

**8-24. POWER STEERING PUMP, PULLEY, AND BRACKET MAINTENANCE (6.2L)**

This task covers:

- |                |                 |
|----------------|-----------------|
| a. Removal     | c. Assembly     |
| b. Disassembly | d. Installation |

**INITIAL SETUP:**

Applicable Models

All vehicle models except M1123 and "A2" series

Tools

General mechanic's tool kit:  
automotive (Appendix B, Item 1)

Special Tools

Pulley installer (Appendix B, Item 137)

Materials/Parts

Lockwasher (Appendix G, Item 133)  
Lockwasher (Appendix G, Item 191)  
Lockwasher (Appendix G, Item 188)  
O-ring (Appendix G, Item 208)  
Sealing compound (Appendix C, Item 45)

Manual References

TM 9-2320-280-10  
TM 9-2320-280-24P

Equipment Condition

Hood raised and secured (TM 9-2320-280-10).

**CAUTION**

Cover or plug all hoses and connections immediately after disconnection to prevent contamination. Remove all plugs prior to connection.

**a. Removal**

**NOTE**

Have drainage container ready to catch fluid.

1. Loosen two clamps (2) and disconnect two return lines (1) and high pressure line (5) from power steering pump (3). Remove O-ring (4) from high pressure line (5). Discard O-ring (4).
2. Loosen alternator adjusting capscrew (6), two alternator mounting capscrews (16), and push alternator (7) toward engine. Remove two drivebelts (22) from power steering pump pulley (10).
3. Loosen adjusting capscrews (29) and (17) from front of power steering bracket (14).
4. Loosen engine mounting capscrew (11) and push power steering bracket (14) toward engine. Remove two drivebelts (21) from power steering pump pulley (10).
5. Remove capscrew (11) and lockwasher (12) from power steering bracket (14) and alternator bracket (15). Discard lockwasher (12).
6. Remove adjusting capscrew (17), lockwasher (18), and washer (19) from power steering bracket (14) and alternator bracket (15). Discard lockwasher (18).
7. Remove adjusting capscrew (29), lockwasher (28), and washer (27) from power steering bracket (14) and power steering front support bracket (23). Discard lockwasher (28).
8. Remove power steering pump (3), pulley (10), and power steering bracket (14).

**NOTE**

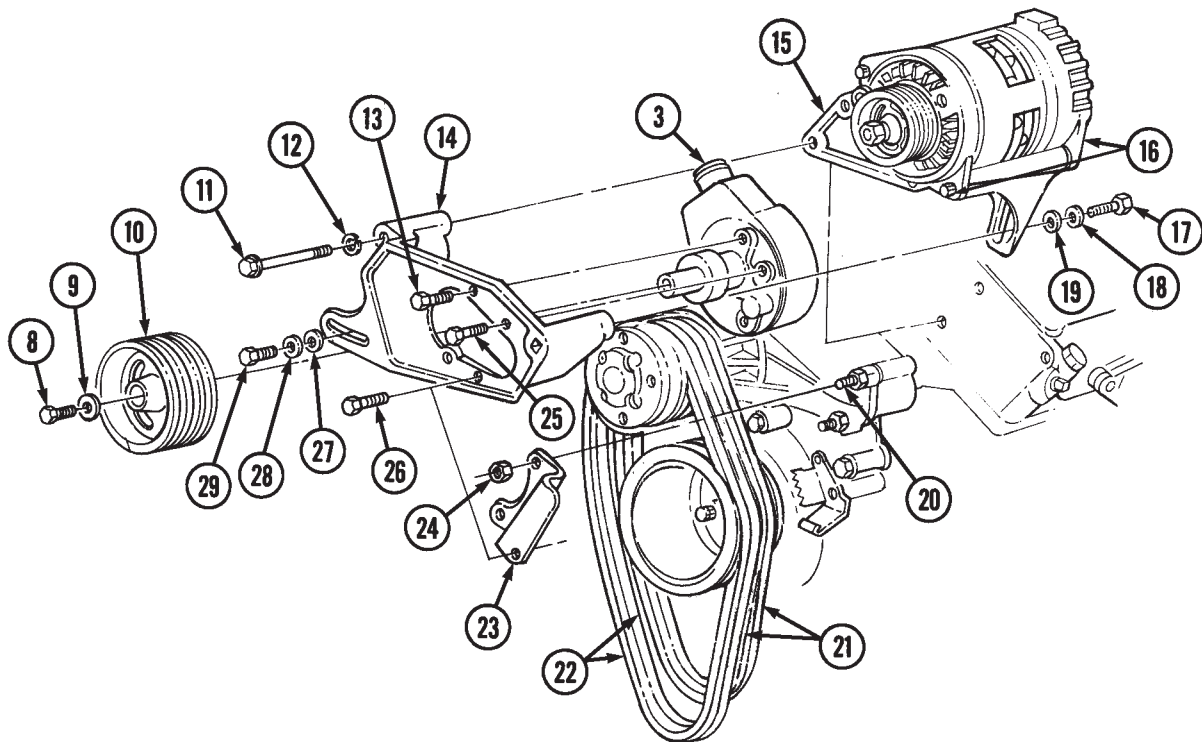
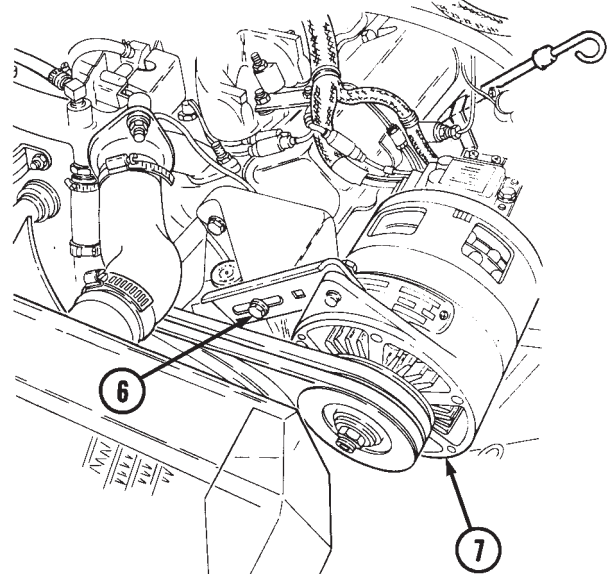
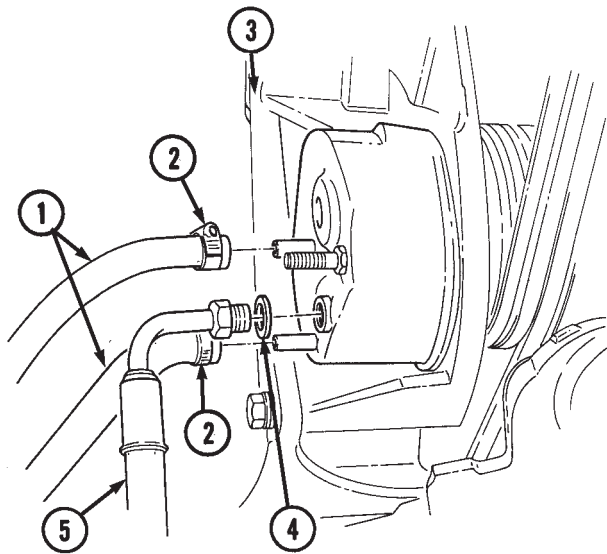
Perform step 10 if support bracket is defective.

