fig. 18) to 54 N·m (40 ft. lbs.). Then torque the front power steering pump mounting bracket bolt (Fig. 19) to 54 N·m (40 ft. lbs.).

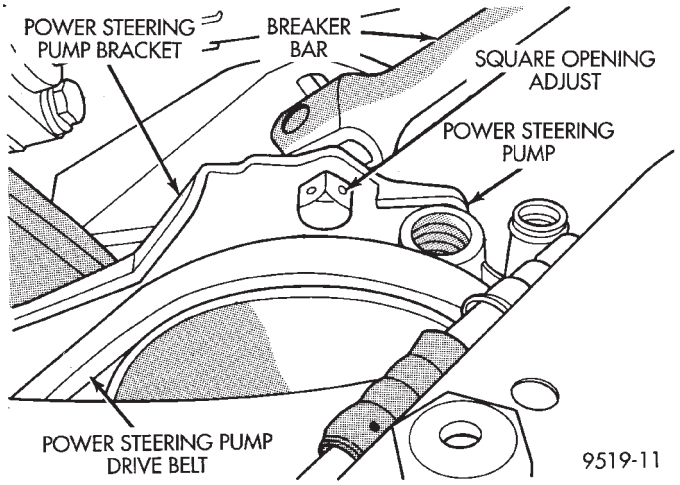


Fig. 21 Setting Power Steering Pump Drive Belt Tension

(6) Using a lint free towel, wipe clean all open power steering hose ends, and power steering pump fittings.

(7) Install power steering fluid supply hose on suction fitting of power steering pump (Fig. 17). Install hose clamp on hose. **Be sure hose clamp is installed on hose past upset bead on power steering pump suction fitting.**

(8) Install a new O-ring on the end of the power steering pressure hose banjo fitting (Fig. 22).

(9) Install a new O-ring (Fig. 23) on the Banjo Bolt for the power steering fluid pressure hose banjo fitting.

(10) Lubricate both O-rings using fresh clean power steering fluid.

(11) Install banjo bolt into the power steering pressure hose banjo fitting.

(12) Attach power steering pressure hose on outlet fitting of the power steering pump (Fig. 16).

(13) Position locating pin on power steering pressure hose banjo fitting so it is against power steering pump mounting bracket (Fig. 16). While holding locating pin against power steering pump bracket, torque pump end Banjo bolt to 34 N·m (25 ft. lbs.).

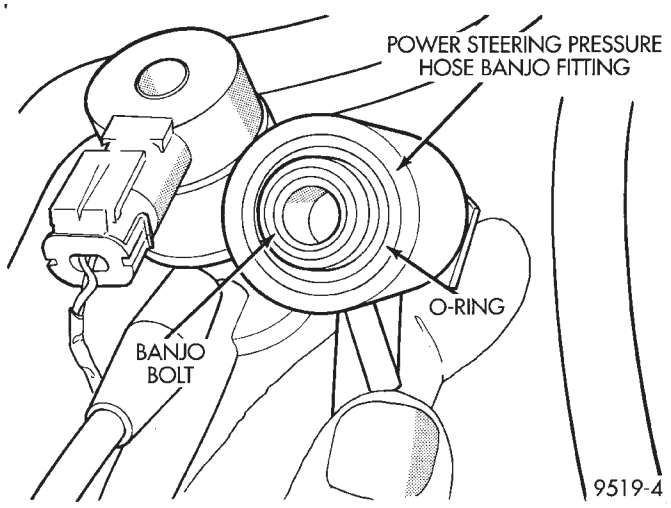


Fig. 22 O-Ring Installed On Power Steering Hose Banjo Fitting

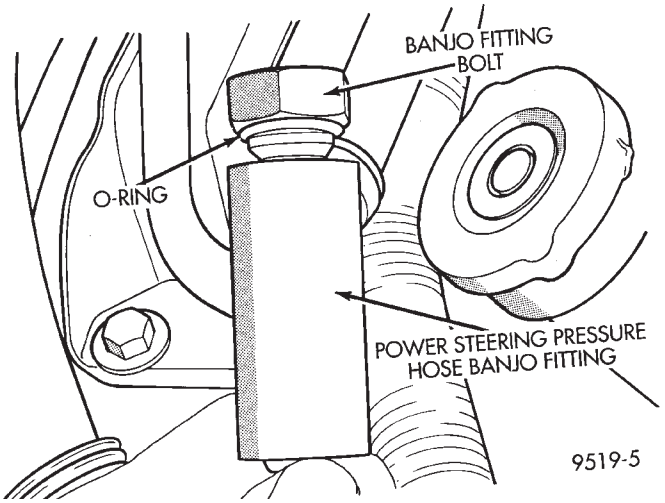


Fig. 23 O-Ring Installed On Banjo Fitting Bolt

(14) Install negative cable on battery.

CAUTION: Do not use automatic transmission fluid in power steering system. Only use Mopar®, Power Steering Fluid, or equivalent.

(15) Fill power steering reservoir to correct fluid level.

(16) Start the engine and let run for a few seconds. Then turn the engine off.

(17) Add fluid if necessary. Repeat the above procedure until the fluid level remains constant after running the engine.

(18) Raise front wheels of vehicle off the ground.

(19) Start engine, then slowly turn steering wheel right and left several times until lightly contacting the wheel stops. Then turn the engine off.

(20) Add power steering fluid if necessary.

REMOVAL AND INSTALLATION (Continued)

(21) Lower the vehicle. Start engine again and turn the steering wheel slowly from lock to lock.

(22) Stop the engine. Check the fluid level and refill as required.

(23) If the fluid is extremely foamy, allow the vehicle to stand a few minutes and repeat the above procedure.

(24) After power steering pump is installed, check for leaks at all hose connections and power steering pump fittings.

POWER STEERING FLUID RESERVOIR

REMOVE

(1) Remove the battery cable from the negative (-) terminal on the battery.

(2) Remove fill cap from power steering fluid reservoir.

(3) Raise vehicle on jack stands or on a frame contact type hoist. See Hoisting in the Lubrication And Maintenance Section of this service manual for the required lifting procedure to be used for this vehicle.

(4) Remove hose clamp, attaching return hose to steel tube at power steering gear (Fig. 24). Let power steering fluid drain through return hose until power steering fluid reservoir is empty.

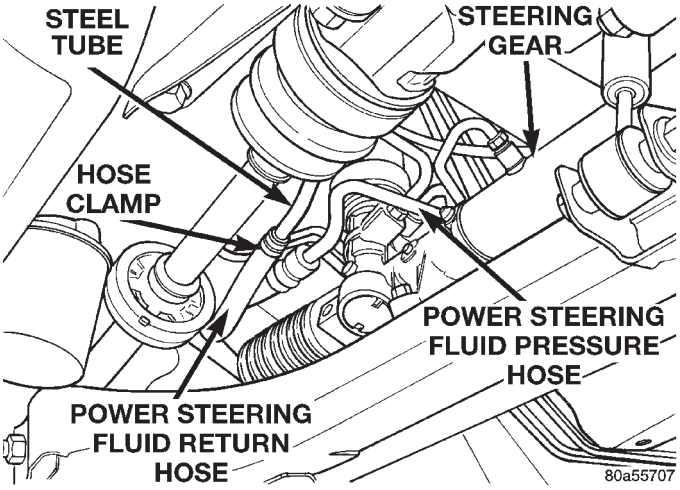


Fig. 24 Power Steering Return Hose At Steering Gear

(5) Install power steering return hose on the steel tube at the power steering gear (Fig. 24). Install hose clamp on power steering return hose at power steering gear (Fig. 24). **Be sure hose clamp is installed on return hose past the upset bead on steel tube.**

(6) Lower vehicle.

CAUTION: Care must be used when removing and installing power steering fluid hoses on the power steering fluid reservoir. If excessive force is used when trying to remove or install hoses on nipples of power steering fluid reservoir, nipples can be broken off the reservoir.

(7) Remove the power steering fluid, return and supply hose, from the power steering fluid reservoir (Fig. 25).

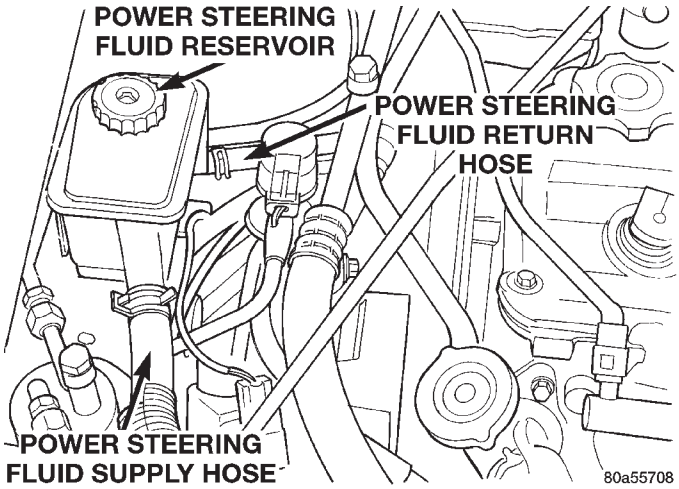


Fig. 25 Power Steering Fluid Hoses At Reservoir

(8) Remove the power steering fluid reservoir from the mounting bracket. Reservoir is removed from bracket by lifting the reservoir straight up out of the bracket.

(9) If removal of the mounting bracket is required, remove the bolts attaching it to the inner fender and remove from vehicle.

INSTALL

(1) If power steering fluid reservoir was removed, install on inner fender. Install and securely tighten the bracket mounting bolts.

(2) Install power steering fluid reservoir on mounting bracket using the reverse procedure of removal.

(3) Install the power steering fluid return and supply hose, on the power steering fluid reservoir fittings (Fig. 25). **Be sure both hose clamps are installed on hoses past the upset bead on the power steering reservoir fittings.**

(4) Fill the power steering pump fluid reservoir to the proper level.

(5) Start the engine and let run for a few seconds. Then turn the engine off.

(6) Add additional power steering fluid as necessary to bring level up to the full cold mark on the dipstick. Repeat the above procedure until the fluid level remains constant after running the engine.

(7) Raise the front wheels of vehicle off the ground.

(8) Start the engine. Slowly turn the steering wheel right and left several times, lightly contacting the wheel stops. Then turn the engine off.

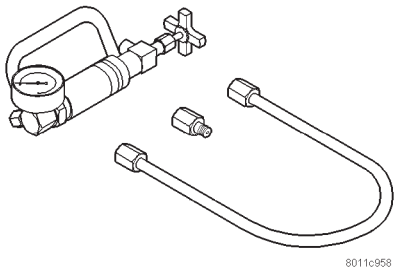
(9) Add power steering fluid if necessary.

