

SECTION 3B

POWER STEERING GEAR AND PUMP ON-VEHICLE SERVICE

NOTICE: When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

NOTICE: Do not start the vehicle with any power steering gear inlet or outlet hoses disconnected. When disconnected, cap or plug all openings of components. Failure to do so could result in contamination or loss of power steering fluid and damage to the system.

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GENERAL DESCRIPTION

POWER STEERING GEAR ASSEMBLY

Figures 1 and 2

The major internal components of the steering gear assembly (1) are the power steering gear pinion and valve shaft assembly, steering gear rack and piston assembly and steering linkage tie rod assemblies (inner and outer tie rods). The steering gear rack and piston assembly is supported at its ends in the steering gear housing and sealed to prevent both external and internal leakage across the piston. The pinion and valve assembly intersects and meshes directly with the teeth of the rack and piston assembly. Manual steering is always available at times when the engine is not running or in the event of power steering pump assembly (4 or 32) or serpentine belt failure. Steering effort is increased under such conditions.

The movement of the steering gear assembly components, when either parked or moving, is aided by hydraulic pressure and fluid flow supplied by the power steering pump assembly (4 or 32). Pressurized fluid is directed by the steering gear valve during a steer maneuver and travels through external steel cylinder lines to act on the rack and piston assembly. When the vehicle is turned right, the steering gear valve is opened and

routes pressurized fluid to the left side of the piston, while allowing fluid to escape from the right side and return to the valve area. The pressure of the fluid is converted to a mechanical force applied to the piston and the difference in force across the piston causes the rack to move to the right. The opposite occurs when the gear assembly (1) is turned to the left. Whenever the pump assembly (4 or 32) provides pressurized fluid to the gear assembly (1) and the valve is operating correctly, the effort to steer the vehicle is created by this pressure difference at the piston. For information on power steering gear assembly unit repair, refer to SECTION 3B1A.

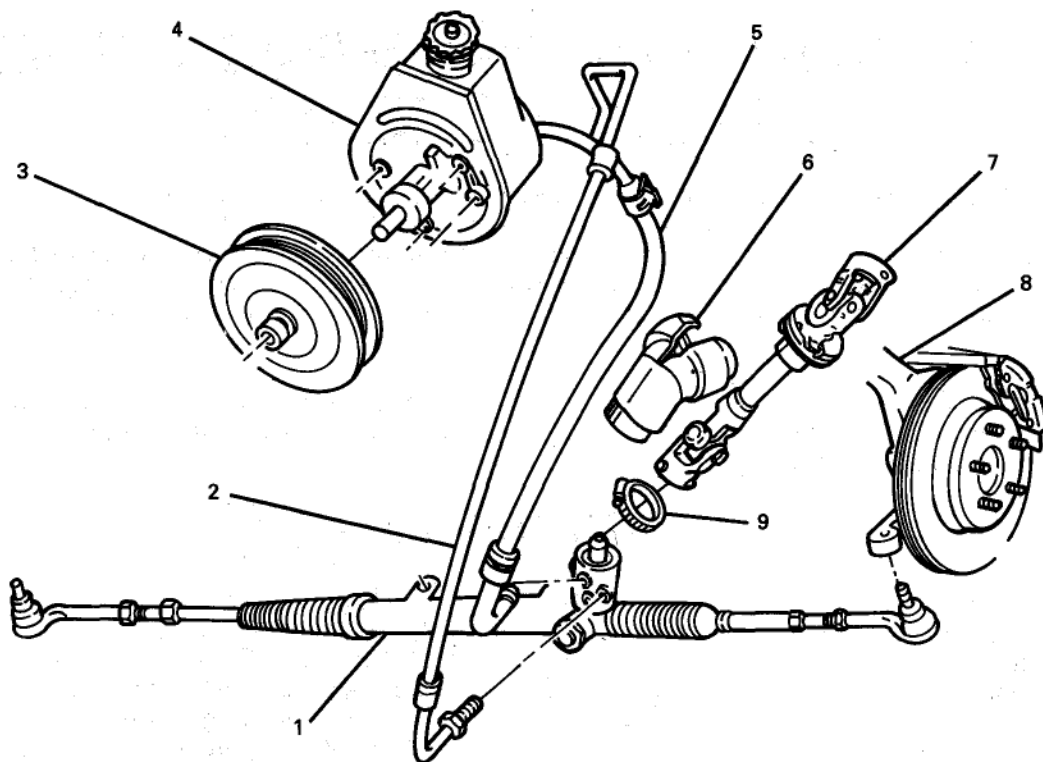
POWER STEERING PUMP ASSEMBLY

Figures 1 and 2

A constant displacement vane-type pump assembly provides hydraulic pressure and flow for the power steering system. The pump assembly (4 or 32) is located on the engine and is belt driven by the power steering pulley assembly (3 or 31).

The major components of the pump assembly (4 or 32) are the fluid reservoir, pump shaft, pump housing, pump fitting, flow control valve and spring, thrust and pressure plates, pump ring, pump rotor and pump vanes.

The housing and component parts are "submerged" in the fluid reservoir in the 3.4L L32 engine. The 5.7L



- 1 GEAR ASSEMBLY, POWER STEERING
- 2 HOSE ASSEMBLY, POWER STEERING GEAR INLET,
28 N·m (21 LB. FT.)
- 3 PULLEY ASSEMBLY, POWER STEERING PUMP
- 4 PUMP ASSEMBLY, POWER STEERING
- 5 HOSE ASSEMBLY, POWER STEERING GEAR OUTLET,
28 N·m (21 LB. FT.)
- 6 BOOT, STEERING GEAR
- 7 SHAFT ASSEMBLY, STEERING GEAR COUPLING
- 8 KNUCKLE ASSEMBLY, STEERING
- 9 CLAMP, STEERING GEAR COUPLING SHIELD

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Figure 1 – Power Steering System (3.4L L32 Engine)

LT1 engine has a remote reservoir assembly (10). The reservoir cap assembly (24) has a fluid level indicator attached to show the fluid level in the reservoir.

For the 3.4L L32 engine pump assembly (4), there are two bore openings at the rear of the housing. The larger opening contains all of the pump assembly components, except the flow control valve, spring and pump fitting, which are in the small bore. The pump fitting, working with the flow control valve and spring, limits the maximum flow of the pump assembly (4). The pressure relief valve, inside the flow control valve, limits the maximum pump assembly (4) pressure.

For the 5.7L LT1 engine pump assembly (32), the bore at the rear of the housing contains the same set of components as the 3.4L L32 engine pump assembly (4). The flow control valve, spring and pump fitting are located in the top of the pump housing, in the casting boss that runs across the housing. For information on power steering pump assembly unit repair, refer to SECTION 3B1B.