9. Inspect support bracket (23) for breaks or cracks.
10. Remove two nuts (24) and steering support bracket (23) from studs (20).

**b. Disassembly**

1. Remove screw (8), washer (9), and pulley (10) from power steering pump (3).
2. Remove capscrew (25), capscrew (13), two capscrews (26), and power steering pump (3) from power steering bracket (14).

8-24. POWER STEERING PUMP, PULLEY, AND BRACKET MAINTENANCE (6.2L)(Cont'd)



## 8-24. POWER STEERING PUMP, PULLEY, AND BRACKET MAINTENANCE (6.2L) (Cont'd)

### c. Assembly

1. Apply sealing compound adhesive to threads of capscrews (6), (20), (21), and (1).
2. Install power steering pump (8) on power steering bracket (7) with capscrew (6), short capscrew (20), and two long capscrews (21). Tighten capscrews (6), (20), and (21) to 40 lb-ft (54 N•m).
3. Using pulley installer, install pulley (3) on power steering pump (8) with washer (2) and capscrew (1). Tighten capscrew (1) to 37 lb-ft (50 N•m).

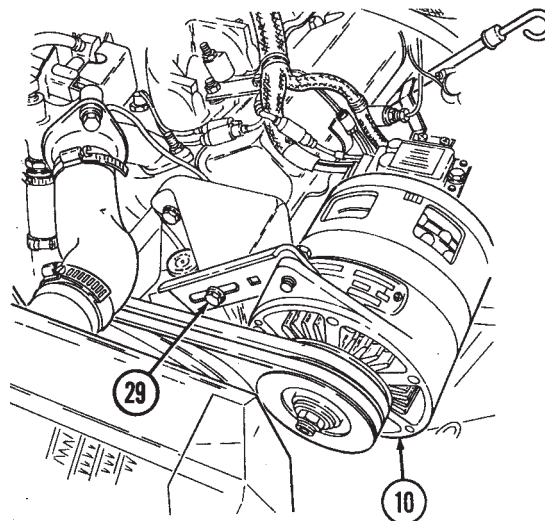
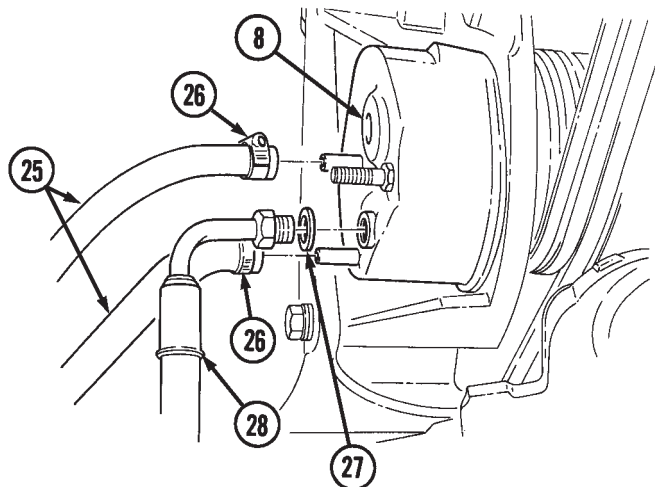
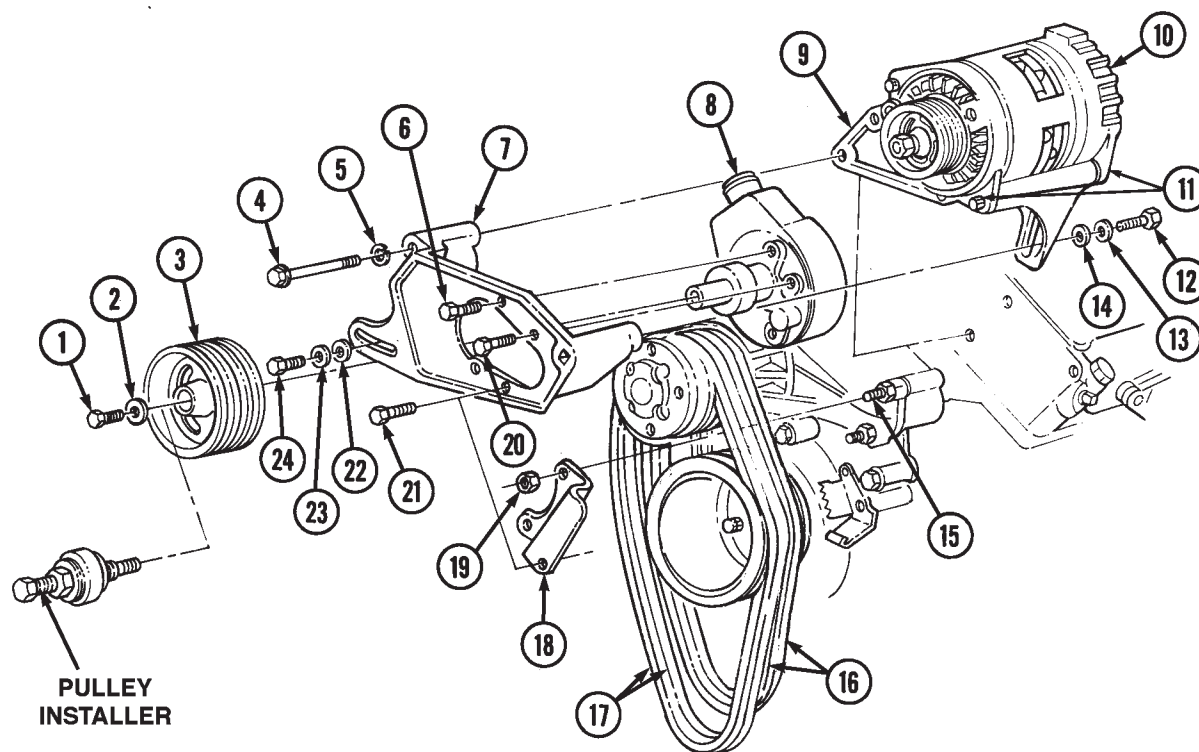
### d. Installation

#### NOTE

Perform step 1 if support bracket was removed.

1. Apply sealing compound to studs (15) and install support bracket (18) to studs (15) with two nuts (19). Tighten nuts (19) to 45 lb-ft (61 N•m).
2. Install power steering pump (8), pulley (3), and power steering bracket (7) on alternator bracket (9) with washer (14), lockwasher (13), and capscrew (12).
3. Install power steering bracket (7) to support bracket (18) with washer (22), lockwasher (23), and capscrew (24).
