

# STEERING

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## POWER STEERING SYSTEM – 3.1L VM DIESEL

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### DESCRIPTION AND OPERATION

#### POWER STEERING PUMP

The power steering pump used with the 3.1L VM Diesel engine operates the same way as the power

steering pump used with the 4.0/4.7L gasoline engines. Refer to the Description and Operation section for the 4.0/4.7L gasoline engine power steering pump for more information.

# POWER STEERING PUMP – 3.1L VM DIESEL

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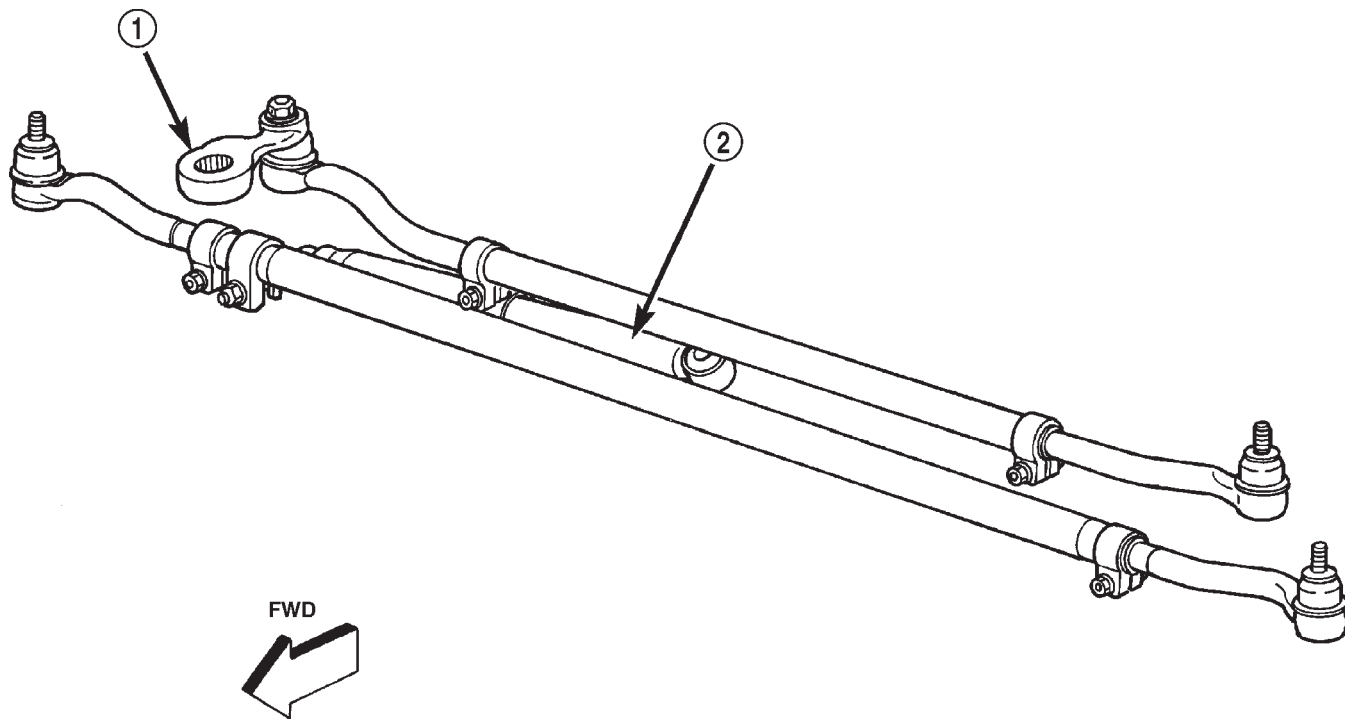
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## DESCRIPTION AND OPERATION

### STEERING LINKAGE – RIGHT HAND DRIVE VEHICLES

Vehicles equipped with right hand drive (RHD) steering utilize the same components of left hand drive vehicles. RHD Steering linkage (Fig. 1) is

designed as a mirror image of left hand drive linkage with the exception of the steering damper, which is mounted on the same side of the vehicle weather RHD or LHD. See figure below for reference. All specifications are the same as LHD. Refer to Group 19, Steering of the gasoline engine service manual for additional information.



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**Fig. 1 Right Hand Drive Steering Linkage**

- 1 – PITMAN ARM
- 2 – STEERING DAMPENER

## SERVICE PROCEDURES

### 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) Start the engine and let run for a few seconds then turn engine off.

