

STEERING

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STEERING

DESCRIPTION

Power steering systems consist of:

- Steering column & Intermediate Shaft
- Rack and pinion steering gear
- Belt driven hydraulic steering pump
- Pump pressure, supply and return hoses
- Oil Cooler

OPERATION

The steering column intermediate shaft attaches the steering column to the gear pinion. The rotation of the pinion moves the gear rack from side-to-side. This lateral action of the rack pushes and pulls the tie rods to change the direction of the front wheels.

Power assist is provided by an engine mounted hydraulic pump. The pump supplies hydraulic fluid to the steering gear. All vehicles are equipped with an oil cooler.

DIAGNOSIS AND TESTING

DIAGNOSIS AND TESTING - POWER STEERING SYSTEM

STEERING NOISE

There is some noise in all power steering systems. One of the most common is a hissing sound evident at a standstill/parking, or when the steering is at the end of it's travel. Hiss is a high frequency noise similar to that of a water tap being closed slowly. The noise is present in all valves that have a high velocity fluid passing through an orifice. There is no relationship between this noise and steering performance.

CONDITION	POSSIBLE CAUSES	CORRECTION
OBJECTIONAL HISS OR WHISTLE	1. Steering intermediate shaft to dash panel seal. 2. Noisy valve in power steering gear.	1. Check and repair seal at dash panel. 2. Replace steering gear.
	1. Gear mounting bolts loose. 2. Loose or damaged suspension components. 3. Internal gear noise. 4. Loose or damaged intermediate shaft or column.	1. Tighten bolts to specification. 2. Inspect and repair suspension. 3. Replace steering gear. 4. Inspect and repair or replace.
MOAN	Pressure hose in contact with other components.	Reposition hose.
CHIRP OR SQUEAL	1. Loose belt.	1. Adjust or replace.

STEERING (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
WHINE OR GROWL	1. Low fluid level. 2. Pressure hose in contact with other components. 3. Internal pump noise.	1. Fill to proper level. 2. Reposition hose. 3. Replace pump.
SUCKING AIR SOUND	1. Loose return line clamp. 2. O-ring missing or damaged on hose fitting. 3. Low fluid level. 4. Air leak between pump and reservoir. 5. Reservoir cap not installed correctly.	1. Replace clamp. 2. Replace o-ring. 3. Fill to proper level. 4. Repair as necessary. 5. Install reservoir cap correctly.
SCRUBBING OR KNOCKING	1. Wrong tire size. 2. Wrong gear. 3. Tire Pressure	1. Verify tire size. 2. Verify gear. 3. Adjust Tire Pressure

BINDING AND STICKING

CONDITION	POSSIBLE CAUSE	CORRECTION
DIFFICULT TO TURN WHEEL STICKS OR BINDS	1. Low fluid level. 2. Tire pressure. 3. Steering components (ball joints/tie rod ends). 4. Loose belt. 5. Low pump pressure. 6. Column Intermediate shaft binding. 7. Steering gear worn.	1. Fill to proper level. 2. Adjust tire pressure. 3. Inspect and repair as necessary. 4. Adjust or replace. 5. Pressure test and replace if necessary. 6. Replace Intermediate Shaft. 7. Replace gear.

INSUFFICIENT ASST. OR POOR RETURN TO CENTER

CONDITION	POSSIBLE CAUSE	CORRECTION
HARD TURNING OR MOMENTARY INCREASE IN TURNING EFFORT	1. Tire pressure. 2. Low fluid level. 3. Loose belt. 4. Low pump pressure. 5. Internal gear leak.	1. Adjust tire pressure. 2. Fill to proper level. 3. Adjust or replace. 4. Pressure test and repair as necessary. 5. Replace gear.
STEERING WHEEL DOES NOT WANT TO RETURN TO CENTER POSITION	1. Tire pressure. 2. Wheel alignment. 3. Lack of lubrication. 4. High friction in steering gear.	1. Adjust tire pressure. 2. Align front end. 3. Inspect and lubricate suspension compnents. 4. Replace gear.

STEERING (Continued)

LOOSE STEERING AND VEHICLE LEAD

CONDITION	POSSIBLE CAUSE	CORRECTION
EXCESSIVE PLAY IN STEERING WHEEL	1. Worn or loose suspension or steering components. 2. Worn or loose wheel bearings. 3. Steering gear mounting. 4. Gear out of adjustment. 5. Worn or loose steering intermediate shaft.	1. Inspect and repair as necessary. 2. Inspect and replace bearings. 3. Tighten / replace gear mounting bolts/ isolators to specification. 4. Replace gear. 5. Inspect and replace as necessary.
VEHICLE PULLS, DRIFTS OR LEADS TO ONE SIDE.	1. Tire Pressure. 2. Radial tire lead. 3. Brakes dragging. 4. Wheel alignment.	1. Adjust tire pressure. 2. Rotate tires. 3. Repair as necessary. 4. Align front end.

DIAGNOSIS AND TESTING - POWER STEERING FLOW AND PRESSURE

The following procedure is used to test the operation of the power steering system on the vehicle. This test will provide the gallons per minute (GPM) or flow rate of the power steering pump along with the maximum relief pressure. Perform test any time a power steering system problem is present. This test will determine if the power steering pump or power steering gear is not functioning properly. The following pressure and flow test is performed using Power Steering Analyzer Tool kit 6815 and (Fig. 1) Adapter Kit 6893.

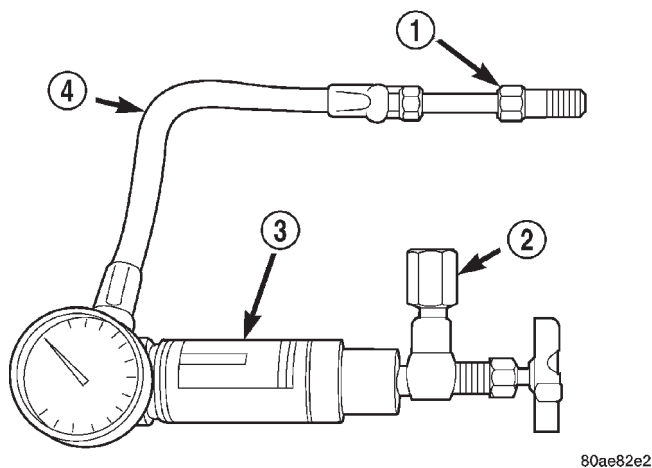


Fig. 1 Analyzer With Tube and Adapter

- 1 - TUBE
- 2 - ADAPTER FITTINGS
- 3 - ANALYZER
- 4 - GAUGE HOSE

FLOW AND PRESSURE TEST

- (1) Check the power steering belt to ensure it is in good condition and adjusted properly.
- (2) Connect pressure gauge hose from the Power Steering Analyzer to Tube 6844.
- (3) Connect Adapter 6826 to Power Steering Analyzer test valve end.
- (4) Disconnect the high pressure hose from the power steering pump.
- (5) Connect the tube to the pump hose fitting.
- (6) Connect the power steering hose from the steering gear to the adapter.
- (7) Open the test valve completely.
- (8) Start engine and let idle long enough to circulate power steering fluid through flow/pressure test gauge and to get air out of the fluid. Then shut off engine.
- (9) Check fluid level, add fluid as necessary. Start engine again and let idle.
- (10) Check for air bubbles, Evacuate if necessary
- (11) Gauge should read below 862 kPa (125 psi), if above, inspect the hoses for restrictions and repair as necessary. The initial pressure reading should be in the range of 345-552 kPa (50-80 psi).
- (12) Increase the engine speed to 1500 RPM and read the flow meter. If the flow rate (GPM) is below specification, (refer to pump specification chart for GPM) the pump should be replaced.

CAUTION: The following test procedure involves testing maximum pump pressure output and flow control valve operation. Do not leave valve closed for more than three seconds as the pump could be damaged.

STEERING (Continued)

(13) Close valve fully three times and record highest pressure indicated each time. **All three readings must be above specifications and within 345 kPa (50 psi) of each other.**

- Pressures above specifications but not within 345 kPa (50 psi) of each other, replace pump.
- Pressures within 345 kPa (50 psi) of each other but below specifications, replace pump.

(14) Open the test valve and turn the steering wheel to the extreme left and right positions three times against the stops. Record the highest pressure reading at each position. Compare readings to the pump specifications chart. If pressures readings are not within 50 psi of each other, the gear is leaking internally and must be replaced.

CAUTION: Do not force the pump to operate against the stops for more than 2 to 3 seconds at a time because, pump damage will result.

PUMP SPECIFICATION

ENGINE	RELIEF PRESSURE ± 50	FLOW RATE (GPM) AT 1500 RPM
3.7L, 2.4L & 2.5L	10342 kPa (1450 psi)	2.4 - 2.8

COLUMN

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COLUMN

DESCRIPTION

The standard non-tilt and tilt steering column has been designed to be serviced as an assembly. The column is connected to the steering gear with a one piece shaft. The upper half has a support bearing mounted to a bracket. The bracket mounts to the frame rail with two nuts. The shaft is serviceable. The key cylinder, switches, clock spring, trim shrouds and steering wheel are serviced separately.

OPERATION - SERVICE PRECAUTIONS

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

To service the steering wheel, switches or airbag, refer to Electrical - Restraints and follow all WARNINGS and CAUTIONS.

WARNING: THE AIRBAG SYSTEM IS A SENSITIVE, COMPLEX ELECTRO-MECHANICAL UNIT. BEFORE ATTEMPTING TO DIAGNOSE, REMOVE OR INSTALL THE AIRBAG SYSTEM COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. THEN WAIT TWO

MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE. FAILURE TO DO SO COULD RESULT IN ACCIDENTAL DEPLOYMENT OF THE AIRBAG AND POSSIBLE PERSONAL INJURY. THE FASTENERS, SCREWS, AND BOLTS, ORIGINALLY USED FOR THE AIRBAG COMPONENTS, HAVE SPECIAL COATINGS AND ARE SPECIFICALLY DESIGNED FOR THE AIRBAG 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.