4. Install four drivebelts (16) and (17) onto pulley (3).
5. Install power steering bracket (7) to alternator bracket (9) with lockwasher (5) and capscrew (4).
6. Pull alternator (10) away from engine. Tighten alternator adjusting capscrew (29) and two alternator mounting capscrews (11) finger tight.
7. Connect two return lines (25) to power steering pump (8) and secure with two clamps (26).
8. Install O-ring (27) on high pressure line (28) and connect high pressure line (28) to power steering pump (8).

# 8-24. POWER STEERING PUMP, PULLEY, AND BRACKET MAINTENANCE (6.2L)(Cont'd)



FOLLOW-ON TASKS:

- Adjust drivebelts (para. 3-82).
- Bleed power steering system (para. 8-29).

## 8-24.1. POWER STEERING PUMP AND PULLEY REPLACEMENT (6.5L)

This task covers:

**a. Removal**

**b. Installation**

### INITIAL SETUP:

Applicable Models

All M1123 and "A2" series vehicles

Tools

General mechanic's tool kit:  
automotive (Appendix B, Item 1)  
Maintenance and repair shop equipment:  
automotive (Appendix B, Item 2)

Special Tools

Pulley installer (Appendix B, Item 137)

Materials/Parts

O-ring (Appendix G, Item 208)  
Lockwasher (Appendix G, Item 190)

Manual References

TM 9-2320-280-10  
TM 9-2320-280-24P

Equipment Condition

- Hood raised and secured (TM 9-2320-280-10).
- Serpentine drivebelt removed (para. 3-83).

### a. Removal

#### **CAUTION**

Cover or plug all hoses and connections immediately after disconnection to prevent contamination. Remove all plugs prior to connection.