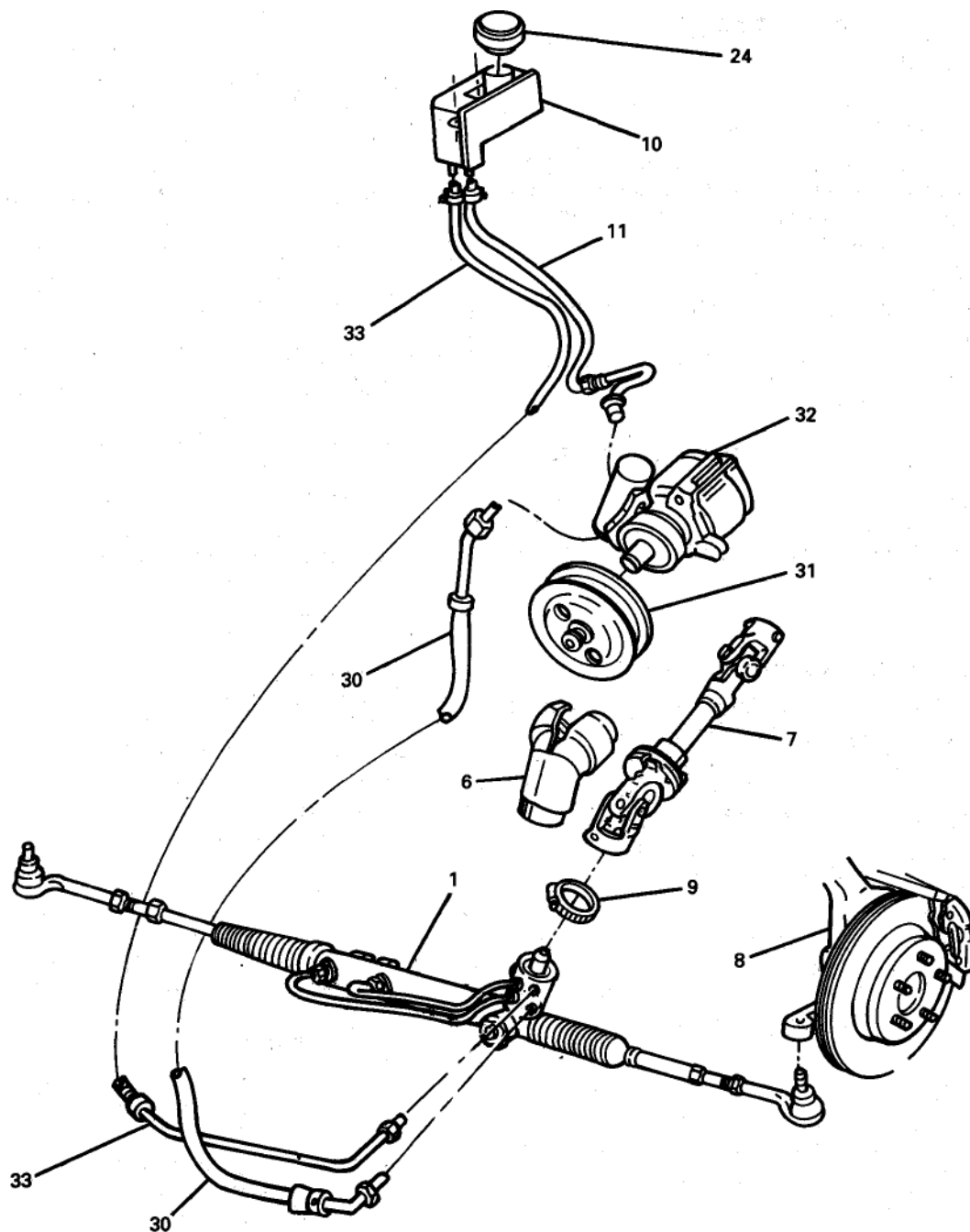
SEAL REPLACEMENT

Lip Seals

Lip seals, which seal rotating shafts, require special treatment. This type of seal is used on the hydraulic pump shaft of the pump assembly. When leakage occurs in this area, always replace the seal or seals, after inspecting and thoroughly cleaning the sealing surfaces. Replace the shaft if pitting is found. If corrosion in the lip seal contact zone is slight, clean the surface of the shaft with crocus cloth. Replace the shaft only if the leakage cannot be stopped by smoothing with crocus cloth first.

O-Ring Seals

Whenever a part which forms a sealing surface for an O-ring is removed, the O-ring seal should also be removed and replaced with a new O-ring seal. Lubricate all new O-ring seals with power steering fluid to ease assembly.



- 1 GEAR ASSEMBLY, POWER STEERING
- 6 BOOT, STEERING GEAR
- 7 SHAFT ASSEMBLY, STEERING GEAR COUPLING
- 8 KNUCKLE ASSEMBLY, STEERING
- 9 CLAMP, STEERING GEAR COUPLING SHIELD
- 10 RESERVOIR ASSEMBLY, POWER STEERING FLUID
- 11 HOSE ASSEMBLY, POWER STEERING FLUID RESERVIOR
- 24 CAP ASSEMBLY, POWER STEERING FLUID RESERVOIR
- 30 HOSE ASSEMBLY, POWER STEERING GEAR INLET, 28 N•m (21 LB. FT.)
- 31 PULLEY ASSEMBLY, POWER STEERING PUMP
- 32 PUMP ASSEMBLY, POWER STEERING
- 33 HOSE ASSEMBLY, POWER STEERING GEAR OUTLET, 28 N•m (21 LB. FT.)

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Figure 2 – Power Steering System (5.7L LT1 Engine)

ON-VEHICLE SERVICE

CHECKING AND ADDING POWER STEERING FLUID

Fluid level is indicated by marks on a fluid level indicator on the reservoir cap assembly.

NOTICE: When adding fluid or making a complete fluid change, always use the proper fluid. Failure to use the proper fluid will cause hose and seal damage and fluid leaks. Refer to "Power Steering Fluid Recommendations" in this section.

If the fluid is about 77°C (170°F), the fluid level should be at the "H" mark.

If the fluid is about 21°C (70°F), the fluid level should be at the "C" mark.

POWER STEERING FLUID REPLACEMENT

The fluid replacement procedure is a two-stage process: first, flushing the old fluid from the system with new fluid; and second, bleeding the system to remove trapped air. The following two sequences outline the steps in each procedure.

Flushing the Power Steering System

NOTICE: When adding fluid or making a complete fluid change, always use the proper fluid. Failure to use the proper fluid will cause hose and seal damage and fluid leaks. Refer to "Power Steering Fluid Recommendations" in this section.

1. Raise and suitably support front of vehicle off ground until tire and wheel assemblies are free to turn. Refer to SECTION 0A.
2. Remove inlet hose assembly on 3.4L L32 engine or reservoir hose assembly on 5.7L LT1 engine at fluid reservoir inlet connector and plug fluid inlet connector port on fluid reservoir assembly.

Important

- Position inlet or reservoir hose assembly toward large container to catch draining fluid.
3. While an assistant is filling fluid reservoir assembly with fluid, start and run engine at idle.

NOTICE: Do not hold the steering wheel assembly against tire and wheel assembly stops while flushing system. Holding steering wheel assembly against stops will cause high power steering system pressure, overheating, and damage to the pump assembly and/or steering gear assembly.

4. Turn steering wheel assembly from stop to stop.
5. Continue draining until all old fluid is cleared from power steering system. Addition of approximately 0.94 liters (1 quart) of new fluid will be required to flush system.

Inspect

- Draining fluid while refilling fluid reservoir assembly.

- If necessary, replace all lines and disassemble, and clean or replace system components.
- Do not reuse any drained fluid.

6. Unplug fluid inlet connector port on fluid reservoir assembly and reconnect inlet hose assembly on 3.4L L32 engine and reservoir hose assembly on 5.7L LT1 engine at fluid reservoir inlet connector.
7. Turn engine off and fill fluid reservoir on 3.4L L32 engine or remote fluid reservoir assembly on 5.7L LT1 engine to "C" mark on fluid level indicator. Continue with following procedure "Bleeding the Power Steering System."

Bleeding the Power Steering System

NOTICE: When adding fluid or making a complete fluid change, always use the proper fluid. Failure to use the proper fluid will cause hose and seal damage and fluid leaks. Refer to "Power Steering Fluid Recommendations" in this section.

NOTICE: If the system has been serviced, an accurate fluid level reading cannot be obtained unless air is bled from the system. The air in the fluid may cause pump assembly cavitation noise and may cause pump assembly damage over a period of time.

After replacing the fluid or servicing the system, you must bleed air from the system. Air in the system prevents an accurate fluid level reading, causes pump assembly cavitation noise and over time could damage the pump assembly. To bleed the system proceed as follows:

1. Begin with engine off, front tire and wheel assemblies off ground and turned all the way to left. Refer to SECTION 0A.
2. Add either standard fluid or optional cold climate fluid to "C" mark on fluid level indicator.
3. Bleed system by turning tire and wheel assemblies from side to side without hitting stops.