REMOVAL AND INSTALLATION (Continued)

(10) Lower the vehicle and turn the steering wheel slowly from lock to lock.

(11) Stop the engine. Check the fluid level and refill as required.

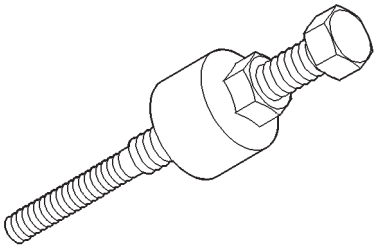
(12) If the fluid is extremely foamy, allow the vehicle to stand a few minutes and repeat the above procedure.



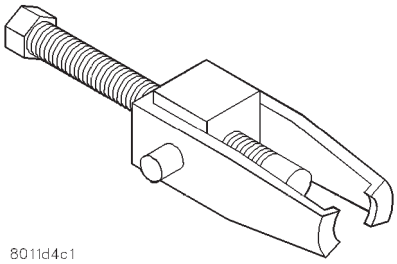
P/S System Analyzer 6815

SPECIAL TOOLS

POWER STEERING PUMP



Installer C-4063B



Puller C-4333

STEERING GEAR

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DESCRIPTION AND OPERATION

POWER STEERING GEAR

NOTE: The power steering gear and front suspension crossmember used on the Right Hand Drive and Left Hand Drive versions of this vehicle are unique to the vehicle they are used on. If a steering gear and/or front suspension crossmember needs to be replaced, be sure to verify by part number listed in the Mopar Parts Catalog that the correct replacement part for the vehicle being serviced is installed.

The power steering system used on this vehicle consists of these four major components. Power Steering Gear (Fig. 1), Power Steering Pump, Pressure Hose, and Return Hose. Turning of the steering wheel is converted into linear travel through the meshing of the helical pinion teeth with the rack teeth. Power assist steering is provided by an open center, rotary type control valve which directs oil from the pump to either side of the integral rack piston.

Road feel is controlled by the diameter of a torsion bar which initially steers the vehicle. This movement directs oil behind the integral rack piston, which, in

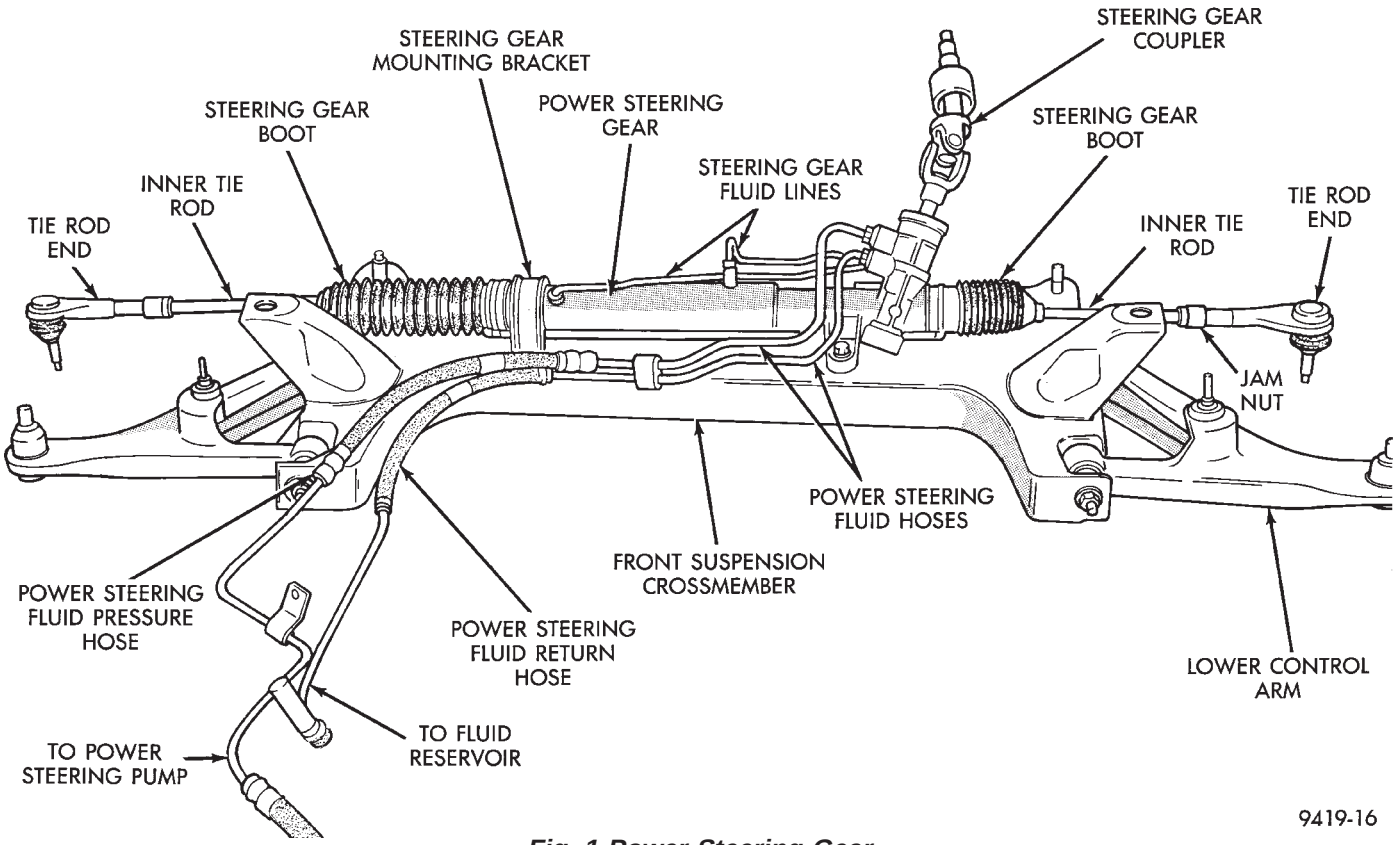


Fig. 1 Power Steering Gear

DESCRIPTION AND OPERATION (Continued)

turn, builds up hydraulic pressure and assists in the turning effort.

The drive tangs on the pinion of the power steering pump mate loosely with a stub shaft. This is to permit manual steering control to be maintained if the drive belt on the power steering pump should break. However, under these conditions, steering effort will be increased.

NOTE: The power steering gear (Fig. 1) should NOT be serviced or adjusted. If a malfunction or oil leak occurs the complete steering gear must be replaced.

REMOVAL AND INSTALLATION

STEERING GEAR

REMOVE

(1) From the interior of the vehicle, disconnect the steering gear coupling from the flex coupling of the steering column shaft (Fig. 2).

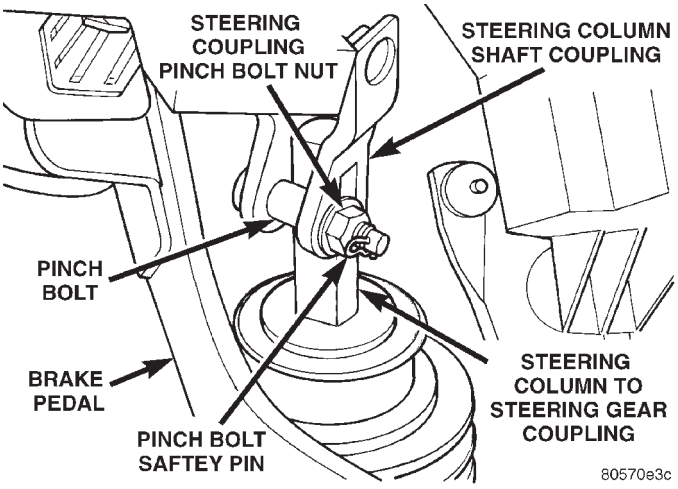


Fig. 2 Steering Column To Steering Gear Coupler

(2) Raise vehicle on jack stands or centered on a frame contact type hoist. See Hoisting in the Lubrication and Maintenance section of this manual, for the required lifting procedure to be used for this vehicle.

(3) Remove both front wheel and tire assemblies from the vehicle.

(4) Remove engine/transaxle bobble dampener, on vehicles so equipped, from front suspension crossmember (Fig. 3). Bobble strut does not need to be removed from transaxle assembly.

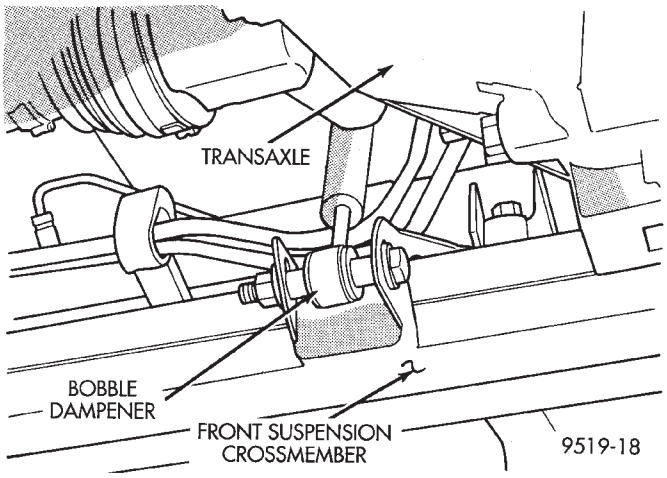


Fig. 3 Engine/Transaxle Bobble Dampener

(5) Remove both outer tie rod ends to the steering knuckles. **Nuts are to be removed from tie rod ends using the following procedure, hold tie rod end stud with an 11/32 socket, while loosening and removing nut with wrench (Fig. 4).**

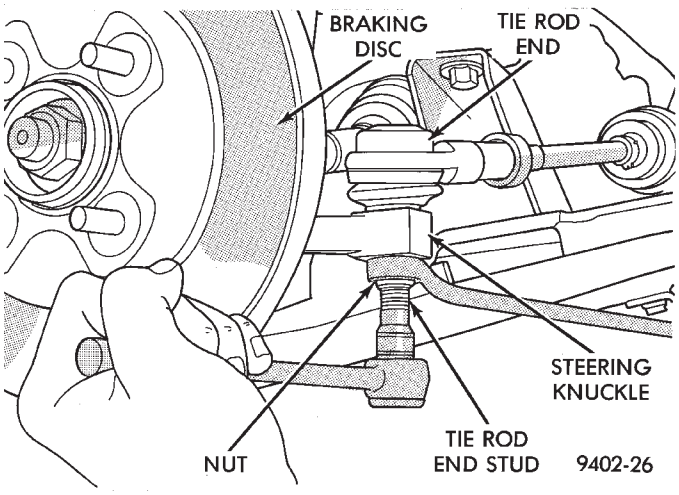


Fig. 4 Removing Tie Rod End Attaching Nut

REMOVAL AND INSTALLATION (Continued)

(6) Remove both tie rod end studs from the steering knuckles, using Remover, Special Tool MB-990635 (Fig. 5).