1. Loosen two clamps (2) and disconnect return lines (1) and high-pressure line (5) from power steering pump (3). Remove O-ring (4) from high-pressure line (5). Discard O-ring (4).
2. Remove nut (7), clamp (8), and wiring harness (6) from power steering pump (3).
3. Remove nut (15), lockwasher (14), capscrew (9), washer (10), and idler pulley (11) from bracket (12). Discard lockwasher (14).
4. Remove two capscrews (17), capscrew (18), and power steering pump (3) from mounting bracket (16).
5. Remove capscrew (19), washer (20), and power steering pulley (21) from power steering pump (3).

### b. Installation

#### **NOTE**

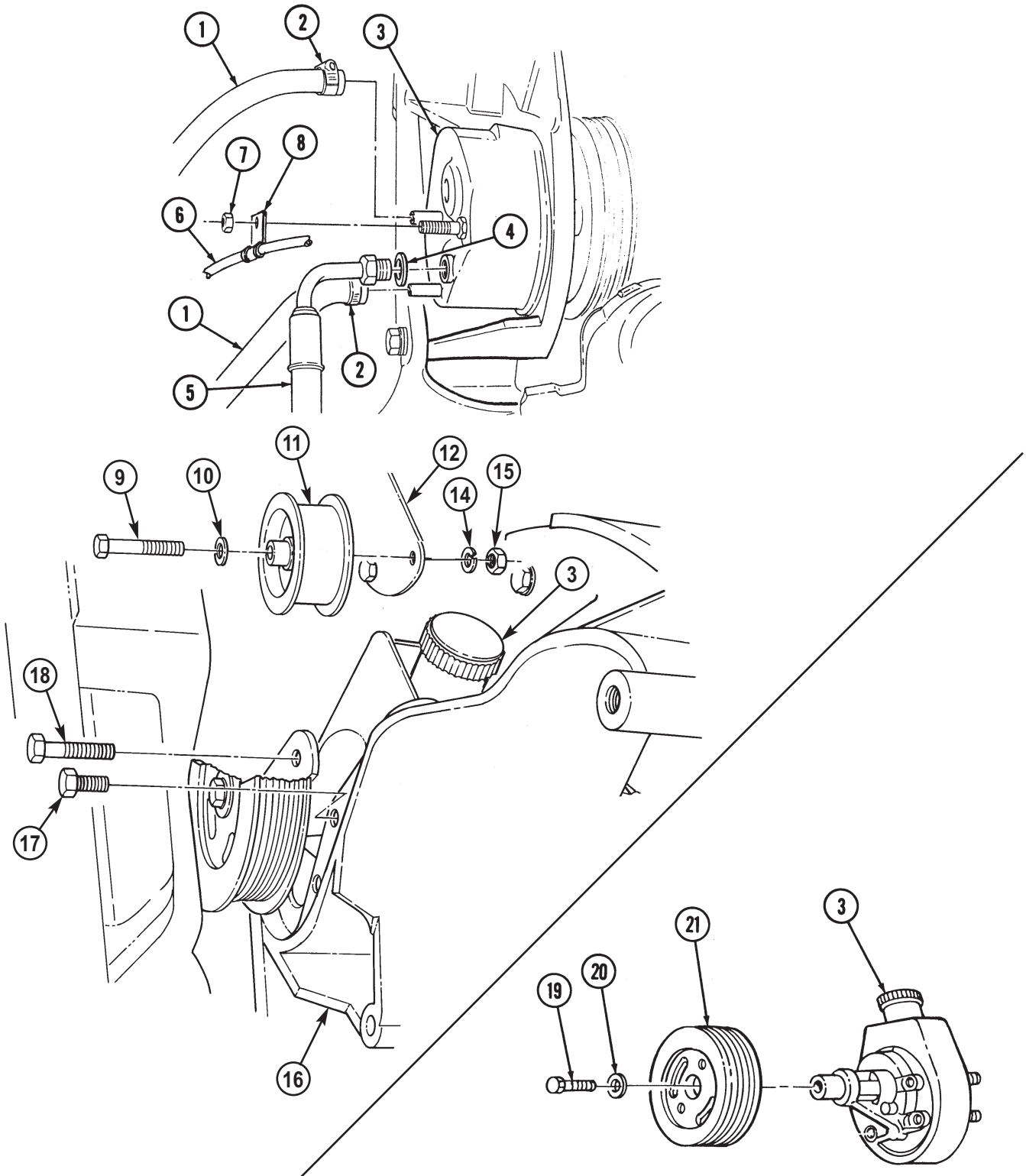
Ensure flat surface of pulley is facing out and is flush with pump shaft.

1. Using pulley installer, install pulley (21) on power steering pump (3).
2. Secure pulley (21) to power steering pump (3) with washer (20) and capscrew (19). Tighten capscrew (19) to 37 lb-ft (50 N·m).
3. Install power steering pump (3) on mounting bracket (16) with capscrew (18) and two capscrews (17).
4. Install idler pulley (11) on bracket (12) with washer (10), capscrew (9), lockwasher (14), and nut (15).
5. Install O-ring (4) on high-pressure line (5) and install high-pressure line (5) on power steering pump (3).
6. Install two return lines (1) on power steering pump (3) and tighten clamps (2).
7. Install wiring harness (6) and clamp (8) on power steering pump (3) with nut (7).

#### **CAUTION**

Serpentine belt failure (abnormal wear and belt dislodgement) can be caused by misalignment of pulleys, improper installation, or foreign objects introduced into belt path. For pulley alignment procedures, refer to para. 3-83.