Important

- It may be necessary to turn tire and wheel assemblies from side to side several times. Keep fluid level at "C" mark on fluid level indicator. Fluid with air in it has light tan appearance. This air must be eliminated from fluid before normal steering action can be obtained.
4. Start engine. With engine idling, recheck fluid level. If necessary, add fluid to bring level to "C" mark on fluid level indicator.
 5. Return tire and wheel assemblies to center position. Lower front tire and wheel assemblies to ground. Continue running engine for two or three minutes.
 6. Test vehicle to be sure steering functions normally and is free from noise.

Inspect

- For fluid leakage at connection points along system.
7. Recheck fluid level as described in steps 3 and 4 except fluid level should now be up to "H" mark on

fluid level indicator after system has stabilized at its normal operating temperature.

POWER STEERING PUMP BELT (SERPENTINE BELT)

The pump assembly is driven by a serpentine belt. No adjustment of the serpentine belt is required.

To remove or install the serpentine belt, refer to SECTION 6A2A or 6A3A.

POWER STEERING PUMP PULLEY ASSEMBLY

Figure 3

Tools Required:

J 25034-B Pump Pulley Remover

J 25033-B Pump Pulley Installer

Remove or Disconnect

1. Raise and suitably support vehicle on 5.7L LT1 engine only. Refer to SECTION 0A.
2. Drain engine coolant on 5.7L LT1 engine only. Refer to SECTION 6B.
3. Serpentine belt. Refer to SECTION 6A2A or 6A3A.
4. Lower vehicle on 5.7L LT1 engine only.
5. Front air intake duct. Refer to SECTION 1A.
6. Generator assembly on 5.7L LT1 engine only. Refer to SECTION 6D3.
7. Radiator outlet hose assembly from engine assembly on 5.7L LT1 engine only. Refer to SECTION 6B.
8. Heater inlet and outlet hose assemblies from water pump assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
9. Throttle body heater return hose from heater outlet hose assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
10. Power steering pump bolts/screws on 5.7L LT1 engine only. Refer to "Power Steering Pump Assembly" in this section.
11. Inlet and reservoir hose assemblies from pump assembly on 5.7L LT1 engine only. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" and "Power Steering Fluid Reservoir Assembly" in this section.
12. Pulley assembly (3 or 31) from pump assembly (4 or 32) using J 25034-B.

Install or Connect

1. Pulley assembly (3 or 31) to pump assembly (4 or 32) using J 25033-B.

Important

- Face of pulley assembly hub must be flush with end of pump shaft before applying load to pulley assembly hub.

- Load required to press pulley assembly hub onto pump shaft must be greater than 6 672 N (1,500 lbs.) but less than 31 136 N (7,000 lbs.).
2. Inlet and reservoir hose assemblies to pump assembly on 5.7L LT1 engine only. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" and "Power Steering Fluid Reservoir Assembly" in this section.
 3. Power steering pump bolts/screws on 5.7L LT1 engine only. Refer to "Power Steering Pump Assembly" in this section.
 4. Throttle body heater return hose to heater outlet hose assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
 5. Heater inlet and outlet hose assemblies to water pump assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
 6. Radiator outlet hose assembly to engine assembly on 5.7L LT1 engine only. Refer to SECTION 6B.
 7. Generator assembly on 5.7L LT1 engine only. Refer to SECTION 6D3.
 8. Front air intake duct. Refer to SECTION 1A.
 9. Raise and suitably support vehicle on 5.7L LT1 engine only. Refer to SECTION 0A.
 10. Serpentine belt. Refer to SECTION 6A2A or SECTION 6A3A.
 11. Lower vehicle on 5.7L LT1 engine only.
 12. Refill and bleed engine coolant on 5.7L LT1 engine only. Refer to SECTION 6B.
 13. Refill and bleed power steering system on 5.7L LT1 engine only. Refer to "Bleeding the Power Steering System" in this section.

POWER STEERING GEAR ASSEMBLY

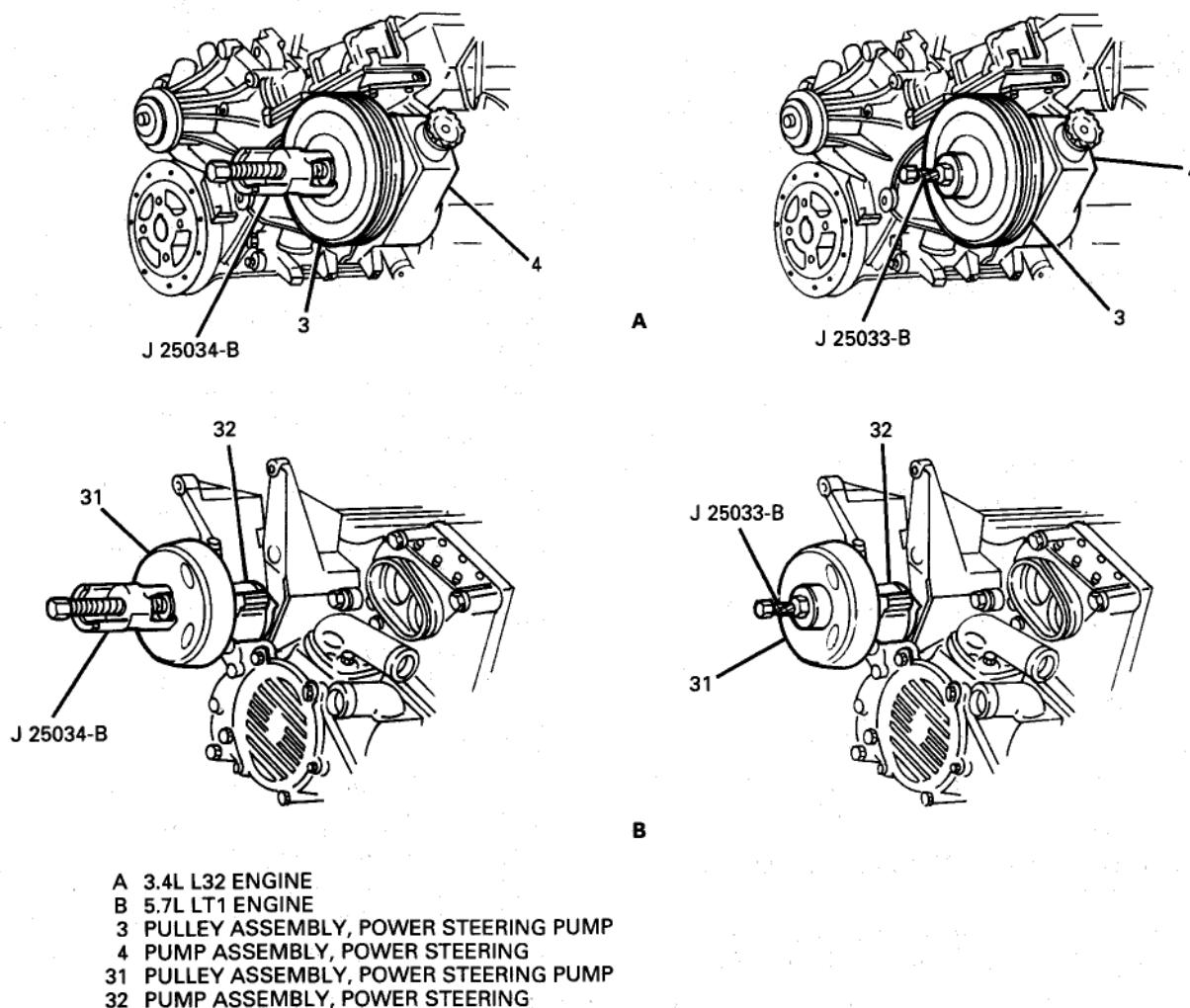
Figure 4

Remove or Disconnect

1. Raise and suitably support vehicle. Refer to SECTION 0A.
2. Special security wheel lock nuts, if equipped. Refer to SECTION 3E.
3. Tire and wheel assemblies. Refer to SECTION 3E.
4. Place drain pan under steering gear assembly (1).
5. Inlet and outlet hose assemblies from steering gear assembly. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" in this section.
6. Steering linkage outer tie rod assembly from steering knuckle assembly. Refer to SECTION 3B1A.
7. Steering gear coupling shaft assembly from steering gear assembly. Refer to SECTION 3F.
8. Nuts (26) and bolts/screws (27).
9. Steering gear assembly (1).