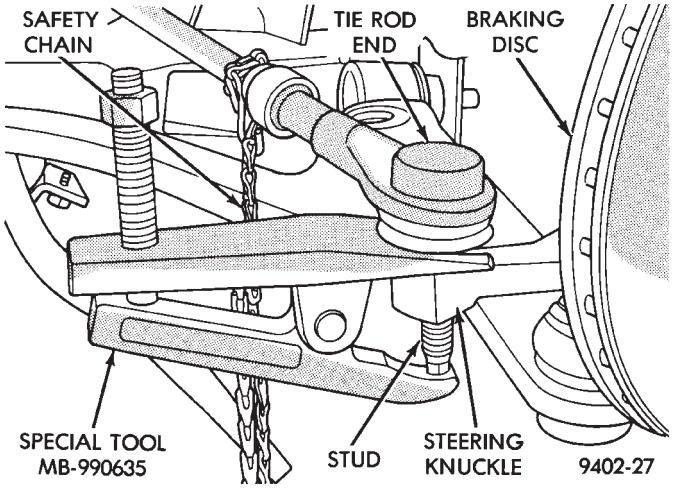


Fig. 5 Tie Rod End Removal From Steering Knuckle

(7) If equipped, remove vehicle wiring harness connector from the power steering fluid pressure switch (Fig. 6).

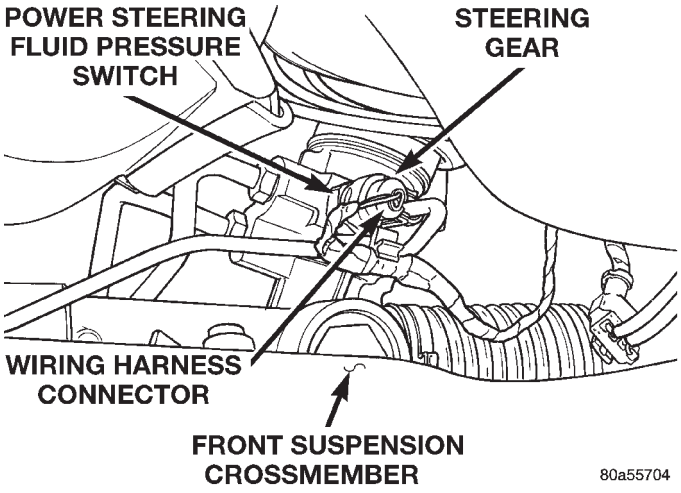


Fig. 6 Power Steering Fluid Pressure Switch Electrical Connector

(8) Remove the power steering fluid, pressure and return hoses (Fig. 7) from the steering gear.

NOTE: This vehicle is designed and assembled using NET BUILD front suspension alignment settings. This means that front suspension alignment settings are determined as the vehicle is designed by the location of front suspension components in relation to the vehicle body. This process is carried out when building the vehicle, by accurately locating the front suspension crossmember, to master gage holes located in the underbody of the vehicle. With this method of designing and building a vehicle, it is no longer possible to adjust a vehicles front suspension alignment settings to the required specifications. Due to this, whenever the front suspension crossmember is removed from a vehicle, it MUST be replaced in the same location on the body of the vehicle it was removed from. Front suspension Toe settings though are still adjustable by the outer tie rod ends.

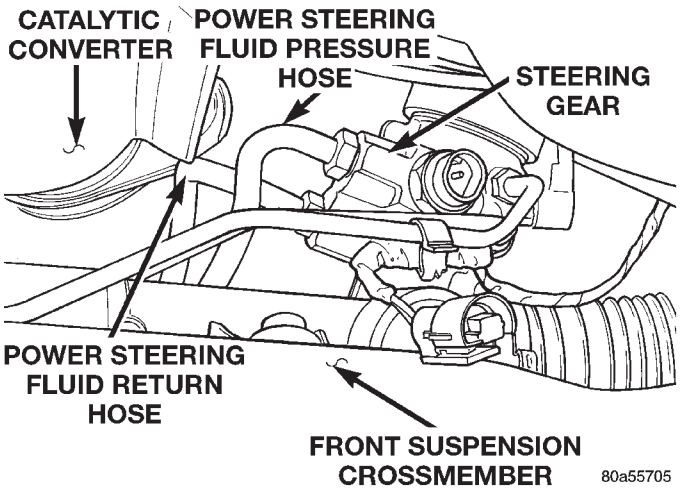


Fig. 7 Power Steering Fluid Pressure And Return Hoses

CAUTION: Before removing front suspension crossmember from the vehicle, the location of the front suspension crossmember MUST be scribbed on body of vehicle per (Fig. 9). This must be done so crossmember can be relocated against body of vehicle in the same location when it is reinstalled. If location of front suspension crossmember to body of vehicle is not maintained when vehicle is assembled, NET BUILD front suspension alignment settings will not be obtained. This may lead to handling and or tire wear problems.

(9) Using an awl, scribe a line (Fig. 8) marking the location of where front suspension crossmember is mounted against the body of the vehicle.

(10) Position a transmission jack under the center of the front suspension crossmember. Transmission jack is used to lower, support and raise front suspension crossmember when removing steering gear.

(11) Remove the front 2 bolts (Fig. 9) attaching the front of the front suspension crossmember to the frame rails of the vehicle. Then loosen the 2 bolts (Fig. 9) attaching the rear of the front suspension crossmember and lower control arms to the body of the vehicle. **Lower front suspension crossmember while loosening rear bolts. Do not remove the rear bolts from the front suspension crossmember or the rear bushings of the lower control arms.**

REMOVAL AND INSTALLATION (Continued)

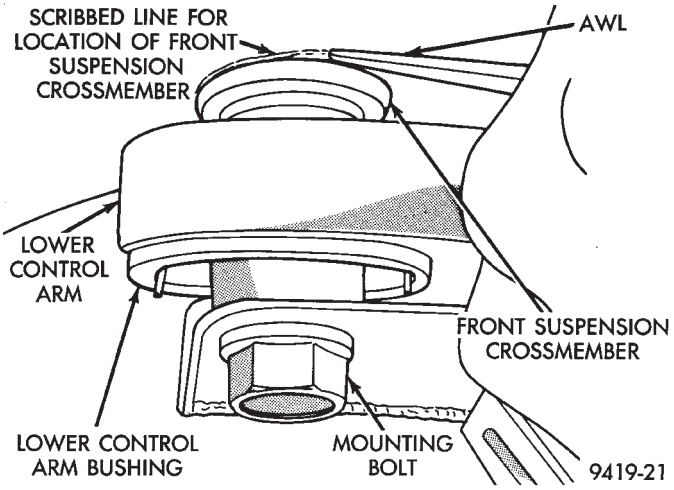


Fig. 8 Marking Front Suspension Crossmember Location

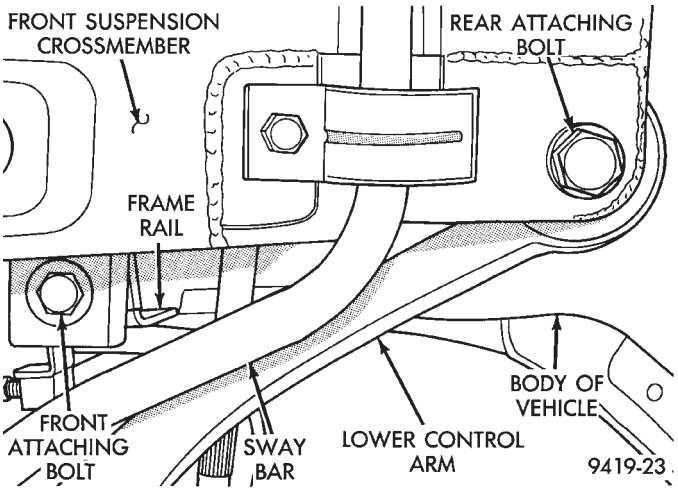


Fig. 9 Front Suspension Crossmember Mounting Bolts

(12) Using transmission jack, lower front suspension crossmember enough to allow steering gear to be removed from crossmember (Fig. 10). **When lowering front suspension crossmember, do not let crossmember hang from lower control arms weight of crossmember should be supported by transmission jack.**

(13) Remove the 4 bolts (Fig. 11), attaching the steering gear to the front suspension crossmember. Then, remove the steering gear from the front suspension crossmember.

(14) Transfer required parts from the removed steering gear to the replacement steering gear, if a new steering gear is being installed.

INSTALL

(1) Install steering gear on front suspension crossmember. Install the 4 steering gear to front suspension crossmember mounting bolts (Fig. 11). Torque

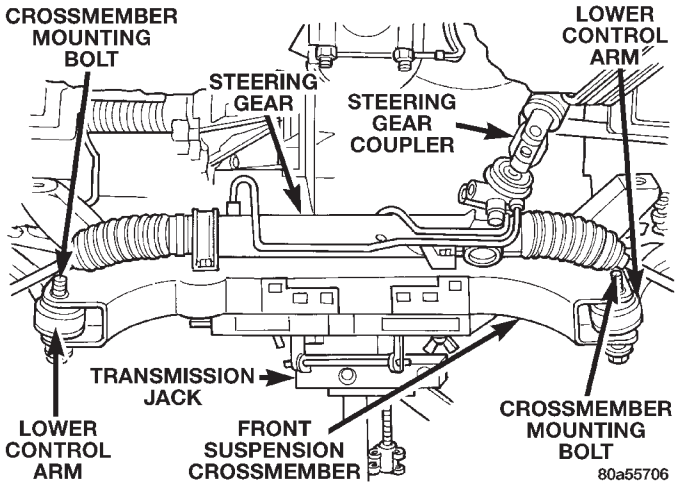


Fig. 10 Crossmember Lowered For Removal Of Steering Gear

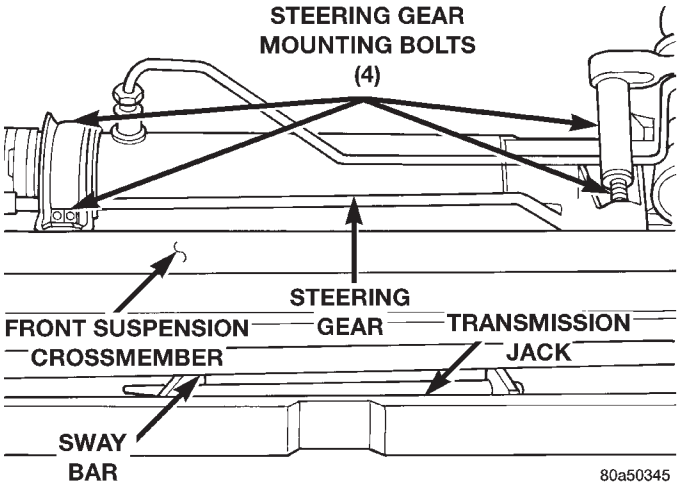


Fig. 11 Steering Gear Mounting Bolts

the 4 steering gear mounting bolts to 68 N·m (50 ft. lbs.).