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

(4) Raise the front wheels off the ground.

(5) Slowly turn the steering wheel right and left, lightly contacting the wheel stops at least 20 times.

(6) Check the fluid level add if necessary.

(7) Lower the vehicle, start the engine and turn the steering wheel slowly from lock to lock.

(8) Stop the engine and check the fluid level and refill as required.

(9) If the fluid is extremely foamy or milky looking, allow the vehicle to stand a few minutes and repeat the procedure.

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

## REMOVAL AND INSTALLATION

### POWER STEERING PUMP - 3.1L DIESEL

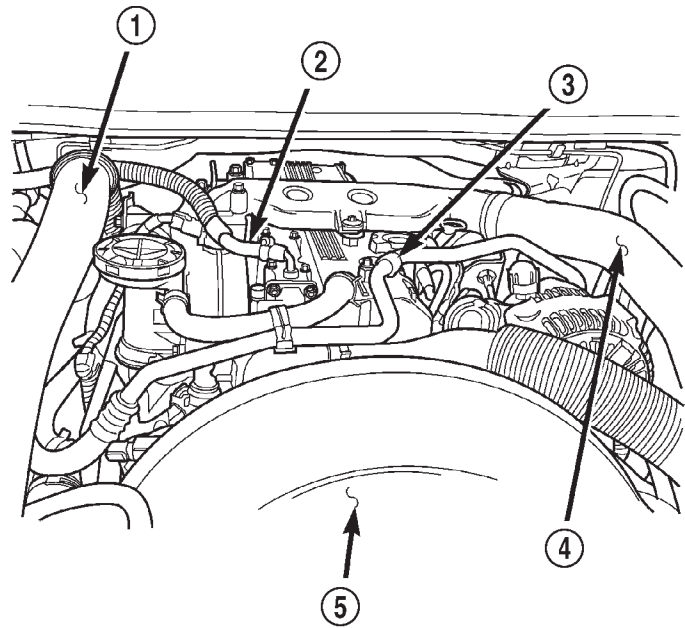
#### REMOVAL

(1) Open the hood and disconnect the negative battery cable.

(2) Remove the intercooler outlet hose from the vehicle (Fig. 2).

(3) Remove the accessory drive belt from the power steering pump pulley (Fig. 3). Refer to Group 7, Cooling System for the procedure.

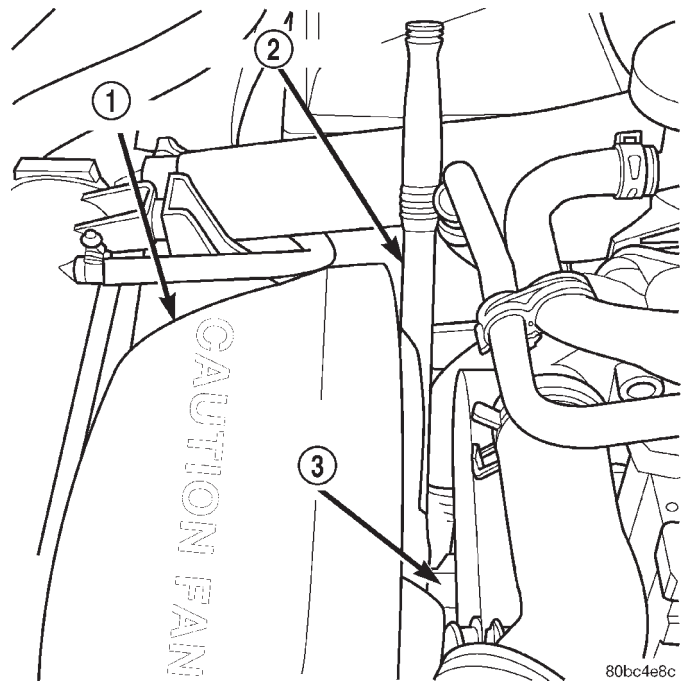
(4) Install a allen wrench in the power steering pump center shaft to hold the pump in position. Remove the (3) power steering pump pulley retaining bolts (Fig. 4).