REMOVAL

- (1) Position front wheels **straight ahead**.
- (2) Remove and isolate the negative ground cable from the battery.
- (3) Remove the airbag, (Refer to 8 - ELECTRICAL/ RESTRAINTS/DRIVER AIRBAG - REMOVAL).

NOTE: If equipped with cruise control, disconnect clock spring harness from the cruise switch harness on the steering wheel.

COLUMN (Continued)

(4) Remove the steering wheel with an appropriate puller (Fig. 1) (Refer to 19 - STEERING/COLUMN/STEERING WHEEL - REMOVAL).

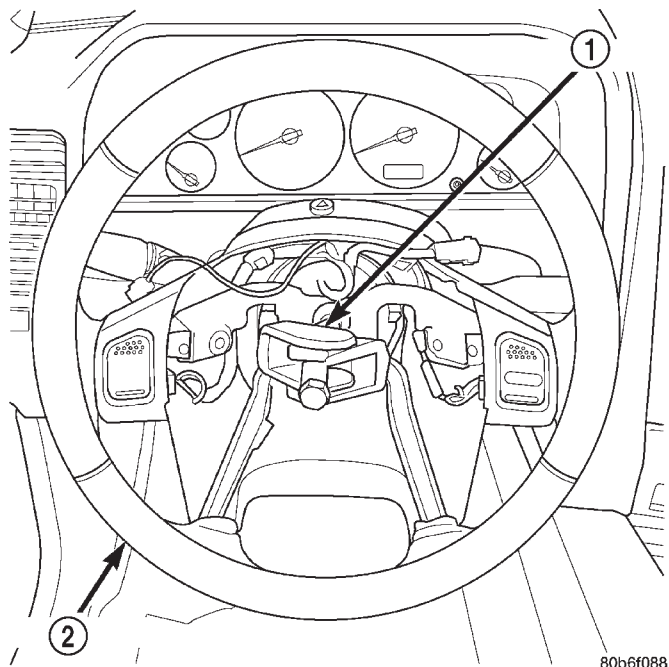


Fig. 1 Steering Wheel Puller

- 1 - PULLER C-3894-A
2 - STEERING WHEEL

(5) Remove knee blocker cover and knee blocker, (Refer to 23 - BODY/INSTRUMENT PANEL/KNEE BLOCKER - REMOVAL). (Fig. 2)

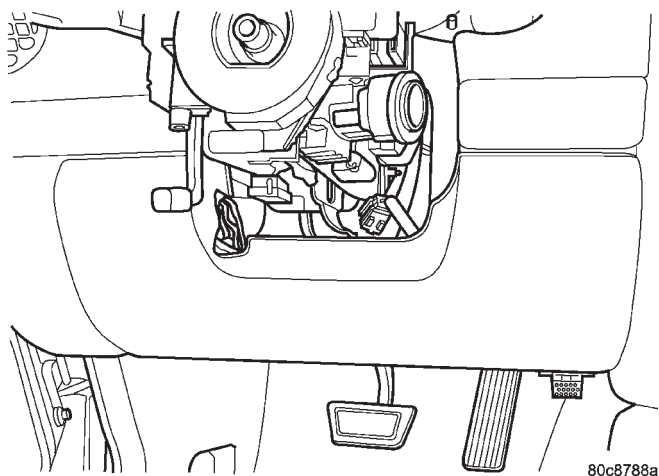
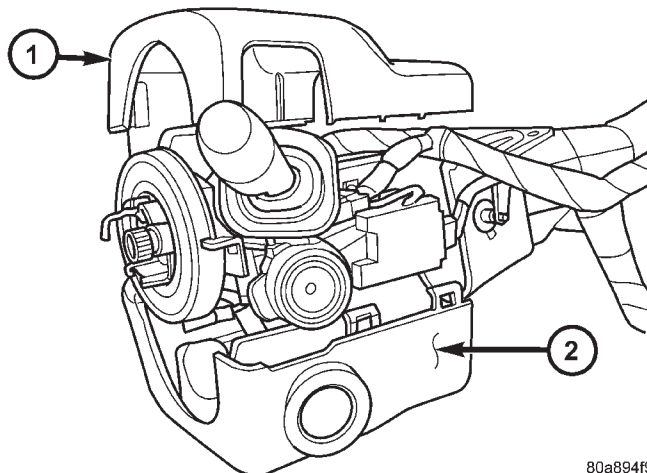


Fig. 2 KNEE BLOCKER

(6) Remove screws from the lower column shroud (Fig. 3) and remove both the upper and lower shrouds.

(7) Turn ignition key to the on position.



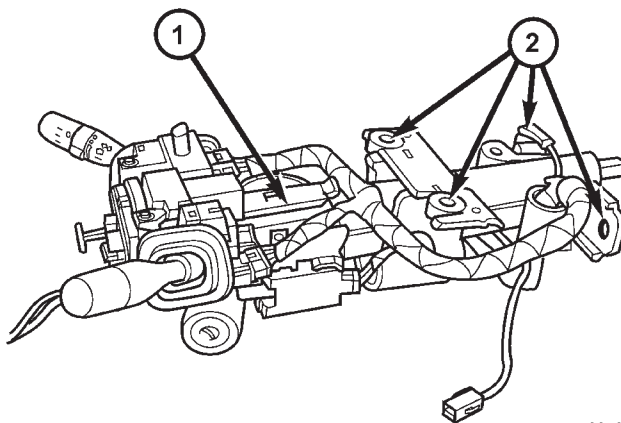
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Fig. 3 SHROUD REMOVAL/INSTALL

- 1 - Upper Shroud
2 - Lower Shroud

(8) If vehicle is equipped with automatic transmission, disconnect shifter interlock cable from the column.

(9) Remove the steering coupler bolt and column mounting nuts and bolts (Fig. 4) then lower column off the mounting studs.



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Fig. 4 STEERING COLUMN MOUNTING

- 1 - Steering Column
2 - Mounting Holes

(10) Disconnect and remove the wiring harness from the column (Fig. 5).

(11) Slide the shifter interlock cable from the tie straps.

(12) Remove column.

(13) Transfer the necessary parts if needed.

(14) Remove clock spring (Fig. 6), switches, (SKIM if equipped) (Refer to 8 - ELECTRICAL/RESTRAINTS/CLOCKSPRING - REMOVAL).

COLUMN (Continued)

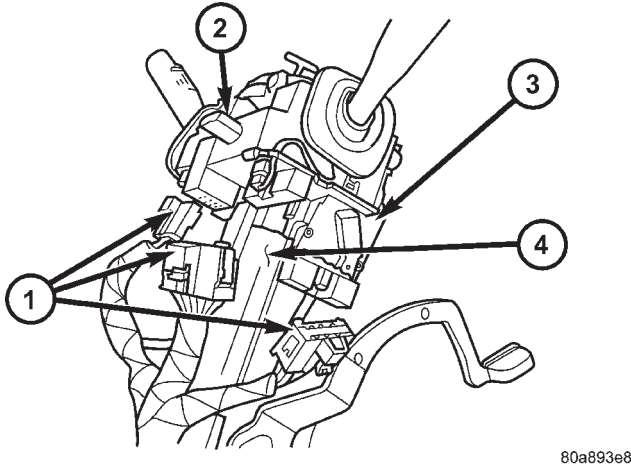


Fig. 5 WIRING HARNESS COLUMN

- 1 - Column Wiring Harness
- 2 - Multi-function Switch
- 3 - Ignition Switch
- 4 - Steering Column

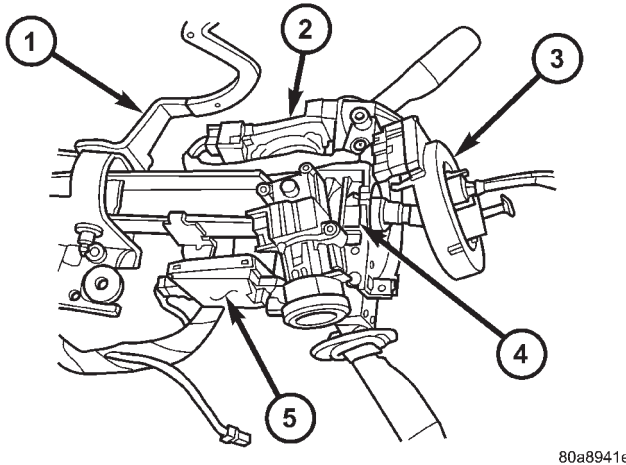


Fig. 6 CLOCK SPRING

- 1 - Tilt Lever
- 2 - Ignition Switch
- 3 - Clockspring
- 4 - Steering Column
- 5 - SKIM

INSTALLATION

(1) Align and install column into the steering coupler.

(2) Install column harness and connect harness to switches.

(3) Reroute the shifter interlock cable through the tie straps.

(4) Install the column onto the mounting studs.

(5) Install the two mounting nuts and the two mounting bolts all finger tight.

CAUTION: Lower nuts must be installed and tightened first then the upper nuts in order to prevent damage to the capsules.

(6) Tighten the lower mounting nuts to 17 N·m (150 in. lbs.).

(7) Tighten the upper mounting nuts to 17 N·m (150 in. lbs.).

(8) Install the steering column coupler bolt and tighten to 49 N·m (36 ft. lbs.).

(9) Reconnect the shifter interlock cable.

(10) Center the clock spring (if necessary) and install it on the column, (Refer to 8 - ELECTRICAL/RESTRAINTS/CLOCKSPRING - INSTALLATION).

(11) Snap together the column shrouds and install the mounting screws.

(12) Install the knee blocker and the knee blocker cover, (Refer to 23 - BODY/INSTRUMENT PANEL/KNEE BLOCKER - INSTALLATION).

(13)

NOTE: Do not reuse the old steering wheel bolt (a new bolt must be used)

NOTE: Be certain that the steering wheel mounting bolt is tightened to the proper torque specification to ensure proper clockspring operation. Install the steering wheel and tighten bolt to 54 N·m (40 ft. lbs.) (Refer to 19 - STEERING/COLUMN/STEERING WHEEL - INSTALLATION).

