

## 4-2. 60 AMPERE ALTERNATOR MAINTENANCE

This task covers:

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| <p>a. Removal</p> <p>b. Installation</p> | <p>c. Adjustment</p> |
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### INITIAL SETUP:

**Tools**

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

**Special Tools**

Hex-head driver, 3/16 in.  
(Appendix B, Item 163)

**Materials/Parts**

Lockwasher (Appendix G, Item 133)  
Two lockwashers (Appendix G, Item 183)  
Three lockwashers (Appendix G, Item 188)  
Five lockwashers (Appendix G, Item 178)  
Sealing compound (Appendix C, Item 44)  
Adhesive sealant (Appendix C, Item 3)

**Personnel Required**

One mechanic  
One assistant

**Manual References**

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

**Equipment Condition**

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

**General Safety Instructions**

Alternator must be supported during removal and installation.

**NOTE**

Prior to removal, tag leads for installation.

a. Removal

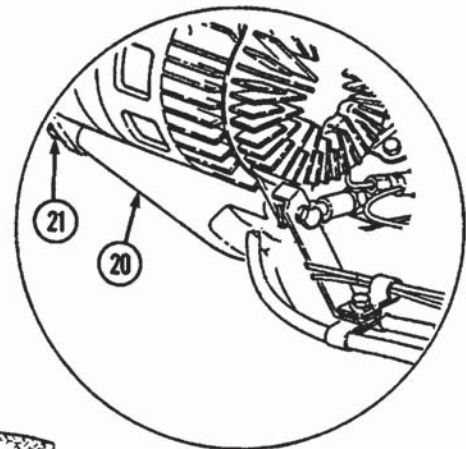
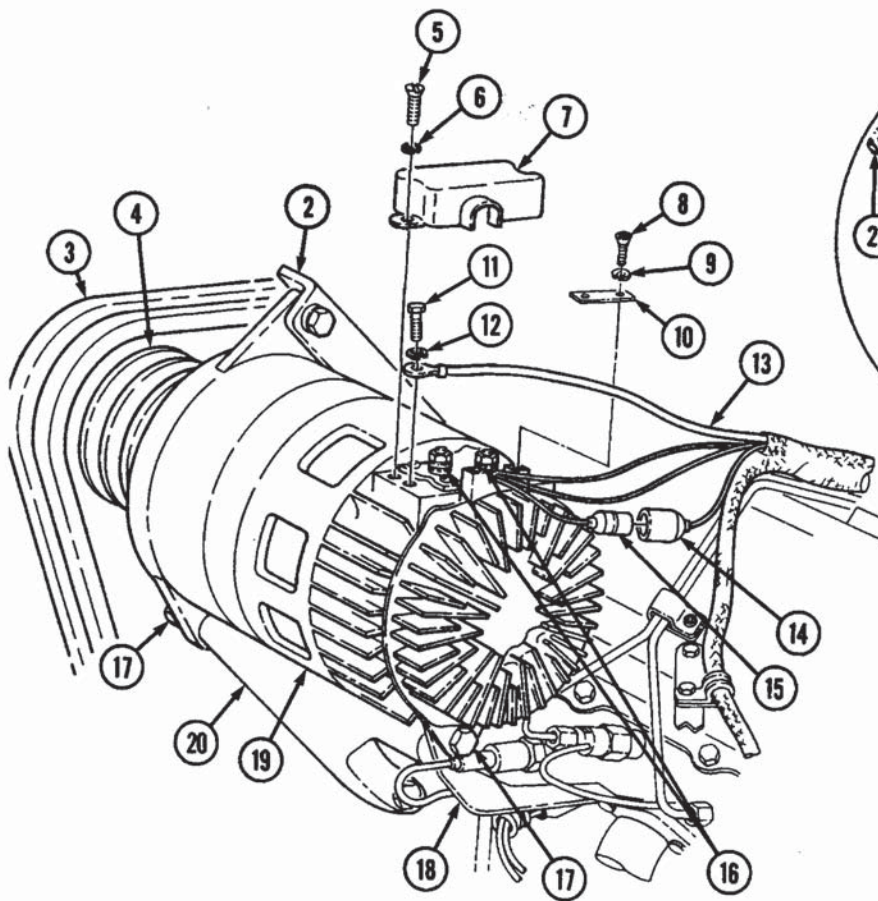
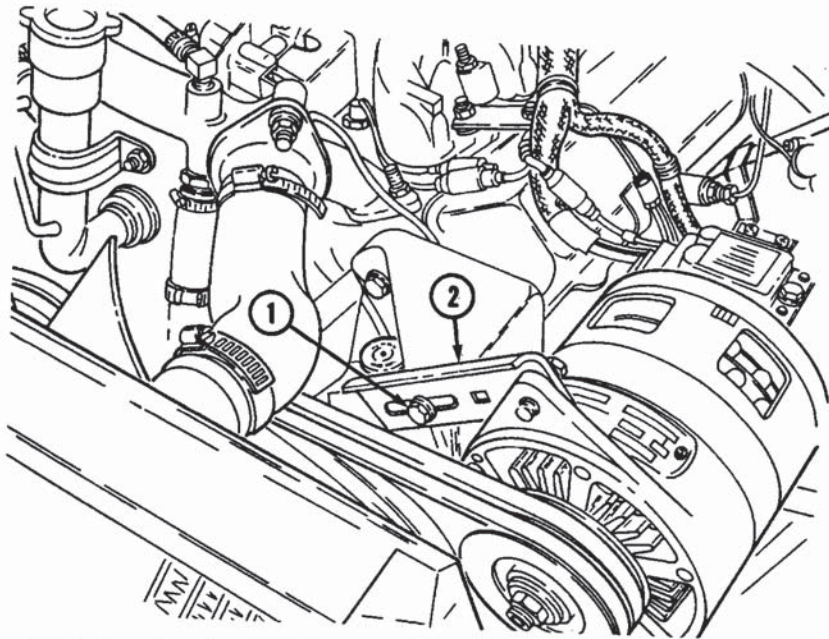
1. Loosen capscrew (1) on alternator adjusting bracket (2) and two capscrews (17) on alternator mounting bracket (20) and support bracket (18).