Install or Connect

NOTICE: See "Notice" on page 3B-1 of this section.



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Figure 3 - Power Steering Pump Pulley Assembly

- Position steering gear assembly (1) to crossmember assembly (34).



Adjust

- Steering gear assembly (1) so it aligns as straight as possible with steering gear coupling shaft assembly.

- Hand start bolts/screws (27) and nuts (26).
- Position back-up wrench to nuts (26).



Tighten

- Bolts/screws (27) to 85 N•m (63 lb. ft.).

- Steering gear assembly to steering gear coupling shaft assembly. Refer to SECTION 3F.
- Steering linkage outer tie rod assemblies to steering knuckle assemblies. Refer to SECTION 3B1A.
- Inlet and outlet hose assemblies to steering gear assembly. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" in this section.

- Tire and wheel assemblies. Refer to SECTION 3E.
- Special security wheel lock nuts, if equipped. Refer to SECTION 3E.
- Lower vehicle.
- Refill and bleed power steering system. Refer to "Bleeding the Power Steering System" in this section.

POWER STEERING GEAR INLET AND OUTLET HOSE ASSEMBLIES

Figures 5 and 6



Remove or Disconnect

- Place drain pan under steering gear assembly (1) and pump assembly (4 or 32).
- Outlet hose assembly (5) from pump assembly (4) on 3.4L L32 engine only.
- Raise and suitably support vehicle. Refer to SECTION 0A.
- Inlet and outlet hose assemblies (2 and 5 or 30 and 33) from steering gear assembly (1).

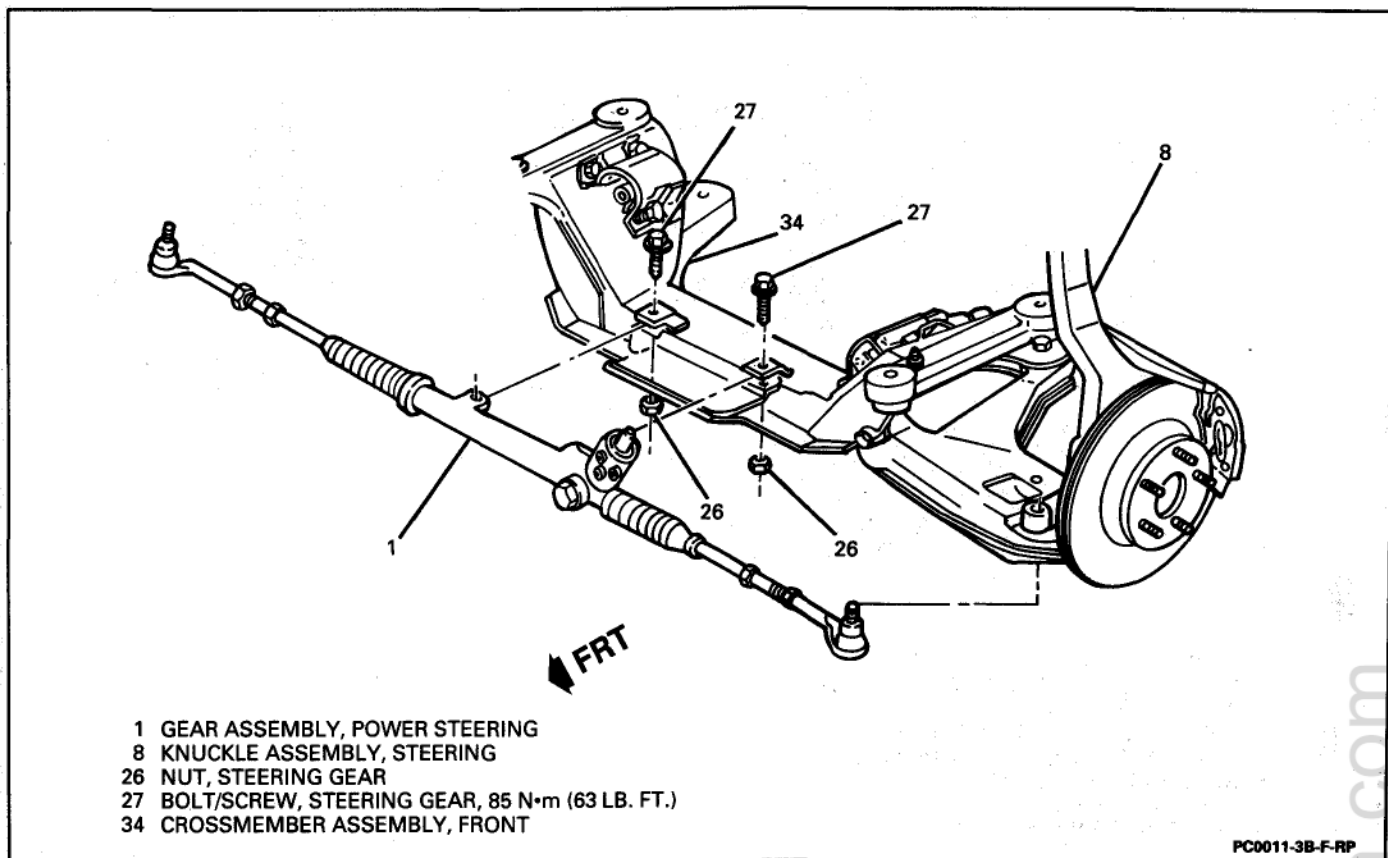


Figure 4 - Power Steering Gear Assembly

5. Inlet hose assembly (2) from pump assembly (4) on 3.4L L32 engine only.
6. Drain engine coolant on 5.7L LT1 engine only. Refer to SECTION 6B.
7. Serpentine belt on 5.7L LT1 engine only. Refer to SECTION 6A3A.
8. Lower vehicle on 5.7L LT1 engine only.
9. Front air intake duct on 5.7L LT1 engine only. Refer to SECTION 1A.
10. Generator assembly on 5.7L LT1 engine only. Refer to SECTION 6D3.
11. Radiator outlet hose assembly from engine assembly on 5.7L LT1 engine only. Refer to SECTION 6B.
12. Heater inlet and outlet hose assemblies from water pump assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
13. Throttle body heater return hose from heater outlet assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
14. Power steering pump bolts/screws on 5.7L LT1 engine only. Refer to "Power Steering Pump Assembly" in this section.
15. Inlet hose assembly (30) from pump assembly (32) on 5.7L LT1 engine only.
16. Power steering fluid reservoir bolt/screw and power steering fluid reservoir retainer on 5.7L LT1 engine only. Refer to "Power Steering Fluid Reservoir Assembly" in this section.