# 8-24.1. POWER STEERING PUMP AND PULLEY REPLACEMENT (6.5L) (Cont'd)



FOLLOW-ON TASKS: • Install serpentine drivebelt (para. 3-83).  
• Bleed power steering system (para. 8-29).

## 8-24.2. POWER STEERING PUMP REPAIR

This task covers:

- |                |               |
|----------------|---------------|
| a. Disassembly | c. Inspection |
| b. Cleaning    | d. Assembly   |

### INITIAL SETUP:

#### Tools

General mechanic's tool kit:  
 automotive (Appendix B, Item 1)  
 Maintenance and repair shop equipment:  
 automotive (Appendix B, Item 2)

#### Materials/Parts

Seal service kit (Appendix G, Item 291.1)

#### Manual References

TM 9-2320-280-10  
 TM 9-2320-280-24P

#### Equipment Condition

Power steering pump, pulley, and  
 bracket removed (para 8-24 (6.2 L)),  
 (para. 8-24.1 (6.5 L)).

### a. Disassembly

#### **NOTE**

Have drainage container ready to catch fluid.

1. Remove reservoir filler cap (1) and drain fluid from pump assembly (8).
2. Remove two mounting studs (2) from pump assembly (8).

#### **NOTE**

Fitting assembly is spring loaded. Remove carefully to avoid losing parts.

3. Remove fitting assembly (6) and O-ring seal (5) from pump body (7). Discard O-ring seal (5).
4. Remove flow control valve (4) and valve spring (3) from pump body (7).

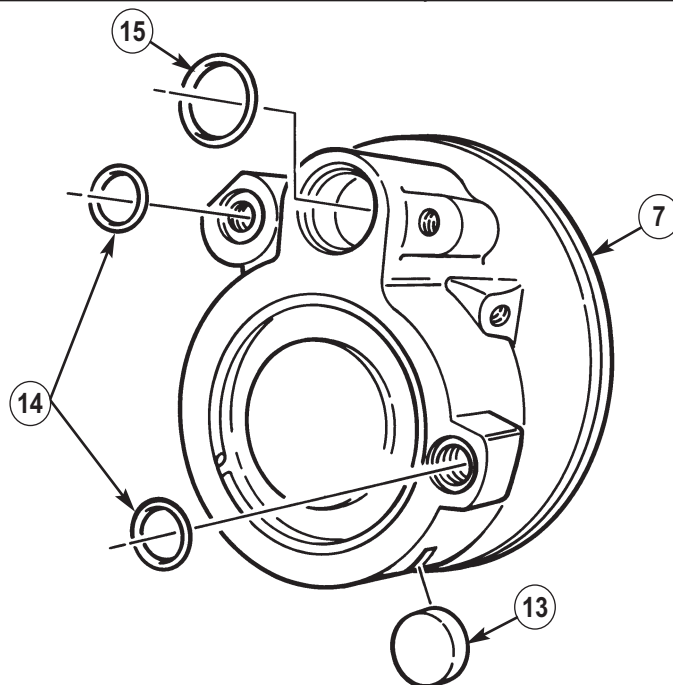
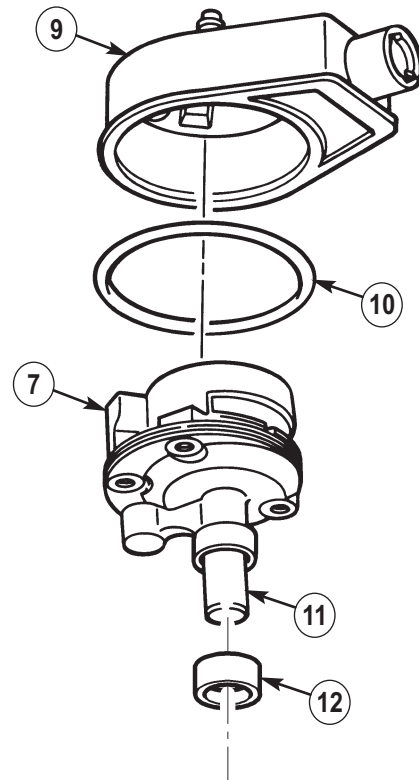
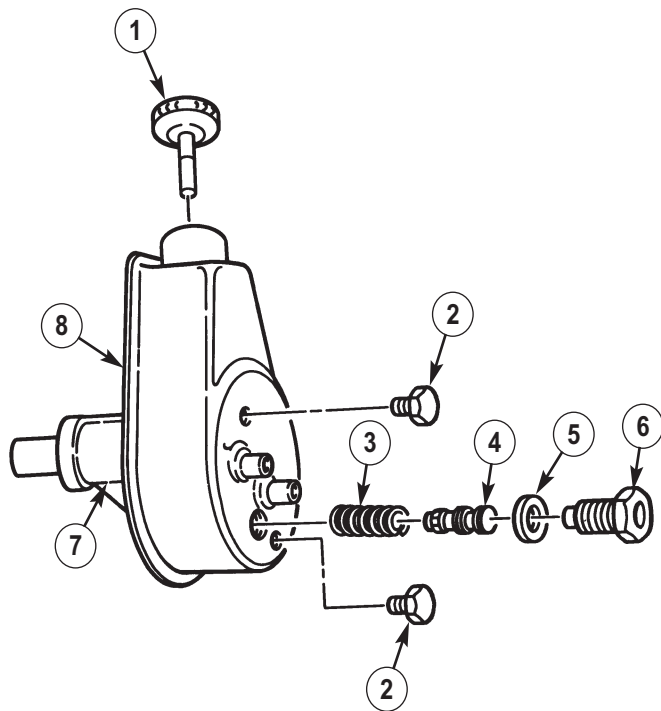
#### **CAUTION**

Do not overtighten vise as pump body could be distorted.