**NOTE**

Perform step 2 for vehicles with revised configurations.

2. Loosen capscrew (1) on alternator adjusting bracket (2) and nut (21) on alternator mounting bracket (20) and support bracket (18).
3. Remove two drivebelts (3) from alternator pulley (4).
4. Remove two screws (8), lockwashers (9), and wire retaining strap (10) from alternator (19). Discard lockwashers (9).
5. Remove two screws (5) and lockwashers (6) from terminal cover (7). Discard lockwashers (6).
6. Pry cover (7) away from waterproofing adhesive and remove cover (7).
7. Remove waterproofing adhesive around terminals (16).
8. Disconnect lead 568A (15) at engine wiring harness (14).
9. Remove capscrew (11) and lockwasher (12) securing ground 3B (13) to alternator (19) and disconnect ground 3B (13) from alternator (19). Discard lockwasher (12).

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REVISED  
NEW  
CONFIGURATION

## 4-2. 60 AMPERE ALTERNATOR MAINTENANCE (Cont'd)

10. Remove nut (4), lockwasher (3), washer (2), and lead 5A (1) from alternator (9). Discard lockwasher (3).
11. Remove nut (5), lockwasher (6), washer (7), and lead 2A (8) from alternator (9). Discard lockwasher (6).

### **WARNING**

Alternator must be supported during removal and installation. Failure to support alternator may cause injury to personnel or damage to equipment.

12. Remove capscrew (13), lockwasher (12), and washer (11) from adjusting bracket (10) and alternator (9). Discard lockwasher (12).

### **NOTE**

- Perform step 14 for vehicles with new alternator support bracket configuration.
- Perform step 15 for vehicles with revised new configuration

13. Remove two capscrews (14), lockwashers (15), and washers (16) from alternator (9), support bracket (17), and mounting bracket (18). Discard lockwashers (15).
14. Remove two capscrews (14), lockwashers (15), washers (16), spacer (21), power steering lines bracket (20), and support bracket (17) from mounting bracket (18). Discard lockwashers (15).
15. Remove nut (22), lockwasher (15), washer (16), long capscrew (23), washer (16), power steering lines bracket (20), and support bracket (17) from mounting bracket (18) and alternator (9). Discard lockwasher (15).
16. Remove alternator (9).
17. Remove alternator pulley (19) (para. 4-3).

### **b. Installation**

1. Install alternator pulley (19) (para. 4-3).

### **NOTE**

- Perform step 3 for vehicles with new alternator support bracket configuration.
- Perform step 4 for vehicles with revised new configuration.