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**Fig. 2 Diesel Engine Compartment**

- 1 - INTERCOOLER INLET HOSE
- 2 - COOLANT RECOVERY HOSE
- 3 - REFRIGERANT LINE SUPPORT BRACKET
- 4 - INTERCOOLER OUTLET HOSE
- 5 - FAN SHROUD

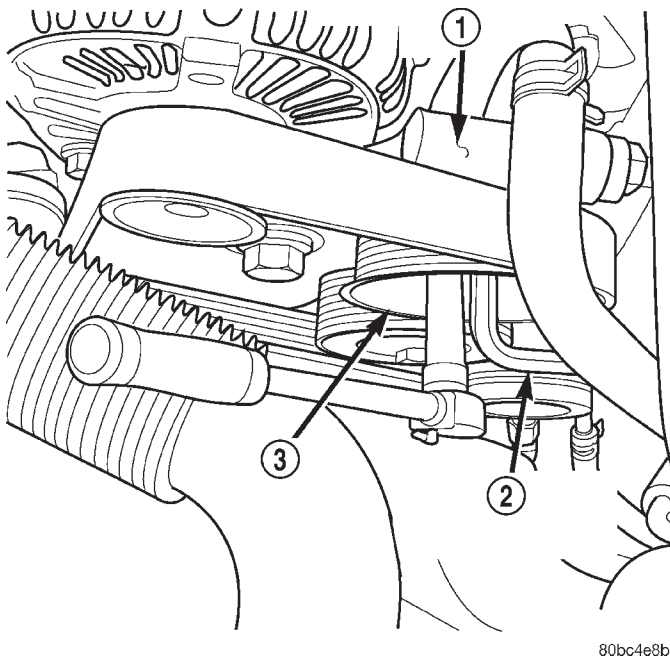


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**Fig. 3 Removing Accessory Drive Belt**

- 1 - FAN SHROUD
- 2 - 1/2 DRIVE BAR
- 3 - AUTOMATIC BELT TENSIONER

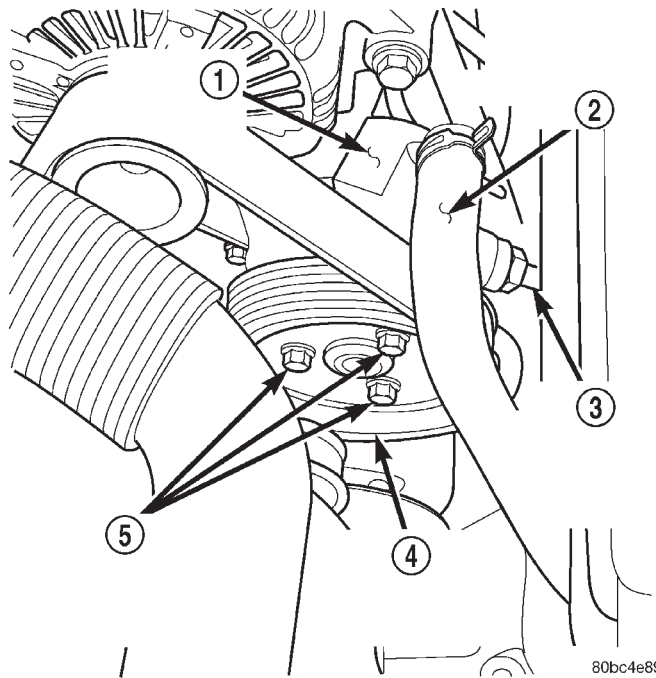
## REMOVAL AND INSTALLATION (Continued)



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**Fig. 4 Removing Power Steering Pump Pulley Retaining Bolts**

- 1 - POWER STEERING PUMP
- 2 - ALLEN WRENCH HOLDING PUMP CENTER SHAFT
- 3 - POWER STEERING PUMP PULLEY



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**Fig. 5 Power Steering Pump Position & Orientation**

- 1 - POWER STEERING PUMP
- 2 - POWER STEERING FLUID SUPPLY HOSE
- 3 - POWER STEERING FLUID PRESSURE LINE
- 4 - POWER STEERING PUMP PULLEY
- 5 - POWER STEERING PUMP PULLEY RETAINING BOLTS

(5) Remove the power steering pump pulley from the pump.

(6) Remove the power steering fluid supply hose from the pump (Fig. 5).

(7) Remove the power steering fluid pressure line from the pump (Fig. 5).

(8) Remove the steel vacuum supply line from the rear of the power steering pump.

(9) Remove the power steering pump to mounting bracket retaining bolts and remove the pump from the vehicle.

## INSTALLATION

**WARNING:** Power steering system fluid may be contaminated with metal shavings, overheated or improper fluid. All fluid should be drained from the system. After any component replacement, system should be flushed and filled with Mopar Power Steering fluid, or equivalent.