NOTE: If equipped with cruise control, connect clock spring harness to cruise switch harness on the steering wheel.

(14) Install the airbag, (Refer to 8 - ELECTRICAL/RESTRAINTS/DRIVER AIRBAG - INSTALLATION).

(15) Install the negative battery terminal.

COLUMN (Continued)

SPECIFICATIONS

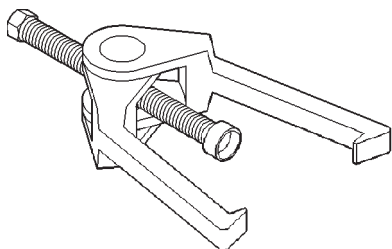
TORQUE CHART

TORQUE SPECIFICATIONS

DESCRIPTION	N·m	Ft. Lbs.	In. Lbs.
Tilt Steering Column Steering Wheel Bolt	54	40	—
Tilt Steering Column Mounting Bolts	17	—	150
Tilt Steering Column Coupler Bolt	49	36	—
Non-Tilt Steering Column Steering Wheel Bolt	54	40	—
Non-Tilt Steering Column Mounting Bolts	17	—	150
Non-Tilt Steering Column Coupler Bolt	49	36	—
Ignition Switch Screws	2	—	17

SPECIAL TOOLS

STEERING COLUMN

*Puller C-3894-A*

IGNITION SWITCH

DESCRIPTION

The electrical ignition switch is located on the steering column. It is used as the main on/off switching device for most electrical components. The mechanical key lock cylinder is used to engage/disengage the electrical ignition switch.

DIAGNOSIS AND TESTING - IGNITION SWITCH

ELECTRICAL DIAGNOSIS

For ignition switch electrical schematics, Refer to the appropriate section for the component.

MECHANICAL DIAGNOSIS (KEY DIFFICULT TO ROTATE)

Vehicles equipped with an automatic transmission and a floor mounted shifter: a cable is used to connect the interlock device in the steering column assembly, to the transmission floor shift lever. This interlock system is used to lock the transmission shifter in the PARK position when the key lock cylinder is rotated to the LOCKED or ACCESSORY position. If the ignition key is difficult to rotate to or from the LOCK or ACCESSORY position, it may not be the fault of the key cylinder or the steering column components. The brake transmission shift interlock cable may be out of adjustment. (Refer to 21 - TRANSMISSION/TRANSAXLE/AUTOMATIC - 30RH/GEAR SHIFT CABLE - ADJUSTMENTS). The interlock system within the steering column is not serviceable. If repair is necessary, the steering column assembly must be replaced. (Refer to 19 - STEERING/COLUMN - REMOVAL).

Vehicles equipped with a manual transmission and a floor mounted shifter: on certain models, a button is located on the steering column behind the ignition key lock cylinder. The button must be manually depressed to allow rotation of the ignition key lock cylinder to the LOCK or ACCESSORY position. If it is difficult to rotate the key to the LOCK or ACCESSORY position, the lever mechanism may be defective. This mechanism is not serviceable. If repair is necessary, the steering column assembly must be replaced. (Refer to 19 - STEERING/COLUMN - REMOVAL).

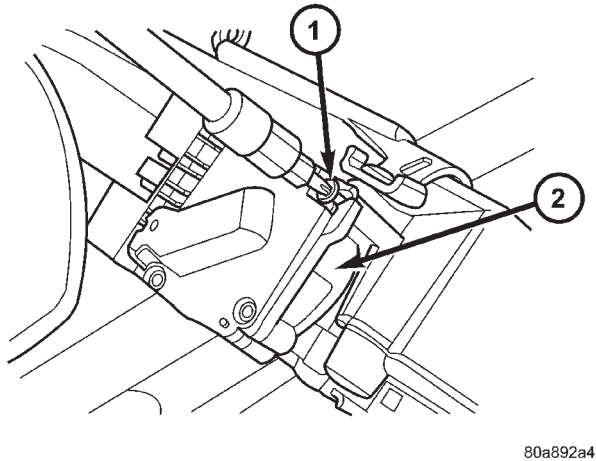
IGNITION SWITCH (Continued)

REMOVAL

IGNITION SWITCH REMOVAL

The ignition key must be in the key cylinder for cylinder removal. The key cylinder must be removed first before removing ignition switch.

- (1) Remove lower steering column cover screws and remove cover.
- (2) Remove lock cylinder.(Refer to 19 - STEERING/COLUMN/KEY/LOCK CYLINDER - REMOVAL).
- (3) Remove the multi-function switch.
- (4) Disconnect the electrical connector at the rear of the ignition switch.
- (5) Remove the ignition switch mounting screw (Fig. 7). Use tamper proof torx bit to remove the screw.

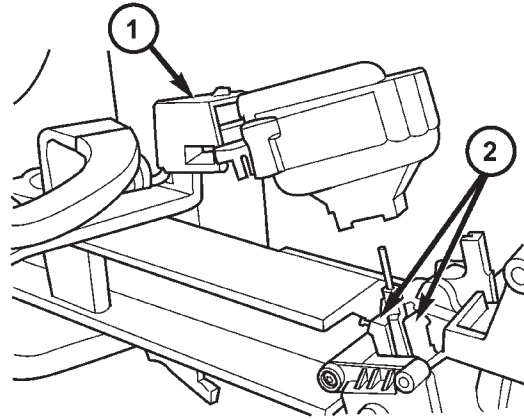


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Fig. 7 IGNITION SWITCH MOUNTING SCREW

- 1 - Tamper Proof Torx Screw
- 2 - Ignition Switch

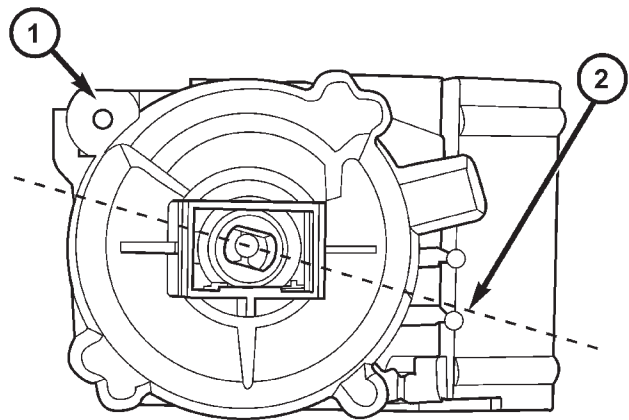
- (6) Pull the ignition switch straight out to remove from the locking tabs (Fig. 8)



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Fig. 8 IGNITION SWITCH TABS

- 1 - Ignition Switch
- 2 - Locking Tabs



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Fig. 9 IGNITION SWITCH ON POSITION

- 1 - Ignition Switch
- 2 - Rotate to On Position

INSTALLATION

IGNITION SWITCH INSTALLATION

The ignition key must be in the key cylinder for cylinder installation. The key cylinder must be aligned with the ignition switch for installation.

- (1) Before installing ignition switch, rotate the slot in the switch to the ON position (Fig. 9).
- (2) Connect the electrical connector to rear of ignition switch. Make sure that locking tab is fully seated into wiring connector.
- (3) Position the switch to the column and install tamper proof screw. Tighten screw to 2 N·m (17 in. lbs.).

- (4) Install the lock cylinder (Refer to 19 - STEERING/COLUMN/KEY/LOCK CYLINDER - INSTALLATION).

- (5) Test the operation of the lock cylinder for smooth rotating.
- (6) Install the multi-function switch.
- (7) Install steering column lower cover.

KEY-IN IGNITION SWITCH

DESCRIPTION

The key-in ignition switch is integral to the ignition switch, which is mounted on the left side of the steering column, opposite the ignition lock cylinder. It closes a path to ground for the instrument cluster chime warning circuitry when the ignition key is inserted in the ignition lock cylinder and the driver door jamb switch is closed (driver door is open). The key-in ignition switch opens the ground path when the key is removed from the ignition lock cylinder.

The key-in ignition switch cannot be repaired and, if faulty or damaged, the entire ignition switch must be replaced. (Refer to 19 - STEERING/COLUMN/IGNITION SWITCH - REMOVAL).

DIAGNOSIS AND TESTING - KEY-IN IGNITION SWITCH

For circuit descriptions and diagrams, Refer to the appropriate sections on the individual components.

WARNING: ON VEHICLES EQUIPPED WITH AIR-BAGS, REFER TO ELECTRICAL - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIR-BAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Disconnect and isolate the battery negative cable. Remove the steering column shrouds. Unplug the key-in ignition switch wire harness connector from the ignition switch.

(2) Check for continuity between the key-in switch sense circuit and the left front door jamb switch sense circuit terminals of the key-in ignition switch. There should be continuity with the key in the ignition lock cylinder, and no continuity with the key removed from the ignition lock cylinder. If OK, go to Step 3. If not OK, replace the faulty ignition switch assembly.

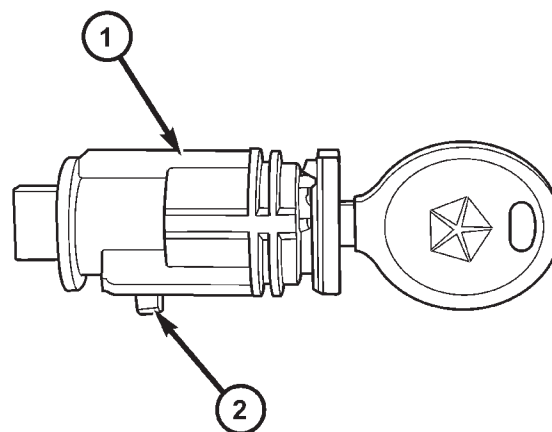
(3) Check for continuity between the left front door jamb switch sense circuit cavity of the key-in ignition switch wire harness connector and a good ground. There should be continuity with the driver door open, and no continuity with the driver door closed. If OK, see the diagnosis for Instrument Cluster in this group. If not OK, repair the circuit to the driver door jamb switch as required.