17. Outlet hose assembly (33) from reservoir assembly (10) on 5.7L LT1 engine only.

Install or Connect

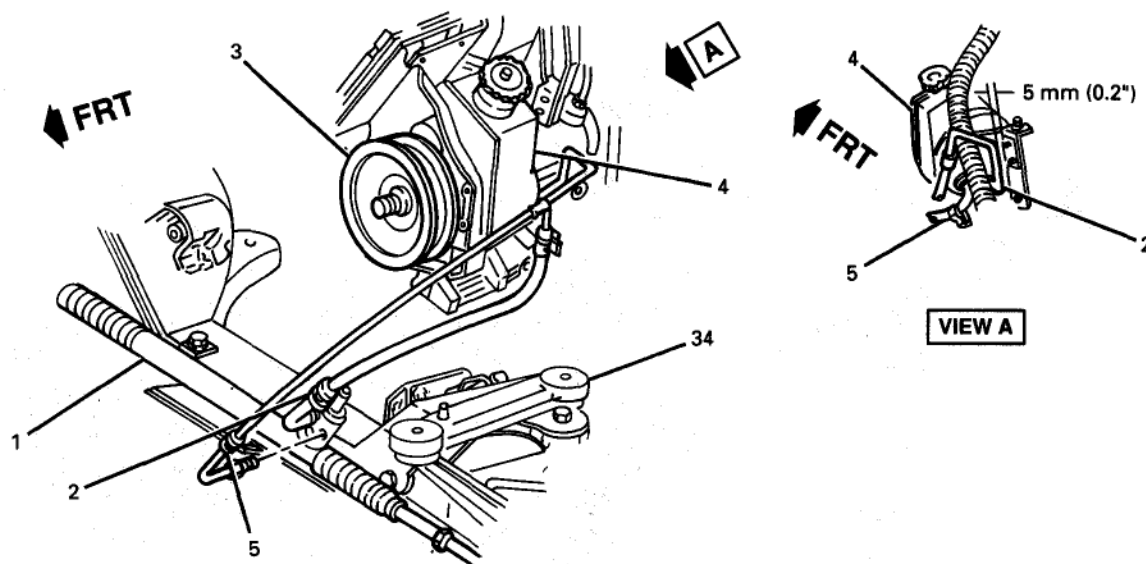
NOTICE: See "Notice" on page 3B-1 of this section.

NOTICE: Inlet and outlet hose assemblies must be installed to clear each other and all surrounding parts to prevent chafing. Use minimum clearance of 12 mm (0.47 inch). The outlet hose assembly must not be twisted during installation. Do not bend or distort inlet and outlet hose assemblies to make installation easier. Failure to follow these procedures could result in component damage.

1. Outlet hose assembly (33) to reservoir assembly (10) using clamp on 5.7L LT1 engine only. Lubricate as required.
2. Power steering fluid reservoir bolt/screw and power steering fluid reservoir retainer on 5.7L LT1 engine only. Refer to "Power Steering Fluid Reservoir Assembly" in this section.
3. Inlet hose assembly (30) to pump assembly (32) on 5.7L LT1 engine only.

Tighten

- Inlet hose assembly (30) to 28 N·m (21 lb. ft.).
4. Power steering pump bolts/screws on 5.7 LT1 engine only. Refer to "Power Steering Pump Assembly" in this section.



- 1 GEAR ASSEMBLY, POWER STEERING
- 2 HOSE ASSEMBLY, POWER STEERING GEAR INLET, 28 N•m (21 LB. FT.)
- 3 PULLEY ASSEMBLY, POWER STEERING PUMP
- 4 PUMP ASSEMBLY, POWER STEERING
- 5 HOSE ASSEMBLY, POWER STEERING GEAR OUTLET, 28 N•m (21 LB. FT.)
- 34 CROSSMEMBER ASSEMBLY, FRONT

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Figure 5 – Power Steering Gear Inlet and Outlet Hose Assemblies (3.4L L32 Engine)

5. Throttle body heater return hose to heater outlet hose assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
6. Heater inlet and outlet hose assemblies to water pump assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
7. Radiator outlet hose assembly to engine assembly on 5.7L LT1 engine only. Refer to SECTION 6B.
8. Generator assembly on 5.7L LT1 engine only. Refer to SECTION 6D3.
9. Front air intake duct on 5.7L LT1 engine only. Refer to SECTION 1A.
10. Raise and suitably support vehicle on 5.7L LT1 engine only. Refer to SECTION 0A.
11. Serpentine belt on 5.7L LT1 engine only. Refer to SECTION 6A3A.
12. Inlet hose assembly (2) to pump assembly (4) on 3.4L L32 engine only.

Important

- Maintain at least 5 mm (0.20 inch) clearance between the inlet hose assembly (2) and the power steering pump support on the 3.4L L32 engine only.

Tighten

- Inlet hose assembly (2) to 28 N•m (21 lb. ft.).

13. Inlet and outlet hose assemblies (2 and 30 or 5 and 33) to steering gear assembly (1).

Tighten

- Inlet hose assembly (2 or 30) to 28 N•m (21 lb. ft.).
- Outlet hose assembly (5 or 33) to 28 N•m (21 lb. ft.).

14. Outlet hose assembly (5) to pump assembly (4) on 3.4L L32 engine only.

Tighten

- Outlet hose assembly (5) to 28 N•m (21 lb. ft.).

15. Lower vehicle on 5.7L LT1 engine only.
16. Refill and bleed engine coolant on 5.7L LT1 engine only. Refer to SECTION 6B.
17. Refill and bleed power steering system. Refer to "Bleeding the Power Steering System" in this section.

HYDRAULIC PUMP FLOW CONTROL VALVE

Figure 7

Remove or Disconnect

1. Place drain pan under pump assembly (4 or 32).
2. Inlet hose assembly (2 or 30) from fitting (15).
3. Fitting (15) and O-ring seal (14).