5. Place pump body (7) in vise so pump shaft (11) is pointing down.
6. Tap lightly around edge of reservoir (9).
7. Remove reservoir (9) and O-ring seal (10) from pump body (7). Discard O-ring seal (10).
8. Remove two O-ring seals (14) from pump body (7). Discard O-ring seals (14).
9. Remove magnet (13) from pump body (7). Discard magnet (13).
10. Remove O-ring seal (15) from pump body (7). Discard O-ring seal (12).
11. Remove shaft seal (12) from pump body (7).



# 8-24.2. POWER STEERING PUMP REPAIR (Cont'd)





## 8-24.2. POWER STEERING PUMP REPAIR (Cont'd)

### b. Cleaning

Clean all power steering pump components (refer to TM 9-2320-280-10).

### c. Inspection

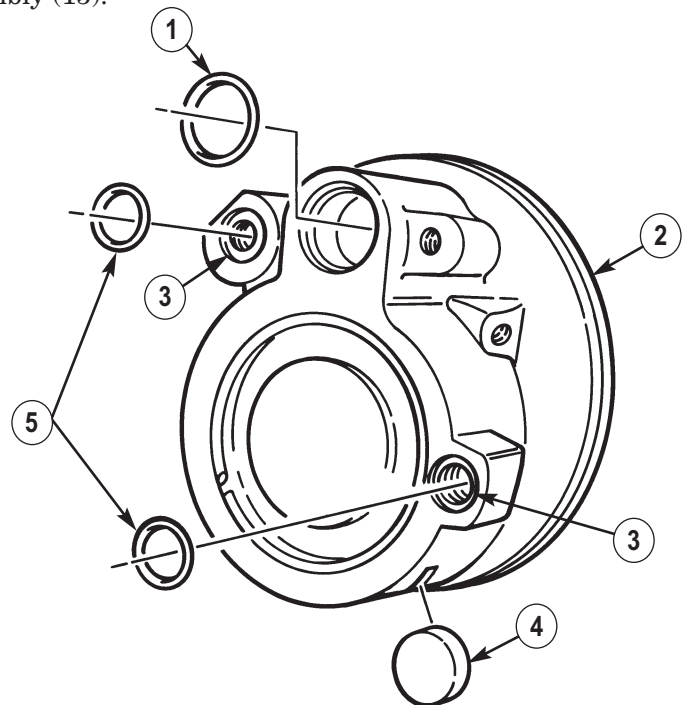
#### NOTE

For general inspection instructions, refer to para. 2-5.

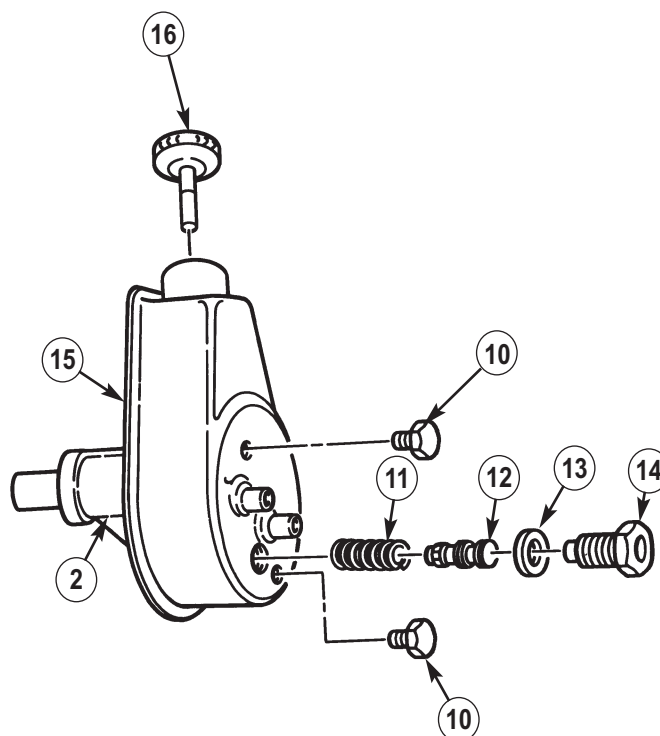
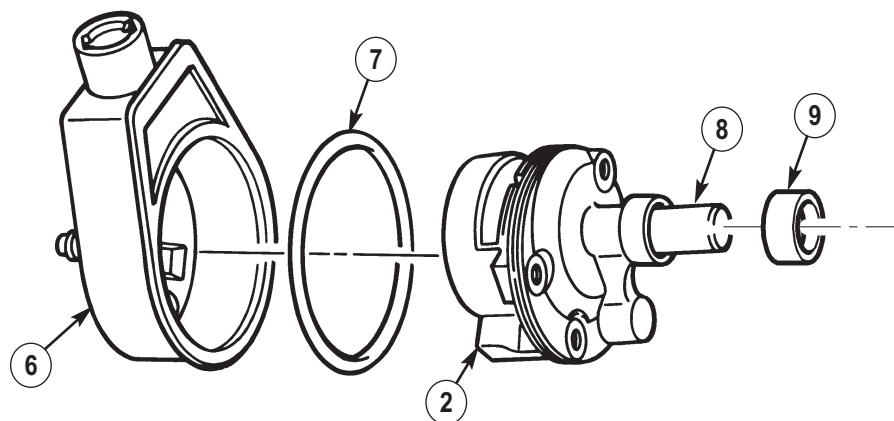
1. Inspect external surface of flow control valve (12) for burrs, nicks, or damage. Inspect flow control valve (12) bore and screen for damage or debris. Inspect valve spring (11) for damage. Replace both flow control valve (12) and valve spring (11) if either is damaged.
2. Inspect studs (10) for damage. Replace if damaged.
3. Inspect fitting (14) for damage. Replace if damaged.
4. Inspect reservoir filler cap (16) for damage. Replace if damaged.
5. Inspect pump body (2) for damage. Replace power steering pump assembly (15) if pump body (2) is damaged.
6. Inspect pump shaft (8) for burrs, nicks, or damage. Replace pump assembly (15) if damaged.