LOCK CYLINDER

REMOVAL

The ignition key must be in the key cylinder for cylinder removal. The key cylinder must be removed first before removing ignition switch.

- (1) If equipped with an automatic transmission, place shifter in PARK position.
- (2) Remove the lower shroud cover.
- (3) Remove the remote keyless entry (R.K.E.) module.
- (4) Remove the halo ring around the lock cylinder.
- (5) Rotate key to ON position.
- (6) A release tang is located on bottom of key cylinder (Fig. 10).



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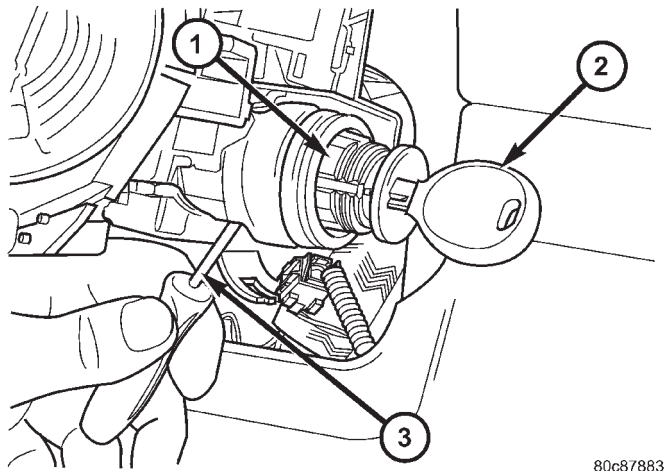
Fig. 10 LOCK CYLINDER RELEASE TANG

- 1 - Lock Cylinder
2 - Release Tang

(7) Position a small screwdriver or pin punch into tang access hole on bottom of steering column (Fig. 11).

(8) Push the pin punch up while pulling key cylinder from steering column.

LOCK CYLINDER (Continued)



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Fig. 11 LOCK CYLINDER RELEASE

- 1 - LOCK CYLINDER
- 2 - KEY
- 3 - PIN PUNCH

INSTALLATION

The ignition key must be in the key cylinder for cylinder installation.

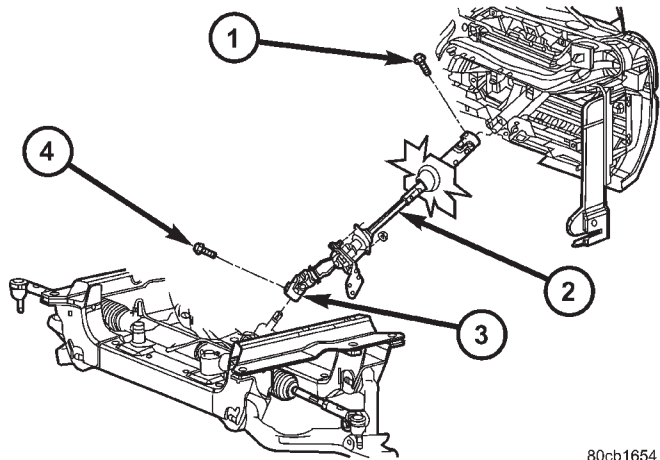
- (1) Install the lock cylinder into the housing using care to align the end of the lock cylinder with the ignition switch.
- (2) Push the lock cylinder in until it clicks.
- (3) Rotate the key to the lock position.
- (4) install the halo ring around the lock cylinder housing.
- (5) Install the R.K.E. module.
- (6) Install the lower shroud cover.

INTERMEDIATE SHAFT**REMOVAL**

- (1) Disconnect the negative battery cable.
- (2) Remove knee blocker cover and knee blocker, (Refer to 23 - BODY/INSTRUMENT PANEL/KNEE BLOCKER - REMOVAL).
- (3) Lock the steering wheel with the tires in the straight ahead position.
- (4) Remove the lower column pinch bolt (Fig. 12).
- (5) Lower the steering coupler shaft from the column.
- (6) Remove the intermediate shaft seal by pushing in the four tangs securing it to the panel (Fig. 12).
- (7) Remove the center support bearing bracket from the mount on the shock tower.
- (8) Remove the lower coupler pinch bolt at the steering gear (Fig. 12).
- (9) Remove the coupler at the steering gear (Fig. 12).

(10) Remove the intermediate shaft from the vehicle (Fig. 12).

(11) Remove the center support bracket from the steering shaft (if replacing the intermediate shaft).



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Fig. 12 STEERING COUPLER

- 1 - PINCH BOLT
- 2 - STEERING SHAFT
- 3 - STEERING COUPLER
- 4 - PINCH BOLT

INSTALLATION

- (1) Install the center support bracket to the steering shaft (if removed).
- (2) Install the intermediate shaft to the vehicle (Fig. 12).
- (3) Install the coupler at the steering gear (Fig. 12).
- (4) Install the lower coupler pinch bolt at the steering gear and tighten the bolt to 49 N·m (36 ft. lbs.) (Fig. 12).
- (5) Install the center support bearing bracket to the mounting holes on the shock tower.
- (6) Install the intermediate shaft seal by pushing it in securing the four tangs to the panel (Fig. 12).
- (7) Install the steering coupler shaft to the column.
- (8) Install the lower column pinch bolt and tighten the bolt to 49 N·m (36 ft. lbs.) (Fig. 12).
- (9) Unlock the steering wheel.
- (10) Install the knee blocker cover and knee blocker (Refer to 23 - BODY/INSTRUMENT PANEL/KNEE BLOCKER - INSTALLATION).
- (11) Reconnect the negative battery cable.

STEERING WHEEL

REMOVAL

(1) Disable and remove the drivers side airbag.(Refer to 8 - ELECTRICAL/RESTRAINTS/DRIVER AIRBAG - REMOVAL).

(2) Partially remove the steering wheel bolt and leave the bolt in the column.

(3) Install puller C-3894-A or equivalent using the top of the bolt to push on. (Fig. 13)

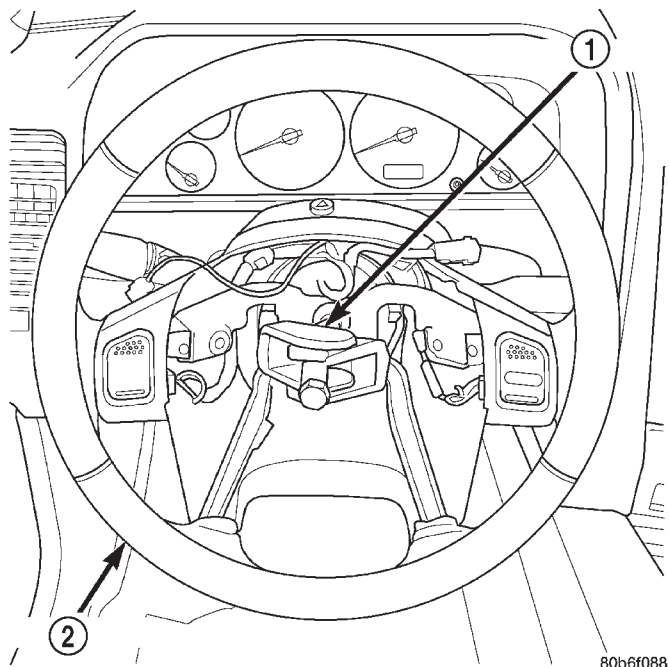


Fig. 13 Steering Wheel Puller

- 1 - PULLER C-3894-A
2 - STEERING WHEEL

INSTALLATION

NOTE: Do not reuse the old steering wheel bolt (a new bolt must be used)

(1) Install steering wheel to the column

NOTE: Be certain that the steering wheel mounting bolt is tightened to the proper torque specification to ensure proper clockspring operation.

(2) Install the new steering wheel bolt. Tighten the bolt to 54 N·m (40 ft. lbs.).

(3) Install the drivers side air bag. (Refer to 8 - ELECTRICAL/RESTRAINTS/DRIVER AIRBAG - INSTALLATION).

(4) Remove the steering wheel.

GEAR

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GEAR

DESCRIPTION

A rack and pinion steering gear (Fig. 1) is made up of two main components, the pinion shaft and the rack. The gear cannot be adjusted or internally serviced. If a malfunction or a fluid leak occurs, the gear must be replaced as an assembly.

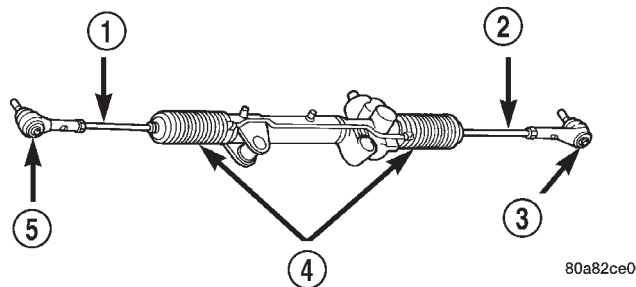


Fig. 1 Rack & Pinion Steering Gear

- 1 - TIE ROD - INNER
- 2 - TIE ROD - INNER
- 3 - TIE ROD END - OUTER LH
- 4 - BOOTS
- 5 - TIE ROD END - OUTER RH

OPERATION

The steering column intermediate shaft is attached to the gear pinion. The rotation of the pinion moves the gear rack from side-to-side. This lateral action of the rack pushes and pulls the tie rods, which are connected to the steering knuckles to change the direction of the front wheels.

REMOVAL

REMOVAL - 4WD

- (1) Siphon the power steering fluid from the power steering reservoir.
- (2) Lock the steering wheel to prevent spinning of the clockspring.
- (3) Raise and support the vehicle.
- (4) Remove the skid plate from under the front end to gain access to the gear (Refer to 13 - FRAME & BUMPERS/FRAME/FRONT SKID PLATE - REMOVAL).
- (5) Remove the front tire and wheel assemblies.

NOTE: Mark the alignment adjusting cams for easier installation.