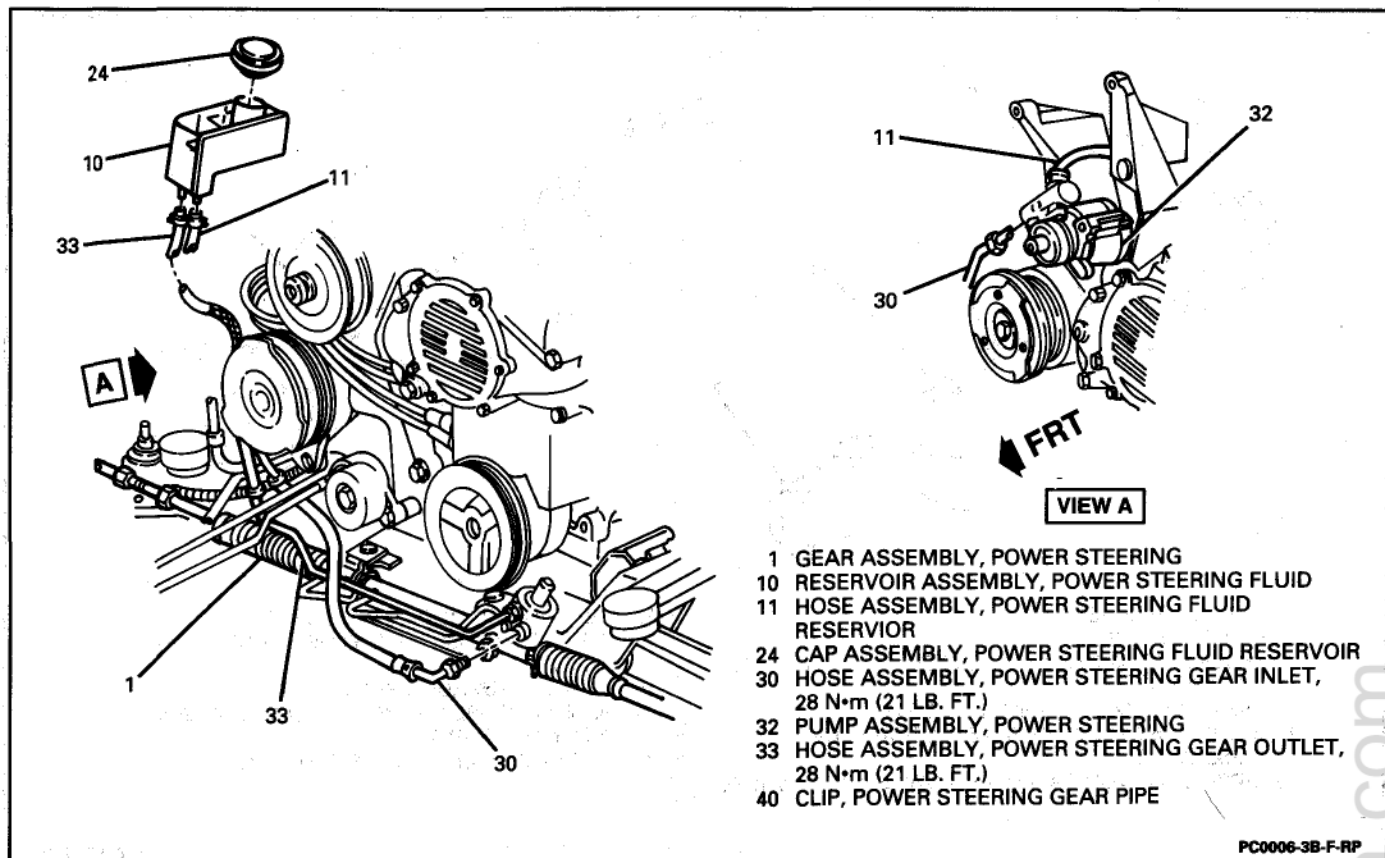


Figure 6 – Power Steering Gear Inlet and Outlet Hose Assemblies (5.7L LT1 Engine)

! Important

- The flow control valve must be installed in the same position it was in when removed or flow control and pressure relief will be affected.
- Flow control valve (13) and valve spring (12) from pump assembly (4 or 32) using magnet.

NOTICE: Do not disassemble the flow control valve.

L Inspect

- Flow control valve (13) for free movement within housing bore.
 - If sticking occurs, check for burrs and clean as necessary.
 - If necessary, replace flow control valve (13).

Install or Connect

NOTICE: See “Notice” on page 3B-1 of this section.

! Important

- The flow control valve (13) should be installed face out, away from contact with the valve spring (12).
- Valve spring (12) and flow control valve (13) to pump assembly (4 or 32).

- New O-ring seal (14) to fitting (15).

! Important

- Lubricate O-ring seal (14) with power steering fluid.

- Hand start fitting (15) and O-ring seal (14) to pump assembly (4 or 32).

Tighten

- Fitting (15) to 75 N•m (55 lb. ft.).

- Inlet hose assembly (2 or 30) to fitting (15).

Tighten

- Inlet hose assembly (2 or 30) to 28 N•m (21 lb. ft.).

- Fill reservoir assembly with fluid. Refer to “Checking and Adding Power Steering Fluid” in this section.

- Bleed system. Refer to “Bleeding the Power Steering System” in this section.

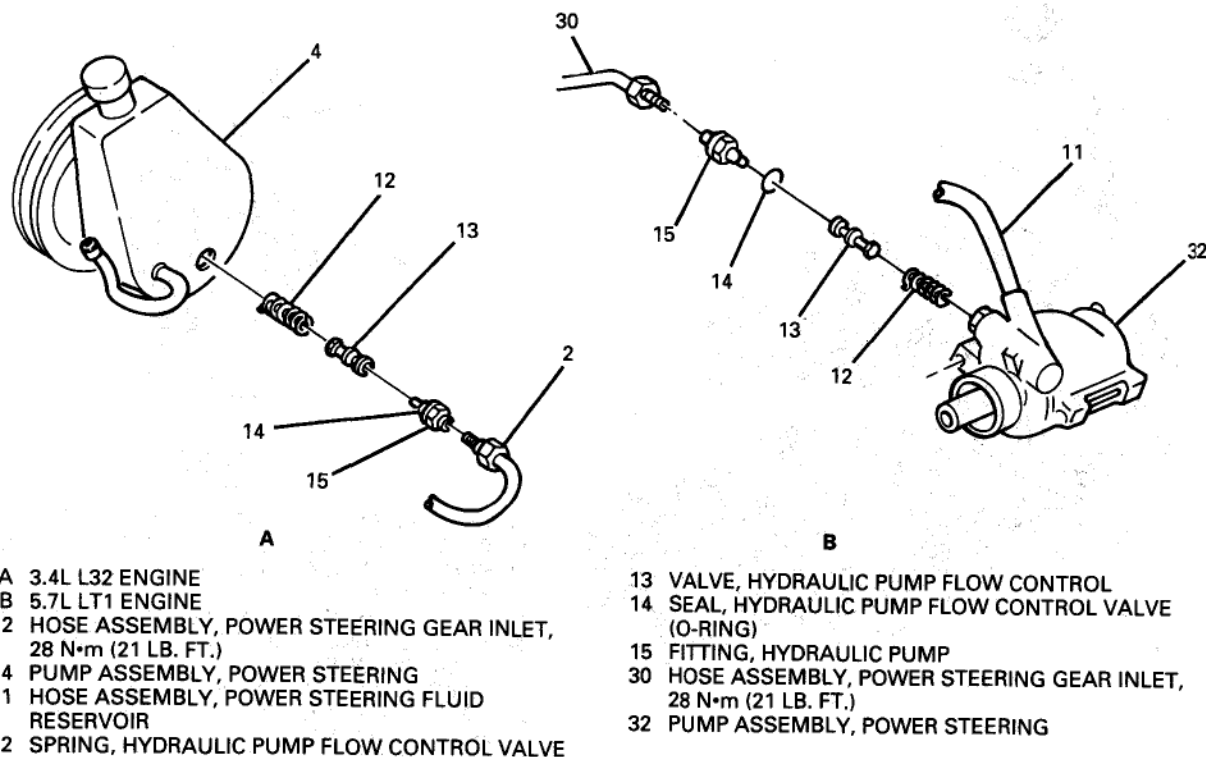
POWER STEERING PUMP SUPPORT

3.4L L32 Engine Only

Figure 8

Remove or Disconnect

- Place drain pan under pump assembly (4).



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Figure 7 - Hydraulic Pump Flow Control Valve

2. Outlet hose assembly from pump assembly. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" in this section.
3. Bolts/screws (18) and nuts (19).
4. Support (17) from pump assembly (4) and brace assembly (35).

Install or Connect

NOTICE: See "Notice" on page 3B-1 of this section.

1. Position support (17) to pump assembly (4) and brace assembly (35).
2. Hand start nuts (19).
3. Hand start bolts/screws (18).



Tighten

- Nuts (19) to 50 N•m (37 lb. ft.).
 - Bolts/screws (18) to 50 N•m (37 lb. ft.).
4. Outlet hose assembly to pump assembly. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" in this section.
 5. Refill and bleed power steering system. Refer to "Bleeding the Power Steering System" in this section.

POWER STEERING PUMP ASSEMBLY

Figures 8 and 9

Remove or Disconnect

1. Place drain pan under pump assembly (4 or 32).
2. Raise and suitably support vehicle on 5.7L LT1 engine only. Refer to SECTION 0A.
3. Drain engine coolant on 5.7L LT1 engine only. Refer to SECTION 6B.
4. Serpentine belt. Refer to SECTION 6A2A or 6A3A.
5. Lower vehicle on 5.7L LT1 engine only.
6. Front air intake duct. Refer to SECTION 1A.
7. Generator assembly on 5.7L LT1 engine only. Refer to SECTION 6D3.
8. Radiator outlet hose assembly from engine assembly on 5.7L LT1 engine only. Refer to SECTION 6B.
9. Heater inlet and outlet hose assemblies from water pump assembly on 5.7L LT1 engine. Refer to SECTION 1A.
10. Throttle body heater return hose from heater outlet hose assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
11. Bolts/screws (21) on 5.7L LT1 engine only.
12. Inlet and outlet hose assemblies from pump assembly on 3.4L L32 engine only. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" in this section.