(1) Position the pump in the pump mounting bracket and install the retaining bolts. Torque the bolts to 27 N·m (20 ft. lbs.).

(2) Install the steel vacuum supply line on the rear of the power steering pump.

(3) Install the power steering fluid pressure line on the pump (Fig. 6). Torque the nut to 24 N·m (18

ft. lbs.). Be certain the sealing o-ring is lubricated and free of tears.

(4) Install the power steering fluid supply hose on the pump (Fig. 6).

(5) Install the power steering pump pulley on the pump. Torque the retaining bolts to 27 N·m (20 ft. lbs.). Use the allen wrench to hold the pump from rotating (Fig. 7).

(6) Install the accessory drive belt on the power steering pump pulley (Fig. 8). Refer to Group 7, Cooling System for the procedure.

(7) Install the intercooler outlet hose on the vehicle (Fig. 9).

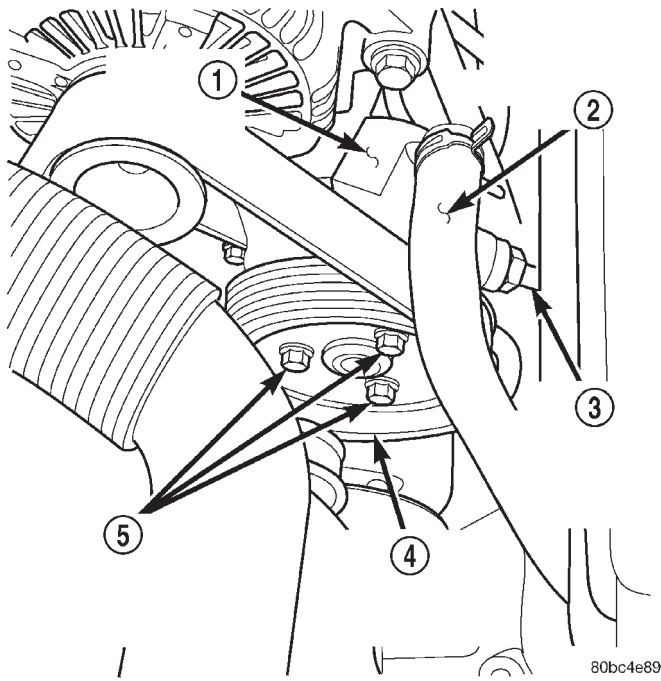
(8) Connect the negative battery cable.

(9) Fill the power steering fluid. Refer to - Power Steering Pump Initial Operation - in this group for the procedure.

## POWER STEERING PUMP PULLEY

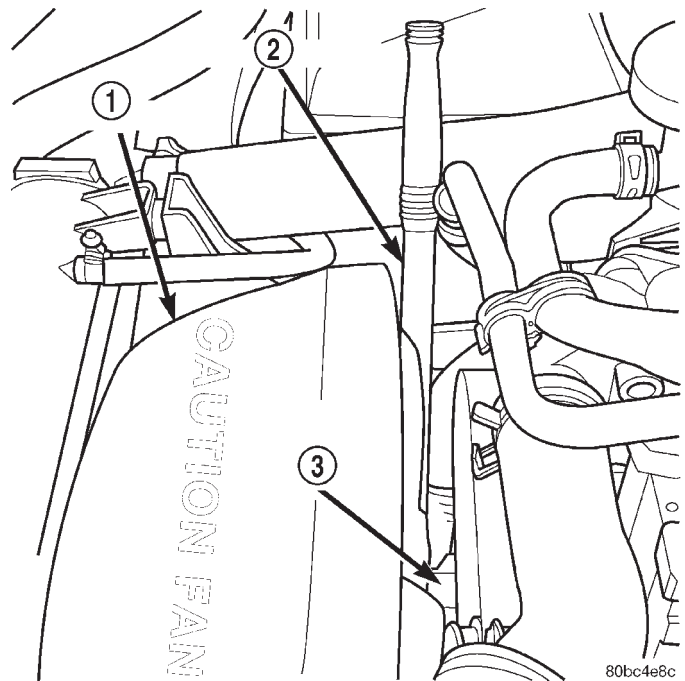
To service the power steering pump pulley. Refer to the power steering pump removal and installation procedure in this group. Since the pulley must be removed to service the pump assembly, detailed instructions are included in the pump procedure.