### d. Assembly

1. Install shaft seal (9) on pump shaft (8) and in pump body (2). Use care not to damage pump seal (9) when installing on pump shaft (8).
2. Install magnet (4) in pump body (2).
3. Install O-ring seal (1) into control valve cavity and two O-ring seals (5) into threaded holes (3).
4. Install O-ring seal (7) on pump body (2).
5. Install reservoir (6) on pump body (2).
6. Install two studs (10) on pump assembly (15). Tighten studs (10) to 26 lb-ft (35 N•m).
7. Install valve spring (11) and flow control valve (12) in pump assembly (15).
8. Install O-ring seal (13) and fitting (14) in pump assembly (15). Tighten fitting (14) in pump assembly (15) to 37 lb-ft (50 N•m).
9. Install reservoir filler cap (16) on pump assembly (15).



# 8-24.2. POWER STEERING PUMP REPAIR (Cont'd)



**FOLLOW-ON TASK:** Install power steering pump, pulley, and bracket (para 8-24 (6.2L)), (para 8-24.1 (6.5L)).

# 8-25. POWER STEERING HYDRAULIC SYSTEM PRESSURE AND RETURN HOSE REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Tools

General mechanic's tool kit:  
automotive (Appendix B, Item 1)

Materials/Parts

Three locknuts (Appendix G, Item 70)  
Two O-rings (Appendix G, Item 218)  
Tiedown strap (Appendix G, Item 308)

Manual References

TM 9-2320-280-10  
TM 9-2320-280-24P

Equipment Condition

- Hood raised and secured (TM 9-2320-280-10).
- Battery ground cable disconnected (para. 4-73).

General Safety Instructions

Do not drain fluid when engine is hot.

**NOTE**

Removal and installation procedures are basically the same for all hydraulic system pressure and return hoses. This procedure covers the power steering pump to hydro-boost return hose and the steering gear to hydro-boost pressure hose.

a. Removal

**WARNING**

Do not drain fluid when engine is hot. Severe injury to personnel will result

**CAUTION**

Cover or plug all hoses and connections immediately after disconnection to prevent contamination. Remove all plugs prior to connection.

**NOTE**

Have drainage container ready to catch fluid.

1. Loosen two clamps (3) and disconnect return hose (8) from power steering pump (9) and hydro-boost (19).
2. Remove two locknuts (12), washers (13), and capscrews (14) from clamps (15) and control valve hose (16). Remove two clamps (15) from return hose (8). Discard locknuts (12).

**NOTE**

Perform step 4 for vehicles with new alternator support bracket configuration.

3. Remove locknut (6), washer (7), capscrew (2), spacer (4), two clamps (5), clamp (10), and return hose (8) from alternator bracket (1). Remove clamp (5) from return hose (8). Discard locknut (6).
4. Remove locknut (6), two washers (7), capscrew (2), two clamps (5), harness clamp (10), and return hose (8) from power steering lines bracket (11). Remove clamp (5) and tiedown strap (11.1) from return hose (8). Discard locknut (6) and tiedown strap (11.1).
5. Remove pressure hose (17) from hydro-boost (19) and steering gear (20). Remove two O-rings (18) from pressure hose (17). Discard O-rings (18).

b. Installation

1. Install two O-rings (18) on pressure hose (17) and connect pressure hose (17) to steering gear (20) and hydro-boost (19).
2. Connect return hose (8) to power steering pump (9) and hydro-boost (19) with two clamps (3).