(2) Using the transmission jack, raise front suspension crossmember and steering gear against body and frame rails of vehicle. Start the 2 rear bolts into tapping plates, attaching front suspension crossmember to body of vehicle (Fig. 9). Then install the 2 front bolts, attaching front suspension crossmember to frame rails of vehicle (Fig. 9). Tighten the 4 mounting bolts, until front suspension crossmember is against body of vehicle at the 4 mounting points. Then torque the 4 mounting bolts to 2 N·m (20 in. lbs.) to hold front suspension crossmember in position.

CAUTION: When front suspension crossmember is installed back in vehicle, crossmember MUST be aligned with positioning marks previously scribbed into body of vehicle (Fig. 12). This MUST be done to maintain NET BUILD front suspension alignment settings.

REMOVAL AND INSTALLATION (Continued)

(3) Using a soft face hammer, tap front suspension crossmember into position, until it is aligned with the 2 previously scribbed positioning marks on body of vehicle (Fig. 12). When front suspension crossmember is correctly positioned, torque the 2 rear crossmember/lower control arm mounting bolts to 163 N·m (120 ft. lbs.). Then torque the 2 front crossmember to frame rail attaching bolts to 163 N·m (120 ft. lbs.) (Fig. 9).

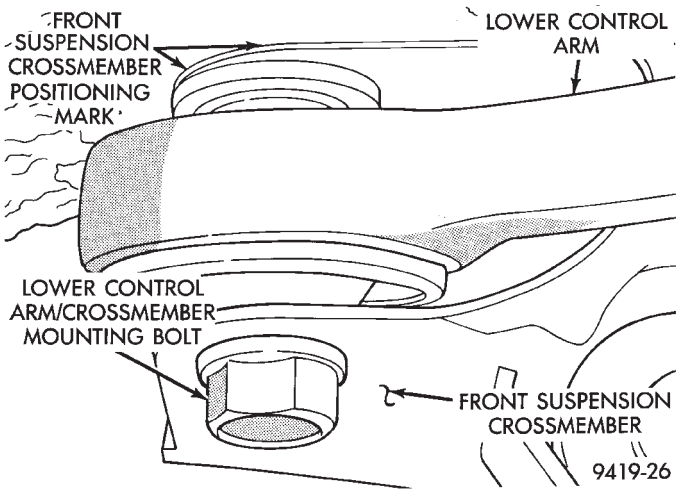


Fig. 12 Crossmember Aligned With Positioning Marks

(4) Install the power steering fluid pressure and return hoses into correct fluid ports on power steering gear assembly (Fig. 7). Torque power steering fluid pressure and return lines to steering gear tube nuts (Fig. 7) to 31 N·m (275 in. lbs.).

(5) Install wiring harness connector on the power steering fluid pressure switch on the steering gear assembly (Fig. 6). Be sure locking tab on wiring harness connector is securely latched to pressure switch.

(6) Install tie rod end into the steering knuckle. Start tie rod end to steering knuckle attaching nut onto stud of tie rod end. While holding stud of tie rod end stationary, tighten tie rod end to steering knuckle attaching nut (Fig. 4). Then using a crowfoot and 11/32 socket (Fig. 13), torque tie rod end attaching nut to 55 N·m (40 ft. lbs.).

(7) Install engine/transaxle bobble dampener (Fig. 3) on front suspension crossmember bracket. Install and securely tighten the dampener to crossmember attaching bolt.

(8) Install the wheel and tire assemblies back on vehicle. Tighten the wheel nuts to 135 N·m (100 ft. lbs.) torque.

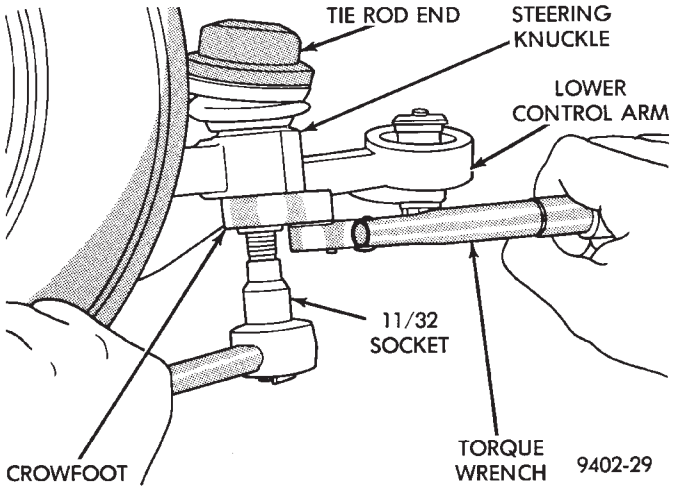


Fig. 13 Torquing Tie Rod End Attaching Nut

(9) Lower vehicle.

(10) From interior of vehicle, reconnect the steering gear coupler with the steering column shaft coupler. Install steering gear coupler retaining pinch bolt and torque to 28 N·m (250 in. lbs.). **Be sure to install the upper to lower steering coupler retaining bolt, retention pin (Fig. 2).**

CAUTION: Do not use automatic transmission fluid.

(11) Fill power steering pump fluid reservoir to the (Full-Cold) proper level.

(12) Start the engine and let run for a few seconds. Then turn the engine off.

(13) Add fluid if necessary.

(14) Raise front wheels of vehicle off the ground.

(15) Start engine and turn steering wheel several times from stop to stop to bleed air from fluid in system. Stop engine, check fluid level, and inspect system for leaks. **Fill pump reservoir to correct level with Mopar®, Power Steering Fluid, or equivalent.** See Checking Fluid Level.

(16) Lower front wheels of vehicle back on the ground.

CAUTION: During this procedure do not allow the steering gear inner tie rod boots to become twisted. (See Wheel Alignment in the suspension section of this service manual).

(17) Adjust the front Toe setting on the vehicle. Refer to the Toe Setting Procedure in Front Suspension Service Procedures in this group of the service manual. Refer to the Specifications Section at the end of this group for the desired front Toe specification.

REMOVAL AND INSTALLATION (Continued)

(18) Tighten tie rod jam nut (Fig. 14) to 61 N·m (45 ft. lbs.) torque.

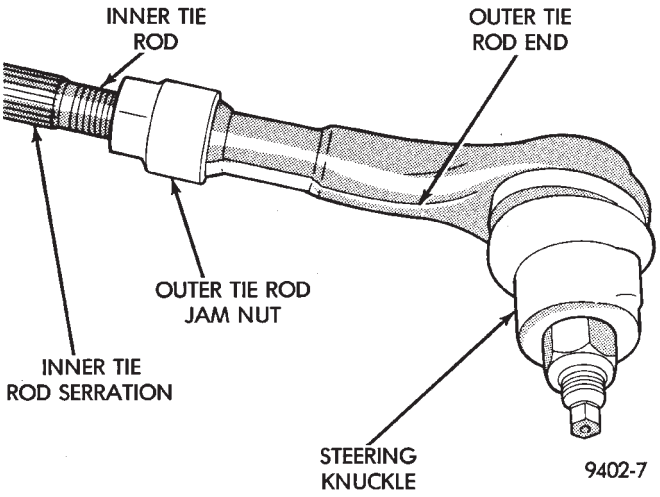


Fig. 14 Outer Tie Rod End Jam Nut

(19) Adjust steering gear to tie rod boots at tie rods to remove any twisting that may have occured during Toe adjustment.

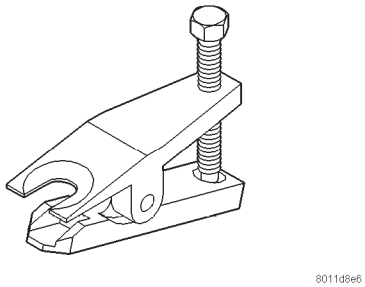
SPECIFICATIONS

STEERING GEAR FASTENER TORQUE SPECIFICATIONS

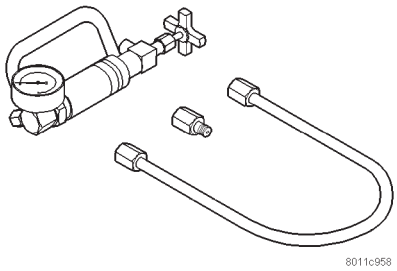
DESCRIPTION	TORQUE
FRONT SUSPENSION CROSSMEMBER:	
To Body Mounting Bolts	163 N·m (120 ft. lbs.)
STEERING GEAR:	
To Crossmember Mounting Bolts	68 N·m (50 ft. lbs.)
OUTER TIE ROD:	
To Steering Knuckle Nut	55 N·m (40 ft. lbs.)
To Inner Tie Rod Jam Nut	61 N·m (45 ft. lbs.)
POWER STEERING HOSE:	
Tube Nuts	31 N·m (275 in. lbs.)
Routing Bracket At Crossmember	23 N·m (17 ft. lbs.)

SPECIAL TOOLS

POWER STEERING GEAR



Remover Tie Rod End MB–990635



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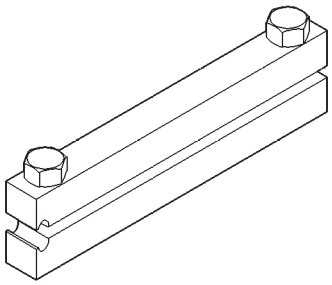

Installer Boot Clamp C-4975A

STEERING COLUMN

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DESCRIPTION AND OPERATION

STEERING COLUMN

The tilt steering column (Fig. 1) used in this vehicle has been designed to be serviced only as a complete assembly, if a component of the steering column is determined to be defective. The only replaceable components of the steering column assembly, are the key cylinder, ignition switch, multi- function switch, clock spring, trim shrouds and steering wheel. These replaceable components of the steering column can be serviced without requiring removal of the steering column from the vehicle.