REMOVAL AND INSTALLATION (Continued)



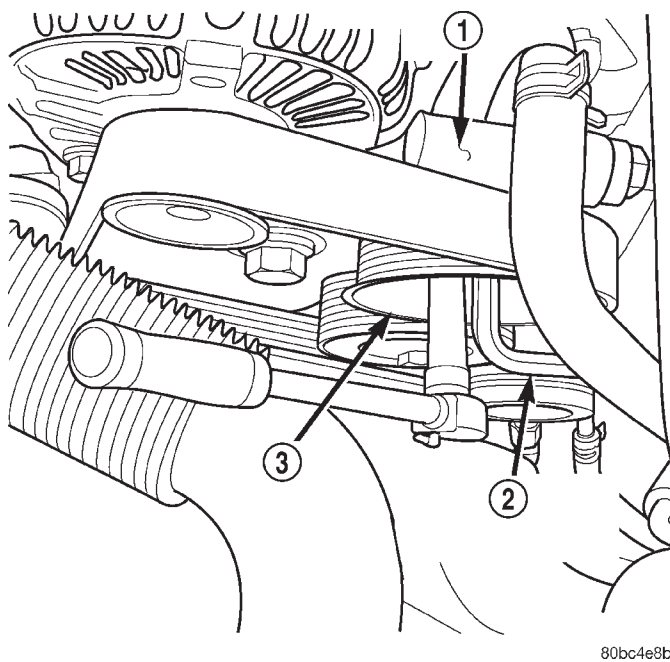
**Fig. 6 Power Steering Pump Position & Orientation**

- 1 - POWER STEERING PUMP
- 2 - POWER STEERING FLUID SUPPLY HOSE
- 3 - POWER STEERING FLUID PRESSURE LINE
- 4 - POWER STEERING PUMP PULLEY
- 5 - POWER STEERING PUMP PULLEY RETAINING BOLTS



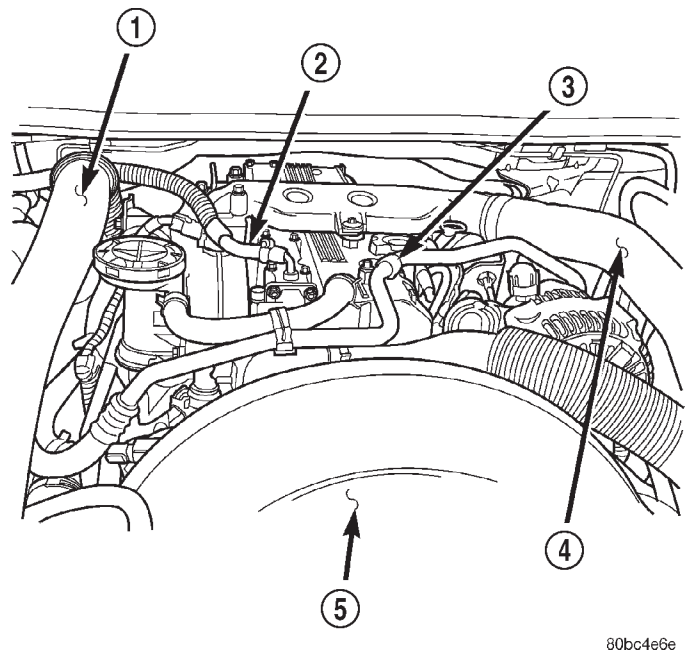
**Fig. 8 Installing Accessory Drive Belt**

- 1 - FAN SHROUD
- 2 - 1/2 DRIVE BAR
- 3 - AUTOMATIC BELT TENSIONER



**Fig. 7 Installing Power Steering Pump Pulley**

- 1 - POWER STEERING PUMP
- 2 - ALLEN WRENCH HOLDING PUMP CENTER SHAFT
- 3 - POWER STEERING PUMP PULLEY



**Fig. 9 Diesel Engine Compartment**

- 1 - INTERCOOLER INLET HOSE
- 2 - COOLANT RECOVERY HOSE
- 3 - REFRIGERANT LINE SUPPORT BRACKET
- 4 - INTERCOOLER OUTLET HOSE
- 5 - FAN SHROUD

## SPECIFICATIONS

## TORQUE CHART

<b>DESCRIPTION</b>	<b>TORQUE</b>
Power steering pump mounting bolts . . . . .	27 N·m (20 ft. lbs.)
Pump pressure line . . . . .	24 N·m (18 ft. lbs.)
Pump pulley bolts . . . . .	27 N·m (20 ft. lbs.)