- (6) Remove the lower control arms. (Refer to 2 - SUSPENSION/FRONT/LOWER CONTROL ARM - REMOVAL).
- (7) Remove the front axle. (Refer to 3 - DIFFERENTIAL & DRIVELINE/FRONT AXLE - REMOVAL).
- (8) Remove the tie rod end nuts.
- (9) Separate tie rod ends from the knuckles with Puller C-3894-A.
- (10) Remove the intermediate shaft lower coupler bolt and slide the coupler off the gear (Fig. 2).
- (11) Remove power steering pressure hose bracket (Fig. 3).
- (12) Remove the power steering lines from the gear (Fig. 2).
- (13) Remove the mounting bolts from the gear to the front cradle (Fig. 3).
- (14) Remove the steering gear from the vehicle.

GEAR (Continued)

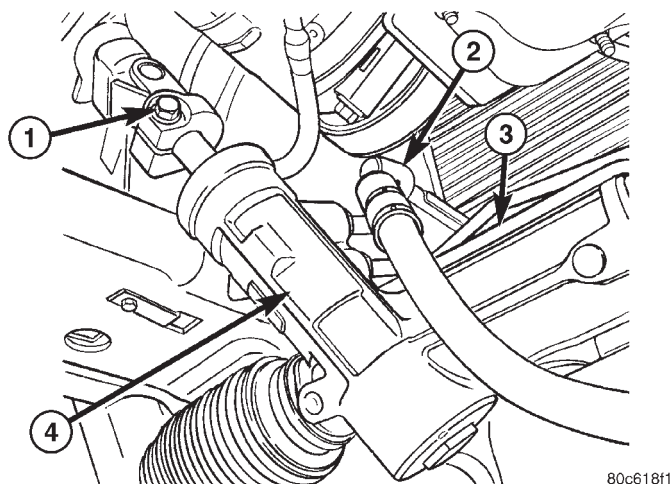


Fig. 2 COUPLER BOLT

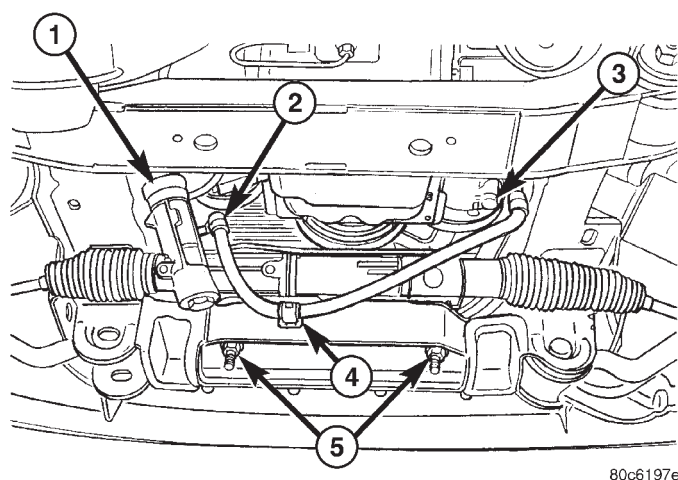


Fig. 3 RACK & PINION

REMOVAL - 2WD

- (1) Siphon the power steering fluid from the power steering reservoir.
- (2) Lock the steering wheel to prevent spinning of the clockspring.
- (3) Raise and support the vehicle.
- (4) Remove the skid plate from under the front end to gain access to the gear (Refer to 13 - FRAME & BUMPERS/FRAME/FRONT SKID PLATE - REMOVAL).
- (5) Remove the tire and wheel assembly.

NOTE: Mark the alignment adjusting cams and tie rod end jam nuts on the steering gear for easier installation.

- (6) Remove the tie rod end nuts.
- (7) Separate tie rod ends from the knuckles with Puller C-3894-A.
- (8) Remove the lower intermediate shaft coupler bolt and slide the coupler off the gear (Fig. 2).

(9) Remove power steering pressure hose bracket (Fig. 3).

(10) Remove the power steering lines from the gear (Fig. 2).

(11) Remove the mounting bolts from the gear to the front cradle (Fig. 3).

(12) Remove the steering gear from the vehicle.

INSTALLATION**INSTALLATION - 4WD**

(1) Transfer the tie rod ends to the new steering gear (if needed).

(2) Install the steering gear to the vehicle.

(3) Install the gear mounting bolts to the front cradle. (Fig. 3). Tighten the gear mounting bolts to 162 N·m (120 ft.lbs.)

(4) Install the power steering lines to the gear (Fig. 2).

(5) Install the power steering pressure hose bracket (Fig. 3).

(6) Install the lower coupler bolt and slide the coupler on to the gear (Fig. 2).

(7) Install the tie rod end to the knuckle and tighten the nuts.

(8) Install the front axle. (Refer to 3 - DIFFERENTIAL & DRIVELINE/FRONT AXLE - INSTALLATION).

(9) Install the lower control arms. (Refer to 2 - SUSPENSION/FRONT/LOWER CONTROL ARM - INSTALLATION).

(10) Install the tire and wheel assembly. (Refer to 22 - TIRES/WHEELS/WHEELS - STANDARD PROCEDURE).

(11) Install the skid plate (Refer to 13 - FRAME & BUMPERS/FRAME/FRONT SKID PLATE - INSTALLATION).

(12) Lower the vehicle.

(13) Unlock the steering wheel.

(14) Fill the power steering fluid (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).

(15) Reset the toe and center the steering wheel (Refer to 2 - SUSPENSION/WHEEL ALIGNMENT - STANDARD PROCEDURE).

INSTALLATION - 2WD

(1) Transfer the outer tie rod ends to the new steering gear (if needed).

(2) Install the steering gear to the vehicle.

(3) Install the gear mounting bolts to the front cradle. (Fig. 3). Tighten the gear mounting bolts to 162 N·m (120 ft.lbs.)

(4) Install the power steering lines to the gear (Fig. 2).

GEAR (Continued)

(5) Install the power steering pressure hose bracket (Fig. 3).

(6) Install the lower coupler bolt and slide the coupler on to the gear (Fig. 2).

(7) Install the tie rod end to the knuckle and tighten the nuts.

(8) Install the tire and wheel assembly. (Refer to 22 - TIRES/WHEELS/WHEELS - STANDARD PROCEDURE).

(9) Install the skid plate (Refer to 13 - FRAME & BUMPERS/FRAME/FRONT SKID PLATE - INSTALLATION).

(10) Lower the vehicle.

(11) Unlock the steering wheel.

(12) Fill the power steering fluid (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).

(13) Reset the toe and center the steering wheel (Refer to 2 - SUSPENSION/WHEEL ALIGNMENT - STANDARD PROCEDURE).

SPECIFICATIONS

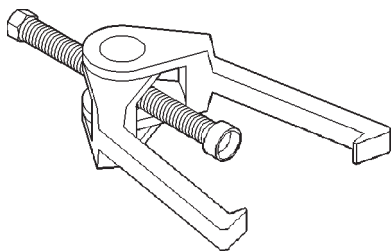
TORQUE CHART

TORQUE SPECIFICATIONS

DESCRIPTION	N·m	Ft. Lbs.	In. Lbs.
Rack and Pinion Steering Gear Gear to Frame Bolts	162	120	—
Rack and Pinion Steering Gear Intermediate Shaft Bolt	49	36	—
Tie Rod End Knuckle Nut	108	80	—
Tie Rod End Jam Nut	75	55	—
Power Steering Line Pressure Line	35	25	—
Power Steering Line Return Line	35	25	—

SPECIAL TOOLS

OUTER TIE ROD END REMOVAL TOOL



Puller C-3894-A

LINKAGE

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LINKAGE

STANDARD PROCEDURE - STEERING LINKAGE

The tie rod end and ball stud seals should be inspected during all oil changes. If a seal is damaged, replace the tie rod.

CAUTION: If any steering components are replaced or serviced an alignment must be performed, to ensure the vehicle meets all alignment specifications.

TIE ROD END

REMOVAL

- (1) Raise and support the vehicle.

(2) Remove the tire and wheel assembly.
- NOTE:** Mark the tie rod end jam nuts on the steering gear for easier installation.
- (3) Loosen the tie rod end jam nut (Fig. 1).

(4) Remove the tie rod end nut (Fig. 1).

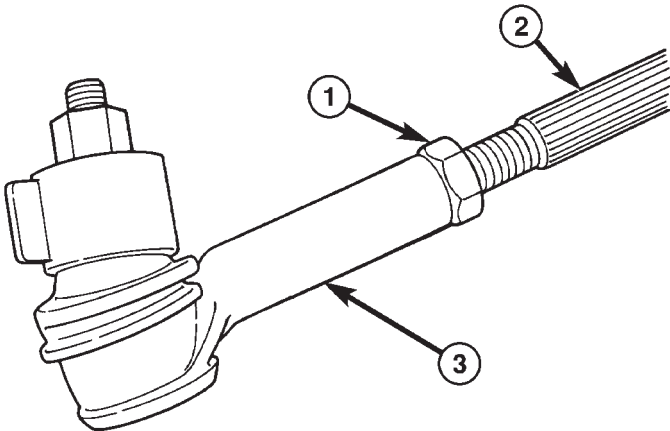
(5) Seperate the tie rod end from the knuckle using tool C3894A.

NOTE: Count the number of turns when removing.

- (6) Remove the tie rod end from the rack (Fig. 1).

INSTALLATION

- (1) Install the tie rod end to the rack to the exact number of turns that it was removed (Fig. 1).



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Fig. 1 TIE ROD END

- 1 - JAM NUT

2 - TIE ROD - INNER

3 - TIE ROD END - OUTER

- (2) Install the tie rod end to the knuckle. Tighten the nut to 108 N·m (80 ft.lbs).

(3) Tighten the jam nut to 76 N·m (55 ft.lbs). (Fig. 1).

(4) Install the tire and wheel assembly. (Refer to 22 - TIRES/WHEELS/WHEELS - STANDARD PROCEDURE).

(5) Reset the toe and center the steering wheel (Refer to 2 - SUSPENSION/WHEEL ALIGNMENT - STANDARD PROCEDURE).