STEERING GEAR TO STEERING COLUMN COUPLING

This vehicle uses a different design for the coupling used to connect the steering column to the steering gear (Fig. 2).

This coupling has a hollow convolouted tube (Fig. 2) which allows the coupling to bend rather then colapse when a vehicle is involved in a collision. The previous coupling used on this vehicle incorporated 2 release washers which allowed the coupling to separate into 2 pieces, if necessary, when a vehicle was involved in a collision.

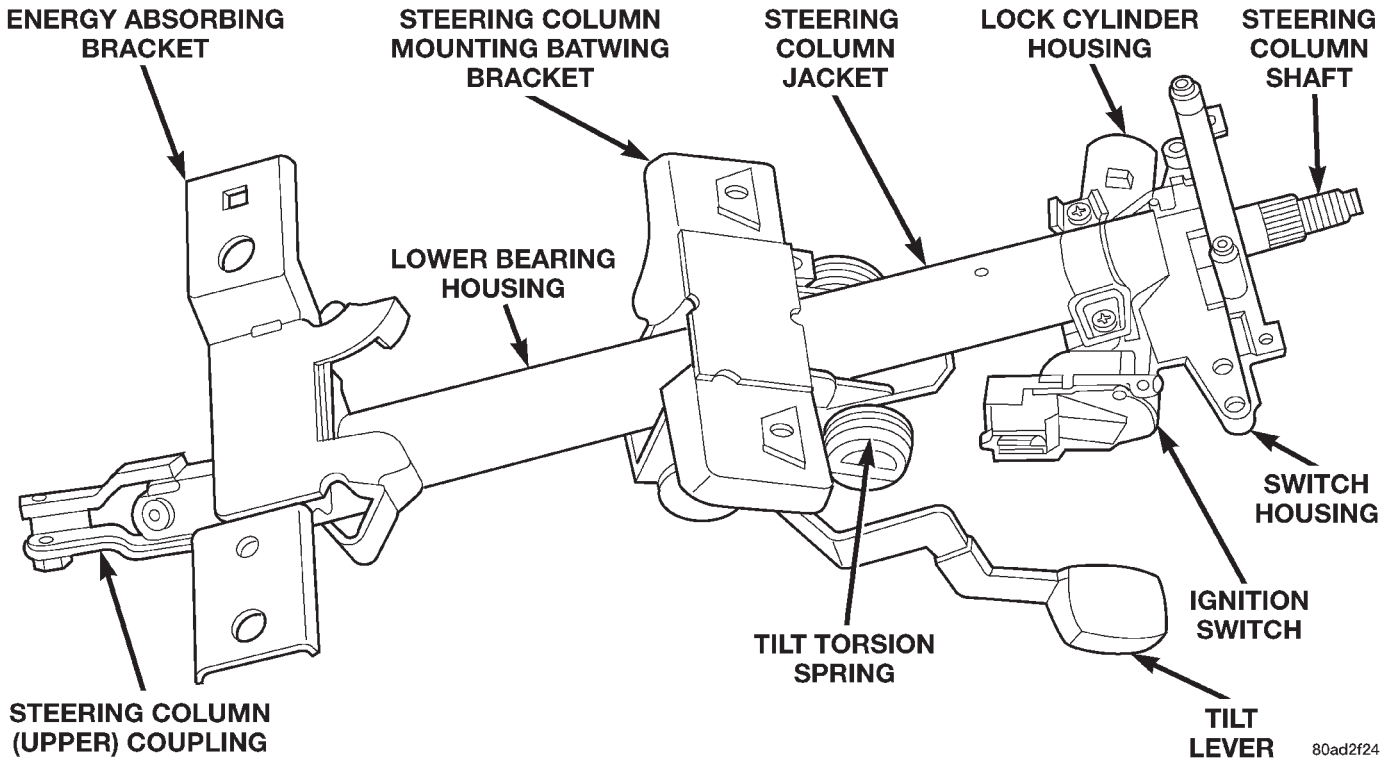

Fig. 1 Tilt Steering Column

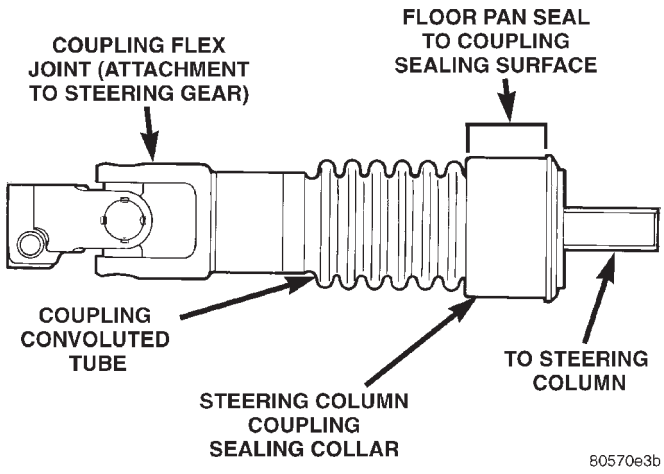

Fig. 2 Steering Column Coupling

DIAGNOSIS AND TESTING

STEERING COLUMN

For diagnosis of conditions relating to the steering column, refer to the steering system diagnosis charts, in the diagnosis and testing section at the beginning of this group.

STEERING COLUMN TO STEERING GEAR COUPLING

STEERING COLUMN COUPLING INSPECTION

The steering column coupling **MUST** be inspected whenever a vehicle is involved in an impact or whenever any of the following conditions exist.

(1) The steering column coupling must be inspected whenever a vehicle is involved in a collision which deploys the air bag, regardless of the extent of damage done to the vehicle.

(2) If a vehicle is involved in an impact of the vehicles front suspension or under carriage, which results in any type of damage to the front suspension crossmember.

(3) Under any conditions which result in the steering column assembly or steering column shaft receiving a force great enough to move the steering column or shaft forward or rearward in a vehicle.

STEERING COUPLING INSPECTION PROCEDURE

(1) Remove the pinch bolt safety pin from the steering column shaft coupling pinch bolt (Fig. 3).

(2) Loosen the coupling pinch bolt retaining nut and remove pinch bolt (Fig. 3) from steering coupler. **(Pinch bolt nut is caged to coupler and is not removable.)** Then separate the steering column upper coupling from the lower coupling.

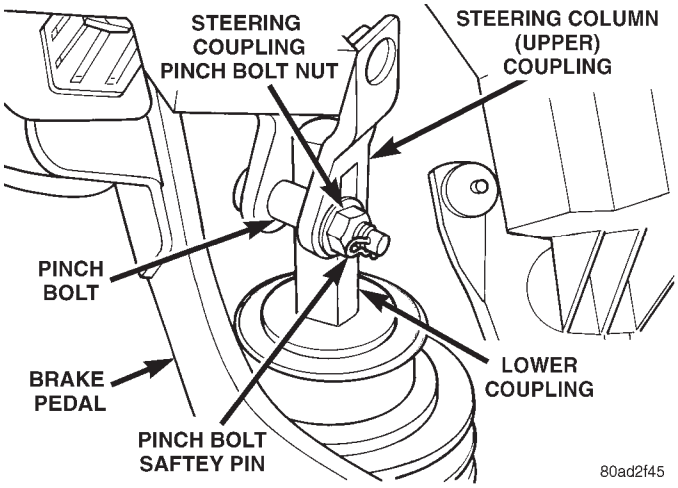

Fig. 3 Steering Column To Coupling Attachment

(3) Remove the silencer seal (Fig. 4) enclosing the steering column coupling.

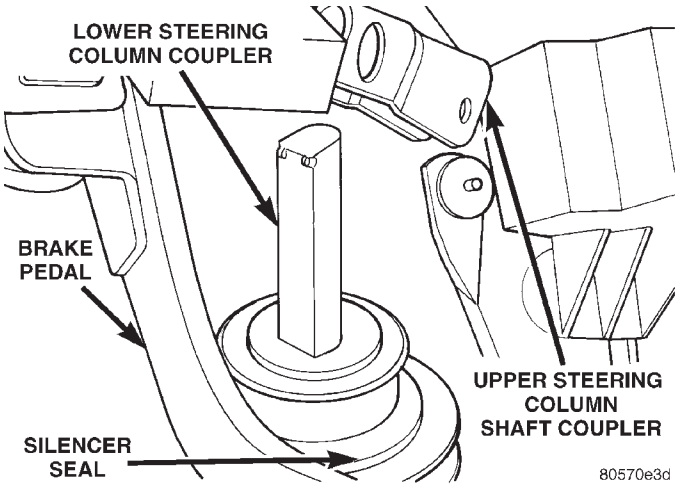

Fig. 4 Lower Coupling Seal

(4) Inspect steering column coupling in the following areas for signs of damage:

- Inspect the sealing collar on the lower coupling (Fig. 5) to ensure that it is not cracked, broken, or otherwise damaged requiring coupling replacement.
- Inspect the corrugated section (Fig. 5) of the lower coupling for the following conditions or any other visible signs of damage.

DIAGNOSIS AND TESTING (Continued)

- Uneven spacing between the corrugations on the coupling.
- Dings or dents in the corrugations of the coupling or anywhere else on the coupling wall.
- A bend in the corrugated section of the coupling.

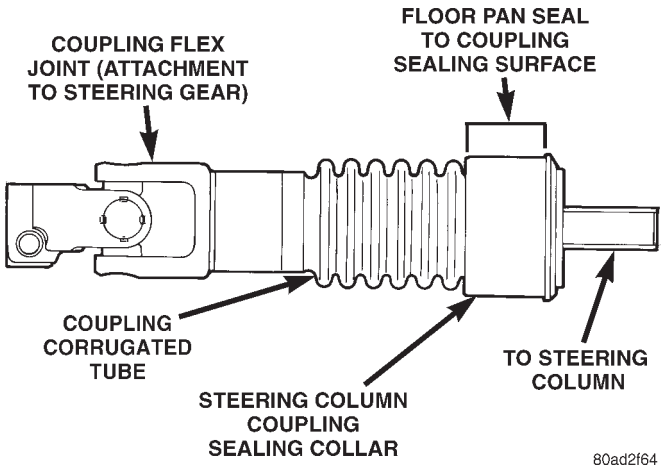

Fig. 5 Lower Coupling Inspection

If any of the preceding conditions exist the steering coupling **MUST** be replaced.

The steering gear must be removed from the vehicle to allow access for replacement of the steering coupling. Refer to Steering Gear Service Procedures in this group of the service manual for the required steering gear removal procedure.