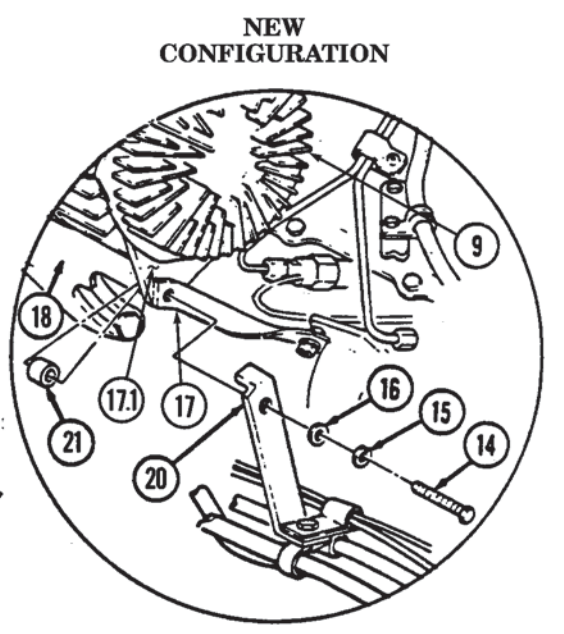
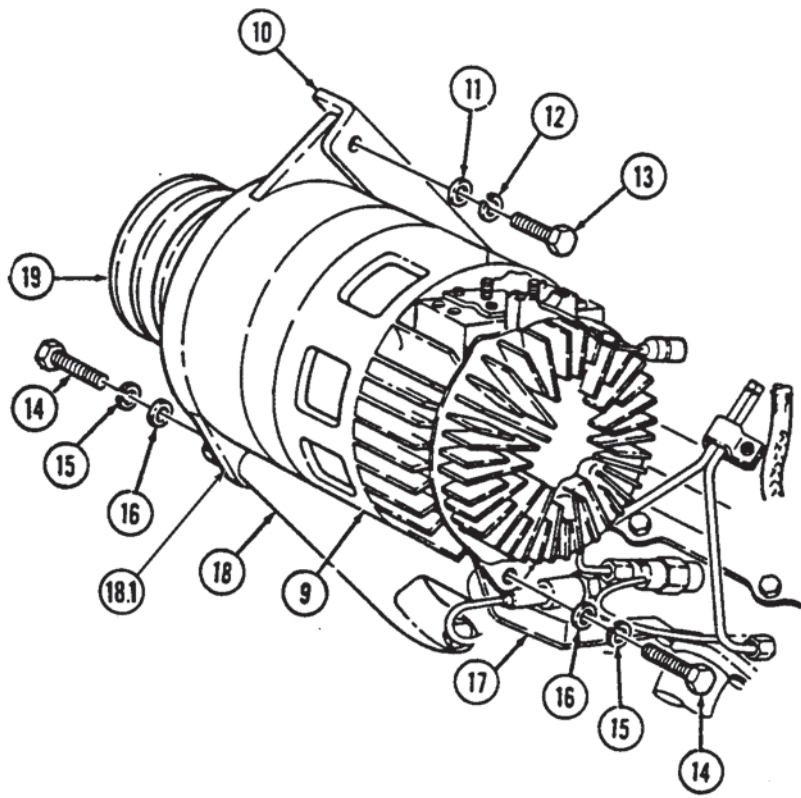
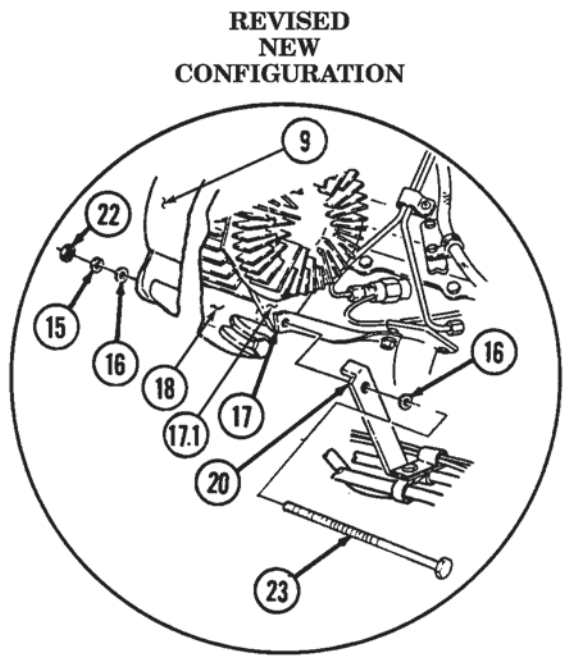
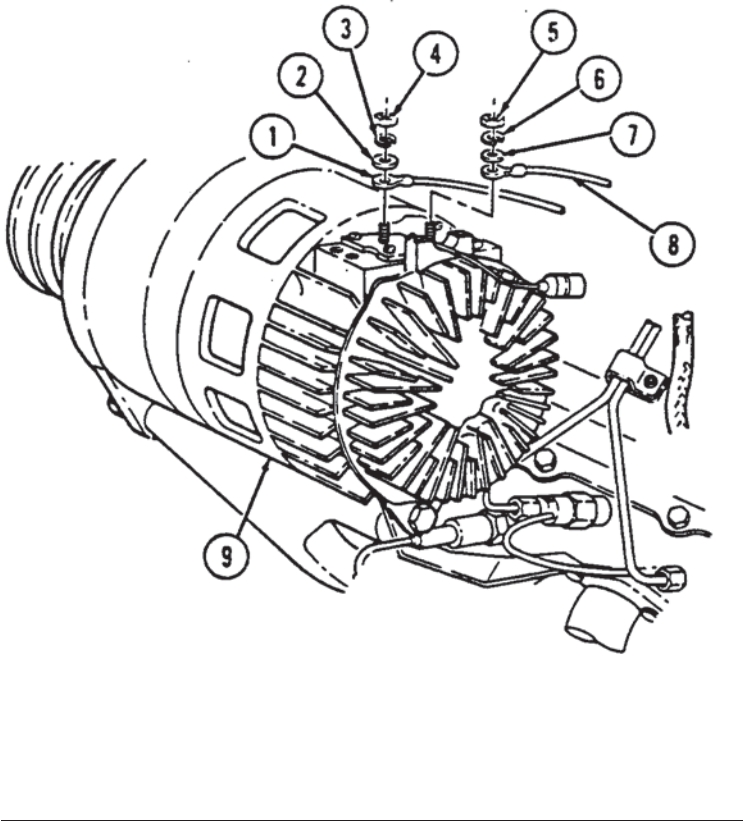
2. Position alternator (9) on mounting bracket (18) with support bracket (17) between mounting flange (18.1) and alternator (9) and install two washers (16), lockwashers (15), and capscrews (14).
3. Position alternator (9) on mounting bracket (18) with support bracket (17) and power steering lines bracket (20) on the outside of alternator mounting flange (17.1) and install spacer (21) between mounting bracket (18) and alternator mounting flange (17.1) with two lockwashers (15), washers (16), and capscrews (14).
4. Position alternator (9) on mounting bracket (18) with support bracket (17) and power steering lines bracket (20) on the outside of alternator mounting flange (17.1) and install washer (16), long capscrew (23), lockwasher (15), washer (16), and nut (22).
5. Align alternator (9) with adjusting bracket (10) and install washer (11), lockwasher (12), and capscrew (13).

