
SECTION 6B

POWER STEERING PUMP

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DESCRIPTION AND OPERATION

POWER STEERING PUMP

The pump has a remote fluid reservoir. A pressure-relief valve inside the flow control valve limits pump pressure.

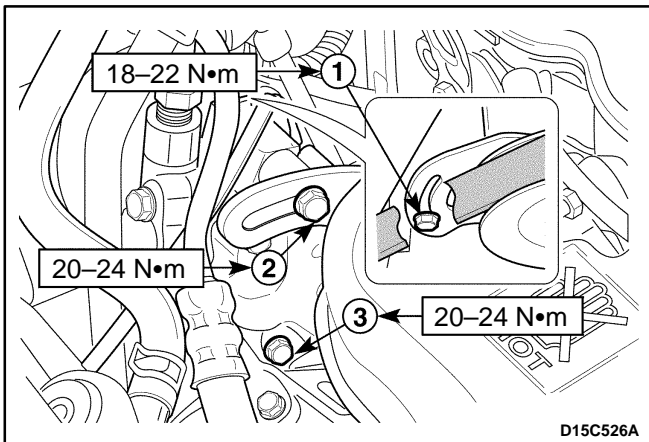
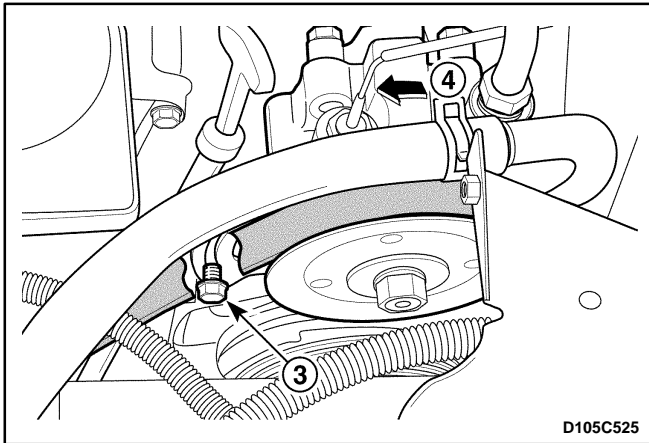
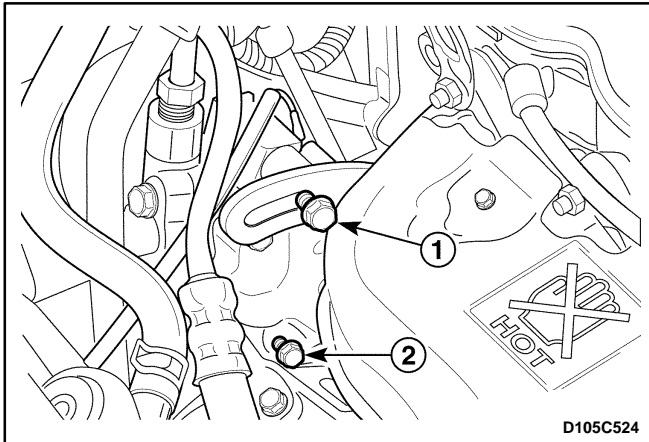
DIAGNOSTIC INFORMATION AND PROCEDURES