(5) If steering coupling does not require replacement, install steering column coupling silencer seal (Fig. 4) back on vehicle.

(6) Ensure front wheels of vehicle are positioned straight-ahead and then align and attach steering column upper coupling to lower coupling (Fig. 3). Install the coupling pinch bolt (Fig. 3). Tighten the pinch bolt nut to a torque of 28 N·m (250 in. lbs.). **Be sure to install upper to lower steering coupling pinch bolt safety pin (Fig. 3).**

REMOVAL AND INSTALLATION

STEERING COLUMN SERVICE PROCEDURE WARNINGS

WARNING: BEFORE BEGINNING ANY SERVICE PROCEDURES THAT INVOLVES REMOVING THE AIR BAG. REMOVE AND ISOLATE THE NEGATIVE (-) BATTERY CABLE (GROUND) FROM THE VEHICLE BATTERY. THIS IS THE ONLY SURE WAY TO DISABLE THE AIR BAG SYSTEM. FAILURE TO DO THIS COULD RESULT IN ACCIDENTAL AIR BAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

WARNING: THE AIR BAG SYSTEM IS A SENSITIVE, COMPLEX ELECTRO-MECHANICAL UNIT. BEFORE ATTEMPTING TO DIAGNOSE, REMOVE OR INSTALL THE AIR BAG SYSTEM COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. FAILURE TO DO SO COULD RESULT IN ACCIDENTAL DEPLOYMENT OF THE AIR BAG AND POSSIBLE PERSONAL INJURY. THE FASTENERS, SCREWS, AND BOLTS, ORIGINALLY USED FOR THE AIR BAG COMPONENTS, HAVE SPECIAL COATINGS AND ARE SPECIFICALLY DESIGNED FOR THE AIR BAG SYSTEM. THEY MUST NEVER BE REPLACED WITH ANY SUBSTITUTES. ANYTIME A NEW FASTENER IS NEEDED, REPLACE WITH THE CORRECT FASTENERS PROVIDED IN THE SERVICE PACKAGE OR FASTENERS LISTED IN THE PARTS BOOKS. BEFORE SERVICING A STEERING COLUMN EQUIPPED WITH AN AIR BAG, REFER TO GROUP 8M, ELECTRICAL FOR PROPER AND SAFE SERVICE PROCEDURES.

NOTE: Safety goggles should be worn at all times when working on steering columns.

CAUTION: Disconnect negative (ground) cable from the battery, before servicing any column component.

CAUTION: Do not attempt to remove the pivot pins to disassemble the tilting mechanism. Damage will occur.

STEERING COLUMN ASSEMBLY

REMOVE

(1) Disconnect the negative (ground) cable from the battery and isolate cable.

(2) **Before beginning removal of steering column from vehicle, be sure front wheels of vehicle are in the straight ahead position.**

(3) Remove the fuse access panel (Fig. 6) from the steering column cover.

(4) Remove the 4 screws attaching the steering column cover, to the lower instrument panel (Fig. 7). Then remove the steering column cover.

(5) Remove 3 screws (Fig. 8) attaching the steering column cover liner to the instrument panel. Remove the liner from the lower instrument panel.

(6) Remove the 2 covers (Fig. 9) from the steering wheel. Covers need to be removed to access the mounting bolts for the air bag module.

REMOVAL AND INSTALLATION (Continued)

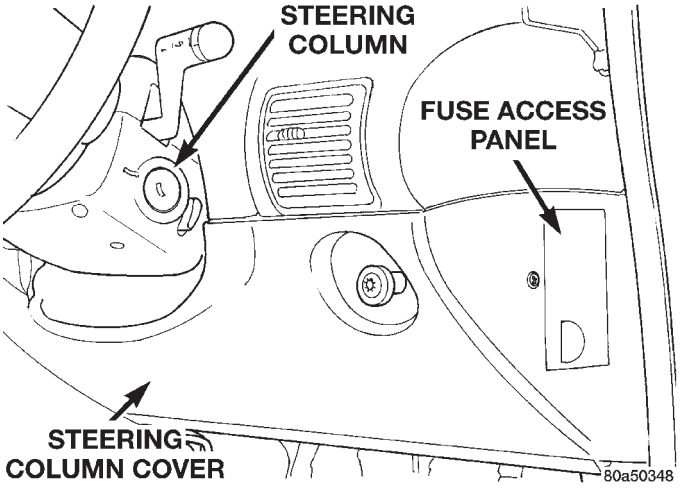

Fig. 6 Fuse Access Panel

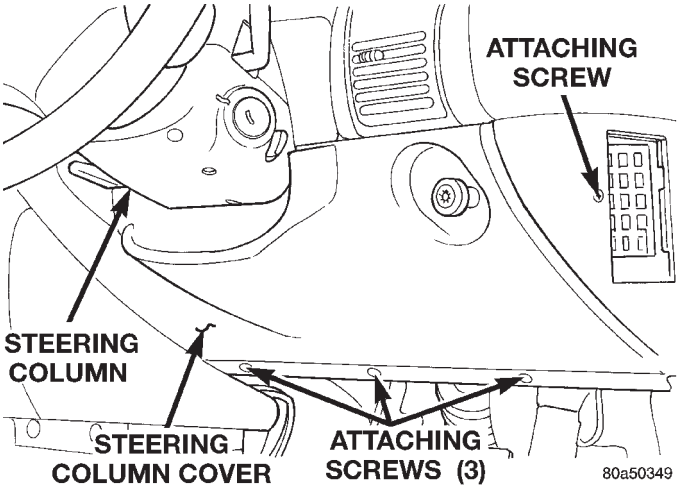

Fig. 7 Steering Column Cover Attachment

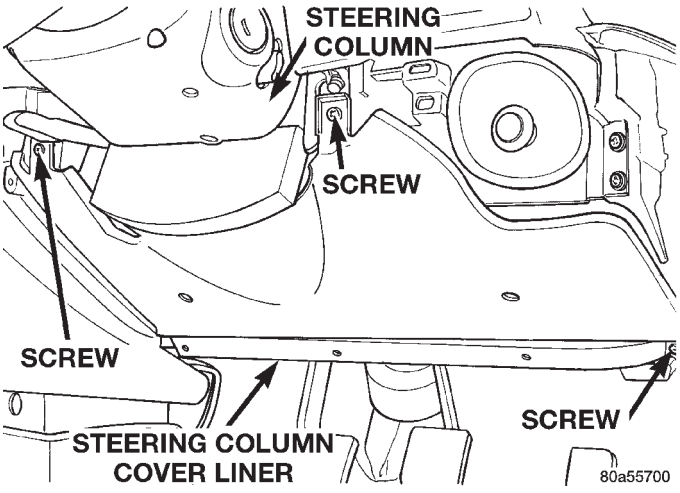

Fig. 8 Steering Column Cover Liner Attaching Screws

WARNING: WHEN AN UNDEPLOYED AIR BAG ASSEMBLY IS TO BE REMOVED FROM THE STEERING WHEEL, DISCONNECT BATTERY GROUND CABLE AND ISOLATE. ALLOW SYSTEM CAPACITOR TO DISCHARGE FOR TWO MINUTES, BEFORE BEGINIG AIR BAG REMOVAL.

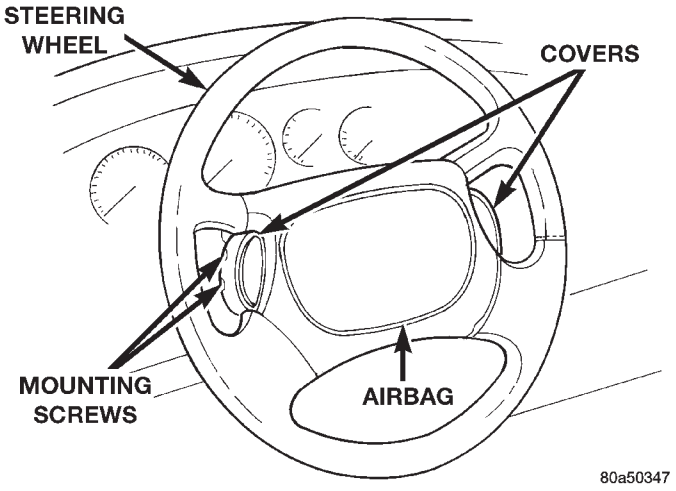

Fig. 9 Steering Wheel Covers

(7) Remove the 2 fasteners, 1 on each side of steering wheel, attaching air bag module to steering wheel (Fig. 10).

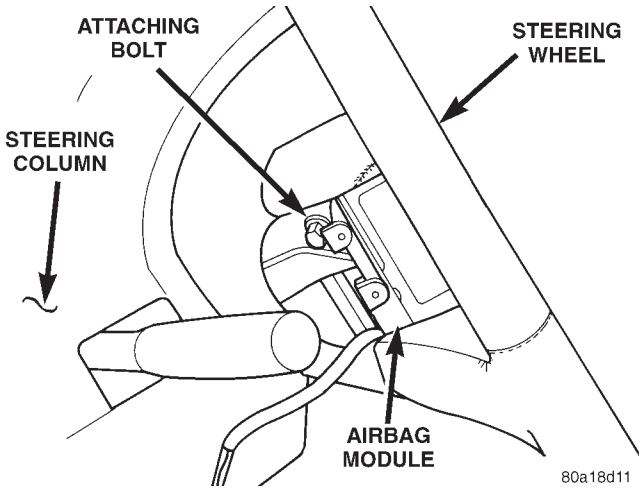

Fig. 10 Air Bag Module Mounting Bolts

WARNING: WHEN HANDLING AN UNDEPLOYED AIRBAG MODULE DURING SERVICING OF THE STEERING COLUMN THE FOLLOWING PRECAUTIONS SHOULD BE OBSERVED. AT NO TIME SHOULD ANY SOURCE OF ELECTRICITY BE PERMITTED NEAR THE INFLATOR ON THE BACK OF THE AIRBAG MODULE. WHEN CARRYING A LIVE MODULE, THE TRIM COVER SHOULD BE POINTED AWAY FROM THE BODY TO MINIMIZE INJURY IF AIRBAG ACCIDENTLY DEPLOYS. IF AIRBAG MODULE IS PLACED ON A BENCH OR OTHER SURFACE, PLASTIC COVER SHOULD BE FACE UP TO MINIMIZE MOVEMENT IN CASE OF ACCIDENTAL DEPLOYMENT.

REMOVAL AND INSTALLATION (Continued)

(8) Remove airbag module from center of steering wheel.

(9) Disconnect the clock spring electrical lead from the back of the airbag module (Fig. 11).