### **NOTE**

Ensure terminals are clean before connections are made.

6. Connect lead 2A (8) on alternator (9) with washer (7), lockwasher (6), and nut (5). Tighten nut (5) to 20-25 lb-in. (2-3 N•m).
7. Connect lead 5A (1) on alternator (9) with washer (2), lockwasher (3), and nut (4). Tighten nut (4) to 45-55 lb-in. (5-6 N•m).

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## 4-2. 60 AMPERE ALTERNATOR MAINTENANCE (Cont'd)

8. Connect ground 3B (11) to alternator (15) with lockwasher (3) and capscrew (4). Tighten capscrew (4) to 82-102 lb-in. (9-12 N•m).
9. Connect lead 568A (14) to engine wiring harness (13).
10. Install wire retainer strap (10) on alternator (15) with two lockwashers (9) and screws (8). Tighten screws (8) to 30-35 lb-in. (3-4 N•m).
11. Install two drivebelts (1) on alternator pulley (2).
12. Adjust drivebelts (1) (para. 3-82).
13. Check alternator (15) for correct output voltage adjustment (para. 4-2, task c.).

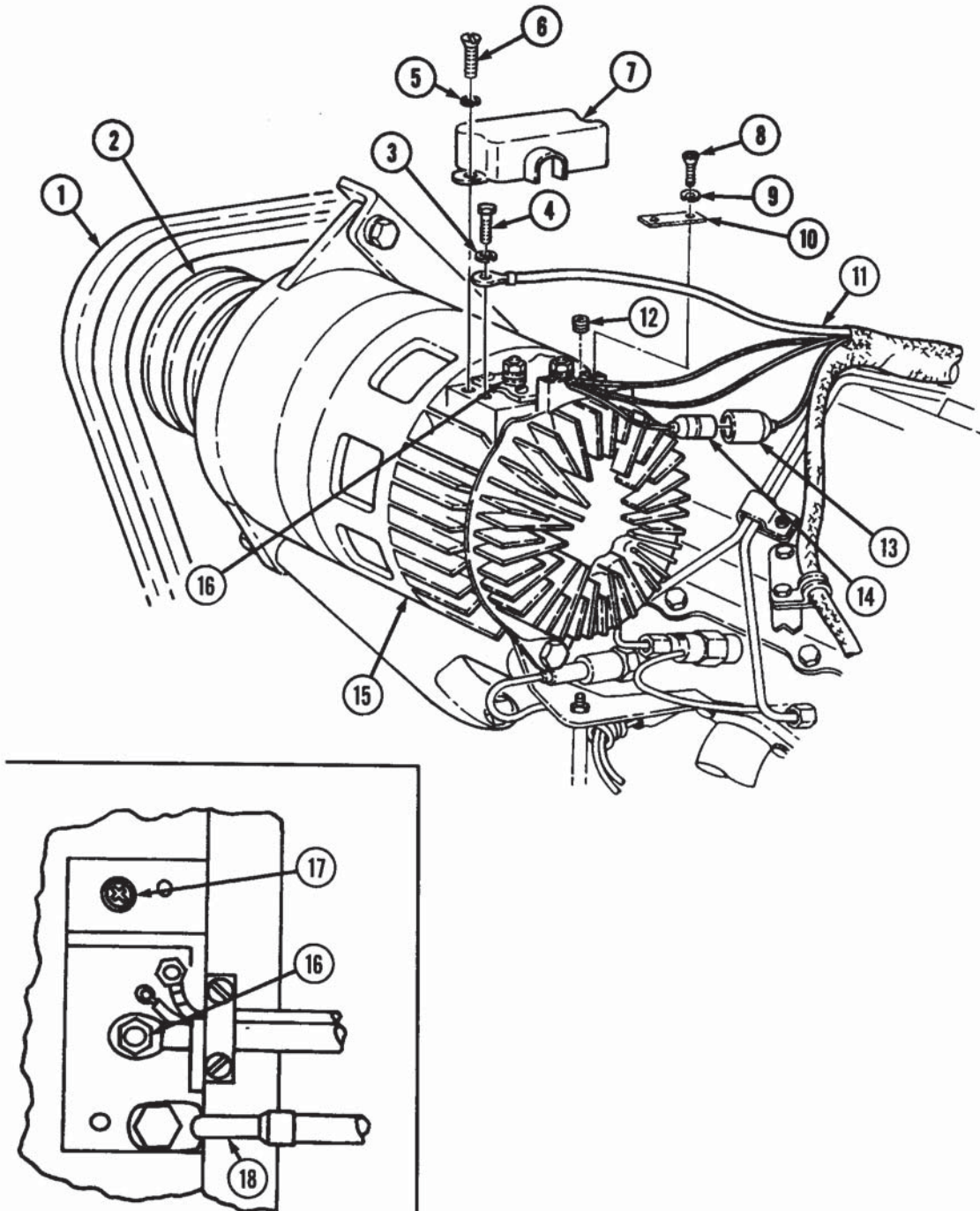
### c. Adjustment

#### NOTE

Battery ground cable must be removed (para. 4-73).

1. Using hex-head driver, remove pipe plug (12).
2. Connect battery ground cable (para. 4-73).
3. Start engine (TM 9-2320-280-10).
4. Raise engine speed above idle.
5. Put a load on the alternator by operating driving lights (TM 9-2320-280-10).
6. Using a multimeter, check alternator (15) output voltage. Connect black test lead to ground lead 3B (18). Connect red test lead to lead 5A (16). Output voltage should be 28 volts  $\pm$  0.5 volts. If adjustment is required, go to step 7. If no adjustment is required, go to step 11.
7. Turn adjusting screw (17) counterclockwise to increase voltage or clockwise to decrease voltage.
8. Turn off driving lights (TM 9-2320-280-10).
9. Return engine to idle.
10. Stop engine (TM 9-2320-280-10).
11. Apply sealing compound to pipe plug (12) threads. Using hex-head driver, install pipe plug (12) and tighten to 30-40 lb-in. (3-4 N•m).
12. Remove battery ground cable (para. 4-73).
13. Seal terminal connections using adhesive sealant.
14. Install terminal cover (7) on alternator (15) with two lockwashers (5) and screws (6).