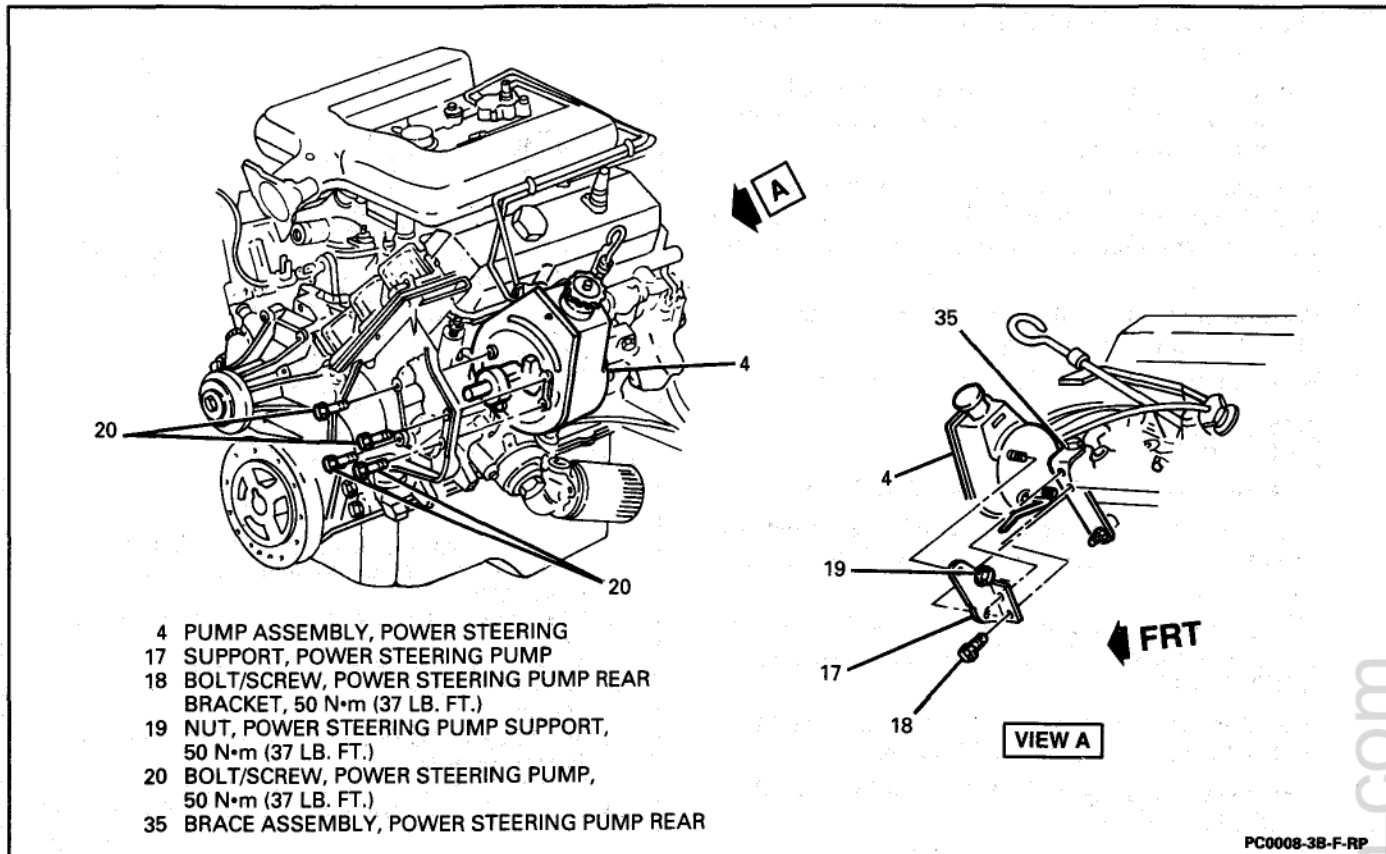


Figure 8 – Power Steering Pump Assembly (3.4L L32 Engine)

13. Pulley assembly from pump assembly on 3.4L L32 engine only. Refer to "Power Steering Pump Pulley Assembly" in this section.
14. Inlet and reservoir hose assemblies from pump assembly on 5.7L LT1 engine only. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" and "Power Steering Fluid Reservoir Hose Assembly" in this section.
15. Pump support from pump assembly on 3.4L L32 engine only. Refer to "Power Steering Pump Support" in this section.
16. Bolts/screws (20) on 3.4L L32 engine only.
17. Pump assembly (4 or 32).

Install or Connect

NOTICE: See "Notice" on page 3B-1 of this section.

1. Position pump assembly (4) to brace assembly (35) on 3.4L L32 engine only.
2. Bolts/screws (20) on 3.4L L32 engine only.

Tighten

- Bolts/screws (20) to 50 N•m (37 lb. ft.).
3. Pump support to pump assembly on 3.4L L32 engine only. Refer to "Power Steering Pump Support" in this section.
 4. Inlet and reservoir hose assemblies to pump assembly on 5.7L LT1 engine only. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" and

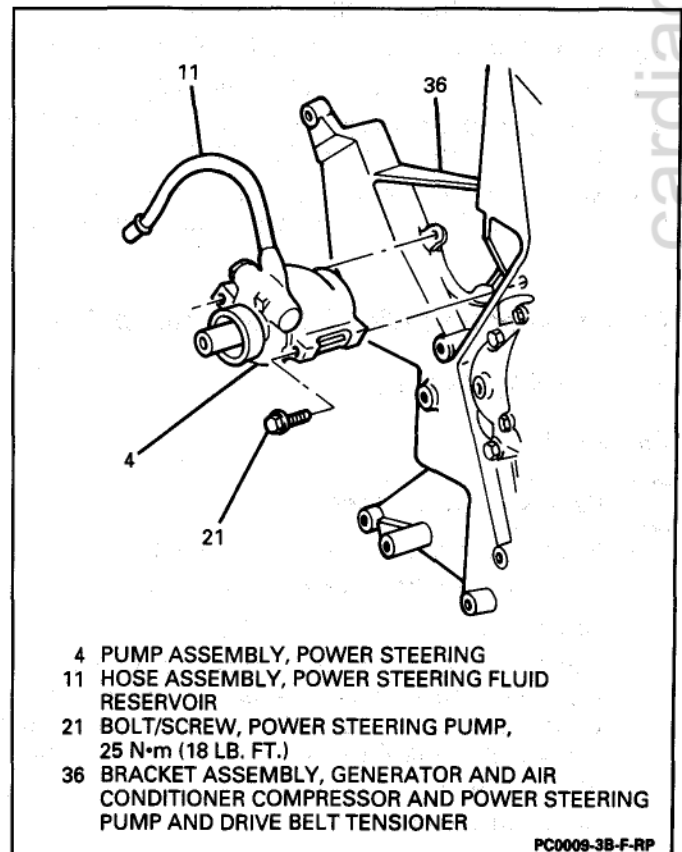


Figure 9 – Power Steering Pump Assembly (5.7L LT1 Engine)

"Power Steering Fluid Reservoir Hose Assembly" in this section.

5. Pulley assembly to pump assembly on 3.4L L32 engine only. Refer to "Power Steering Pump Pulley Assembly" in this section.
6. Inlet and outlet hose assemblies to pump assembly on 3.4L L32 engine only. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" in this section.
7. Position pump assembly (30) to bracket assembly (36) on 5.7L LT1 engine only.
8. Bolts/screws (21) on 5.7L LT1 engine only.



Tighten

- Bolts/screws (21) to 25 N•m (18 lb. ft.).
9. Throttle body heater return hose to heater outlet hose assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
 10. Heater inlet and outlet hose assemblies to water pump assembly on 5.7L LT1 engine only. Refer to SECTION 1A.
 11. Radiator outlet hose assembly to engine assembly on 5.7L LT1 engine. Refer to SECTION 6B.
 12. Generator assembly on 5.7L LT1 engine only. Refer to SECTION 6D3.
 13. Front air intake duct. Refer to SECTION 1A.
 14. Raise and suitably support vehicle on 5.7L LT1 engine only. Refer to SECTION 0A.
 15. Serpentine belt. Refer to SECTION 6A2A or 6A3A.
 16. Lower vehicle on 5.7L LT1 engine only.
 17. Refill and bleed engine coolant system on 5.7L LT1 engine only. Refer to SECTION 6B.
 18. Refill and bleed power steering system. Refer to "Bleeding the Power Steering System" in this section.