POWER STEERING PUMP

| Condition | Probable Cause | Correction |
|---|--|--|
| Foaming, Milky Power Steering Fluid, Low Fluid Level, and Possible Low Pressure | <ul style="list-style-type: none"> ● Insufficient power steering fluid level. | <ul style="list-style-type: none"> ● Fill the power steering fluid reservoir. |
| | <ul style="list-style-type: none"> ● Contaminated air in the power steering fluid. | <ul style="list-style-type: none"> ● Bleed the power steering system. |
| | <ul style="list-style-type: none"> ● Internal leaks and overflow of the power steering pump. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| | <ul style="list-style-type: none"> ● Leaks of the power steering pump housing and the soft plug. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| Low Pressure Due to Steering Pump | <ul style="list-style-type: none"> ● Stuck and improperly operated power steering pump flow control valve. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| | <ul style="list-style-type: none"> ● Worn power steering pump seats. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| | <ul style="list-style-type: none"> ● Scores, cracks, or breaks of the pressure plate, the pump ring, the thrust plate, and the rotor. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| | <ul style="list-style-type: none"> ● Sticking of the vanes in the rotor slots. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| | <ul style="list-style-type: none"> ● Internal leaks and overflow of the power steering pump. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| Growling Noise in Steering Pump | <ul style="list-style-type: none"> ● Restricted flow of the pump hoses and the steering gear pipes. | <ul style="list-style-type: none"> ● Clean out the pipes and the hoses. ● Replace the pipes and the hoses as needed. |
| | <ul style="list-style-type: none"> ● Scores, cracks, or breaks of the pressure plate, the pump ring, the thrust plate, and the rotor. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| | <ul style="list-style-type: none"> ● Improperly contacted power steering hose with the body. | <ul style="list-style-type: none"> ● Secure the pump hose in a clamp away from the body. |
| | <ul style="list-style-type: none"> ● Insufficient power steering fluid level. | <ul style="list-style-type: none"> ● Fill the power steering pump reservoir. |
| Ratting Noise in the Steering Pump | <ul style="list-style-type: none"> ● Contaminated air in the power steering fluid. | <ul style="list-style-type: none"> ● Bleed the power steering system. |
| | <ul style="list-style-type: none"> ● Improperly contacted power steering hose with the body. | <ul style="list-style-type: none"> ● Secure the pump hose in a clamp away from the body. |
| | <ul style="list-style-type: none"> ● Insufficient power steering fluid level. | <ul style="list-style-type: none"> ● Fill the power steering pump reservoir. |
| | <ul style="list-style-type: none"> ● Improperly installed pump mounting. | <ul style="list-style-type: none"> ● Tighten the power steering pump attachment bolts. |
| Swishing Noise in the Steering Pump | <ul style="list-style-type: none"> ● Damaged power steering pump flow control valve. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| Whining Noise in the Steering Pump | <ul style="list-style-type: none"> ● Scores of the pressure plate and the vanes. | <ul style="list-style-type: none"> ● Replace the power steering pump. |
| | <ul style="list-style-type: none"> ● Scores of the pump shaft bearing | <ul style="list-style-type: none"> ● Replace the power steering pump. |

REPAIR INSTRUCTIONS

ON-VEHICLE SERVICE



PUMP DRIVE BELT

Removal Procedure

1. Remove the front passenger side headlamp. Refer to *Section 9B, Lighting Systems*.
2. Remove the pump drive belt.
 - Loosen the rear bracket adjusting bolt (1).
 - Loosen the bolt (2).

- Loosen the front bracket adjusting bolts (3).
- Push the pump forward (4).

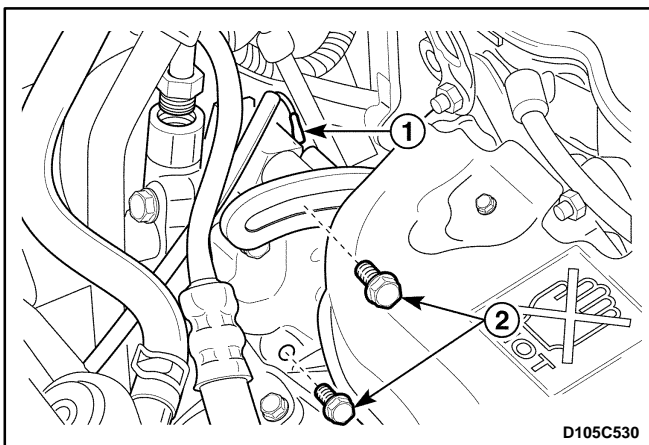
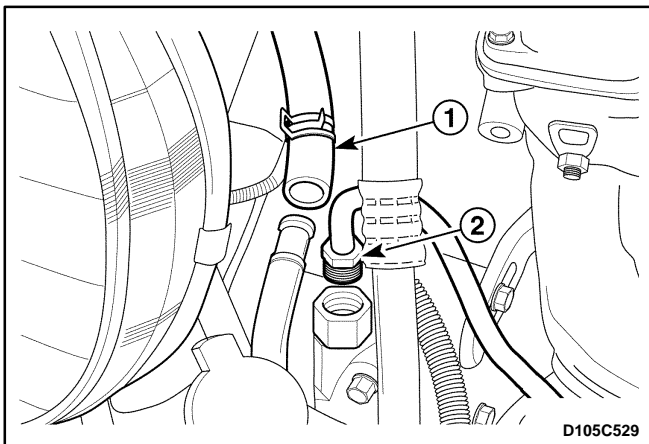
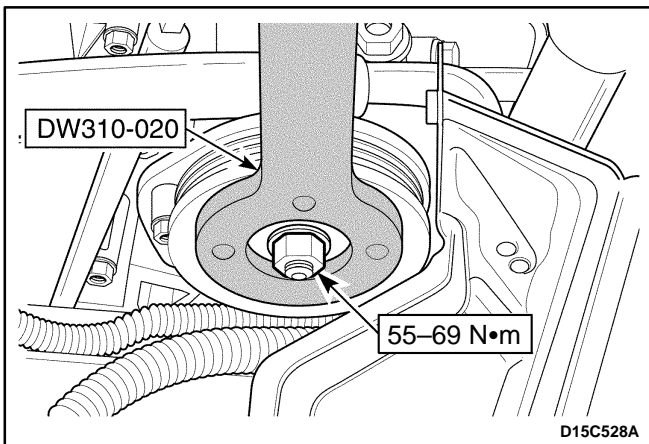
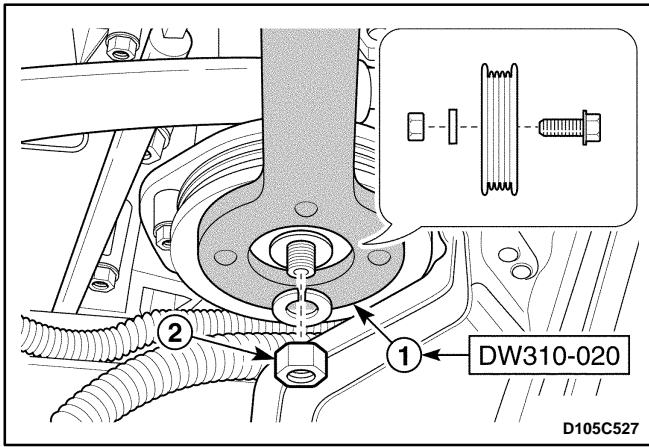
Installation Procedure