4-2. 60 AMPERE ALTERNATOR MAINTENANCE (Cont'd)



- FOLLOW-ON TASKS:
- Connect battery ground cable (para. 4-73).
  - Lower and secure hood (TM 9-2320-280-10).

## 4-2.1. 60 AMPERE ALTERNATOR REGULATOR REPLACEMENT

This task covers:

a. Removal

b. Installation

### INITIAL SETUP:

#### Tools

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

#### Manual References

TM 9-2320-280-24P

#### Materials/Parts

O-ring (Appendix G, Item 218)

#### Equipment Condition

60 ampere alternator removed (para. 4-2).

### a. Removal

#### **NOTE**

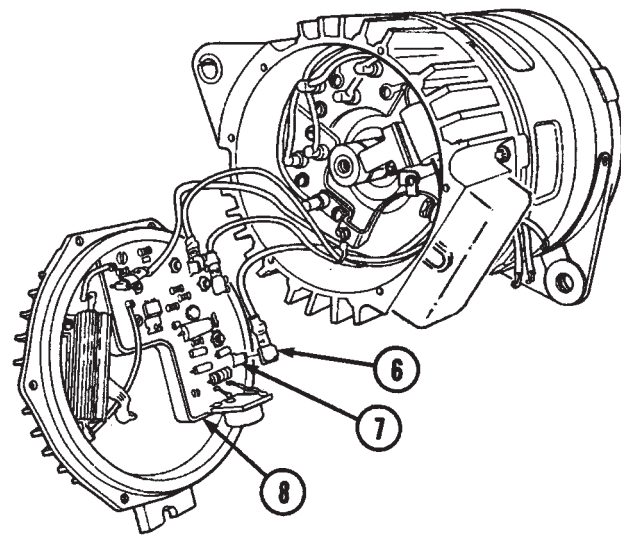
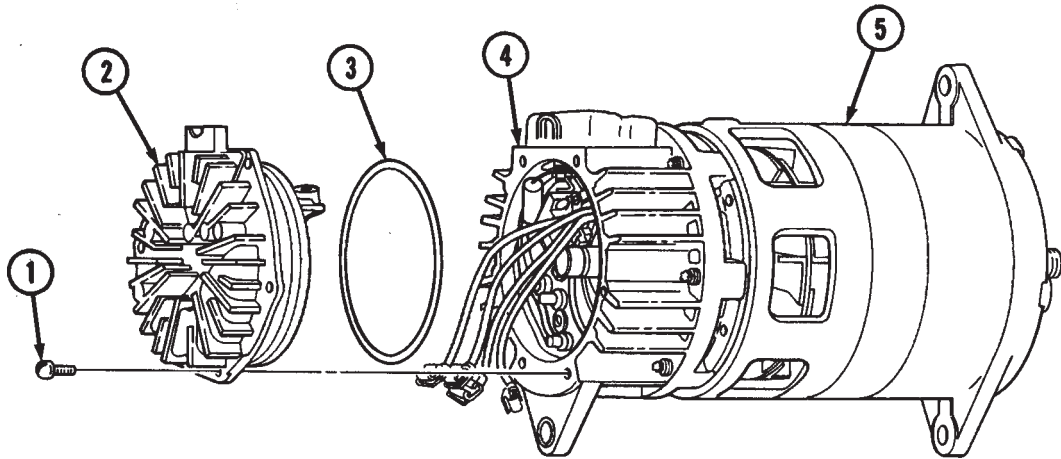
Regulator is part of end cover. Do not disassemble.

1. Remove six screws (1), end cover (2), and O-ring (3) from end housing (4). Discard O-ring (3).
2. Disconnect four leads (6) from terminals (7) on regulator (8).

### b. Installation

1. Install O-ring (3) on end cover (2).
2. Connect four leads (6) to terminals (7) on regulator (8).
3. Install end cover (2) on end housing (4) with six screws (1).
4. Check alternator (5) for correct output voltage (para. 4-2, task c.).

**4-2.1. 60 AMPERE ALTERNATOR REGULATOR REPLACEMENT (Cont'd)**



FOLLOW-ON TASK: Install alternator (para. 4-2).