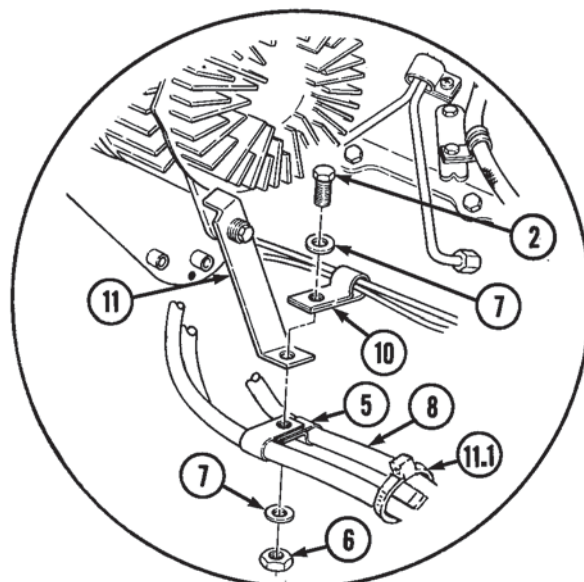
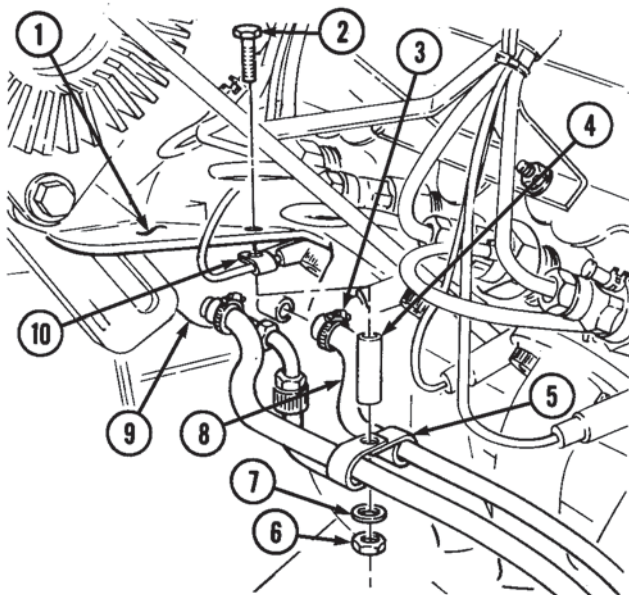
## 8-25. POWER STEERING HYDRAULIC SYSTEM PRESURE AND RETURN HOSE REPLACEMENT (Cont'd)

3. Position two clamps (15) and clamp (5) on return hose (8) and install control valve hose (16) and two clamps (15) with two capscrews (14), washers (13), and locknuts (12).

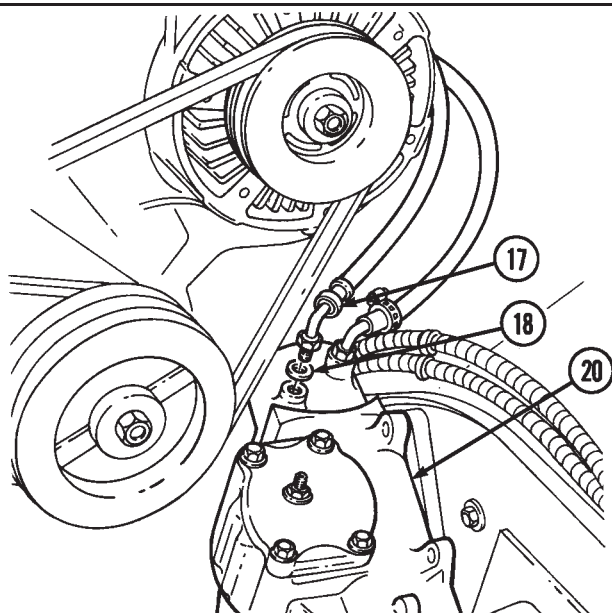
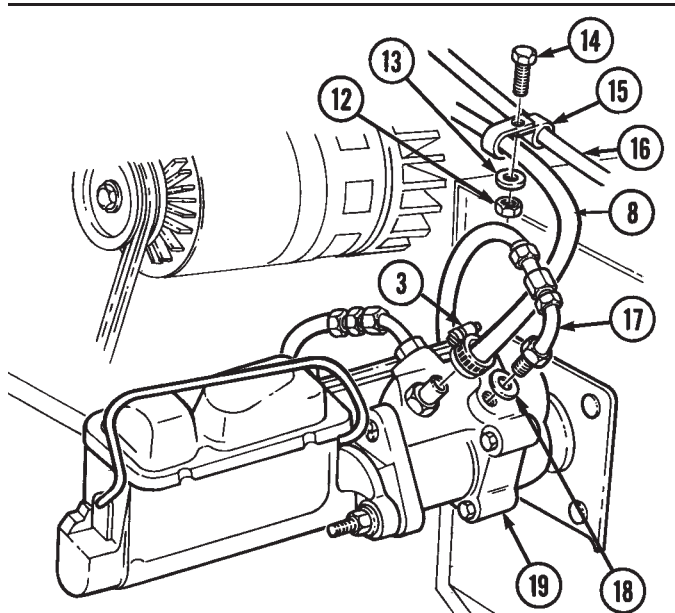
### NOTE

Perform step 5 for vehicles with new alternator support bracket configuration.

4. Install clamp (10), spacer (4), and two clamps (5) to alternator bracket (1) with capscrew (2), washer (7), and locknut (6).
5. Install harness clamp (10) and two clamps (5) to power steering lines bracket (11) with capscrew (2), two washers (7), and locknut (6). Install tiedown strap (11.1) on return hose (8).



NEW CONFIGURATION



FOLLOW-ON TASKS: • Connect battery ground cable (para. 4-73).  
• Bleed power steering system (para. 8-29).