1. Install the pump drive belt with the bolts.

Tighten

- Tighten the front bracket adjusting bolt to 18–22 N•m (13–16 lb-ft) (1).
- Tighten the rear bracket adjusting bolt to 20–24 N•m (15–18 lb-ft) (2).
- Tighten the power steering pump bolt to 20–24 N•m (15–18 lb-ft) (3).

2. Install the front passenger side headlamp. Refer to *Section 9B, Lighting Systems*.



PUMP DRIVE PULLEY

Tools Required

DW310-020 Power Steering Pulley Remove Holder

Removal Procedure

1. Remove the front passenger side headlamp.
Refer to *Section 9B, Lighting Systems*.
2. Remove the steering pump pulley.
 - Remove the pump drive belt. Refer to "Pump Drive Belt" in this section.
 - Fix the pulley using the power steering pulley remove holder DW310-020 (1).
 - Remove the pump drive pulley nut (2).

Installation Procedure

1. Install the pump drive pulley. Install the steering pump pulley nut.
2. Install the pump drive belt.
3. Tighten the steering pump pulley nut using the power steering pulley remove holder DW310-020.

Tighten

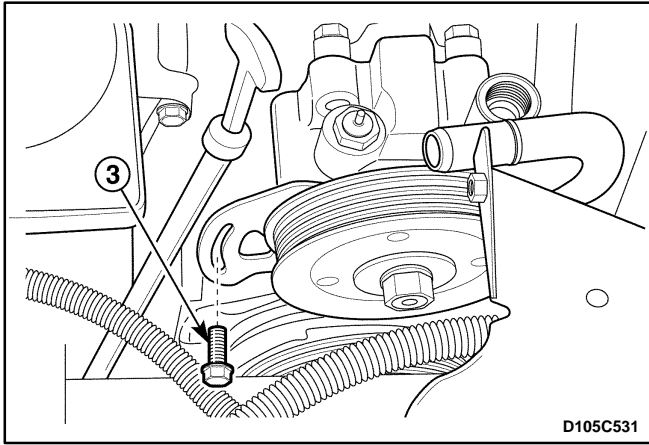
Tighten the steering pump pulley nuts to 55-69 N·m (41-51 lb-ft).