PUMP

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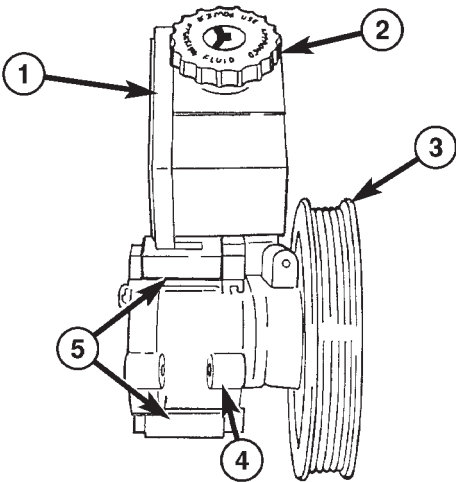
PUMP

DESCRIPTION

Hydraulic pressure for the power steering system is provided by a belt driven power steering pump (Fig. 1). The pump shaft has a pressed-on high strength plastic drive pulley that is belt driven by the crankshaft pulley. The integral reservoir used on the 3.7L only is attached to the pump body with spring clips (Fig. 1). The 2.4L uses a remote fluid reservoir (Fig. 2). The power steering pump is connected to the steering gear by the pressure and return hoses.

OPERATION

The power steering pump is a constant flow rate and displacement, vane-type pump. The pump internal parts operate submerged in fluid. The flow control orifice is part of the high pressure line fitting. The pressure relief valve inside the flow control valve limits the pump pressure.

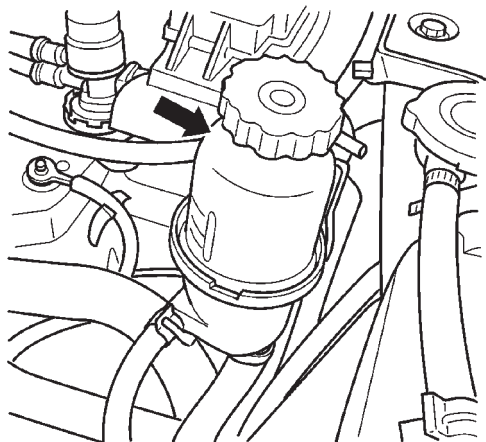


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Fig. 1 POWER STEERING PUMP ASSEMBLY

- 1 - RESERVOIR
- 2 - CAP
- 3 - PULLEY
- 4 - PUMP BODY
- 5 - RESERVOIR RETAINING CLIPS

PUMP (Continued)



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Fig. 2 FLUID RESERVOIR - 2.4L

NOTE: Power steering pumps have different pressure rates and are not interchangeable with other pumps.

STANDARD PROCEDURE - POWER STEERING PUMP - INITIAL OPERATION

WARNING: THE FLUID LEVEL SHOULD BE CHECKED WITH ENGINE OFF TO PREVENT INJURY FROM MOVING COMPONENTS.

CAUTION: Use MOPAR Power Steering Fluid or equivalent. Do not use automatic transmission fluid and do not overfill.

Wipe filler cap clean, then check the fluid level. The dipstick should indicate **COLD** when the fluid is at normal ambient temperature.

- (1) Fill the pump fluid reservoir to the proper level and let the fluid settle for at least two minutes.
- (2) Raise the front wheels off the ground.
- (3) Slowly turn the steering wheel right and left, lightly contacting the wheel stops at least 20 times.
- (4) Check the fluid level add if necessary.
- (5) Lower the vehicle, start the engine and turn the steering wheel slowly from lock to lock.
- (6) Stop the engine and check the fluid level and refill as required.

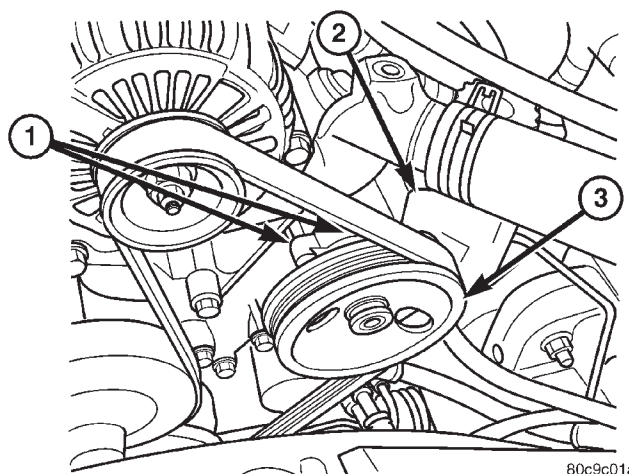
CAUTION: Do not run a vehicle with foamy fluid for an extended period. This may cause pump damage.

- (7) If the fluid is extremely foamy or milky looking, allow the vehicle to stand a few minutes and repeat the procedure.
- (8) Add fluid if necessary. Repeat the above procedure until the fluid level remains constant after running the engine.

REMOVAL

REMOVAL - 3.7L

- (1) Siphon out as much power steering fluid as possible.
- (2) Remove the radiator cross member (Refer to 23 - BODY/EXTERIOR/RADIATOR CROSSMEMBER - REMOVAL).
- (3) Remove the engine cooling fan (Refer to 7 - COOLING/ENGINE/RADIATOR FAN - REMOVAL).
- (4) Remove the fan shroud
- (5) Remove the serpentine drive belt (Refer to 7 - COOLING/ACCESSORY DRIVE/DRIVE BELTS - REMOVAL).
- (6) Remove the power steering high pressure hose at the pump.
- (7) Remove the return hose at the pump.
- (8) Remove the three bolts securing the pump to the bracket thru the holes in the pulley. (Fig. 3)
- (9) Remove the pump from the vehicle.



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Fig. 3 POWER STEERING PUMP - 3.7L

- 1 - MOUNTING BOLTS
- 2 - RESERVOIR
- 3 - STEEL PULLEY

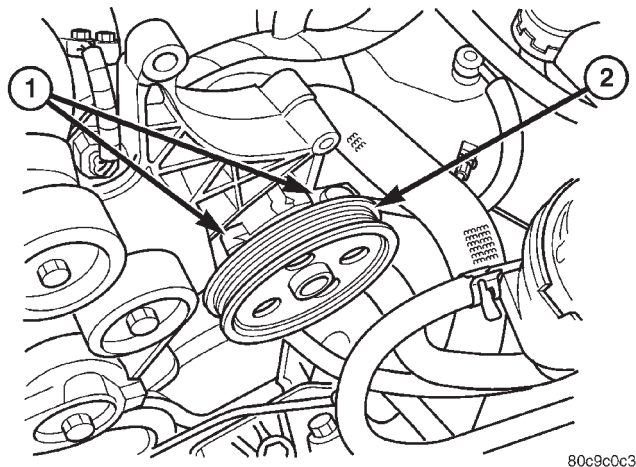
REMOVAL - 2.4L

CAUTION: On vehicles equipped with the 2.4L, Do not reuse the old power steering pump pulley it is not intended for reuse. A new pulley must be installed if removed.

- (1) Siphon out as much power steering fluid as possible.
- (2) Remove the serpentine drive belt.
- (3) Remove the power steering high pressure hose at the pump using care not to remove the flow control valve.
- (4) Remove the return hose at the pump.

PUMP (Continued)

- (5) Remove the two nuts securing the wire loom behind the pump bracket.
- (6) Remove the three bolts securing the pump to the bracket thru the holes in the pulley. (Fig. 4)
- (7) Remove the pump from the vehicle.

**Fig. 4 POWER STEERING PUMP - 2.4L**

- 1 - MOUNTING BOLTS
2 - PULLEY

INSTALLATION

INSTALLATION - 3.7L

- (1) Install the pump to the vehicle.

SPECIFICATIONS

TORQUE CHART

TORQUE SPECIFICATIONS

DESCRIPTION	N·m	Ft. Lbs.	In. Lbs.
Power Steering Pump Bracket to Pump	28	21	—
Power Steering Pump Bracket to Engine	47	35	—
Power Steering Pump Flow Control Valve	75	55	—
Power Steering Pump Pressure Line	28	21	—
Power Steering Pump Pressure Line Bracket	12	9	105

- (2) Install the three bolts securing the pump to the engine. (Fig. 3) Tighten the bolts to 47 N·m (35 ft.lbs.).
- (3) Install the power steering hoses.
- (4) Install the serpentine belt (Refer to 7 - COOLING/ACCESSORY DRIVE/DRIVE BELTS - INSTALLATION).
- (5) Install the fan shroud
- (6) Install the engine cooling fan (Refer to 7 - COOLING/ENGINE/RADIATOR FAN - INSTALLATION).
- (7) Install the radiator crossmember (Refer to 23 - BODY/EXTERIOR/RADIATOR CROSSMEMBER - INSTALLATION).
- (8) Refill the power steering fluid and check for leaks (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).

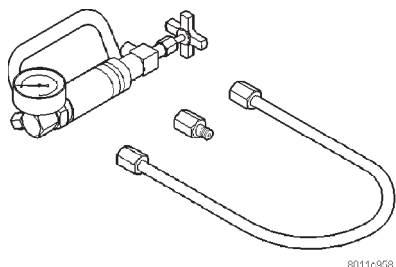
INSTALLATION - 2.4L

- (1) Install the pump to the vehicle.
- (2) Install the three bolts securing the pump to the engine. (Fig. 4) Tighten the bolts to 47 N·m (35 ft.lbs.).
- (3) Install the two nuts securing the wire loom to the pump bracket.
- (4) Install the power steering pressure and supply hoses.
- (5) Install the serpentine belt (Refer to 7 - COOLING/ACCESSORY DRIVE/DRIVE BELTS - INSTALLATION).
- (6) Refill the power steering fluid and check for leaks (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).