Power Steering Fluid Reservoir Assembly

5.7L LT1 Engine Only

Figure 10



Remove or Disconnect

1. Place drain pan under reservoir assembly (10).
2. Cap assembly (24) from reservoir assembly (10).
3. Bolt/screw (22) and retainer (23).
4. Outlet hose assembly and reservoir hose assembly from reservoir assembly. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" and "Power Steering Fluid Reservoir Hose Assembly" in this section.
5. Reservoir assembly (10).



Install or Connect

NOTICE: See "Notice" on page 3B-1 of this section.

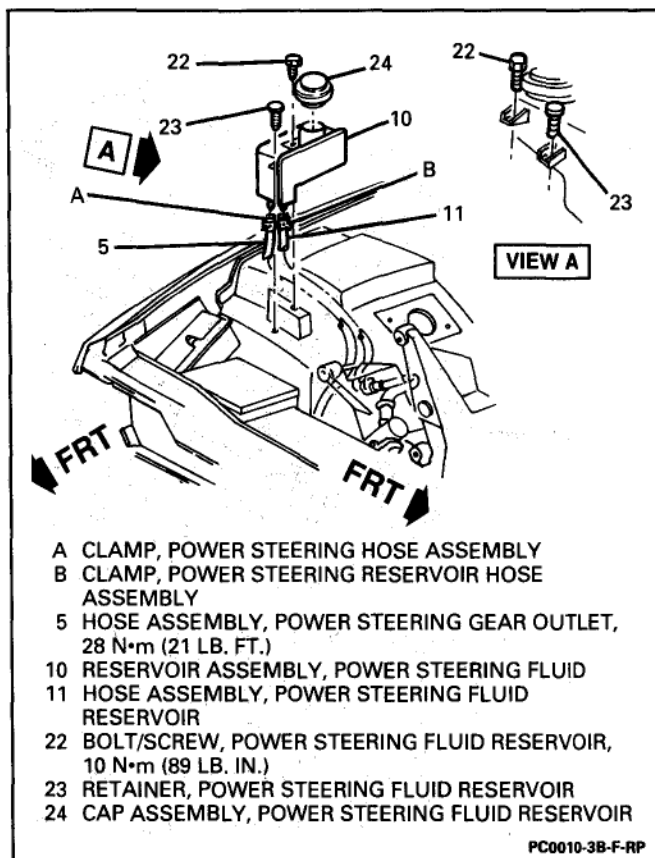


Figure 10 – Power Steering Fluid Reservoir Assembly (5.7L LT1 Engine)

1. Outlet hose assembly and reservoir hose assembly to reservoir assembly. Refer to "Power Steering Gear Inlet and Outlet Hose Assemblies" and "Power Steering Fluid Reservoir Hose Assembly" in this section.
2. Position reservoir assembly (10) to right front wheelhouse assembly.
3. Retainer (23) and bolt/screw (22).



Tighten

- Bolt/screw (22) to 10 N•m (89 lb. in.).
4. Cap assembly (24) to reservoir assembly (10).
 5. Refill and bleed power steering system. Refer to "Bleeding the Power Steering System" in this section.

Power Steering Fluid Reservoir Hose Assembly

5.7 LT1 Engine Only

Figure 6



Remove or Disconnect

1. Raise and suitably support vehicle. Refer to SECTION 0A.
2. Drain engine coolant. Refer to SECTION 6B.
3. Serpentine belt. Refer to SECTION 6A3A.

4. Lower vehicle.
5. Front air intake duct. Refer to SECTION 1A.
6. Generator assembly. Refer to SECTION 6D3.
7. Radiator outlet hose assembly from engine assembly. Refer to SECTION 6B.
8. Heater inlet and outlet hose assemblies from water pump assembly. Refer to SECTION 1A.
9. Throttle body heater return hose from heater outlet assembly. Refer to SECTION 1A.
10. Power steering pump bolts/screws. Refer to "Power Steering Pump Assembly" in this section.
11. Reservoir hose assembly (11) from pump assembly (32).
12. Power steering fluid reservoir bolt/screw and power steering fluid reservoir retainer from reservoir assembly. Refer to "Power Steering Fluid Reservoir Assembly" in this section.
13. Reservoir hose assembly (11) from reservoir assembly (10).
2. Power steering fluid reservoir retainer and power steering fluid reservoir bolt/screw. Refer to "Power Steering Fluid Reservoir Assembly" in this section.
3. Reservoir hose assembly (11) to pump assembly (32).
4. Power steering pump bolts/screws. Refer to "Power Steering Pump Assembly" in this section.
5. Throttle body heater return hose to heater outlet hose assembly. Refer to SECTION 1A.
6. Heater inlet and outlet hose assemblies to water pump assembly. Refer to SECTION 1A.
7. Radiator outlet hose assembly from engine assembly. Refer to SECTION 6B.
8. Generator assembly. Refer to SECTION 6D3.
9. Front air intake duct. Refer to SECTION 1A.
10. Raise and suitably support vehicle. Refer to SECTION 0A.
11. Serpentine belt. Refer to SECTION 6A3A.
12. Lower vehicle.
13. Refill and bleed engine coolant. Refer to SECTION 6B.
14. Refill and bleed power steering system. Refer to "Bleeding the Power Steering System" in this section.



Install or Connect

NOTICE: See "Notice" on page 3B1 of this section.

1. Reservoir hose assembly (11) to reservoir assembly (10) using clamp. Lubricate as required.

SPECIFICATIONS

POWER STEERING FLUID RECOMMENDATIONS

Temperate Climate

Power Steering Fluid Requirement GM Power Steering Fluid P/N 1050017 or 1052884, or equivalent meeting GM Specification 9985010

Cold Climate

Power Steering Fluid Requirement GM Power Steering Fluid P/N 12345867 or 12345866 (System should be drained and refilled prior to using this fluid.)

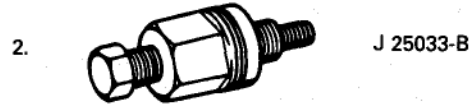
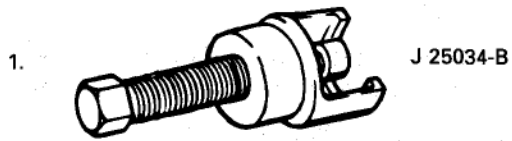
FITTING TIGHTENING SPECIFICATIONS

Hydraulic Pump Fitting-to-Power Steering Pump Assembly	75 N•m (55 lb. ft.)
Power Steering Gear Inlet Hose Assembly Fitting-to-Power Steering Gear Assembly	28 N•m (21 lb. ft.)
Power Steering Gear Inlet Hose Assembly Fitting-to-Power Steering Pump Assembly	28 N•m (21 lb. ft.)
Power Steering Gear Outlet Hose Assembly Fitting-to-Power Steering Gear Assembly	28 N•m (21 lb. ft.)

FASTENER TIGHTENING SPECIFICATIONS

Power Steering Fluid Reservoir Bolt/Screw	10 N•m (89 lb. in.)
Power Steering Pump Bolt/Screw – 3.4L L32 Engine	50 N•m (37 lb. ft.)
Power Steering Pump Bolt/Screw – 5.7L LT1 Engine	25 N•m (18 lb. ft.)
Power Steering Pump Rear Bracket Bolt/Screw	50 N•m (37 lb. ft.)
Power Steering Pump Support Nut	50 N•m (37 lb. ft.)
Steering Gear Bolt/Screw	85 N•m (63 lb. ft.)

SPECIAL TOOLS



1. PUMP PULLEY REMOVER
2. PUMP PULLEY INSTALLER

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