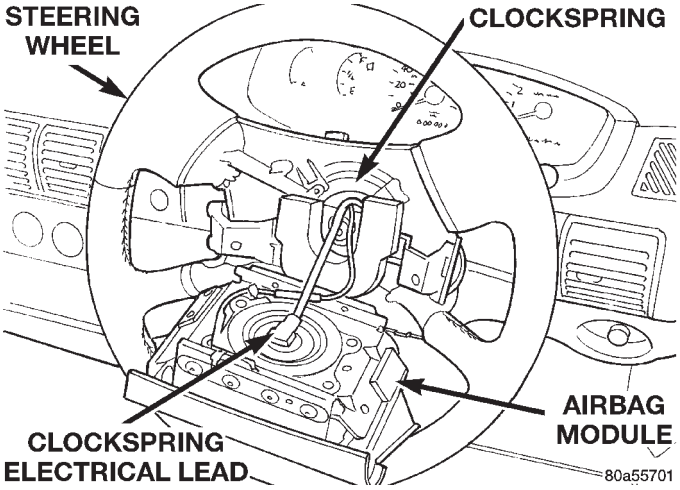

Fig. 11 Airbag Module Electrical Connector

(10) Disconnect the clockspring electrical lead from the wire to the airbag module horn switch (Fig. 12).

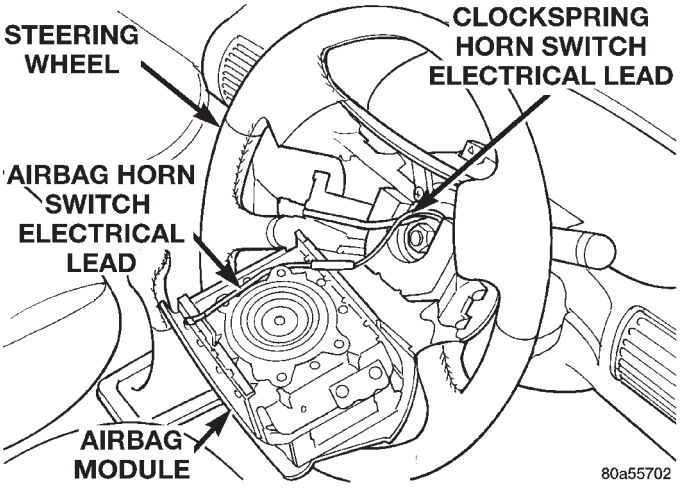

Fig. 12 Clockspring To Horn Switch Wire

(11) Remove the steering wheel retaining nut, from the steering column shaft (Fig. 13). Remove the steering wheel damper weight (Fig. 13) from the steering wheel.

CAUTION: When installing Puller, Snap On CJ2001P or an equivalent on steering wheel, be sure puller bolts are fully seated in threaded holes on steering wheel. If bolts are not fully seated in threaded holes, threads may be stripped out when puller is tightened to remove steering wheel.

(12) Install Puller, Snap On CJ2001P or an equivalent on steering wheel (Fig. 14).

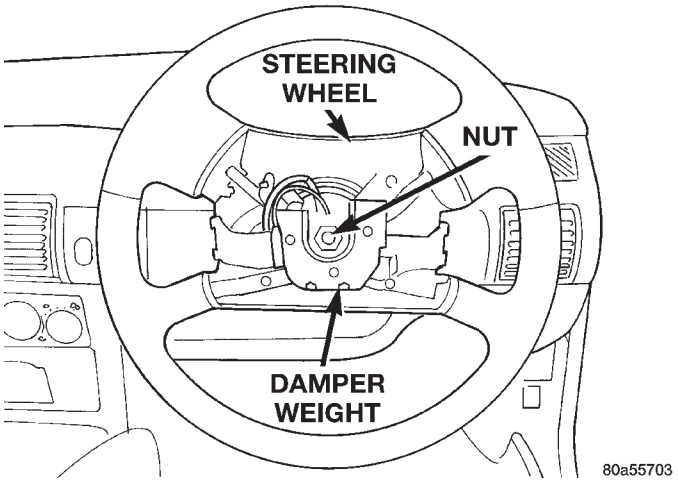

Fig. 13 Steering Wheel Attaching Nut

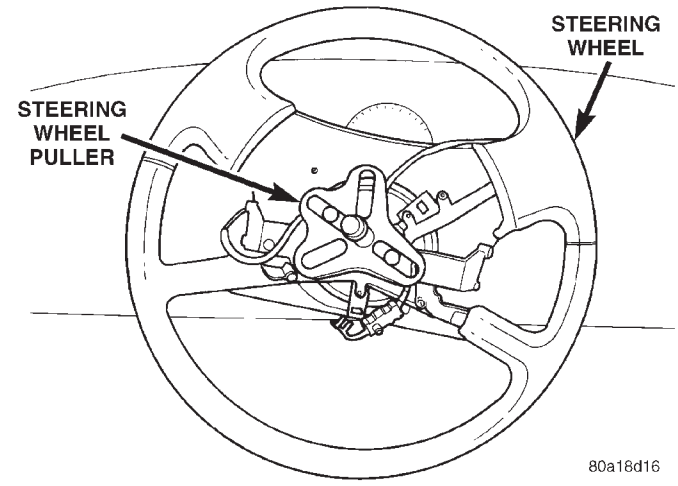

Fig. 14 Steering Wheel Puller Installed

CAUTION: Do not bump or hammer on steering wheel or steering column shaft when removing steering wheel from steering column.

(13) Remove steering wheel assembly from steering column shaft using Puller, Snap On CJ2001P or an equivalent.

(14) Remove key lock cylinder from steering column. Key lock cylinder is removed from steering column using the following procedure. Place the key lock cylinder in the Run position. Then through the hole in lower shroud, (Fig. 15) depress lock cylinder retaining tab and remove key lock cylinder.

(15) Remove the 3 screws attaching the upper and lower shroud to the steering column (Fig. 16). First remove lower shroud from steering column, then release tilt lever and tilt steering column to its lowest point. Then remove upper shroud from steering column.

(16) Remove retaining pin from pinch bolt in steering column upper coupling (Fig. 17).

REMOVAL AND INSTALLATION (Continued)

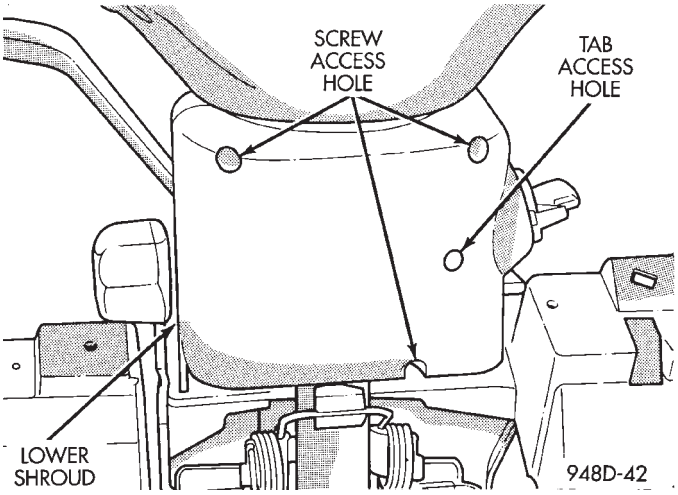

Fig. 15 Key Lock Cylinder Access Hole In Steering Column Shrouds

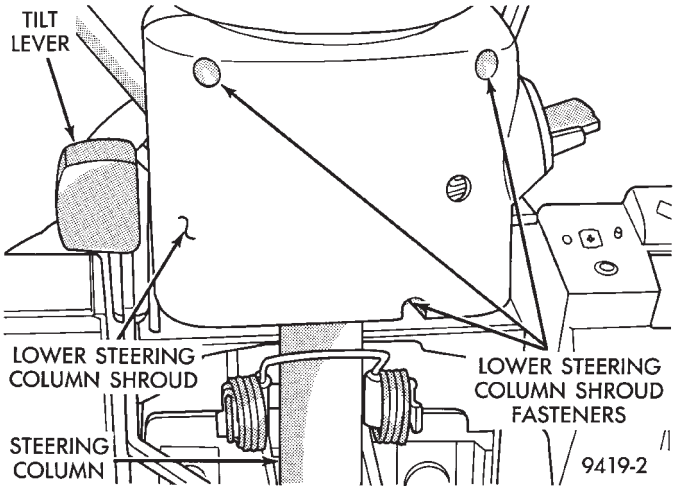

Fig. 16 Upper And Lower Steering Column Shrouds

(17) Loosen the steering column upper coupling pinch bolt retaining nut and remove pinch bolt (Fig. 17) from coupling. **(Pinch bolt nut is caged to coupling and is not removable.)** Then separate steering column shaft coupling from lower steering coupler.

(18) Remove steering column lower bearing housing to lower steering column mounting bracket through bolt (Fig. 18).

(19) Remove the 2 steering column assembly upper bat wing bracket to support bracket nuts (Fig. 19).

(20) Lower steering column assembly in the steering column access opening of the lower instrument panel.