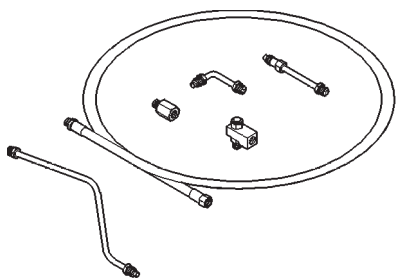
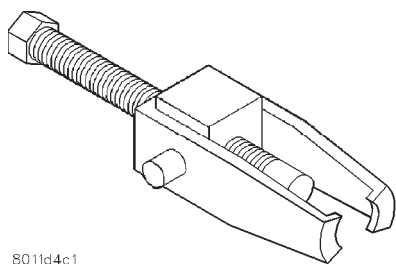
PUMP (Continued)

SPECIAL TOOLS

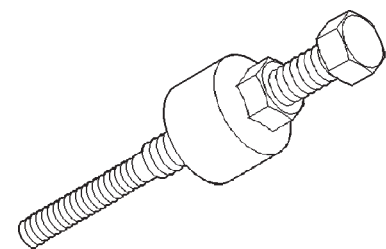
POWER STEERING PUMP



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Analyzer Set, Power Steering Flow/Pressure 6815**Adapters, Power Steering Flow/Pressure Tester 6893**

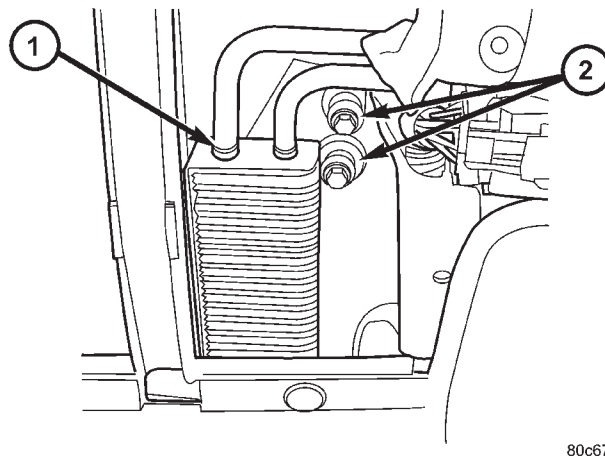
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Puller C-4333**Installer, Power Steering Pulley C-4063B**

FLUID COOLER

DESCRIPTION

The power steering fluid cooler is located at the front of the vehicle. It is mounted to the radiator lower support just forward of the air-conditioning condenser and just rearward of the front fascia. The cooler is positioned so it is in the air flow through the front fascia of the vehicle (Fig. 5)



80c674ad

Fig. 5 FLUID COOLER

- 1 - FLUID COOLER
- 2 - MOUNTING BOLTS

OPERATION

The purpose of the power steering fluid cooler is to keep the temperature of the power steering system fluid from rising to a level that would affect the performance of the power steering system.

The cooler used on this vehicle is referred to as a fluid-to-air type cooler. This means that the air flow across the fin/tubes of the cooler is used to extract the heat from the cooler which it has absorbed from the power steering fluid flowing through it. The cooler is placed in series with the power steering fluid return line, between the steering gear and the power steering fluid reservoir. This lowers the temperature of the power steering fluid prior to it entering the power steering fluid reservoir where it is resupplied to the power steering pump.

REMOVAL

- (1) Remove the return line at the gear.
- (2) Remove the return line at the reservoir.
- (3) Remove the grille (Refer to 23 - BODY/EXTERIOR/GRILLE - REMOVAL).
- (4) Remove the two cooler mounting bolts. (Fig. 5)
- (5) Remove the cooler from the vehicle.

INSTALLATION

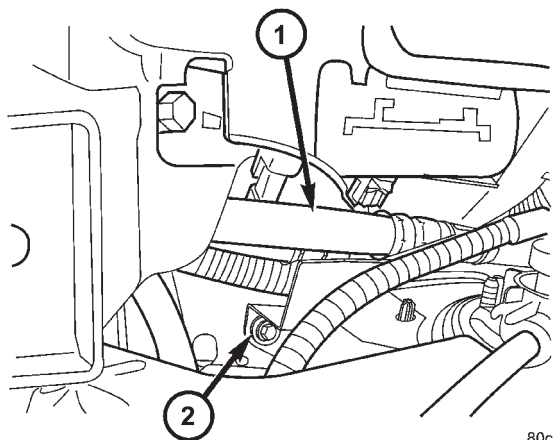
- (1) Install the cooler to the vehicle.
- (2) Install the two cooler mounting bolts. (Fig. 5).
- (3) Install the grille (Refer to 23 - BODY/EXTERIOR/GRILLE - INSTALLATION).
- (4) Install the return line at the reservoir.
- (5) Install the return line at the gear.
- (6) Refill the power steering fluid and check for leaks (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).

HOSES

REMOVAL

REMOVAL - PRESSURE HOSE

- (1) Siphon the power steering fluid from the reservoir.
- (2) Remove the radiator crossmember (Refer to 23 - BODY/EXTERIOR/RADIATOR CROSSMEMBER - REMOVAL).
- (3) Remove the fan (Refer to 7 - COOLING/ENGINE/RADIATOR FAN - REMOVAL).
- (4) Remove the fan shroud.
- (5) Remove the serpentine belt (Refer to 7 - COOLING/ACCESSORY DRIVE/DRIVE BELTS - REMOVAL).
- (6) Remove the pressure hose at the pump.
- (7) Disconnect the pressure switch electrical connector from the pressure hose.
- (8) Remove the pressure hose from the gear.
- (9) Remove the pressure hose mounting bracket bolts from behind the headlamp assembly. (Fig. 6)
- (10) Remove the pressure hose from the vehicle and transfer power steering pressure switch if necessary.



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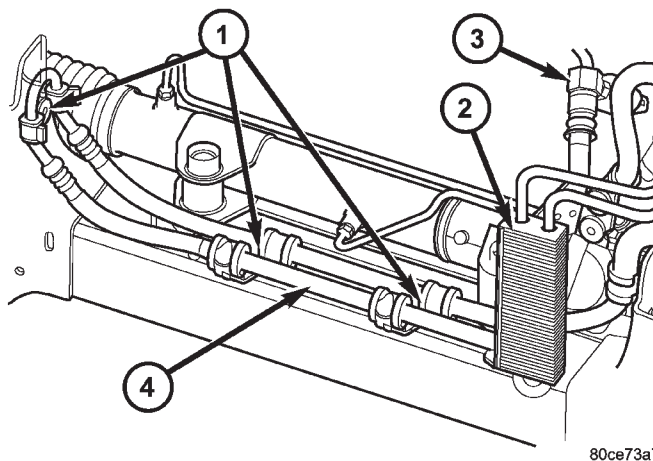
Fig. 6 MOUNTING BRACKET

- 1 - HIGH PRESSURE POWER STEERING HOSE
- 2 - MOUNTING BRACKET

REMOVAL - RETURN HOSE (GEAR TO THE COOLER)

- (1) Siphon the power steering fluid from the reservoir.
- (2) Remove the radiator crossmember (Refer to 23 - BODY/EXTERIOR/RADIATOR CROSSMEMBER - REMOVAL).
- (3) Remove the fan (Refer to 7 - COOLING/ENGINE/RADIATOR FAN - REMOVAL).

- (4) Remove the fan shroud.
- (5) Remove the serpentine belt (Refer to 7 - COOLING/ACCESSORY DRIVE/DRIVE BELTS - REMOVAL).
- (6) Remove the return hose from the gear.
- (7) Remove the return hose at the cooler.
- (8) Remove the return hose mounting bracket bolts from the front cradle. (Fig. 7)
- (9) Remove the return hose from the vehicle.



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Fig. 7 RETURN HOSE TO COOLER

- 1 - MOUNTING BRACKETS
- 2 - FLUID COOLER
- 3 - PRESSURE SWITCH
- 4 - RETURN HOSE

REMOVAL - RETURN HOSE (RESERVOIR TO THE COOLER)

- (1) Siphon the power steering fluid from the reservoir.
- (2) Remove the return hose from the pump reservoir.
- (3) Remove the return hose at the cooler.
- (4) Remove the return hose from the vehicle.

INSTALLATION

INSTALLATION - PRESSURE HOSE

- (1) Install the pressure hose to the vehicle. (Fig. 8)
- (2) Install the pressure hose mounting bracket bolts behind the headlamp assembly. Tighten to 12 N·m (9 ft.lbs.).
- (3) Install the pressure hose to the gear. Tighten the hose to 28 N·m (21 ft.lbs.).
- (4) Install the pressure switch electrical connector.
- (5) Install the pressure hose at the pump. Tighten the hose to 28 N·m (21 ft.lbs.).

HOSES (Continued)

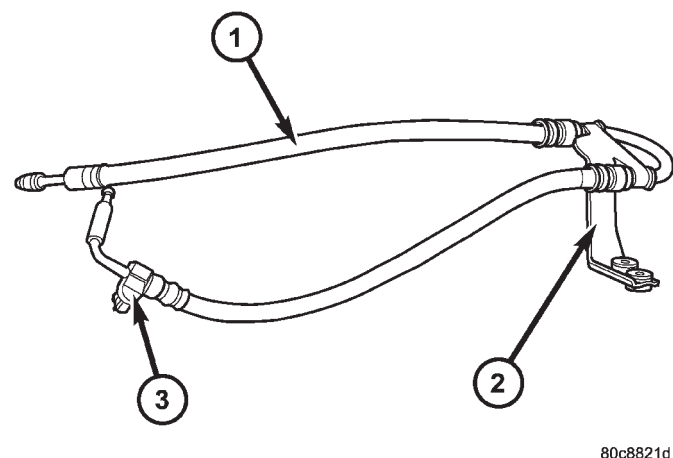
(6) Install the serpentine belt (Refer to 7 - COOLING/ACCESSORY DRIVE/DRIVE BELTS - INSTALLATION).

(7) Install the fan shroud.

(8) Install the fan (Refer to 7 - COOLING/ENGINE/RADIATOR FAN - INSTALLATION).

(9) Install the radiator crossmember (Refer to 23 - BODY/EXTERIOR/RADIATOR CROSSMEMBER - INSTALLATION).

(10) Refill the power steering fluid (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).