4. Install the front passenger side headlamp.
Refer to *Section 9B, Lighting Systems*.

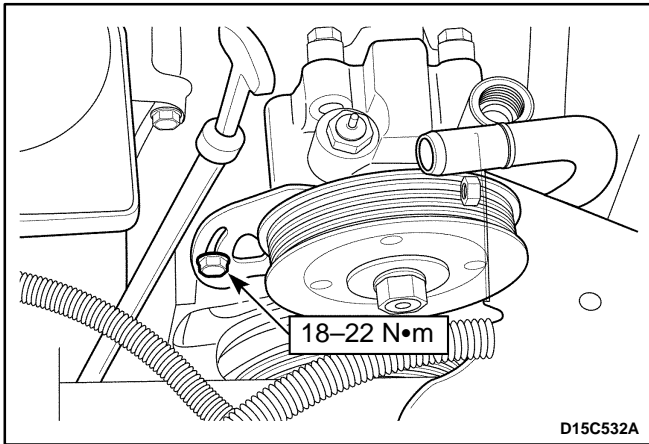
PUMP ASSEMBLY

Removal Procedure

1. Remove the front passenger side headlamp.
Refer to *Section 9B, Lighting Systems*.
2. Disconnect the pipe line from the pump.
 - Disconnect the supply line pipe hose (1).
 - Disconnect the pressure line pipe fitting (2).
3. Remove the power steering pump.
 - Remove the pump drive belt. Refer to "Pump Drive Belt" in this section.
 - Disconnect the power steering pressure switch connector (1). Refer to *Section 6A, Power Steering Systems*.
 - Remove the bolts (2).



- Remove the bolt (3).



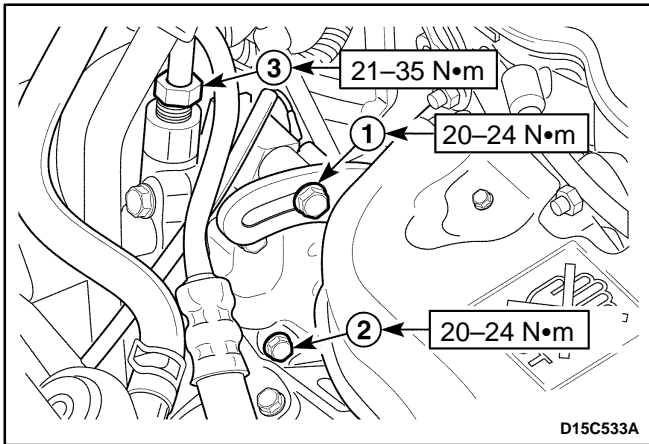
Installation Procedure

1. Install the power steering pump with the bolt.

Tighten

Tighten the bolt to 18–22 N•m (13–16 lb-ft).

2. Connect the power steering pressure switch connector. Refer to *Section 6A, Power Steering System*.
3. Install the pump drive belt. Refer to “Pump Drive Belt” in this section.



4. Install the bolts.

Tighten

- Tighten the rear bracket adjusting bolt to 20–24 N•m (15–18 lb-ft) (1).
 - Tighten the power steering bolt to 20–24 N•m (15–18 lb-ft) (2).
5. Connect the pressure line pipe to the outlet connection on the steering pump.

Tighten

Tighten the pressure line pipe fitting to 21–35 N•m (16–26 lb-ft) (3).

6. Install the front passenger side headlamp.
Refer to *Section 9B, Lighting Systems*.

Notice: When adding fluid or making a complete fluid change, always use DEXRON®-II or DEXRON®-III power steering fluid. Failure to use the proper fluid will cause hose and seal damage and fluid leaks.

7. Refill the pump with new fluid and bleed the air from the system. Refer to *Section 6A, Bleeding the Power Steering System*.
8. Inspect for leaks. If leaks are found, correct the cause of the leak and bleed the system.

UNIT REPAIR

PUMP

The power steering pump in this vehicle is not serviceable. A faulty pump must be replaced.

SPECIFICATIONS

GENERAL SPECIFICATIONS

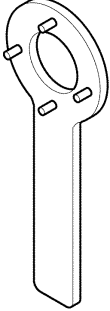
| Application | Description |
|-------------|--|
| Lubricant | Power Steering Fluid DEXRON®-II, DEXRON®-III |
| Capacity | 1.0 Liter (1.056 qt) |
| Type | Vane |

FASTENER TIGHTENING SPECIFICATIONS

| Application | N•m | Lb-Ft | Lb-In |
|--|---------|---------|-------|
| Power Steering Pump Bolt | 20 – 24 | 15 – 18 | – |
| Power Steering Pump Front Bracket Bolt | 20 – 24 | 15 – 18 | – |
| Power Steering Pump Front Bracket Adjusting Bolt | 18 – 22 | 13 – 16 | – |
| Power Steering Pump Rear Bracket Upper Bolt | 35 – 45 | 26 – 33 | – |
| Power Steering Pump Rear Bracket Lower Bolt | 20 – 24 | 15 – 18 | – |
| Power Steering Pump Rear Bracket Adjusting Bolt | 20 – 24 | 15 – 18 | – |
| Power Steering Pump Pulley Nut | 55 – 69 | 41– 51 | – |
| Power Steering Oil Pressure Line Fitting | 21 – 35 | 16 – 26 | – |

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS TABLE

| | |
|---|---|
|  <p>D105C101</p> | <p>DW310-020 Power Steering Pulley Remove Holder</p> |
|---|---|