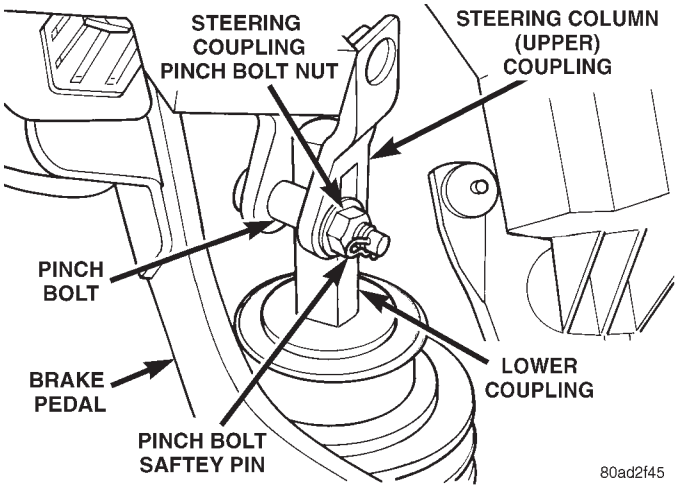

Fig. 17 Steering Column Coupling

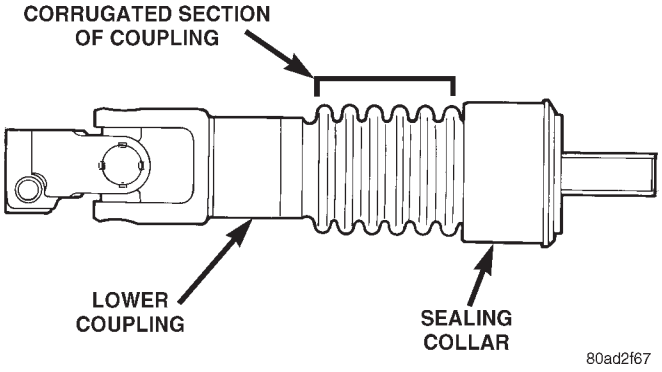

Fig. 18 Steering Column Lower Attaching Bolt

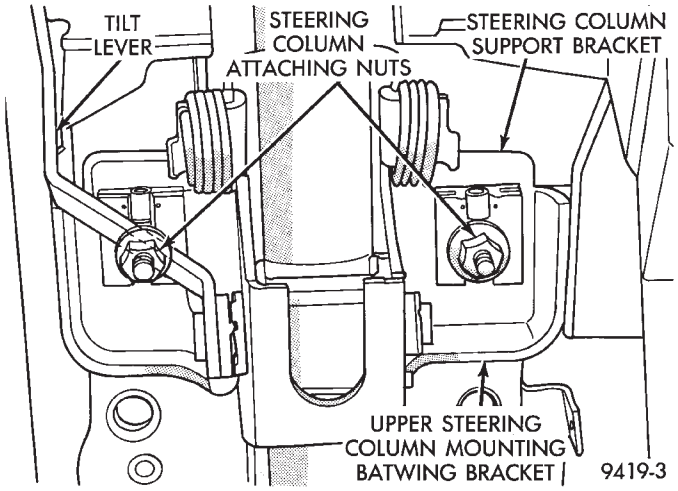

Fig. 19 Steering Column Upper Support Bracket Attaching Nuts

REMOVAL AND INSTALLATION (Continued)

(21) Remove routing clip (Fig. 20) holding wiring harness to steering column jacket. Then remove wiring harness connectors from the multi- function switch and the windshield wiper switch (Fig. 20).

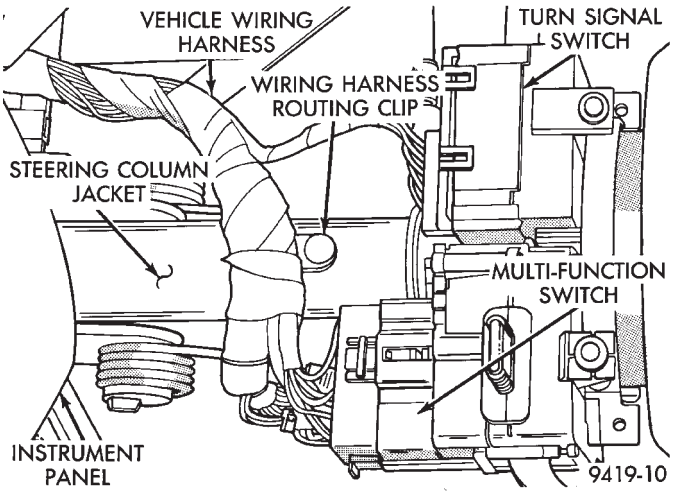

Fig. 20 Steering Column Wiring Connections

(22) Remove the vehicle wiring harness connectors from the ignition switch and clock spring (Fig. 21).

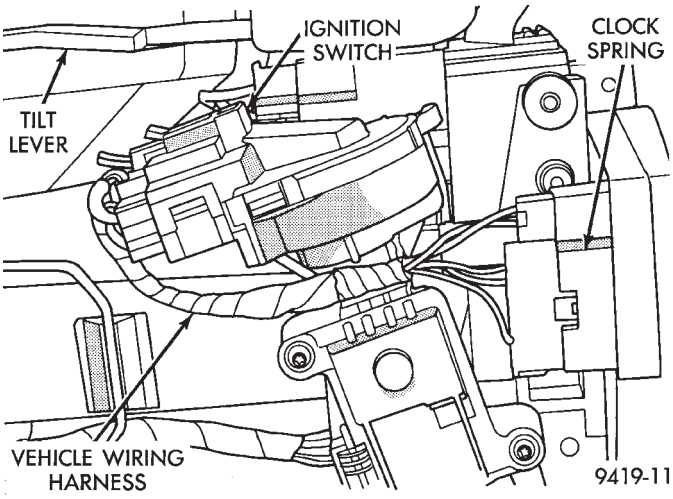

Fig. 21 Steering Column Wiring Connections

(23) Remove steering column assembly from vehicle through the drivers door of the passenger compartment. Use care to avoid damaging the paint or interior trim.

INSTALL

(1) Install steering column into steering column access opening in lower instrument panel.

(2) Install the vehicle wiring harness connectors, into the ignition switch and clock spring assembly (Fig. 21).

(3) Install vehicle wiring harness connectors into multi-function switch and turn signal switch (Fig. 20) on steering column assembly. Install routing clip (Fig. 20) holding wiring harness to jacket of steering column.

(4) Install the studs in steering column support bracket into the slots in the plastic capsules located in steering column upper mounting bracket (Fig. 19). Partially install the 2 upper steering column assembly mounting bracket to support bracket attaching nuts (Fig. 19). **Do not tighten the 2 mounting nuts at this time.**

(5) Align lower steering column bearing housing with lower steering column mounting bracket. Install and securely tighten the lower bearing housing to steering column mounting bracket thru-bolt (Fig. 18).

(6) Install the upper and lower steering column shrouds onto the lock housing of the steering column. Install and securely tighten the 3 upper to lower steering column shroud to lock housing attaching screws (Fig. 16).

(7) Be sure both breakaway capsules are still fully seated in the slots of the upper steering column mounting bracket. Equally tighten both steering column mounting nuts, until upper steering column mounting bracket is seated against support bracket (Fig. 19). Then tighten the 2 steering column upper mounting bracket nuts to a torque of 12 N·m (105 in. lbs.).

(8) Ensure front wheels of vehicle are positioned straight-ahead. Align and assemble steering column shaft coupling to lower steering coupling (Fig. 17). Install the upper to lower steering coupler pinch bolt. Torque the pinch bolt nut to 28 N·m (250 in. lbs.). **Be sure to install upper to lower steering coupler pinch bolt retaining pin (Fig. 17).**

(9) Install the lower instrument panel steering column cover liner onto lower instrument panel. Install and securely tighten the 3 liner to instrument panel attaching screws (Fig. 8).

(10) Install lower instrument panel steering column cover (Fig. 7) on lower instrument panel. Install and securely tighten the 4 screws (Fig. 7) attaching steering column cover, to lower instrument panel.

CAUTION: Clock spring centering procedure MUST be performed prior to installing steering wheel assembly. If clock spring is not centered it may be overextended, causing clock spring assembly to become inoperative.

(11) Center the clock spring using the following procedure.

- Depress the 2 plastic locking pins to disengage clockspring locking mechanism.
- Keeping locking mechanism disengaged, rotate the clockspring rotor in the CLOCKWISE DIRECTION to the end of the travel. Do not apply excessive torque.

REMOVAL AND INSTALLATION (Continued)

• From the end of travel, rotate the rotor 2 full turns and an additional half turn in the counterclockwise direction. (The horn wire should end up at the top and the squib wire at the bottom.) Engage the clockspring locking mechanism.

CAUTION: Do not install steering wheel onto shaft of steering column assembly by driving it onto the shaft. Pull steering wheel down onto steering column shaft using ONLY the steering wheel retaining nut.

(12) Feed clock spring wiring leads through hole in steering wheel. Position steering wheel on shaft of steering column, making sure to fit flat on hub of steering wheel with flat on hub of clockspring.

(13) Install damper weight on steering wheel.

(14) Install steering wheel to steering column shaft retaining nut and tighten until steering wheel is fully installed on shaft. The tighten steering wheel retaining nut to a torque of 61 N·m (45 ft. lbs.).

(15) Install horn switch electrical lead from clock spring into the connector from the air bag module horn switch (Fig. 12).

(16) Install air bag electrical lead from clock spring, into connector on back of air bag module (Fig. 11). **Be sure electrical connector from clockspring is securely latched into air bag module connector.**

CAUTION: The fasteners, screws, and bolts, originally used for the air bag components are specifically designed for the air bag system. They must never be replaced with any substitutes. Anytime a new fastener is needed, replace only with correct fasteners provided in service packages or fasteners listed in the parts book.

(17) Install air bag module into center of steering wheel. Align air bag module mounting holes with bolt holes in steering wheel. Install **only the 2 original or correct replacement** air bag module attaching bolts (Fig. 10). Torque the 2 air bag module attaching bolts to 10 N·m (90 in. lbs.).

(18) Install key lock cylinder into lock housing. Key lock cylinder is installed by positioning key cylinder in the run position so retaining tab can be depressed and the pushing key cylinder into lock hosing until retaining tab locks into key lock cylinder.

(19) Reconnect ground cable to Negative post of the battery. **When reconnecting battery on a vehicle that has had the air bag module removed, the following procedure should be used.**

• Remove forward console or cover as necessary.

• Connect DRB Scan Tool to ASDM diagnostic 6-way connector, located at right side of the ASDM module.

• Turn ignition key to ON position. Exit vehicle with the DRB Scan Tool. Install the latest version of the proper diagnostic cartridge into the DRB Scan Tool.

• Ensuring that their are no occupants in the vehicle, connect negative cable to negative post of the battery.

• Using the DRB Scan Tool read and record active fault codes. Also read and record any stored fault codes. Refer to the Passive Restraint Diagnostic Test Manual if any faults are found.

• Erase stored faults if there are no active fault codes. If problems remain, fault codes will not erase.

• From the passenger side of the vehicle, turn ignition key to OFF and then ON observing instrument cluster air bag lamp. It should go on for six to eight seconds, then go out. This will indicate that the air bag system is functioning normally.

(20) **If air bag warning lamp fails to light, blinks on and off or goes on and stays on, there is an air bag system malfunction.** Refer to the Passive Restraint Diagnostic Test Manual to diagnose the system malfunction.

(21) Test the operation of the horn, lights and any other functions that are steering column operated. If applicable reset the radio and the clock.

(22) Road test vehicle to ensure proper operation of the steering system and the speed control system.

SPECIFICATIONS

STEERING COLUMN FASTENER TORQUE SPECIFICATIONS

DESCRIPTION	TORQUE
Steering Wheel	
Retaining Nut	61 N·m (45 ft. lbs.)
Steering Column Assembly	
Upper and Lower Mounting Bracket Attaching Nuts	17 N·m (150 in. lbs.)