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Fig. 8 HIGH PRESSURE HOSE ASSEMBLY

1 - HIGH PRESSURE POWER STEERING HOSE

2 - MOUNTING BRACKET

3 - POWER STEERING PRESURE SWITCH

INSTALLATION - RETURN HOSE (GEAR TO THE COOLER)

(1) Install the return hose to the vehicle. (Fig. 7)

(2) Install the return hose mounting bracket bolts to the front cradle.

(3) Install the return hose at the cooler.

(4) Install the return hose at the gear 28 N·m (21 ft.lbs.).

(5) Install the serpentine belt (Refer to 7 - COOLING/ACCESSORY DRIVE/DRIVE BELTS - INSTALLATION).

(6) Install the fan shroud.

(7) Install the fan (Refer to 7 - COOLING/ENGINE/RADIATOR FAN - INSTALLATION).

(8) Install the radiator crossmember (Refer to 23 - BODY/EXTERIOR/RADIATOR CROSSMEMBER - INSTALLATION).

(9) Refill the power steering fluid (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).

INSTALLATION - RETURN HOSE (RESERVOIR TO THE COOLER)

(1) Install the return hose to the vehicle.

(2) Install the return hose to the pump reservoir.

(3) Install the return hose at the cooler.

(4) Refill the power steering fluid (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).

POWER STEERING PRESSURE SWITCH

DESCRIPTION

A pressure sensing switch is used in the power steering system. It is mounted on the high-pressure steering hose. This switch will be used with both 2.4L and 3.7L engines.

OPERATION

The switch is used on both the 2.4L 4-cylinder and 3.7L V-6 engines.

The power steering pressure switch provides an input to the Powertrain Control Module (PCM). This input is provided during periods of high steering pump load and low engine rpm; such as during parking maneuvers. The PCM increases the idle speed through the Idle Air Control (IAC) motor. This is done to prevent the engine from stalling under the increased load.

When steering pump pressure exceeds 3275 kPa $\pm$ 690 kPa (475 psi $\pm$ 100 psi), the Normally Closed (NC) switch will open and the PCM will increase the engine idle speed. This will prevent the engine from stalling.

When pump pressure drops to approximately 1379 kPa (200 psi), the switch circuit will re-close and engine idle speed will return to its previous setting.

REMOVAL

The power steering pressure switch is installed in the power steering high-pressure hose (Fig. 9).

(1) Remove the high pressure power steering hose (Refer to 19 - STEERING/PUMP/HOSES - REMOVAL).

(2) Disconnect electrical connector from power steering pressure switch.

(3) Place a small container or shop towel beneath switch to collect any excess fluid.

(4) Remove switch. Use back-up wrench on power steering line to prevent line bending.

INSTALLATION

(1) Install power steering switch into power steering line. (Fig. 9)

(2) Tighten to 9.6 N·m (85 in. lbs.) torque.

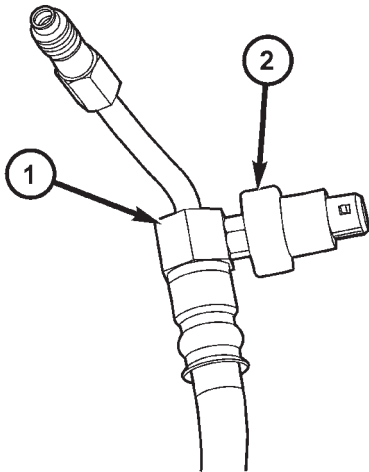
POWER STEERING PRESSURE SWITCH (Continued)

(3) Install the high pressure power steering hose (Refer to 19 - STEERING/PUMP/HOSES - INSTALLATION).

(4) Connect electrical connector to switch.

(5) Check power steering fluid and add as necessary (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).

(6) Start engine and again check power steering fluid. Add fluid if necessary.



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Fig. 9 POWER STEERING PRESSURE SWITCH

- 1 - HIGH PRESSURE POWER STEERING HOSE
- 2 - O-RING
- 3 - POWER STEERING PRESSURE SWITCH

PULLEY

REMOVAL

CAUTION: On vehicles equipped with the 2.4L, Do not reuse the old power steering pump pulley it is not intended for reuse. A new pulley must be installed if removed.

(1) Remove pump assembly. (Refer to 19 - STEERING/PUMP - REMOVAL).

(2) Remove pulley from pump with Puller C-4333 or equivalent puller (Fig. 10).

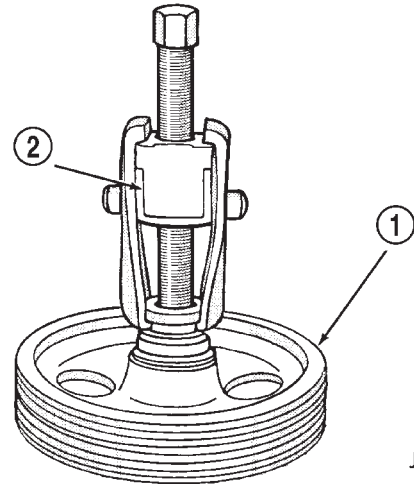
INSTALLATION

NOTE: The pulley is marked front for installation.

(1) Replace pulley if bent, cracked, or loose.

(2) Install pulley on pump with Installer C-4063-B or equivalent installer (Fig. 11). The pulley must be flush with the end of the shaft. Ensure the tool and pulley are aligned with the pump shaft.

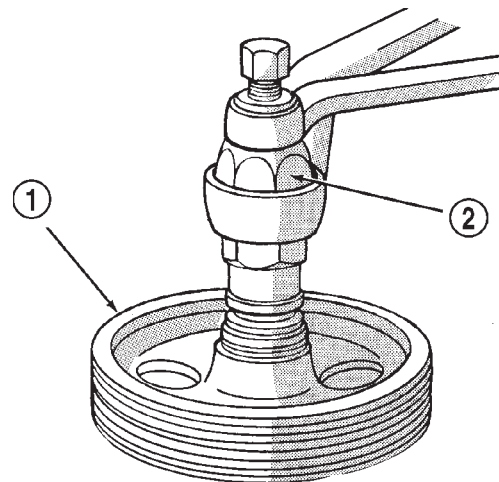
(3) Install pump assembly. (Refer to 19 - STEERING/PUMP - INSTALLATION)



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Fig. 10 Pulley Removal

- 1 - POWER STEERING PUMP DRIVE PULLEY
- 2 - SPECIAL TOOL C-4333



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Fig. 11 Pulley Installation

- 1 - POWER STEERING PUMP DRIVE PULLEY
- 2 - SPECIAL TOOL C-4063-B

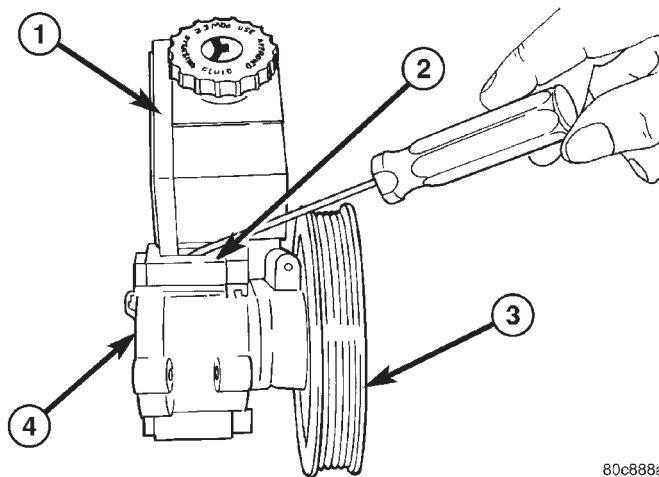
(4) With Serpentine Belt, run engine until warm (5 min.) and note any belt chirp. If chirp exists, move pulley outward approximately 0.5 mm (0.020 in.). If noise increases, press on 1.0 mm (0.040 in.). **Be careful that pulley does not contact mounting bolts.**

RESERVOIR

REMOVAL

REMOVAL - 3.7L

- (1) Remove the power steering pump. (Refer to 19 - STEERING/PUMP - REMOVAL).
- (2) Secure the pump in a holding fixture.
- (3) Remove the retaining clips by prying the lock tab upwards and tap the retaining clips off the pump body. (Fig. 12)
- (4) Remove the reservoir from the pump body.



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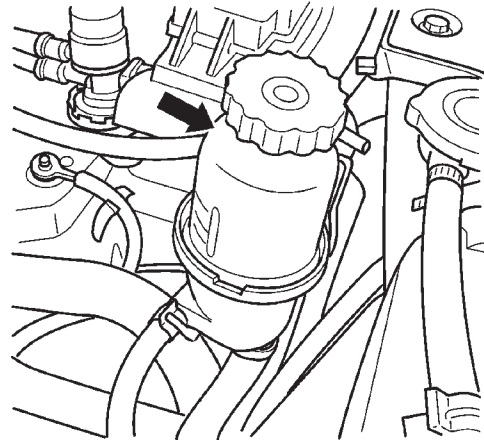
Fig. 12 FLUID RESERVOIR

- 1 - FLUID RESERVOIR
- 2 - RETAINING CLIP
- 3 - PULLEY
- 4 - PUMP BODY

REMOVAL - 2.4L

- (1) Siphon out as much power steering fluid as possible.
- (2) Remove the power steering hoses.

- (3) Remove the bolt securing the reservoir to the mounting bracket. (Fig. 13)
- (4) Remove the reservoir.



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Fig. 13 FLUID RESERVOIR - 2.4L

INSTALLATION

INSTALLATION - 3.7L

- (1) Install the reservoir to the pump body.
- (2) Install the retaining clips to the pump and reservoir.
- (3) Install the pump to the engine. (Refer to 19 - STEERING/PUMP - INSTALLATION).
- (4) Refill the power steering fluid and check for leaks (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE).

INSTALLATION - 2.4L

- (1) Install the reservoir to the mounting bracket.
- (2) Install and tighten the bolt to
- (3) Install the hoses.
- (4) Refill the power steering fluid and check for leaks (Refer to 19 - STEERING/PUMP - STANDARD PROCEDURE). (Fig. 13)